



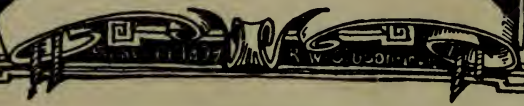
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V o l u m e T w o

DIAGNOSES OF NEW AMERICAN PLANTS -- I (a)

C. L. Lundell

**STRUTHANTHUS ESCUINTELENSIS** Lundell, sp. nov.

Frutex epiphyticus omnino glaber, ramulis subteretibus, brunnescentibus. Folia petiolata, petiolo ad 1.5 cm. longo; lamina coriacea, elliptica, 2.2--5 cm. longa, 1.7--3.2 cm. lata, apice rotundata, minute apiculata, basi rotundata, nervis lateralibus inconspicuis, venulis obsoletis. Inflorescentiae subspicatae, axillares, solitariae, ad 12 cm. longae, floribus in spiculas trifloras subsessiles dispositis, bracteolis acutis. Petala linearia, 6.5 mm. longa. Stylus ca. 4.5 mm. longus, haud contortus. --MEXICO: Chiapas, Mt. Ovando, alt. 1800 m., on tree, July 1--16, 1940, Eizi Matuda 4185 (Univ. Michigan Herb., type). --Allied to S. macrostachyus Lundell and S. belizensis Lundell.

**CALLIANDRA SILTEPECENSIS** Lundell, sp. nov.

Arbor parva, 3--4 m. alta, ramulis subteretibus dense hirtellis. Stipulae ca. 4 mm. longae. Folia petiolata, petiolo ad 2.5 cm. longo, hirtello, rachi usque ad 5.5 cm. longae; pinnis 5--7-jugis; foliolis chartaceis, 21--53-jugis, linear-oblongis, ad 8 mm. longis, 1.5 mm. latis, sessilibus, adpresse hirtello-ciliatis, apice acutis, basi obliquis. Capitulae axillares, pedunculis ad 5.5 cm. longis, parce hirtellis vel glabris. Legumina glabra, ad 10.5 cm. longa, 0.9 cm. lata, apice rotundata et minute apiculata, basi stipitata. --MEXICO: Chiapas, Barranca Honda, Siltepec, riverside, October--November, 1940, Eizi Matuda 4040 (Univ. Michigan Herb., type).



**HELIOCARPUS BELIZENSIS** Lundell, sp. nov.

Arbor, 13 cm. diam., omnino minute rufo-glandulosa. Ramuli parce hirsuti, glabrescentes. Folia petiolata, petiolo 1.3--4.5 cm. longo; lamina integra, late ovata, ovata, vel ovato-lanceolata, 7--13 cm. longa, 2.5--6.5 cm. lata, apice caudato-acuminata, basi rotundata, serrulata, supra parce et breviter hirsuta, subtus stellato-pilosa. Infructescentia magna, rhachibus hirsutis. Pedicelli fructiferi 4.3--5 mm. longi. Fructus crasse stipitatus. --BRITISH HONDURAS: El Cayo District, Vaca, on hilltop, Mar. 2, 1938, Percy H. Gentle 2273 (Univ. Michigan Herb., type), vernacular name moho. --The clothing of minute red glands suggests H. glanduliferus Robinson, but that species has sessile fruits.

**HELIOCARPUS CUSPIDATUS** Lundell, sp. nov.

Arbor, 20 cm. diam., ramulis parce et minute stellato-puberulentibus. Folia petiolata, petiolo 2.5--7 cm. longo; lamina ovato-lanceolata, 7--15 cm. longa, 3.6--6.7 cm. lata, apice caudato-acuminata, basi late obtusa vel rotundata, serrulata, glabrescentia. Inflorescentia parva, rhachibus minute stellato-tomentulosis; pedicellis 5--6 mm. longis. Sepala 4, linearis, 6 mm. longa, extus minute stellato-tomentulosa. Petala 4, anguste spatulata, 3.8--4 mm. longa, basis breviter pilosa. Stamina 14 vel 16. Stylus bifidus, ovario longior. Pedicelli fructiferi 3.5--4.5 mm. longi. Fructus stipitatus. --BRITISH HONDURAS: El Cayo District, Vaca, on hilltop, Mar. 4, 1938, Percy H. Gentle 2297 (Univ. Michigan Herb., type), vernacular name moho; near Camp 6, on hillside, Mar. 15, 1938, Gentle 2355. --From description H. cuspidatus appears to be close to H. Donnell-Smithii Rose, but differs in the narrower serrulate leaves with caudate-acuminate tips, longer sepals, plumose hairs on faces of young fruits, and in the longer fruit stipes. The flowers appear to be pseudohermaphroditic which may account for the differences in pedicel lengths.

**HELIOCARPUS FLORIBUNDUS** Lundell, sp. nov.

Arbor, 15 m. alta, 25 cm. diam. Ramuli glabrescentes. Folia petiolata, petiolo 3.5--11.5 cm. longo; lamina integra, late ovata vel suborbicularia, 10--22 cm. longa, 7--12.5 cm. lata, apice acuminata, basi rotundata vel subcordata, serrulata, supra minute stellato-puberula, subtus parce tomentosa. Infructescentia magna, usque ad 45 cm. longa, rhachibus fulvis, breviter stellato-tomentulosis. Pedicelli fructiferi 2--4 mm. longi. Fructus stipitatus. --BRITISH HONDURAS: Belize District, Gracie Rock, Sibun River, Mar. 28, 1935, Percy H. Gentle 1534 (Univ. Michigan Herb., type), vernacular name mountain moho. El Cayo District, Little Cockericot, Belize River, Mar. 27, 1933, C. L. Lundell 4177.

Stann Creek District, 22 Mile, Feb. 17, 1932, W. A. Schipp 872, vernacular name broad leaf mohe. --Essential characteristics of H. floribundus are as follows: leaf blades minutely appressed stellate-puberulent above and tomentose beneath, huge panicles with branches and pedicels clothed with short fulvous stellate tomentum, short pedicels, long fruit stipes, faces of fruit rugose and persistently hirsute but not bearing plumose hairs, and plumose bristles of fringe as much as 8 mm. long. It is related to H. tomentosus Turcz., which has smaller leaves and coarsely hirsute branchlets and infructescence.

HELIOCARPUS GENTLEI Lundell, sp. nov.

Arbor, 10 cm. diam., ramulis minute stellato-tomentulosis. Folia persistenter stipulata, stipulis 16 mm. longis vel minoribus, petiolata, petiolo 4.5--14 cm. longo; lamina suborbicularia, 12--26 cm. longa, 9--17 cm. lata, trilobata, lobo terminali acuminato, lobis lateralibus acutis vel rotundatis, basi cordata, serrulata, supra glabrescens, nervis parce et minute stellato-puberulentis, subtus parce stellato-puberulens, nervis breviter villosis. Inflorescentia magna, rhachibus stellato-tomentulosis, pedicellis 3.5--4.5 mm. longis. Sepala 4, linearis, 5.5--6 mm. longa, obtusa, exteriora stellato-tomentulosa. Petala 4, spatulata, 4--4.5 mm. longa. Stamina 16. Stylus ad mediam bilobus, ovario duplo longior. Fructus ignotus. --BRITISH HONDURAS: Belize District, Gracie Rock, Sibun River, on hilltop, Jan. 30, 1936, Percy H. Gentle 1787 (Univ. Michigan Herb., type), vernacular name white mohe. --In the absence of fruits, the exact relationship is difficult to determine. The persistent stipules suggest an alliance with H. stipulatus Hochr. which, according to description, has sordid-tomentose branches, flowers almost sessile, tuberculate sepals, and the androgynophore surrounded by a conspicuous pilose ring. H. Gentlei differs in these and other significant characteristics. The large 3-lobed leaves, short villous beneath along the primary and secondary veins, the minute gray stellate tomentum of branchlets and inflorescence, and the nodose flowers, in addition to the persistent stipules already mentioned, distinguish the species.

DAPHNOPSIS FLAVIDA Lundell, sp. nov.

Arbor parva, 5 m. alta, ramulis rubris, juvenilibus parce strigosis vel glabrescentibus. Folia petiolata, petiolo ad 5 mm. longo; lamina glabra, subcoriacea, flavida, oblongo-elliptica, 5.5--10 cm. longa, 2--4 cm. lata, apice attenuata, obtusa, basi acuta, nervis venisque prominulis et reticulatis, nervis lateralibus utroque latere ca. 8. Inflorescentiae ♂ axillares vel laterales, pauciflorae, pedunculis

minute et parce strigillosis, ca. 5 mm. longis, floribus flavidus apice umbellatis, pedicellis minute et parce strigillosis, ad 2 mm. longis; perianthii tubus ca. 11 mm. longus, lobis 4, ovato-orbicularibus, 2--2.5 mm. longis, minute puberulis, extus fere glabris. Ovarium glabrum. Styli 1.5 mm. longi. --MEXICO: Chiapas, Mt. Ovando, in forest, alt. 2000 m., July 1--16, 1940, Eizi Matuda 4157 (Univ. Michigan Herb., type).

**EUGENIA ESCUINTELENSIS** Lundell, sp. nov.

Arbor, 15 m. alta, glabra, ramulis gracilibus, internodiis elongatis. Folia petiolata, petiolo canaliculato, ad 7 mm. longo; lamina chartacea, flavida, obovata, obovato-elliptica, vel oblongo-elliptica, 5--10.5 cm. longa, 1.7--4.7 cm. lata, apice subacuminata, acumine obtuso, basi acuta, nervis lateralibus 7--10-jugis, utrinque prominulis. Flores breviter racemosi, racemis ad 5 mm. longis, fasciculatis, glabris, axillaribus; pedicellis 4--7 mm. longis; bracteolis triangulari-ovatis, ca. 0.8 mm. longis, parce puberulis. Sepala 4, late ovata, 1.2--1.5 mm. longa, parce ciliolata. Petala suborbicularia, ca. 3.5 mm. longa. Stylus 4.5 mm. longus. --MEXICO: Chiapas, Finca Esperanza, Escuintla, Feb. 28, 1940, Eizi Matuda 4144 (Univ. Michigan Herb., type).

**VACCINIUM MATUDAI** Lundell, sp. nov.

Frutex; ramulis rubris, juvenilibus parce pilosellis, mox glabrescentibus. Folia petiolata, petiolo ad 2.5 mm. longo, crasso; lamina sublucida, crasse coriacea, ovato-cordata, 2--4.5 cm. longa, 1.5--3.5 cm. lata, apice obtusa, basi late cordata, obscure crenulata, utrinque glabra costa ad basin puberula excepta, venulis reticulatis. Inflorescentia rubra, glabra vel parce pilosella, pauciflora, racemosa, ca. 2 cm. longa, pedicellis 3.5--5 mm. longis. Calyx glaber, calycis lobi 5, late deltoidei, ca. 1 mm. longi, acuti. Corolla urceolata, ca. 7 mm. longa, extus glabra, lobis 5, ovato-oblongis, ca. 1.5 mm. longis, obtusis, intus parce pilosis. Filamenta pilosa. Antherae 3 mm. longae, scalcaratae. Ovarium glabrum, ut videtur 10-loculare. Fructus ca. 5 mm. diam. --MEXICO: Chiapas, Barranca Honda, Siltepec, growing on rocks, alt. 2600 m., Oct.--Nov., 1940, Eizi Matuda 4074 (Univ. Michigan Herb., type). --Allied to V. Selerianum (Loes.) Sleumer.

**ARDISIA (Graphardisia) PAQUITENSIS** Lundell, sp. nov.

Ramuli crassiusculi, glabri. Folia petiolata, petiolo marginato, ad 1.8 cm. longo; lamina membranacea, glabra, integra, elliptica vel obovato-elliptica, 23.5--30 cm. longa, 11--13.5 cm. lata, apice subabrupte acuminata, basi angustata. Inflorescentiae glabrae, terminales, ca. 3.5 cm. longae,



bracteae foliolosae. Pedicelli usque ad 8 mm. longi. Sepala oblonga, 4.5--5 mm. longa. Petala elliptica, ca. 7 mm. longa. Stamina 4 mm. longa, filamentis glandulosis, ca. 1.2 mm. longis. Ovarium glabrum. --COSTA RICA: San José Province, low hills above Río Paquita, alt. 5--50 m., Aug. 15, 1936, C. W. Dodge & V. F. Goerger 9885 (Herb. Field Mus., No. 885,447, type). --*A. paquitensis*, allied to *A. opegrapha* Oerst., is remarkable for its large entire leaves up to 30 cm. long and 13.5 cm. wide, and the small inflorescence scarcely 3.5 cm. long.

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(a) Papers from the University of Michigan Herbarium.

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#### A NEW SPECIES OF PREMNA FROM THE PHILIPPINES

E. D. Merrill

PREMNA ATRA Merrill, sp. nov. §*Premnos*.

Arbor parva, inflorescentiis exceptis glabra vel subglabra, ramis pallidis, subteretibus, ramulis brunneis, glabris vel leviter pubescentibus; foliis in sicco atris, utrinque concoloribus nitidisque, oblongo-ovatis vel late lanceolato-ovatis, integris, firmiter chartaceis, 8--15 cm. longis, 4--6 cm. latis, sursum angustatis, longe acuminatis, basi subrotundatis, utrinque glabris vel supra ad costam nervosque et subtus in axillis inferioribus breviter pubescentibus; nervis primariis utrinque 5--6, perspicuis, utrinque plus minusve elevatis, plerumque pallide brunneis, laxe arcuato-anastomosantibus, reticulis primariis sublaxis, ultimis subobscuris, subcatervis; petiolis 1.5--4 cm. longis, supra subplanis vel leviter canaliculatis, hic breviter pubescentibus, ceteroquin glabris; inflorescentiis terminalibus, corymboso-cymosis, plerumque pedunculatis (pedunculo 1--2.5 cm. longo), 5--7 cm. longis latisque, breviter subadpresse pubescentibus (praesertim partibus junioribus); floribus circiter 5 mm. longis, in sicco atris, pedicellis circiter 1 mm. longis, bracteis oblongis, obtusis, circiter 2 mm. longis, bracteolis brevioribus vix 1 mm. longis; calycibus subobliquis, distincte 2-labiatis, cupulatis, glabris vel extus parcissime breviter pubescentibus, labio majore 3-lobato, minore 2-lobato, lobis late rotundatis, brevibus; corolla extus glabra, intus villosa, 2-labiata, labio inferiore 3-lobato, lobis centralibus ad 1.5 mm. longis, suborbiculari-

ovatis, rotundatis, lateralibus paullo brevioribus, labio superiore late truncato-rotundato vel obscure retuso; ovario globoso, glabro; stylis filamentisque glabris; fructibus immaturis subglobosis, glabris, 4-locellatis, circiter 4 mm. diametro.

PHILIPPINES: Luzon, Rizal Province, Mount Irig and Mount Lumutan, Bur. Sci. 41873 (type, herb. Arnold Arboretum) 42171 Ramos, February and April, 1923.

A species clearly belonging to the section Premnos, strongly characterized by its nearly glabrous, entire, long acuminate, shining leaves, these and the inflorescences characteristically black when dry. By the characters of Dr. Lam's key to the Malaysian species it falls in the group with Premna benguetensis Merr., a species totally different in all respects.

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#### NOVELTIES IN THE ERICCAULACEAE AND VERBENACEAE

Harold N. Moldenke

*SYNGONANTHUS VAUPESANUS* Moldenke, sp. nov.

Herba acaulis; foliis caespitosis reflexis numerosis linearibus obtusis utrinque glabris nitidisque; pedunculis gracillimis aggregatis bicostatis dense albedo-tomentellis; vaginis glabris.

Acaulescent herb; leaves basal, tufted, reflexed or appressed to the ground, numerous, linear, 1--3.3 cm. long, about 1 mm. wide at the middle, blunt at apex, glabrous and shining on both surfaces; peduncles very slender, aggregate, 4--6 or more per plant, 15--24 cm. long, 2-costate, slightly twisted, densely white-tomentellous throughout; sheaths narrow, closely appressed, equaling or surpassing the leaves, 1.5--3 cm. long, slightly twisted, glabrous, obliquely split at apex, the blade appressed and bluntish; heads hemispheric, 3--9 mm. in diameter; involucre bracts numerous, very conspicuous and showy, white, their margins subhyaline, obovate or oblanceolate, the outermost ones slightly stramineous, about 2.5 mm. long and 1.5 mm. wide, the inner ones about 4.5 mm. long and 2 mm. wide, rounded at apex, more or less navicular-cucullate, glabrous; receptacle densely villous with tenuous translucent hairs; staminate florets: sepals 3, separate, hyaline, translucent, oblanceolate, about 2 mm. long and 0.5 mm. wide, rounded at apex, glabrous; petal-tube very pale-stramineous, translucent, 1.3--1.4 mm. long, glabrous, amplicate and 3-lobed at apex, the lobes very short, rounded,

and involute; stamens 3; anthers white, versatile; pistillate florets: sepals 3, separate, broadly elliptic, 1.8--1.9 mm. long, about 0.9 mm. wide, rounded at apex, hyaline and translucent, glabrous; petals 3, connate at apex, oblanceolate, about 1.9 mm. long and 0.4 mm. wide at apex, densely pilose with long antrorse silky hairs; style very short, infundibular-ampliate toward apex, glabrous; stigmas 3; style-appendages longer than the stigmas; ovary 3-celled, 3-seeded

The type of this species was collected by José Cuatrecasas (no. 6973) at Yurupari, alt. 220 m., about 350 km. above Mitú, Vaupes, Colombia, on September 24, 1939, and is deposited in the United States National Herbarium at Washington. The species is obviously related to S. niveus (Bong.) Ruhl.

**ARGIPHILA CUATRECASASI** Moldenke, sp. nov.

Arbor parva; ramis percrassis tetragonis adpresso-puberulis vel furfuraceis glabrescentibus valde medullosis; foliis oppositis permagnis; petiolis crassis densissime adpresso-puberulis; laminis chartaceis vel submembranaceis late ellipticis utrinque puberulento-pulverulis, ad apicem acutis vel breviter acuminatis, ad basin acuminatis.

Small tree, about 5 m. tall; branches very coarse and stout, tetragonal, more or less densely appressed-puberulent or furfuraceous with very minute sordid furf, glabrous in age, marked with scattered corky elongated lenticels, very medullose with large white pith; nodes slightly flattened; principal internodes 3--5 cm. long; leaves decussate-opposite, very large; leaf-scars very large, prominent, and corky; petioles stout, 3.5--5 cm. long, very densely appressed-puberulent with grayish-brown hairs; blades chartaceous or submembranous, broadly elliptic, lighter and more grayish-green beneath, 32--35 cm. long, 15--17 cm. wide, acute or short-acuminate at apex, acuminate at base, entire, densely puberulent-pulverulent with very minute appressed pulverulence above, somewhat more conspicuously and densely puberulent beneath with sordid yellowish or grayish puberulence; midrib very stout, flat or slightly prominulous above, very much rounded-prominent beneath, decreasing rapidly in diameter as the apex is approached, densely puberulent; secondaries slender, 13--20 per side, ascending, not much arcuate except near the margins where they are arcuately joined, flat above, prominulous beneath; veinlet reticulation rather abundant, obscure or indiscernible above, the larger portions slightly prominulous beneath; inflorescence axillary, glomerate, apparently borne on the older wood; flowers not seen; peduncles none; fruiting-pedicels very stout, about 5 mm. long, densely furfuraceous-puberulent, verruculose; fruiting-calyx very large and incrassate, cupuliform, about 1 cm. long and 1.5 cm. wide, verruculose, glabrate,



the rim subtruncate; fruit drupaceous, oblong, about 15 mm. long, 12--14 mm. wide, glabrous, shiny, with a conspicuous corky scar at the apex; seeds 4, elongate-oblong.

The type of this remarkable species was collected by Jose Cuatrecasas (no. 8566) below Gabinete, alt. 2100--2250 m., Quebrada del Río Haocha, eastern slope of the Cordillera Oriental, Caquetá, Colombia, on March 23, 1940, and is deposited in the United States National Herbarium at Washington. It is obviously related to A. Gleasonii Moldenke and A. sessiliflora Moldenke.

*AEGIPHILA HAUGHTII* Moldenke, sp. nov.

Frutex gracilis; ramulis gracilibus sparsissime pilosulis glabrescentibus; foliis oppositis; petiollis minutissime puberulentis vel glabris; laminis membranaceis obovatis vel obovato-ellipticis longe acuminatis integris, ad basin cuneato-attenuatis, utrinque minutissime puberulis glabrescentibus; inflorescentiis axillaribus cymosis paucifloris.

Slender shrub, about 2 m. tall; branchlets slender, gray, very sparsely pilosulous on the nodes and younger parts, glabrous in age; nodes not annulate; principal internodes 1.5--10 cm. long; leaves decussate-opposite, usually about 2 pairs clustered near the apex of the season's growth; petioles rather slender, 5--10 mm. long, very minutely puberulent or glabrous; blades membranous, obovate or obovate-elliptic, 11--24 cm. long, 3.7--8.3 cm. wide, rather long-acuminate at apex, entire, cuneate-attenuate at base, very minutely and obscurely puberulent on both surfaces, glabrescent in age; midrib slender, flat above, prominent beneath; secondaries slender, about 10 per side, arcuate-ascending, prominulous beneath and slightly so above, plainly anastomosing near the margins; veinlet reticulation very abundant, slightly prominulous on both surfaces; inflorescence axillary, cymose; cymes solitary in the uppermost axils, 5--6.5 cm. long, 3--4 cm. wide, few- (about 7-) flowered, much shorter than the subtending leaves; peduncles very slender or subfiliform, about 3.5 cm. long, glabrous or obscurely puberulent at apex; pedicels filiform, 5--8 mm. long, glabrous; calyx cupuliform, about 2.7 mm. long and 3 mm. wide, glabrous, blackening in drying, its rim truncate and entire; corolla hypocrateriform, white and rather showy, nigrescent in drying, its tube slender, about 8 mm. long, glabrous, its lobes 5, oblong-lingulate, 4--5 mm. long, glabrous.

The type of this distinctive species was collected by Oscar Haught (no. 2904) -- in whose honor it is named -- at the foot of Cerro Cimalon, alt. about 50 m., on Hacienda Vainillo, Guayas, Ecuador, on October 7, 1939, and is deposited in the United States National Herbarium at Washington. It cannot be confused with any other species in the group.



*REGIPHILA STEINBACHII* Moldenke, sp. nov.

Frutex vel arbor; ramulis tetragonis adpresso-puberulis; sarmentis gracilibus obtuse tetragonis densissime tomentellis velutinis; foliis oppositis; petiolis gracilibus; laminis membranaceis ovatis acutis vel acuminatis integris, ad basin acutis vel subtruncatis, supra densissime velutinis, subtus dense breviterque pubescentibus; inflorescentiis terminalibus paniculatis; cymis multifloris.

Shrub or tree, to 5 m. tall; branches tetragonal, often decussately flattened, more or less appressed-puberulent; twigs slender, obtusely tetragonal, very densely tomentellous with grayish-brown tomentum, velvety to touch; nodes not annulate; principal internodes 1.5--5.5 cm. long; leaves decussate-opposite; petioles slender, 5--8 mm. long; blades membranous, uniformly green on both surfaces or somewhat lighter beneath, ovate, 7--12 cm. long, 3--6.5 cm. wide, acute or acuminate at apex, entire, acute or subtruncate at base, very densely velutinous with more or less subappressed multicellular hairs above, densely short-pubescent beneath with sordid-grayish hairs; inflorescence terminal, paniculate; peduncles and rachis densely sordid-tomentellous like the branches; cymes small, abbreviated, 1.5--4 cm. long, many-flowered; bractlets subulate, to 7 mm. long, densely strigose-tomentellous; pedicels very slender, about 1 mm. long, densely appressed-pubescent; calyx infundibular, 3--4 mm. long and wide, rather densely appressed-pubescent, its rim deeply 4-lobed, the lobes broadly triangular, about 1 mm. long, acute; corolla hypocrateriform, its tube narrow-cylindric, about 4 mm. long, glabrous, its limb 4-parted, the lobes oblong-lingulate, 2--2.5 mm. long; stamens 4, long-exserted; filaments filiform, 7--8 mm. long, glabrous.

The type of this species was collected by José Steinbach (no. 3168) -- in whose honor it is named -- at Bosquecitos San Javier, Sara, alt. 450 m., Santa Cruz, Bolivia, on November 16, 1916, and is deposited in the Britton Herbarium at the New York Botanical Garden. This collection was erroneously cited by me in *Brittonia* 1: 406 (1934) and *Phytologia* 1: 240 (1937) as *A. mollis* H.B.K., which has a subtruncate calyx-rim and therefore belongs to an entirely different section of the genus. It is very probable that all the other Bolivian specimens cited by me as *A. mollis* are also this new species and that *A. mollis* does not occur in Bolivia.

*ALOYSIA ALOYSIOIDES* Loes. & Moldenke, sp. nov.

Frutex; ramis medioeriter gracilibus obtuse tetragonis glabris suberosis; sarmentis brevibus parce pilosis; petiolis gracilibus parce pilosis; laminis membranaceis ovatis obtusis vel rotundatis, ad basin truncatis vel subtruncatis, crasse dentatis, subrevolutis, supra scabris, subtus puberu-

lis; inflorescentiis axillaribus dense multifloris.

Shrub; branches medium-slender, obtusely tetragonal, glabrous, gray, with very large and elevated leaf-scars projecting 2--3 mm. in divaricate fashion from the branches, corky; nodes not flattened nor annulate; twigs short, sparsely pilose with scattered hairs, the nodes often rather obscurely annulate with a line of hairs; leaves decussate-opposite; principal internodes 1--3 cm. long; petioles slender, 1--2 mm. long, sparsely scattered-pilose; blades membranous, rather uniformly light-green on both surfaces or somewhat lighter beneath, ovate, 1.5--5 cm. long, 1.5--2.5 cm. wide, obtuse or rounded at apex, truncate or subtruncate at base or slightly prolonged into the petiole when young, coarsely dentate from almost the base to the apex with rounded broadly triangular teeth, the margins slightly revolute, scabrous above, densely or sparsely puberulent beneath; midrib, secondaries, and veinlet reticulation conspicuous on both surfaces, subimpressed above, prominulous and dark beneath; inflorescence axillary; spikes 5--8.5 cm. long, about 1 cm. wide in anthesis, densely many-flowered; peduncles very slender, 2--3 cm. long, rather sparsely pilose-puberulent with spreading hairs like the twigs and petioles; rachis more densely spreading-pilose; prophylla lanceolate, 2--3 mm. long, long-acuminate at apex, attenuate at base, pilose-ciliate; calyx about 1.5 mm. long and wide, very densely villous; corolla-tube about 5 mm. long, glabrous outside, its limb about 3 mm. wide.

The type of this species was collected by August Weberbauer (no. 5206) below Surco, dept. Lima, Peru, alt. 1800 m., in February, 1909, and is deposited in the herbarium of the Field Museum of Natural History at Chicago. The cheiromym, Lippia aloysioides Loes., appears on the label.

ALOYSIA HERRERAE Moldenke, sp. nov.

Frutex; ramulis graciusculis tetragonis glabrescentibus; petiolis gracillimis perbrevis vel obsolete pilosulo-puberulentis; laminis chartaceis oblongis vel oblongo-ellipticis acutis vel subacutis integris, ad basin acutis, supra scaberrimis, subtus scabris et dense resinoso-punctatis; inflorescentiis axillaribus terminalibusque.

Shrub; branches rather slender, tetragonal, stramineous or brownish, glabrous and shiny in age, finely and very obscurely scattered-puberulent on the youngest parts; nodes annulate; principal internodes 2--5.5 cm. long; twigs short and very slender; leaves decussate-opposite; petioles very slender, 1--2 mm. long or obsolete, pilosulous-puberulent; blades chartaceous, bright-green above, lighter beneath, oblong or oblong-elliptic, 0.9--4.5 cm. long, 3--10 mm. wide, acute or subacute at apex, acute at base, entire, very scab-

rous above with very short stiff bulbous-based hairs, scabrous beneath with shorter hairs and also densely resinous-punctate; veinlet reticulation impressed above on smaller leaves, obscure on larger ones, conspicuous but flat beneath; inflorescence axillary and terminal, the spikes abbreviated, 7--12 mm. long, many-flowered; peduncles 1--2 mm. long, very slender, densely puberulent; calyx tubular, about 2 mm. long, densely puberulent, not hirsute, its rim slightly flaring and triangular-toothed; corolla-tube about 4 mm. long, densely short-pubescent outside, its limb about 3 mm. wide.

The type of this remarkable species was collected by Fortunato L. Herrera (no. 1534) -- in whose honor it is named -- at an altitude of 3000 m. in the Urubamba Valley, Peru, in July, 1927, and is deposited in the herbarium of the Field Museum at Chicago. A common name recorded by the collector is "cedronsillo".

*ALOYSIA LEPTOPHYLLA* Loes. & Moldenke, sp. nov.

Frutex (?); ramis gracilibus sparsiuscule albo-hirsutis medullosis; foliis sessilibus amplexicaulis; laminis membranaceis ovatis ad apicem rotundatis, at basin cordatis, crasse dentatis subrevolutis utrinque plusminus hirsutis; inflorescentiis axillaribus terminalibusque dense multifloris.

Shrub (?); branches slender, tetragonal, rather sparsely and irregularly hirsute with white hairs, more densely so toward the apex, medullose; nodes not flattened nor annulate; principal internodes 3--4 cm. long, not lenticellate; leaves decussate-opposite, sessile and more or less clasping at base; blades membranous, ovate, rather uniformly green on both surfaces or somewhat lighter beneath, 2--5 cm. long, 1.5--4 cm. wide, rounded at apex, cordate at base and clasping the stem, coarsely dentate from base to apex with broadly triangular teeth, the margins slightly revolute, more or less densely hirsute above with weak whitish bulbous-based hairs, somewhat hirsute and also more or less densely puberulent beneath, the larger venation often subimpressed above, prominulous beneath; inflorescence axillary and terminal; spikes 5--8 cm. long, densely many-flowered, erect or ascending; peduncles very slender, 2--3 cm. long, rather densely hirsute-pubescent like the branches, often surmounted by a pair of foliaceous bracts about 1 cm. long and 7 mm. wide, dentate, sessile, hirsute; bractlets large and conspicuous, lanceolate, 5--6 mm. long, 1--1.2 mm. wide, acuminate-attenuate at both ends, hirsute; calyx about 3 mm. long, densely spreading-hirsute, its rim long-toothed with subulate-attenuate teeth; corolla-tube 5--6 mm. long, entirely glabrous outside, its limb about 4 mm. in diameter.



The type of this remarkable species was collected by August Weberbauer (no. 5374) somewhere in Peru between 1909 and 1914 and is deposited in the herbarium of the Field Museum of Natural History at Chicago.

*ALOYSIA MINTHIOSA* Moldenke, sp. nov.

Frutex; ramis ramulisque gracilibus tetragonis densely pulverulento-puberulis resinoso-granulosis; internodiis abbreviatis; foliis sessilibus vel subsessilibus; laminis subcoriaceis elliptico-ovatis supra pernitidis, ad apicem obtusis, regulariter serrulatis subrevolutis utrinque dense pulverulento-puberulis et resinoso-glandulosis; inflorescentiis axillaribus densissime multifloris; calyce non villosa.

Shrub, with a mint-like fragrance; branches and branchlets slender, obtusely tetragonal, more acutely so when young, densely but obscurely pulverulent-puberulent and resinous-granular when young, less so in age; nodes not annulate; principal internodes abbreviated, 5--20 mm. long; leaf-scars small but very prominent, divaricate-raised; leaves decussate-opposite, sessile or practically so; leaf-blades subcoriaceous, uniformly bright-green on both surfaces, elliptic-ovate, very shiny above, 7--19 mm. long, 5--12 mm. wide, obtuse at apex, uniformly serrulate from almost the base to the apex with blunt and subrevolute teeth, densely but obscurely pulverulent-puberulent on both surfaces, less densely so above in age, and resinous-glandular; midrib and venation somewhat impressed above, flat beneath; inflorescence axillary, abundant, 4--13 cm. long, spicate, very densely many-flowered; peduncles and rachis very slender, densely puberulent, the former 4--15 mm. long; prophylla numerous, lanceolate, 1--1.5 mm. long, acuminate, puberulent; calyx about 2 mm. long, densely puberulent, not villous, its rim unequally 4-lobed; corolla about 5 mm. long, its limb 4-lobed, the lobes subequal, the tube short, puberulent within; stamens 4; anthers subsessile; style terminal; stigma very minutely 2-lobed; ovary 2-celled, each cell with a single basal ovule.

The type of this species was collected by J. Francis Macbride & Featherstone (no. 2564) in a cliff crevice, alt. about 2000 feet, Yautan, Peru, on October 9, 1922, and is deposited in the herbarium of the Field Museum at Chicago.

*ALOYSIA NAHUIRE* Gentry & Moldenke, sp. nov.

Frutex; ramulis elongatis gracilibus debilibus fere subteretibus glabrescentibus; sarmentis substrigoso-puberulis; petiolis gracillimis breviter pubescentibus vel strigosis; laminis chartaceis lanceolato-ellipticis acutis vel breviter acuminatis regulariter serrulatis, ad basin acutis, supra scabris bullatis, subtus puberulis dense resinoso-punctatis.

Very slender shrub, 1--4 m. tall, with licorice-like odor; branches elongate, slender, weak, very obscurely tetragonal or almost subterete, glabrous in age; twigs substrigose-puberulent; leaf-scars large, concave, corky, rather prominent on the branches; nodes not annulate nor flattened; principal internodes 1--5.5 cm. long; leaves decussate-opposite; petioles very slender, 2--6 mm. long, short-pubescent or strigose; blades chartaceous, bright-green on both surfaces, lanceolate-elliptic, 3--12.5 cm. long, 1.2--3.7 cm. wide, acute or short-acuminate at apex, acute at base, regularly serrulate from almost the base to the apex, scabrous above with very minute whitish bulbous-based hairs and bullate, puberulent and densely resinous-punctate beneath; midrib, secondaries, and veinlet reticulation deeply impressed above, prominent beneath; inflorescence axillary, nutant, 3--4.5 cm. long, densely many-flowered, hop-like; peduncles filiform, densely strigose-puberulent; rachis densely spreading-puberulent; bracts foliaceous, hop-like, elliptic, about 8 mm. long and 4 mm. wide, acute or short-acuminate at apex, rounded at base, densely silky-pubescent with long appressed whitish hairs, very conspicuous; calyx about 2.5 mm. long, very densely hirsute; corolla-tube very slender, about 5 mm. long, sparsely spreading-pilose outside, its limb about 3.4 mm. wide.

The type of this remarkable species was collected by Howard Scott Gentry (no. 5721) in Croton Monte, in a coastal thorn forest, Cerro Tecamate, west of Pericos, alt. 100 feet, Sinaloa, Mexico, on February 27, 1930, and is deposited in the Britton Herbarium at the New York Botanical Garden. Tea is made locally from the foliage and the vernacular name is "nahuire".

*CARYOPTERIS INCANA* var. *BRACHYDONTA* (Hand.-Mazz.) Moldenke, comb. nov.

*Caryopteris tangutica* var. *brachyodonta* Hand.-Mazz., Acta Hort. Goth. 9: 68. 1934.

*GITHAREXYLUM DRYANDERAE* Moldenke, sp. nov.

Arbor; ramulis acutis tetragonis densiuscule farinaceo-puberulis; foliis oppositis; petiollis crassiusculis densiuscule farinaceo-puberulis in sicco corrugatis; laminis coriaceis ellipticis acutis integris, ad basin plerumque acutis, supra glabris et nitidis, subtus densely adpresso-tomentellis, ad basin biglandulosis; inflorescentiis racemoso-spicatis multifloris, rhachide dense adpresso-furfuraceo.

Tree, about 5 m. tall; branchlets stout, acutely tetragonal, rather densely farinaceous-puberulent with sordid-brownish furf; nodes flattened, not annulate; leaf-scars very large, amplate, corky; principal internodes 2--5 cm.

long; leaves decussate-opposite; petioles stoutish, 3--4.5 cm. long, rather densely farinaceous-puberulent like the branchlets, wrinkled-striate in drying, ampliate at base; blades coriaceous, gray-green and shiny above, yellow-green beneath, elliptic, 11--19 cm. long, 3--7 cm. wide, acute at apex, entire, usually acute (sometimes rounded) at base, glabrous above, densely appressed-tomentellous or furfuraceous with yellowish furf beneath, bearing two large and prominent glands parallel to the petiole at the very base; midrib stout, impressed above, very prominent beneath; secondaries slender, 10--15 per side, arcuate-ascending, flat and rather inconspicuous above, very prominent and glabrous beneath; veinlet reticulation abundant, flat and often rather inconspicuous above, the larger portions prominulous and glabrous beneath; inflorescence racemose-subspicate, 8--14 cm. long, many-flowered, solitary in the upper axils, erect; flowers not seen; fruiting peduncles stout, 1--2.5 cm. long, more or less densely appressed-furfuraceous; rachis in fruit stout and wrinkled-striate, densely appressed-furfuraceous with brownish furf; fruiting-pedicels stout and incrassate, about 1 mm. long or less, densely appressed-furfuraceous; fruiting-calyx indurated, 5--6 mm. long, 9--10 mm. wide, venose, glabrate, the rim irregularly lobed; fruit drupaceous, fleshy, oblong-elliptic, 7--12 mm. long, 5--9 mm. wide, glabrous, shiny, red.

The type of this species was collected by Editha Dryander (no. 2362) -- in whose honor it is named -- at an altitude of 2000 m. in El Valle, Colombia, in May, 1939, and is deposited in the United States National Herbarium at Washington

*CITHAREXYLUM ROSEI* var. *DURANGENSIS* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis minute obscure puberulis, pilis brevissimis adpressis.

This variety differs from the typical form of the species in having its leaves only very minutely and obscurely puberulent on both surfaces with very short appressed grayish hairs.

The type of this variety was collected by Forrest Shreve (no. 9122) on outwash plains near Pasaje, alt. 4650 feet, Durango, Mexico, on August 23, 1939, and is deposited in his herbarium at Tucson, Arizona. He describes the plant as a shrub 6 feet tall, with its mature fruit red in color.

*CITHAREXYLUM STEYERMARKII* Moldenke, sp. nov.

Frutex; ramis tetragonis brunneis glabris nitidis; sarmenis minute puberulis; laminis maturis subcoriaceis ellipticis acuminatis integris, ad basin acutis vel acuminatis, utrinque glabris vel obscure pulverulento-punctatis; inflorescentiis terminalibus racemiformibus dense multifloris.



Shrub, to 10 feet tall; branches tetragonal, brownish, glabrous, medium-slender, shiny; youngest twigs minutely puberulent; nodes annulate; principal internodes 1.5--10.5 cm. long; leaves decussate-opposite; petioles stout, 5--18 mm. long, glabrous; leaf-scars large, corky, prominent, divergent, 3--4 mm. long; blades chartaceous when young, subcoriaceous when mature ("firmly membranaceous" according to the collector), elliptic, 6--18 cm. long, 2--7.8 cm. wide, acuminate at apex, entire, often slightly undulate along the margins, acute or acuminate at base, glabrous or very minutely and obscurely pulverulent-punctate on both surfaces, very minutely and obscurely short-puberulent along the midrib above; midrib slender, flat or subimpressed above, very prominent beneath; secondaries slender, 7 or 8 per side, arcuate-ascending, flat or subprominulous above, very sharply prominent beneath, joined in many loops near or at the margins beneath; veinlet reticulation very abundant, conspicuously prominulous above, sharply prominulous beneath; inflorescence terminal, racemiform; racemes simple or the large ones branched at base, 6--15 cm. long, densely many-flowered; peduncles (2--2.5 cm. long) and rachis slender, minutely puberulent; pedicels very slender, 1--2 mm. long, puberulent, in fruit to 3 mm. long and glabrescent; calyx campanulate, about 3 mm. long and wide, light, very shiny, glabrous, the rim truncate and entire, short-ciliolate; corolla hypocrateriform, sweet-scented, its tube 5 mm. long, its lobes spreading, slightly squarrose, densely pubescent within; fruiting-calyx slightly indurated, cupuliform, about 3 mm. long and 5 mm. wide, glabrous, light-colored, very shiny, its rim entire and truncate; immature fruit subglobose, about 5 mm. long and wide, glabrous, shiny.

The type of this species was collected by Julian A. Steyermark (no. 31,433) on shaded cloud-forest slopes on top of Volcan Quezaltepeque, 3--4 miles northeast of Quezaltepeque at an altitude of 1500--2000 m., Chiquimula, Guatemala, on November 8, 1939, and is deposited in the herbarium of the Field Museum at Chicago. The type is in fruit. An isotype at Chicago is in anthesis and is remarkable in having much larger and thinner leaves, only chartaceous in texture and to 18 cm. long and 7.8 cm. wide. The type has its leaves subcoriaceous in texture and only 4.5--11.5 cm. long and 1.8--4.2 cm. wide.

*OITHAREXYLUM VALLENSE* Moldenke, sp. nov.

Arbor; ramulis percrassis acute tetragonis marginatis dense puberulo-farinosis glabrescentibus; foliis oppositis; petiolis crassis pulverulento-farinosis glabrescentibus; laminis coriaceis ovatis acutis vel breviter acuminatis in-



tegris, ad basin acutis, utrinque sparsissime pulverulentis glabrescentibus, ad basin biglandulosis; inflorescentiis axillaribus spicatis dense multifloris; rachide percrasso.

Tree, to 8 m. tall; branchlets very coarse and heavy, sharply tetragonal, decussately flattened and ampliate at the nodes, margined, densely pulverulent-farinose when young, glabrescent in age; nodes plainly annulate with a circumferential ridge; principal internodes 3-6 cm. long (at tips of branchlets); leaves decussate-opposite; petioles heavy, about 5 cm. long, pulverulent-farinose, glabrescent in age; blades coriaceous, dark-green above, lighter beneath, ovate, about 30 cm. long, 10-12 cm. wide, acute or short-acuminate at apex, entire, acute at base and there bearing 2 large black glands parallel to the midrib, very sparsely pulverulent along the midrib and larger veins on both surfaces, glabrescent in age; midrib heavy, flat or subimpressed above, very prominent beneath; secondaries slender, about 15 per side, flat above, sharply prominent beneath, arcuate-ascending, conspicuously joined in many loops near the margins; veinlet reticulation obscure or indiscernible above, prominulous beneath; inflorescence spicate, axillary, 8-15 cm. long, densely many-flowered; peduncles (1-2 cm. long) and rachis very stout, very densely furfuraceous with sordid grayish or buff-colored furf, less densely so in age; pedicels obsolete; prophylla tiny, scale-like, 1-1.5 mm. long, densely furfuraceous or pulverulent-farinose; calyx tubular, heavy and coriaceous, 6-8 mm. long, 4-5 mm. wide, densely furfuraceous-farinose with sordid grayish or buff-colored furf; corolla white, barely protruding from the calyx, its limb 5-parted, the lobes elliptic-lingulate, about 3 mm. long, densely pilose at base.

The type of this species was collected by Ellsworth Paine Killip and Hernando García y Bstriga (no. 33,940) in a dense forest, San Antonio, west of Cali, near the summit of the Cordillera Occidental, alt. 1900-2350 m., between February 26 and March 2, 1939, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*DURANTA MACRODONTA* Moldenke, sp. nov.

Frutex; ramis gracilibus inermis plusminus tetragonis breviter adpresso-pubescentibus medullosis; foliis oppositis; petiolis graecillimis submarginatis dense adpresso-pubescentibus vel strigosis; laminis membranaceis ovatis vel subrotundis, ad basin et apicem breviter acuminatis, crasse dentatis, utrinque sparsissime pilosulis; inflorescentiis paniculatis foliosis multifloris.

Shrub, 4-5 feet tall; branches slender, unarmed, more or less tetragonal, the younger parts decussately flattened at the nodes, shortly appressed-pubescent with sordid-grayish

hairs, corky-lenticellate, brunnescent, medullose; nodes not annulate, flattened; buds very densely villous-pubescent with sordid-canescens hair; leaves decussate-opposite; petioles very slender, 4--6 mm. long, deeply canaliculate above, submargined, densely appressed-pubescent or strigose with sordid-canescens hair; blades membranous, uniformly dark-green on both surfaces, brunnescent in drying, ovate or the youngest subrotund, 2--5.8 cm. long, 1--4.8 cm. wide, short-acuminate at apex and base, coarsely dentate with broadly triangular teeth from below the middle to the base of the terminal acumination, very sparsely and obscurely pilosulous on both surfaces with widely scattered hairs, more densely so on the midrib; inflorescence supra-axillary and terminal, the supra-axillary ones aggregated near the tips of the branches, forming a loose and leafy terminal panicle; racemes 9--18 cm. long, about 2 cm. wide, rather densely many-flowered, not secund, erect or recurved; peduncle slender, 1--2.5 cm. long, brunnescent, more or less appressed-pilose like the branches; rachis similar, but more densely appressed-pilose with sordid-canescens hairs; bracts often leafy, 1--6 at the base of the racemes, ovate, 5--15 mm. long, acuminate at apex and base, stipitate, pilosulous; prophylla linear-setaceous, 3--5 mm. long, densely strigose, persistent, conspicuous; pedicels about 2 mm. long, densely canescens-pubescent; calyx tubular-campanulate, about 3 mm. long, about 3 mm. wide at the apex, uniform, densely strigose with sordid-canescens hairs like the branches and rachis, its rim long-apiculate, the apiculations 1 mm. long and densely strigose, erect; corolla blue, its tube about 5 mm. long, very densely puberulent above the calyx, its limb about 1 cm. wide.

The type of this species was collected by Mohamed Nur bin Mohamed Ghose in the Botanic Gardens at Singapore, Federated Malay States, on October 21, 1924, and is deposited in the herbarium of the Bailey Hortorium at Ithaca. It was cultivated under the name of "Duranta plumieri Jacq."

*DURANTA REPENS* var. *GRANDIFLORA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit floribus majoribus, corollae limbo usque ad 1.8 cm. diametro.

This variety differs from the typical form of the species in its larger flowers, the corolla-limb being to 1.8 cm. wide, its margins more or less crisped.

The type of this variety was collected by Frank F. Gander in cultivation at 4681 50th Street, San Diego, California, on May 28, 1936, and is deposited in the herbarium of the Bailey Hortorium at Ithaca. Dr. Bailey states that the flowers of this variety may attain a diameter of 3/4 inch (approximately 2 cm.). They are violet-blue in color.

DURANTA SPRUCEI var. COLOMBIENSIS Moldenke, var. nov.

Haec varietas a forma typica speciei recedit calyce leviter puberulo vel strigilloso.

This variety differs from the typical form of the species in its calyx being only lightly puberulent or strigillose.

The type of this variety was collected by Brother Alberto [Apolinar-María 263] at San Pedro, Antioquia, Colombia, on July 25, 1938, and is deposited in the herbarium of the Field Museum of Natural History at Chicago.

LANTANA CAMARA var. HYBRIDA (Neubert) Moldenke, comb. nov.

Lantana hybrida Neubert, Deutsch. Gart. Mag. 10: 98. 1857; Lantana chrysantha Schmöger ex Neubert, loc. cit., in syn.

This is the dwarf yellow-flowered garden form.

LANTANA CAMARA var. MULTIFLORA (Otto & Dietr.) Moldenke, comb. nov.

Lantana multiflora Otto & Dietr., Allg. Gartenz. 9: 370. 1841.

LANTANA SCANDENS Moldenke, sp. nov.

Frutex alto-volubilis; ramis gracilibus inermis acutiuscule tetragonis hirsutulis; foliis oppositis nigrescentibus; petioliis gracillimis glanduloso-punctatis hirsutulis; lamina membranaceis ovatis breviter acuminatis, ad basin acutis, regulariter arguteque serratis utrinque plusminus strigosopilosis, maturitate supra scabris.

High-climbing vine; stems slender, unarmed, rather acutely tetragonal, more or less abundantly hirsutulous with stiff spreading short hairs and with shorter gland-tipped hairs beneath; nodes annulate, usually marked with a denser band of long-hirsute hairs; principal internodes 1.5--7.8 cm. long; leaves decussate-opposite, nigrescent in drying; petioles very slender, 4--6 mm. long, glandular-punctate and rather abundantly hirsutulous; blades membranous, ovate, 3.5--7 cm. long, 1.6--4.3 cm. wide, short-acuminate at apex, acute at base and often somewhat prolonged into the petiole, regularly sharp-serrate from the apex almost to the base, scattered strigose-pilose along the larger venation beneath, more uniformly so on the lamina above with bulbous-based hairs, causing the mature leaves to be quite scabrous above; midrib very slender; secondaries very slender, about 7 pairs inflorescence axillary, capitate; peduncles very slender, 1.5--6 cm. long, very sparsely hirsutulous with scattered white hairs and more abundantly pilosulous with much shorter gland-tipped hairs; heads hemispheric, 1--2.5 cm. wide, many-flowered; bractlets rather large, often foliaceous, acute, variable in size and shape, the inner ones lanceolate,



4--5 mm. long, the outer ones spatulate or elliptic, to 10 mm. long and 3.5 mm. wide, more or less strigillose on both surfaces; corolla "red and yellow or all red or all yellow", its tube about 10 mm. long, very narrow, densely puberulent outside, its limb 5--6 mm. wide.

The type of this species was collected by George B. Hinton (no. 12,315) at Villa Victoria, Pto de Aire, alt. 1480 m., Coalcomán, Michoacán, Mexico, on October 3, 1938, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is obviously closely related to L. Camara L. of the West Indies, but differs in being a high-climbing vine and in its very thin nigrescent leaves, glandular pubescence, and foliaceous bractlets.

*LIPPIA ANTAICA* Loes. & Moldenke, sp. nov.

Frutex; ramis gracilibus strictis virgatis acute tetragonis adpresso-puberulis; foliis parvis; petiolis parvissimis vel obsolete; laminis firme chartaceis vel subcoriaceis flabelliformibus vel subrotundis (juventute obovatis), ad apicem rotundatis, ad basin maturitate truncatis vel subtruncatis (juventute subcuneatis), regulariter crenato-serratis revolutis, supra scaberrimis bullatis, subtus dense pubescentibus.

Shrub; branches slender, apparently strict and virgate, acutely tetragonal, brownish, appressed-puberulent throughout; principal internodes 2--3 cm. long; nodes not annulate; leaves decussate-opposite, small; petioles very slender, 1--2 mm. long or obsolete, densely short-pubescent; blades firmly chartaceous or subcoriaceous (when mature), flabelliform or subrotund, obovate when immature, to about 2 cm. long and wide when mature, with numerous smaller thinner and more obovate ones in their axils, rounded at apex, subtruncate or truncate at base (the immature and smaller ones acute or subcuneate at base), regularly and uniformly crenate-serrate from base to apex with rounded teeth, the margins revolute, very scabrous and bullate above, puberulent on the venation, densely pubescent over the entire surface beneath; midrib, secondaries, and veinlet reticulation deeply impressed above, the larger parts prominent beneath; inflorescence axillary, a pair at each node, capitate; peduncles very slender, erect, 5--10 mm. long, densely appressed-puberulent with grayish hair like the branches; heads densely many-flowered, about 8 mm. long and 10 mm. wide; bracts ovate, 2.5--3 mm. long, subacute at apex, densely short-pubescent; corolla 4--5 mm. long, its limb about 3 mm. wide.

The type of this species was collected by August Weberbauer (no. 5918) somewhere in Peru between 1909 and 1914, and is deposited in the herbarium of the Field Museum at Chicago. It is most unfortunate that the label on the type

specimen does not give the exact place and date of collection, but it was probably in the neighborhood of Anta in Cuzco.

*LIPPIA FRANCOENSIS* Moldenke, sp. nov.

Frutex (?); ramis ut videtur simplicibus rectis gracilibus acutiuscule tetraonis dense hirsutis glanduliferis velutinis; foliis oppositis; petiolis gracilibus dense albo-hirsutis; laminis coriaceis elliptico-subrotundis ad basin et apicem rotundatis regulariter serratis utrinque dense hirsutis subvelutinisque, subtus dense resinoso-punctatis.

Shrubby (?); stems apparently simple, erect, slender, rather acutely tetragonal, densely hirsute with stiff whitish hairs and shorter gland-tipped hairs, velutinous to touch; nodes annulate with a band of denser hirsute hairs; principal internodes 1--4.5 cm. long; leaves decussate-opposite; petioles slender, 2--5 mm. long, densely white-hirsute; blades coriaceous, elliptic-subrotund, somewhat lighter beneath, 1.2--4 cm. long, 1--2.8 cm. wide, rounded at apex and base, regularly serrate from the apex almost to the base with rounded revolute-margined teeth, densely hirsute on both surfaces, subvelutinous and densely resinous-punctate beneath; midrib, secondaries, and veinlet reticulation deeply impressed above, very prominent beneath; secondaries 5 or 6 per side, ascending, not much arcuate; inflorescence axillary, borne at the tips of the stems, usually 2 pairs, capitate; peduncles very slender, 0.8--3.5 cm. long, very densely hirsutulous with stiff white gland-tipped hairs; heads hemispheric, about 2 cm. in diameter, many-flowered; bracts large, foliaceous, red, ovate, to about 10 mm. long and 8 mm. wide, blunt at apex, densely pubescent with short silky mostly gland-tipped hairs, ciliate-margined; corolla yellow.

The type of this handsome species was collected by Guilherme Ehrt [Herb. Inst. Biol. São Paulo 4037] in fields at Franca, São Paulo, Brazil, on April 11, 1920, and is deposited in the Britton Herbarium at the New York Botanical Garden. It was originally distributed as L. lupulina Cham., to which the species is closely related.

*LIPPIA PINETORUM* Moldenke, sp. nov.

Frutex; ramulis graciusculis obtuse tetragonis obsolete pilosis vel glabrescentibus; sarmentis nigrescentibus pilosis; petiolis gracilibus piloso-hirsutulis; laminis chartaceis brunnescentibus ellipticis acutis vel obtusis, ad basin acutis vel subacuminatis, regulariter serratis revolutis, supra bullatis et scabris et hirsutulis, subtus sparse pilosis; inflorescentiis axillaribus perspicue involucreatis.

Shrub; branchlets rather slender, obtusely tetragonal, grayish, obsoletely scattered-pilose or glabrescent; twigs

nigrescent in drying, more abundantly pilose with scattered short spreading hairs; nodes annulate; principal internodes 2--6 cm. long; leaves decussate-opposite; petioles slender, 5--10 mm. long, sparsely or rather densely pilose-hirsutulous with stiff spreading hairs; blades chartaceous, dark-green above, lighter beneath, brunnescent in drying, elliptic, 2--7.5 cm. long, 1.8--4 cm. wide, acute or obtuse at apex, acute or subacuminate at base, regularly serrate from apex almost to base with blunt revolute-margined teeth, bulate and scabrous above, rather abundantly hirsutulous with bulbous-based whitish hairs above, very sparsely and obscurely pilose beneath; the slender midrib and 4--7 arcuate-ascending secondaries impressed above, sharply prominent beneath; veinlet reticulation abundant, subimpressed above, prominulous beneath; inflorescence simple, axillary, borne at the tips of the twigs, capitate, conspicuously involucrate, about equaling or shorter than the subtending leaves; peduncles very slender, 1--2 cm. long, densely hirsutulous and brownish-pubescent with gland-tipped hairs; heads 5--17 mm. in diameter; involucral bractlets large and foliaceous, ovate, to 8 mm. long and 5 mm. wide, acute at apex, densely short-pubescent with brownish gland-tipped hairs and scattered-hirsutulous with longer white hairs.

The type of this species was collected by Eizi Matuda (no. 3925) in pine land, Mt. Ovando, Chiapas, <sup>M</sup>exico, between November 14 and 18, 1939, and is deposited in the Britton Herbarium at the New York Botanical Garden. It was originally distributed as L. cardiostegia Benth., to which the species is obviously related.

LIPPPIA TAYACAJANA Moldenke, sp. nov.

Frutex; ramis gracilibus tetragonis costatis, juventute dense breviterque pubescentibus, senectute glabrescentibus; internodiis valde abbreviatis; petiolis brevissimis vel obsolete; laminis firme chartaceis oblanceolato-ellipticis, ad apicem rotundatis vel acutis, ad basin cuneato-attenuatis, revolutis serratis, supra scabris substrigosis, subtus dense tomentellis.

Shrub, about 1 m. tall; branches slender, tetragonal, ribbed, densely short-pubescent when young, glabrescent in age and then with peeling shreddy bark, brown, somewhat twiggy below; nodes not annulate; principal internodes much abbreviated, 1--3 cm. long; leaves decussate-opposite; twigs very short, leafy; petioles slender, 1--2 mm. long and densely short-pubescent or obsolete; blades firmly chartaceous, uniformly gray-green on both surfaces, oblanceolate-elliptic, 0.8--1.9 cm. long, 3--9 mm. wide, rounded or acute at apex, cuneate-attenuate at base, revolute along the margins and serrate from about the middle to the apex,



scabrous and subtrigose above, densely tomentellous beneath; midrib and slender secondaries deeply impressed above, very prominent beneath; inflorescence axillary, solitary in each axil, 1--1.5 cm. long, capitate, rather few- or submany-flowered; peduncles very slender or filiform, 10--12 mm. long, densely appressed-pubescent with antrorse canescent or yellowish hairs; heads small, about 5 mm. long and wide; bractlets lanceolate, about 4 mm. long and 1.5 mm. wide, densely appressed-strigose-pubescent, sharply acute; corolla about 5 mm. long, its limb about 2 mm. wide.

The type of this species was collected by August Weberbauer (no. 6510) in the valley of the Mantaro, northeast of Pampas, prov. Tayacaja, dept. Huancavelica, Peru, at an altitude of 1800--1900 m., in March, 1913, and is deposited in the United States National Herbarium at Washington. The species is related to L. ferruginea H.B.K.

PHYLA NODIFLORA var. LONGIFOLIA Moldenke, var. nov.

Hæc varietas a forma typicali speciei recedit foliis valde elongatis oblanceolato-cuneatis usque ad 5.5 cm. longis et 10 mm. latis, versus apicem argute patento-dentatis.

This variety differs from the typical form of the species in its much more uniformly elongate leaves, the blades being oblanceolate-cuneate, to 5.5 cm. long, 4--10 mm. wide, and sharply spreading-dentate toward the apex.

The type of this variety was collected by T. G. Yuncker, J. M. Koepper, and K. A. Warner (no. 8327) in sandy soil on the beach at Salado, in the vicinity of La Ceiba, Atlántida, Honduras, on July 10, 1938, and is deposited in the Britton Herbarium at the New York Botanical Garden.

PHYLA NODIFLORA var. ROSEA (D. Don) Moldenke, comb. nov.

Zappania nodiflora var. rosea D. Don in Sweet, Brit. Fl. Gard. 6: pl. 225. 1834.

STACHYTARPHETA SCHAUERII Moldenke, nom. nov.

Stachytarpheta villosa (Pohl) Schau. in A. DC., Prodr. 11: 570. 1847 [not S. villosa Cham., Linnæa 7: 247. 1832] -- Melananthus villosus Pohl, Pl. Bras. Ic. 1: 76, pl. 60. 1827.

VERBENA BAJACALIFORNICA Moldenke, sp. nov.

Herba annua; ramis rectis simplicibus vel pauci-brachiatis obtuse tetragonis sparse hirsutulis glabrescentibus; petiolis gracillimis dense vel sparse hirsutulis submarginatis; laminis chartaceis ovatis pinnatifido-incisis vel obscure 3-partitis subrevolutis utrinque sparse hirsutulo-pilosis.

Annual herb; stems erect, simple or sparsely branched, 8--15 cm. long, obtusely tetragonal, sparsely hirsutulous



with mostly scattered, stiff, whitish, non-glandular hairs about 1 mm. long, glabrescent in age, sometimes decumbent at the very base and throwing out roots from the lower nodes; leaves decussate-opposite, petiolate; petioles distinct, very slender, 1--10 mm. long, densely or sparsely hirsutulous with stiff, white, non-glandular hairs like the stems, slightly margined; blades chartaceous, uniformly green on both surfaces, ovate in outline, 0.8--2.7 cm. long, 0.4--1.8 cm. wide, sparsely hirsutulous-pilose with rather short and subappressed whitish hairs on both surfaces, more densely so along the midrib and larger veins beneath, abundantly pinnatifid-incised, sometimes obscurely 3-parted with the divisions again abundantly pinnatifid-incised, the lobes rounded, subrevolute along the margins; inflorescence erect, long-pedunculate, 5--15 or more cm. long; peduncles slender, obtusely tetragonal, 2--6.5 cm. long, sparsely hirsutulous-pilose with rather scattered non-glandular whitish hairs; rachis densely many-flowered, more densely hirsutulous, not glandular, the flowers close together and densely imbricate before, during, and even after anthesis or the 2 or 3 lowermost to 5 mm. apart in fruit; bractlets very small, lanceolate, 2--3 mm. long, about half the length of the calyx, attenuate at apex, glabrate except for the long-ciliate margin; calyx tubular, 4--5 mm. long, irregularly short-pubescent with whitish spreading hairs, obscurely (if at all) glandular; corolla 7--8 mm. long, slightly projecting from the calyx, its tube slightly puberulent at apex outside, its limb about 4 mm. wide.

The type of this species was collected by Forrest Shreve (no. 7169) eighteen miles north of El Refugio, Baja California, Mexico, on March 16, 1935, and is deposited in the herbarium of the University of Michigan. It is closely related to *V. Shrevei* Moldenke, but differs in its ovate abundantly incised-pinnatifid leaves, sparser non-glandular pubescence on stems and peduncles, densely flowered spikes with closely imbricate flowers even after anthesis, and very short non-glandulose bractlets.

VERBENA CLOVERI var. LILACINA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit rhachide calycibusque bracteolisque brevissime pubescentibus, pilis glanduliferis, et corollis lilacinis.

This variety differs from the typical form of the species in its much shorter and densely glandular pubescence on the rachis, calyx, and bractlets and in its lavender (instead of purple) corollas.

The type of this handsome variety was collected by Cyrus Longworth Lundell and Amelia A. Lundell (no. 10,142) off U. S. Highway 81 near Millett, La Salle County, Texas, on April

9, 1941, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*VERBENA LUNDELLIORUM* Moldenke, sp. nov.

Herba; ramis graecilibus obtuse tetragonis albido-hirsutulis; petiolis 5--10 mm. longis valde hirsutulis submarginatis; laminis ovatis acutis, ad basin subtruncatis et in petiolum subprolongatis, ad marginem crasse et irregulariter inciso-dentatis, utrinque sparse adpresso-pilosis, pilis albidis; inflorescentiis spicatis abbreviatis dense multifloris; pedunculis acute tetragonis valde hirsutulis; bracteolis lineari-lanceolatis ca. 6 mm. longis dense puberulis, ad marginem longe ciliatis.

Herb, about 18 inches tall; stems slender, obtusely tetragonal, rather abundantly hirsutulous with stiff white hairs about 1 mm. long; branches numerous, very slender, erect or ascending, obtusely tetragonal, more densely hirsutulous; leaves decussate-opposite, numerous; petioles very slender, 5--10 mm. long, abundantly hirsutulous like the branches, slightly margined; blades thin-chartaceous or membranous, ovate, somewhat lighter-green beneath, 1.1--3.5 cm. long, 7--22 mm. wide, acute at apex, subtruncate at base and slightly prolonged into the petiole at the center, coarsely and irregularly incised-dentate along the margins with blunt or subacute teeth, sparsely scattered-pilose on both surfaces with appressed whitish hairs; inflorescence spicate, abbreviated, 2--6 cm. long, densely many-flowered, the flowers closely imbricate before and during anthesis, somewhat more separated in fruit; peduncles (8--30 mm. long) and rachis very slender or filiform, more acutely tetragonal, abundantly hirsutulous like the branches, often with shorter glandular hairs interspersed; bractlets linear-lanceolate, about 6 mm. long, slightly shorter or longer than the calyx, densely puberulent, long-ciliate along the margins with stiff white hairs; calyx tubular, swollen, 5--6 mm. long, somewhat puberulent and also sparsely hirsutulous with longer white hairs, not glandular; corolla small, inconspicuous, barely protruding from the calyx, about 7 mm. long, purple, its limb about 2 mm. wide.

The type of this curious woodland species was collected by C. L. Lundell and A. A. Lundell (no. 8698) -- in whose joint honor it is named -- in a clearing at the Palm Grove, south of Brownsville, Cameron County, Texas, on May 4, 1940, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*VERBENA PLICATA* var. *DEGENERI* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit bracteolis firmis rigidis late ovatis usque ad 9 mm. longis et 6 mm.

latis stramineis siccis abruptissime longeque acuminatis.

This variety differs from the typical form of the species in its bractlets being very firm and rigid, broadly ovate, dry, stramineous, to 9 mm. long and 6 mm. wide, and very abruptly long-acuminate.

The type of this desert variety was collected by my good friend and co-worker, Otto Degener (no. 5184), near Fort Stockton, Pecos County; Texas, on August 2, 1933, and is deposited in the Britton Herbarium at the New York Botanical Garden. It affords me exceptional pleasure to dedicate this variety to so careful and indefatigable a botanical collector, whose monumental "Flora Hawaiiensis" is one of the most important and valuable floras now being written.

VERBENA RUNYONI Moldenke, sp. nov.

Herba alta annua; caulis rectis crassiusculis argute tetragonis sparse hirsutulis glabrescentibus; foliis sessilibus amplexicaulibus plusminus tripartitis, segmentis pinnatifido-incisis, utrinque valde albido-hirsutus, pilis bulbosis deciduis, laminis senectute scabris; inflorescentiis spicatis compositis, ramis gracilibus rectis densiuscule multifloris, floribus densissime imbricatis; pedunculis rhachideque gracilibus argute tetragonis patento-pilosis vel breviter pubescentibus, pilis glandulosis brevissimis.

Tall annual herb; stems erect, green, rather stout, sharply tetragonal, sparsely hirsutulous with short whitish divergent hairs especially on the angles and at the nodes, glabrescent in age, more or less scabrellous on the angles; internodes elongated; leaves decussate-opposite, sessile, clasping, 2--6 cm. long, 0.8--3 cm. wide, more or less 3-parted, each division pinnatifid-incised with broad acute teeth, abundantly hirsutulous on both surfaces with rather short whitish hairs which are bulbous-based on the upper surface and wear off there, leaving the upper surface scabrous on older leaves; inflorescence spicate, compound, the branches slender, erect, 14--25 cm. long, rather closely many-flowered, often bearing 1--3 pairs of much reduced leaves near the base, the flowers with a faint odor, very densely imbricate before and during anthesis, rather uniformly separated in fruit; peduncles (2--6 cm. long) and rachis slender, sharply tetragonal, rather densely or sparsely spreading-pilose or -pubescent, glandular, the pubescence very short; bractlets linear-lanceolate, about 3 mm. long, equaling the calyx, sharply attenuate, rather sparsely puberulent and glandular, the margins sparsely and irregularly ciliolate toward the base; calyx tubular, about 3 mm. long, glandular-pilose with short spreading hairs; corolla blue, about 6 mm. long, its tube puberulent at the apex outside, its limb about 4 mm. wide.



The type of this hitherto neglected species was collected by my good friend, Robert Runyon (no. 2485) in clay soil at 10 m. altitude in open moist ground and ditches, El Jardin tract, Cameron County, Texas, on April 2, 1941, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is with considerable satisfaction that I dedicate this fine species to Mr. Runyon, who has done such noteworthy work in botanizing so thoroughly the region of Cameron and Hidalgo Counties, Texas, and in collecting such ample and excellent material to substantiate his records through the years. Museum and herbarium workers are deeply indebted to field workers like this, to whom so much of the credit in the discovery of novelties is due. The species is related to and has hitherto been confused with *V. xutha* Lehm., which differs notably in its dense long-strigose or hirsute non-glandular pubescence throughout, especially on the bractlets and calyx, and which inhabits dry instead of uniformly moist ground.

*VERBENA SHREVEI* Moldenke, sp. nov.

Herba annua; ramis decumbentibus gracilibus obtuse tetragonis dense patenti-pubescentibus; foliis petiolatis vel subsessilibus; petiolis marginatis dense hirsutulis vel patenti-pubescentibus; laminis chartaceis ellipticis utrinque dense strigosis plerumque plusminus tripartitis, partibus paucè inciso-lobatis, lobis rotundatis.

Annual herb; stems decumbent at base, slender, obtusely tetragonal, more or less densely spreading-pubescent with whitish often glandular hairs, often many-branched with erect or ascending branches, which are usually somewhat more densely spreading-pubescent; leaves decussate-opposite, petiolate (or the uppermost subsessile); petioles very slender, 1--10 mm. long, more or less winged, densely hirsutulous or spreading-pubescent; blades chartaceous, rather uniformly green on both surfaces, elliptic in outline, 1--2 cm. long, 9--17 mm. wide, rather densely strigose on both surfaces, usually more or less 3-parted, the divisions sparingly incised-lobed, the lobes rounded at apex; inflorescence spicate, elongating to 10 cm. or more, densely many-flowered, the rachis elongating even during anthesis and thus separating the individual flowers by 4--13 mm. toward the base of the spike; peduncles (1--4 cm. long) and rachis slender, obtusely tetragonal, densely spreading-pubescent or hirsutulous with whitish often glandular hairs; bractlets lanceolate, about 4 mm. long, shorter than the calyx, attenuate at apex, densely glandular-pubescent on the back, densely long-ciliate with longer stiff white non-glandular hairs on the margins; calyx tubular, 5--6 mm. long, rather densely glandular-pubescent and also more or less scattered white-hirsute

ulous; corolla small, 7--8 mm. long, slightly projecting from the calyx, its tube minutely puberulent at the apex outside, its limb about 4 mm. wide.

The type of this species was collected by my esteemed friend, Dr. Forrest Shreve (no. 7119) -- in whose honor it is named -- at an elevation of 1900 feet, 19 miles northeast of Comondón, Baja California, Mexico, on March 16, 1935, and is deposited in his herbarium at Tucson, Arizona. It has hitherto been confused with V. pumila Rydb.

*VERBENA GENTRYI* Moldenke, sp. nov.

Herba perennis ramulosa; ramis graciusculis tetragonis sparsissime pilosis vel glabris; petiolis indistinctis et alatis vel obsolete; laminis chartaceis ellipticis acutis, ad basin cuneatis, regulariter arguteque serratis utrinque adpresso-strigillosis non scabris.

"Low spreading bush, branched from base"; branches rather slender, tetragonal, often purplish, very sparsely scattered pilose with rather long weak hairs or glabrous; nodes annulate; principal internodes 1--3.5 cm. long; leaves decussate-opposite; petioles indistinct, to 5 mm. long, and winged, or absent, amplate and clasping the stem at base, sparsely scattered-pilose or glabrescent; blades chartaceous, lighter beneath, elliptic, 3--7 cm. long, 1--1.7 cm. wide, acute at apex, cuneate at base and prolonged into the winged petiole, regularly sharp-serrate from the apex to below the middle, rather abundantly appressed-strigillose on both surfaces, more densely so beneath, not scabrous above, not glandular; venation slightly subimpressed above, prominulous beneath; inflorescence spicate, compound, the spikes very slender, to 18 or more cm. long, many-flowered, the flowers closely imbricate before and during anthesis, rather uniformly separated in fruit; peduncles (1--3 cm. long) and rachis slender, glabrate; bractlets lanceolate, very small, about 1--2 mm. long, subglabrate or very minutely ciliolate at the base, sharply acuminate; calyx narrow-tubular, about 1.5 mm. long (to 2 mm. long in fruit), glabrous or subglabrate; corolla very tiny.

The type of this species was collected by Howard Scott Gentry (no. 5923) -- in whose honor it is named -- in a moist canyon bottom, short-tree forest, altitude 1500 feet, Quebrado de Platano, Sierra Monterey, Sinaloa, Mexico, on March 13, 1940, and is deposited in the Britton Herbarium at the New York Botanical Garden. It was distributed by the collector as V. urticifolia L., to which it is related.

*VERBENA PINETORUM* Moldenke, sp. nov.

Herba; caulis gracilibus argute tetragonis crasse hirsutis; petiolis late alatis; laminis chartaceis profunde pinn-



atifido-incisis vel tripartitis, supremis plerumque oblongis vel linearibus et integris, utrinque dense hirsutis, supremis adpresso-strigosis; inflorescentiis elongatis spicatis.

Herb; stems slender, sharply tetragonal, bristly-hirsute with whitish hairs about 1 mm. long, much more densely so at base of plant; leaves decussate-opposite, 2--3 cm. long; petioles broadly winged, not very distinct from the blades; blades chartaceous, uniformly green on both surfaces, deeply pinnatifid-incised, the lower ones often 3-parted and each division again pinnatifid-incised, the uppermost much reduced and simply 3-parted with entire divisions or even oblong or linear and entire, densely hirsute on both surfaces, the larger leaves scabrous with bulbous-based hairs above and very densely white-hirsute beneath, the upper leaves with much more appressed-strigose hairs, especially above; inflorescence spicate, elongate; spikes slender, to 21 or more cm. long, loosely many-flowered (dense in bud and during anthesis, the rachis later elongating considerably), not glandular; peduncles slender, sharply tetragonal, 2--3 cm. long, hirsute like the stems; rachis also tetragonal and densely hirsute; bractlets lanceolate, about 4 mm. long, attenuate at apex, rather densely strigose-pilose, about equaling the calyx in anthesis and fruit; calyx tubular, 3.5--4 mm. long, densely strigillose; corolla pale-blue, showy, 10--11 mm. long, its limb large and spreading.

The type of this species was collected by Howard Scott Gentry (no. 1522) in pine flats, transition habitat, Sierra Charuco, Río Fuerte, Chihuahua, Mexico, on July 22, 1955, and is deposited in the herbarium of Dr. Forrest Shreve at Tucson, Arizona. It was originally distributed as V. neomexicana (A. Gray) Small

VERBENA PINNATILOBA (Kuntze) Moldenke, comb. nov.

Verbena megapotamica var. tweediana f. pinnatiloba Kuntze, Rev. Gen. Pl. 3<sup>a</sup>: 256. 1898.

xVERBENA TEASII Moldenke, hybr. nov.

Herba cultorum hybrida; ramis decumbentibus vel adscendentibus multoramosis gracilibus obtuse tetragonis sparse vel dense hirsutulis; foliis perversiabilis dense strigosis vel supra sparse strigillosis et subtus patento-pubescentibus, plusminus profunde inciso-pinnatifidis plerumque tripartitis; inflorescentiis spicatis, juventute subcapitatis, dein elongatis, densissime multifloris; floribus arcte imbricatis

Garden hybrid between V. tenuisecta Briq. and V. hybrida Voss, with intermediate characters; stems decumbent or ascending, abundantly branched with ascending branches, slender, obtusely tetragonal, sparsely or densely hirsutulous with rather stiff whitish hairs or merely spreading-pilose,

the smaller branches often more acutely tetragonal; leaves decussate-opposite, numerous, very variable in shape and size, varying from densely strigose with long white appressed hairs on both surfaces to sparsely strigillose above and spreading-pubescent along the midrib and larger veins beneath, more or less deeply incised in pinnatifid fashion, often more or less 3-parted, the lowest divisions usually again pinnatifid-incised, the lobes all sharply acute at apex, the body of the blade and lowest lobes often relatively very broad and with recurved secondary lobes; inflorescence spicate, at first flattened-subcapitate, later elongating to 15 cm. or more, very densely many-flowered, the flowers closely overlapping before, during, and after anthesis; peduncles (1.5--7 cm. long) and rachis slender, acutely tetragonal, densely hirsutulous or spreading-pilose, not glandular; bractlets relatively very short, lanceolate, about 4 mm long, about  $1/3$  as long as the calyx, attenuate to the apex, rather densely strigillose with white appressed hairs, densely white-ciliate toward the base; calyx elongate-tubular, 8--13 mm. long, densely short-pubescent with spreading hair or densely white-strigose with closely appressed hairs; corolla 15--20 mm. long, showy, blue, purple, red, pink, or white, its tube about  $1 \frac{1}{3}$  times as long as the calyx, glabrous throughout or slightly puberulent at the apex outside, its limb 5--9 mm. in diameter.

The type of this hybrid was collected by G. A. Stevens in a nursery at Harrisburg, Dauphin County, Pennsylvania, on June 20, 1933, and is deposited in the herbarium of the Bailey Hortorium at Ithaca. It is named in honor of Edward Teas who first developed this hybrid in his nurseries at Houston, Texas, by crossing V. hybrida and V. tenuisecta. It is the source of the races of cultivated verbena called Ceres (dark red), Rowena (pink), Albion (white), Ruth (pink), Belaire, Madge Roberts, and Teas Hybrid.

xVITEX HYBRIDA Moldenke, hybr. nov.

Arbor vel frutex hybridus naturalis; foliolis anguste lanceolatis 5 longe attenuatis utrinque dense canescento-puberulis; inflorescentiis distincte ramulosis; ramulis gracillimis ubique dense canescento-puberulis.

A natural hybrid between V. Agnus-castus L. and V. Negundo L. with intermediate characters. The leaflets are narrow-lanceolate, 5 in number, the three central ones 5.5--10 cm. long and 7--16 mm. wide, long-attenuate at apex, densely canescent-puberulent on both surfaces, on petiolules 3--5 mm. long, the lowest two very much smaller. The inflorescences are distinctly branched, the branches very slender, 5--15 mm. long, with numerous nodes and flowers (in the fashion of V. Negundo), densely canescent-puberulent throughout.

The type of this variety was collected at Bhola in Sindh, India, in July, 1891, and is deposited in the herbarium of the University of Michigan at Ann Arbor. No collector is designated on the label.

VITEX REGNELLIANA Moldenke, Geogr. Distrib. 27, nom. nud. (1939), sp. nov.

Frutex vel arbor; ramulis gracilibus medullosis obtuse tetragonis puberulis vel breviter pubescentibus glabrescentibus; sarmentis densissime ferrugineo-velutinis vel villosotomentosis; foliis oppositis 3-foliolatis; petiolis gracilibus densissime velutino-villosis vel tomentososis ferrugineis; foliolis sessilibus vel subsessilibus oblongis vel anguste ellipticis vel oblanceolatis acutis vel abruptissime breviterque acuminatis integris, ad basin acutis vel obtusis, utrinque velutinoso-villosis vel tomentososis; inflorescentiis axillaribus cymosis valde bracteatis ubique dense ferrugineo-velutinis vel villosotomentosis.

Shrub or tree; branchlets slender, medullose, obtusely tetragonal, grayish, compressed and rather ampliate at the nodes, puberulent or short-pubescent when young, becoming glabrate in age; twigs slender, tetragonal, compressed, very densely velutinous with ferruginous villous-tomentose pubescence, ampliate-compressed at the nodes; nodes annulate; principal internodes 1--6 cm. long; leaf-scars very large and corky, greatly elevated; buds densely ferruginous-villous or -velutinous; leaves decussate-opposite, 3-foliolate; petioles slender, 4--10.5 cm. long, slightly ampliate at the base, flattened above, very densely velutinous-villous or tomentose with ferruginous hairs; leaflets subequal, sessile or subsessile; leaflet-blades thin-chartaceous, uniformly dark- or bright-green on both surfaces under the ferruginous tomentum, the central one oblong, narrow-elliptic, or oblanceolate, 5.5--10 cm. long, 1.5--3.2 cm. wide, acute or very abruptly short-acuminate at apex, entire, acute or obtuse at base, very densely velutinous-villous on both surfaces or somewhat more tomentose beneath, the pubescence golden or ferruginous, the lateral leaflets similar in all respects only often somewhat inequilateral and usually more obtuse at the base; midrib slender, flat or subprominent above, prominent beneath; secondaries slender, about 10 per side, mostly hidden by the long pubescence on both surfaces or prominent beneath; vein and veinlet reticulation not discernible above, mostly obscure beneath or sometimes the largest parts slightly subprominent beneath; inflorescence axillary, cymose, 3--8 cm. long, 2--4.5 cm. wide, 1--3 times dichotomous, dense, the branches much abbreviated, densely ferruginous-velutinous or villous-tomentose throughout, conspicuously bracteate; peduncles slender, 1.5--5.2 cm. long, flatten-



ed, densely ferruginous-velutinous or villous-tomentose like the twigs and petioles; pedicels very slender, 1--2 mm. long, or obsolete on lateral flowers; bracts numerous, simple, oblong or lanceolate, 1--1.8 cm. long, densely velutinous like the leaflets, sessile, acute; bractlets linear, 3--6 mm. long, densely ferruginous-pubescent; prophylla linear, about 1 mm. long, hidden by the tomentum; corolla violet or white.

The type of this very handsome species was collected by Don Bento Pickel (no. 3211) in a thicket at Tapera, Pernambuco, Brazil, on January 26, 1933, and is deposited in the Langlois Herbarium of the Catholic University of America at Washington. The species is known also from São Paulo and is named in honor of Anders Fredrik Regnell, famous explorer and botanist, to whom we owe so much of our knowledge of the Brazilian flora.

VITEX SPONGIOPARPA var. LONGIDENTATA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit lobis calycis 1.5--2 mm. longis et bracteolis prophyllisque persistentibus.

This variety differs from the typical form of the species in its calyx-teeth being 1.5--2 mm. long (instead of 0.5--1 mm.) and its bractlets and prophylla being persistent.

The type of this variety was collected by Adolfo Ducke [Herb. Jard. Bot. Rio de Janeiro 23,763] in "catinga" woods at Igarapé Jurupary, on an affluent of the lower Rio Uaupés, Amazonas, Brazil, on November 2, 1932, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector describes the plant as a small tree with white flowers.

VITEX TRIFOLIA var. VARIEGATA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliolorum irregulariter albo-variegatis.

This variety differs from the typical form of the species in its leaflet-blades being variegated, whitish along the edges in irregular mottles.

The type of the variety was collected by my good friend, Walter M. Buswell, from a cultivated specimen at or near Miami, Dade County, Florida, in 1940, and is deposited in the herbarium of the Bailey Hortorium at Ithaca.

VITEX WITTROCKIANA Moldenke, Geogr. Distrib. 20 & 27, nom. nud. (1939), sp. nov.

Arbor; ramulis crassiusculis obtuse tetragonis vel subteretibus sparsissime minutissimeque puberulis glabrescentibus; sarmentis acutiuscule tetragonis sparse puberulis; foliis oppositis 5-foliolatis; petiolis gracilibus sparsiuscule



puberulis; folioliis subsessilibus vel brevipetiolutatis tenuiter chartaceis vel submembranaceis oblongis vel lanceolatis vel oblanceolatis longe acuminatis vel caudatis integris, ad basin acutis vel subacuminatis, supra glabris nitidis, subtus glabratis vel obscure puberulis; inflorescentiis axillaribus capitatis dense multifloris sparse strigilloso-puberulis.

Tree, to 7 m. tall; branchlets rather stout, brownish, obtusely tetragonal or subterete, not very pithy, very sparsely and minutely puberulent, becoming glabrous and rather shiny; twigs very slender, rather acutely tetragonal or compressed, short, rather sparsely puberulent, less so in age; nodes not annulate; principal internodes 1--6 cm. long; leaf-scars mostly not very large or corky or prominent; leaves decussate-opposite, 5-foliolate; petioles slender, 2--5 cm. long, convex or slightly keeled beneath, conspicuously flattened above, rather sparsely puberulent, not noticeably amplicate at base nor disciform at apex; leaflets usually unequal, the 2 lowermost much smaller than the 3 central ones, all subsessile or the central one short-petiolute on a petiolule which is slightly puberulent and margined and to 1 mm. long; leaflet-blades thin-chartaceous or submembranous, dark-green and rather shiny above, lighter beneath, the central one oblong, lanceolate, or oblanceolate, 3.5--8.5 cm. long, 2--3 cm. wide, long-acuminate or caudate at apex, entire, acute or subacuminate at base, glabrous and shiny above, glabrate beneath or obscurely puberulent on the midrib and secondaries; midrib slender, flat or slightly impressed above; secondaries slender, 7--18 per side, ascending, not much arcuate except at the margins, where they are arcuately joined, flat or subprominulous above, prominulous beneath; vein and veinlet reticulation abundant, very fine, subprominulous on both surfaces; inflorescence axillary, capitate, 5--8.5 cm. long, 1--2 cm. wide, densely many-flowered, sometimes with a few very short branches arranged in subumbelloid form; peduncles slender, compressed, 4--7.3 cm. long, sparsely strigillose-puberulent; pedicels very slender and to 1 mm. long or usually obsolete; bracts absent; bractlets linear, 1--3 mm. long; prophylla setaceous, minute; corolla violet.

The type of this species was collected by João Geraldo Kuhlmann (no. 2915) in campo at Caracarahy on the Rio Branco, Amazonas, Brazil, in February, 1913, and is deposited in the United States National Herbarium at Washington. The species is also known from adjacent Venezuela and is named in honor of Gustave Ludwig Wittrock, custodian of the herbarium at the New York Botanical Garden, conscientious worker on all botanical subjects, and expert on the plants used by the North American Indians.



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## ENERGY AND EVOLUTION

James B. McNair

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The object of this paper is to develop the theory that species formation occurs during periods of increased activity, that plants which do the hardest (most difficult) work have evolved to the highest positions; that in this regard quality of products is more important than quantity; and that as morphological structures evolve from simple to complex, so plant chemical compounds evolve from simple to complex.

Species Definition from a Chemical Standpoint. - It is assumed that each species is in a state of mobile equilibrium between reversible reactions which fluctuate and are mutable under the action of modifying agents (Marcello, 1930). Individuality has, therefore, a complex chemical basis. The existence and permanency of a species is controlled and depends upon the existence of constant external and internal conditions and shows a fixed ability to synthesize characteristic compounds which constitute its physiologico-chemical characteristics (in part S. L. Ivanov, 1926). Thus, an increase in habitat temperature will stimulate the formation of more saturated fatty acids in glycerides and vice versa. Also, at moderately elevated temperatures starch is formed in evergreen leaves which is converted into oil when the temperature is gradually lowered and vice versa (Tuttle, 1919). As another instance of change of conditions affecting plant physiologico-chemical characteristics we know that an increase in water in the soil and in the plant promotes oil formation and vice versa (Sinnott 1917, Ivanov, Lavrova and Japochko 1931, Geddes 1934, Halden 1934). The concentration of electrolytes in plants is a factor controlling the amount of alkaloids and cyanogenetic compounds formed (McNair, 1941). As instances of the effect of internal conditions on plant chemical products we have the influence of changes in genetic constitution. Genetic strain affects HCN production in white clover (Williams, 1939) and sorghum (Nowosad and MacVicar, 1940). Genetic strain affects alkaloid production in tobacco (Rasmussen, 1915), opium (Annett and coworkers, 1920-1925), and aconite (Bonisteel, 1940, 1941). And genetic strain also affects the amount and distribution of oil in corn kernels (Pearl and Bartlett 1911, Lindstrom and Gerhardt 1926).

Species Developed During Greater Activity. - It is the consensus of opinion that although species may originate in a number of different ways they all originate during periods

of greater activity. This greater activity may take place internally in or externally to the plant. According to geological evidence the splitting off of new species apparently falls within the times of greater range of variation in all characters, therefore of greater plasticity of species (Brinkmann, 1929). According to the biologists, especially physiologists, structure varies with function (Tait, 1928) and functional activity is emphasized as the foundation of structural differentiation (Leathes 1926, Fox 1932), or in the words of Fyecraft (1930) changes of form are responses to continuous and persistent needs. The geneticists, as pointed out by Huxley (1941), have shown that new species may arise suddenly at a single bound. Instances of such greater activity are shown in chromosome-doubling (e. g. Oenothera), the inverting end-to-end of a considerable section of one chromosome (e. g. Datura) or the detachment of a bit of one chromosome which may become attached to a different kind of chromosome (e. g. in Drosophila). A chemist, Henderson (1922), has suggested that apparent instances of orthogenesis may sometimes depend upon a single important chemical change in an organism, followed by slow and progressive modifications leading up to a definitive morphological result. Such a process, he says, might be somewhat analogous to the establishment of a condition of equilibrium.

Climate, Energy and Evolution. - As Parks (1926) points out from geological evidence, there is an undoubted tendency to increased complexity in the organic world. Consequently the greatest complexity in both form and substance may be expected to be found in such regions and in such plants as undergo the most rapid changes of external and internal conditions. There are, of course, optimum conditions above which the foregoing statement would not be true.

From a detailed study of the varietal diversity of cultivated plants and their wild relatives Vavilov (1932) found that the majority have had their origin in comparatively small territories concentrated mainly in the mountains and foothills of the subtropics and tropics. The mountain and foothill regions in the subtropics he found especially favorable for the development of species and varietal diversity. Mountains provide geographic types of isolation in the nature of differences between habitats - woodland and open country, pond and swamp, high ground and low ground, sunny southern slopes and shady northern slopes, canyons and ridges. These barriers isolate small populations and then useless accidental characters automatically accumulate. Much greater divergence is achieved on small areas (islands) as compared to large continental areas. Sewell Wright offers the explanation that if isolated populations are small enough in numbers, mere chance will step in and largely

override the effects of selection.

Greater differences between habitats are found in the mountains of the tropics and subtropics than in those nearer the poles. We have in tropical mountains various life zones from tropical, lower sonoran, upper sonoran, transition, to boreal, while in mountains nearer to the poles some of these zones are absent.

In tropical lowland climates where conditions are more stable one would not expect to find the most highly evolved plants or the most complex chemical compounds. But rather the most highly evolved plants and the most complex chemical compounds would be found more likely in the subtropics and temperate zones where fluctuations of environment occur. For a similar reason aquatics with their more equable environment would be more primitive than land plants. In this connection Went (1941) has shown that in tomatoes either a high uniform temperature or a low uniform temperature did not promote nearly as much growth or fruiting as when a fluctuating temperature consisting of a high day temperature and low night temperature was provided.

Alkaloids. - If the alkaloids be first separated according to the habitat climates of the plant families producing them, it becomes apparent that the alkaloids of the highest molecular weight are produced by temperate plants and that those with the lowest are obtained from tropical families (Table I) (McNair, 1934).

The greatest number of plant families and also the greatest number of plant families from which alkaloids have been analyzed is found in the tropics. Some 299 alkaloids have been analyzed. All else being equal a largest number of analyses should lead to the most accurate results. Consequently tropical alkaloids are used. When this is done it is found that the higher the tropical plant family is in evolutionary development, the greater will be its tendency to form alkaloids of large average molecular weight (McNair, 1934).

Inasmuch as it generally requires more difficult work to produce chemical compounds of large molecular weight than those of small molecular weight, it can be argued that the higher evolved plants which likewise manufacture alkaloids of greater molecular weight perform more difficult work than more primitive plants.

A specific example in which the molecular weight of alkaloids may serve to indicate the degree of evolution of species is shown in the members of the genus Aconitum. Aconitum is noteworthy in giving a new chemical species of aconitine for each new botanical species analyzed, although all the aconitines are apparently closely related. Perhaps India is the center of distribution of this genus for here we find



A. chasmanthum Stapf with indiaconitine  $C_{34}H_{47}O_{10}N$  (mol. wt. 629), A. demorrhizum Stapf with pseudoaconitine  $C_{36}H_{49}O_{12}N$  (mol. wt. 687) and A. spicatum Stapf which contains bikhacconitine  $C_{36}H_{50}O_{11}N$  (mol. wt. 672). Japan may be at the outer boundary of distribution with a more recently evolved species for here is found A. japonicum Thunb. which furnishes jesaconitine  $C_{40}H_{51}O_{12}N$  (mol. wt. 737) of a higher molecular weight than the Indian alkaloids (Carr 1912, Schafer and La Cour 1934). In a comparison of the chromosome numbers with toxicity Bonisteel has found (1940, 1941) that the diploid aconites are for the most part non-toxic, while the triploid and tetraploid aconites contain some of the most powerful poisons known. There is, therefore, an increase in toxicity with an increase in chromosome number.

Glycerides. - Analyses of 318 fats (glycerides) are available for study. In Table I the fatty oils from temperate plant families have been separated from those produced by tropical plant families. It is apparent from this table that temperate fatty oils have higher average iodine values (and lower melting points) than the tropical (McNair, 1934).

As in the case of alkaloids, the greatest number of plant families from which glycerides have been analyzed is found in the tropics. By use of the more abundant tropical data it has been found (McNair, 1934) that the higher the plant family is in evolutionary development the greater will be its tendency to produce glycerides of large average iodine numbers (i. e. of greater unsaturation).

In the plant economy, saturated fatty acids are first produced which become less saturated later. In this way additional and more difficult work is necessary to form the less saturated fatty acids and consequently it is evident that the higher evolved plants which produce them perform harder, more difficult work.

The molecular weights of tropical glycerides (in agreement with the molecular weights of tropical alkaloids) are lower than those of temperate regions. Hilditch (1928) found that the tropical families Palmae and Myristicaceae had one specific fatty acid for each family, respectively lauric (mol. wt. 200, m.p.  $48^{\circ}C.$ ) and myristic (mol. wt. 228, m.p.  $58^{\circ}C.$ ) and that the temperate families Cruciferae and Umbelliferae had likewise one specific acid for each family, respectively erucic (mol. wt. 338, m.p.  $33.5^{\circ}C.$ ) and petroselinic (mol. wt. 282, m.p.  $14^{\circ}C.$ ). From this data it is evident that the average molecular weight of the tropical families, 214, is lower than that of the temperate, 310. As it requires more energy to compound fatty acids of higher molecular weight it is evident that these temperate families which likewise occupy a higher evolutionary rank have more difficult work to do than these tropical lower evolved fam-

ilies.

In the latest compilation of analyses of seed fats (Hil-ditch, 1940) data from sixteen natural orders (Engler and Prantl classification) are given. When the component acids of the families of these orders are considered it is found that seven orders have an increase in the number of acids, eight have an equal number of acids and one has a decrease in the number of acids with an advance in evolutionary position of their constituent families.

When the number of carbon atoms of these acids is considered it is found that eight orders have an increase in the number of C-atoms, six have equal numbers of C-atoms and two have a decrease in the number of C-atoms with an advance in evolutionary position. If, however, the terminal families of those analyzed of the Malvales, Myrtiflorae, Contortae and Tubiflorae (i. e. respectively Sterculiaceae, Myrtaceae, Aclepiadaceae and Acanthaceae) be removed from consideration, then three of these four orders show an increase in the number of acids and all four show an increase in the number of C-atoms in these acids with an increase in evolution. An increase in the number of C-atoms indicates in these instances an increase in molecular weight of the acids which contain them. It is hardly necessary to add that both an increase in the number of fatty acids as well as an increase in their molecular weights require an increased expenditure of energy.

Volatile Oils. - Nilov (1936) shows in a study of the essential oils in various stages of growth of Coriandrum sativum, Trachyspermum copticum and other plants that, parallel with the evolution of the plant, there occurs an increase in the complexity of the molecules.

In the volatile oils the genus Eucalyptus provides an excellent demonstration of the progressive increase in the number and variety of chemical products with the morphological advance in evolutionary position in the genus. These comprise in order of occurrence pinene, cineole, phellandrene, aromadendral (cuminal, cryptal, etc.) and piperitone (Baker and Smith data 1920). The amount of oil in the leaf also increases with the increase in evolutionary position, e. g. the most primitive average 1/2 of 1 per cent (e. g. E. corymbosa Sm.), while the most advanced (e. g. E. dives Schau.) have 2 per cent (4 times as much).

Volatile Oils, Specific Gravities. - Analytical data from 938 volatile oils is available for study. When the average specific gravities of the volatile oils produced by tropical and temperate plant families are inspected, it is evident that the volatile oils of tropical plant families have lower specific gravities than those produced by temperate plants (Table I) (McNair, 1932).

Further analysis of the more abundant tropical data shows

that the higher the tropical family is in evolutionary development the greater will be its tendency to produce volatile oils of high specific gravity (McNair, 1934).

It can likewise be inferred (McNair, 1932) in accordance with these differences in specific gravity, that terpenes and compounds of the fatty (aliphatic) series predominate in the volatile oils produced lowest in the evolutionary position, while volatile oils formed by the families highest in evolution contain more aromatic, sulphur and nitrogen compounds. As more energy is generally required to produce aromatic than aliphatic compounds we can conclude that families highest in evolution carry on the most difficult work.

Volatile Oils, Refractive Index. - The refractive index is another property which may be used to measure variations in composition of volatile oils. From Table I it is evident that tropical volatile oils have higher values than temperate (McNair, 1932).

In addition it has been definitely shown (McNair, 1934) that the higher the tropical plant family is in evolutionary development, the smaller will be the average refractive index of its volatile oil.

It can likewise be inferred (McNair, 1932) that a small number or lesser amounts of saturated substances are formed in the volatile oils produced lowest in the evolutionary position. A high refractive index may also indicate a large quantity of compounds of high molecular weight; therefore it might be that the volatile oils produced lowest in the evolutionary scale have less of these compounds.

However, it has been observed in volatile oils (McNair, 1932) that a low index of refraction carries with it a concomitant increase in specific gravity. Consequently, a trend downward in the case of the refractive index (Fig. 5, McNair 1934) and upward in the case of specific gravity (Fig. 4, McNair 1934), indicate that the values verify each other in the case of evolutionary progression as well as in climatic difference.

It can therefore be concluded that the volatile oils of the tropical families highest in evolutionary development have constituents with a large number of double bonds (low saturation), more aromatic compounds, or more sulphur and nitrogen compounds with small amounts of substances of low molecular weight or small quantities of terpenes or bodies of the fatty series.

Because it requires more energy to form substances of high than of low molecular weight, aromatic than fatty (aliphatic) compounds, it can be concluded that plant families which manufacture these substances can be classed in the same manner. That is, that temperate volatile oil producing families are more energetic than tropical volatile oil fami-



lies, and that in tropical volatile oil families those highest in evolutionary development are more energetic and perform more difficult work than those lower in evolutionary position.

Volatile Oils, Tropical Acids and Alcohols. - It has been shown from a consideration of both the specific gravity and refractive index of volatile oils that the higher the development of a tropical plant family the greater is the complexity of its chemical constituents. The study can likewise be continued to the various components of volatile oils, e. g. their acids and alcohols. When this was done, it was found that the heats of combustion of the alcohols and acids of tropical volatile oils increased in harmony with the increase in evolutionary differentiation of the plant families producing them (McNair, 1934).

The greater the heat combustion the greater the amount of energy required in the making of the burned compound. Consequently the higher the tropical plant family in evolutionary position the harder the work it has had to perform.

Plant Form Versus Energy and Evolution. - Aristotle long ago (384-322 B.C.) and his pupil Theophrastus (372-287 B.C.) classified plants as trees, shrubs and herbs, and this simple classification (in the words of A. M. Johnson) is the one we all first become aware of in our youth. It is plain that this classification is based on "life-form" and that the structure of the flower is ignored.

Eames (1911) brings forward evidence that the earliest dicotyledons possessed a solid tubular woody cylinder of considerable thickness which has gradually been reduced and finally broken up into a circle of separate strands, which is characteristic of the "typical" herbaceous condition. Such an hypothesis of reduction from primitive arborescent forms has also been worked out under the direction of Professor Jeffrey by several other members of his laboratory (Adkinson 1913, Bailey 1911, and Jeffrey 1912). In more recent papers, Sinnott and Bailey (1914, 1922) produced evidence in support of this view from paleobotany, phylogeny, anatomy and geographical distribution. It is no wonder that Bessey (1915) included in his "general principles adopted for the classification of plants" the postulate that "in certain groups, trees and shrubs are probably more primitive than herbs."

This hypothesis may be considered from the standpoint of the chemical products derived from plants. In Table II the glycerides, alkaloids and volatile oils from tropical plant families are considered in this respect.

From the final average obtained of the molecular weights of the alkaloids, there is a clear indication that trees produce alkaloids of lower molecular weights than shrubs,



and that shrubs have lower alkaloid averages than herbs. Corresponding results are obtained from the iodine numbers of glycerides. The average refractive indices and specific gravities of volatile oils in respect to the dominant form of plant growth in the families is also developed in Table II. Here again the findings clearly indicate that trees may be the ancestors of herbs. This is shown in the specific gravities. It has been observed that volatile oils with a high specific gravity have a correspondingly low index of refraction (McNair, 1932). If then the specific gravities of volatile oils decrease from herbs to trees, the refractive indices should increase from herbs to trees. This is the case as shown by the averages (Table II). There is chemical support, therefore, for the contention of Bessey (1915), Sinnott and Bailey (1914) and others that in the angiosperms herbs have been derived from woody plants.

It has been shown previously in this paper that plants which manufacture glycerides of the highest iodine numbers, alkaloids with the largest molecular weights, volatile oils with the highest specific gravities and lowest refractive indices perform the most difficult work; therefore, it may be concluded that herbs which are higher evolved than shrubs or trees, also perform the most difficult work.

The chemical data used in Table II are condensed and rearranged according to plant form from McNair (1934). The following families used in the calculations are considered as consisting mainly of trees: Bombacaceae, Caricaceae, Dipterocarpaceae, Lecythidaceae, Moringaceae, Palmae, Rhizophoraceae and Winteranaceae; the families consisting mostly of shrubs and trees are Anacardiaceae, Anonaceae, Araliaceae, Bignoniaceae, Bixaceae, Burseraceae, Caryocaraceae, Cochlospermaceae, Combretaceae, Ebenaceae, Erythroxylaceae, Flacourtiaceae, Guttiferae, Hernandiaceae, Lauraceae, Meliaceae, Monimiaceae, Moraceae, Myristicaceae, Myrtaceae, Ochnaceae, Olacaceae, Oleaceae, Proteaceae, Salvadoraceae, Sapindaceae, Sapotaceae, Simarubaceae, Staphyleaceae, Symplocaceae, Tiliaceae, Vochysiaceae and Zygophyllaceae; mostly shrubs, Apocynaceae, Asclepiadaceae, Humiriaceae, Loranthaceae and Vitaceae; the families consisting mostly of herbs, shrubs and trees, Loganiaceae, Menispermaceae, Phytolaccaceae, Rubiaceae, Sterculiaceae and Verbenaceae.

Intensity of Assimilation. - Although the amounts of materials such as ligneous matter, sugars and chlorophyll assimilated in plant structures may not have a bearing on evolution, yet the rapidity of assimilation of some substances in plants apparently does have a bearing on evolution. For instance, by a rapid rate of metabolism in those plants which produce fruit only once in their lives, the foods and reserve materials necessary for fructification and seed prod-

uction are produced in sufficient quantity more rapidly and earlier reproduction and death are thereby made possible. It is these plants of rapid metabolism which generally occupy the most highly evolved positions on the plant family tree.

Length of Plant Maturation Period. - In relation to the length of plant maturation period plants may be divided into two categories, those plants which bear fruit only once during their lives (monocarpic), and others which do so several times or frequently (polycarpic).

Plants which bear fruit only once generally tend to have the shortest longevity consistent with a normal reproductive period (Molisch, 1938). These germinate, develop and, as soon as they are fully grown, store reserve materials and then proceed to fructification, seed production and death.

This principle of the greatest possible abbreviation of a natural life does not apply to polycarpic plants, however, for we know that many such forms, particularly trees and shrubs, continue to live a long while, sometimes for many centuries after attaining maturity.

As monocarpic annual herbs have shorter plant maturation periods than polycarpic perennial shrubs and trees, and as annual herbs also occupy, in general, more recent evolutionary positions, therefore it can be concluded that these plants with shorter plant maturation periods work harder and are higher evolved than the longer maturing shrubs and trees.

PLANT PARTS. -- Length of Fruit Maturation Period. - The time consumed between the moment that the ovule becomes fertilized and the moment that the seed becomes viable varies greatly among plants. The length of this maturation period may require from a few weeks (Tradescantia virginica) to from two to three years as in the Finaceae and Myrtaceae (Cheel, 1931). The shortest periods are found in monocarpic species and among the monocarpic species the ephemeral or annual plants generally require less time than the perennials. As the ephemeral or annual plants are herbs we have another instance where the greatest intensity of work is shown by plants highest in evolutionary position.

Flowers, Leaves and Stems. - The rate of metabolism appears to have a definite relation to the evolutionary position not only of the plant forms themselves (as shown above) but also of plant parts. Intensity of respiration can indeed be regarded, to a certain degree, as a measure of intensity of metabolism, since we know, for example, that flowers exhibit an unusually high rate of respiration, leaves less so and stems still less, and that the longevity of these organs parallels these rates, i. e., flowers live only a short period, leaves for a longer period and stems still longer.

The systematic position of a plant in evolution is determined mainly through flower differences. In the flower

structure and function many more changes and more rapid changes have taken place than in either the leaves or stems.

The period of longevity of an angiosperm flower is here considered as extending from the first opening of the blossom to the final withering or shedding of its important parts (calyx, stamens).

So considered, the duration of flowers among various plants lasts from three hours to three months. If the plant puts forth only one flower (which is considered by some to be a more primitive condition than an inflorescence) annually, as is true of Galanthus, Moneses uniflora, Paris quadri-folia and the different species of Trillium, or when the flowers are only two or three in number, as in Cypripedium calceolus and the tropical orchids of the genera Oncidium, Stanhopea and Cattleya, these single flowers remain fresh and open a long time.

Evolution, we know, does not necessarily involve all parts of the flower at one time or in the same direction. One flower part may be advancing while another is stationary or retrograding. Because of this, all short-lived flowers are not all evolved to the same uniform degree of advancement, but nearly all of them are found on short-lived herbs (although staminate aments are on trees), and herbs constitute the most recent evolved plant form. Consequently it can be concluded that in general the flowers of shortest duration which also exhibit the most intense metabolism occupy the most advanced phylogenetic positions.

Leaves. - As compared with flowers, leaves are of greater duration; compared with the entire plant, however, they are rather short-lived, sometimes conspicuously so, except in those cases where their death is approximately simultaneous with that of the entire plant.

Under the most favorable circumstances the leaves of annuals attain the age of the plants which bear them, usually that of only one vegetative period, namely, several months.

The leaves of gymnosperms vary greatly from one hundred years (those of Welwitschia) to one year (Cupressus, Ephedra, etc.). The longevity of the leaves of the monocotyledons also varies from a number of years, as in the palms, to less than one year (Amaryllis, etc.). Although some of the leaves of the dicotyledons live as long as five years, many are in the one-year class.

There is, therefore, apparent decrease in the length of life (with an accompanying increase in intensity of work) of leaves as the plants on which they occur advance in evolutionary position.

Stems. - In general, it may be said, aside from exceptions, that the life of stems of herbs is relatively shorter than that of shrubs and trees as a whole. In the case of



gymnosperms, woody stems and great longevity attain the ultimate dominance. And among monocotyledons long life prevails in the palms and shrubby forms, while short-lived annuals are relatively rare. In the dicotyledons short-lived annuals are more common.

It seems highly probable, therefore, that the position in evolution of some spermatophytes is indicated by the kinetic energy of their life cycles and the potential energy of some of their chemical compounds.

### Summary

The object of this paper is to develop the theory that species formation occurs during periods of increased activity, that plants which do the hardest (most difficult) work have evolved to the highest positions; that in this regard quality of products is more important than quantity; and that as morphological structures evolve from simple to complex, so plant chemical compounds evolve from simple to complex.

Chemically each species is in a state of mobile equilibrium between reversible reactions.

The existence and permanency of a species depends upon the existence of constant external and internal conditions and shows a fixed ability to synthesize characteristic chemical compounds.

The splitting off of new species falls within the times of greater activity.

There is a tendency to increased complexity both in morphology and chemical compounds with evolutionary progress.

The stable conditions in the tropics are not as liable to produce these changes as the fluctuating conditions in the temperate zones.

Alkaloids are of greater molecular weight in temperate regions and likewise in the higher evolved tropical plants. Therefore higher evolved plants carry on more difficult work.

Glycerides produced in temperate zones and in the higher evolved tropical families have greater unsaturation (higher iodine values), and their fatty acids have higher molecular weights than the average tropical products. Thus more difficult work is performed by the higher evolved plants.

Volatile oils of temperate families and tropical families highest in evolutionary placement have constituents of low saturation, more aromatic compounds, or more sulphur and nitrogen compounds with small amounts of substances of low molecular weight or small quantities of terpenes or bodies of the aliphatic (fatty) series. Because it requires more energy to form substances of high than of low molecu-



lar weight, aromatic than aliphatic compounds, it can be concluded that plant families which manufacture these substances can be said to have reached an advanced place in evolution.

Volatile oil tropical acids and alcohols likewise show that the highest evolved tropical families form the acids and alcohols of greatest molecular weight and therefore promote more difficult work.

Trees are shown to do less difficult work than shrubs or herbs through a study of their alkaloid, glyceride and volatile oil production.

Plants that produce fruit only once in their lives (annual herbs) have a more rapid rate of metabolism than the polycarpic shrubs and trees. This rapid rate of metabolism is therefore indicative of more difficult work of the more highly evolved plant forms.

The length of the fruit maturation period is shorter in annual herbs than in shrubs and trees and therefore is an indication of the more difficult work carried on by the highly evolved herbs in apposition to that of the more primitive shrubs and trees.

Among plant parts longevity is a measure of metabolism. In this regard flowers greatly exceed leaves, and leaves exceed stems. The shortest lived flowers are produced by annual herbs and consequently exhibit the most intense metabolism, the most difficult work and occupy in general the most advanced phylogenetic positions.

It seems highly probably, therefore, that the position in evolution of some spermatophytes is indicated by the kinetic energy of their life cycles and the potential energy of some of their chemical compounds.

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Table I

Substances	Properties	Producing Climates	
		Tropical	Temperate
Glycerides	(iodine number)	85.36	124.00
Alkaloids	(molecular weight)	293.00	338.00
Volatile oils	(specific gravity)	0.9188	1.9232
Volatile oils	(refractive index)	1.4932	1.4879

Table II

Substances	Properties	Families consisting essentially of (average values)			
		trees	shrubs and trees	shrubs	herbs and shrubs
Glycerides	(iodine numbers)	66	94	96	102
Alkaloids	(molecular weight)	191	348	236	231
Volatile oils	(specific gravity)	.8878	.9175	.9010	.9340
Volatile oils	(refractive index)	1.4630	1.4938	1.4295	1.4918
					117
					307
					.8875
					1.4904



Table III

Comparison of Some Characteristics of Primitive  
and Higher Evolved Plants

	More Primitive Plants	Higher Evolved Plants
Environment	More stable environments e.g. tropics and water	More fluctuating environ- ments e.g. temperate zone and land
Chemical components	<u>Alkaloids</u> Lower average molecular weights	<u>Alkaloids</u> Higher average molecular weights
	<u>Glycerides</u> Lower average melting points Lower average iodine num- bers Lower average molecular weights	<u>Glycerides</u> Higher average melting points Higher average iodine numbers Higher average molecular weights
	<u>Volatile Oils</u> Lower average specific gravity More aliphatic compounds  Higher average refrac- tive index Fewer compounds of high molecular weight	<u>Volatile Oils</u> Higher average specific gravity Fewer aliphatic com- pounds Lower average refractive index More compounds of high molecular weight
	<u>Energy</u> Less energy required to make compounds of lower molecular weight cited above Volatile oil alcohols and volatile oil acids with lower heat combustion	<u>Energy</u> More energy required to make compounds of high- er molecular weight cited above Volatile oil alcohols and volatile oil acids with higher heat com- bustion

Table III - (continued)

	More Primitive Plants	Higher Evolved Plants
	<u>Energy</u> (continued) Therefore less energy required to make	<u>Energy</u> (continued) Therefore more energy required to make
Plant form	<u>Trees more primitive</u> Alkaloids Lower average molecular weights Glycerides Lower average melting points Lower average iodine numbers Lower average molecular weights Volatile Oils Fewer compounds of high molecular weight	<u>Herbs more advanced</u> Alkaloids Higher average molecu- lar weights Glycerides Higher average melting points Higher average iodine numbers Higher average molecu- lar weights Volatile Oils More compounds of high molecular weight
Intensity of assimilation	<u>Intensity of assimilation</u> Polycarpic plants have less	<u>Intensity of assimilation</u> Monocarpic plants have greater
Longevity of plant parts	<u>Length of plant matura- tion period</u> Polycarpic plants have greater Perennial shrubs & trees	<u>Length of plant matura- tion period</u> Monocarpic plants have less Annual herbs
	<u>Length of fruit matura- tion period</u> Polycarpic perennials (longer)	<u>Length of fruit matura- tion period</u> Monocarpic ephemeral or annual (shorter)
	<u>Longevity of flowers</u> Longer	<u>Longevity of flowers</u> Shorter

Table III - (continued)

More Primitive Plants	Higher Evolved Plants
<u>Longevity of leaves</u> Longer	<u>Longevity of leaves</u> Shorter
<u>Longevity of stems</u> Longer	<u>Longevity of stems</u> Shorter

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PLANT NOVELTIES

Harold N. Moldenke

ALOYSIA FONCKI (R. A. Phil.) Moldenke, Suppl. List Invalid  
Names 5, hyponym (1941), comb. nov.

Lippia Foncki R. A. Phil., Anal. Univ. Chile 90: 620.1896

BAILLONIA AMABILIS var. PUBESCENS Moldenke, var. nov.

Haec varietas a forma typica speciei recedit ubique dense breviterque pubescentibus vel puberulis.

This variety differs from the typical form of the species in having its twigs, branchlets, petioles, and both leaf-surfaces densely short-pubescent, the racis and bracts densely puberulent or short-pubescent, and the calyx more or less puberulent.

The type of this variety was collected by my good friend and respected colleague, Dr. Frederico Carlos Hoehne [Com. Rondon 4739] at Triunpho, Rio S. Lourenço, Matogrosso, Brazil, in February, 1911, and is deposited in the herbarium of the Departamento do Botânica do Estado, São Paulo.

CALENDULA OFFICINALIS f. PROLIFERATA Moldenke, f. nov.

Haec forma a forma typica speciei recedit ramulis 4--15 cm. longis in axillis bracteolorum involucri ornatis.

This form differs from the typical form of the species in bearing one or more short branchlets which issue from the axils of involucral bractlets beneath the main head of flow-

ers and which each bear one or more miniature leaves and a small terminal head of orange flowers.

The type of this form was collected by H. N. Moldenke (no. 11,830) in cultivation at Mount Vernon, Westchester Co., New York, on September 20, 1941, and is deposited in the herbarium of the Bailey Hortorium at Ithaca, New York.

*GITHAREXYLUM KUNTHIANUM* Moldenke, nom. nov.

*Citharexylum tomentosum* H.B.K., Nov. Gen. & Sp. Pl. 2: 258. 1818 [not *C. tomentosum* Poir. in Lam., Encycl. Méth. Bot. Suppl. 2: 368. 1811].

*JUNELLIA ILLAPELINA* (R. A. Phil.) Moldenke, Suppl. List Invalid Names 9, hyponym (1941), comb. nov.

*Verbena illapelina* R. A. Phil., Anal. Univ. Chile 90: 612. 1896.

*JUNELLIA THYMIFOLIA* (Lag.) Moldenke, Suppl. List Invalid Names 10, hyponym (1941), comb. nov.

*Verbena thymifolia* Lag., Gen. & Sp. 18--19. 1816.

*LAMPAYA CASTELLANI* Moldenke, sp. nov.

Frutex; caulis prostratis abbreviatis; ramis numerosis brevibus erectis vel adscendentibus dense viscidulo-puberulis; nodis valde annulatis; foliis numerosis confertis decussato-oppositis; petiollis abbreviatis viscidulo-puberulis vel glabratis, ad basin subamplexicaulis; laminis coriaceis brunnescentibus ellipticis acutis integris, glanduloso-punctatis utrinque glabratis aromaticis, ad basin attenuatis; floribus fasciculatis; bractéolis parce pilosulis.

Dwarf shrub; stem prostrate, woody, gnarled, abbreviated; branches numerous, short, erect or ascending, quadrangular, densely viscidulous-puberulent, becoming scabrous through attachment of sand particles; nodes very conspicuously annulate; principal internodes much abbreviated, 1--12 mm. long; leaves numerous, crowded, decussate-opposite; petioles abbreviated, 1.5--3 mm. long, sub-clasping at base, viscidulous-puberulent and eventually scabrous, or glabrate; blades coriaceous, uniformly gray-green on both surfaces, brunnescent in drying, elliptic, 6--14 mm. long, 3--7 mm. wide, acute at apex, entire, somewhat attenuate into the margined petiole at base, glandular-punctate, glabrate on both surfaces, aromatic when crushed; midrib flat above, sharply prominent beneath; secondaries and veinlet reticulation not visible on either surface; flowers borne in fascicles of 1 or more near the tips of the branches; bractlets deltoid, 1.5--2 mm. long, sparsely pilosulous; calyx tubular, about 5 mm. long, sparsely pilosulous outside, its rim 2-lipped, 5-lobed, the lobes involute



at the tip; corolla zygomorphic, hypocrateriform, its tube curvate, 10--12 mm. long, pilose within, glabrous outside, its limb 4-parted; stamens 4, didynamous; filaments abbreviated; stigma obliquely 2-lobed; ovary glabrous, 2-celled; ovules 1 per cell, apparently basally attached.

The type of this species was collected by my good friend, Alberto Castellanos -- in whose honor it is named -- between Cienaga Grande and Cerillos, Jujuy, Argentina, on February 5, 1937 [Herb. Mus. Argent. Cienc. Nat. 20,161] and is deposited in the Britton Herbarium at the New York Botanical Garden.

LAMPAYA HIERONYMI Schum. & Moldenke ex Moldenke, Suppl. List Invalid Names 4, hyponym (1941), sp. nov.

Frutex; ramis crassis tetragonis glabris; nodis valde annulatis argute ampliatis; foliis numerosis decussato-oppositis; petiolis obsolete vel usque ad 3 mm. longis crassis glabris non-amplexicaulibus; laminis coriaceis oblongo-ellipticis obtusis vel subacutis integris, ad basin acutis, utrinque glabris.

Erect shrub; stems heavy, tetragonal; branches numerous, heavy, tetragonal, glabrous; nodes very conspicuously annulate, sharply ampliate on the branches; principal internodes 1--2.5 cm. long; leaves decussate-opposite, numerous, borne on prominent corky sterigmata; petioles obsolete or to several mm. long, heavy, glabrous, not clasping at base; blades thick-coriaceous, 2.5--4 cm. long, 7--12 mm. wide, oblong-elliptic, obtuse or subacute at apex, entire, acute at base, glabrous on both surfaces, the epidermis wrinkling in drying; midrib flat or subimpressed above, rounded-prominent beneath; secondaries and veinlet reticulation hidden; inflorescence not seen.

The type of this species was collected by G. Hieronymus and G. Niederlein (no. 191) at Las Cortaderas, between El Penou and El Jaguel, Rioja, Argentina, on February 22, 1879, and is deposited in the herbarium of the Botanisches Museum at Berlin. The collectors report the vernacular name "lampaya" and say that the plant is used to was wounds and in the treatment of gonorrhoea.

LANTANA BRITTONI Moldenke, sp. nov.

Frutex scandens; ramis acutiuscule tetragonis obscure aculeatis plusminus pilosis glabrescentibus; internodiis elongatis; nodis distincte piloso-annulatis; foliis oppositis; petiolis gracilibus sparse obscureque pilosis; laminis tenuiter membranaceis fragilibus nigrescentibus ovatis acutis vel breviter acuminatis regulariter serratis, ad basin subcuneatis, utrinque glabris vel subglabris vel supra obscure scabridis; inflorescentiis axillaribus capitatis.

Trailing shrub or climbing to a height of over 7 m.; main stem about 1.5 cm. in diameter at base; branches rather acutely tetragonal, obscurely prickly, more or less scattered-pilose toward the apex, becoming glabrous in age; principal internodes elongate, 8--10 cm. long; nodes distinctly annulate, with a band of pilose hairs on the youngest parts; leaves decussate-opposite; petioles slender, about 2.5 cm. long, sparsely and obscurely pilosulous; leaf-blades thin-membranous, very fragile in drying, uniformly green on both surfaces, nigrescent in drying, or slightly lighter beneath, ovate, about 13 cm. long and 6.5 cm. wide, acute or short-acuminate at apex, subcuneate at base, uniformly serrate along the margins with broad more or less rounded (and minutely apiculate) teeth, glabrous or subglabrous on both surfaces or very slightly and obscurely roughened above; midrib slender, flat above, prominent beneath; secondaries slender, 6 or 7 per side, arcuate-ascending, flat above, slightly prominulous beneath; veinlet reticulation obscure or indiscernible above, abundant and plane beneath; inflorescence axillary, 2.5--6 cm. long, capitate, densely many-flowered; peduncles slender, 1.5--4.5 cm. long, glabrate or very obscurely puberulent, sometimes incrassate or ampliate at apex; bractlets small, linear, not very conspicuous, 2--4 mm. long, minutely strigillose; calyx campanulate, about 2 mm. long; corolla yellow, its tube about 6 mm. long, its limb about 5 mm. in diameter, the three upper lobes smaller than the lower lobe.

The type of this species was collected by William Harris and Nathaniel Lord Britton (no. 10,541) at Tweedside, below Moody's Gap, Jamaica, on September 10, 1908, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is named, in grateful appreciation, in honor of Dr. Britton, who assigned to it the cheironymous name, Lantana scandens Britton [not L. scandens Moldenke, *Phytologia* 2: 18--19. 1941].

*LANTANA INVOLUCRATA* var. *ODORATA* (L.) Moldenke, comb. nov.

Lantana odorata L., *Syst. Veg.*, ed. 12, 418. 1774.

*LIPPIA SCHLECHTENDALII* Moldenke, nom. nov.

Dipterocalyx scaberrima Schlecht., *Linnaea* 26: 647. 1853  
[not Lippia scaberrima Sond., *Linnaea* 23: 87. 1850].

*NASHIA ARMATA* (Urb.) Moldenke, comb. nov.

Lippia armata Urb. in Fedde, *Repert.* 18: 194. 1922.

*NASHIA MYRTIFOLIA* (Griseb.) Moldenke, comb. nov.

Lippia myrtifolia Griseb., *Cat. Pl. Cub.* 215. 1866.

NASHIA NIPENSIS (Urb.) Moldenke, comb. nov.

Lippia nipensis Urb. in Fedde, Repert. 20: 344. 1924.

NASHIA SPINIFERA (Urb.) Moldenke, comb. nov.

Lippia spinifera Urb. in Fedde, Repert. 18: 195. 1922.

NASHIA VARIIFOLIA (Urb.) Moldenke, comb. nov.

Lippia variifolia Urb. in Fedde, Repert. 20: 344. 1924.

PYGMAEOPREMNA HERBACEA (Roxb.) Moldenke, comb. nov.

Premna herbacea Roxb., Hort. Beng. 46, hyponym (1814), Fl. Ind. 3: 80. 1832.

PYGMAEOPREMNA SUBACAULIS (F. Muell.) Moldenke, comb. nov.

Tatea subacaulis F. Muell., Trans. Roy. Soc. S. Austral. 6: 34. 1883.

STACHYTARPHETA CEARENSIS Moldenke, sp. nov.

Herba perennis; ramis subtetragonis adpresso-puberulis vel pubescentibus; foliis oppositis brevipetiolatis; petiolis gracilibus adpresso-strigilloso-pubescentibus; laminis firme chartaceis obovatis, ad apicem rotundatis, supra mediam uniforme crasseque dentatis, ad basin cuneatis, marginibus subrevolutis, supra subscabridis et obscure strigillosis glabrescentibus, subtus leviter adpresso-puberulis.

Perennial herb; stems appressed-pubescent or puberulent, less so in age, subtetragonal; leaves decussate-opposite, short-petiolate; petioles slender, about 4 mm. long, appressed-strigillose-pubescent; blades firmly chartaceous, obovate, 3--3.3 cm. long, 1.6--1.8 cm. wide, rounded at apex, rather uniformly coarsely dentate above the middle with broad and rounded or subacute teeth, cuneate at base, subrevolute along the margins, subscabridous and obscurely strigillose with very minute caducous hairs above, glabrescent in age, lightly appressed-puberulent beneath; midrib slender, impressed above, prominulous beneath; secondaries slender, 4 or 5 per side, arcuate-ascending, somewhat impressed above, prominulous beneath; peduncles short, tetragonal, about 1.5 cm. long, rather densely puberulent with cinereous or sordid hairs; floriferous portion of spike 5.5 cm. long (in immature specimen?); rachis stout, densely cinereous-puberulent, sharp-angled; bracts oblong, 8--9 mm. long, about 3 mm. wide from base to near the apex, then abruptly long-acuminate (the acumination about 2 mm. long), abundantly puberulent on the back, not at all scarious; flowers closely imbricate; calyx tubular, about 10 mm. long and 3 mm. wide, prominently 5-ribbed or -plaited, its rim shortly 5-toothed; corolla-tube slightly exceeding the calyx, glabrous outside, its limb spreading, about 8 mm. wide.



The type of this species is a poor fragment collected by Freire Allemão (no. 1152) in Ceará, Brazil, and is no. 32247 in the herbarium of the Museu Nacional at Rio de Janeiro.

*VERBENA GALAPAGOSENSIS* Moldenke, sp. nov.

Herba, in siccitate ubique nigrescens; ramis ramulisque gracilibus acute tetragonis saepe sulcatis striatisque sparsissime pilosis; nodis annulatis; foliis oppositis sessilibus linearibus vel angustissime lanceolatis utrinque adpresso-pilosis, ad basin subamplexicaulibus; inflorescentiis terminalibus spicatis laxae multifloris.

Herb, nigrescent throughout in drying; stems and branches slender, acutely tetragonal, often sulcate and striate between the angles, very sparsely pilose with short whitish widely scattered antrorse hairs; nodes annulate; principal internodes 1--5.8 cm. long; leaves decussate-opposite, sessile, sub-clasping at base, linear or very narrowly lanceolate, 5--15 mm. long, rather abundantly pilose with appressed antrorse hairs on both surfaces; midrib and veinlet reticulation indiscernible; inflorescence terminal, spicate, 4--15 cm. long, loosely many-flowered; peduncles slender, similar to the branches in all respects, nigrescent in drying, acutely tetragonal, longitudinally striate, very sparsely scattered-pilose, 1--3 cm. long; bractlets ovate-lanceolate, about 2.5 mm. long, ciliolate-margined, acuminate at apex, usually glabrate or very obscurely pilosulous except for the margins; mature flowers and fruit not seen.

The type of this remarkable species was collected by Alban Stewart (no. 3318) at Cowley Bay, Albemarle Island, Galapagos Islands, on August 10, 1905, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector stated that the species is common at 2000 feet elevation. It has hitherto been confused with *V. litoralis* H.B.K.

*VERBENA RUSSELLII* Moldenke, sp. nov.

Herba; ramis gracilibus argute tetragonis ubique minutissime obscureque puberulis; nodis annulatis; foliis oppositis, supremis sessilibus; petiolis alatis hirsuto-pubescentibus; laminis inferioribus ellipticis vel ovato-ellipticis acutis irregulariter inciso-dentatis utrinque densiuscule glanduloso-hirsutulis, ad basin longo-acuminatis, marginibus subrevolutis; laminis supremis lineari-lanceolatis irregulariter inciso-dentatis vel integris utrinque dense glanduloso-hirsutulis; inflorescentibus terminalibus spicatis.

Herb, not at all nigrescent in drying; stems slender, sharply tetragonal, very minutely and obscurely puberulent throughout; nodes annulate; principal internodes 2--6.5 cm. long; leaves decussate-opposite, the uppermost ones sessile, the lower and older ones petiolate; petioles to 1 cm. long,



winged, hirsute-pubescent; lower leaf-blades elliptic or ovate-elliptic in outline, 1--4 cm. long, 8--15 mm. wide, acute at apex, irregularly incised-dentate along the margins, long-attenuate into the petiole at base, rather densely hirsutulous and glandular on both surfaces, especially beneath, with stiff whitish hairs, the margins slightly revolute in age; midrib and secondaries flat or subimpressed above, prominent beneath; upper leaves linear-lanceolate, sessile, 5--15 mm. long, irregularly incised-dentate or entire, densely glandular-hirsutulous on both surfaces, with a very prominent midrib beneath; inflorescence terminal, spicate, paniculately branched, the branches to 20 cm. long, densely many-flowered; peduncles slender, sharply tetragonal, minutely puberulent, often elongate; rachis densely glandular-puberulent; bractlets lanceolate, 2--2.5 mm. long, attenuate to the sharply acute apex, densely glandular-pubescent and ciliate-margined; calyx tubular, about 2 mm. long, densely glandular-puberulent, its rim 5-apiculate; corolla small, its tube 3--3.5 mm. long, very slender, its limb 2--3 mm. wide in anthesis.

The type of this species was collected by Joseph Nelson Rose, Paul Carpenter Standley, and Paul George Russell (no. 14,850) in a moist field in the vicinity of Culiacan, Sinaloa, Mexico, on April 21, 1910, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is named in honor of Paul George Russell and was annotated by Lily M. Perry in 1922 as "aff. V. officinalis L."

VERBENA STEWARTII Moldenke, sp. nov.

Herba plusminus nigrescens; ramis ramulisque gracillimis subfiliformibus argute tetragonis ubique glabris nitidisque; nodis annulatis; foliis oppositis sessilibus, supremis linearibus, inferioribus 2--3-linearilobatis, obtusis revolutis utrinque plusminus sparse adpresso-pilosis; inflorescentiis terminalibus spicatis paucifloris.

Herb, more or less nigrescent in drying; stems and branches very slender, the latter almost filiform, sharply tetragonal, glabrous and shiny throughout; nodes annulate; principal internodes mostly elongated, 2--6 cm. long; leaves decussate-opposite, sessile, the upper ones linear, the lower ones with 2 or 3 linear widely divergent lobes, revolute-margined, blunt-pointed, more or less sparsely scattered-pilose with appressed whitish antrorse hairs on both surfaces; midrib prominent beneath; inflorescence terminal, spicate, rather few-flowered, dense toward the apex and during anthesis, the lower flowers often scattered after anthesis; peduncles slender, elongated, 6.5--7.5 cm. long, glabrous and shiny; rachis filiform, glabrous and shiny or very obscurely scattered-pulverulent; bractlets lanceolate,

1.5--2 mm. long, acuminate at apex, glabrous except for the ciliolate margins; calyx tubular, about 2 mm. long, minutely appressed-puberulent; corolla barely exceeding the calyx, its tube usually only about 2 mm. long, its limb about 1.5 mm. wide.

The type of this remarkable species was collected by Alban Stewart (no. 3320) -- in whose honor it is named -- at Tagus Cove, Albemarle Island, Galapagos Islands, on March 27, 1906, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector states that the species is common in lava beds at 300 feet altitude. It has hitherto been confused with V. litoralis H.B.K.

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ADDITIONAL NOTES ON THE GENUS AEGIPHILA -- VII

Harold N. Moldenke

The following notes constitute a continuation of those published in *Phytologia* 1: 182--208, 222--240, and 248--272 (1937), 289--304 (1938), 364--368 (1939), and 372--400 (1940). An additional herbarium abbreviation herein employed and not previously explained is "Ra", which stands for the herbarium of the Museo Nacional de Historia de Buenos Aires.

Bentham in Benth. & Hook. f., *Gen. Pl.* 2<sup>d</sup>: 1151 (1876) recognized about 30 species in the genus *Aegiphila*. Today we recognize 158 species and varieties. An additional misspelling of the generic name is *Aegyphylla* Jacq. ex Moldenke, *Suppl. List Invalid Names* 1, in syn. (1941). Junell in *Symb. Bot. Upsal.* 4: 83, fig. 133 (1934) shows the structure of the gynoecium and gives important notes on the floral morphology of the group.

49a. *AEGIPHILA ACULEIFERA* Moldenke.

Austin Smith has furnished us with detailed notes about this species, including some characters not before recorded. He states that it is a tree 4--12 m. tall, of open growth, inhabiting the cloud forests of the Caribbean watershed and thickets on the edges of woodlands, where it is "quite a common tree", at altitudes of 4200 to 7000 feet, often in clay-loam and open shade. The bark is neutral-brown, gray, or gray-brown, a little glandularly roughened. The leaves are "barely stiffened", nearly glabrous, dark dull-green above, the venation prominent on the under surface. The under surface of the leaves is dark-green, not shiny, with a faint

tomentum, and has the midrib there cream-colored. The buds are roundish, pale- or grayish-green, more or less woolly-tomentose. The flowers, stems, pedicels, and petioles, according to this fine collector, are more or less woolly-tomentose. The expanded flowers are 20 mm. long and 10--13 mm. wide. The calyx is campanulate, pale-green, and glandular, the sepals 4 in number. The corolla is pure-white, creamy-white, or cream-colored, glandular, cruciform, and fleshy, the tube about 12 mm. long, the lobes recurved. The 4 stamens are "as long as the petals" and are placed alternately with them. The filaments are slender and white, the anthers large, brown, compressed, bilobed or "2-segmented". The style is either much longer than or much shorter than the stamens depending on whether the plant is male- or female-predominant. The stigma is much shorter than the style, 2-parted. The fruits ripen pale-yellow and semi-pellucid. The tree is in full inflorescence in June and August.

Additional citations: COSTA RICA: Alajuela: A. Smith 4210 (F, F), A.252 (F, N), H.1104 (F, N, N).

#### 6. AEGIPHILA ANOMALA Pittier.

Austin Smith has furnished detailed notes about this rare species, stating that it is a tree 35--50 feet tall, of open spreading growth, often spreading to 50 feet, the base 1 1/2 to 3 feet in diameter, of open forests on wooded hillsides in light shade and in clay-loam soil on the Continental Divide and within the zone of the Pacific cloud-forest, often in semi-shade on clay ridges, at altitudes of from 4500 to 5800 feet. On one label he states that it is "common" and on another "scarce so high, more common westward". The sap is not milky. The bark is brown, thick, of cork-like structure, well-sutured, much roughened and shaggy by raised and slightly curled granulated narrow-oblong strips. The cambium is cream-yellow. The buds are round and gray-green, the unopened clusters grayish-yellow, the open ones showing brownish; the flower-buds are buffy-yellow in color. The leaves are rather lax and soft or slightly stiffened, much disfigured by the wind, clustered, bright-green or the newer ones light-green, velvety to touch. The calyx-cup is light-green. The flowers resemble those of Capparidaceae, 14--20 mm. wide when expanded, with a faint odor. The corolla is pure-white, "resembling Cleome", "springing independently of the base cluster from stem", the tube very small and urceolate, "canaliculated in throat". The corolla-limb opens flat, 2 of the 5 petals sometimes recurving. The 5 stamens are long-exserted and curved, the anthers brown, and the style short. "Seed capsules suggesting Capparidaceae." It has been collected in flower and fruit in July and August and has been confused

with A. Valerii.

Additional citations: COSTA RICA: Alajuela: A. Smith 138 (F), A.242 (F, N, N--photo, Z--photo), A.379 (F, F, F). Limón: H. Pittier s.n. [Herb. Instit. Physico-geogr. Nat. Costaric. 16,711] (F--photo of type).

70. AEGIPHILA BARBADENSIS Moldenke.

Additional citations: BARBADOS: Warming 101 (F--photo of type).

3. AEGIPHILA BOGOTENSIS (Spreng.) Moldenke.

This species has been collected in anthesis in September, December, and January, inhabiting low woods on slopes. It is said by Miss Mexia to be a small tree to 6 m. tall, with yellow-white and waxy flowers.

Additional citations: COLOMBIA: Cundinamarca: Bonpland s.n. (F--fragment); Triana 3743/4 [1] (Jc), 3743/4 [2] (Jc). Tolima: Purdie s.n. (F--photo). ECUADOR: Pichincha: Mexia 7683 (N).

80. AEGIPHILA BOLIVIANA Moldenke.

Additional citations: BOLIVIA: Santa Cruz: Steinbach 6437 (F--photo of cotype), 7071 [Herb. Mus. Nac. Hist. Nat. Buenos Aires 30/2720] (Ra), 7289 (Z--photo).

23. AEGIPHILA BRACHIATA Vell.

Jørgensen states that the species grows to be a tree 4 m. tall, with sulphur-yellow flowers, blooming in September. He states that it is very common in Paraguay.

Additional citations: BRAZIL: State undetermined: Sellow 1269 [Macbride photos 17,590] (F--photo, Kr--photo). PARAGUAY: Jørgensen 3662 (F, F, N).

120. AEGIPHILA BRACTEOLOSA Moldenke.

The species is said by Ducke and by Krukoff to inhabit secondary not-inundated forests or terra firma. It is described as a shrub to 12 feet tall and has been confused with A. arborescens (Aubl.) Gmel. [-A. integrifolia (Jacq.) Jacks.].

Additional citations: BRAZIL: Amazonas: Ducke 444 (F); Krukoff 5060 (F, Ml).

102. AEGIPHILA BUCHTIENII Moldenke.

The species has been collected at an altitude of 800 m., in anthesis in January.

Additional citations: BOLIVIA: La Paz: Buchtien 1716 (N).

99. AEGIPHILA CANDELABRUM Briq.

The specific name of this species is sometimes lower-



cased, but was written with a capital initial letter in the original publication, and being a substantive, not agreeing with the generic name in gender, it probably would be classed among those which the International Rules of Nomenclature (more properly called "International Exceptions in Nomenclature"!.) in Recommendation 43 allows to be capitalized. It is gratifying to the present writer to note how many modern authors are disregarding this unfortunate recommendation.

Additional citations: PARAGUAY: Hassler 8120 [Macbride photos 24,621] (F--photo of type, Kr--photo of type).

90. AEGIPHILA CEPHALOPHORA Standl.

Additional citations: PANAMA: Canal Zone: Kenoyer 607 (F--fragment of type, F--photo of type).

98. AEGIPHILA CHRYSANTHA Hayek.

An additional synonym is Aegiphila chrysantha Poepp. ex Moldenke, Suppl. List Invalid Names 1, in syn. (1941). The Klug 2104 and 2204 from Loreto, Peru, cited by me in Brittonia 1: 423 & 474 (1934) and Phytologia 1: 297 (1938) as A. vitelliniflora Klotzsch are actually A. chrysantha and the citations are repeated in their correct place hereinafter. Klug 2204 has the disks very conspicuous along the midrib on the lower leaf-surface and was identified as A. Smithii Moldenke by Standley. It has been collected in anthesis from March to July and at altitudes of 180--200 m. The common name "fedoró-ey" is recorded by Klug and applies to this species instead of to A. vitelliniflora as erroneously stated by me in Brittonia 1: 423 (1934) and Alph. List Common Names 12 (1939).

Additional citations: ECUADOR: Guayas: Eggers 14,348 [Macbride photos 20,349] (F--photo, F--photo, Kr--photo). PERU: Loreto: Klug 2027 (F), 2104 (A, B, E, F, G, K, M, N, S, W), 2204 (B, Cb, E, F, G, K, S, W); Poeppig 2314 [Macbride photos 34,313] (F--fragment of isotype, F--photo of logotype).

98a. AEGIPHILA CHRYSANTHA var. GLABRA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit calyce ubique glabro.

This variety differs from the typical form of the species in its calyx being entirely glabrous. The corolla is described by the collector as being cream-colored. The type was collected by Guillermo Klug (no. 3894) at Juan Jui, Alto Río Huallaga, at an altitude of about 400 m., San Martín, Peru, in October, 1934, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector states that it is a liana, and Standley identified it as A. Smithii.

Citations: PERU: San Martín: Klug 3894 (F--isotype, N--

type).

44b. AEGIPHILA CONTURBATA Moldenke.

Additional citations: BRAZIL: Maranhão: Newman s.n. [Macbride photos 28,377] (Kr--photo of type).

112. AEGIPHILA CORDATA Poepp.

An additional synonym, due to misaccrediting, is Aegiphila cordata P. & E. ex Moldenke, Suppl. List Invalid Names 1, in syn. (1941).

Additional citations: PERU: Loreto: Poeppig 2158 [Macbride photos 34,312] (F--photo of type, F--fragment of isotype, F--photo of type).

112a. AEGIPHILA CORDATA var. COLOMBIANA Moldenke.

Additional citations: COLOMBIA: Santander Sur: Haught 1885 (F--isotype).

113. AEGIPHILA CORDIFOLIA (Ruíz & Pav.) Moldenke.

Additional citations: PERU: Department undetermined: Ruíz & Pavon 12/68 (F), s.n. [Miña, Panatahua] (Kr--photo of isotype).

10. AEGIPHILA COSTARICENSIS Moldenke.

Austin Smith has furnished us with copious field notes about this species. He states that it is an erect bushy shrub 3 m. tall or a tree to 8 m. tall, the trunk 20 cm. in diameter at breast-height, with a broad flat crown, inhabiting the shade of Caribbean rain-forests, in mould and loamy soil at altitudes of 600--1100 m. The bark is brown or pale-brown, slightly roughened by raised striations. The leaves are "thin-chartaceous" or thin-membranous, "faintly stiffened", dark opaque-green above, glabrous, with a faint sheen. The "cupules" [calyx?] are green; "dried peduncles and cupules brownish to black". The drupes are various shades of green, pale-green to greenish-yellow, ripening to Prussian-green. It has been collected in anthesis in December and in fruit in March and April and has been confused with the genus Vitex.

Additional citations: MEXICO: Chiapas: Matuda 572 (F--fragment), 2101 (F). GUATEMALA: Quezaltenango: Skutch 2012 (F). COSTA RICA: Alajuela: A. Smith F.1818 (F, N), F.1907 (F, N). Cartago: Pittier & Tonduz s.n. [Herb. Instit. Physico-geogr. Nat. Costaric. 9167] (F--fragment of isotype). Guanacaste: Standley & Valerio 45,538 (F--photo).

35. AEGIPHILA ORENATA Moldenke.

Additional citations: BRAZIL: Paraná: Dusén 10,541 [Macbride photos 30,182] (F--isotype, F--photo of isotype, Kr--

photo of isotype), 16,238 (F).

17a. *AEGIPHILA CUATRECASASI* Moldenke, *Phytologia* 2: 7—8. 1941.

Citations: COLOMBIA: Caquetá: Cuatrecasas 8566 (N—fragment of type, N—photo of type, W—type, W—-isotype, Z—photo of type).

9. *AEGIPHILA CUNEATA* Moldenke.

The species is said by Ule to be a shrub 2—9 m. tall, with white flowers, blooming in July.

Additional citations: BRAZIL: Acre Territory: Ule 9859 ["14,684"] (F).

117. *AEGIPHILA DEPPEANA* Steud.

In *Phytologia* 1: 291 (1938) I cited a "Dugand & Mina 950" from "Department undetermined", Colombia, and in *Phytologia* 1: 383 (1940) I stated that this collection was actually made in the Panama Canal Zone. Dr. Armando Dugand, in a letter to me, dated March 18, 1941, has kindly pointed out to me that I was in error in the above references. The collection was made by Dr. Armando Dugand G. at Juan Mina, a small place some 10 miles southwest of Barranquilla, in the Department of Atlántico, Colombia. The collector describes the plant as having "small tubular reddish flowers" and records the vernacular name "sauco monte". Elias calls it a rather abundant woody vine around Barranquilla, with light bark and no economic uses. Williams and Martínez-Calderón describe it from Mexico as an uncommon straggly scandent shrub on the edge of paths in thickets or a vine in llanos, found at altitudes of 20—50 m., collected in fruit in March. It has been confused with *A. elata* Sw. by some recent workers. An additional synonym, due to miscrediting, is *Aegiphila Deppeana* Moldenke, *Suppl. List Invalid Names* 1, in syn. (1941). In *Brittonia* 1: 452 (1934) I stated that the type of *A. Berteriana* Schau. was collected by Bertero. This is an error. It was collected by Balbis, as is shown by Macbride photo 33,932, cited below.

Additional citations: MEXICO: Tamaulipas: Schiede 1165 (F—photo of type). Veracruz: Ll. Williams 8872 (F). Oaxaca: Martínez-Calderón 418 (W). State undetermined: Sessé, Mocino, Castillo, & Maldonado 603 (F), 1074 (F). COSTA RICA: Department undetermined: C. W. Dodge 6189 (F). COLOMBIA: Atlántico: Dugand G. 950 [Mus. Yale School of Forestry 32,382] (F); Elias 1621 (F, N). Magdalena: Balbis s.n. [Macbride photos 33,932] (F—photo); H. H. Smith 881 (Ca).

101. *AEGIPHILA ELONGATA* Moldenke.

Addit.cit.: BOLIVIA: La Paz: Buchtien 1645 (F-ph. of type)

124. AEGIPHILA ELATA Sw.

Williams describes the species as a "slender shrub, at times scandent, in secondary growth", a "vine on shrubs in clearings or rough pastures", and as a "scandent herb". As a shrub it is said to attain a height of 4 to 5 feet. Williams reports the flowers as sometimes white and the common name "bejuco de peine mico" in Oaxaca. It has been collected in fruit in February and has been confused with the genus Cestrum of the Solanaceae.

Additional citations: MEXICO: Oaxaca: Ll. Williams 9143 (F), 9271 (F), 9281 (F), 9354 (F), 9566 (F). Tabasco: Matuda 3031 (F), 3081 (F), 3406 (F). BRITISH HONDURAS: Gentle 2633 (F, Mi), 2684 (Mi), 2843 (F, Mi, Mi), 3047 (F, Mi), 3350 (N). HONDURAS: Atlántida: Yuncker, Koepfer, & Wagner 8377 (F). COSTA RICA: Alajuela: Brenes 20,535 ["30"] (F). COLOMBIA: Cundinamarca: Triana 3713 [1; "677"] (Jc). Tolima: Pérez Arbeláez & Cuatrecasas 6529 (W). VENEZUELA: Bolívar: Ll. Williams 12,828 (Ve, W).

121. AEGIPHILA ELEGANS Moldenke.

Krukoff describes the species as a vine, growing on terra firma in high forests.

Additional citations: BRAZIL: Amazonas: Krukoff 8701 (F).

61. AEGIPHILA FALCATA Donn. Sm.

Standley reports that the species is a shrub 2--4 m. tall, inhabiting dry or damp thickets, at an altitude of about 240 m., that the flowers are greenish-yellow or pale greenish-yellow, and that a vernacular name in Guatemala is "chiploque"; collected in flower and fruit in September.

Additional citations: MEXICO: Chiapas: Matuda 666 (Mi, Mi). GUATEMALA: Escuintla: J. D. Smith 2111 (F--photo of type). Retalhuleu: J. D. Smith 1479 (F--photo); P. C. Standley 88,699 (N), 88,767 (N). COSTA RICA: Department undetermined: Calvert & Calvert s.n. [Surubres, Oct. 1909] (Up).

15. AEGIPHILA FASCICULATA Donn. Sm.

An additional synonym, due to mis-accrediting, is Aegiphila fasciculata H.B.K. ex Moldenke, Suppl. List Invalid Names 1, in syn. 1941.

Additional citations: GUATEMALA: Alta Verapaz: Türkheim 4013 (F--photo of type).

114. AEGIPHILA FENDLERI Moldenke.

The species grows at altitudes of 1450--1650 m., and has been collected in anthesis in October.

Additional citations: VENEZUELA: Aragua: Chardon 189 (N--fragment, Ve, W).



31. *AEGIPHILA FERRUGINEA* Hayek & Spruce.

Rimbach has furnished some additional information about this species. He states that the cortex of the trunk is gray and slightly fissured, soft in texture, and the wood is white, with distinct growth-rings; also that it is a medium-sized tree of the forest. An additional synonym, due to mis-accrediting, is *Aegiphila ferruginea* Hayek ex Moldenke, Suppl. List Invalid Names 1, in syn. 1941.

Additional citations: ECUADOR: Chimborazo: Rimbach 616 (F). Imbabura: Lehmann 4700 [Macbride photos 17,584] (F--photo, Kr--photo). Pichincha: Firmin 632 (F--photo); Penland & Summers 939 (F); Spruce 5473 (F--fragment of isotype, F--photo of isotype).

63. *AEGIPHILA FILIPES* Mart. & Schau.

The species is described by collectors as a tall shrub or small tree, 10—18 feet tall, with a stem 1/2 to 1 inch in diameter, sometimes to 22 feet tall, inhabiting pastures, forests, and jungles on varzea land, the flowers white or yellowish. The calyx is green, remarkably and quite characteristically wide during anthesis. The fruit is yellow or orange. It has been collected in anthesis in March and from July to September, and in fruit in August. It ascends to 1900 m. altitude in Colombia.

Additional citations: COLOMBIA: Huila: Pérez Arbeláez & Cuatrecasas 8360 (W). PERU: Loreto: Ll. Williams 533 (F), 2165 (F), 2469 (F), 2622 (F), 2778 (F), 2832 (F), 2850 (F), 2856 (F), 3115 (F), 3146 (F). BRAZIL: Amazonas: Krukoff 5125 [Herb. Dept. Bot. Est. S. Paulo 35,047] (Ca, F, Mi, Sp), 8041 (F), 8042 (F); Riedel 1418 (F). Pará: Martius s.n. [Herb. Monac. 1020 & 1689; Macbride photos 20,350] (F--photo of cotype, Kr--photo of cotype).

66. *AEGIPHILA FLORIBUNDA* Moritz & Moldenke.

The label on the photograph cited below says "Moritz & Moldenke 1765" for the collection number, in error.

Additional citations: VENEZUELA: Aragua: Moritz 1765 [Macbride photos 34,310] (F--photo).

57. *AEGIPHILA FOETIDA* Sw.

Additional citations: JAMAICA: R. C. Alexander s.n. (F--photo); Swartz s.n. [Jamaica] (F--photo of type).

62a. *AEGIPHILA GLANDULIFERA* var. *PARAËNSIS* Moldenke.

The variety is described as a shrub 12 feet tall, blooming in August; the fruit red when ripe. It has been confused with *A. filipes*.

Additional citations: BRAZIL: Pará: Ginzberger 908 (F); Krukoff 5923 (F, Mi).



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# PHYTOLOGIA

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ADDITIONAL COMMON AND VERNACULAR NAMES RECORDED FOR MEMBERS  
OF THE VERBENACEAE AND AVICENNIACEAE

Harold N. Moldenke

Since the publication of my original alphabetic list of 2202 common and vernacular appellations for members of the Verbenaceae and Avicenniaceae (1) and the supplementary list of 1387 additional names (2), numerous names have come to my attention on the labels of herbarium specimens and in various manuals, horticultural catalogues, floral lists, and descriptive accounts of regions in which these plants grow. These 1012 additional names are given herewith together with some corrections and emendations of previous listings. As in the previous works, all variations in orthography or accentuation are listed separately in exactly the manner as given by the original recorder. Entries which are merely corrections or emendations of entries in previous installments of this list are here indicated by an asterisk (\*).

- abisoa = Vitex Doniana Sweet, V. grandifolia Gürke  
 aboutennua = Stachytarpheta jamaicensis (L.) Vahl  
 ada = Vitex Doniana Sweet, V. grandifolia Gürke  
 adabi = Clerodendrum splendens G. Don  
 adaga = Vitex Doniana Sweet, V. grandifolia Gürke  
 ade = Vitex Doniana Sweet  
 adefia = Vitex grandifolia Gürke  
 adelamanyi = Lantana Camara L.  
 \*adgáu = Premna corymbosa var. obtusifolia (R. Br.) Fletcher  
 aegiphilas = Aegiphila Jacq.  
 afetewa = Vitex Doniana Sweet, V. grandifolia Gürke  
 afia-nunung = Avicennia africana P. Beauv.  
 afia omya = Clerodendrum splendens G. Don  
 afurati = Lippia adoënsis Hochst.  
 \*agáu = Premna corymbosa var. obtusifolia (R. Br.) Fletcher  
 ägba = Stachytarpheta jamaicensis (L.) Vahl  
 agbul u uwagh = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 \*agdau = Premna corymbosa var. obtusifolia (R. Br.) Fletcher  
 \*agetha = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*agnimantha = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 agnocasto = Vitex Agnus-castus L.  
 àgógo igún = Stachytarpheta jamaicensis (L.) Vahl  
 \*agug = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 \*aguyábát = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 ahgao = Premna Gaudichaudii Schau.  
 \*akar kētu-kētu = Sphenodesme pentandra Jack

- \*akar lintang ruas = Sphenodesme pentandra Jack  
 akojoe mála kali = Stachytarpheta cayennensis (L. C. Rich.)  
 Vahl  
 akotongmē = Lantana Camara L.  
 akwakora-gyahini = Vitex Fosteri C. H. Wright, V. rivularis  
 Gürke  
 \*alagáu = Premna corymbosa var. obtusifolia (R. Br.) Fletcher  
 \*alagáu-blanko = Premna corymbosa var. obtusifolia (R. Br.)  
 Fletcher  
 \*alagáu-dágat = Premna corymbosa var. obtusifolia (R. Br.)  
 Fletcher  
 \*alalgáu = Premna corymbosa var. obtusifolia (R. Br.) Flet-  
 cher  
 alasaobo = Vitex Stahelii Moldenke  
 Albion Verbena = Verbena Teasii Moldenke  
 albocar = Callicarpa acuminata H.B.K.  
 alfornbrilla = Verbena ciliata Benth.  
 algarrobo = Avicennia nitida Jacq.  
 aloalo = Premna taitensis var. rimatarensis F. H. Br., P.  
corymbosa (Burm. f.) Rottl. & Willd.  
 aloch = Vitex Agnus-castus L.  
 ama-kosikati = Vitex Wilmsii var. reflexa (H. H. W. Pearson)  
 Pieper  
 \*amamahít = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 \*amamboligan = Clerodendrum minahassae Teijsm. & Binn.  
 \*ambuligan = Clerodendrum minahassae Teijsm. & Binn.  
 American callicarpa = Callicarpa americana L.  
 amor de hombre = Verbena tenuisecta Briq.  
 amor de hombre = Verbena tenuisecta Briq.  
 amu-ati = Avicennia africana P. Beauv.  
 amu-tsi = Avicennia africana P. Beauv.  
 ananse dökono = Lantana Camara L.  
 ananse dua = Lantana Camara L.  
 ananse kono = Lantana Mearnsii Moldenke  
 ananu kōmi = Lantana Camara L., L. Mearnsii Moldenke  
 ananu kōn-tsho = Lantana Camara L., L. Mearnsii Moldenke  
 \*andarèse = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 andofiti = Vitex micrantha Gürke  
 angalem = Vitex Doniana Sweet  
 ángel = Aloysia ligustrina (Lag.) Small  
 angkasa-angkasa = Stachytarpheta jamaicensis (L.) Vahl  
 angma-tsho = Avicennia africana P. Beauv.  
 ankasa = Stachytarpheta jamaicensis (L.) Vahl  
 \*anobrang = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 antelopé's garden egg = Vitex rivularis Gürke  
 \*acepaloelan hahoela = Clerodendrum Rumphianum De Vriese  
 api-api = Avicennia alba Blume, \*A. marina var. Rumphiana  
 (H. Hallier) Bakh.  
 api-api putik = Avicennia marina (Forsk.) Vierh.

- apokotja = Vitex compressa Turcz.  
 aporó = Clerodendrum polycephalum J. G. Baker  
 \*appel = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*aragáu = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 aranga = Vitex Doniana Sweet, V. grandifolia Gürke  
 \*arbre à la migraine = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*arbre de la migraine = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*argáu = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 arisgo = Duranta repens L.  
 ariya = Clerodendrum inerme (L.) Gaertn.  
 \*arni = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*arnrai = Vitex quinata (Lour.) F. N. Will.  
 asokoro = Avicennia africana P. Beauv.  
 asokpolo = Avicennia africana P. Beauv.  
 asopro = Avicennia africana P. Beauv.  
 asukuru = Avicennia africana P. Beauv.  
 ata-nunung = Avicennia africana P. Beauv.  
 atiaci = Lippia Hoehnei Moldenke  
 \*ayam-ayam = Clerodendrum minahassae Teijsm. & Binn.  
 ayeti = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 \*babon = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 bacatón = Lippia Pringlei Briq.  
 badi = Clerodendrum barba-felis H. Hallier  
 baéh zitâng = Clerodendrum paniculatum L.  
 \*bagalbak = Clerodendrum minahassae Teijsm. & Binn.  
 \*bagáuak = Clerodendrum minahassae Teijsm. & Binn.  
 \*bagáuak-itím = Clerodendrum minahassae Teijsm. & Binn.  
 \*bagáuak-na-puti = Clerodendrum minahassae Teijsm. & Binn.  
 Nahama tea = Lantana Camara L.  
 bahé = Lippia adoënsis Hochst.  
 bahé-bahé = Lippia adoënsis Hochst.  
 \*bakarcha = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*bakóbak = Clerodendrum minahassae Teijsm. & Binn.  
 bakoróné = Clerodendrum Buchholzii Gürke  
 ba-kudu-ne = Vitex barbata Planch., V. chrysocarpa Planch.  
 \*balabi = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 balamagnian kan = Vitex chrysocarpa Planch.  
 balsamo = Citharexylum fruticosum L.  
 balunakuta = Stachytarpheta mutabilis (Jacq.) Vahl  
 \*bañgana = Gmelina elliptica J. E. Sm.  
 bartanucha = Verbena pumila Rydb.  
 \*basal = Vitex quinata (Lour.) F. N. Will.  
 bastard vervain = Stachytarpheta jamaicensis (L.) Vahl  
 batayáqui = Lippia Pringlei Briq.  
 beauty-berry = Callicarpa americana L.  
 \*bëbuas = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*bëbuat = Premna corymbosa (Burm. f.) Rottl. & Willd.



- bee blossom = Aloysia ligustrina var. Schulzii (Standl.) Moldenke
- bee brush = Aloysia ligustrina (Lag.) Small
- \*beech = Gmelina Leichhardtii (F. Muell.) F. Muell.
- bejuco de peine mico = Aegiphila elata Sw.
- Bellaire Verbena = Verbena Teasii Moldenke
- \*bĕlongeh = Gmelina elliptica J. E. Sm.
- benturosa morada = Lantana trifolia L.
- bercul = Verbena menthaefolia Benth.
- Bermudian mulberry = Callicarpa americana L.
- \*bhuijam = Pygmaeopremna herbacea (Roxb.) Moldenke
- \*bhumijambu = Pygmaeopremna herbacea (Roxb.) Moldenke
- \*bhūmi-jambūka = Pygmaeopremna herbacea (Roxb.) Moldenke
- \*bhūt-bhirari = Premna corymbosa (Burm. f.) Rottl. & Willd.
- bichicho = Verbena crithmifolia Gill. & Hook.
- bilankuru fida = Premna hispida Benth.
- blacktree = Avicennia nitida Jacq.
- blackwood = Avicennia nitida Jacq.
- bleeding heart = Clerodendrum Thomsonae Balf. f.
- blue plumeria = Duranta repens L.
- blue rats tail = Stachytarpheta urticaefolia (Salisb.) Sims
- Blue Sentinel Verbena = Verbena hybrida Voss
- blue spirea = Caryopteris incana (Thunb.) Miq.
- blue verbena = Verbena hastata L., V. stricta Vent.
- blue vervain = Verbena Blanchardi Moldenke, V. Engelmannii Moldenke, V. Halei Small, V. stricta Vent.
- boardjo = Avicennia africana P. Beauv.
- \*Bocksblatt = Premna corymbosa (Burm. f.) Rottl. & Willd.
- \*boelangan = Gmelina asiatica var. villosa Bakh.
- \*boenato = Clerodendrum minahassae Teijsm. & Binn.
- boenga-in tah = Lantana Camara var. aculeata (L.) Moldenke
- \*boenga panggil = Clerodendrum Rumphianum De Vriese
- \*boenga pluim = Clerodendrum Rumphianum De Vriese
- \*boenga poean = Clerodendrum Rumphianum De Vriese
- \*boengis = Vitex quinata (Lour.) F. N. Will.
- boerta-boerta = Clerodendrum adenophysum H. Hallier
- boesie droifi = Clerodendrum aculeatum (L.) Schlecht.
- \*boewah kerandjang = Gmelina asiatica var. villosa Bakh.
- bofuluk = Vitex grandifolia Gürke
- \*bohol = Gmelina elliptica J. E. Sm.
- \*bois à cōtelettes = Citharexylum B. Juss.
- \*bois cotelet = Citharexylum B. Juss.
- \*bois de bouc = Premna corymbosa (Burm. f.) Rottl. & Willd.
- \*bois de guitare = Citharexylum B. Juss.
- \*bois sureau sauvage = Premna corymbosa (Burm. f.) Rottl. & Willd.
- \*bokkeblad = Premna corymbosa (Burm. f.) Rottl. & Willd.
- bok wat tan = Callicarpa longissima (Hemsl.) Merr.
- bollo limpio = Aegiphila puberulenta Moldenke

- \*boñogon = Viticipremna philippinensis (Turcz.) H. J. Lam  
 borom-borom = Lippia adoensis Hochst.  
 boschkalebas = Vitex compressa Turcz.  
 bracted vervain = Verbena bracteata Lag. & Rodr.  
 Brazilian lantana = Lantana fucata Lindl.  
 Brazilian tea = Stachytarpheta jamaicensis (L.) Vahl  
 broedae nahatti = Clerodendrum Thomsonae Balf. f.  
 buë = Avicennia africana P. Beauv.  
 buë-dintë = Avicennia africana P. Beauv.  
 buji = Vitex simplicifolia Oliv.  
 \*bulang = Gmelina elliptica J. E. Sm.  
 \*bulang gajah = Gmelina elliptica J. E. Sm.  
 \*bulang hutan = Gmelina elliptica J. E. Sm.  
 \*bulang kěchil = Gmelina elliptica J. E. Sm.  
 \*bulbuol = Gmelina elliptica J. E. Sm.  
 bummehi = Vitex simplicifolia Oliv.  
 bummeji = Vitex simplicifolia Oliv.  
 bummere = Vitex simplicifolia Oliv.  
 \*bunalun-babay = Avicennia marina var. Rumphiana (H. Hallier) Bakh.  
 bunch-berry = Lantana horrida H.B.K.  
 \*bunga kěrtas = Sphenodesme pentandra Jack  
 \*bunglas = Tectona philippinensis Benth.  
 Burnett's Scarlet Verbena = Verbena hybrida Voss  
 burzun = Vitex Doniana Sweet  
 buttonweed = Phyla nodiflora var. reptans (H.B.K.) Moldenke  
 buwe = Avicennia africana P. Beauv.  
 cabará-caá = Lantana Camara L., L. montevidensis (Spreng.) Briq.  
 cabradora simarona = Aloysia macrostachya (Torr.) Moldenke  
 café cimarrón = Aegiphila monstrosa Moldenke  
 calico bush = Lantana horrida H.B.K.  
 camará = Lantana montevidensis (Spreng.) Briq.  
 camaradinha = Verbena phlogiflora Cham.  
 camara faux thé = Lippia Pseudo-thea (A. St. Hil.) Schau.  
 camará roseo = Lantana fucata Lindl.  
 cambará = Lantana Chamissonis (D. Dietr.) Benth., L. tiliae-folia Cham.  
 canahuite = Citharexylum hexangulare Greenm.  
 capa-blanca = Petitia domingensis Jacq.  
 capa rosa = Callicarpa ampla Schau.  
 capa savannah = Petitia domingensis Jacq.  
 captao do mato = Lippia Pseudo-thea (A. St. Hil.) Schau.  
 \*caragra = Lippia oxyphyllaria (Donn. Sm.) Standl.  
 cariaquito = Lantana Moritziana Otto & Dietr.  
 cariaquito blanco = Lantana achyranthifolia Desf.  
 carrioquito = Lantana Camara L.  
 Carter's Dwarf Coerulea Verbena = Verbena hybrida Voss  
 Carter's Dwarf Compact Verbena = Verbena hybrida Voss

- Carter's Holborn Mammoth Verbena = Verbena hybrida Voss  
 carvoeiro = Citharexylum myrianthum Cham.  
 cateicillo = Citharexylum caudatum L.  
 cawuira = Aegiphila racemosa Vell.  
 cedron = Aloysia ligustrina (Lag.) Small, A. triphylla  
 (L'Hér.) Britton, A. virgata (Ruíz & Pav.) A. L. Juss.  
 Ceres Verbena = Verbena Teasii Moldenke  
 chaak tsai shue = Callicarpa rubella Lindl.  
 cha de pedreste = Lippia Pseudo-thea (A. St. Hil.) Schau.  
 \*chah leud = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*chámári = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 chaste-trees = Vitex Tourn.  
 chau pin tung = Clerodendrum fragrans var. pleniflorum  
 Schau.  
 chau shi mut li = Clerodendrum Bungei Steud.  
 chène calebassic = Petitia domingensis Jacq.  
 chicharra caopi = Aloysia virgata (Ruíz & Pav.) A. L. Juss.  
 chile pájaro = Citharexylum brachyanthum (A. Gray) A. Gray  
 chiligua = Lippia cardiostegia Benth.  
 chilillo = Stachytarpheta angustifolia (Mill.) Vahl  
 Chinese beardwort = Caryopteris incana (Thunb.) Miq.  
 Chinese-hats = Holmskioldia sanguinea Retz.  
 chingari = Clerodendrum indicum (L.) Kuntze  
 chinkaro = Lantana hispida H.B.K.  
 chinquillo = Neosparton ephedroides Griseb.  
 chiploque = Aegiphila falcata Donn. Sm.  
 chisnan = Duranta triacantha A. L. Juss.  
 chuul = Citharexylum Donnell-Smithii Greenm.  
 cidrera = Lippia alba (Mill.) N. E. Br.  
 cinzeiro = Aegiphila Sellowiana Cham.  
 \*clérodendron = Clerodendrum Burm.  
 comasi = Stachytarpheta urticaefolia (Salisb.) Sims  
 commune mulberry = Callicarpa americana L.  
 common deep orange lantana = Lantana Camara L.  
 common lantana = Lantana Camara var. aculeata (L.) Moldenke,  
L. Camara var. mista (L.) L. H. Bailey  
 common lilac lantana = Lantana tiliaefolia Cham.  
 common verbena = Verbena bipinnatifida Nutt., V. hybrida  
 Voss  
 common vervain = Verbena Abramsi Moldenke, V. lasiostachys  
 Link  
 common white vervain = Verbena urticifolia L.  
 confite = Lantana velutina Mart. & Gal.  
 confite blanca = Lantana velutina Mart. & Gal.  
 confituria amarilla = Lantana glandulosissima Hayek  
 confiturilla = Lantana horrida H.B.K.  
 confiturilla amarilla = Lantana glandulosissima Hayek  
 confiturilla blanca = Lantana velutina Mart. & Gal.  
 coralillo rosado = Duranta repens L.

- corocillo = Stachytarpheta cayennensis (L. C. Rich.) Vahl  
 \*cotelet = Citharexylum B. Juss.  
 \*cotelets = Citharexylum B. Juss.  
 \*cotelet tomenteux = Citharexylum Kunthianum Moldenke  
 cuul = Citharexylum Donnell-Smithii Greenm.  
 \*dabtan = Vitex trifolia var. bicolor (Willd.) Moldenke  
 dadiangas = Gmelina elliptica J. E. Sm.  
 dagba = Clerodendrum volubile P. Beauv.  
 Dakota verbena = Verbena bipinnatifida Nutt.  
 \*dalipapa = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 dame cubre galanos = Lantana Camara L.  
 \*danasi = Geunsia Cumingiana (Schau.) Rolfe  
 \*danata = Clerodendrum minahassae Teijsm. & Binn.  
 dancundi = Vitex trifolia var. simplicifolia Cham.  
 \*danglá = Vitex trifolia var. bicolor (Willd.) Moldenke  
 \*dañgúla = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 \*danhañgas = Gmelina elliptica J. E. Sm.  
 danna = Citharexylum macradenium Greenm.  
 \*daoen kambina = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*dauhon lagondie = Vitex trifolia var. bicolor (Willd.) Moldenke  
 d'dap mira = Hosea Lobbia (C. B. Clarke) Ridl.  
 dengö = Premna quadrifolia Schum. & Thonn.  
 \*der surinamsche Thé = Lantana Camara L.  
 devil's coach whip = Stachytarpheta jamaicensis (L.) Vahl  
 \*didigkalin = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 \*didipapak = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 dínchi = Vitex Doniana Sweet  
 'dinya = Vitex Doniana Sweet  
 'dinyar biri = Vitex simplicifolia Oliv.  
 diohuli = Lippia adoënsis Hochst.  
 djin-akwa = Vitex micrantha Gürke  
 drap d'or = Lantana urticaefolia Mill.  
 droceria = Lippia umbellata Cav.  
 'dumniya = Vitex Doniana Sweet  
 \*duñgúla = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 'dunya = Vitex Doniana Sweet  
 'duryar biri = Vitex simplicifolia Oliv.  
 durancia = Duranta repens L.  
 duranta = Duranta repens L.  
 duranta de Plumier = Duranta repens L.  
 Dwarf Coerulea Verbena = Verbena hybrida Voss  
 Dwarf Compact Verbena = Verbena hybrida Voss  
 dwarf lantana = Lantana Camara var. hybrida (Neubert) Moldenke  
 dyob = Vitex Doniana Sweet  
 \*ear-stud climber = Sphenodesme pentandra Jack  
 ébenote = Clerodendrum volubile P. Beauv.  
 ébisaa = Vitex Doniana Sweet, V. grandifolia Gürke



- ě-bure = Avicennia africana P. Beauv.  
 ede = Avicennia africana P. Beauv.  
 edin = Vitex Doniana Sweet  
 efinrin-gogara = Lippia adoënsis Hochst.  
 egwa = Clerodendrum Thomsonae Balf. f.  
 ehrodo = Avicennia africana P. Beauv.  
 ěji = Vitex Doniana Sweet  
 ekĕnyieya = Clerodendrum splendens G. Don  
 ele-ele = Vitex Doniana Sweet  
 eleku = Lantana Mearnsii Moldenke  
 Elis's duranta = Duranta repens L.  
 English sage bush = Lantana Camara var. mista (L.) L. H. Bailey  
 espina de pescado = Junellia seriphioides (Gill. & Hook.) Moldenke  
 espino = Clerodendrum Pittieri Moldenke  
 ěwŏn adĕlĕ = Lantana Camara L.  
 ěwŏn agogo = Lantana Camara L.  
 fafa-hinei = Clerodendrum Buchholzii Gürke  
 fafe = Clerodendrum Buchholzii Gürke  
 false vervain = Verbena Blanchardi Moldenke  
 fasau = Lippia adoënsis Hochst.  
 \*faux thé = Lippia Pseudo-thea (A. St. Hil.) Schau.  
 feremŏmi = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 fetfetti = Lippia adoënsis Hochst.  
 fetorŏ-ey = Aegiphila chrysantha Hayek  
 feve = Vitex micrantha Gürke  
 fevei = Vitex micrantha Gürke, V. oxycuspis J. G. Baker  
 fiddlewood = Citharexylum B. Juss.  
 \*fiddle-wood = Citharexylum B. Juss.  
 \*fiddlewood tree = Citharexylum B. Juss.  
 \*fidelle-wood = Citharexylum B. Juss.  
 filigrana = Lantana Camara L., L. montevidensis (Spreng.) Briq.  
 fiolintraee = Citharexylum B. Juss.  
 fioltraed = Citharexylum B. Juss.  
 firi-fore = Clerodendrum capitatum (Willd.) Schum. & Thonn.,  
C. umbellatum Poir.  
 flor de chichalague = Callicarpa acuminata H.B.K.  
 flor de la rosa muerte = Clerodendrum Bungei Steud.  
 flor de sangre = Lantana Moritziana Otto & Dietr.  
 flowering verbena = Verbena canadensis (L.) Britton  
 fŏ = Vitex Doniana Sweet, V. grandifolia Gürke  
 fog fruit = Phyla lanceolata (Michx.) Greene, P. nodiflora (L.) Greene  
 fog-fruit = Phyla incisa Small  
 for chai tsai = Callicarpa formosana Rolfe  
 forget-me-not = Duranta repens var. alba (Masters) L. H. Bailey

- Fordhook Famous Verbena = Verbena hybrida Voss  
 fð-ti = Vitex Doniana Sweet, V. grandifolia Gürke  
 fox-fruit = Phyla lanceolata (Michx.) Greene  
 fð yi = Vitex Doniana Sweet, V. grandifolia Gürke  
 fð yi-ti = Vitex Doniana Sweet, V. grandifolia Gürke  
 fðyi-tsho = Vitex Doniana Sweet, V. grandifolia Gürke  
 fragrant clerodendron = Clerodendrum Bungei Steud.  
 French mulberry = Callicarpa americana var. lactea F. J. Muller  
 frog fruit = Phyla incisa Small, P. nodiflora (L.) Greene  
 frog-fruit = Phyla Lour.  
 fruta de iguana = Duranta repens L.  
 fruta de macaco = Citharexylum myrianthum Cham.  
 fruta de paloma = Duranta repens var. canescens Moldenke  
 frutilla = Lantana scorta Moldenke  
 frutilla blanca = Lantana achyranthifolia Desf.  
 frutillo = Lantana achyranthifolia Desf.  
 fumömi = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 fumaria = Verbena tenuisecta Briq.  
 furu-fure = Clerodendrum capitatum (Willd.) Schum. & Thonn.,  
C. umbellatum Poir.  
 \*gagayug = Geunsia Cumingiana (Schau.) Rolfe  
 galbihi = Vitex Doniana Sweet  
 galbije = Vitex Doniana Sweet  
 \*galipápa = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 gane ba = Lippia adoënsis Hochst.  
 \*ganiári = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*ganikárika = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*ganniri = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 garigari = Avicennia africana P. Beauv.  
 gbšlěti = Avicennia africana P. Beauv.  
 geakoi = Clerodendrum splendens G. Don  
 \*Geigenholz = Citharexylum B. Juss.  
 \*Geigenholzbaum = Citharexylum B. Juss.  
 gerbão = Stachytarpheta cayennensis (L. C. Rich.) Vahl  
 gervão = Stachytarpheta australis Moldenke, S. Maximiliani  
 Schau., S. polyura Schau.  
 \*gervaô = Stachytarpheta cayennensis (L. C. Rich.) Vahl  
 \*ghebu-nelli = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 Giant Pink Verbena = Verbena hybrida Voss  
 gidjiko = Vitex Doniana Sweet  
 gigatraed = Citharexylum B. Juss.  
 gigetraee = Citharexylum B. Juss.  
 \*gineri = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 globito = Priva lappulacea (L.) Pers.  
 \*glorybower = Clerodendrum Burm.  
 \*glory tree = Clerodendrum Burm.  
 godon kada = Phyla nodiflora (L.) Greene  
 God's coconut = Vitex grandifolia Gürke

- \*goemira = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*gofasa = Vitex quinata (Lour.) F. N. Willd.  
 golden-dewdrop = Duranta L.  
 golden dewdrops = Duranta repens L.  
 goo yis hai = Clerodendrum inerme (L.) Gaertn.  
 grigri = Avicennia africana P. Beauv.  
 guarataro = Vitex capitata Vahl  
 guilel guéri = Lippia adoënsis Hochst.  
 \*guitar wood = Citharexylum B. Juss.  
 gulinda = Clerodendrum inerme (L.) Gaertn.  
 gumhar = Gmelina arborea Roxb.  
 gyengya aforowa = Premna quadrifolia Schum. & Thonn.  
 hai ngan = Callicarpa cana L.  
 hairy lantana = Lantana Camara var. mista (L.) L. H. Bailey  
 hairy verbena = Verbena pumila Rydb.  
 \*hamuráun-asu = Viticipremna philippinensis (Turcz.) H. J. Lam  
 harlequin glorybower = Clerodendrum trichotomum Thunb.  
 harlequin lantana = Lantana Camara var. varia (Kuntze) Moldenke  
 hayariballi = Petrea bracteata Steud.  
 \*headache tree = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 hemptree = Vitex Tourn.  
 herba Luisa = Aloysia triphylla (L'Hér.) Britton  
 herb o' grace = Verbena officinalis L.  
 herimena-kola = Phyla nodiflora (L.) Greene  
 herva cidreira = Aloysia triphylla (L'Hér.) Britton  
 herva de picapáo = Amasonia campestris (Aubl.) Moldenke  
 heul = Vitex Doniana Sweet  
 hierba de Christo = Lantana horrida H.B.K.  
 hierba de hormiga = Phyla nodiflora var. canescens (H.B.K.) Moldenke, P. nodiflora var. reptans (H.B.K.) Moldenke  
 \*hierba del incordio = Verbena tenuisecta Briq.  
 hierba del negro = Lippia alba (Mill.) N. E. Br.  
 hierba dulce = Lippia graveolens H.B.K.  
 hierba negra = Lippia alba (Mill.) N. E. Br.  
 hoar vervain = Verbena stricta Vent.  
 hoary verbena = Verbena moechina Moldenke, V. stricta Vent.  
 hoary vervain = Verbena stricta f. albiflora Wadmond  
 hoi = Verbena bonariensis L.  
 Holborn Mammoth Verbena = Verbena hybrida Voss  
 honawai = Clerodendrum umbellatum Poir.  
 honey-mangrove = Avicennia nitida Jacq.  
 huhw wali = Vitex mollis H.B.K.  
 \*hukre-mara = Clerodendrum viscosum var. nilagiricum H. Hallier  
 huniyan = Pygmaeopremna humilis Merr., \*P. herbacea (Roxb.) Moldenke  
 hunter-does-not-eat-it = Lantana Camara L.

- hunters' scent = Lantana Mearnsii Moldenke  
 hunters' spice = Lantana Mearnsii Moldenke  
 hwana wulie = Clerodendrum umbellatum Poir.  
 ibang = Vitex Fosteri C. H. Wright  
 idjōli = Vitex simplicifolia Oliv.  
 \*igang = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 iguanero = Avicennia nitida Jacq.  
 ilán-ilán = Aloysia Looseri Moldenke  
 ilang-ilang = Aloysia Looseri Moldenke  
 illiri = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 \*incdic = Vitex rapinoides Guillaum.  
 \*indjaro = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 ingari = Vitex Doniana Sweet, V. grandifolia Gürke  
 ink tree = Vitex Doniana Sweet, V. grandifolia Gürke  
 \*inrelo = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 insuo-koto = Vitex chrysocarpa Planch.  
 ìrù alángba = Stachytarpheta jamaicensis (L.) Vahl  
 ìrù amure = Stachytarpheta jamaicensis (L.) Vahl  
 ishē-dùn = Clerodendrum violaceum Gürke  
 Italian verbena = Verbena tenera var. Maonetti Regel  
 iye = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 jaja-guli = Avicennia africana P. Beauv.  
 jampang laki = Vitex flava Ridl.  
 jaqueca = Verbena ephedroides Cham.  
 jawa verbena = Stachytarpheta cayennensis (L. C. Rich.)  
 Vahl  
 \*ka-aunggyi = Clerodendrum infortunatum L.  
 ka-bure = Avicennia africana P. Beauv.  
 kadamanaku = Vitex altissima L. f.  
 \*kada met = Pygmaepremna herbacea (Roxb.) Moldenke  
 kadduno-chchi = Vitex leucoxydon L. f.  
 kafī = Premna hispida Benth.  
 kafi = Premna hispida Benth.  
 kaikoa = Premna corymbosa var. sambucina (Wall.) Moldenke  
 kajie = Clerodendrum umbellatum Poir.  
 kajoe boerta-boerta = Clerodendrum adenophyllum H. Hallier  
 \*kajoe sēmoet = Vitex quinata (Lour.) F. N. Will.  
 kaju titi = Gmelina macrophylla Wall.  
 kaju titie = Gmelina macrophylla Wall.  
 kaju tittie = Gmelina macrophylla Wall.  
 kaka kairkau = Stachytarpheta jamaicensis (L.) Vahl  
 kakoli = Clerodendrum inerme (L.) Gaertn.  
 \*kalimantau = Viticipremna philippinensis (Turcz.) H. J. Lam  
 \*kalipápa = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 ka liu tsoi = Vitex quinata (Lour.) F. N. Will.  
 \*kalúñgun = Gmelina elliptica J. E. Sm.  
 \*kamalan = Viticipremna philippinensis (Turcz.) H. J. Lam  
 kamiyo = Verbena delticola Small, V. Goodingii var. nepetifolia Tidestr.



- \*kananga woeba = Gmelina asiatica var. villosa Bakh.  
 \*kang mao = Gmelina elliptica J. E. Sm.  
 kani ba = Lippia adoënsis Hochst.  
 kapni = Holmskioldia sanguinea Retz.  
 \*karnika = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 karuana = Premna foetida Reinw.  
 kasaroballi = Citharexylum macrophyllum Poir.  
 \*kasopāngil-gubat = Clerodendrum minahassae Teijsm. & Binn.  
 kataboawin = Vitex rivularis Gürke  
 katu-hinguru = Lantana sp., L. Camara var. aculeata (L.) Moldenke  
 kawiyo = Verbena pumila Rydb.  
 \*kemandiāng = Gmelina asiatica var. villosa Bakh.  
 kena-gele-yago = Stachytarpheta urticaefolia (Salisb.) Sims  
 kenhenda = Clerodendrum serratum (L.) Moon  
 \*kētilēng = Vitex quinata (Lour.) F. N. Will.  
 \*ki bangbara = Vitex quinata (Lour.) F. N. Will.  
 kimbar mahalba = Lantana Mearnsii Moldenke  
 kimbo = Lippia adoënsis Hochst.  
 kingkilli ba = Lippia adoënsis Hochst.  
 \*ki pahang = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*ki seungit = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*koefo-koefo = Vitex quinata (Lour.) F. N. Will.  
 \*koetilēng = Vitex quinata (Lour.) F. N. Will.  
 \*kojoe semoet = Vitex quinata (Lour.) F. N. Will.  
 koli = Clerodendrum inerme (L.) Gaertn.  
 ko ling ngio = Vitex Negundo L.  
 \*kalipāpa = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 koorsoe wiwierie = Lantana Camara L.  
 korlejiga = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 koro koronta = Vitex Fosteri C. H. Wright  
 koto = Vitex Doniana Sweet  
 kpar-seh = Vitex oxycuspis J. G. Baker, V. rufa A. Chev.  
 kua = Premna foetida Reinw.  
 kuabalon = Premna corymbosa var. sambucina (Wall.) Moldenke  
 kudu = Vitex Doniana Sweet  
 kukpweli = Vitex Doniana Sweet, V. grandifolia Gürke  
 \*ku-ku = Clerodendrum minahassae Teijsm. & Binn.  
 kukui = Vitex Doniana Sweet, V. grandifolia Gürke  
 \*kulipāpa = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 kuma-tsuzura = Verbena officinalis L.  
 kumbil = Gmelina philippensis Cham.  
 kuru = Vitex barbata Planch., V. chrysocarpa Planch., V. simplicifolia Oliv.  
 kurugh = Vitex Doniana Sweet  
 kuru kudulé = Vitex madiensis Oliv.  
 kutu-fingo = Vitex barbata Planch.  
 kwai tim foh = Clerodendrum canescens Wall.  
 kyet yo = Vitex pinnata L.

- \*laban = Vitex quinata (Lour.) F. N. Will.  
 la ché rat = Stachytarpheta cayennensis (L. C. Rich.) Vahl  
 lagoon tree = Avicennia africana P. Beauv.  
 lagrima de Cristo = Clerodendrum Thomsonae var. delectum Hort.  
 \*lagundi = Vitex trifolia var. bicolor (Willd.) Moldenke  
 lagunding dagat = Vitex trifolia var. simplicifolia Cham.  
 lagunding gapang = Vitex trifolia var. simplicifolia Cham.  
 lala tea = Vitex trifolia var. bicolor (Willd.) Moldenke  
 lampaya = Lampaya medicinalis R. A. Phil.  
 lampayo = Lampaya medicinalis R. A. Phil.  
 lantan = Lantana Camara var. aculeata (L.) Moldenke  
 lantaná = Lantana Camara var. aculeata (L.) Moldenke, L. Camara var. mista (L.) L. H. Bailey, L. horrida H.B.K., L. insularis Moldenke, L. montevidensis (Spreng.) Briq., L. scorta Moldenke, L. trifolia L.  
 lantanna = Lantana Camara var. flava (Medic.) Moldenke, L. Camara var. hybrida (Neubert) Moldenke, L. Camara var. mutabilis (Hook.) L. H. Bailey, L. Camara var. nivea (Vent.) L. H. Bailey, L. Camara var. sanguinea (Medic.) L. H. Bailey, L. Camara var. varia (Kuntze) Moldenke  
 large-bracted vervain = "Verbena bipinnatifida Nutt."  
 [error for V. bracteata Lag. & Rodr.]  
 large-bracted vervaine = Verbena bracteata Lag. & Rodr.  
 large-bracted vervane = Verbena bracteata Lag. & Rodr.  
 large flowered verbena = Verbena canadensis (L.) Britton  
 large flower verbena = Verbena canadensis (L.) Britton  
 large-leaved vervain = Verbena bracteata Lag. & Rodr.  
 lavender ground-flower = Verbena bracteata Lag. & Rodr.  
 \*layaupán = Geunisia flavida (Elm.) H. J. Lam, G. pentandra (Roxb.) Merr.  
 lazo de amor = Verbena tenuisecta Briq.  
 \*lëban boenga = Vitex quinata (Lour.) F. N. Will.  
 le bois cotelet = Citharexylum B. Juss.  
 le bois de guitard = Citharexylum B. Juss.  
 le cotelet = Citharexylum B. Juss.  
 \*Leierholz = Citharexylum B. Juss.  
 \*lëilëm in asoe = Clerodendrum minahassae Teijsm. & Binn.  
 \*lëilëm in taloen = Clerodendrum minahassae Teijsm. & Binn.  
 leja gado = Citharexylum macrophyllum Poir.  
 \*lentang ruas = Sphenodesme pentandra Jack  
 liane rude = Petrea Kohautiana Presl  
 lilac lantana = Lantana Camara var. aculeata (L.) Moldenke, L. Camara var. mutabilis (Hook.) L. H. Bailey  
 \*lîñgei = Vitex trifolia var. bicolor (Willd.) Moldenke  
 \*lîñgo-lîñgo = Viticipremna philippinensis (Turcz.) H. J. Lam  
 \*linolîno = Viticipremna philippinensis (Turcz.) H. J. Lam  
 \*lîño-lîño = Viticipremna philippinensis (Turcz.) H. J. Lam  
 lizard's tail = Stachytarpheta jamaicensis (L.) Vahl

- \*loewarang = Gmelina asiatica var. villosa Bakh.  
 lo hai ngan = Callicarpa cana L.  
 lo kop ngan = Callicarpa longifolia Lam.  
 \*loloet = Clerodendrum Rumphianum De Vriese  
 long-fruited duranta = Duranta Mutisii L. f.  
 long-spiked fiddle-wood = Citharexylum caudatum L.  
 \*Loosbaum = Clerodendrum Burm.  
 \*Losbaum = Clerodendrum Burm.  
 \*lotboom = Clerodendrum Burm.  
 lubei = Vitex Doniana Sweet, V. grandifolia Gürke  
 lugbei = Vitex Doniana Sweet, V. grandifolia Gürke  
 lung nga ts'o = Verbena officinalis L.  
 luwu-wului = Vitex Doniana Sweet, V. grandifolia Gürke  
 lyre = Lantana Camara var. mista (L.) L. H. Bailey  
 madan polan = Clerodendrum fragrans var. pleniflorum Schau.  
 Madge Roberts Verbena = Verbena Teasii Moldenke  
 \*madolau = Geunsia flavida (Elm.) H. J. Lam  
 \*magilak = Geunsia Cumingiana (Schau.) Rolfe  
 \*magomo = Viticipremna philippinensis (Turcz.) H. J. Lam  
 makwaiwa = Vitex Doniana Sweet  
 \*malabulaon = Symphorema luzonicum (Blanco) Fern.-Will.  
 \*malaígang = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 \*mala-moláve = Viticipremna philippinensis (Turcz.) H. J. Lam.  
 \*malamuláuin = Viticipremna philippinensis (Turcz.) H. J. Lam  
 \*malapañgit = Tectona philippinensis Benth.  
 \*malasiad = Symphorema luzonicum (Blanco) Fern.-Will.  
 \*malasiag = Symphorema luzonicum (Blanco) Fern.-Will.  
 \*malaskog = Symphorema luzonicum (Blanco) Fern.-Will.  
 \*malatabáko = Geunsia Cumingiana (Schau.) Rolfe  
 \*maláuing-àsò = Viticipremna philippinensis (Turcz.) H. J. Lam  
 \*mala-usá = Viticipremna philippinensis (Turcz.) H. J. Lam  
 male = Clerodendrum Buchholzii Gürke  
 \*malet = Caryopteris odorata (Hamilton) B. L. Robinson  
 malmequer do mato = Lippia alba (Mill.) N. E. B.  
 \*malvena = Lippia Recolletae Morong  
 \*mamahit = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 \*mamali = Vitex quinata (Lour.) F. N. Will.  
 mamath = Verbena hybrida Voss  
 mameira = Vitex flavens H.B.K.  
 Mammoth Rose Queen Verbena = Verbena hybrida Voss  
 Mammoth Scarlet Queen Verbena = Verbena hybrida Voss  
 Mammoth Snow Queen Verbena = Verbena hybrida Voss  
 \*manabáko = Geunsia Cumingiana (Schau.) Rolfe  
 mandarin's-hat = Holmskioldia sanguinea Retz.  
 man kaka kakkan = Stachytarpheta cayennensis (L. C. Rich.) Vahl

- manprasara = Aegiphila laeta H.B.K., A. laevis (Aubl.) Gmel.  
manzanillo = Lippia integrifolia (Griseb.) Hieron.  
ma pin ts'o = Verbena officinalis L.  
margarita morada = Verbena dissecta Willd., \*V. laciniata (L.) Briq.  
margarita punzó = Verbena incisa Hook.  
\*masarwèt = Vitex quinata (Lour.) F. N. Will.  
mashayi = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
máta negro = Junellia tridens (Lag.) Moldenke  
matorro moro = Junellia Lorentzii (Niederlein) Moldenke  
maukakarawa = Stachytarpheta urticaefolia (Salisb.) Sims  
mbalhat = Lippia adoënsis Hochst.  
mbombor = Lippia adoënsis Hochst.  
mbougand = Avicennia africana P. Beauv.  
mejorana = Lantana macropoda Torr.  
\*midí-gass = Premna corymbosa (Burm. f.) Rottl. & Willd.  
misiwahchil = Holmskioldia sanguinea Retz.  
Miss Willmott Verbena = Verbena hybrida Voss  
misteriosa olorosa = Clerodendrum fragrans var. pleniflorum Schau.  
mofalu = Stachytarpheta urticaefolia (Salisb.) Sims  
\*moháni = Caryopteris odorata (Hamilton) B. L. Robinson  
mokaucarau kedra = Stachytarpheta urticaefolia (Salisb.) Sims  
molauin = Vitex parviflora A. L. Juss.  
molave = Vitex parviflora A. L. Juss.  
\*mongpong = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
\*moni = Caryopteris odorata (Hamilton) B. L. Robinson  
monks-pepper-tree = Vitex Tourn.  
moradia = Verbena delticola Small  
moradilla = Verbena ciliata Benth., V. elegans var. asperata Perry  
mosongo-songo = Clerodendrum Buchholzii Gürke  
\*moss verbena = Verbena laciniata (L.) Briq.  
motofu = Stachytarpheta urticaefolia (Salisb.) Sims  
mouse's bowstring = Stachytarpheta jamaicensis (L.) Vahl  
\*muláuin = Viticipremna philippinensis (Turcz.) H. J. Lam  
\*muláuing-báging = Symphorema luzonicum (Blanco) Ferb.-Will.  
mullen-leafed vervain = Verbena stricta Vent.  
\*munnay = Premna corymbosa (Burm. f.) Rottl. & Willd.  
\*múney kiray = Premna corymbosa (Burm. f.) Rottl. & Willd.  
\*munni-vayr = Premna corymbosa (Burm. f.) Rottl. & Willd.  
Mutis's durante = Duranta Mutisii L. f.  
mu-tswani = Lippia scabra Hochst.  
mutuku-tsho = Avicennia africana P. Beauv.  
muyuyu del monté = Citharexylum quitense Spreng.  
myrrh tree = Vitex Agnus-castus L.  
\*naga = Premna corymbosa var. obtusifolia (R. Br.) Fletcher  
\*nago = Geunsia Cumingiana (Schau.) Rolfe



- nahuire = Aloysia nahuire Gentry & Moldenke  
 nambalerra = Vitex simplicifolia Oliv.  
 narenga = Vitex Doniana Sweet, V. grandifolia Gürke  
 \*narvel = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 Nassau-rose = Clerodendrum fragrans var. pleniflorum Schau.  
 \*nay-mof-si = Vitex rapinoides Guillaum.  
 nebedda = Vitex leucoxydon L. f.  
 negrito = Vitex pyramidata B. L. Robinson  
 \*néla níredu = Pygmaeopremna herbacea (Roxb.) Moldenke  
 nettle leaved vervain = Verbena urticifolia L.  
 nettle-leaved vervain = Verbena Engelmannii Moldenke, V. urticifolia var. leiocarpa Perry & Fernald  
 nettle leaved Virginian vervain = Verbena urticifolia L.  
 ngakawa = Faradaya ovalifolia (A. Gray) Seem.  
 ngalbihi = Vitex Doniana Sweet  
 ngãsu = Lippia adoënsis Hochst.  
 ngãsuru = Lippia adoënsis Hochst.  
 ng chi fung = Vitex Negundo L.  
 ngoh sat na = Verbena officinalis L.  
 ngurunguru = Premna Gaudichaudii Schau.  
 nici = Premna taitensis Schau.  
 nigua = Cornutia obovata Urb.  
 nika = Vitex Negundo L.  
 niña rupá = Aloysia ligustrina (Lag.) Small  
 niue = Vitex quinata (Lour.) F. N. Will.  
 nja-wului = Avicennia africana P. Beauv.  
 nomeoluides = Duranta repens var. alba (Masters) L. H. Bailey  
 no-me-oluides = Duranta repens var. alba (Masters) L. H. Bailey  
 \*ném mêu = Gmelina elliptica J. E. Sm.  
 neunsu = Stachytarpheta jamaicensis (L.) Vahl  
 ñeñu-pichada = Stachytarpheta cayennensis (L. C. Rich.) Vahl  
 nuna del monte = Aloysia ligustrina (Lag.) Small  
 nya = Vitex Doniana Sweet, V. grandifolia Gürke  
 nyamšle-kukwe = Vitex grandifolia Gürke  
 nyarina = Vitex Doniana Sweet, V. grandifolia Gürke  
 nyěkpe = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 nyõna = Lippia adoënsis Hochst.  
 obranmotuam = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 obuban = Vitex Fosteri C. H. Wright  
 õcha koro = Vitex Doniana Sweet  
 odonumon = Avicennia africana P. Beauv.  
 oema koorsoe wiwirie = Lantana Camara var. mista (L.) L. H. Bailey  
 oeroejatoe = Citharexylum macrophyllum Poir.  
 ogboso-tsho = Premna quadrifolia Schum. & Thonn.  
 ogbosu = Premna quadrifolia Schum. & Thonn.  
 ogbun = Avicennia africana P. Beauv.

- ogi = Vitex Fosteri C. H. Wright  
 ogikhimi = Vitex grandifolia Gürke  
 oi = Stachytarpheta jamaicensis (L.) Vahl  
 ojédiballi = Stachytarpheta cayennensis (L. C. Rich.) Vahl  
 okurutu = Vitex grandifolia Gürke  
 old man's shin-bone = Vitex rivularis Gürke  
 òpá para = Stachytarpheta jamaicensis (L.) Vahl  
 opó-èshi = Clerodendrum splendens G. Don  
 orabia = Vitex grandifolia Gürke  
 orajuuela = Citharexylum Berlandieri B. L. Robinson  
 oreganillo = Aloysia ligustrina (Lag.) Small  
 oregano = Lippia alba (Mill.) N. E. Br.  
 orégano = Lippia Berterii Spreng., L. micromera Schau.  
 orégano de burro = Lippia Berterii Spreng.  
 orégano di burro = Lippia affinis Schau.  
 òrì = Vitex Doniana Sweet, V. grandifolia Gürke  
 òrì-ètà = Vitex Fosteri C. H. Wright  
 origanum = Lippia micromera Schau.  
 òrì-nla = Vitex Doniana Sweet  
 òrì-òdàn = Vitex Doniana Sweet  
 oriri = Vitex grandifolia Gürke  
 orozuz de latierra = Phyla scaberrima (A. L. Juss.) Moldenke  
 òtwe-ntòrowa = Vitex rivularis Gürke  
 oviakuku = Clerodendrum Thomsonae Balf. f.  
 ovuruburu = Vitex grandifolia Gürke  
 òwenkundigbon = Vitex grandifolia Gürke  
 Oxford Fink Verbena = Verbena hybrida Voss  
 paak pui ip = Vitex trifolia var. simplicifolia Cham.  
 pagil = Vitex pinnata L.  
 pagoda-flower = Clerodendrum Burm., C. paniculatum L.  
 pak yat hung = Clerodendrum Kaempferi (Jacq.) Sieb.  
 pak yat pak = Clerodendrum fragrans (Vent.) R. Br.  
 palo amarillo = Aloysia ligustrina (Lag.) Small  
 \*palo blanco = Citharexylum Kunthianum Moldenke  
 \*pamagsen = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 pampa oregano = Lippia alba (Mill.) N. E. Br.  
 \*pamulaklakín = Symphorema luzonicum (Blanco) Fern.-Will.  
 \*pananagok = Geunsia flavida (Elm.) H. J. Lam  
 panda = Vitex Stahelii Moldenke  
 pan poregano = Lippia alba (Mill.) N. E. Br.  
 panyerò = Vitex Doniana Sweet  
 panyerò buda = Vitex simplicifolia Oliv.  
 papagaio = Aegiphila Sellowiana Cham.  
 \*paper flower = Sphenodesme pentandra Jack  
 paraguita de China = Holmskioldia sanguinea Retz.  
 parasol-flower = Holmskioldia sanguinea Retz.  
 parwa = Avicennia nitida Jacq.  
 pau de tamanco = Aegiphila Sellowiana Cham.  
 pau de viola = Citharexylum myrianthum Cham.

- pechiche = Vitex gigantea H.B.K.  
 pedrésy = Stachytarpheta Mexiae Moldenke  
 pendola de sierra = Citharexylum caudatum L.  
 pendúla = Citharexylum fruticosum L.  
 pengua = Priva aspera H.B.K.  
 \*péragu = Clerodendrum Burm.  
 \*péragut = Clerodendrum Burm.  
 perajil = Verbena tenuisecta Briq.  
 perennial verbena = Verbena canadensis (L.) Britton  
 pfufulla = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 piedra = Vitex capitata Vahl  
 pigeonberry = Duranta L.  
 pimenteira = Citharexylum myrianthum Cham.  
 pingdang = Clerodendrum paniculatum L.  
 pink verbena = Verbena hybrida Voss, V. pumila Rydb.  
 pink vervain = Verbena pumila Rydb.  
 \*pinna-nelli = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 pipe-tree = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 Plumier's duranta = Duranta repens L.  
 \*pokok agak paya = Teijsmanniodendron pteropodum (Miq.) Bakh.  
 poko kwat tán = Callicarpa macrophylla Vahl  
 poleo = Aloysia barbata (T. S. Brandeg.) Moldenke, Lippia Berterii Schau., L. turbinata f. angustifolia Osten  
 poleo de burro = Aloysia polystachya (Griseb.) Moldenke  
 poleo de Castilla = Aloysia polystachya (Griseb.) Moldenke  
 poleo de Castillo = Aloysia polystachya (Griseb.) Moldenke  
 polinalina = Vitex trifolia var. simplicifolia Cham.  
 \*ponranga = Gmelina asiatica var. villosa Bakh.  
 prickly lantana = Lantana Camara var. aculeata (L.) Moldenke  
 \*puhúng = Gmelina elliptica J. E. Sm.  
 \*pukang mata hari = Gmelina elliptica J. E. Sm.  
 punyo-tsho = Vitex Doniana Sweet, V. grandifolia Gürke  
 Purple Garnet Verbena = Verbena hybrida Voss  
 purple verbena = Verbena bipinnatifida Nutt., V. canadensis (L.) Britton, V. hastata L.  
 purple wreath = Petrea racemosa Nees  
 puta de noche = Clerodendrum ternifolium H.B.K.  
 qarovo = Premna corymbosa var. sambucina (Wall.) Moldenke  
 \*Queensland beech = Gmelina Leichhardtii (F. Muell.) F. Muell.  
 quendereniqua = Vitex pyramidata B. L. Robinson  
 queue de rat = Stachytarpheta jamaicensis (L.) Vahl  
 quillau = Clerodendrum disparifolium Blume  
 ra-bina = Clerodendrum splendens G. Don  
 rat's tail = Stachytarpheta jamaicensis (L.) Vahl  
 rauvula = Premna taitensis var. rimatarensis F. H. Br.  
 red lantana = Lantana Camara var. sanguinea (Medic.) L. H. Bailey  
 red verbena = Verbena hybrida Voss

- remako = Premna corymbosa var. sambucina (Wall.) Moldenke,  
P. foetida Reinw.
- rica-rica = Acantholippia deserticola (R. A. Phil.) Molden-  
ke, A. hastulata Griseb.
- \*rimoewas = Vitex quinata (Lour.) F. N. Will.
- rithoul = Holmskioldia sanguinea Retz.
- rosa blanca = Lantana velutina Mart. & Gal.
- rose glorybower = Clerodendrum Bungei Steud.
- rose verbena = Verbena canadensis (L.) Britton
- rouen = Verbena tenuisecta Briq.
- Rowena Verbena = Verbena Teasii Moldenke
- Ruth Verbena = Verbena Teasii Moldenke
- saa-nunum = Lippia adoënsis Hochst.
- sacha-poleo = Aloysia sp. (Salta)
- sagarai = Vitex trifolia L., \*V. trifolia var. bicolor  
(Willd.) Moldenke
- sah-sah = Vitex micrantha Gürke
- sai fa min = Callicarpa cana L.
- saigun = Tectona grandis L. f.
- sai hong hun = Callicarpa formosana Rolfe
- sai ip lo hai ngan = Callicarpa dichotoma (Lour.) K. Koch
- sai ko din nuang = Premna acuminatissima Merr., P. octoner-  
via Merr. & Metc.
- sai tsio tau = Vitex quinata (Lour.) F. N. Will.
- saivonta = Vitex quinata (Lour.) F. N. Will.
- \*sajor kambing = Premna corymbosa (Burm. f.) Rottl. & Willd.
- saladillo = Avicennia nitida Jacq.
- salvia = Aloysia salviaefolia (Hook. & Arn.) Moldenke, Lip-  
pia alba (Mill.) N. E. Br.
- salvia alta = Lantana velutina Mart. & Gal.
- \*salvia blanca = Aloysia salviaefolia (Hook. & Arn.) Mold-  
enke
- salvia morada = Lantana montevidensis (Spreng.) Briq., Lip-  
pia alba (Mill.) N. E. Br., L. Grisebachiana Moldenke
- salvia santa = Lippia substrigosa Turcz.
- samanibir = Vitex Doniana Sweet, V. grandifolia Gürke
- \*sambuyut = Geunsia Cumingiana (Schau.) Rolfe
- sana = Avicennia africana P. Beauv.
- sanango sacha = Petrea peruviana Moldenke
- sandia lahuén = Verbena laciniata (L.) Briq., V. tenuisecta  
Briq.
- \*sandialahuén = Verbena tenuisecta Briq.
- San Juan de la verdad = Aegiphila puberulenta Moldenke
- sanzgatillo = Vitex Agnus-castus L.
- \*saoe masarawèt = Vitex quinata (Lour.) F. N. Will.
- \*saoe poeti = Vitex quinata (Lour.) F. N. Will.
- \*saoe rëndai = Vitex quinata (Lour.) F. N. Will.
- \*saoe sôla = Vitex quinata (Lour.) F. N. Will.
- \*saonad = Gmelina elliptica J. E. Sm.



- sapu-milla = Vitex altissima L. f.  
 \*sarogang salaki = Gmelina asiatica var. villosa Bakh.  
 \*sasalit = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 sa sha ping = Clerodendrum Bungei Steud.  
 \*sasilit = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 \*sasulit = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 sauco monte = Aegiphila Deppeana Steud.  
 scarlet verbena = Verbena hybrida Voss  
 shah's favourite = Verbena L., V. hybrida Voss  
 shan pak tang = Sphenodesme pentandra Jack  
 sha-passan = Verbena L., V. hybrida Voss  
 \*shechin = Caryopteris odorata (Hamilton) B. L. Robinson  
 shek tzi shu = Gmelina racemosa (Lour.) Merr.  
 short-hair white vervain = Verbena urticifolia var. leiocarpa Perry & Fernald  
 siba = Premna corymbosa var. sambucina (Wall.) Moldenke  
 sibo = Premna foetida Reinw.  
 sidraera = Lippia alba (Mill.) N. E. Br.  
 silvery duranta = Duranta argentea Lodd.  
 simplers' joy = Verbena hastata L.  
 \*singkil = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 \*singkil alas = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 sisiling hyamo = Lippia adoënsis Hochst.  
 skyflower = Duranta L.  
 \*sky-flower = Duranta L.  
 slender vervain = Verbena Halei Small  
 small-flowered verbena = "Verbena canadensis (L.) Britton"  
 [error for V. bipinnatifida Nutt.]  
 snake-rattle = Stachytarpheta cayennensis (L. C. Rich.) Vahl  
 \*sobsoganbogo = Geunsia Cumingiana (Schau.) Rolfe  
 solande = Lantana Camara var. mista (L.) L. H. Bailey  
 Soldaten Thee = Lantana Camara L.  
 song-sho = Vitex Doniana Sweet, V. grandifolia Gürke  
 song tsio gun = Gmelina racemosa (Lour.) Merr.  
 so pa = Vitex trifolia var. simplicifolia Cham.  
 sō-tsho = Vitex Doniana Sweet, V. grandifolia Gürke  
 spatulate-leaf fog-fruit = "Aloysia macrostachya (Torr.)  
 Moldenke" [error for Phyla nodiflora (L.) Greene]  
 spatulate-leaved fog-fruit = Phyla incisa Small, P. lanceo-  
lata (Michx.) Greene  
 spider's kenki = Lantana Camara L.  
 \*stilbé = Stilbe Berg.  
 \*südamerikanisches Eisenkraut = Verbena bonariensis L.  
 sumpin = Sphenodesme borneënsis Merr.  
 \*susanna = Citharexylum B. Juss.  
 sweet sage = Lantana trifolia L.  
 sweet William = Verbena bipinnatifida Nutt.  
 sylvania = Aegiphila martinicensis Jacq.  
 taasen dua = Clerodendrum capitatum (Willd.) Schum. & Thonn.,

- G. formicarum Gürke, G. polycephalum J. G. Baker  
 tabaquillo = Aegiphila intermedia Moldenke  
 tabšto = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 tabonsu = Stachytarpheta jamaicensis (L.) Vahl  
 \*tabúgok = Clerodendrum minahassae Teijsm. & Binn.  
 tai chung lo kop muk = Callicarpa nudiflora Hook. & Arn.  
 tai ip shan po = Premna octonervia Merr. & Metc.  
 táI = Cornutia odorata (Poepp. & Endl.) Poepp.  
 talabao = Lippia Pringlei Briq.  
 tala blanco = Duranta serratifolia (Griseb.) Kuntze  
 talalachi = Aegiphila monstrosa Moldenke  
 \*talauan = Gmelina elliptica J. E. Sm.  
 taitue = Premna corymbosa var. sambucina (Wall.) Moldenke  
 tall aegiphila = Aegiphila elata Sw.  
 \*talúñgud = Gmelina elliptica J. E. Sm.  
 \*talúñgun = Gmelina elliptica J. E. Sm.  
 tamanqueira = Aegiphila Sellowiana Cham.  
 tanagya = Stachytarpheta jamaicensis (L.) Vahl  
 \*tanlúñgun = Gmelina elliptica J. E. Sm.  
 tanodza = Stachytarpheta jamaicensis (L.) Vahl  
 \*tarbay = Lippia graveolens H.B.K.  
 tarete = Lippia alba (Mill.) N. E. Br.  
 tarrafe = Avicennia africana P. Beauv.  
 taruma = Vitex cymosa Bert.  
 tarumá = Vitex calothyrsa Sandw., V. flavens H.B.K.  
 tarumã = Vitex montevidensis Cham., V. polygama Cham.  
 taruma de mata = Vitex Froesii Moldenke  
 tarumá de terra firma = Vitex triflora Vahl  
 tarumá de varzea = Vitex cymosa Bert.  
 taruman = Vitex Schaueriana Moldenke  
 tarumán = Citharexylum montevidense (Spreng.) Moldenke  
 tarumansinho = Vitex Schaueriana Moldenke  
 tarasajo = Vitex orinocensis H.B.K.  
 tataba = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 tatumo = Aegiphila truncata Moldenke  
 tavotavo = Premna taitensis Schau.  
 tavu = Premna taitensis var. rimatarensis F. H. Br.  
 \*tayupuk = Teijsmanniodendron Ahernianum (Merr.) Bakh.  
 tcaucui = Clerodendrum barba-felis H. Hallier  
 \*tea plant = Lantana Camara L.  
 Teas Hybrid Verbena = Verbena Teasii Moldenke  
 té del país = Lippia turbinata Griseb.  
 \*te del país = Lippia graveolens H.B.K.  
 te negro = Phyla stoehadifolia (L.) Small  
 \*thé de piéton = Lippia Pseudo-thea (A. St. Hil.) Schau.  
 tialu = Verbena officinalis L.  
 ti dah = Clerodendrum umbellatum Poir.  
 tinho = Stachytarpheta australis Moldenke  
 tiogbi = Vitex ferruginea Schum. & Thonn.

- tokalau = Lantana Camara var. aculeata (L.) Moldenke  
 tolochocho = Lantana velutina Mart. & Gal.  
 tomillo = Acantholippia seriphioides (A. Gray) Moldenke,  
Junellia asparagoides (Gill. & Hook.) Moldenke  
 tomillo macho = Junellia seriphioides (Gill. & Hook.) Moldenke  
 toronjil = Lantana Langlassei Moldenke  
 tosatido = Petrea arborea H.B.K.  
 tostadito = Petrea aspera Turcz.  
 totumillo blanco = Vitex divaricata Sw.  
 \*toug-than-gyoe = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 tra-tsho = Avicennia africana P. Beauv.  
 tres colores = Lantana glandulosissima Hayek  
 trömen = Clerodendrum capitatum (Willd.) Schum. & Thonn.  
 tsarkiyar kusu = Stachytarpheta jamaicensis (L.) Vahl  
 tschangbaio = Vitex Doniana Sweet  
 tschangmaro = Vitex Doniana Sweet  
 tschingmara = Vitex Doniana Sweet  
 tuetu = Stachytarpheta jamaicensis (L.) Vahl  
 \*tugas = Viticipremna philippinensis (Turcz.) H. J. Lam  
 \*tugas-buñgogon = Viticipremna philippinensis (Turcz.) H. J. Lam  
 \*tuluñgun = Gmelina elliptica J. E. Sm.  
 \*tuñgónol = Gmelina elliptica J. E. Sm.  
 turkey tangle = Phyla nodiflora (L.) Greene  
 turu-levu = Stachytarpheta urticaefolia (Salisb.) Sims  
 tzou tsing tsoi = Clerodendrum cyrtophyllum Turcz.  
 ububan = Vitex rivularis Gürke  
 ucha koro = Vitex Doniana Sweet  
 ucellucui-sacha = Stachytarpheta cayennensis (L. C. Rich.) Vahl  
 ucellucuy sacha = Stachytarpheta cayennensis (L. C. Rich.) Vahl  
 ufiri = Avicennia africana P. Beauv.  
 ufuchi = Clerodendrum splendens G. Don  
 um-digulgul = Vitex Doniana Sweet  
 um-dugulgul = Vitex Doniana Sweet  
 unarmed duranta = Duranta repens L.  
 uñli = Vitex Doniana Sweet  
 urdi loho'be = Lantana Mearnsii Moldenke  
 uruahu = Vitex grandifolia Gürke  
 usillo = Aloysia ligustrina (Lag.) Small  
 \*ustabunda = Premna corymbosa (Burm. f.) Rottl. & Willd.  
 uvalama = Vitex pyramidata B. L. Robinson  
 uvulama = Vitex mollis H.B.K., V. pyramidata B. L. Robinson  
 vanilla = Duranta repens L.  
 vara de San José = Castelia cuneato-ovata Cav.  
 vara dulce = Aloysia macrostachya (Torr.) Moldenke

- varo = Premna foetida Reinw.  
 vasari = Vitex cofassus Reinw.  
 \*vasung = Viticipremna philippinensis (Turcz.) H. J. Lam  
 \*vedelhoutboom = Citharexylum B. Juss.  
 vedel houthboom = Citharexylum B. Juss.  
 venturosa = Lantana trifolia L.  
 verbean vervain = Verbena bracteata Lag. & Rodr.  
 verbena = Stachytarpheta trinitensis Moldenke, Verbena canadensis (L.) Britton, V. carolina L., V. domingensis Urb., V. ephedroides Cham., V. hispida Ruiz & Pav., V. integrifolia Sessé & Moc., V. laciniata (L.) Briq., V. tenuisecta Briq.  
 verbena ancha = Stachytarpheta cayennensis (L. C. Rich.) Vahl  
 verbena azul = Stachytarpheta jamaicensis (L.) Vahl  
 verbena blanca = Stachytarpheta cayennensis (L. C. Rich.) Vahl, Verbena platensis Spreng.  
 verbena blanca serrana = Verbena litoralis H.B.K.  
 verbena cim = Stachytarpheta jamaicensis (L.) Vahl  
 verbena falsa = Stachytarpheta cayennensis (L. C. Rich.) Vahl  
 verbena negra = Stachytarpheta cayennensis (L. C. Rich.) Vahl, S. straminea Moldenke  
 verbena oil — from Aloysia triphylla (L'Hér.) Britton  
 verbena shrub = Caryopteris incana (Thunb.) Miq.  
 verbena-shrub = Caryopteris Bunge  
 verevere = Clerodendrum inerme (L.) Gaertn.  
 vervain = Verbena bipinnatifida Nutt., V. canadensis (L.) Britton, V. canescens var. Roemeriana (Scheele) Perry, V. Halei Small, V. simplex Lehm., V. xutha Lehm.  
 \*verveine á fleurs rouges = Stachytarpheta mutabilis (Jacq.) Vahl  
 verveine de Drummond = Verbena canadensis (L.) Britton  
 verveine de Miquelon naine magenta = Verbena canadensis (L.) Britton  
 verveine de Miquelon naine rose = Verbena canadensis (L.) Britton  
 \*verveine élégante = Verbena tenuisecta Briq.  
 vervena = Verbena litoralis H.B.K.  
 villatermin = Duranta repens L.  
 Violet King Lantana = Lantana tiliaefolia Cham.  
 violette = Verbena tenuisecta Briq.  
 Virginia sage = Vitex Agnus-castus L.  
 voekoe voekoe tolman = Priva lappulacea (L.) Pers.  
 vulcana = Clerodendrum fragrans var. pleniflorum Schau.  
 vulokaka = Vitex trifolia var. simplicifolia Cham.  
 waiwai = Lantana Camara var. aculeata (L.) Moldenke  
 wakarovungi = Faradaya ovalifolia (A. Gray) Seem.  
 wakarovundi = Faradaya ovalifolia (A. Gray) Seem.  
 wal-gurenda = Clerodendrum inerme (L.) Gaertn.



- wan hon na wan njari = Clerodendrum japonicum (Thunb.) Sweet  
 \*warèng = Gmelina elliptica J. E. Sm.  
 \*warèng kètan = Gmelina asiatica var. villosa Bakh., G. elliptica J. E. Sm.  
 waro = Premna Gaudichaudii Schau.  
 waro ndamu = Premna Gaudichaudii Schau.  
 warowaro = Premna taitensis Schau.  
 waterside tree = Avicennia africana P. Beauv.  
 wa vatu = Faradaya ovalifolia (A. Gray) Seem., F. vitiensis (A. Gray) Seem.  
 wedgeleaf frog-fruit = Phyla cuneifolia (Torr.) Greene  
 wedgeleaf frog fruit = Phyla incisa Small  
 wedge-leaved fog-fruit = Phyla nodiflora var. reptans (H.B.K.) Moldenke  
 weighty fog-fruit = Phyla incisa Small  
 westindisches Eisenholz = Aegiphila martinicensis Jacq.  
 wesussi = Stachytarpheta jamaicensis (L.) Vahl .  
 \*wèwènganga = Gmelina asiatica var. villosa Bakh.  
 weyhooli = Verbena menthaefolia Benth.  
 \*white beech = Gmelina Leichhardtii (F. Muell.) F. Muell.  
 white Brazil mangrove = Avicennia nitida Jacq.  
 white brush = Aloysia ligustrina var. Schulzii (Standl.) Moldenke  
 white bush = Aloysia ligustrina (Lag.) Small  
 white-flowered lantana = Lantana Camara var. nivea (Vent.) L. H. Bailey  
 white-flowered verbena = Verbena stricta f. albiflora Wadmond  
 white-fruited callicarpa = Callicarpa americana var. lactea F. J. Muller  
 white mangrove = Avicennia africana P. Beauv.  
 white-verbena = Verbena hybrida Voss, V. urticifolia L.  
 widow of last year = Clerodendrum splendens G. Don  
 wild coffee = Clerodendrum aculeatum (L.) Schlecht.  
 wild hyssop = Verbena stricta Vent.  
 wild sage = Lantana Camara var. mista (L.) L. H. Bailey  
 wild verbena = Verbena canadensis (L.) Britton  
 \*woelas watoe = Vitex quinata (Lour.) F. N. Will.  
 work is sweet = Clerodendrum violaceum Gürke  
 wutsiyar 'bera = Stachytarpheta jamaicensis (L.) Vahl  
 wutsiyar kadangare = Stachytarpheta jamaicensis (L.) Vahl  
 wutsiyar kusu = Stachytarpheta jamaicensis (L.) Vahl.  
 \*xakilche = Lippia graveolens H.B.K.  
 Kalapa duranta = Duranta repens L.  
 yabu-murasaki = Callicarpa mollis Sieb. & Zucc.  
 yapau = Verbena L.  
 yaro = Premna taitensis Schau., P. taitensis var. rimatarensis F. H. Br.  
 yellow lantana = Lantana Camara var. flava (Medic.) Molden-

ke, L. tiliaefolia Cham.

yellow sage = Lantana trifolia L.

yemo sigba = Lantana Camara L.

yerba de Inca = Lippia integrifolia (Griseb.) Hieron.

yerba de la muestranza = Lantana Camara L.

yerba de la princesa = Aloysia triphylla (L'Hér.) Britton

yerba de la Virgen = Phyla nodiflora var. rosea (D. Don)

Moldenke

yerba del Cristo = Lantana horrida H.B.K.

yerba del incordio = Verbena tenuisecta Briq.

yerba dulce = Phyla scaberrima (A. L. Juss.) Moldenke

yerba mora = Lantana Camara L.

yeung ue yi fa = Lantana montevidensis (Spreng.) Briq.

yoch opp tzimin = Petrea volubilis L.

yaimte = Clerodendrum ligustrinum (Jacq.) R. Br.

\*Zitronenlippe = Lippia Houst.

ἀγρός = Vitex Agnus-castus L.

λίγυριά = Vitex Agnus-castus L.

λίγυός = Vitex Agnus-castus L.

λίγυός = Vitex Agnus-castus L.

ἴσος = Vitex Agnus-castus L.

οἰόςος = Vitex Agnus-castus L.

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- (1) Moldenke, H. N., An alphabetic list of common and vernacular names recorded for members of the Verbenaceae and Avicenniaceae. 34 pp. New York Botanical Garden, August 31, 1939.
- (2) Moldenke, H. N., A supplementary list of common and vernacular names recorded for members of the Verbenaceae and Avicenniaceae. 24 pp. New York Botanical Garden, February 25, 1940.
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THE RECORDED COMMON AND VERNACULAR NAMES OF VERBENACEAE AND AVICENNIACEAE ARRANGED ACCORDING TO GENERA AND SPECIES

Harold N. Moldenke

The following is a list of the common and vernacular names of Verbenaceae and Avicenniaceae which were recorded by me in alphabetic sequence in my previous publications on this subject (1). In all, four thousand six hundred and one names are here recorded.

- Acantholippia deserticola (R. A. Phil.) Moldenke -- rica-rica
- Acantholippia hastulata Griseb. -- rica-rica
- Acantholippia seriphioides (A. Gray) Moldenke -- tomillo
- Aegiphila Jacq. -- aegiphilas, aegiphile, bois cabril, Geissenbäumchen, geitenboompje, goatwood, Ziegenbäumchen, Ziegenstrauch
- Aegiphila aculeifera Moldenke -- tabaquilla
- Aegiphila alba Moldenke -- koit tree, lulu, tutumbo
- Aegiphila anomala Pittier -- tabaquillo
- Aegiphila chrysantha Hayek -- fetoró-ey
- Aegiphila Deppeana Steud. -- saúco de monte, sauco monte
- Aegiphila elata Sw. -- bejuco de peine mico, guairo santo, guaro, guauro, hoher Ziegenstrauch, spirit weed, tall aegiphila
- Aegiphila falcata Donn. Sm. -- chiploque, zorrillo
- Aegiphila ferruginea Hayek & Spruce -- valso
- Aegiphila foetida Sw. -- stinkender Ziegenstrauch
- Aegiphila glandulifera Moldenke -- chirapa sacha
- Aegiphila glandulifera var. pyramidata L. C. Rich. & Moldenke -- tabaquero
- Aegiphila integrifolia (Jacq.) Jacks. -- baumartiger Ziegenstrauch, bois de golette, bois sendu, carindiba, lardwood, tocaneiro
- Aegiphila intermedia Moldenke -- tabaquillo
- Aegiphila laeta H.B.K. -- manprasara, San Juan de la Verdad
- Aegiphila laevis (Aubl.) Gmel. -- gelber Ziegenstrauch, manabo, manprasara
- Aegiphila laxicipulis Moldenke -- palo de zope
- Aegiphila martinicensis Jacq. -- bastard white-root, bois cabril, bois cabrit, bois de bouc, bois de cabril, bois de fer, capallo, lengua de vaca, martiniquische Geissenbäumchen, martiniquischer Ziegenstrauch, sureau gros, sylvania, westindisches Eisenholz, wild-jasmine
- Aegiphila martinicensis var. oligoneura (Urb.) Moldenke -- bois cabrite
- Aegiphila mollis H.B.K. -- contra-culebra, heilkräftiger Ziegenstrauch, totumillo
- Aegiphila monstrosa Moldenke -- café cimarrón, hulub, talalachi, vara blanca
- Aegiphila multiflora Ruiz & Pav. -- utcus
- Aegiphila obovata Andr. -- cutlet-wood, timber fiddlewood
- Aegiphila panamensis Moldenke -- hombre grande
- Aegiphila perplexa Moldenke -- goat-meat
- Aegiphila peruviana Turcz. -- chirapa sacha, huaca, ucullucuy sacha
- Aegiphila puberulenta Moldenke -- bollo limpio, San Juan de la verdad
- Aegiphila racemosa Vell. -- cawaira, wanini

- Aegiphila Riedeliana Schau. -- cajuja  
Aegiphila Sellowiana Cham. -- cajugá, carindiba, caujuja, cinzeiro, habiara, papagaio, pau de tamanco, tamanqueira  
Aegiphila splendens Schau. -- serra dos Christae  
Aegiphila truncata Moldenke -- tatumo  
Aegiphila Valerii Standl. -- tabaquillo  
Aegiphila verrucosa Schau. -- chicharra  
Aegiphila villosa (Aubl.) Gmel. -- bois de tabac, bois tabac, moracooballi, wolliger Ziegenstrauch  
Aegiphila vitelliniflora Klotzsch -- caferana, fetoró-ey  
Aloysia barbata (T. S. Brandeg.) Moldenke -- poleo  
Aloysia ligustrina (Lag.) Small -- ángel, azahar del campo, bee brush, cedron, Mexican heliotrope, niña rupá, nuna del monte, oreganillo, palo amarillo, romerillo, usillo, white bush  
Aloysia ligustrina var. Schulzii (Standl.) Moldenke -- bee blossom, white brush  
Aloysia Looseri Moldenke -- ilang-ilang, ilán-ilán  
Aloysia macrostachya (Torr.) Moldenke -- cabradora simarona, vara dulce  
Aloysia nahuire Gentry & Moldenke -- nahuire  
Aloysia polystachya (Griseb.) Moldenke -- poleo de burro, poleo de Castilla, poleo de Castillo  
Aloysia salviaefolia (Hook. & Arn.) Moldenke -- salvia, salvia blanca  
Aloysia triphylla (L'Hér.) Britton -- Aloisekraut, cedron, cedrón, citroenboompje, citroenkruid, citroenverbena, citronelle, citronenduftende Lippie, citronenduftige Lippie, Citronen-kraut, Citronen-strauch, citron-scented lippia, dreibladige lippia, herba Luisa, herb Louisa, herva cidreira, Lemonekraut, lemon plant, lemon-scented verbena, lemon-scented vervain, lemon tree, lemon verbena, limouneto, lippie à odeur de citron, pigeon's herb, Punschkraut, scented verbena, sweet-scented verbena, thé arabe, verbena oil, vervain, verveine à trois feuilles, verveine citronnelle, verveine du Pérou, verveine odorante, yerba de la princesa, yerba luisa  
Aloysia virgata (Ruíz & Pav.) A. L. Juss. -- cedron, chicharra caopi, niño-urupá  
Aloysia sp. -- sacha-poleo  
Amasonia L. f. -- Amasonie, taligalées  
Amasonia campestris (Aubl.) Moldenke -- aufrechte Amasonie, herva de picapáo, rothe Amasonie  
Amasonia lasiocaulos Mart. & Schau. -- bandiera do Espirito Santo, pau vermelho  
Avicennia L. -- black mangrove, Lebendiggebärend, mangrove, Salzbaum



- Avicennia africana P. Beauv. -- afia-nunung, amu-ati, amu-tsi, angma-tsho, asokoro, asokpolo, asopro, asukuru, ata-nunung, black mangrove, boandjo, boanjo, bue, buš, bue-dinte, buš-dintš, buwe, common white mangrove, š-bure, ede, ehrodo, garigari, gbeleti, gbělěti, grigri, jaja-guli, jaja-guwi, ka-bure, lagoon tree, mbougand, mofuri, mutuku-tsho, nja-wului, odonumon, ogbun, roanjo, saanar, samar, sana, tarrafe, tra-tsho, ufiri, waterside tree, white mangrove
- Avicennia alba Blume -- api-api, api-api hitam, black api-api, elava, gundu mada, lamet, marne, samair dam, ton samair, unte unte
- Avicennia bicolor Standl. -- mangle negro
- Avicennia lanata Ridl. -- api-api bėrbulu, api-api puteh, hairy api-api, white api-api
- Avicennia marina (Forsk.) Vierh. -- api-api, api-ápi, api-api merah, api-api puteh, api-api putik, biná, boak, buńgálan, buńgálon, buńgálu, buńgálon, cheriá, fika-fika, harav, kalapíni, kalapíni mańgitit, kalapíni-maputí, kausia, koak, kulási, kuyápi, lame apyu, lińgig, lińgog, mabaran, mada-chettu, mchu, miápi, mtschu, nalla-mada, piápi, piksik, pipisig, pipisik, red api-api, renggou, sagarai, samair kao, showarab, timmer, ticoes léwo, upputti, white api-api, white mangrove
- Avicennia marina var. resinifera (Forst.) Bakh. -- manawa, mangrove, native mangrove, New Zealand mangrove
- Avicennia marina var. Rumphiana (H. Hallier) Bakh. -- api-api, bunalun-babay
- Avicennia nitida Jacq. -- algarrobo, black mangrove, black-mangrove, black tree, blacktree, black wood, blackwood, bois de mēche, button mangrove, carnôé, cativo mangle, ciriuba, conrida, courida, cowrida, culumate, glänzender Salzbaum, green turtle bough, honey-mangrove, iguanero, istatén, mangel, manggel blanko, mangle, mangle blanc, mangle blanco, mangle bobo, mangle chéne, mangle negro, mangle prieto, mangle salado, manglier noir, manglo salado, mangrove, mangue amarello, mangue branco, olive mangrove, paléluvier, palétuvier, palétuvier blanc, palétuvier gris, palétuvier rouge, palo de sal, palo do sal, pariva, parwa, parwaboom, péré, puyequé, saltbushes, salt pond, white Brazil mangrove, white mangrove, witte mangrove
- Avicennia officinalis L. -- api-ápi, api-api brajoe, api-api daun lebar, api-api katjang, api-api ludat, api-api puteh, baen, bani, bara baen, bien, bina, black mada, bogēm, bunalun-lalaque, buńgálon, kajoe kěndéka, kajoe ting, ki balanak, lame, lameb, lamet, ludat, mada, metbin, miápi, nala-mada, nalla, nalla mada, oepata,

orei, palétuvier, pè-apè, piápi, saladillo, tamelhêe, thame, tiabaen, tivar, udat, white api-api, white mangrove, zoutboom

Avicennia Schaueriana Stapf & Leechman -- caju, ciriba preta, fromarina, magae siriba, mangue, mangue branco, mangue seriva, siriúwa, white mangrove

Avicennia Tonduzii Moldenke -- palo de sal

Bouchea Cham. -- gervão

Bouchea fluminensis (Vell.) Moldenke -- gervão de folha grande, gervão de folha grande, gervão de folha larga, verveine faux-gervão

Bouchea prismatica (L.) Kuntze -- germander-leaved bastard vervain, narrow-fruited vervain, prismatischer Eisenhart, verbena, verbena cimarrona

Bouchea prismatica var. longirostra Grenz. -- arrocillo, verbena, verbena manza

Bouchea pseudochascanum (Walp.) Grenz. -- gervão, gervão

Bouchea Rusbyi Moldenke -- verbena de flos grande

Burroughsia fastigiata (T. S. Brandeg.) Moldenke -- damiana

Callicarpa L. -- beauty-berries, beautyberry, beauty-berry, callicarpe, French-mulberry, murasaki, Schönbeere, Schönfrucht, Spanish-mulberry, Wirbelbeere, Wirtelbeere

Callicarpa acuminata H.B.K. -- albecar, blackberry, ceniciento, flor de chichalague, fructa de chacha, patzahumacachil, pukil, pukin, sac pukim, uvilla, vara de alcalde, vara del alcalde, x puc yim, zacpukim

Callicarpa americana L. -- American beautyberry, American callicarpa, amerikanische Schönbeere, amerikanische Wirbelbeere, beauty-berry, beauty-fruit, Bermuda mulberry, Bermudian mulberry, bunchberry, commode mulberry, filigrana, filigrana de mazorca, filigrana fructo morado, filigrana morada, French mulberry, French-mulberry, Mexican-mulberry, sourbush, Spanish-mulberry, turkeyberry, turkey-berry

Callicarpa americana var. lactea F. J. Muller -- French mulberry, white-fruited callicarpa

Callicarpa ampla Schau. -- capa rosa, capá rosa

Callicarpa angusta Schau. -- dirik-dirik

Callicarpa apoënsis Elm. -- layaupán

Callicarpa arborea Roxb. -- bogodi, bormala, boropatri, bündún, daung-sat-pya, dera, doika, dung-sap-pya, dum kotokoi, ghivala, ghiwala, goehlo, gogdi, khoja, kodo, kozo, makanchi, sakrela, sunga, turmong

Callicarpa basilanensis Merr. -- linagop

Callicarpa cana L. -- adokk, alalui, alayo-ti-manók, anobrang, anuyup, apoe-apoe, apu-apu, arusha, damar bësi, dynamite-grass, goro-goro oetan, graue Wirbelbeere, hai ngan, hati-hati ketan, katoempang

badak, katoempang kajoe, katumpang badak, katumpang kayu, kuping bėsi, lo hai ngan, mėniran bėsar, mėniran kasar, mėniran kėbo, mėniran oetan, mėniran utan, palis, papalsis, red-fruited tampang bėsi, sai fa min, sesepo, sėtampo bėsi, songka oetan, songka utan, tambalási, tambul-basi, tampa bėsi, tampah bėsi, tampal bėsi, tampang bėsi, tampang bėsi merah, tampong bėsi puteh, tapoeng-tapoeng, tı́gau, tı́gau-na-itım, toembar bėsi, túbang-dalág

Callicarpa caudata Maxim. -- anayop, anigup, arayop, harayhai, kabatiti, mama, suba

Callicarpa cubensis Urb. -- filigrana de mazorquilla

Callicarpa denticulata Merr. -- anaif, mayop

Callicarpa dichotoma (Lour.) K. Koch -- Chinese beautyberry,

French-mulberry, Japanese-mulberry, ko-murasaki, meka-sogi, murasaki-sikiboo, purple-mulberry, purple urn-fruit tree, sai ip lo hai ngan, tsú-kōa-uōn

Callicarpa elegans Hayek -- tambalabási

Callicarpa erioclona Schau. -- kagong, palis, salingárau, tambalabási, tı́gau, túbang-dalág

Callicarpa ferruginea Sw. -- filigrana, rostfarbene Schönbeere, turkey berry

Callicarpa formosana Rolfe -- anadhiu, anoyop, anoyot, atólba, for chai tsai, horai-murasaki, palis, sai hong hun, shan-puchiang, tambalabási, tı́gau, tı́gau, tı́gau-tı́gau, tigbabási, timbabási, ts'u-k'ang, tubang-dalag, túbang-dalág, tubaybási

Callicarpa Hitchcockii Millsp. -- boar-hog bush

Callicarpa japonica Thunb. -- guiou-saō-si, jama-murasaki, Japanese beautyberry, ko-mourassaki, méka-sogui, mi-mura-saki, mourassaki-skibou, murasaki, murasaki-shikibu, tama-mourassaki, tama-murasaki, yabu-murasaki

Callicarpa longifolia Lam. -- bėbėtih kinana, bėning-bėning, chapal, chapal kechil, dama bėsoi, gambiran, kajoe séran, karat bėsi, katoempang, katumpang, keling-kahan, kėmėniran, khow tok, lo kop ngan, mėniran oetan, mėniran sapi, nasi-nasi, papalsin, sėtampo, simadgimbadjon, songka, songka kampong, sulap, tama, tampah bėsi, tampal bėsi, tampang bėsi, tampang bėsi puteh, tampoh bėsi, tampong bėsi, tapah bėsi, tibabási, tı́gau, tobaybási, tulang besi, white-fruited tampang besi

Callicarpa longissima (Hemsl.) Merr. -- bok wat tan

Callicarpa Loureiri Hook. & Arn. -- birodomurasaki

Callicarpa macrophylla Vahl -- bá-pattra, bauna, budhi-ghasit, daya, den, drúss, mathara, mattranja, pattharman, poko kwat tán, shiwali, súmáli, thar, tondi-teregam, urn-fruit tree

Callicarpa magna Schau. -- atı́mla, magı́lig

- Callicarpa magnifolia Merr. -- agnai  
Callicarpa Maingayi King & Gamble -- balek angin laut, chulak, mēndapor, tampang bēsi, tulo, tutok puteh, tutor  
Callicarpa megalantha Merr. -- palayan  
Callicarpa Merrillii Moldenke -- katonal, palis, tīgau  
Callicarpa mollis Sieb. & Zucc. -- jabumurasaki, namainoki, yabu-murasaki, yama-murasaki  
Callicarpa nudiflora Hook. & Arn. -- tai chung lo kop muk  
Callicarpa obtusifolia Merr. -- anoyop  
Callicarpa pedunculata R. Br. -- bēning-bēning rih, mēmēniran, mēniran, ringan-ringang, wild heliotrope  
Callicarpa reticulata Sw. -- netzblättige Schönbeere  
Callicarpa Roigii Britton -- filigrana de pinar, filigrana fruto blanco  
Callicarpa rubella Lindl. -- chaak tsai shue, sugrúmuk  
Callicarpa stenophylla Merr. -- karangiti, layop  
Callicarpa subintegra var. parva Merr. -- maratariñgau  
Callicarpa surigaënsis Merr. -- alingtutuñgau, buyakan  
Callicarpa tomentosa (L.) Murr. -- aisar, ambong-ambong bukit, ambong-ambong puteh, bastra coat comul, hu kwai, kata kēran, kēpayang, massandari, sitapoeng, sitapueng, tamah kērbau, tēpong-tēpong, teregam, tindjaoe, tinjau, tondi  
Caryopteris Bunge -- Bartblume, bluebeard, caryoptère, verbena-shrub  
Caryopteris incana (Thunb.) Miq. -- blue spiraea, blue spirea, Chinese beardwort, verbena shrub  
Caryopteris odorata (Hamilton) B. L. Robinson -- malet, mohani, moni, shechin  
Castelia cuneato-ovata Cav. -- cuchipapa, papilla, vara de San José  
Chascanum marrubiifolium Fenzl -- danabán, erg el bugr, tchingaraguen  
Citharexylum B. Juss. -- bois à cōtelettes, bois cotelet, bois de guitare, bois fidèle, citarexilon, cotelet, cotelets, fiddle wood, fiddle-wood, fiddlewood, fiddlewood tree, fidelle-wood, fiolintræe, fioltraed, Geigenholz, Geigenholzbaum, gigatraed, gigetraee, guitar wood, le bois cotelet, le bois de guitard, le cotelet, Leierholz, susanna, vedelhoutboom, vedel houthboom, zither-wood  
Citharexylum affine D. Don -- alacate, cacachila, canutillo, chachalaca, jalacate  
Citharexylum Berlandieri B. L. Robinson -- negrito, orcujuela  
Citharexylum brachyanthum (A. Gray) A. Gray -- chile pájaro  
Citharexylum caudatum L. -- bird-seed, catecillo, cigua, coffé marron, collarette, dama, fiddle-wood, fidelle-wood, guairo sando de costa, guairo santo, higuerillo,



juniper-berry, long-spiked fiddle-wood, manglillo, moco de pavo, palo de dama, penda, pendola de sierra, perda, pigeon-feed, sauge doncella, white fiddlewood, white fiddle-wood, wild-cherry

Citharexylum Cooperi Standl. -- corrimiente, wild-lime

Citharexylum Dawei Moldenke -- agracejo

Citharexylum decorum Moldenke -- totumillo

Citharexylum discolor Turcz. -- guayo

Citharexylum Donnell-Smithii Greenm. -- buela noche, buena noche, chuul, cola de pava, coralillo, coral negro, cordoncillo, cuul, dama, damas, moca de pava, paraiso, sorguillo

Citharexylum ellipticum Sessé & Moc. -- anacahueta

Citharexylum Endlichii Moldenke -- manzano del cerro

Citharexylum flexuosum (Ruíz & Pav.) D. Don -- turucasa

Citharexylum fruticosum L. -- agracejo, balsamo, bálsamo, black fiddlewood, bois de guitard, bois de guitare, bois guitarin, canilla de vendado, catcycillo, cateycillo, cutlet, fairytree, falo blanco, fiddlewood, fiddle-wood, fiddlewood-tree, gallito, grenad marron, guairo sando de costa, guairo santo, guayo, guayo blanco, guayo roble, higuerrillo, long Tom, mangle de sabana, old woman's bitter, old-woman's bitter, palo de guitarra, palo guitana, palo guitarra, penda, penda blanca, pender, péndola, pendu, pendula, pendula, péndulo colorado, pfndula [error for "pendula"], pindoula, pindula, racemose fiddlewood, roble amarillo, roble de olor, roble dulce, roble guayo, sangre de doncella, savanna-wattle, spicate fiddlewood, susanna tree, white fiddlewood

Citharexylum fruticosum var. Brittonii Moldenke -- bois cotelette, bois cutlet, cotelette, cutlet, fiddlewood, hairy cutlet, white fiddlewood

Citharexylum fruticosum var. subserratum (Sw.) Moldenke -- cotelet denticulé, grenardo, palo santo

Citharexylum fruticosum var. subvillosum Moldenke -- cateycillo, gallito, penda, pendula blanca

Citharexylum fruticosum var. villosum (Jacq.) O. E. Schulz -- bois cotelette, cotelet velu, cutlet, fiddlewood, grenard, pende, white fiddlewood

Citharexylum Herrerae Mansf. -- huairuru

Citharexylum hexangulare Greenm. -- cajjalaco, canahuite, palomillo

Citharexylum Hintoni Moldenke -- chichalaco

Citharexylum hirtellum Standl. -- sac-xitch-che

Citharexylum Kerberi Greenm. -- aceitumillo, aceitunillo

Citharexylum Kunthianum Moldenke -- cotelet tomenteux, palo blanco

Citharexylum laetum Hieron. -- caffecillo, coffee chocolate,

jacende, semina, tarumá branco

Citharexylum lucidum Schlecht. & Cham. -- naranjillo, tepesi

Citharexylum macradenium Greenm. -- damas, danna

Citharexylum macrophyllum Poir. -- cotelet à grandes

feuilles, kasaroballi, leja gado, oeroejatoo

Citharexylum microphyllum (P. DC.) O. E. Schulz -- gatigal, mala-muger

Citharexylum montevidense (Spreng.) Moldenke -- aguay-guazú, espina de bañado, naraujillo, tarumá, tarumá espirudo, tarumán

Citharexylum myrianthum Cham. -- caá voró, carvoeiro, fruta de macaco, pau de viola, pimenteira, pirazú rembiú, primenteira, sarriá, turuman

Citharexylum pentandrum Vent. -- bois de guitare, cotelet à cinq étamines, cotelet à feuilles molles

Citharexylum pernambucense Moldenke -- salgueiro

Citharexylum Poeppigii Walp. -- mullu-caspi, palo de chaquiras

Citharexylum quitense Spreng. -- muyuyu, muyuyu del monté

Citharexylum Rosei Greenm. -- del ciervo á Sn. Juan

Citharexylum scabrum Sessé & Moc. -- jito siropo, panothillo

Citharexylum Schottii Greenm. -- chacni-bach, iximche,

ixtatakche, palo de violín, tatakche, xchobenche, yerba bois cotelet, bois cotelet, bois cotelet carré, bois cotelette, bois de cotelette, bois de fer blanc, bois de guitare, bois fidele, bois fidèle, bois guitare, bois guitarin, cotelette, cutlet, fairy, fiddlewood, fiddle-wood, fig bush, guayo blanco, juniper-berry, penda, savannah wattle, susanna, susanna tree, white fiddle-wood

Citharexylum teclense Standl. -- café de árbol

Citharexylum tristachyum Turcz. -- agracejo, guayo blanco, guayo roble, la calerio, mari de las Indias, palo blanco, roble guayo

Citharexylum viride Moldenke -- corrimiente, corrimiento

Citharexylum sp. -- bois guitarin

Clerodendrum Burm. -- clérodendron, glorybower, glorybowers, glory tree, Loosbaum, Losbaum, lotboom, pagoda-flower, péragu, péragut

Clerodendrum aculeatum (L.) Schlecht. -- amourette, amourette de St. Christophe, boesie droifi, boschhopfie, boton de oro, chuc chuc, clavellina aspinosa, crab prickle, crab-prickle, escambron blanco, gratte jambes, Haugenush, madampolam, pree-bree, prickly myrtle, privet, the bord de mer, wild coffee, wild-coffee, zamourette

Clerodendrum aculeatum var. gracile Griseb. & Moldenke -- clavellina espinosa

- Clerodendrum adenophyllum H. Hallier -- boerta-boerta, kajoe boerta-boerta
- Clerodendrum barba-felis H. Hallier -- badi, tcaucui
- Clerodendrum Bethuneanum Low -- anóran, antutuñgau-pulá, biniúang, guánton, kali-kali, maitúm, matá-kuó, udan-udan
- Clerodendrum Blumeanum Schau. -- aoepaloeslan mahina, kěmbang boegang, kolon ranteh, maroerang, mata ajam, panggil-panggil, singoep, tadjoe, tintinga, waroe dojong
- Clerodendrum brachyanthum Schau. -- hamindáng, kayomkom, lusib, mangha, samanpait, talabogting
- Clerodendrum Buchholzii Gürke -- bakoréné, fafa-hinei, fafe, male, mosongo-songo
- Clerodendrum Bungei Steud. -- camelia americana, chau shi mut li, flor de la rosa muerte, fragrant clerodendron, rose glorybower, sa sha ping
- Clerodendrum calamitosum L. -- Baum des Elendes, kajoe gambir, kěmbang boegang, kűmmerlicher Losbaum, rampige totboom
- Clerodendrum canescens Wall. -- kwai tim foh
- Clerodendrum capitatum (Willd.) Schum. & Thonn. -- agbul u uwagh, ayeti, feremómi, firi-fore, fuemómi, furu-fure, illiri, iye, korlejiga, mashayi, nyěkpe, obranmotuam, pfululla, pipe-tree, taasen dua, taběto, tataba, trómen
- Clerodendrum Colebrookianum Walp. -- kadungbi
- Clerodendrum cubense Schau. -- hiel de gallina, magiűre cimarrona
- Clerodendrum Cumingianum Schau. -- salumget
- Clerodendrum cyrtophyllum Turcz. -- tzou tsing tsoi
- Clerodendrum deflexum Wall. -- baboon's fat, balong ayam, big wood blumea, black ixora, buffalo's tongue, cheret hutan, chuchohgambar, cock's comb, decline wood, hill haunted plant, kayu sampu, kayu sampu kělau, kelusam jantan, lěmak běrok, lidah kěrbau, lidah kěrbau bětina, měrambong bukit, pěchah pěriok hitam, sěkacha lima jantan, sěkati lima, sěkati lima jantan, sěmbong hutan jantan, sětawar hutan, woodland sětawar
- Clerodendrum disparifolium Blume -- anting-anting, chělěguri, chinaguri, guriam, kecholan, lampin badak, lampin budak, lělampang badak, pěncholam, puding, quilau, sělěguri, sělěguri bětina, sělulang bukit, sěmbong, sěmpayan pitu, tampan putěri jantan, tudong roman, ubat tumbuh, uloh-ulai, unting-unting
- Clerodendrum formicarum Gürke -- taasen dua
- Clerodendrum fortunatum L. -- fortuné, gelukkige boom, gelukkige lotboom, glűcklicher Losbaum, Glűcksbaum
- Clerodendrum fragrans (Vent.) R. Br. -- exhilaration tree, glory tree, higantong, Javanese jasmine, mělor jawa, mil flores, nāng yam, pak yat pak, pelegrina,

peregrino, pokok rabu kembang, rompok, sabuka, sëtumpok  
Clerodendrum fragrans var. pleniflorum Schau. -- ela de  
 angel, boca amelia, bocamelia, boramelo, bridal-  
 bouquet, camelia, chau pin tung, cologne-plant, flor de  
 muerte, flor de muerto, Gohagan bush, herbe à Mad.  
 Villaret, herbe puante, hortensia, japana, jasmín,  
 jasmín de Amelia, jasmín de Italia, jasmín del muerto,  
 jasmín del muerto de perro, jasmín del perro, jasmín de  
 muerto, jasmín de perro, jasmín hediondo, jazmín de  
 Amelia, jazmín de España, jazmín de Italia, karu,  
 madam-polan, madan-polan, marabella, metrocedar, mil  
 flor, mil flores, milki hoedoe, misteriosa olorosa,  
 Nassau-rose, Nessau-rose, odorous clerodendrum,  
 Spanish-jasmine, verbena, vinda alegre, viuda alegre,  
 vulcana, wild jessamine

Clerodendrum glabrum E. Mey. -- bush clerodendr m, palo de  
 perico

Clerodendrum heterophyllum (Poir.) R. Br. -- bois cabri,  
 bois cabril, bois cabris, bois chenilles, bois de bouc,  
 bois de chenilles, gros bois de chenilles

Clerodendrum indicum (L.) Kuntze -- arnah, arní, báman-háti,  
 bamúnhatti, baranai, bead-flower, bharangi, bháangi,  
 bhárgi, bidoejoek, brahman-patta, brahma yashtika,  
 brahmuní, brahmunu yushtiki, chingari, daoen apioen,  
 daun apium, daw-ái-mubarík, gandja, ganja, ganja-ganja,  
 gëndjè, memadatan, mēmadatan, naijamphá ti, pēnatoch,  
 ronggo dipo, sarum cutur, sēkar petak, siphonanthus,  
 tow yai-mon, tube flower, Turk's-head, Turk's-turban

Clerodendrum inerme (L.) Gaertn. -- aňg-angri, ariya,  
 baliseng, bán-jai, ban-juen, batraj, biring djéné, bon-  
 joí, bunga pawang, bun-join, bun-jumat, busel-busel,  
 chia bam, eru-pichecha, eru puchcha, eti pisinika, foo  
 long shue, gambir laoet, goo yis hai, gulinda,  
 isandhári, kakoli, kembang boegang, kembang lygang,  
 ketoewèr, koi a koi, koli, kundah, lagoendi alas, lán-  
 jai, limau lēlang, maňgotňgot, maneroe dowongi, manor  
 oetan, mēlati oetan, mēlati utan, nalla-kupi, nir-  
 notesjl, parian solojon, penni ka, pinari, píná-  
 shengam-kuppi, pirolai kyont, písangi, pishinika,  
 pisíngaha, samin-aňga, sang-kupi, sáng-kūpi, shangam-  
 kupi, shangam-kuppi, shengan-kuppi, sorcerer's flower,  
 tabaňgoňgong, tak-kólapu-chettu, tērong gambul, tulang-  
 tulang, úti chettu, vana-jai, verevere, wal-gúranda,  
 wal-gurenda, wiri salo

Clerodendrum infortunatum L. -- barni, bhandíra, bhándíra,  
 bhánt, bhantaka, bhanti, bhat, bockada, bujiphyú,  
 chitu, gas-pinna, ghentú, infortuné, ka-aunggyil, kálí  
 basúti, kari, karí, kdung, khaoung gyí, kharbari,  
 kulamarsal, lukunah, ongelukkige boom, ongelukkige



- lotboom, peragú, péragu infortuné, piene, pinne gala, unglücklicher Loosbaum, Unglücksbaum, varni
- Clerodendrum intermedium Cham. -- aloksok, asuañgai, balantana, bantana, dagtung, humang, igiñga, kalalauan, kasopañgil, kasupañgil, katuñgátun, kolokolog, laroan-aníto, libintano, pakapis, salinguák
- Clerodendrum japonicum (Thunb.) Sweet -- wan hon na wan njari
- Clerodendrum Kaempferi (Jacq.) Sieb. -- pak yat hung, sěpanggil hutan
- Clerodendrum Klemmei Elm. -- luag
- Clerodendrum laciniatum Balf. f. -- bois cabri, nasty tree
- Clerodendrum lanuginosum Blume -- antutuñgau-taluk, magalablab, salumpapait, takipan, tanogo
- Clerodendrum ligustrinum (Jacq.) R. Br. -- itzimte, mosté, muste, snake-tree, y'imte
- Clerodendrum ligustrinum var. nicaraguense Moldenke -- jasmin, si me miras
- Clerodendrum Lindenianum A. Rich. -- roble guayo, turquesa
- Clerodendrum macrostegium Schau. -- agbolígan, aktolígan, bagáuak, baúgak, kasopañgil-na-putí, magbolígan, nakbolígan, payi-payi
- Clerodendrum minahassae Teijsm. & Binn. -- amambolígan, ambolígan, ayam-ayam, bagalbak, bagáuak, bagáuak-itím, bagáuak-na-putí, bakóbak, boenato, danata, kasopañgil-gúbat, ku-ku, lěilěm in asoe, lěilěm in taloen, sunkol, tabúgok
- Clerodendrum mindorense Merr. -- bagab, bagáuak
- Clerodendrum multibracteatum Merr. -- palutan
- Clerodendrum myricoides (Hochst.) R. Br. -- surbattri
- Clerodendrum nutans Wall. -- canastilla, fire-bush, martinica, misteriosa, ramo de novias, Santa Alda
- Clerodendrum paniculatum L. -- baěh zitang, bunga mara, bunga tinggal, danger flower, nom sawan, pagoda-flower, pangil-pangil, pěmanggil, pěngkilai, pěpangil, pingdang, sapanggil, sěpangil, tabut
- Clerodendrum phlomoides L. f. -- airan, airanamúla, arni, gharayt, irun, nellie, panjot, pírun, taludala, ta'údalel, tekkali, telaki, teleki, tilaka, urni, váta-ghní, wada madichi
- Clerodendrum phyllomega Steud. -- kojoe lampam, ramo daging lalaki
- Clerodendrum Ficardae Urb. -- jěte bois pin
- Clerodendrum Pittieri Moldenke -- espino
- Clerodendrum polycephalum J. G. Baker -- aporó, taasen dua
- Clerodendrum puberulum Merr. -- urang-urang
- Clerodendrum quadriloculare (Blanco) Merr. -- bagáuak, bagáuak-na-pulá, baligtárin, baliktáran, salinguák, uak-uák

- Clerodendrum Rumphianum De Vriese -- aoePALoelan hahoela, boenga panggil, boenga plum, boenga poean, loloet
- Clerodendrum serratum (L.) Moon -- angár, baikyo, baranai, barbara, bebya, barang, bháranga-mula, bharangi, bhárangi, bharungi, brah-mari mari, cheru tékka, chiru dekku, chúa, gandu-bhárangí, gant-bahárangí, gantu-bhárangi, gunti paringaie, jeru-hka, kanta-bháranní, kenhenda, ken-henda, kèrtasè, lampin budak, mata kèssang, nápálu, nirisa, pinggir tosèk, sagoenggoe, saram lutur, sènggoegoe, sènggugor, shimtek, simar bacengkoedoe, singgoegoe, sri-goenggoe, sunga tasek, taman tasek, tambun tasek, ténjal tasek, timba tasek, tindjae handak, tinjal tasek, tsjeru-teka, vátham addakki
- Clerodendrum serratum var. Wallichii C. B. Clarke -- nirisa
- Clerodendrum speciosissimum Van Geert -- coral, glorybower, herba a Madam Villaret, herbe a Mad. Villaret grand, jazmin rojizo-corazón, red honeysuckle, Santo Domingo, scarlet clerodendrum
- Clerodendrum spinosum (L.) Spreng. -- chichara, quédec
- Clerodendrum splendens G. Don -- adabi, afifia omya, ekñyieya, geakoi, opó-èshi, ra-bina, ufuchi, widow of last year
- Clerodendrum ternifolium H.B.K. -- puta de noche
- Clerodendrum Thomsonae Balf. f. -- ala de ángel, balao de S. José, bleeding heart, bleeding-heart, brinco de danea, broedae nahatti, clara lisa, clemátida, corazon horido, Cornell-flower, crendolinda, egwa, enredadera florirósada, fucsia, jamaiquina, lazo de amor, mata vaine, misteriosa, Mrs. Thompson's clerodendrum, oviakuku, pasión de Cristo, posión de Cristo, secreto de amor, southern bleeding-heart
- Clerodendrum Thomsonae var. delectum Hort. -- lagrima de Cristo
- Clerodendrum tomentosum (Vent.) R. Br. -- Cumberland-tree, downy clerodendrum
- Clerodendrum trichotomum Thunb. -- harlequin glorybower, kusagi, tuñgau
- Clerodendrum umbellatum Poir. -- firi-fore, furu-fure, honawai, hwana wulie, kajie, ti dah
- Clerodendrum umbellatum var. speciosum (Dombrain) Moldenke -- bleeding heart
- Clerodendrum umbratile King & Gamble -- lèruntoh, mali-mali bukit, mšroyan kabut, pianggu
- Clerodendrum villosum Blume -- boerta boerta, buffalo's foot-print, chapa, chapaneng, chěmpěning, daun bubut, gampir roesa, kalopang pait, kasap jantan, labu-labu, lěmpoŋ hutan, milki hoedoe, pěchah pěriok babi, pigs ixora, pokok kasap, rough plant, tapak kěrbaŋ, zottiger

## Losbaum

- Clerodendrum violaceum Gürke -- ishě-dùn, work is sweet  
Clerodendrum viscosum var. nilagiricum H. Hallier -- hukre-mara  
Clerodendrum volubile P. Beauv. -- dagba, šbenote  
Clerodendrum Williamsii Elm. -- dibalai  
Congea tomentosa Roxb. -- enredadera santa hoji-rojiza, japonesa, ka-yan, tamakanwe  
Cornutia Plum. -- agnantes, agnanthe  
Cornutia grandifolia (Schlecht. & Cham.) Schau. -- azari, cuatro caras, cucaracho, palo cuadrado, zopilote  
Cornutia grandifolia var. intermedia Moldenke -- cucaracho, flor lila, hoja de jope, morcielago, murciélago  
Cornutia grandifolia var. normalis (Kuntze) Moldenke -- cuatro caras, morcielago, murciélago, palo cuadrado  
Cornutia grandifolia var. quadrangularis Ørst. & Moldenke -- pavilla  
Cornutia latifolia (H.B.K.) Moldenke -- chialche, loth-ché, matasano, tzultesnuk  
Cornutia obovata Urb. -- nigua, palo de nigua  
Cornutia odorata (Poepp. & Endl.) Poepp. -- dona, tál, ulape  
Cornutia pyramidata L. -- agnanthe à fleurs en grappe, agnanthe à fleurs en grappes, bois à côtelettes, bois cac, bois cagne, bois care, bois cassau, bois cassave, bois côtelet, bois côtelet quarré, bois de caque, bois de l'ancre, bois de saban, bois de savane, bois de savanne, bois guarri, fiddlewood, mouri debout, penda, purple fiddlewood, salvilla  
Cornutia pyramidata var. isthmica Moldenke -- latche, lattche, pangage, pangagé, x oltexnuc  
Diostea juncea (Gill. & Hook.) Miers -- cau-cau-mamill, retama, retamilla, retamo  
Diostea scoparia (Gill. & Hook.) Miers -- clavelillo del campo, escobilla del campo  
Duranta L. -- golden-dewdrop, pigeonberry, skyflower, skyflower  
Duranta argentea Lodd. -- silvery duranta  
Duranta coriacea Hayek -- naranjuelo  
Duranta costaricensis (Donn. Sm.) Standl. -- uña de gato  
Duranta Mutisii L. f. -- limoncillo, long-fruited duranta, Mutis's duranta  
Duranta repens L. -- adonis, adonis blanco, adonis morado, arisgo, azota-caballo, blue plumeria, campo-koche, celosa, celosa cimarrona, chulada, coralillo rosado, cuenta de oro, cuento de oro, durancia, duranta, duranta de Plumier, durante de Plumier, Elis's duranta, espina blanca, espina de paloma, espino negro, fructa de jacu, fruta de jguana, fruta de paloma, garbancillo, golden dewdrop, golden-dewdrop,

golden dewdrops, granjenillo, heliotrope bush, heliotrope tree, heliotropio, heliotropio morado, hombocoche, kampakó-ché, kan poco che, kanpóko-ché, kanpó ko-ché, kanppocoche, kanppocoché, kanppocóché, lila, limoncillo cimmi, lluvia, lora, pensamiento, pigeon berry, pigeon-berry, Plumier's duranta, skyflower, troène d'Amérique, unarmed duranta, vanillier, vanilla, vanillier, varita de San José, villatermin, violeteira, violetina, Xalapa duranta, xcambocoché, x kambocoche, yellow hat tree

Duranta repens var. alba (Masters) L. H. Bailey -- forget-me-not, heliotropio blanco, nomeoluides, no-me-oluides, varita de San José

Duranta repens var. canescens Moldenke -- fruta de paloma

Duranta serratifolia (Griseb.) Kuntze -- pala blanca, tala blanca, tala blanco

Duranta Skottsbergiana Moldenke -- judu casha

Duranta triacantha A. L. Juss. -- chisnan

Faradaya ovalifolia (A. Gray) Seem. -- ngakawa, wakarovungi, wakorovundi, wa watu

Faradaya vitiensis (A. Gray) Seem. -- wa watu

Geunsia Cumingiana (Schau.) Rolfe -- danasi, gagayug, magilak, malatabako, manabako, nago, sambuyut, sobsogabogo

Geunsia flavida (Elm.) H. J. Lam -- layaupán, madolau, pananagok

Geunsia pentandra (Roxb.) Merr. -- layaupán

Ghinia Boxiana Moldenke -- cardero, coast broom

Ghinia curassavica (L.) Millsp. -- flor morada, spiny-fruited vervain

Ghinia curassavica var. yucatanensis Moldenke -- chan-ko-xnuk, chanxnuk

Gmelina L. -- gmelin, heilpeeren

Gmelina arborea Roxb. -- at-demmata, bolko bak, chimman, cummi, gamari, gamári, gambari, gámbhar, gamhar, gomari, gumadi, gúmár, gúmar-tek, gúnbar, gumbhár, gúmbhar, gumbhari, gumhar, gúmhar, gumher, gumudu, gumudu téku, kákódumbári, kambhar, kasamar, kasmár, kásmari, kasmaryamu, kasmiri, kassamar, khamar, khambhári, khammara, kull, kúmár, kumbhár, kumbulu, kúmhar, kurse, kyúnboç, kywon-pho, pedda gomru, pedda gumudu téku, ramani, sag, sewan, shewan, shewney, shewun, shivan, shivani, shiwali, shíwun, sripmari, tagumúda, tegummadu, yamanai, yémené

Gmelina asiatica L. -- badhára, bhedaira, biddari, bulangan, challa-gumudu, coumelon, gamudu, gatta-demmata, gmelin asiatique, gumudu, heilpeeren, kal-shivani, kavva-gumudu, láhan shivan, nilak-kumazh, nilak-kumizh

Gmelina asiatica var. villosa Bakh. -- boelangan, boewah



- kerandjang, kananga woeba, kemandiang, loewarang, ponranga, sarogang salaki, warèng kĕtan, wĕwĕnganga
- Gmelina elliptica J. E. Sm. -- baŋgana, bĕlongeh, bohól, bulang, bulangan, bulang gajah, bulang hutan, bulang kĕchil, bulbuol, dadiangas, danhaŋgas, kaluŋgun, kang mao, kemandiang, nóm méo, puhúng, pukang mata hari, saonad, talauan, taluŋgud, taluŋgun, tanluŋgun, tuluŋgun, tuŋgólnol, warèng, warèng kĕtan
- Gmelina Leichhardtii (F. Muell.) F. Muell. -- beech, Queensland beech, white beech
- Gmelina macrophylla Wall. -- kaju titi, kaju titie, kaju tittie
- Gmelina moluccana (Blume) Backer -- titi, toehoe, toeroe
- Gmelina philippensis Cham. -- alipúng, alipúnga, бага-бабуи, betebet, bosel-bosel, bulangan duri, ching chai, kalulut, kumbil, paniktik, sousou, tulóŋgau
- Gmelina racemosa (Lour.) Merr. -- shek tzi shu, song tsio.  
gun
- Holmskioldia Retz. -- holmskioldia, holmskioldie
- Holmskioldia sanguinea Retz. -- chapeau chinois, Chinese hat plant, Chinese hat-plant, Chinese-hats, kapni, kul tolia, kumaon, mandarin's-hat, misiwahchil, paraguita de China, parasol-flower, rithoul, sombrero chino
- Hosea Lobbiai (C. B. Clarke) Ridl. -- d'dap mira
- Junellia asparagoides (Gill. & Hook.) Moldenke -- tomillo
- Junellia bryoides (R. A. Phil.) Moldenke -- culesoro, pata de perdiz
- Junellia Lorentzii (Niederlein) Moldenke -- matorro moro
- Junellia seriphioides (Gill. & Hook.) Moldenke -- espina de pescado, tomillo macho
- Junellia tridens (Lag.) Moldenke -- mata negro
- Lachnostachys Cliftoni F. Muell. -- big flannel plant
- Lampaya medicinalis R. A. Phil. -- lampaya, lampayo
- Lantana L. -- bergsalbei, camara, cambará, cambarás, capitão do campo, chá de pedreste, lantana, lantane, Mehlbaum, Schwalke, shrub-verbenas, Wandelblüte, Wandelrose, wild sage
- Lantana achyranthifolia Desf. -- cariaquito de San Juan, cariaquito blanco, frutilla blanca, frutillo
- Lantana bahamensis Britton -- Bahama lantana, golden-rod
- Lantana balsamifera Britton -- Inagua sage-bush
- Lantana Camara L. -- adelamanyi, akotongmĕ, amerikanischer Mehlstrauch, ananse dökono, ananse dua, ananu kōmi, ananu kön-tsho, angelmund, Bahama tea, bahúg-bahúg, boenga pagar, bohó-bohó, cabará-caá, camara, camará, camara à feuilles de melisse, camara piquant, cambará, carriquito, cinco negritos, common deep orange lantana, corbeille d'or, coronitas, dame cubre galanos, der surinamsche Thé, English sage-bush, ěwōn adèlé, ěwōn

agogo, filigrana, flor de duenda, flor de sangre, flor di sangur, galaba, gekroonde lantana, herbe à caïman, herbe à plomb, hunter-does-not-eat-it, Jamaica mountain sage, jaral, jarilla, kajoë singapore, kamantjo, kembang satèk, kembang talèk, kiskeete, koorsoe wiwirie, koorsoe wiwiri, koorsoe wiwirie, koortsruid, korso-wirie, lantana, lantana à feuilles de mélisse, maintjo, Marie crabe, Mehlbaum, mora de caballa, oblo, poejngan, poetjngan, red sage, red sage-bush, sage, Salbeystrauch, salijara, salijèrè, sauge à feuilles rondes, sauge de montagne, Soldaten Thee, soterre, spider's kenki, surinamischer Thé, Surinam tea plant, tai ajam, tai hajam, tai kotok, tamandjho, tea plant, tēmbēlèk, tēmbēlèkan, tētšrapan, tjētè, tres colores, venturosa, vieille-fille, viorne d'Amérique, waeng, wilde salbey, wild sage, wiléran, yellow sage, yemo sigba, yerba de la muestranza, yerba mora

Lantana Camara var. aculeata (L.) Moldenke -- boenga-in tah, bunga asam senyur, bunga pagar, bunga tahi anjing, bunga tahi asu, bunga tahi ayam, bunga tahi ayam busok, camará de espinho, camara espineux, cariaquillo, chētè, common lantana, dog's dung flower, hedge flower, kankung, katu-hinguru, kembang satek, kembang telèk, lantaine arguillonense, lantan, lantana, lilac lantana, oblo, paká krawng, pink sage, prickly lantana, prickly sage, puchngan, puyngan, saliyara, saliyèrè, stachelige Lantane, stachlige lantane, tahi ayam munai, tai hayam, tai kotok, tēmbēlèk, tēmbēlèkan, tētšrapan, tokalau, waiwai, waung, wiléran

Lantana Camara var. flava (Medic.) Moldenke -- lantanna, yellow lantana

Lantana Camara var. hybrida (Neubert) Moldenke -- dwarf lantana, lantanna

Lantana Camara var. mista (L.) L. H. Bailey -- cinco negritos, common lantana, English sage bush, hairy lantana, lantana, lyre, oema koorsoe wiwirie, solande, West Indian coast bramble, wild sage

Lantana Camara var. mutabilis (Hook.) L. H. Bailey -- lantana, lilac lantana

Lantana Camara var. nivea (Vent.) L. H. Bailey -- camará de flôr branca, lantanna, white-flowered lantana, white lantana

Lantana Camara var. sanguinea (Medic.) L. H. Bailey -- lantanna, red lantana

Lantana Camara var. varia (Kuntze) Moldenke -- harlequin lantana, lantanna

Lantana Chamissonis (D. Dietr.) Benth. -- camará

Lantana citrosa (Small) Moldenke -- hiervade javillas, oregano xiu, sac-chili, toronjil

- Lantana frutilla Moldenke -- frutilla
- Lantana fucata Lindl. -- Brazilian lantana, camará roseo, cariaço morado
- Lantana glandulosissima Hayek -- cinco negritos, cinco-negritos, cinco negritos, confiturilla amarilla, confiturilla amarilla, frutilla, guaquita, oregano silvestre, oregano xiu, sinceria, tres colores, xohexnuc
- Lantana hispida H.B.K. -- chinkuro, jaral, mora de caballo, crozuz del país, soterre blanco, toltolquelite
- Lantana horrida H.B.K. -- bunch-berry, calico bush, cinco-negri, confiturilla, hierba de Christo, lantana, palabra-de-muger, yerba del Cristo
- Lantana insularis Moldenke -- lantana
- Lantana involucrata L. -- andornblättrige Lantane, baume de la grande terre, big sage, button sage, camara à feuilles obtuses, common sage-bush, filigrana, lantaine involucrée, monjol, montjoli, montjoli de Cayenne, sage, sage bush, sage tree, Santa Maria, Santa Maria de playa, te de la playa, wild sage, zicilhaxiu
- Lantana Langlassei Moldenke -- toronjil
- Lantana macropoda Torr. -- mejorana
- Lantana Mearnsii Moldenke -- ananse kono, ananu kōmi, ananu kon-tsho, eleku, hunters' scent, hunters' spice, kimbar mahalba, urdi loho'be
- Lantana montevidensis (Spreng.) Briq. -- cabará-caá, camará, filigrana, lantana, polecat-geranium, salvia morada, trailing lantana, weeping lantana, weeping-lantana, yeung ue yi fa
- Lantana Moritziana Otto & Dietr. -- cariaquito, flor de sangre
- Lantana ovatifolia Britton -- ovate-leaved lantana
- Lantana rugulosa H.B.K. -- venturosa
- Lantana scorta Moldenke -- frutilla, frutilla para comer, lantana, yerba de tres colores
- Lantana tiliaefolia Cham. -- camará, common lilac lantana, Violet King Lantana, yellow lantana
- Lantana trifolia L. -- benturosa morada, bunga pagar puteh, lantana, oregano, sweet sage, venturosa, yellow sage
- Lantana urticaefolia Mill. -- drap d'or
- Lantana velutina Mart. & Gal. -- confite, confite blanca, confiturilla blanca, frutilla, oregano xiu, rosa blanca, salvia alta, sarza mora, tolochocho, tolonchocho
- Lantana sp. -- bois de sauge, katu-hinguru
- Lippia Houst. -- lippia, lippia, Lippie, Zitronenlippia
- Lippia adoënsis Hochst. -- afurati, bahé, bahé-bahé, boromborom, diohuli, efinrin-gogara, fasau, fetfetti, Gambia tea, gane ba, guilel guéri, kani ba, kimbo,

kingkilli ba, mbalhat, mbormbor, ngãsu, ngãsuru, nyõna, saa-nunum, sisiling hyamo

Lippia affinis Schau. -- orégano, oregano di burro, poleo

Lippia alba (Mill.) N. E. Br. -- alfronbrilla, beukes bosjie, blakka tiki ment, bushy lippia, cidrera, graveelkruidje, hierba del negro, hierba negra, juanilama, leppie rude, malmequer do mato, malva, malva thee, oregano, palisado, pampa oregano, pan poregano, poleo, poley, Saint Mario, salvia, salvia morada, sidraera, tarete

Lippia Berterii Spreng. -- orégano, orégano de burro, poleo

Lippia Briquetii Moldenke -- amogre

Lippia callicarpaefolia H.B.K. -- salvia real

Lippia cardiostegia Benth. -- chiligua, orégano montés

Lippia Geisseana Solered. -- orégano

Lippia graveolens H.B.K. -- grégano, hierba dulce, oregano, orégano, oregano cimarrón, tabay, tarbay, té del país, xakilche

Lippia Grisebachiana Moldenke -- salvia morada

Lippia Hoehnei Moldenke -- atiaci

Lippia hypoleia Briq. -- cutujume, maste, tah

Lippia integrifolia (Griseb.) Hieron. -- manzanillo, poleo, pulco, yerba de Inca

Lippia micromera Schau. -- orégano, origanum, Spabish-thyme

Lippia micromera var. Helleri (Britton) Moldenke --mejorana, oregano, orégano

Lippia myrioccephala Schlecht. & Cham. -- tatascame, vera blanca

Lippia oxyphyllaria (Donn. Sm.) Standl. -- caragra

Lippia Palmeri S. Wats. -- orégano, origano

Lippia Palmeri var. spicata Rose -- origano

Lippia Pringlei Briq. -- bacatón, batayaqui, choila, chokili, matayaki, tabaquilla, talabáo, talakao

Lippia Pseudo-thea (A. St. Hil.) Schau. -- camara faux thé, capitao do mato, cha de pedreste, faux thé, thé de piéton

Lippia Recolletae Morong -- malvena

Lippia scabra Hochst. -- mu-tswane

Lippia substrigosa Turcz. -- salvia santa

Lippia Torresii Standl. -- caragra, caragra negra, caragre

Lippia turbinata Griseb. -- poleo, té del país

Lippia turbinata f. angustifolia Osten -- poleo

Lippia umbellata Cav. -- droceria, drosira

Lippia yucatanana Loes. -- salvia poblana, xolténuuc

Nashia inaguensis Millsp. -- moujean tea

Neospartan ophedroides Griseb. -- chinquillo, pichanilla retamo

Peronema canescens Jack -- djati sabrang, ki sabrang, loeroes, soengkai, soengkai mēlajoe

Petitia Jacq. -- black-fiddlewood, Petitie, petitier



- Petitia domingensis Jacq. -- bastard stopper, bastard-stopper, black-fiddlewood, black-heart fiddlewood, bois de fredoche, bois d'ortie, bois pelé, bois sans écorce, capá, capa amarillo, capá amarillo, capa-blanca, capá blanco, capá de sábana, capá sabanero, capa savannah, chen a gren, chène calebasic, chène calebassic, chien a gren, fiddlewood, fiddle-wood, fidéle, guayo, guayo prieto, petitia, petitier de Saint-Domingue, roble guayo, spur tree, westindische Petitie
- Petraevitex multiflora (J. E. Sm.) Merr. -- hahiat, seroe wari, tali boeboe
- Petrea Houst. -- pétrée, purplewreath, whitewreath
- Petrea Andrei Moldenke -- chivovo gueb
- Petrea arborea H.B.K. -- blue tree petrea, lilac, tosatido, tostadito
- Petrea arborea var. Broadwayi Moldenke -- bridal-wreath
- Petrea aspera Turcz. -- bejuco de hajo, biura, flor de la cruz, flor de mayo, Santa Lucia, tostadito, viuda
- Petrea bracteata Steud. -- hajauballi saléroce, hayariballi, parapo, petraea, sandpaper-vine
- Petrea glandulosa Pittier -- penitente
- Petrea Kohautiana Presl -- bridal wreath, liane rude, lilas, purple reef-plant, purplewreath, sandpaper-flowers, tree petrea, white petrea
- Petrea Kohautiana var. alba (Freeman & Williams) Moldenke -- bridal-wreath
- Petrea macrostachya Benth. -- moronea
- Petrea peruviana Moldenke -- sanango sacha
- Petrea pubescens Turcz. -- pluma
- Petrea racemosa Nees -- flor de S. Miguel, flor de viuva, la pétrée grimpante, purple wreath, purple-wreath, touca de viuva, twining petraea, viuvinha
- Petrea rugosa H.B.K. -- chaparrillo, cháparrillo, mamoncillo
- Petrea volubilis L. -- adelfa, adolfina, bejuco de caballo, bejuco del caballo, buirá, carbonera del monte, chaparrito, chaparro, choreque, ci contre, coamecate azul, colación, estrella azul, flor de Jesús, flor de papel, flor de Santa María, hoja chigue, jazmín, jazmín azul, la pétrée grimpante, lengua de vaca, liane de St. Jean, liane rude, liane Saint-Jean, opp-tzimin, petrea, piocha viejo, purple wreath, purple-wreath, queen's-wreath, raspa sombrero, sandpaper-vine, Santa Rita, soltero, stapelia-flowered petrea, tortilla tortada del caballo, tortilla tostada del caballo, totopostillo, twining petraea, yoch opp tzimin, yoxop-šimin
- Petrea volubilis var. pubescens Moldenke -- chorreque, cuera de zapo, flor de Jesus, raspa-guacal
- Phyla Lour. -- fog-fruits, frog-fruit, frog-fruits
- Phyla cuneifolia (Torr.) Greene -- vhapparal, Mexican

heliotrope, wedgeleaf frog-fruit, wedge-leaved fog-fruit

Phyla incisa Small -- fog-fruit, frog fruit, spatulate-leaved fog-fruit, wedgeleaf frog fruit, weighty fog-fruit

Phyla lanceolata (Michx.) Greene -- fog fruit, fog-fruit, frog-fruit, spatulate-leaved fog-fruit

Phyla nodiflora (L.) Greene -- ana-coluppa, bhui-okra, busbusi, cape-weed, chhota okra, cidron, creeping lippia, fog fruit, fog-fruit, fox-fruit, fraise de mer, frog fruit, Godet's-weed, godon kada, herimena-kola, hierba de la Virgen María, lién fuen, lopu-lopú, lopu-lupú, naculad, nakulad, orozus, sarad buti, sirik puto, sirik puyo, spatulate-leaved fog-fruit, spepetun, sprain bush, te cimarrón, turkey tangle, verveine, verveine du pays, verveine sauvage

Phyla nodiflora var. canescens (H.B.K.) Moldenke -- hierba de hormiga

Phyla nodiflora var. reptans (H.B.K.) Moldenke -- buttonweed, hierba de hormiga, larger creeping lippia, spepetun, wedge-leaved fog-fruit

Phyla nodiflora var. rosea (D. Don) Moldenke -- yerba de la Virgen

Phyla scaberrima (A. L. Juss.) Moldenke -- corronchocho, hierba buena, hierba dulce, honey-herb, malba, neuctixihuitl, orozul, orozus, orozuz, orozuz de latierra, orozuz del país, salvia santa, yerba dulce

Phyla stoechadifolia (L.) Small -- cabalyaxnic, cabalyaxnic, marsh lippia, té del país, te negro, thé del paiz, yerba Luisa Elena

Premna L. -- anderèse, Bocksmülle, bokkeblad, premmè

Premna acuminatissima Merr. -- sai ko din nuang

Premna adenosticta Schau. -- kalanggiáuan, kalipápa-madam, kla, lanabau, liñgo-liñgo, magupai, muláuinaso, sasalit

Premna barbata Wall. -- bakar, bakharcha

Premna bengalensis C. B. Clarke -- dhaoli, gabbu nelli, gohora, gwyheli, sungna

Premna congesta Merr. -- alakáag

Premna cordifolia Roxb. -- amboeng-amboeng laeot, baroewas, baroewèh, baroh, bëroewas, boewas-boewas, si baroewèh

Premna corymbosa (Burm. f.) Rottl. & Willd. -- agetha, agnimantha, aguyábát, aloalo, andarèse, appel, arbre à la migraine, arbre de la migraine, arni, babon, bakarcha, balabi, bëbuas, bëbuat, bhút-bhirari, Bocksblatt, bois de bouc, bois sureau sauvage, bokkeblad, chah leud, chámári, daoen kambina, ganiári, ganikáriká, ganniari, ghebu-nelli, gineri, goemira, headache tree, indjaro, inrelo, karnika, ki pahang, ki seungit, middí-gass, múney kíray, munnay, munni-vayr,

nárvel, pinna-nelli, sajur kambing, singkil, singkil alas, toung-than-gyee, ustabunda

Premna corymbosa var. obtusifolia (R. Br.) Fletcher -- adgáu, agáu, agdau, alagáu, alagáu-blanko, alagáu-dagat, alalgáu, anobrang, aragáu, argáu, naga

Premna corymbosa var. sambucina (Wall.) Moldenke -- kaikoa, kuabalon, qarovo, remako, siba, talitue

Premna Cumingiana Schau. -- alagáu, banabá, magalas, magílig, magílik, malaápi, manabá, maparai, mulmagan, palaudiáuan

Premna divaricata Wall. -- akar buas tunggal, akar jutong, akar mēlor padang, akar pērindu, akar rachun tikus, bois de bouc, buas-buas, field jasmine, lingue blanc, rat-poison climber, tēnung rimau puteh

Premna foetida Reinw. -- ambong-ambong laut, buas-buas, drekhout, karuana, kua, pokok buru hantu, remako, sibo, varo

Premna Gaudichaudii Schau. -- ahgao, ngurunguru, waro, waro ndamu

Premna hispida Benth. -- bilankuru fida, kafīi, kafi

Premna latifolia Roxb. -- chambadi, chambari, dauli, gineri, gondona, michapgong, middí, nella, nelli, nellí kúra, pedda-nella-kúra, padda nellí kúra

Premna latifolia var. cuneata C. B. Clarke -- dangra seya

Premna latifolia var. mucronata (Roxb.) C. B. Clarke -- agniú, ágniúm, bakar, bakarcha, bakhurchu, bankár, basóta, ganhíla, ganhin, gían, jhatela, tumari

Premna membranacea var. cordata Merr. -- nago

Premna nauseosa Blanco -- agráu, alagáu-gúbat, ananghit, anghit, engsuan, ansuan, areu, mala-muláuin, muláuin-áso

Premna octonervia Merr. & Metc. -- sai ko din nuang, tai ip shan po

Premna odorata Blanco -- aagáu, abgáu, adgáu, adiyo, agbáu, agdáu, alagáu, anobran, argáu, atiñgi, duragáu, guachal, lagáu, lassi, pumuhat, tangli, tibangñgen

Premna parasitica Blume -- areuj ki hoedjan, djati areuj

Premna quadrifolia Schum. & Thonn. -- dengö, gyengya aforowa, ogboso-tsho, ogbosu

Premna stellata Merr. -- manabá

Premna subglabra Merr. -- adgáu, agáu, alagáu, alagáu-blanko, ariáu, salipápa

Premna subscandens Merr. -- alagáu-báging, anangget, anobrang-ñg-limanut, sikir-ñg-purau, uradgáu

Premna taitensis Schau. -- nici, tavotavo, warowaro, yaro

Premna taitensis var. rimatarensis F. H. Br. -- aloalo, rauvula, tavu, yaro

Premna tomentosa Willd. -- bëboelang handak, bëbuas, bird's nest, boelang, boengboelang, boenglang, bulang,

bungbulang, bunglang, gadoengan, gadungang, gẽmboelang, gẽmbulang, lajas-lajas, lãban chapo, lãban tjapo, oenit, piat, pisang-pisang, sarang burong, tẽmbaroh, unit

Premna trichostoma Miq. -- buas, mẽdang palu

Priva Adans. -- Drehling, Eisenhart, velvet bur

Priva adhaerans (Forsk.) Chiov. -- arabischer Eisenhart, hamsched

Priva aspera H.B.K. -- chile güeco, chirrite, churrite, pengua, salvia alta

Priva cordifolia (L. f.) Druce -- obeera, scharfblättrige Drehling, wotray cheddy

Priva cordifolia var. abyssinica (Jaub. & Spach) Moldenke -- nassák

Priva lappulacea (L.) Pers. -- amor seco, berbenilla, bur vervain, bur-vervain, cadillito, cadillo, cadillo de bolsa, calluncay, carbroom, cat's-tongue, cayuncay, cola de alacrán, collant, costón, globito, guanaboa, guerit tout, heal-all, herbe à l'angine, klettenartiger Eisenhart, mozote, mozote de gallina, mozote de pollo, mozotillo, pedagogoso, pegajosa, pega-pega, pega pollo, Sonderähre, stick-tight, styptic bur, tzalluntzay, velvet bur, velvet-bur, verbena, voekoe voekoe tolman, xpakunpak, çallunçay

Priva mexicana (L.) Pers. -- mexikanischer Eisenhart, verveine du Mexique

Priva rhinanthifolia (Mart. & Gal.) B. L. Robinson -- pionillo

Pseudocarpidium ilicifolium (A. Rich.) Millsp. -- chicharron, navaja de verraco, pico de cotorra

Pseudocarpidium multident (Urb.) Moldenke -- chicharrón

Pseudocarpidium Wrightii Millsp. -- chicharrón, Wright's pseudocarpidium

Pygmaeopremna herbacea (Roxb.) Moldenke -- bhuijam, bhumi-jambuka, huniyan, kada met, méla níredu

Pygmaeopremna humilis Merr. -- huniyan

Rehdera penninervia Standl. & Moldenke -- palo blanco

Rehdera trinervis (Blake) Moldenke -- llayo, saquisilche, saquilzciché

Rhaphithamnus Miers -- citarexilon

Rhaphithamnus spinosus (A. L. Juss.) Moldenke -- amyán macho, arayan de espino, arrayán de espino, arrayán espinudo, arrayán macho, espino, espino blanco espino negro, guayun, nayún, prickly-myrtle, repu, repu mayún

Rhaphithamnus venustus (R. A. Phil.) B. L. Robinson -- arayan macho, arrayán macho, espinillo, juan bueno

Sphenodesme barbata (Wall.) Schau. -- aga lumut, akar chabana lima, akar lumut, akar mẽruan, five-points



climber, hulat, lembu-lembu, lilimbo

Sphenodesme borneensis Merr. -- sumpin

Sphenodesme pentandra Jack -- akar kĕtu-kĕtu, akar lintang ruas, akar subang, akar tanak rimau, bunga kĕrtas, ear-stud climber, lentang ruas, paper flower, shan pak tang

Sphenodesme triflora Wight -- akar bisa, akar bisar, akar katup-katup, akar mĕmali, akar pinang gusi, akar risa, akar sambu, akar sĕmpuleh

Stachytarpheta Vahl -- bastard vervain, Dichtähre, Eisenbart, Eisenhart, Fettähre, gervão, ogervão

Stachytarpheta angustifolia (Mill.) Vahl -- chilillo, esponjilla

Stachytarpheta australis Moldenke -- gervão, tinho

Stachytarpheta Calderonii Moldenke -- verbena

Stachytarpheta cayennensis (L. C. Rich.) Vahl -- akójoe málakali, akójoe mála kali, burr vine, cola de millo, corocillo, gerbão, gervão, Java verbena, kaka kankan, kuka kakang, la ché rat, large leaf, man kaka kakkan, ñueñu-pichada, ojediballi, ojédiballi, snake-rattle, ucullucui-sacha, ucullucuy sacha, verbena, verbena ancha, verbena blanca, verbena falsa, verbena negra, vervaine, water vine

Stachytarpheta elatior var. Jenmani Moldenke -- esponjilla

Stachytarpheta Frantzii Polak. -- cola de alacrán, cola de armado, mazote, verbena, verbena celeste, verbena morada

Stachytarpheta fruticosa (Millsp.) B. L. Robinson -- Bahama vervain

Stachytarpheta guatemalensis Moldenke -- camaq olal, San Diego, verbena

Stachytarpheta indica (L.) Vahl -- brasilianischer Tee, Brazilian tea, djarong lalaki, East Indian false vervain, herbe à chenilles, jarbao, jarung lalaki, ngadi rĕngga, orgibao, queue de rat, roemdjaroem, sĕlaseh dandi, sĕlaseh hutan, spotted basil, thé du Brésil, vervain, verveine bleue, verveine queue de rat, woodland basil

Stachytarpheta jamaicensis (L.) Vahl -- abontennua, āgba, āgogo igun, albāka, angkasa-angkasa, ankasa, bastard vervain, berbena, biru-biru, biron, blue-flower, bolomoros, Brazilian tea, Brazilian-tea, devil's coach whip, djarong, gĕwongan, ibinxiu, irù alāngba, irù amure, Jamaica vervain, kaka kairkau, kaka kankan, kandikandilāan, karoménal, large leaf, limbagat, lizard's tail, mes, mouse's bowstring, nagabo-so, neunsu, oi, ópá para, pig's dung grass, queue de rat, rat's tail, rumput tahi babi, sĕkar larvae, sĕlaseh dandi, spotted basil, tabonsu, talche, tanagya, tanodza, tsarkiyar kusu, tuetu, verbena, verbena azul,

verbena cim, verbena de playa, verbena manza, vervain, verveine, verveine queue de rat, water vine, wesussi, wutsiyar 'bera, wutsiyar kadangare, wutsiyar kusu

Stachytarpheta Maximiliani Schau. -- gervão

Stachytarpheta Mexiae Moldenke -- pedrésy

Stachytarpheta mutabilis (Jacq.) Vahl -- balunakuta, bois de chenilles rouge, djarongan, jarongan, ki meurit beureum, laler mêngèng, rêmèk gètih, rumput puti, verveine à fleurs rouges

Stachytarpheta orubica (L.) Vahl -- aristate bastard-vervain

Stachytarpheta polyura Schau. -- gervão

Stachytarpheta Robinsoniana Moldenke -- xtalché

Stachytarpheta straminea Moldenke -- verbena negra

Stachytarpheta trinitensis Moldenke -- verbena

Stachytarpheta urticaefolia (Salisb.) Sims -- albáka, balunakuta, biana blau, biru-bilu, biron, blue rats tail, bolomoros, comasi, djarong, jaih babi, kandikandiláan, karomónal, kena-quele-yago, limbagat, maukakarawa, mautofu tala, mautofu vao, mofalu, mokaukarau kedra, motofu, nettle-leaved bastard-vervain, nettle-leaved cymburus, ngadi-renggo, sekar-laru, tumbutumbu, turulévu

Stilbe Berg. -- Heidenmülle, stilbé

Svensonia laeta (Fenzl) Moldenke -- marib

Symphorema involucratum Roxb. -- gubba dára, konda tekkali, nway-sat, surúdu

Symphorema luzonicum (Blanco) Fern.-Will. -- balábai, malabulaon, malasiad, malasiag, malaskog, muláuing-báging, pamulaklakín

Tectona L. f. -- Indian oak, teak, teak tree, teak wood, tectona, teka, Tekbaum, tektone, thek, Theka-baum, Tiek-baum, Tik-baum

Tectona grandis L. f. -- adaritéku, bois de teck, bois de tek, cajaten-hout, cāka, cay-gô-gia tri, chène des Indes, chène du Malabar, chingjagú, dalanang, dalandon, dáti, dǎlǎg, djati, djáti, Djatibaum, djatiboom, djatti-boom, djattie, djattie-boom, dodolan, East Indian oak, Eisenholzbaum, fati, hadlayáti, háti, iattie, Indian oak, indische Eiche, indische eik, indische Teak, jádí, jati, Jatibaum, jatiboom, kalayáti, khaka, kyún, kywon, loherú, pedda téku, sag, ság, sagon, sagun, sagún, sǎgún, ságún, saguna, sagunyáti, sagván, sagwan, sagwán, sǎgwán, sagwani, saigun, saj, sáj, sak, saka, sáka, sǎkhú, sal, sál, segun, según, sígwan, singuru, sipna, teak, Teakbaum, teakboom, teak tree, teak tree of India, teak wood, teka, téca, teck, teck des Indes, téga, tegina, tégu, tek, ték, teka, Tek-baum, teke, tekka, tékka-maram, tekku, tékku, tékkumaram, téku, téku-mánu, theca, theck, Theka Baum,

- Tihk Baum, tyágada mara, yáti, Zimmer Baum  
Tectona Hamiltoniana Wall. -- dwarf teak, ta-hat, ta-nap  
Tectona philippinensis Benth. -- bunglas, malapañgit  
Teijsmanniodendron Ahernianum (Merr.) Bakh. -- agug, amamahit, dalipápa, dañgúla, didigkalin, dilipápak, duñgúla, galipápa, ígang, kalipápa, kolipápa, kulipápa, malaígang, mamahit, mongpong, pamagsen, sasalit, sasilit, sasulit, tayupuk  
Teijsmanniodendron longifolium (Merr.) Merr. -- atikoko, mamananau, sikukok  
Teijsmanniodendron pteropodum (Miq.) Bakh. -- mēdang poedi, pokok agak paya, sepoendang, sēpoegang, sēpugang, sēpundang, sipanoeh, tjēmpana  
Verbena L. -- camaradinhas, cambarás, Eisen-hart, Eisenhort, Eisen-klette, Eisenkraut, Eisenweich, herva cidreira, ijzerhard, iron-weed, jujubas, shah's favourite, sha-passan, verbena, verbena, vervain, vervains, verveine, vervène, wijkruid, yapau  
Verbena Abramsi Moldenke -- common vervain  
Verbena bipinnatifida Nutt. -- common verbena, Dakota verbena, purple verbena, small-flowered verbena, sweet William, vervain  
Verbena Blanchardi Moldenke -- blue vervain, false vervain  
Verbena bonariensis L. -- hoi, South American vervain, südamerikanisches Eisenkraut, verbena, verveine, verveine de Buénos-Ayres, verveine sauvage  
Verbena bracteata Lag. & Rodr. -- bracted vervain, large-bracted vervain, large-bracted vervaine, large-bracted vervane, large-leaved vervain, lavender ground-flower, prostrate vervain, verbean vervain, verbena, vervain  
Verbena canadensis (L.) Britton -- cut-leaved vervain, flowering verbena, large flowered verbena, large-flowered verbena, large flower verbena, perennial verbena, pubbeeten, purple verbena, Rocky Mountain vervain, rosenrotes Eisenkraut, rose verbena, rose vervain, sweet William, verbena, verbenen, vervain, verveine à bouquets, verveine citronnelle, verveine de Drummond, verveine de Miquelon, verveine de Miquelon naine magenta, verveine de Miquelon naine rose, verveine des Indes, verveine du Canada, verveine du Pérou  
Verbena canescens var. Roemeriana (Scheele) Perry -- vervain, wild verbena  
Verbena carolina L. -- verbena  
Verbena ciliata Benth. -- alforbrilla, moradilla  
Verbena corymbosa Ruiz & Pav. -- correcaballito, verbena  
Verbena crithmifolia Gill. & Hook. -- bichicho  
Verbena deltoicola Small -- kamiyo, moradia  
Verbena dissecta Willd. -- margarita morada

- Verbena domingensis Urb. -- verbena
- Verbena elegans var. asperata Perry -- moradilla
- Verbena Engelmannii Moldenke -- nettle-leaved vervain
- Verbena ephedroides Cham. -- jaqueca, verbena
- Verbena Gooddingii var. nepetifolia Tidestr. -- kamiyo
- Verbena Halei Small -- blue vervain, slender vervain, vervain
- Verbena hastata L. -- American vervain, blue vervain, blue vervain, blue verbena, blue-verbena, clowne's all-heal of New England, false vervain, iron-weed, purple verbena, purvain, shades, simplers' joy, simplers' joy, verbena, vervain, wild hyssop
- Verbena hispida Ruiz & Pav. -- verbena
- Verbena hybrida Voss -- Apple Blossom, Beauty of Oxford, Blue Defiance, Blue Sentinel, Blue Shades, Burnett's Scarlet, Cameo Pink, Cardinal, Carmine Ball, Carmine Rose, Carter's Dwarf Coerulea, Carter's Dwarf Compact, Carter's Holborn Mammoth, Cerise Queen, Chamois, Coccinea, Coccinea Dwarf, common garden verbena, common verbena, Crimson Seedling, Crown Prince, Dannebrog, Dark Blue, Defiance, Defiance Re-selected, Dwarf Coerulea, Dwarf Compact, Elfin Scarlet, Elite Ellen Willmott, Etna, Fairy Queen, Fireball, Floradale Beauty, Fordhook Famous, Giant Erect Mixed, Giant Pink, Giant Salmon Pink, Golden Queen, Grandiflora Blue, Grandiflora White, Holborn Mammoth, Lavender Glory, Lucifer, Luminosa, Lutea Improved, Majestic Rose Shades, Mammoth, Mammoth Mixed, Mammoth Rose Queen, Mammoth Scarlet Queen, Mammoth Snow Queen, Miss Willmott, New Red, Oxford Pink, Pfitzer's Giant, Pink, Pink and Rose Shades, Pure White, Purple Garnet, Red, Rose Cardinal, Rosea Stellata, Royal Bouquet, Royale, Salmon Defiance, Salmon Pink, Scarlet, Scarlet Defiance, shah's favourite, sha-passan, Snow Queen, Snowball, Snowdrift, Spectrum, Spectrum Red, verbeina, verbena, verveine, Violacea Stellata, Violet Bouquet, White, White-eye Blue Verbena
- Verbena incisa Hook. -- margarita punzó, pubbeeten, verbenen
- Verbena integrifolia Sessé & Moq. -- verbena
- Verbena laciniata (L.) Briq. -- margarita morada, moss verbena, sandia lahuen, verbena
- Verbena lasiostachys Link -- common vervain
- Verbena litoralis H.B.K. -- false vervain, verbena, verbena blanca, verbena blanca serrana, vervena
- Verbena menthaefolia Benth. -- bercul, weyhooli
- Verbena moechina Moldenke -- hoary verbena
- Verbena officinalis L. -- Altarblume, aristereon, Aschlepius alceas, ashthroat, berbena, herbine, camaradinha, chamelicos, columbina, columbine, common vervain,



- creisseta, curetis fersefomon, cyparissos, demetrias,  
 diose lacete, echtes Eisenkraut, Eisen-bart, Eisen-dek,  
 Eisen-hart, eisen-hendrik, Eisen-herz, Eisen-kraut,  
 eisen krokt, Eisenreich, Eisenweich, eiserich, eisern,  
 eisernhart, eisewich, eisewig, enchanter's plant,  
 enchanter's-plant, erba dé berména, erbo à touti li  
 man, European-verbena, European vervain, eysencrut,  
 eysenhart, eysenkruyd, eyssen-chrawtt, eyssen-kraut,  
 ferraria, gemeines Eisenkraut, geweiht kraut, Hahnen-  
 kampf, Hahnen-kopf, hardijzer, heiliges Kraut,  
 Heiligkraut, herbe à tous les maux, herbe aux  
 enchantements, herbe aux sorcières, herbe de sang, herbe  
 du foie, herbe sacrée, herb-grace, herb-of-the-cross,  
 herb o' grace, herva de ferro, hierabotane, hierobotane,  
 holy herb, holy-herb, iherabotane, iisercruyt,  
 ijsenkruyd, ijserhard, ijserkruyd, ijzerhard,  
 ijzerkruid, irenharde, isarna, isarnina, isecruyt,  
 isekrut, isena, isenarre, isen-bart, isen-brut, isen-  
 hard, isen-kraut, iserbart, isercruyt, isere, iseren-  
 bart, iseren-hard, iseren krut, iserhart, iserhert,  
 iserich, isern, isernehart, isern Hendreck, isern krut,  
 isin-chlete, isin-ina, isin-un, isirn, isirnwurz, isni,  
 issernhar, issinkraut, Juno's herb, Juno's tears,  
 Juno's-tears, Junothränen, jururuba, karáita,  
 Katzenblut, kerckkruyd, kerkkruid, kuma-tsuzura,  
 licinia, lung nga ts'o, lustam, ma pin ts'o, Mercurie's  
 moist blood, Mercury's moist blood, Merkurblut,  
 militare, ngoh sat na, Opferbraut, pá múkh, pancremon,  
 pempentar, peristerion, perstereona, pigeon's grass,  
 pigeon's-grass, pigeon's grasse, pitagosas, planta de  
 sorte, reich-hard, reich-hart, Segen-kraut, shamuki,  
 shop vervain, sideritis, simpler's joy, simpler's-joy,  
 sirpina, Stahl-kraut, Tauben-kraut, Taubenlieb, tialu,  
 tigrodion, varveino, varvey, Venusader, verbena,  
 verbenam, vertiperdum, veruaine, vervain, vervayne,  
 vervein, verveine, verveine commune, verveine  
 officinale, verven, vervena, vervene, vervin,  
 Weihsprossen, wilder eisewig, ysen-hard, ysen-krûte,  
 ysercruit, ysere, yseren, yseren-hard, yseren-hart,  
 yser-hard, yser-hart, ysern, ysernhard, ysinina
- Verbena origenes R. A. Phil. -- hierba del incordio,  
 ricarrica
- Verbena peruviana (L.) Britton -- brennende Liebe,  
 Feuerverbene, garden verbena, margarita punzo,  
 margarita punzó, roode verbena, verbena, verbenas
- Verbena phlogiflora Cham. -- camaradinha
- Verbena platensis Spreng. -- piedra, verbena, verbena  
 blanca, verveine odorante
- Verbena pumila Rydb. -- bartanucha, hairy verbena, kawiyo,

pink verbena, pink vervain

Verbena rigida Spreng. -- hardy garden verbena, large-veined  
vervain, stiff verbena

Verbena scabra Vahl -- rough vervain

Verbena simplex Lehm. -- bur-vine, narrow-leaved vervain,  
pigmy vervain, vervain

Verbena stricta Vent. -- blue verbena, blue vervain, bur-  
vine, fever-weed, hoar vervain, hoary verbena, hoary-  
verbena, hoary vervain, mullein-leaved vervain, mullein-  
leaved vervain, thimble-weed, verbena, wild hyssop

Verbena stricta f. albiflora Wadmond -- hoary vervain,  
white-flowered verbena

Verbena Teasii Moldenke -- Albion Verbena, Bellaire Verbena,  
Ceres Verbena, Madge Roberts Verbena, Rowena Verbena,  
Ruth Verbena, Teas Hybrid Verbena

Verbena tenera Spreng. -- Italian verbena, verveine  
délicate, verveine gentille, verveine jolie

Verbena tenera var. Maonetti Regel -- Italian verbena

Verbena tenuisecta Briq. -- amor de hombre, amor de hombre,  
fumaria, hierba del incordio, lazo de amor, margarita  
morada, moss verbena, perajil, rouen, sandia lahuén,  
sandialahuén, verbena, verveine élégante, violette,  
yerba del incordio

Verbena urticifolia L. -- bur-vine, common vervain, common  
white vervain, nettle leaved vervain, nettle-leaved  
vervain, nettle leaved Virginian vervain, verbena,  
white verbena, white-verbena, white vervain

Verbena urticifolia var. leiocarpa Perry & Fernald --  
nettle-leaved vervain, short-hair white vervain, white  
vervain

Verbena xutha Lehm. -- vervain

Verbenaceae J. St. Hil. -- Eisenhartgewächse,  
eisenkrautähnliche Gewächse, Eisenkrautartigen,  
Eisenkrautgewächse, Verbenaächtigen, verbénacées,  
Verbena Family, verbenas, Verbena Tribe, verbenes,  
Vervain Family

Vitex Tourn. -- chaste tree, chaste-tree, chaste-trees,  
gatlil, gatillier, gatlil, hemp-tree, Kenschbaum,  
Keuschbaum, Keuschlamm, kuischboom, Maria preta,  
Mönchspfeffer, monks-pepper-tree, Mülle, mullein,  
Müllen, rage tree, samaw hin, taruma, tarumã, vitex,  
vitice

Vitex Agnus-castus L. -- Abraham's balm, Abraham's balm  
fruit, Abrahamsbaum, Abrahamsboom, Abrahamstrauch,  
agneau chaste, agnocasto, agnus castus, agnus-castus,  
alecrim d'Angola, aloch, arbre au poivre, arbre de  
poivre, artenhewe, boom der kuisheid, borst-saame,  
borst-samen, chaste lamb, chaste lamb tree, chaste  
tree, chaste-tree, common chaste-tree, europische

kuisboom, faux poivre, raux poivrier, gattilier, gattilier, gattilier commun, grattilier, hemp tree, hemp-tree, herbe chaste, Indian-spice, Keuschbaum, Keuschbaummüllen, Keuschlamm, Keuschlammstrauch, Keuschlamm, Klosterpfeffer, kuisch-boom, kuisch-lam, Künschbaum, kuyische boom, Mönchspfeffer, monks pepper-tree; monk's pepper tree, monnikpeper, mullen, Müllen, myrrh tree, pébré, pébrier, pepe di monaci, peperboom, pepper taste, petit poivre, Pfefferbaum, pimienta de Guinea, poivre des moines, poivre petit, poivre saurage, poivre sauvage, sage tree, sanzgattillo, Schaaffmülle, Schaaffsmühle, schaapemiul, Schaf-milch, schaf-milte, Schaf-müle, Schaf-mülle, Schaf-müllen, schafs-milben, schafs-millen, Schafs-mühlen, Schafs-mülben, schafs-mullel, Schafs-müllen, schafwulle, totsane, tree of chastity, true chaste-tree, Virginia sage, wild lavender, wild-pepper, zeewilg, *αγγός*, *λιγαριά*, *λυγός*, *Λυγός*, *ἴσος*, *οἶσος*

- Vitex altissima L. f. -- ahay, balgay, banalgay, gua, kadamanakku, maila, milla, millilla, myrole, namilí adogú, nauladi, sampaga-pala, sapu-milla, simyanga
- Vitex Balbisii Spreng. -- bois des savannes, gri-gri, mata becerro, palo perrito
- Vitex bankae H. J. Lam -- kajoe melati, mólak
- Vitex barbata Planch. -- ba-kudu-ne, kuru, kutu-fingo
- Vitex brevipetiolata Moldenke -- ubaia
- Vitex calothyrsa Sandw. -- tarumá
- Vitex capitata Vahl -- aceituno, escobillo, five-leaf fiddlewood, guarataro, piedrero, totumillo, white fiddlewood
- Vitex chrysoarpa Planch. -- ba-kudu-ne, balamagnian kan, insuo-koto, kuru
- Vitex cofassus Reinw. -- banafat, banohoeba, bèso, biti, boepasa, gawasa, gofasa, gofasa batoe, gofasa gaba-gaba, gofasa mērah, gofasa pērampoean, gofasa tikar, katonde, katondèng, pasal, vasari, wila
- Vitex columbiensis Pittier -- acietuno
- Vitex compressa Turcz. -- aceituno-totumillo, acetuno, acietu, acietuno, acietuno blanco, alasoabo, apokotja, arbor procera, boschkalebas, bosch kalebas, fruta de gonzalo, hakiá-balli, leon pintado, taroema, totumillo, white fiddlewood
- Vitex Cooperi Standl. -- cua-ja, cuajada, raja bien
- Vitex coriacea C. B. Clarke -- banton, connaropsis laurel, jali batu, mēdang pupoi, mēroyan batu, pupoi, rock mēroyan, urat rusa
- Vitex cymosa Bert. -- aceituno, acietuna, azietuno, guazu, taruma, tarumá, tarumá de varzea, taryma
- Vitex Degeneriana Moldenke -- manna cachorro

- Vitex divaricata Sw. -- bastard fiddlewood, black fiddlewood, bois agouti, bois d'agati, bois d'agouti, bois de lézard, bois lézard, bois manive agouti, côte lizard, higuerillo, manive agouti, palo de pendula, pendola, pendulo blanco, timber fiddlewood, totumillo, totumillo blanco
- Vitex divaricata var. cubensis Urb. -- roble guayo
- Vitex Doniana Sweet -- abisoa, ada, adaga, ade, afetewa, African oak, African teak, angalem, aranga, black plum, burzun, dínchi, 'dinya, 'dumniya, 'dunya, dyob, ebisaa, edín, éji, ele-ele, fò, fò-ti, fò yi, fò yi-ti, fòyi-tsho, galbihi, galbije, gidjiko, heul, ingari, ink tree, koto, kudu, kukpweli, kukui, kurugh, lubei, lugbei, luwu-wului, makwaiwa, narenga, ngalbihi, nya, nyarina, ðcha koro, ofón, òrì, òrì-nla, òrì-òdàn, panyerò, punyo-tsho, samanibir, song-sho, sò-tsho, tschangbaio, tschangmaro, tschingmara, ucha koro, um-digulgul, um-dugulgul, uóli
- Vitex Duckei Huber -- tarumá, taruman
- Vitex erioclona H. J. Lam -- lako
- Vitex excelsa Moldenke -- taruma
- Vitex ferruginea Schum. & Thonn. -- tiogbi
- Vitex flava Ridl. -- jampang laki
- Vitex flavens H.B.K. -- acietuno, mameira, pechiche, tarumá, taruman
- Vitex Fosteri C. H. Wright -- akwakora-gyahini, ibang, koro koronta, obuban, ogi, òrì-òtá
- Vitex Froesii Moldenke -- taruma de mata
- Vitex gamosepala Griff. -- cooked rice leban, lèban nasi, lèban pachat, leeçh's lèban, pèlong, sètulang, sulong chong
- Vitex Gardneriana Schau. -- jaramataia
- Vitex Gaumeri Greenm. -- barbás, barrabas, blue blossom, blue flower, dachnik, fiddlewood, flor azul, flor azule, jocote de mico, locote de mico, matasamo, monkey fiddle, yaaxnic, yaax nic, yashnik, yash snick, yaxnic
- Vitex gigantea H.B.K. -- moconto, pechiche
- Vitex glabrata R. Br. -- ampapalút, amuláon, ashwal, bhodiya, bihboel, bihbul, boetboet, boñgóg, boñgúg, bonkolion, gèntileng, gèntileng ketileng, goda, horina, htoukshar, kalipápa-aso, kamoláuan, karril, kètilèng, kí now, laban kètilèng, laban kètilèng hlèng, longarbis thiras, luki, neva-lédi, sasalit, sengeri, senkane, sheras, sherasá, songarbi, tálang-puso, tilèng, tokra, topas
- Vitex grandifolia Gürke -- abisoa, ada, adaga, adefia, afetewa, aranga, bofuluk, ébisaa, fò, fò-ti, fò yi, fò yi-ti, fòyi-tsho, God's coconut, ingari, ink tree, kukpweli, kukui, lubei, lugbei, lugnei, luwu-wului,



narenga, nya, nyamēle-kukwe, nyarina, ogikhimi, okurutu, orabia, ōrì, oriri, ovuruburu, ōwenkundigbon, punyo-tsho, samanibir, song-sho, sō-tsho, uruahu

Vitex guianensis Moldenke -- hakiaballi

Vitex Hemsleyi Briq. -- capulin blanco

Vitex Kuylenii Standl. -- barabás, barbás, flor azul

Vitex leucoxydon L. f. -- kaddunochchi, nebedda

Vitex lignum-vitae A. Cunn. -- lignum-vitae, Queensland lignum-vitae

Vitex longisepala King & Gamble -- flowery lēban, gading kahua, halban, hearth-frame plant, kahua, lēban bunga, lēban kunyit, lēban nasi, pokok galang dapur, tumeric lēban

Vitex lucens T. Kirk -- Neuseelandteak, New Zealand oak, New Zealand teak, New Zealand teak tree, puriri, puriri tree

Vitex madiensis Oliv. -- kuru kudulé

Vitex maranhana Moldenke -- tarumã assú

Vitex Masoniana Pittier -- quajado

Vitex Mexiae Moldenke -- ipé branco, maminha, Maria preta

Vitex micrantha Gürke -- andofiti, djin-akwa, feve, fevei, sah-sah

Vitex mollis H.B.K. -- agualamo, aguamalarío, agüilate, ahuilote, atuto, coyotamate, coyotomate, flor de tila, huhwwali, mate, nanche de perro, negro coyote, obalamo, oovalama, tescalama, torete, ualama, uvalama, uvatano, uvulama, valama, walamo

Vitex montevidensis Cham. -- bracuy, echter Tarumán, guabiroba brava, tarumã, tarumá, tarumá dure, taruma guazu, taruman, tarumán de ley, tarumão, taturan

Vitex Negundo L. -- ai toeban, amalu, aslag, banj-angasht, bankahú, banna, bari, bári, beguniyá, beygúna, binna, biuna, cannellier à feuilles de niekegas, chinesche kuischboom, ehúri, fanjangasht, faux poivrier, filfil, five-leaved chaste-tree, gattilie de Chine, gattilier nēgundo, hobaro, kátrí, kiyow-bhán-bin, kiyubán-bin, ko ling ngio, lagoendi laeet laki-laki, lakki, lakki-gidá, lakkle, lēban, lēnggundi, lingúr, man king shue, marwa, marwan, marwandaí, máura, mawá, mehrwán, mewri, mora, morann, moráun, nagoda, nalla várili, nargunda, negundo, nengar, ng chí fung, nika, nikka, nirgandí, nīrgari, nīrgiri, nīrguda, nīrgudi, nīrgunda, nīrgundi, nīrgúndi, nīrgundí, nīrgur, nīrgúr, nīr-nochchi, nishinda, nishindá, nisinda, nisindá, nochchi, páni-ki-sambhálú, panj-angusht, pasatia, sámálú, sambhal, sambhálu, sanake, sanbhálu, semálu, shambáli, shamálú, shanbáli, shawáli, shiwáli, shiwari, shvéta-surasa, shwári, simáli, sindhuca, sindhuvára, sinduari, sindwar, sindwor, sisbán, súdú-nikka, swanján, tella-

vávili, three-leaved chaste-tree, torban, tórbanna, vavali-padú, vávili, vellai-noch-chi, vella-noch-chi, vel-noch chi, veyala, vrikshana, wana, warmande, zúkhamsate-asábea, zúkhamsatilouráq

Vitex Negundo var. cannabifolia (Sieb. & Zucc.) Hand.-Mazz.  
-- chaste-tree

Vitex Negundo var. intermedia (P'ei) Moldenke -- potentilla

Vitex odorata Huber -- petit arbre de campos

Vitex orinocensis H.B.K. -- tasajo

Vitex orinocensis var. multiflora (Miq.) Huber -- tarumã,  
taruma preto, totumillo

Vitex oxycuspis J. G. Baker -- fevei, kpar-seh

Vitex parviflora A. L. Juss. -- adgaúon, alah, amaráun, amuaúan, amugaúan, amulaúon, anla, bulaúen, burikán, edieu, foeli kaã, hamolaúen, hamoráon, hamulai, hamulaúon, hamuráon, hamuyáon, huláh, kajoe koela, kalipápa, kalipápa-bató, kauere, kulimpápa, kulipápa, malabalinanau, maraúin, maulaúin-aso, molauin, molaúin, molave, moláve, moláve-batú, moláve de playa, muláon, mulauin, mulaúin, muraúin, sagad, sagat, salingkápa, sasalit, taga, topas, tugas, tugas-buñgogan, tugas-lanhan

Vitex peduncularis var. Roxburghiana C. B. Clarke -- bhadu, boruna, goda, hila auwal, krawru, kyetyo, marak', navaládi, osai, shelangri

Vitex Ferriana var. abludens Moldenke -- Maria molle

Vitex pinnata L. -- ablas, alaban, aloban, amuráon, black lëban, búsi, cooked rice lëban, din, flowery lëban, goelimpapa, halaban, halban, haleban, haniban, hëjas, horn lëban, htouk-sha, kalapapa, kã non, ki arak, kiketaroo, kon samaw, kopiher, kulimpápa, kyet yo, kyet-yob, laban, laban kapoer, laban këtílëng, laban koenjit, laban soengoe, laban tandoek, labari, labhan, lëban, lëban boenga, lëban bunga, lëban haniban, lëban hitam, lëban koenjit, lëban kunyit, lëban nasi-nasi, lëban pantis, lëban tandoek, lëban tandok, lëban toengkak, lëbën, manèh, moláve, morón, muria, myladí, nevalad ugu mánu, nevali adugu, nëban, non, nowli eragu, pagil, salingkápa, samaw buang, samaw tìn pët, tin nok, tumeric lëban

Vitex polygama Cham. -- Maria preta, tarumã, taruman, tarumão, velame de campo

Vitex polygama var. Bakeri Moldenke -- mamma cachorro de catinga

Vitex pseudolea Rusby -- aceituno del monte, anacahiute, anacahuita, tarumá, torumar, wild olive

Vitex pyramidata B. L. Robinson -- hupari, negrito, negrito coyote, querenda, querendereniqua, tescalama, uvalama, uvulama

- Vitex quinata (Lour.) F. N. Will. -- arnrai, basal, boengis, flowery lëban, gofasa, hamulaúin, horn lëban, kajoe sëmoeet, kalipápa-asu, kalipápa-madam, ka liu tsoi, kamalan, këtílëng, ki bangbara, koefo-koefo, koetilëng, kojoe sëmoeet, laban, laban këtílëng, laban koening, laban sëmoeet, lëban boenga, lëban bunga, lëban tandok, limo-límo, limpápa, língo-língo, magúpai, mamali, masarwèt, mēdang giring, moláve-aso, niue, rimoewas, sai tsio tau, saivonta, saoe masarawèt, saoe poeti, saoe rēndai, saoe sēla, tileng, tugas, woelas watoe
- Vitex rapinoides Guillaum. -- indic, nay-mof-si
- Vitex Rehmanni Gürke -- thorns
- Vitex rivularis Gürke -- akwakora-gyahini, antelope's garden egg, kataboawin, old man's shin-bone, ōtwe-ntōrowa, ububan
- Vitex rufa A. Chev. -- kpar-seh
- Vitex Schaueriana Moldenke -- taruman, taruman-sinho
- Vitex Sellowiana Cham. -- Maria preta, taruman
- Vitex simplicifolia Oliv. -- buji, bummehi, bummeji, bummere, 'dinyar biri, 'dunyar biri, idjōli, kuru, nambalerrri, panyerō buda, plum-tree
- Vitex Stahelii Moldenke -- alasaobo, hackiaballi, pānda
- Vitex triflora Vahl -- mama cachorra, mama de cachoira, tahuari, tarumá, tarumá de terrafirma
- Vitex triflora var. coriacea Huber -- tarumá
- Vitex triflora var. Kraatzii Huber -- mammi-cachorri
- Vitex trifolia L. -- ai toeban, asla, banj-angashte-abí, danglá, dinsaw, doenoeko, galoemi, gēndarasi, hand of Mary, Indian privet, jala-nirgundi, kiyoubhán-bin, konti saw, lagoendi, lagondi, lagundi, lagúndi, lagundian, lagundíng-dagat, langghoendi, langgoendi, lanra, lawarani, lēgoendi, lēgundi, lēnggundi, lilégoendi, língēi, lipuk, níra-lakki-gidá, nir-noch-chi, ní-r-noch-chi, níru-vávili, pání-kí-sanbhálú, pání-kí-shanbálí, pání-samálú, panj-angushta-ábí, que-ábi, sagarai, salah gundi, sangari, shiru-noch-chi, shiru-varíli, silagundi, sisua noi, suféd-sanbhálú, sunrasa-vrikshasha, tella-vavíli, tigau, uljí-shanbáli, vaturu-nikka, wild pepper, yé-kiyuban-bin
- Vitex trifolia var. bicolor (Willd.) Moldenke -- dabant, danglá, dauhon lagondie, lagundí, lala tea, língēi, sagarai
- Vitex trifolia var. simplicifolia Cham. -- agubarau, daldalaki, dancundi, danglá-ti-baybai, dunglá, lagundí-dagat, lagunding dagat, lagunding gapang, lagundíng-gapang, paak pui ip, paak pui man king, pek-muk-ying, polinalina, so pa, vulokaka
- Vitex umbrosa Sw. -- bois lezard, boxwood, fiddlewood, West

Indian boxwood, yellow fiddlewood

Vitex unifoliolata Merr. -- babako

Vitex velutina (Koord. & Val.) Koord. -- kětílǝng

Vitex venosa H. J. Lam -- kajoe kahomboek gaeling,  
kerindjing daoen talang

Vitex vestita Wall. -- alaban baengat, bangas jantan, black  
lěban, chichah, flowery lěban, halban, haleban, horn  
lěban, kěpayan, lěban, lěban bunga, lěban hitam, lěban  
nasi-nasi, lěban nasi rimba, lěban pelandok, lěban  
tandok, maramboeǝng, marambuǝng, mouse-deer's lěban,  
rice lěban, sěpit, tampang bėsi, tumeric lěban

Vitex Wilmsii var. reflexa (H. H. W. Pearson) Pieper -- ama-  
kosikati

Vitex sp. -- bois de la morue, bois de savanne franc, hab-  
ul-takad, kabeljauwhout, renu-kabij, sham-baloo kabij,  
tukm-i-panjangusht.

Viticipremna philippinensis (Turcz.) H. J. Lam -- boǝgogon,  
hamurauon-asu, kalimantau, kamalan, liǝgo-liǝgo,  
linolıno, liǝno-liǝno, magomo, mala-moláve, malamuláuin,  
maláuing-àso, mala-usá, muláuin, tugas, tugas-buǝgogon,  
vasung

(1) Moldenke, H. N., An alphabetic list of common and  
vernacular names recorded for members of the  
Verbenaceae and Avicenniaceae. 34 pp. New York Botani-  
cal Garden, August 31, 1939.

Moldenke, H. N., A supplementary list of common and ver-  
nacular names recorded for members of the Verbenaceae  
and Avicenniaceae. 24 pp. New York Botanical Garden,  
February 25, 1940.

Moldenke, H. N., Additional common and vernacular names  
recorded for members of the Verbenaceae and Avicennia-  
ceae, Phytologia 2: 65--89. 1944.

SUPPLEMENTARY NOTES ON THE ERIOCAULACEAE, AVICENNIACEAE,  
AND VERBENACEAE OF TEXAS. I.

Harold N. Moldenke

Herewith begins a series of notes supplementary to my  
discussion of the Eriocaulaceae, Avicenniaceae, and Verben-  
aceae in Lundell's "Flora of Texas", volume 3, part 1, pages  
1--87 (1942). Since the publication of that work 144 addi-  
tional Texan specimens of these groups have been examined,  
representing 104 new collections and bringing to light 34



new county records. The abbreviations used for the herbaria in which these specimens are deposited are in conformity with the ones used by me in all my independent works to date and elucidated in my paper entitled "A list showing the location of the principal collections of Verbenaceae and Avicenniaceae", pp. 1--5 (February 20, 1942). For convenience the ones used in the present supplement are repeated herewith: Bt = Butler university, Indianapolis, Indiana; Ca = University of California, Berkeley; N = Britton Herbarium, New York Botanical Garden, New York City; Ok = University of Oklahoma, Norman; Tr = S. M. Tracy Herbarium, Texas Agricultural Station, College Station; Up = University of Pennsylvania, Philadelphia; Ur = University of Illinois, Urbana; and W = United States National Herbarium, Smithsonian Institution, Washington.

ERIOCAULON DECANGULARE L.

Additional citations: Waller Co.: E. Hall 675 (Ur).

AVICENNIA NITIDA Jacq.

Additional citations: Cameron Co.: R. Runyon 2077 (N).

ALOYSIA LIGUSTRINA (Lag.) Small

Additional citations: Brewster Co.: Cutler 4779 (N); G. L. Fisher s.n. [Marathon, July 11, 1927] (Bt). Cameron Co.: R. Runyon 2088 (N). Comal Co.: Lindheimer 1070 (Ok). Jeff Davis Co.: Hinckley s.n. [July:16, 1936] (N). Presidio Co.: Hitchcock & Stanford 6811 (N).

ALOYSIA LIGUSTRINA var. SCHULZII (Standl.) Moldenke

Additional citations: Presidio Co.: O. M. Clark 4764 (Ok)

ALOYSIA MACROSTACHYA (Torr.) Moldenke

Additional citations: Zapata Co.: Cory 35913 (N).

ALOYSIA WRIGHTII (A. Gray) Heller

Additional citations: Jeff Davis Co.: Hinckley s.n. [Aug. 22, 1939] (N).

CALLICARPA AMERICANA L.

Additional citations: Harris Co.: G. L. Fisher s.n. [Houston, Sept. 14, 1930] (Bt), s.n. [Herb. Banker 2307] (N)

CITHAREXYLUM BERLANDIERI B. L. Robinson

Additional citations: Cameron Co.: Cory 36624 (N). Willacy Co.: Tharp 1249 (Bt).

CITHAREXYLUM SPATHULATUM Moldenke & Lundell, Contrib. Univ.

Mich. Herb. 8: 82--83. 1942. Citharexylum brachyanthum

var. glabrum C. L. Hitchc. & Moldenke in Fedde, Repert. 37: 218. 1934; Lundell, Flora of Texas 3<sup>1</sup>: 75. 1942.

See the original publication of this species for a complete description and discussion of its differences from C. brachyanthum.

Additional citations: Hidalgo Co.: Lundell & Lundell 9953 (Mi--type).

DURANTA REPENS var. ALBA (Masters) L. H. Bailey

Additional citations: Hidalgo Co. (cultivated): Cory 36181 (N).

LANTANA CITROSA (Small) Moldenke

Additional citations: Cameron Co.: Cory 36729 (N).

LANTANA HORRIDA H.B.K.

An additional Texan reference to this species is in Anna May Tarrance Davis, A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), pp. 33 & 61. August, 1942. -- An additional synonym is Lantana rubra Berland. in Teran. & Berland., Mem. Comision Limites 15. 1832.

Additional citations: Cameron Co.: Cory s.n. [11-14-1940] (N). Gonzales Co.: Tharp s.n. [Ottine, 5/1/35] (Bt). Llano Co.: G. L. Fisher s.n. [Llano, Apr. 21, 1930] (Bt). Travis Co.: Tharp s.n. [Austin, 5/9/35] (Bt). Zapata Co.: Cory 35916 (N).

LANTANA MACROPODA Torr.

Additional citations: Dimmit Co.: Texas Agr. Exp. Sta. Herb. Exch. s.n. [12-10-39] (Tr). Hidalgo Co.: Cory 36035 (N). Houston Co.: Tracy 9146 (Up). Starr Co.: Cory 35934 (N). Val Verde Co.: Cory 31715 (N), 38097 (N), 39746 (N). Zapata Co.: Cory 35922 (N).

LIPPIA ALBA (Mill.) N. E. Br.

An additional Texan reference is A. M. T. Davis, A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), pp. 33 & 62. August, 1942.

Additional citations: Cameron Co.: Nealley 113 (Up). Hidalgo Co.: Cory 36288 (N).

LIPPIA GRAVEOLENS H.B.K.

Additional citations: Houston Co.: Tracy 9158 (Up). Val Verde Co.: Cory 38065 (N). Zapata Co.: Cory 35930 (N).

PHYLA CUNEIFOLIA (Torr.) Greene

Additional citations: Crockett Co.: Cory 18895 (N), 18897 (N), 32749 (N), 39335 (N). Jeff Davis Co.: Hinckley 466 (N).

Ochiltree Co.: Headlee 56 (Tr). Potter Co.: G. J. Goodman 3052 (N). Schleicher Co.: Cory 34447 (N).

**PHYLA INCISA** Small

An additional Texan reference is A. M. T. Davis, A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), p. 61. August, 1942.

Additional citations: Cameron Co.: R. Runyon 2085 (N). Comal Co.: Lindheimer 1069 (Ok). Crockett Co.: Farks & Cory 18896 (N). Edwards Co.: G. L. Fisher s.n. [Rock Springs, July 19, 1935] (Bt). El Paso Co.: G. W. Dunn s.n. [El Paso, July 20, 1887] (Up). Jackson Co.: Drushel 10260, in part (Ok). Jefferson Co.: Wherry s.n. [September 7, 1936] (Up). Kinney Co.: Cory 35472 (N). Midland Co.: Cory 40613 (N). Presidio Co.: Hinckley 691 (N). Tarrant Co.: Ruth 106 (Up). Tom Green Co.: Cory 39602 (N). Travis Co.: Tharp s.n. [Austin, 5-15-35] (Bt). Val Verde Co.: Cory 37997 (N). Willacy Co.: Cory 36726 (N).

**PHYLA LANCEOLATA** (Michx.) Greene

An additional Texan reference is A. M. T. Davis, A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), p. 61. August, 1942.

Additional citations: Liberty Co.: Langman 1945 (Up).

**PHYLA NODIFLORA** var. **RAPTANS** (H.B.K.) Moldenke

Additional citations: Cameron Co.: Cory 36468 (N); Tharp 1203 (N). Comanche Co.: Lindheimer 1071 (Ok). Uvalde Co.: Cory 39429 (N).

**PRIVA LAPPULACEA** (L.) Pers.

An additional Texan reference is A. M. T. Davis, A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), p. 61. August, 1942.

Additional citations: Cameron Co.: Cory 36622 (N).

**TETRACLEA COULTERI** A. Gray

Additional citations: Presidio Co.: Hinckley 1056 (N).

**VERBENA AMBROSIFOLIA** Rydb.

Additional citations: Cory 40367 (N).

**VERBENA BIPINNATIFIDA** Nutt

Additional citations: Bastrop Co.: Duval s.n. (W). Comal Co.: Lindheimer 1073 (Ok). Crockett Co.: Cory 35469 (N). Gonzales Co.: Friesner 10376 (Bt); Fladeck s.n. [near Gonzales, 3-30-1940] (Bt). Maverick Co.: M. E. Jones 28300 (Ca). Sutton Co.: Cory 39625 (N). Travis Co.: Rose & Russell 24129 (W); K. E. Smith s.n. [Austin, 5/1/35] (Bt); Tharp s.n. [Au-

stin, 4/12/35] (Bt). Waller Co.: Dixon 561 (W). County undetermined: L. I. Davis 1 (N), 2 (N).

**VERBENA BIPINNATIFIDA** var. **LATILOBATA** Perry

Additional citations: Hidalgo Co.: L. I. Davis 199 (N).

**VERBENA BRACTEATA** Lag. & Rodr.

Additional citations: Presidio Co.: Hinckley 694 (N). Sherman Co.: Weaver 17793 (Tr).

**VERBENA CAMERONENSIS** L. I. Davis, Nature Leaflet 1: 1--3.

August 14, 1941. Verbena Lundelliorum Moldenke, *Phytologia* 2: 24. August 26, 1941. -- Careful comparison of publication records shows that Davis' name for this species was actually published and distributed to botanists and botanical libraries twelve days before my name, so his name becomes the valid name for the species. Anna May Tarrance Davis, in her thesis entitled "A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana", pp. 31, 39, 41, 42, 43, & 61 (August, 1942), gives valuable additional information about this species and on pl. 10 a splendid illustration of it. Unfortunately, she misspells the synonymous binomial "Verbena lundellorum Moldenke".

Additional citations: Cameron Co.: L. I. Davis s.n. [March 7, 1942] (N), s.n. [March 22, 1942] (N), s.n. (N).

**VERBENA CANADENSIS** (L.) Britton

Additional citations: Culberson Co.: Hitchcock & Stanford 6782 (N). Harris Co.: G. L. Fisher s.n. [Spring, May 4, 1924] (Ur), s.n. [Houston, Apr. 3, 1920] (Ur).

**VERBENA CANESCENS** var. **ROEMERIANA** (Scheele) Perry

Additional citations: Edwards Co.: Parks & Cory 20841 (Tr). Kendall Co.: Parks & Cory 12929 (Tr). Llano Co.: Wolff 3064 (Tr). Uvalde Co.: H. R. Reed 33818 (N).

**VERBENA CILIATA** Benth.

Additional citations: Brewster Co.: Cory 35568 (N). Edwards Co.: Cory 38871 (N). Hall Co.: R. W. Bennett 44 (Tr).

**VERBENA CILIATA** var. **LONGIDENTATA** Perry

An additional Texan reference is A. M. T. Davis, A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), pp. 42 & 61, pl. 10. August, 1942.

Additional citations: Cameron Co.: Muenschler & Muenschler 14457 (N); Nealley 116 (W).

**VERBENA CILIATA** var. **PUBERA** (Greene) Perry

Additional citations: Jeff Davis Co.: Tracy & Earle 162,



in part (Tr--isotype).

**VERBENA CLOVERI** Moldenke

Additional citations: Brooks Co.: Pladeck s.n. [near Fal-furrias, 5-5-1940] (Bt).

**VERBENA DELTICOLA** Small

An additional Texan reference is A. M. T. Davis, A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), p. 61. August, 1942.

**VERBENA DELTICOLA** f. **LILACINA** L. I. Davis in A. M. T. Davis,

A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), p. 62 [as "lilaciana"]. August, 1942; Moldenke, Known Geogr. Distrib. Verbenac. Suppl. 1: 2, nom. nud. November 15, 1943. -- The type of this color form was collected by L. I. Davis on the banks of Resaca del Rancho Viejo, Cameron County, Texas, in May, 1942, and is deposited in the herbarium of the University of Texas.

**VERBENA HALEI** Small

An additional Texan reference is A. M. T. Davis, A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), p. 72. August, 1942. In regard to Lindheimer 155, in part, cited on page 22 of my work in the Flora of Texas as possibly from Palo Pinto County, Dr. Geiser thinks that Lindheimer never collected in Palo Pinto County. The specimen may have come from some other county -- its label states merely "Dry prairies on the Brazos, July and August, 1843".

Additional citations: Anderson Co.: K. E. Smith s.n. [Falcone, 4/21/35] (Bt). Bell Co.: Wolff 2948 (Tr), 3491 (Tr), 3718 (Tr). Bexar Co.: G. Jermy 88 (W). Fayette Co.: Parks & Cory 10072 (Tr). Grimes Co.: Weaver 1038 (N). Harris Co.: G. L. Fisher s.n. [Houston, Apr. 9, 1931] (Bt). Jim Wells Co.: Muenschler & Muenschler 14391 (N). Llano Co.: Wolff 3067 (Tr, Tr), 3825 (Tr). Nueces Co.: Tracy s.n. [Corpus Christi, 3-31-1905] (Tr). Travis Co.: Tharp s.n. [Austin, 5/2/35] (Bt).

**VERBENA NEOMEXICANA** (A. Gray) Small

Additional citations: Jeff Davis Co.: Hinckley s.n. [July 5, 1936] (N).

**VERBENA NEOMEXICANA** var. **HIRTELLA** Perry

Additional citations: Bexar Co.: O. M. Clark 7441 (Ok).

**VERBENA NEOMEXICANA** var. **XYLOPODA** Perry

Additional citations: Presidio Co.: Hinckley 1254 (N).



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## NOMENCLATURAL NOTES -- III

Harold N. Moldenke

Continued studies in the herbarium of the New York Botanical Garden and in the field have brought to light several as yet undescribed species, varieties, forms, and hybrids, and have revealed the necessity of publishing certain new names and combinations.

**AEGIPHILA VALLENSIS** Moldenke, sp. nov.

Frutex scandens; ramis dense lanatis; foliis oppositis; petiolis dense lanatis crassis; laminis firme chartaceis vel subcoriaceis ovatis longe acuminatis integris, ad basin rotundatis, juventute lanatis, supra maturitate substrigoso-pubescentibus, subtus dense sublanuginoso-villosis; inflorescentiis terminalibus axillaribusque cymosis vel paniculatis multifloris; pedunculis bracteisque bracteolisque dense flavido-lanatis; limbo calycis 4-lobato.

Large woody vine; branches obtusely tetragonal, medium-stout or slender, very densely lanate with matted cinereous hairs; principal internodes 7--11 cm. long; leaf-scars and buds very densely lanate like the branches; leaves decussate-opposite; petioles stout, 10--15 mm. long, very densely lanate with cinereous matted hairs; blades firmly chartaceous or subcoriaceous, dull-green above, ashy beneath, ovate, 17--25 cm. long, 7--12 cm. wide, long-acuminate at apex, rounded at base, entire, substrigose-pubescent above, lanate when young, very densely sublanuginous-villous with cinereous or yellowish hairs beneath; midrib slender, slightly prominent above, conspicuously prominent beneath; secondaries slender, 11--15 per side, arcuate-ascending, joined only by small tertiaries at the margins, subimpressed above, prominulous beneath; tertiaries abundant, subimpressed above, prominulous beneath; inflorescence terminal and in the axils of the uppermost pair of leaves, cymose or paniculate, many-flowered; peduncles densely lanate like the branches, the axillary ones 1--2 cm. long, the terminal ones to 7 cm. long; foliaceous bracts sometimes present beneath the terminal panicle, densely yellowish-lanate or -villous; bractlets and prophylla numerous, linear-filiform, 10--15 mm. long, twisted, densely villous-lanate and almost hidden in the dense tomentum of the inflorescence; calyx cyathiform, its tube about 6 mm. long and 3 mm. wide, very densely villous with yellowish forward-pointing hairs, its limb 4-lobed, the lobes about 2 mm. long, obtuse or acute, densely villous like the tube; corolla infundibular or hypocrateriform, sulphur-yellow, its

tube slender, 4--5 mm. long, glabrous, its limb 4-parted, the lobes about 3 mm. long, obtuse at apex, glabrous; stamens included; pistil long-exserted; fruiting-calyx incrassate, to about 1 cm. long and wide, densely villous, its rim deeply 4-lobed; fruit drupaceous, orange, globose, about 9 mm. long and wide, fleshy, glabrous.

The type of this species was collected by José Cuatrecasas (no. 15564) in woods at La Laguna, alt. 1250--1400 m., on the left side of the valley of the Río Sanquiniñí, on the west slope of the Cordillera Occidental, El Valle, Colombia, between December 10 and 20, 1943, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is obviously related to A. cordata Poepp.

*CORDIA RANGELENSIS* Moldenke, sp. nov.

Frutex vel arbor; ramis ramulisque gracilibus griseis irregularibus, juventute dense adpresso-puberulentibus, senectute glabrescentibus; foliis alternis; petiolis crassiusculis adpresso-puberulentibus canaliculatis vel sulcatis; laminis coriaceis suborbicularibus vel ellipticis vel suboblancheolatis, acutis vel brevissime acuminatis, integris subrevolutis, ad basin attenuatis, utrinque microscopice scabrellis pernitidis.

Shrub or tree; branches and branchlets slender, gray, irregular or even slightly zigzag, the youngest parts densely appressed-puberulent with very short yellowish-brown hair visible only under a hand-lens, the older parts glabrescent; leaves alternate; petioles rather stout, 5--10 mm. long, appressed-puberulent like the branchlets, canaliculate or sulcate above, wrinkled in drying; blades coriaceous, varying from suborbicular to elliptic or slightly oblancheolate, 3.5--8.5 cm. long, 2--4.2 cm. wide, normally acute or very short-acuminate at apex, often (apparently abnormally) obtuse or even retuse, attenuate to the base, entire, subrevolute, microscopically scabrellous on both surfaces, very shiny on both surfaces, appressed-puberulent on the midrib beneath; midrib slender, sharply prominent above, prominent beneath; secondaries, tertiaries, and veinlets forming a dense and conspicuous reticulum which is conspicuous and prominent on both surfaces; inflorescence axillary, solitary in one of the uppermost axils, about 16-flowered; peduncles slender, 1.5 cm. long or less, several-branched, appressed-puberulent and also with a few longer spreading hairs above; pedicels slender, about 1 mm. long, puberulent and often also pilose with longer spreading hairs; calyx cupuliform, 3--4 mm. long, about 3 mm. wide, firm, appressed-puberulent throughout, irregularly split into 2 or more lobes toward the apex.

The type of this species was collected by Juan Tomás Roig

y Mesa and Julián Acuña Galé (no. 4531) on the Sierra de Rangel, Finar del Río, Cuba, between August 27 and 30, 1927, and is deposited in the Britton Herbarium at the New York Botanical Garden. Another collection was made by Acuña Galé (no. 14119) at Taco-Taco, Rangel, in March, 1923.

CORNUTIA LATIFOLIA f. ALBA Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis recedit. -- This form differs from the typical form of the species in having white corollas.

The type was collected by William Campbell Steere, without number, in chaparral at Champotón, Campeche, Mexico, in July, 1932, and is deposited in the herbarium of the Instituto Biología at Mexico City.

×CRYPTOSTEGIA HYBRIDA Moldenke, nom. nov.

*Cryptostegia madagascariensis* x *C. grandiflora* Polhamus, Hill, & Elder, U. S. Dept. Agr. Tech. Bull. 457: 5--21, pl. 1 & 3--9. 1934.

DERMATOCALYX PANDURATUS Moldenke, sp. nov.

Arbor myrmecophila; ramis griseis glabris; foliis oppositis, cicatricibus amplis suberosis elevatis glabris; laminis firme membranaceis panduriformibus vel obovatis integris acuminatis ad basin subamplexicaulibus utrinque glabris.

Tree to 8 m. tall; trunk 13 cm. in diameter at breast height; branches rather stout, gray, glabrous, prominently lenticellate, rather angular, flattened at the nodes; leaf-scars large, broad, elevated, with corky margins; leaves decussate-opposite; petioles very thick, about 5 mm. long or less, somewhat arched or humped, glabrous; leaf-blades firmly membranous, panduriform or obovate, 13--28 cm. long, 5--12 cm. wide, acuminate at apex, entire, subamplexicaul at base, glabrous on both surfaces; midrib flattened or slightly canaliculate above, stout and prominent beneath; secondaries heavy, about 6 per side, ascending, arcuate near the margins, flattened or slightly impressed above, very prominent beneath; vein and veinlet reticulation subprominulous on both surfaces, especially beneath; inflorescence axillary, glomerate or fasciculate; flowers not seen, but said to be white; fruiting-pedicels very heavy, about 5 mm. long, glabrous; fruiting-calyx very stout and heavy, campanulate-cupuliform, about 8 mm. long and 15 mm. wide when fully mature, leathery, glabrous, somewhat 2-lipped and irregularly lobed, often scarious-margined; fruit subglobose, about 1 cm. long and wide, glabrous, hard, 2-celled; seeds very numerous on both surfaces of the central placenta.

The type of this species was collected by Elbert L. Little, Jr. (no. 6317; U. S. Dept. Agr. Forest Service



96771) in partly cut wet tropical forest, alt. 10 m., 2 km. south of San Lorenzo, Esmeraldas, Ecuador, April 21, 1943, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector records the vernacular name "mata palo" and reports that there are "black chambers from ants all over."

*ERIOCAULON ATABAFENSE* Moldenke, Known Geogr. Distrib. Eriocaul. 5 & 32, nom. nud. (1946), sp. nov.

Herba; foliis caespitosis firmis linearibus utrinque glabris nitidis stramineis argute acutis vel mucronulatis; pedunculis paucis costatis paullo contortis glabris; vaginis firmis stramineis laxis glabris nitidis oblique fissis; capitulis albis duris.

Herb to 30 cm. tall; leaves cespitose, the fresh ones few, firm, to 3.8 cm. long, linear, glabrous on both surfaces, shiny, stramineous, sharply acute or mucronulate at the apex, not visibly fenestrate, the old ones thin-membranous, numerous, translucent, very plainly fenestrate, to 12 cm. long, very weak and flaccid, glabrous; peduncles one or more per plant, 12--17 cm. long, several-costate, somewhat twisted, glabrous; sheaths firm, stramineous, loose, about 3.8 cm. long, glabrous, shiny, obliquely split at the apex, the lobes sharply acute; heads very hard, not flattening in pressing, very white.

The type of this species was collected by Llewelyn Williams (no. 13858) in sandy soil along a stream at Chamuchina, alt. 280 m., Río Atábapo, Amazonas, Venezuela, on January 19, 1942, and is deposited in the United States National Herbarium at Washington.

*ERIOCAULON CAPITULATUM* Moldenke, sp. nov.

Herba pumila; foliis caespitosis paucis parvis glabris non fenestratis; vaginis membranaceis laxis glabris fissis; pedunculis solitariis glabris 5 cm. longis; capitulis griseis vel albidis; bracteis involucrentibus paucis obovato-ellipticis pallide stramineis glabris, ad apicem rotundatis.

Plants very small, tufted; stems obsolete; leaves cespitose, few, 1--2 cm. long, amplate-sheathing at base, blunt at apex, glabrous on both surfaces, not visibly ribbed nor fenestrate; sheaths membranous, about 18 mm. long, glabrous, split at the apex, loose; peduncles solitary, about 5 cm. long, glabrous; heads about 5 mm. wide, grayish or whitish; involucrent bractlets few, obovate-elliptic, pale-stramineous throughout, about 2.6 mm. long and 1.3 mm. wide, rounded and slightly cucullate at the apex, glabrous and shiny on both surfaces; receptacle subglabrate; receptacular bractlets obovate, brown towards the apex, about 1.8 mm. long and 1.3 mm. wide, concave within, convex on the outside, rounded at

apex, short-pilose at the apex but not tufted-bearded; staminate florets: sepals 3, obovate-cuneate, spathaceous-conate at the base, brown except at the united base, about 1.56 mm. long and 0.7 mm. wide, slightly cucullate and apiculate at the apex, glabrous on both surfaces; petals 3, united into a slender hyaline tube about 0.6 mm. long, the free apical lobes also about 0.6 mm. long, hyaline, densely white bearded at the apex; stamens 6; anthers dark-brown or black; pistillate florets: sepals 3, free and separate to the base, dark-brown or nigrescent throughout, obovate, navicular, carinate or short-alate on the back below the middle, about 1.56 mm. long and 1.1 mm. wide, short-acuminate at the apex, white-pilose with very short hairs throughout on the back; petals 3, separate to the base, oblanceolate, about 1.8 mm. long and 0.5 mm. wide, hyaline, black-glanduliferous below the apex, white-pilose on the inner surface; ovary 3-celled, 3-ovulate; style about 0.6 mm. long; stigmas 3, about 0.6 mm. long.

The typw of this dwarf species was collected by Carl August Ehrenberg (no. 219, in part) somewhere in Mexico and is deposited in the Herbario Nacional of the Instituto Biologia de Universidad Nacional de Mexico (no. 2608, in part) at Mexico City. The heads superficially resemble those of E. Ehrenbergianum Klotzsch, but differ in their essential characters.

*ERIOCAULON PARADOXUM* Moldenke, sp. nov.

Herba perpumila; foliis paucis caespitosis glabris non fenestratis; pedunculis solitariis 2 cm. longis glabris; vaginis membranaceis laxis fissis glabris; capitulis griseis; bracteis involucrentibus pallide stramineis oblongis glabris, ad apicem rotundatis.

Plants very small, tufted; stems obsolete; leaves few, cespitose, 1--2 cm. long, 1.5--2 mm. wide, blunt at the apex, glabrous on both surfaces, not visibly ribbed nor fenestrate, erect; peduncles solitary, about 2 cm. long, glabrous; sheaths membranous, loose, about 15 mm. long, split at the apex, glabrous; heads grayish, about 5 mm. in diameter; involucrel bractlets pale-stramineous, oblong, 2--2.3 mm. long, 1--2 mm. wide, rounded at the apex, glabrous on both surfaces; receptacle glabrate; staminate florets not well developed (or past anthesis?), very few; receptacular bractlets cuneate-obovate, very dark-brown or black above the middle, about 1.6 mm. long and 1.3 mm. wide, triangular-acuminate and cucullate at the apex, densely white-pilose with short appressed hairs on the back and margins, glabrous within, not tufted-bearded; sepals 3, hyaline, elliptic, about 0.8 mm. long and 0.3 mm. wide, concave within, convex on the back, brownish towards the obtuse apex, bearded at

the apex on the back; petals 3, united into a hyaline tube about 0.26 mm. long, the apical free portions also about 0.26 mm. long, glabrous; stamens not seen; rudimentary pistil present; pistillate florets: sepals 3, free to the base, dark-brown throughout, elliptic or subobovate, navicular, about 1.8 mm. long, 0.7--1 mm. wide, acute at the apex, white pilose with obscure appressed hair on the back, more conspicuously so on the upper margins and apex; petals 3, free to the base, hyaline, oblanceolate, about 1.5 mm. long and 0.4 mm. wide, acute at the apex, attenuate to the base, long-pilose on the back from the middle to the apex, black-glanduliferous just below the apex; ovary 3-celled, 3-ovulate; style about 0.7 mm. long, glabrous; stigmas 3, about 0.2 mm. long.

The type of this very dwarf species was collected by Carl August Ehrenberg (no. 219, in part) somewhere in Mexico and is deposited in the Herbario Nacional of the Instituto Biología de Universidad Nacional de México (no. 2608, in part) at Mexico City. The species superficially greatly resembles *E. microcephalum* H.B.K. in its habit of growth, but differs in the technical characters of its heads and florets. The foliage of *E. paradoxum* and *E. capitulatum* is almost identical.

*ERIOCAULON SIERRALEONENSE* Moldenke, Known Geogr. Distrib.

*Eriocaul.* 21 & 40, hyponym (1946), nom. nov.

*Eriocaulon pumilum* Afzel. ex Körn., *Linnaea* 27: 621.

1856 [not *E. pumilum* Raf., *Atl. Journ.* 121. 1832].

*ERIOCAULON TOGOËNSE* Moldenke, Known Geogr. Distrib. *Eriocaul.* 21 & 41, hyponym (1946), nom. nov.

*Eriocaulon xeranthemoides* Van Heurck & Muell.-Arg. in Van

Heurck, *Obs. Bot.* 103. 1870 [not *E. xeranthemoides* Bong., *Act. Petrop. Sci. Math.*, sér. 4, 1: 635. 1831].

*GALPINSIA LAVANDULAEFOLIA* var. *GLANDULOSA* (Munz) Moldenke, comb. nov.

*Oenothera lavandulaefolia* var. *glandulosa* Munz, *Am.*

*Journ. Bot.* 16: 705. 1929.

*HALERPESTES CYMBALARIA* var. *SAXIMONTANUS* (Fernald) Moldenke, comb. nov.

*Ranunculus cymbalaria* var. *saximontanus* Fernald, *Rhodora*

16: 162. 1914.

*HYPERBAENA CUATRECASASI* Moldenke, sp. nov.

Frutex scandens; ramis pendulis gracilibus glabris; petiolis gracilibus sulcatis glabris, ad basin curvatis; laminis coriaceis nitidis ovatis longe acuminatis integris utrinque

glabris, ad basin rotundatis, pli-nervatis; inflorescentiis paniculatis.

Large woody vine, mostly with hanging branches; branches slender, glabrous; leaves alternate; petioles slender, 4--6.3 cm. long, glabrous, sulcate, incrassate and abruptly curved at base; blades coriaceous, bright-green and shiny on both surfaces, ovate, 7--13 cm. long, 2.7--6.5 cm. wide, long-acuminate at the apex, entire, rounded at the base, glabrous on both surfaces; venation pli-nerved, 2 secondaries issuing at the very base of the blade, the other 2 issuing 5--6 mm; above the base, prominent on both surfaces; tertiaries and veinlet reticulation abundant, very slender, prominulous on both surfaces; staminate inflorescence paniculate, to 15 cm. long, many-branched, glabrous throughout; flowers greenish-yellow; prophylla 3, narrow-lanceolate, about 0.7 mm. long, sharply acute at apex, glabrous, membranous-margined, alternate with the outer sepals; sepals 6, the outer 3 elliptic, about 2.6 mm. long and 2 mm. wide, thick, convex on the back, rounded at apex, glabrous, scarious-margined, the inner 3 elliptic-rotund, very convex on the back, about 2.8 mm. long and 2.2 mm. wide, cupped at the base with inflexed margins, subacutely hooded at the apex, glabrous, scarious-margined; petals 6, spatulate, whitish, delicate, about 1.5 mm. long and 1 mm. wide, each enfolding one stamen when mature, shallowly bilobed at the apex, glabrous; stamens 6, about 1.3 mm. long, separate; pistillate flowers and fruit not seen.

The type of this species was collected by José Cuatrecasas (no. 16939) in the neighborhood of Palestina, alt. 5--50 m., on the Río San Juan, Choco, Colombia, between March 12 and 14, 1944, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*JUNELLIA CONNATIBRACTEATA* f. *GLOMERATA* (Monticelli) Moldenke, comb. nov.

*Verbena connatibracteata* f. *glomerata* Monticelli, *Lilloa* 3: 358. 1938.

*JUNELLIA CONNATIBRACTEATA* f. *ROSULATA* (Monticelli) Moldenke, comb. nov.

*Verbena connatibracteata* f. *rosulata* Monticelli, *Lilloa* 3: 358. 1938.

*JUNELLIA LAVANDULIFOLIA* var. *COLCHAGUENSIS* (R. A. Phil.) Moldenke, comb. nov.

*Verbena colchaguensis* R. A. Phil., *Anal. Univ. Chile* 1873 521. 1873.

*JUNELLIA ROSULATA* Moldenke, sp. nov.



Suffrutex pumilus procumbens; ramis numerosis brevibus procumbentibus radiatis; ramulis numerosissimis brevissimis dense rosulatis; internodiis perabbreviatis dense foliatis; foliis sessilibus rigidis tripartitis utrinque leviter pubescentibus, ad basin ampliatis amplexicaulibus, lobis linear-oblongatis obtusis revolutis; corollis rubellis.

Dwarf procumbent subshrub with heavy woody stems and numerous short procumbent radiating branches; branchlets and twigs very numerous, very short, densely rosulate, the sterile ones with extremely abbreviated internodes, very densely leafy, forming a solid moss-like mat or cushion, the fertile branchlets more elongate, to 5 cm. long, rather densely short-pubescent, with internodes elongated to 8 mm., often more abbreviated; nodes slightly ampliate, annulate by the practically contiguous leaf-bases; leaves sessile, rigid, opposite, 3-parted to the slightly ampliate and clasping base, lightly pubescent on both surfaces with uniform, whitish, forward-pointing hairs, the lobes practically equal, linear-oblong, about 4 mm. long and 1 mm. wide (on the fertile branchlets), obtuse or rounded at apex, the margins revolute, much smaller on the sterile branchlets, bright-green on both surfaces, the lower ones hidden from the light by the densely matted upper ones but persistent, gray, brown, or black and dry; peduncles abbreviated, to 1 cm. long, densely short-pubescent with spreading white hairs; inflorescence terminal, densely many-flowered; rachis densely whitish-pubescent; bractlets ovate-lanceolate, 5--6 mm. long, 2 mm. wide at base, attenuate to the acute or acuminate apex, strongly costate on the back, rather densely whitish-pubescent with spreading hairs; calyx tubular, 6--8 mm. long, densely short-pubescent with spreading white hairs, 5-ribbed, the rim shortly 5-toothed; corolla pink, conspicuously exserted, its tube to 10 mm. long, slightly curvate, densely short-pubescent with spreading whitish hairs outside, its limb 5-parted, its lobes 2--3 mm. long, more or less short-pubescent outside, glabrous within.

The type of this remarkable species was collected by my good friend and colleague, Teodoro Meyer (no. 9586), at Tecka, Chubut, Argentina, on December 25, 1945, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is apparently related to J. minutifolia (R. A. Phil.) Moldenke, but differs in its densely rosulate habit and larger leaves. It may also be closely related to J. Struthionum (Speg.) Moldenke, a species known to me only from the original description.

JUNELLIA ROSULATA f. ALBA Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis recedit.

-- This form differs from the typical form of the species in

having white corollas.

The type of this form was collected by Teodoro Meyer (no. 9587) at Estancia "La Mimosa", Chubut, Argentina, on December 25, 1945, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*JUNELLIA TRIDACTYLA* (R. A. Phil.) Moldenke, comb. nov.

*Verbena tridactyla* R. A. Phil., Anal. Mus. Nac. Chile Bot. 1891: 59. 1891.

*LANTANA HINTONI* Moldenke, sp. nov.

Frutex; ramis ramulisque gracillimis obtuse tetragonis brunnescentibus parce strigillosis; petiolis gracilibus strigoso-pubescentibus; laminis subchartaceis ovatis longe acuminatis serratis, ad basin acutis, supra strigilloso-scabridis, subtus strigillosis vel puberulis densissime punctatis; inflorescentiis axillaribus; bracteis ovatis.

Shrub; branches and branchlets very slender, obtusely tetragonal, brunnescent, rather sparsely strigillose-pilous; principal internodes 4--6.5 cm. long; leaves decussate-opposite; petioles slender, 4--8 mm. long, rather abundantly strigose-pubescent with appressed whitish hairs; blades subchartaceous, uniformly bright-green on both surfaces, ovate, 4--7 cm. long, 2--4 cm. wide, long-acuminate at apex, acute at base, rather coarsely but regularly serrate except at the very apex and base, strigillose and scabridous above, strigillose and very densely punctate beneath or puberulent; midrib slender, plane above, prominulent beneath; secondaries slender, 3 or 4 per side, arcuate-ascending, not at all pli-nerved, plane above, subprominulous beneath, usually rather densely puberulent beneath; vein and veinlet reticulation abundant, but apparent only under a hand-lens; inflorescence axillary, 1 or 2 per node, shorter than the subtending leaf; peduncles very slender, 2.5--4 cm. long, strigillose; heads many-flowered, densely capitate, about 1 cm. long and wide, not elongating after anthesis; bracts ovate, the lowest to almost 1 cm. long and 6 mm. wide; acuminate at apex, strigose-puberulent and densely punctate; corolla-tube about 5 mm. long, its limb about 3 mm. wide, the outer portion of the limb and the exerted portion of the tube densely puberulent.

The type of this species was collected by George B. Hinton (no. 9307) at I. R. F. Placeres, alt. 1050 m., Zihuaqueo, Mina district, Guerrero, Mexico, on August 21, 1936, and is deposited in the Britton Herbarium at the New York Botanical Garden. It was first identified by me and distributed as *L. canescens* H.B.K., and later as *L. Langlassei* Moldenke, from both of which species it proves to be abundantly distinct. The collector records the vernacular name

"toronjil."

*LANTANA MINASENSIS* Moldenke, sp. nov.

Frutex erectus; ramis gracilibus obtuse tetragonis parce aculeolatis vel inermibus stramineis obscure pulverulento-puberulis vel glabrescentibus; ramulis acutiore tetragonis inermibus pulverulento-puberulis; nodis annulatis; petioliis gracillimis obscure puberulis vel glabrescentibus; leminis chartaceis griseo-viridibus lanceolatis vel lanceolato-ellipticis longe acuminatis serrulatis, ad basin acutis vel plerumque acuminatis, supra scabris, subtus leviter puberulis; inflorescentiis axillaribus.

Erect shrub, freely branching; branches rather slender, obtusely tetragonal, sparingly aculeolate or unarmed, stramineous, very finely and obscurely pulverulent-puberulent or glabrescent; twigs more acutely tetragonal, unarmed, pulverulent-puberulent; nodes annulate; principal internodes 1--3 cm. long; leaves decussate-opposite, numerous; petioles very slender, 3--7 mm. long, very obscurely puberulent or glabrescent; blades chartaceous, gray-green, lanceolate or lanceolate-elliptic, 3--7 cm. long, 1--3 cm. wide, rather long-acuminate at apex, acute or usually acuminate at base, finely serrulate with blunt appressed teeth from apex to base, pronouncedly scabrous above, lightly puberulent and not scabrous beneath; midrib very slender, plane or slightly impressed above, prominent beneath; secondaries very slender, about 5 per side, arcuate-ascending, extending to the very margins, plane or subimpressed above, prominulous beneath; inflorescence axillary, usually borne only in the 2 or 3 uppermost axils of the twigs, shorter than the mature subtending leaves; peduncles 1 or 2 per axil, very slender, 1.5--2.5 cm. long, tetragonal, minutely puberulous; heads many-flowered, the canescent-puberulous rachis elongated to 1 cm. during anthesis; bractlets lanceolate-ovate, about 2 mm. long, 1 mm. wide at base, densely canescent-puberulous, sharply acute at the apex; calyx about 0.7 mm. long, canescent-puberulous outside; corolla bright-pink, its tube very slender, about 6 mm. long, pulverulent-puberulent outside, its limb about 3 mm. wide.

The type of this species was collected by Ynes Mexia (no. 4448a) in openings of cut-over woods, alt. 690 m., at about km. 2 along the road from Vigosa to Barroso, Minas Geraes, Brazil, on March 9, 1930, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*MALVA MOSCHATA* f. *ALBA* Moldenke, Am. Midl. Naturalist 35: 336, hyponym (1946), f. nov.

Haec forma a forma typica speciei corollis albis recedit. -- This form differs from the typical form of the species in



having white corollas. The type was collected by H. N. Moldenke (no. 15166) in a grassy field about 2 miles west of Warren, Warren County, Pennsylvania, on July 1, 1943, and is deposited in the herbarium of the Carnegie Museum at Pittsburgh. The form is quite common in this locality.

*MARIPA CUATRECASASI* Moldenke, sp. nov.

Frutex scandens; ramis ramulisque glabris; petiolis crassis curvatis glabris; laminis coriaceis ellipticis magnis longis acuminatis integris, ad basin rotundatis vel obtusis, utrinque glabris; inflorescentiis axillaribus corymbiformibus paucifloris; pedunculis fructiferis crassis glabris; pedicellis fructiferis glabris; calyce fructifero glabro.

Large liana; stems and branches glabrous; internodes apparently quite variable in length; leaves alternate; petioles stout, 2--2.5 cm. long, curved, glabrous, wrinkled in drying; blades coriaceous, clear-green on both surfaces, elliptic, 22--25 cm. long, 8.5--9 cm. wide, acuminate at apex, entire, rounded or obtuse at base, glabrous on both surfaces, not particularly shiny; midrib plane or very obscurely impressed above, very prominent beneath; secondaries slender, 7 or 8 per side, arcuate-ascending, not reaching the margins, mostly arcuate-joined about 5 mm. from the margins, plane above, prominent beneath; veinlet reticulation rather sparse, indiscernible above, only the largest portions discernible beneath; inflorescence axillary, corymbiform, few-flowered; flowers not seen; fruiting-peduncles very stout, 6--7 cm. long, glabrous, its branches few, 1--1.5 cm. long, glabrous; fruiting-pedicels stout, 1--1.5 cm. long, glabrous; fruiting-calyx incrassate, glabrous throughout, the sepals suborbicular, 5--6 mm. long and wide, rounded at apex; fruit elliptic, 3.5--4 cm. long, 2--2.5 cm. wide, yellow, acuminate at apex and base, its pericarp rather tough, enclosing 2 seeds in a dark sweet gelatinous endocarp.

The type of this species was collected by José Cuatrecasas (no. 16531) at La Trojita, alt. 5--50 m., Río Calima, in the region of the Chocó, El Valle, Colombia, between February 19 and March 10, 1944, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is quite distinct, differing at once from all the species of the genus listed in Martius, *Flora Brasiliensis* 7: 205--210 (1871) by being a large liana with a perfectly glabrous calyx, and from all the species listed by Gleason in the *Bulletin of the Torrey Botanical Club* 56: 107--111 (1929) by its axillary inflorescences, very large non-cuneate leaves, and lack of pubescence. The generic determination was made by Joseph Monachino.

*MEGAPTERIUM BRACHYCARPUM* var. *WRIGHTII* (A. Gray) Moldenke,



comb. nov.

Oenothera wrightii A. Gray, Pl. Wright. 2: 57. 1853.

PAEPALANTHUS BRITTONI Moldenke, Known Geogr. Distrib. Eriocaul. 5 & 45, hyponym (1946), nom. nov.

Paepalanthus montanus (Britton) Moldenke, Rev. Sudam. Bot. 4: 17. 1937 [not P. montanus Alv. Silv., Fl. Montium 76. 1928].

PAEPALANTHUS COUTOËNSIS Moldenke, Known Geogr. Distrib. Eriocaul. 11 & 47, hyponym (1946), nom. nov.

Paepalanthus barbulatus Alv. Silv., Fl. Montium 211, pl. 139 & 140. 1928 [not P. barbulatus Herzog in Fedde, Repert. 20: 83. 1924].

PAEPALANTHUS GLEASONII Moldenke, Known Geogr. Distrib. Eriocaul. 6 & 49, hyponym (1946), nom. nov.

Paepalanthus robustus Gleason, Bull. Torrey Bot. Club 58: 330. 1931 [not P. robustus Alv. Silv., Flor. Serr. Mineiras 53. 1908].

PAEPALANTHUS NEOCALDENSIS Moldenke, Known Geogr. Distrib. Eriocaul. 14 & 51, hyponym (1946), nom. nov.

Paepalanthus caldensis Alv. Silv., Fl. Montium 186, pl. 120. 1928 [not P. caldensis Malme, Bihang till K. Sv. Vet. Akad. Handl. 27, Afd. 3, no. 11: 29, pl. 2, fig. 3. 1901].

PAEPALANTHUS NEOPULVINATUS Moldenke, Known Geogr. Distrib. Eriocaul. 51 & 61, hyponym (1946), nom. nov.

Paepalanthus pulvinatus Alv. Silv., Fl. Montium 37, pl. 18. 1928 [not P. pulvinatus N. E. Br. in Thiselton-Dyer, Fl. Trop. Afr. 8: 263. 1902].

PHYLA YUCATANA Moldenke, sp. nov.

Herba procumbens; ramis gracilibus plerumque sulcatis canescento-strigillosis; petiolis plerumque alatis obscure canescento-strigillosis vel glabrescentibus; laminis ovatis vel ovato-ellipticis viridibus valde dentatis, ad apicem rotundatis vel acutis, ad basin acuminatis, utrinque dense canescento-strigillosis.

Procumbent herb, freely branched from the base; branches slender, rooting at the nodes, obtusely and rather irregularly tetragonal, often deeply and irregularly sulcate, often reddish or purplish toward the base, canescent-strigillose with closely appressed antrorse hairs, the tips ascending or erect; secondary branches more slender, stramineous, erect; nodes annulate; principal internodes 1--5 cm. long; leaves decussate-opposite, numerous; petioles 1--5 mm. long, mostly winged and merging into the base of the blade, rather

obscurely canescent-strigillose like the twigs or becoming glabrescent; blades ovate or ovate-elliptic, mostly conspicuously widest below the middle, uniformly green on both surfaces, 1.5--4 cm. long, 0.5--2 cm. wide, rounded or acute (in outline) at apex, acuminate at base and prolonged into the petiole, the margins conspicuously and regularly dentate with sharply acute or apiculate broadly triangular rather divergent teeth from the apex to the widest part, the margins of the teeth rather thick and often more or less involute, both surfaces rather densely canescent-strigillose with short closely appressed hairs usually visible only microscopically; midrib slender, plane above, very strong and prominent beneath; secondaries slender, 4--6 per side, plane above, very strong and prominent beneath, extending conspicuously to the leaf-margin and ending in the sinus between two teeth, often with 1 or 2 short branches issuing almost at the apex and extending to the apiculation of the nearest tooth; tertiaries and veinlet reticulation not visible; in drying, the leaves become almost plicate; inflorescence axillary, capitate; peduncles slender, 2.5--5.5 cm. long, usually only one per node, deeply sulcate, rather densely canescent-strigillose or glabrescent; heads densely many-flowered, 4--8 mm. long; bractlets ovate, about 3 mm. long, 1.5 mm. wide at the base, sharply acute at apex, densely canescent-strigose, strongly costate; calyx minute; corolla about 3 mm. long in all, its limb about 1.5 mm. wide.

The type of this species was collected by Percy Gentle [C. L. Lundell 4780] along the Corozal-Pachacan road, British Honduras, on July 20, 1933, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species was hitherto confused with P. nodiflora var. reptans (H.B.K.) Moldenke, the type of which is Venezuelan.

PHYLA YUCATANA var. PARVIFOLIA Moldenke, var. nov.

Haec varietas a forma typica speciei omnibus partibus minoribus et densiore canescento-strigosis recedit. -- This variety differs from the typical form of the species in being smaller in all its parts and more conspicuously canescent-strigose throughout. The stems and branches are often slightly woody; the internodes are often reduced to 1 cm. or less; the petioles are obsolete or only 1--2 mm. long; the leaf-blades are usually less than 1 cm. long and wide, with the venation plainly impressed above and prominent beneath, imparting a decided plicate appearance to the leaves, conspicuously canescent-strigose.

The type of this variety was collected by George B. Hinton (no. 6024) on a llano at Mal Paso, Heutamo district, Michoacan, Mexico, on May 9, 1934, and is deposited in the Britton Herbarium at the New York Botanical Garden. The col-

lector records the vernacular name "hierba de hormiga."

*PRIVA GRANDIFLORA* (Ort.) Moldenke, comb. nov.

*Verbena grandiflora* Ort., Hort. Matr. Dec. 2. 1797.

*SVENHEDINIA TRUNCATA* Moldenke, sp. nov.

Frutex vel arbor; ramulis crassiusculis glabris valde annulatis medullosis; petiolis crassis glabris marginatis, ad apicem biglanduliferis; laminis coriaceis ovatis magnis, ad apicem obtusis, integris subundulatis, ad basin late truncatis, utrinque glabris pernitidis; reticulo venularum valde perspicue utrinque prominente.

Shrub or tree; branchlets rather stout, glabrous, plainly annulate at the nodes, the annulation confluent with the upper margin of the petioles, very pithy; principal internodes 1--4.5 cm. long; leaves alternate; petioles stout, 5.5--8 cm. long, glabrous, flattened above, with two corky margins which terminate in two closely adjacent obtuse glands at the apex; blades coriaceous, ovate, to about 16 cm. long and 13 cm. wide, obtuse at apex, entire but slightly undulate along the margins, broadly truncate at base, glabrous and very shiny on both surfaces; midrib plane above, very prominent beneath, branching into 12 or more secondaries per side and very numerous tertiaries from the midrib, the secondaries, tertiaries, and veinlets forming a very abundant and beautifully conspicuous prominent reticulum on both surfaces, the reticulum equally prominent on both surfaces; inflorescence not seen.

The type of this species was collected by Julián Acuña Galé (no. 14069) at Alto Babiney, Sur del Turquino, Oriente, Cuba, on August 1, 1935, and is deposited in the herbarium of the Estacion Experimental Agronomica at Santiago de las Vegas. The species is obviously related to *S. minor* (Urb.) Urb., which differs notably in its very variable but always acute or attenuate leaf-blade bases.

*SYMPHOREMACEAE* Moldenke, nom. nov.

*Symphoremacées* Van Tieghem, Journ. de Bot. 12: 359--365. 1898.

*SYNGONANTHUS MINUTULUS* (Steud.) Moldenke, Known Geogr. Distrib. *Eriocaul.* 18 & 37, hyponym (1946), comb. nov.

*Eriocaulon minutulum* Steud., Syn. Fl. Cyp. 2: 270. 1855.

*TOXICODENDRON SUCCEDANEA* (L.) Moldenke, comb. nov.

*Rhus succedanea* L., Mant. 2: 221. 1767.

*TOXICODENDRON VERNICIFLUA* (Stokes) Moldenke, comb. nov.

*Rhus verniciflua* Stokes, Bot. Mat. Med. 2: 164. 1812.

## URGINEA SCILLA f. RUBRA Moldenke, f. nov.

Haec forma a forma typica speciei bulbis rubris recedit. -- This form differs from the typical form of the species in having red bulbs. The two forms of the species are kept separate in the trade, where the species is widely handled as a crude drug, and, according to my friend, Joseph Monachino, natives of Sicily invariably distinguish them. Up to the present time, however, I cannot find that the red form has ever received botanic recognition.

## VARRONIA ACUNAE Moldenke, sp. nov.

Frutex; ramis ramulisque subgracilibus subangulato-sulcatis dense puberulo-furfuraceis, juventute adpresso-strigillosis; foliis alternis numerosis; petiolis subobsoletis vel usque ad 2.5 mm. longis strigilloso-puberulis; foliis subcoriaceis anguste ellipticis argute acutis valde revolutis, ad basin attenuato-acutis, supra obscure pilosis vel glabrescentibus, subtus dense fulvo-strigillosis; inflorescentiis terminalibus capitatis.

Shrub; branches and branchlets rather slender, somewhat angulate-sulcate, densely puberulent-furfuraceous with fulvous hair, the younger ones more distinctly appressed-strigillose with incanous hair; leaf-scars elevated, corky-margined; leaves alternate, numerous; petioles to 2.5 mm. long (or almost obsolete on young leaves), rather densely strigillose-puberulent with fulvous appressed hair; leaf-blades subcoriaceous, narrow-elliptic, 1--4 cm. long, 4--10 mm. wide, sharply acute at apex, attenuate-acute at base, the margins very pronouncedly revolute, smooth to touch above and very obscurely scattered-pilose, glabrescent in age, rather densely strigillose-puberulent with fulvous hair beneath; inflorescence terminal, capitate; peduncles similar to the branchlets in texture, shape, and color, 3--4.5 cm. long, densely appressed-puberulent or strigillose with more or less fulvous hair, or slightly incanous toward the apex, several sulcate; heads globose, about 1 cm. in diameter, many-flowered; calyx campanulate or cupuliform, about 3 mm. long, rather sparsely strigose, its rim distinctly 5-lobed, each lobe terminating in a filiform twisted densely strigose appendage about 3 mm. long, the many contorted appendages very conspicuous in the flowering and fruiting heads; fruit elliptic, about 3 mm. long and 1.8 mm. wide, beaked at the apex, glabrous, somewhat reticulate.

The type of this species was collected by Julián Acuña Galé (no. 12687) along the highway at Delta No. 1, Moa, Oriente, Cuba, on April 17, 1945, and is deposited in the herbarium of the Estacion Experimental Agronomica at Santiago de las Vegas. The species is obviously related to V. globosa Jacq., which has similar flower-heads, but entirely



different leaves.

VARRONIA CORIACEA Moldenke, sp. nov.

Frutex; ramulis gracilibus griseis dense setuloso-hispidis, pilis ad basin bulbosis; internodiis valde abbreviatis; petiolis gracilibus densae setuloso-hispidis; laminis subcoriaceis ellipticis vel lanceolato-ellipticis, ad apicem obtusis, ad basin rotundatis, irregulariter denticulatis revolutis; supra juventute dense setuloso-hispidis, senectute scabris, subtus setuloso-hispidis; costa venisque venulisque valde supra impressis, subtus prominentibus; inflorescentiis terminalibus capitatis setuloso-hispidis.

Shrub; branchlets slender, gray, densely setulose-hispid, with bulbous-based hairs which, upon being rubbed off, leave the branchlets conspicuously verruculose; principal internodes greatly abbreviated, usually 1--1.5 cm. long; leaf-scars elevated on corky circular sterigmata; petioles slender, about 1 cm. long, densely setulose-hispid; blades subcoriaceous, elliptic or lanceolate-elliptic, 3.5--5.5 cm. long, 1.7--3 cm. wide, obtuse at apex, rounded at base, rather irregularly denticulate except at the base, but the margins so much revolute that the teeth are not obvious in the dried state, scabrous above with short white bulbous-based hairs, setulose-hispid beneath (and above when young) with longer more slender and not so plainly bulbous-based hairs, the hairs on the larger venation more plainly bulbous-based; midrib deeply impressed above, very prominent beneath; secondaries and tertiaries deeply impressed above, giving the leaf a very bullate aspect, prominent beneath; inflorescence terminal, capitate, varying from slightly to very densely setulose-hispid with long white spreading hairs, densely many-flowered; peduncles slender, 1--2 cm. long, densely setulose-hispid; calyx campanulate, about 6 mm. long, puberulent and also more or less setose, its rim regularly 5-lobed, the lobes sharply acute and about 2 mm. long; corolla exerted, glabrous, its limb about 1 cm. wide.

The type of this species was collected by my good friend and colleague, Julián Acuña Galé (no. 14120) [an isotype is labelled "Van Herman 14120"] at Lengua de Pajaro, Mayari, Oriente, Cuba, in March, 1943, and is deposited in the herbarium of the Estacion Experimental Agronomica at Santiago de las Vegas. The species is apparently related to V. lima Desv., which differs in its non-hispid branches and inflorescences, few-flowered heads, and leaf-blades acute or attenuate at the base, and to Varronia Grisebachii (Urb.) Moldenke [Cordia Grisebachii Urb., Symb. Ant. 4: 477. 1908], which differs markedly in its leaf-blades being acute at the base and in its non-hispid pubescence on branchlets, petioles, and inflorescences.

**VARRONIA MOËNSIS** Moldenke, sp. nov.

Frutex; ramis gracilibus griseis glabris; foliis alternis; petiolis gracilibus glabris; laminis subcoriaceis lanceolatis vel suboblanceolatis utrinque glabris nitidis brunnescentibus integris subrevolutis, ad apicem acutis vel breviter acuminatis, ad basin longe attenuatis; inflorescentiis axillaribus capitatis; pedunculis filiformibus valde elongatis nutantibus glabris.

Shrub; branches slender, gray, glabrous, marked with scattered elevated lenticels; leaves alternate; petioles slender, 2--5 mm. long, glabrous, flattened or slightly canaliculate above; leaf-blades subcoriaceous, lanceolate or suboblanceolate, 1.2--3.8 cm. long, 4--9 mm. wide, glabrous on both surfaces, shiny above, brunnescent in drying, acute or short-acuminate at apex, entire and somewhat revolute along the margins, long-attenuate at base; inflorescence axillary, capitate; peduncles filiform, 1.5--4.5 cm. long, mostly greatly elongated and nutant, glabrous, slightly amplicate at the apex; receptacle club-shaped, very sparsely short-pilose.

The type of this species was collected by Julián Acuña Galé (no. 12686) along the road at Delta No. 1, Moa, Oriente, Cuba, on April 17, 1945, and is deposited in the herbarium of the Estacion Experimental Agronomica at Santiago de las Vegas. The species is apparently related to V. longipedunculata Britton & P. Wils., from which it may at once be distinguished by its much narrower leaf-blades and its filiform nutant peduncles.

**×VERBENA BEALEI** Moldenke, nom. nov.

Verbena hispida x litoralis Dermen, Cytologia 7: 164, 169, 170, 171, & 175. 1936.

**×VERBENA BINGENENSIS** Moldenke, hybr. nov.

Herba mediocriter magna, ut videtur hybrida naturalis; ramis sublignosis obtuse tetragonis, juventute pubescentibus; ramulis argute tetragonis dense albedo-pubescentibus; petiolis alatis brevibus; laminis firme chartaceis fragilibus ovatis irregulariter inciso-laciniatis utrinque substri-goso-pubescentibus, supra scaberrimis; inflorescentiis simplicibus vel pauce ramosis axillaribus.

Medium-sized herb, apparently a natural hybrid between V. bracteata Lag. & Rodr. and V. lasiostachys var. septentrionalis Moldenke; stems medium, slightly woody at the base, obtusely tetragonal, brown, often blotched, rather abundantly pubescent with soft weak white hairs about 1 mm. long, wearing off in age; nodes annulate; principal internodes short, 2.5--5 cm. long; branches numerous, slender, more sharply tetragonal and more densely white-pubescent

with soft hairs; leaves decussate-opposite; petioles short, 2--5 mm. long, winged, grading imperceptibly into the blade; blades firmly chartaceous, brittle in drying, very rough above (when the finger is drawn downwards) and slightly so beneath, ovate in outline, to 5 cm. long, mostly about 1--1.5 cm. wide, the largest to 3 cm. wide at base, irregularly incised-laciniate, the two lowest laciniae often lobe-like and spreading on the largest leaves, abundantly substrigose-pubescent on both surfaces, the hairs very variable in length beneath and densest on the venation; venation impressed above, prominent beneath; inflorescence abundant, simple or few-branched, in the axils of all the upper leaves; peduncles slender, 1--5 cm. long, sharply tetragonal, densely short-pubescent; rachis slender, densely pubescent with rather stiff forward-pointing white hairs of various lengths; spikes to about 10 cm. long, densely many-flowered, apparently setting seed very poorly, the mature calyxes rather distant; bractlets large and conspicuous, very variable in size, 4--8 mm. long, lanceolate, the lowermost slightly foliaceous, attenuate-acuminate, about 1 mm. wide at base, more or less strigose, not keeled except when very old, mostly greatly exceeding the calyx; calyx 3--4 mm. long, densely strigose; corolla-tube slightly surpassing the calyx, densely puberulent outside, its limb about 2 mm. wide.

The type of this natural hybrid was collected by Wilhelm N. Saksdorf in bottomlands near Bingen, Klickitat County, Washington, on July 9, 1898, and is deposited in the Britton Herbarium at the New York Botanical Garden.

VERBENA BRACTEATA f. ALBIFLORA (Cockerell) Moldenke, comb. nov.

Verbena bracteosa f. albiflora Cockerell in Daniels, Fl. Boulder Colo. 204. 1911.

XVERBENA COVASII Moldenke, nom. nov.

Glandularia santiaguensis x laciniata Schnack & Covas, Darwiniana 7: 74. 1945; Rev. Argent. Agronom. 12: 228. 1945.

VERBENA CUMINGII Moldenke, sp. nov.

Herba; ramis procumbentibus stramineis tetragonis albo-hirsutis; petiolis late alatis; laminis valde dissectis vel bipinnatifidis utrinque strigosis, lobis subacutis revolutis tenuiter chartaceis; inflorescentiis solitariis terminalibus; pedunculis elongatis rectis hirsutulis.

Herb; stems apparently procumbent, ascending at the tips, stramineous, tetragonal, hirsute with long white spreading or reflexed hairs; principal internodes 2--3.5 cm. long; nodes annulate, densely hirsute; leaves decussate-opposite, usually with an abbreviated branch in each axil, the branch



very leafy and very hirsute; petioles about 5 mm. long or slightly longer, broadly winged and indistinguishable from the lamina; blades deeply dissected or bipinnatifid, strigose on both surfaces, to 4 cm. long, the lobes subacute, the margins slightly revolute, uniformly green on both surfaces, thin-chartaceous; midrib and secondaries very slender, obscure above, prominulous beneath; inflorescence solitary at the end of each stem; peduncles erect, elongate, 15--17 cm. long, rather more sparsely hirsutulous than the stems but similar in color and texture, terminated by a pair of opposite flowers with their subtending bracts and, about 1 cm. beyond them, a dense head of flowers; bractlets lanceolate, 8--9 mm. long, about 1 mm. wide at the base, long-attenuate at apex, hirsute-ciliate along the lower margins and short-strigillose on the back and toward the apex on the margins; calyx tubular, 10--11 mm. long (including the teeth), strigose with appressed whitish hairs of several lengths, its rim irregularly 5-toothed, the teeth long-attenuate, 1--2 mm. long; corolla large, showy, its tube projecting about 2--3 mm. beyond the calyx, smooth outside, its limb about 12 mm. wide, the lobes deeply bilobed at apex; anther-appendages large, black, conspicuously exerted.

The type of this species was collected by Hugh Cuming (no. 908) somewhere in Chile, sent to the Martius Herbarium in 1835, now deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

*VERBENA CURTISII* Moldenke, sp. nov.

Herba; ramis tetragonis stramineis leviter strigillosis; petiolis gracilibus parce pilosis; laminis leviter chartaceis lanceolatis acutis vel subacutis regulariter serratis, ad basin attenuatis, utrinque strigillosis; spicis gracilibus numerosis multifloris elongatis.

Herb; stems tetragonal, stramineous, lightly strigillose; nodes annulate, with a transverse band of short white hairs; leaves decussate-opposite, only the upper ones in and just below the inflorescence seen; petioles slender, 1--10 mm. long, sparsely scattered-pilose with short white hairs; blades thin-chartaceous, light-green, lanceolate, 1.5--4 cm. long, 7--20 mm. wide, acute or subacute at apex, attenuate into the petiole at base, rather regularly serrate from the widest part to the apex with blunt or acute broadly triangular forward-pointing teeth, scattered-strigillose on both surfaces with short appressed whitish hairs, more densely so along the venation beneath; inflorescence abundant; spikes slender, numerous, two from each upper node, three at the apex of each branch, 4--15 cm. long, rather densely flowered and fruited, often branched toward the base, the branches subtended by reduced leaves; peduncles slender, usually ab-



breviated to about 1 cm., lightly strigillose; bractlets lanceolate, about 2 mm. long, long-attenuate at apex, ciliate-margined, otherwise glabrate, persistent after the fruit and fruiting-calyx have fallen; fruiting-calyx about 2 mm. long, strigillose, especially toward the apex, the teeth coming together over the apex of the fruit and forming a distinctly sharp point until the calyx is ruptured; fruit 1 mm. long, smooth, long-coherent; corolla very small, the tube about 2 mm. long, the limb slightly exerted.

The type of this species was collected by Moses Ashley Curtis somewhere in "Carolina" [probably North Carolina] and is labelled "Verbena carolina L." It is Herb. G. Geete no. 5702, now deposited in the herbarium of the Botaniska Trädgård at Göteborg, Sweden. The species reminds one of V. carolina L. in its general aspect, but differs markedly in its minute pubescence. It also resembles V. urticifolia L., but its fruiting-calyxes are more like those of V. scabra Vahl, from which its non-scabrous leaves at once distinguish it. It differs from V. riparia Raf. and V. urticifolia in its dense fruiting-spikes and from the former in its non-lobed leaves. Its full fruiting-calyxes seem to preclude V. Engelmannii Moldenke or any other hybrid origin.

×VERBENA DERMENI Moldenke, nom. nov.

Verbena hispida x bonariensis Dermen, Cytologia 7: 164, 165, 170, 171, & 175. 1936.

VERBENA DISSECTA f. GLANDULIFERA (Sanzin) Moldenke, comb. nov.

Verbena erinoides var. glandulifera Sanzin, Anal. Soc. Cientific. Argent. 88: 131, fig. 34b. 1919.

VERBENA HAYEKII Moldenke, nom. nov.

Verbena procumbens Hayek in Engl., Bot. Jahrb. 42: 163. 1908 [not V. procumbens Forsk., Fl. Aegypt. Arab. 10. 1775].

VERBENA HOOKERIANA (Covas & Schnack) Moldenke, comb. nov.

Glandularia Hookeriana Covas & Schnack, Rev. Argent. Agronom. 12: 57, fig. 1. 1945.

×VERBENA KONDAI Moldenke, nom. nov.

Verbena racemosa x erinoides Dermen, Cytologia 7: 163. 1936.

×VERBENA LECOCQI Moldenke, nom. nov.

Verbena hispida x prostrata Dermen, Cytologia 7: 170. 1936.

VERBENA MONACENSIS Moldenke, sp. nov.

Herba; ramis prostratis ramosis acute tetragonis pilosis; ramulis fere submarginatis dense adpresseque pubescentibus; petiolis alatis strigosis; laminis chartaceis valde trifidis incis, lobis obtusis ellipticis vel oblanceolatis utrinque strigosis, marginibus subrevolutis; inflorescentiis solitariis terminalibus dense multifloris senectute elongatis.

Herb; stems apparently prostrate, ascending toward the tips, branched, sharply tetragonal, brownish, lightly and irregularly pilose, less so in age; branches more sharply tetragonal (almost submarginated) and more densely appressed-pubescent; nodes annulate; principal internodes 2--7 cm. long; leaves decussate-opposite, often bearing abbreviated and very leafy branches in their axils; petioles to 1 cm. long, usually much shorter, winged and almost indistinguishable from the rachis of the lamina, strigose on both surfaces; blades uniformly green on both surfaces, chartaceous, deeply trifid, the divisions again incised, the individual lobes mostly obtuse at apex and elliptic or oblanceolate in outline rather than linear or oblong, strigose on both surfaces, the margins slightly revolute, the midrib and secondaries slender, obscure above, prominulous beneath; inflorescence solitary at the end of each stem and branch, at first congested, later elongating to 4 cm. or more, densely many-flowered; peduncles slender, 1.5--6.5 cm. long, densely strigose or appressed-pubescent, conspicuously tetragonal like the branches; bractlets lanceolate, about 6 mm. long, 1 mm. wide at the base, densely short-pubescent with subappressed whitish hairs, densely white-ciliate along the margins, long-attenuate at apex; calyx tubular, 8--9 mm. long (including the teeth), strigillose, 5-costate, its rim shortly 5-toothed, the teeth triangular and usually less than 1 mm. long; corolla large, showy, its tube projecting about 5 mm. beyond the calyx, glabrous outside, its limb about 1 cm. wide, the lobes shallowly bilobed at the apex; anther-appendages not exerted.

The type of this species is a specimen from the Martius Herbarium now deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels, said to have been collected from cultivated plants at Munich, Germany.

×*VERBENA* *NOACKI* Moldenke, nom. nov.

*Verbena hispida* × *hastata* Dermen, Cytologia 7: 170. 1936.

*VERBENA* *PARODII* (Covas & Schnack) Moldenke, comb. nov.

*Glandularia Parodii* Covas & Schnack, Rev. Argent. Agrom. 11: 94, fig. 3. 1944.

*VERBENA* *FERAKII* (Covas & Schnack) Moldenke, comb. nov.

*Glandularia Ferakii* Covas & Schnack, Rev. Argent. Agro-

nom. 11: 89, fig. 1. 1944.

VERBENA FERENNIS var. JOHNSTONI Moldenke, var. nov.

Haec varietas a forma typica speciei ubique dense hirtellis recedit. -- This variety differs from the typical form of the species in having its stems, leaves, and rachis densely spreading-hirtellous, the leaves to 5 cm. long, the lowermost often with several linear lobes.

The type of this variety was collected by L. R. Stanford, K. L. Retherford, and R. D. Northcraft (no. 915) among varied vegetation of large shrubs, small trees, and herbs, in broad damp river-beds, alt. 1950 m., 12 km. northwest of Palmillas, on the road to Miquihuana, Tamaulipas, Mexico, on August 14, 1941, and is deposited in the Britton Herbarium at the New York Botanical Garden. It was originally distributed as "Verbena Shrevei Johnston."

VERBENA RIGIDA var. REINECKII (Briq.) Moldenke, comb. nov.

Verbena venosa var. Reineckii Briq., Ann. Conserv. & Jard. Bot. Genève. 3: 164. 1899.

VERBENA SANTIAGUENSIS (Covas & Schnack) Moldenke, comb. nov.

Glandularia santiaguensis Covas & Schnack, Rev. Argent. Agronom. 11: 92, fig. 2. 1944.

× VERBENA SCHNACKII Moldenke, nom. nov.

Glandularia peruviana x megapotamica Schnack & Covas, Rev. Argent. Agronom. 12: 227--228, pl. 12, figs. 1--3. 1945.

× VERBENA SUKSDORFI Moldenke, hybr. nov.

Herba alta ut videtur hybrida naturalis; ramis mediocriter crassis tetragonis breviter pubescentibus scabris, pilis ad basin bulbosis; petiolis late alatis; laminis crassiusculis firmis scaberrimis fragilibus valde trifidis vel laciniato-incisis ovatis, ad basin saepe 2-lobatis, marginibus revolutis, utrinque breviter pubescentibus, pilis ad basin bulbosis; spicis perelongatis dense multifloris.

Tall herb, apparently a natural hybrid between V. officinalis L. and V. lasiostachys var. septentrionalis Moldenke; stems rather stout, obtusely tetragonal below, sharply angled above, light-colored, rather abundantly short-pubescent toward the base with stiff whitish often bulbous-based hair less than 1 mm. long, less densely so toward the apex and on the branches, peduncles, and rachis, but sufficiently abundant throughout to impart a very rough and harsh feel to these organs especially when the finger is moved downwards, the uppermost portions of the stem with margined angles, the stems, branches, and peduncles also very densely fine-puberulent with microscopic (almost punctiform) hairs, the rachis

more conspicuously puberulent with longer whitish forward-pointing hairs; principal internodes mostly elongate, 3--8 cm. long; leaves decussate-opposite, usually with clusters of smaller ones on greatly abbreviated branches in their axils; nodes plainly annulate; petioles 1--2 cm. long, broadly winged and not plainly distinguishable from the blades into which they grade; blades rather thick and firm, very harsh to touch on both surfaces, very brittle in drying, to about 9 cm. long, varying from deeply 3-fid to undivided and merely laciniate-incised along the margins, ovate in outline, the two basal lobes on the largest leaves usually wide-spreading, giving the blade a width of 5.5 cm. at the base, incised-laciniate, the margins more or less revolute, more or less densely short-pubescent on both surfaces with stiff forward-pointing bulbous-based hairs, more densely and lastingly so on the venation beneath; inflorescence copiously branched at the apex of the stem; spikes greatly elongate, usually 15--40 cm. long, densely many-flowered, but apparently not setting fruit; peduncles mostly abbreviated, acutely tetragonal, margined; bractlets ovate, about 2 mm. long, 0.5--1 mm. wide at base, ciliate-margined to the apex, puberulent on the back, acuminate, keeled; calyx slightly longer than the subtending bractlet, about 3 mm. long, whitish-strigose; corolla-tube equalling the calyx, its limb about 2 mm. wide.

The type of this remarkable plant was collected by Wilhelm N. Suksdorf in a garden at Bingen, Klickitat County, Washington, on November 21, 1904, and is deposited in the herbarium of the State College of Washington at Pullman. The plant seems definitely to be a hybrid because the greatly elongated spikes in the only two specimens seen contain thousands of mature calyxes, but not a single fruit. The other described natural hybrids in the genus are also noted for their paucity in fruiting, but none has the lack of fruit as complete as this one!

VERONICA SERPYLLIFOLIA f. ALBIFLORA Moldenke, Am. Midl.

Naturalist 35: 376, hyponym (1946), f. nov.

Haec forma a forma typica speciei corollis albis recedit. -- This form differs from the typical form of the species in having pure-white corollas. The type was collected by H. N. Moldenke (no. 17293) in a field at Cranbrook Farm, North Warren, Warren County, Pennsylvania, on May 8, 1945, and is deposited in the herbarium of the Academy of Natural Sciences at Philadelphia.

XCHRYSANTHEMUM CULTORUM Moldenke, nom. nov.

Chrysanthemum morifolium Ram. x C. sibiricum Fisch. ex Rehd., Man. Cult. Trees & Shrubs, ed. 2, 882. 1940.



SUPPLEMENTARY NOTES ON THE ERIOCAULACEAE, AVICENNIACEAE, AND  
VERBENACEAE OF TEXAS. II

Harold N. Moldenke

Since the publication of my discussion of these three families in Lundell's "Flora of Texas", volume 3, part 1, pages 1--87 (1942) and the first in my series of supplementary notes thereto in *Phytologia* 2: 123--128 (1945) nine hundred and sixty-three additional Texan specimens have been examined. These additional specimens have yielded several scores of new county records and even three new species and varieties for the state. This new material has come to me from thirty-three herbaria, the abbreviations for which as employed hereinafter are as follows: Al = New York State Museum, Albany, New York; Au = University of Texas, Austin, Texas; Br = Jardin Botanique de l'Etat, Brussels, Belgium; Bt = Butler University, Indianapolis, Indiana; Cn = Carnegie Museum, Pittsburgh, Pennsylvania; Cn = University of Cincinnati, Cincinnati, Ohio; Du = Dudley Herbarium, Leland Stanford University, California; Fc = Colorado Agricultural & Mechanical College, Fort Collins, Colorado; Ga = Georgia Agricultural Experiment Station, Experiment, Georgia; Go = Botaniska Trädgård, Göteborg, Sweden; H = Duke University, Durham, North Carolina; Hp = H. Hapeman herbarium, Minden, Nebraska; He = Crispus Attucks High School, Indianapolis, Indiana; I = Langlois Herbarium, Catholic University of America, Washington; It = Cornell University, Ithaca, New York; Ka = Kansas State College, Manhattan, Kansas; Kr = B. A. Krukoff herbarium, New York Botanical Garden, New York City; Ky = University of Kentucky, Lexington, Kentucky; La = University of California at Los Angeles, Los Angeles, California; Ll = Lloyd Library, Cincinnati, Ohio; Me = Instituto de Biología, Universidad Nacional de México, Mexico City; Ml = Instituto Miguel Lillo, Tucumán, Argentina; N = Britton Herbarium, New York Botanical Garden, New York City; Ok = University of Oklahoma, Norman, Oklahoma; Pl = State College of Washington, Pullman, Washington; Po = Pomona College, Claremont, California; Pr = Princeton University herbarium, New York Botanical Garden, New York City; Se = University of Washington, Seattle, Washington; St = Oklahoma Agricultural & Mechanical College, Stillwater, Oklahoma; Up = University of Pennsylvania, Philadelphia, Pennsylvania; Vt = University of Vermont, Burlington, Vermont; W = United States National Herbarium, Smithsonian Institution, Washington; and We = West Virginia University, Morgantown, West Virginia. I am deeply grateful to the directors and curators of these herb-

aria for permitting me to examine and annotate this material.

*ERIOCAULON COMPRESSUM* Lam.

Hardin Co.: E. J. Palmer 9563 (Du); Tharp s.n. [July 20, 1929] (Au). Jefferson Co.: Hooks s.n. [Beaumont, 5/3/1930] (Au, N), s.n. [Beaumont, 5/30/34] (Au).

*ERIOCAULON DECANGULARE* L.

Anderson Co.: LeSueur & Smith s.n. [7/7/35] (Au, N), s.n. [7/7/38] (Au). Austin Co.: Tharp 44347 (N), 44348a (N), s.n. [6/28/42] (Al, Au). Freestone Co.: G. W. Goldsmith s.n. [6/15/41] (Au, Au). Hardin Co.: Tharp s.n. [July 20, 1929] (Au, Au), s.n. [7-21-42] (Au). Henderson Co.: Tharp 2880 (Au). Jasper Co.: G. L. Fisher 32101 (Au, Au). Jefferson Co.: Mrs. Smith s.n. [Beaumont, July '15] (Au). Newton Co.: Tharp 44342 (Au, N). Robertson Co.: F. A. Barkley 1340 (Al), 13034 (N). Rusk Co.: Vinzent 47 (Br). Smith Co.: J. Reverchon 2766 (Po), 4359a (Po). Tyler Co.: Tharp 44345 (Au, N). Waller Co.: E. Hall 675 (Po).

*ERIOCAULON KÖRNICKIANUM* Van Heurck & Mill.-Arg.

Polk Co.: Tharp 42-6 (N), 42-7 (N).

*ERIOCAULON TEXENSE* Körn.

Austin Co.: Tharp s.n. [5/4/40] (Au); Warnock 224 (N). Leon Co.: F. A. Barkley 13556 (N). Milam Co.: Tharp 4434c (Au, N), 44344 (N), 44344b (N). Robertson Co.: F. A. Barkley 13543 (N); Painter & Barkley 13540 (N).

*LACHNOCAULON ANCEPS* (Walt.) Morong

Jasper Co.: Whitehouse s.n. [6/10/1931] (Au, Au, N). Jefferson Co.: Hooks s.n. [5/30/34] (Au), s.n. [6/7/36] (Au). Newton Co.: Tharp 44346 (Au, N). Tyler Co.: Tharp 44343 (Au, N).

*AVICENNIA NITIDA* Jacq.

An additional vernacular name for the species from Texas is "mangle negro", recorded by Runyon.

Cameron Co.: Parks 1724 (Au); R. Runyon 4031 (Au). Nueces Co.: Tharp s.n. [July 2, 1939] (Au).

*ALOYSIA LIGUSTRINA* (Lag.) Small

Bexar Co.: G. L. Fisher s.n. [San Antonio, July 11, 1921] (Hp, Vt); Headley s.n. [April 15, 1907] (I); Metz 62 (Hp, I, Se), 65 (I), s.n. [October 23, 1933] (I); H. B. Parks 2524 (Au). Brewster Co.: C. H. Mueller s.n. [July 12, 1932] (Au); L. T. Murray s.n. [Garden Springs, May 21, 1928] (It); Nelson & Nelson 5108 (Au); Warnock 66, in part (Au), 20675 (Au), 20689 (Au), W.288 (Au). Cameron Co.: R. Runyon s.n. [Browns-

ville, 1930] (Hp). Comal Co.: Lindheimer 275 (Ka), 1070 (Br, Me, Me, Me, Me). Concho Co.: J. Reverchon s.n. [Curtiss 1965\*] (I, Vt). Culberson Co.: U. T. Waterfall 4629 (N), 5091 (Au, N), 5458 (N). Dallas Co.: J. Reverchon s.n. [Aug. 1877] (Vt). Frio Co.: Griffen & Barkley 13909 (Au). Hidalgo Co.: Clover 10, in part (I, Me). Hudspeth Co.: U. T. Waterfall 4963 (N). Jeff Davis Co.: F. A. Barkley 141837 (Au); Tracy & Earle 184 (Cm). Kleberg Co.: J. F. Sinclair s.n. [Kingsville, Spring, 1940] (Au). La Salle Co.: Mauermann 2 (Au), 21 (Au). Llano Co.: Tharp s.n. [8-17-40] (Fl). Mason Co.: Nelson & Nelson 5195 (Au). Mitchell Co.: Tracy 8308 (Cm). Pecos Co.: Tharp 43-794 (Al, Au). Presidio Co.: Hitchcock & Stanford 6811 (Pl, Po, Se); M. S. Young s.n. [Sept. 7, 1914] (Se). Travis Co.: C. C. Albers 32018 (Au); F. A. Barkley 13432 (Au); Letterman 390 (Ka), s.n. [Austin, July, 1882] (Al); R. H. Painter 29 (Ka); Tharp s.n. [Austin, 7/25/41] (Pl, Se). Val Verde Co.: W. H. Rhoades s.n. [Delrio, Aug. 1932] (Ha). County undetermined: A. S. Hitchcock s.n. (Ka); Lindheimer 502 (Br, Ka).

ALOYSIA LIGUSTRINA var. SCHULZII (Standl.) Moldenke

Brewster Co.: Warnock 66, in part (Au). Hidalgo Co.: Clover 10, in part (Me). Pecos Co.: Hinckley s.n. [June 30, 1941] (Au); Tharp 43-793 (Au). Val Verde Co.: Cory 39092 (Au); G. L. Fisher 32233 (Po); Munz 1446 (Po).

ALOYSIA MACROSTACHYA (Torr.) Moldenke

Hidalgo Co.: Clover 1075 (I); Mrs. E. J. Walker 20 (Au, Au); T. R. Walker s.n. [summer, 1938] (Au). Live Oak Co.: Owens 1717 (Au); H. B. Parks 2043 (Au).

ALOYSIA WRIGHTII (A. Gray) Heller

Brewster Co.: Warnock 308 (Au, Au), 308b (Au), 20051 (Au), 20438 (Au), 21272 (Au). El Paso Co.: Shiner 40171 (Au). Jeff Davis Co.: M. S. Young s.n. [Davis Mts., Aug. 11, '14] (Se). Pecos Co.: Tharp 43-795 (Au), 253 (H). Presidio Co.: Hinckley s.n. [July 8, 1941] (Au).

BOUCHEA SPATHULATA Torr.

Brewster Co.: H. C. Hanson 718 (Ka); Moore & Steyermark 3446 (Du).

CALLICARPA AMERICANA L.

Aransas Co.: Cory 45742 (Au). Bexar Co.: A. A. Heller 1832 (Se); Metz 273 (Se). Comal Co.: Lindheimer 297 (Ka), 1067 (Me, Me, Me). De Witt Co.: M. Riedel s.n. [6-3-42] (Au). Fayette Co.: Forshey s.n. [Rutersville, 1857] (Ka). Gregg Co.: C. L. York s.n. [Fall, 1937] (Au). Nacogdoches Co.: Crausley s.n. [July 18, 1944] (Au). Polk Co.: Girvin

101 (Au). Robertson Co.: F. A. Barkley 13590 (Au). Travis Co.: McKee & Wesley 3860 (Au); R. H. Painter s.n. [Austin, 8/6/23] (Ka); Ripperton & Barkley 14524 (Au); Tharp 44416 (Au), s.n. [Austin, 7-21-40] (Pl, Se); York & Wolf 46 (Au). Trinity Co.: Goodrum s.n. [June, 1936] (Au). Washington Co.: C. C. Albers 32022 (Au); Brackett 253 (Au), s.n. [7/1/39] (Au). Victoria Co.: Ferris & Duncan 3258 (Du).

CALLICARPA AMERICANA var. LACTEA F. J. Muller

Chambers Co.: G. L. Fisher s.n. [Anahuac, Sept. 18, 1931] (Du).

CITHAREXYLUM BERLANDIERI B. L. Robinson

Cameron Co.: Clover 1237 (Du); Ferris & Duncan 3051 (Du); G. L. Fisher 41195 (Hp); Owens & Parks R.1713 (Au), R.1714 (Au); I. Shiller 659 (Au); Tharp 1852 (N). Willacy Co.: Tharp 1227 (N), 1249 (N).

CLERODENDRUM FRAGRANS var. PLENIFLORUM Schau.

Gonzalez Co. (cultivated): Cory 29602 (Au).

CLERODENDRUM INDICUM (L.) Kuntze

Cultivated: Drushel, Tharp, & Barkley 13A163 (Au).

LANTANA CAMARA L.

Travis Co.: Warnock 11 (Au).

LANTANA CAMARA var. MISTA (L.) L. H. Bailey

Travis Co.: J. L. White 4732 (Au).

LANTANA HORRIDA H.B.K.

Aranas Co.: Cory 45381 (Au), 45740 (Au). Bexar Co.: Metz 57 (Se); H. B. Parks 15596 (Kr). Cameron Co.: R. Runyon s.n. [Brownsville, 1930] (Hp). Comal Co.: Lindheimer 334 (Ka), 1068 (Me, Me, Me). De Witt Co.: M. Riedel s.n. [7-27-41] (Au). Gonzales Co.: F. A. Barkley 13882 (Au); Tharp s.n. [Ottine, 5/1/35] (St). Harris Co.: G. L. Fisher s.n. [Houston, May 16, 1916] (Hp). Hays Co.: Heald & Wolf 911 (Au); Straudtmann s.n. [San Marcos, Apr. 23, 1937] (Au). Hidalgo Co.: Walker & George 133 (Au). Medina Co.: Tharp s.n. [Devine] (Au). Nueces Co.: A. A. Heller 1386 (Pl). Travis Co.: C. C. Albers 32017 (Au); Harpin, Waldorf, & Barkley 13076 (Au); R. H. Painter 85 (Ka); Tharp 44155 (Au), s.n. [Austin, 5/9/35] (St). Victoria Co.: P. O. Schallert 555, in part (H). Washington Co.: C. C. Albers 34012 (Au); Brackett s.n. [July 1938] (Au). Willacy Co.: Tharp 1197 (Au). County undetermined: Nealley s.n. [s.w. Texas, 1888] (Fc).

LANTANA MACROPODA Torr.



Mr. V. L. Cory offers the following valuable corrections to my key to the Texan species of Lantana: "No. 35922 is Lantana macropoda Torr. to me is correct; but from your key in FLORA OF TEXAS I would not place it there. In that key the separation from L. citrosa is unsatisfactory so far as our material is concerned. 'Leaf-blades sharply serrate' is not true for the material of 35922, and it might stretch it some to be considered true for the material from Starr County (No. 35934), although there is a point to the teeth here and this is lacking in the material from Zapata County and on up the Rio Grande. I have written in my book this correction of your key 'leaf-blades broadly crenate to serrate'. Now as to L. citrosa (No. 36729), the 'Leaf-blades finely crenate or subentire' to me also is misleading, for the leaves here to me are more nearly serrate than they are in L. macropoda. However, there are other differences in the leaves of these two species that would not be misleading."

Brewster Co.: C. H. Muller 32016 (Au), s.n. [Chisos Mts., 7-17-32] (Au); Warnock 253 (Au), 831, in part (Au), s.n. [May 2, 1937] (Au, Au). Cameron Co.: Small & Wherry 11841 (Ml). Duval Co.: F. A. Barkley 13889 (Au). Hidalgo Co.: M. L. Walker 105 (Au). Kinney Co.: H. B. Parks PK.002 (Au). Presidio Co.: Hinckley 1502 (Au, N). Reeves Co.: Tharp 8852 (N). Starr Co.: Clover 1395 (I). Val Verde Co.: Cory 38096 (Au), 39745 (Au); G. L. Fisher s.n. [Davila River, July 14, 1927] (Hp); M. E. Jones 26218 (I); Rose-Innes & Moon 1292 (Au); Rose-Innes & Warnock 602 (Au).

#### LIPPIA ALBA (Mill.) N. E. Br.

A. D. J. Meeuse in "Blumea", vol. 5, pp. 68--69 (1942) claims that the correct name for this plant is L. javanica (Burm. f.) Spreng. However, until I am able to examine the type specimen and complete certain bibliographic inquiries I am reserving judgment and am continuing to use Brown's name.

Cameron Co.: A. M. Davis s.n. [Palm Grove, Sept. '41] (Au); G. L. Fisher s.n. [Brownsville, Aug. 16, 1924] (Hp), s.n. [Apr. 20, 1941] (Au, Au); R. Runyon 228 (N), s.n. [Brownsville, 1930] (Hp). Hidalgo Co.: M. L. Walker 34 (Au)

#### LIPPIA GRAVEOLENS H.B.K.

The species is said by Hanson to frequent canyons.

Brewster Co.: H. C. Hanson 709 (Ka); Warnock 831, in part (Au). Cameron Co.: Nealley s.n. [Pt. Isabel, 1891] (Au). Hidalgo Co.: I. Shiller 756 (Au); Mrs. E. J. Walker 22 (Au), s.n. [Rio Grande Valley, Feb. 2, 1942] (Au); M. L. Walker 104 (Au). Maverick Co.: Pringle 9034 (Me, Me, Me, Vt). Starr Co.: Clover 1676 (I). Val Verde Co.: G. L. Fisher s.n. [Langtry, July 18, 1922] (Hp, Vt).

## PHYLA CUNEIFOLIA (Torr.) Greene

Mr. V. L. Cory has sent me valuable corrections to my key to the members of this very complex group in Texas, for which corrections as well as all his other helpfulness I am deeply grateful. He says "In your key to the genus Phyla I find that your key as it applies to our species P. cuneifolia and P. incisa is misleading. All of our material according to this would be referred to P. incisa, whereas three-fourths or more of it is really P. cuneifolia. However, I found that the New Mexico material of P. cuneifolia really does have the shorter peduncles. As far as we are concerned, if the separation was made on the bracts particularly then one could not go wrong in following the key. This would make the key foolproof."

Brewster Co.: Warnock 20736 (Au), 20737 (Au), 21204 (Au), 21277 (Au), s.n. [July 23, 1940] (Au). Crockett Co.: Cory 37357 (Au), 39334 (Au). Culberson Co.: U. T. Waterfall 4685 (N). Howard Co.: Tracy 7998 (Cm). Midland Co.: Cory 40613 (Au). Olgham Co.: M. W. Howard 25 (Au). Potter Co.: G. J. Goodman 3052 (Se). Reagan Co.: Cory 12540 (Au). Scurry Co.: Tharp s.n. [7/9/41] (Au, N). Taylor Co.: Tolstead 7547 [Herb. Texas Agr. Exp. Sta. 42543] (Au).

## PHYLA INCISA Small

Bell Co.: Cohn T.21 (Au); L. McLean s.n. [Temple, 8-30-34] (St); J. F. Normand s.n. [1928] (N, N). Bexar Co.: Metz 9 (I), 88 (I, I), 159 (I), s.n. [Aug. 10, 1931] (Se). Brazos Co.: Chenault s.n. [May 15, 1937] (Au). Brewster Co.: Warnock 20435 (Au), 20676 (Au), 20741 (Au). Brooks Co.: Tharp s.n. [6/26/41] (Au). Cameron Co.: A. M. Davis s.n. [Palm Grove, Sept. '41] (Au). Comal Co.: Lindheimer 262 (Ka), 288 (Ka), 1069 (Me, Me), 1071 (Me, Me). Dallas Co.: M. A. Hynes s.n. [Dallas, 6/2/26] (Au). El Paso Co.: Cory 45055 (Au); F. W. Johnson 1707 (Go). Fayette Co.: E. W. Crawford s.n. [Colony, June, 1892] (Ka). Galveston Co.: G. L. Fisher s.n. [Galveston, Aug. 31, 1919] (H). Galveston or Harris Co.: E. C. Smith s.n. [between Houston and Galveston, 5-2-1942] (Fc). Grayson Co.: Schleuse 36008 (Au). Gregg Co.: C. L. York s.n. [9-2-39] (Au), s.n. [Aug. 28, 1941] (Au). Harris Co.: G. L. Fisher s.n. [Houston, May 4, 1918] (Vt). Hudspeth Co.: U. T. Waterfall 4589 (N, Pl). Jackson Co.: Tharp s.n. [Aug. 28, 1941] (Au, N), s.n. [Sept. 3, 1941] (Au, Au, N). Kerr Co.: A. A. Heller 1920 (Se). Kleberg Co.: J. F. Sinclair s.n. [Kingsville, Spring 1940] (Au). Nueces Co. A. A. Heller 1806 (N--isotype, Pl--isotype, Se--isotype). Presidio Co.: Hinckley s.n. [San Esteban Lake] (Au), s.n. [Marfa, July, 1936] (Au). Reeves Co.: U. T. Waterfall 4361 (N), 4372 (N). Refugio Co.: Tharp s.n. [Austwell, 9-7-1929] (Au, Pl). Robertson Co.: F. A. Barkley 13003 (Au). Tarrant Co.: Let-

terman 391 (Ka); Ruth 91 (Ll), 106 (Cm, La). Taylor Co.: Tolstead 7550 [Herb. Texas Agr. Exp. Sta. 42551] (Au, Au). Tom Green Co.: Cory 39600 (Au). Travis Co.: Cohn & Barkley 13193 (Au), 13245 (Au); A. M. Ferguson s.n. [Waller Creek] (Au); E. Hall 436 (Pr); Heald & Wolf s.n. [Austin, 4-30-09] (Au); Straudtmann s.n. [July 17, 1940] (Au); Tharp 44138 (Au), 44188 (Au), s.n. [Austin, 5-15-35] (St), s.n. [Austin, 5/10/38] (Pl), s.n. [7-18-41] (Au, Au, N), s.n. [August, 1941] (Au); Waldorf 19 (Au). Victoria Co.: P. O. Schallert 550 (H). Washington Co.: C. C. Albers 33022 (Au); Brackett 20 (Au), 253 (N), s.n. [Apr. 30, 1939] (Au). County undetermined: Lindheimer s.n. (Ka).

#### PHYLA LANCEOLATA (Michx.) Greene

Lundell reports the corolla as white with an orange-yellow eye or pink with a rose eye.

Anderson Co.: F. A. Barkley 13586 (Au). Austin Co.: Tharp s.n. [6/28/42] (Au). Dallas Co.: C. L. Lundell 11656 [Plant. Exsicc. Gray. 1276] (Al, Au, H, I, Ka, N, Pl, St, We). Gonzales Co.: Straudtmann s.n. [Aug. 12, 1940] (Au); Tharp 44182 (Au), s.n. [8-10-40] (Pl). Harris Co.: Boon 53 (Au). Jackson Co.: Tharp s.n. [Aug. 27, 1941] (Au, N). Lubbock Co.: E. L. Reed 3827 (I).

#### PHYLA NODIFLORA (L.) Greene

Aransas Co.: Cory 45739 (Au). Galveston Co.: H. Hapeman s.n. [Galveston, May 10, '94] (Hp); Tharp s.n. [5-1-37] (Pl). Harris or Jefferson Co.: Crockett 7002 [between Beaumont and Houston] (Au). Kerr Co.: H. R. Reed 45998 (Au). Nueces Co.: C. C. Albers 32021 (Au).

#### PHYLA NODIFLORA var. REPTANS (H.B.K.) Moldenke

The following collections previously reported and cited by me as this variety are actually P. incisa Small: M. A. Hynes s.n. [Dallas, 6/2/26], E. Beck 58, Hinckley s.n. [Marfa, July, 1936], s.n. [San Esteban Lake], and Tharp s.n. [Austwell, 9-7-1929]. The following collections previously cited by me as P. nodiflora var. reptans are actually F. yucatana Moldenke: Cory 28215, Mrs. P. Cottrell s.n. [San Benito, Feb.-Apr. 1931], Ferris & Duncan 3091, H. C. Hanson 508, Lundell & Lundell 10013, R. Runyon 350, 2688, s.n. [Harrison, May 11, 1941], Small & Wherry 11892, Seventh Grade Brownsville s.n. [Brownsville, April 1934], and Tharp 1203. The following collections previously cited by me as P. nodiflora var. reptans are actually F. yucatana var. parvifolia Moldenke: Clover 119, Berlandier 867, 2287, and Lundell & Lundell 9922.

Cameron Co.: R. Runyon s.n. [Brownsville, 1930] (Hp). Chambers Co.: Tharp s.n. [4--7/10/36] (N). Comanche Co.:

Lindheimer 1071 (Me, Me). Edwards Co.: Cory 37901 (Au). Tom Green Co.: Cory 39321 (Au), 42826 (Au). Travis Co.: C. C. Albers 32030 (Au); Armer 5532 (Au); Tharp s.n. [7/10/39] (N). Uvalde Co.: Cory 38212 (Au), 39428 (Au), 44511 (Au). Wichita Co.: Tharp s.n. [5-28-22] (N).

PHYLA YUCATANA Moldenke

Cameron Co.: Mrs. P. Cottrell s.n. [San Benito, Feb.-Apr. 1931] (Au); A. M. Davis s.n. [Palm Grove, Sept. '41] (Au); Ferris & Duncan 3091 (N); H. C. Hanson 508 (N); Lundell & Lundell 10013 (N); R. Runyon 350 (Au, N), 2688 (N), s.n. [Harlington, May 11, 1941] (N); Seventh Grade Brownsville s.n. [Brownsville, April 1934] (Au, N); Small & Wherry 11892 (N); Tharp 1203 (Au, N). Hidalgo Co.: Cory 28215 (N); Mrs. E. J. Walker s.n. [La Joya, April 1942] (Au); M. L. Walker 107 (Au).

PHYLA YUCATANA var. PARVIFOLIA Moldenke

Hidalgo Co.: Clover 119 (N). Presidio Co.: U. T. Waterfall 4782 (N). Starr Co.: Lundell & Lundell 9922 (N). County undetermined: Berlandier 867 (T), 2287 (C).

PRIVA LAPPULACEA (L.) Pers.

Mr. L. I. Davis reports that this species "is fairly common in certain parts of Hidalgo County."

Cameron Co.: Cory 36620 (Au); A. M. Davis s.n. [Palm Grove, Sept. '41] (Au).

TETRACLEA COULTERI var. ANGUSTIFOLIA (Woot. & Standl.) A. Nels. & Macbr.

Culberson Co.: U. T. Waterfall 3765 (N), 4457 (N).

VERBENA AMBROSIFOLIA Rydb.

Brewster Co.: Cory 44804 (Au); Rose-Innes & Moon 1172 (Au); Warnock 20121 (Au), 20921 (Au), T.66, in part (Au), W.283, in part (Au). Culberson Co.: U. T. Waterfall 4458 (N, Fl). Hudspeth Co.: Tharp 43-798 (Au); U. T. Waterfall 4895 (N). Jeff Davis Co.: Cory 40365 (Au); Warnock 21676 (Au); U. T. Waterfall 4722 (N). Pecos Co.: Tharp 43-796 (Al, Au), 43-797 (Au).

VERBENA BIPINNATIFIDA Nutt.

Baylor Co.: Bridge s.n. [near Seymour, 6/16] (Cn). Bexar Co.: Barkley & Parsons 1 (Au); Lindheimer 10 (Ka); Metz 79 (I, Se). Brewster Co.: Warnock W.284 (Au). Burnet Co.: C. C. Albers 38003 (Au, Au); Warnock W.1096 (Au). Caldwell Co.: Straudtmann s.n. [Dec. 30, 1936] (Au). Comal Co.: W. H. Kellogg 8 (Au); Lindheimer 1072 (Me, Me, Me), 1973 (Me, Me, Me). Culberson Co.: Hitchcock & Stanford 6782 (Po). Dallas Co.:



E. Brainerd s.n. [Dallas, March 28, 1908] (Vt); Lundell & Lundell 11315 [Plant. Exsicc. Gray. 1275] (Al, Au, H, I, Ka, N, Pl, St, We); Reverchon s.n. [Curtiss 1962\*] (Cm, I, Vt). DeWitt Co.: M. Riedel s.n. [7-18-41] (Au). Eastland Co.: Hodge Oak School 18 (Au). Ellis Co.: Cory 39243 (Au). Fannin Co.: McCart 2032 (Au). Gillespie Co.: G. Jermy 182 (Ka); Mainland & Barkley 14522 (Au). Gonzales Co.: C. C. Albers 35006 (Au). Grayson Co.: C. S. Sheldon s.n. [Denison, June 13, 1891] (Al). Harris Co.: E. Hall 435, in part (Pr). Kimble Co.: Straudtmann s.n. [Aug. 19, 1941] (Au). La Salle Co.: Mauermann 12 (Au). Lynn Co.: Rose-Innes & Moon 1052 (Au). Nueces Co.: Tharp s.n. [11-9-39] (Au). Parker Co.: Tracy 7999 (Cm, Vt). Sutton Co.: Cory 39625 (Au). Tarrant Co.: F. C. Gates 19134 (Ka); H. Hapeman s.n. [Fort Worth, May '94] (Hp); Ruth 92 (Ll), 107 (Cm, Ka), s.n. [Fort Worth, June 19, 1909] (Po). Taylor Co.: Tolstead 6927 (Au); Tracy 8000 (Cm). Travis Co.: C. C. Albers 33021 (Au), 34011 (Au, Au); Birge 2957 (Au); Cohn & Barkley 13252 (Au); Herb. Hort. Bot. Gothenb. s.n. [Austin, June 6, 1903] (Go); R. H. Painter 6 (Ka); R. B. Payton 41 (Au); Ripperton & Barkley 14542a (Au, N); Smith s.n. [Austin, 5/1/1935] (St); Straudtmann s.n. [July 17, 1940] (Au); Tharp 44090 (Au), s.n. [Austin, 4/12/35] (St), s.n. [Austin, 5/9/35] (St); Tharp & Warnock 46084 (Au); Thompson & Hamilton 3451 (Se); Warnock 107 (Au), 46033 (Au); H. H. York s.n. [3-18-08] (Au); York & Wolf s.n. [Sept. 29, '08] (Au). Washington Co.: Brackett 253 (Au), s.n. [Apr. 1928] (Au, Au). County undetermined: Capt. Bolton s.n. [April, 1895] (Ka); Lindheimer 232 (Ka).

VERBENA BONARIENSIS L.

Galveston Co.: Mrs. A. F. Nelson s.n. [5-5-42] (Au). Harris Co.: Boon 60 (Au); G. L. Fisher 34094 (Au). Tyler Co.: C. C. Albers 39011 (Au).

VERBENA BRACTEATA Lag. & Rodr.

Collin Co.: Timmons 743 (Au). Culberson Co.: Tharp 43253 (Au, N). Dallas Co.: F. C. Gates 20972 (Ka). El Paso Co.: Fringie s.n. [El Paso, 11 June 1885] (Vt). Garza Co.: Tharp s.n. [7/9/41] (Au, N). Hunt Co.: Legget s.n. [Loneoak, 7/15/1927] (Au); Tharp 2929 (Au). Lubbock Co.: Demaree 7562 (H). Tarrant Co.: Ruth 109 (Cm, Ka). Taylor Co.: Tracy 8001 (Cm, Vt).

VERBENA CAMERONENSIS L. I. Davis

Cameron Co.: L. I. Davis s.n. [Southmost, Spring '41] (Au), s.n. [Southmost, March 22, 1942] (Ml); Ecology Class Univ. Texas s.n. [3.1.30] (Au); G. L. Fisher 41031 (Au).

VERBENA CANADENSIS (L.) Britton

Chambers Co.: Tharp 36006 (Au). Galveston Co.: Mrs. A. F. Nelson s.n. [3-20-42] (Au). Gregg Co.: C. L. York s.n. [3-20-38] (Au, Au). Harris Co.: G. L. Fisher s.n. [Houston, Apr. 3, 1913] (H, Hp), s.n. [Houston, Apr. 22, 1923] (Hp), s.n. [Spring, May 4, 1924] (H), s.n. [Mar. 17, 1930] (I); E. Hall 435, in part (Fr). Newton Co.: C. C. Albers 39009 (Au). Folk Co.: Girvin 2000 (Au), s.n. [March 15, 1940] (Au); Rose-Innes & Warnock 765 (Au); Tharp s.n. [3/15/41] (Au, Au).

VERBENA CANESCENS var. ROEMERIANA (Scheele) Perry

Bee Co.: J. S. Williams 39378 (Au). Bexar Co.: Metz 76 [Aug. 21] (I), 76 [Aug. 24] (I), 881 (I); Texas Agr. Exp. Sta. Herb. Exchange 3496 (Hp). Brewster Co.: Tharp s.n. [6/19/31] (N), s.n. [10/9/36] (Pl); Warnock s.n. [May 3, 1937] (Au). Brooks Co.: Perkins & Hall 2637, in part (Po). Brown Co.: Reverchon s.n. [Curtiss 1961] (Cm, Ka). Comal Co.: C. C. Albers 38004 (Au); Lindheimer 294 (Ka), 1074 (Me, Me). Hidalgo Co.: Mrs. E. J. Walker 30 (Au, N), 34 (Au, Au), 49 (Au, Au), s.n. [Feb. 9, 1942] (Au, Au, N); M. L. Walker 66 (Au). Fecos Co.: Tharp 43-800, in part (Au). Starr Co.: Ecology Class Univ. Texas s.n. [2.28.30] (Au). Travis Co.: C. C. Albers 32016 (Au), 34009 (Au); Cohn & Barkley 15148 (Au); R. H. Painter 249 (Au), 392 (Ky); Tharp 44099 (Au), s.n. [7-18-40] (Au, Au), s.n. [7-19-40] (Au); Warnock 86 (Au); M. S. Young s.n. [10/10/13] (Au), s.n. [4/29/14] (Au), s.n. [4/1/18] (Au), s.n. [4/5/18] (Au). Williamson Co.: Bodin s.n. [Georgetown, Dec. 22, 1889] (Ka); Wolcott 117 (Au).

VERBENA CILIATA Benth.

The following notes from my friend, V. L. Cory, are of particular interest. In speaking of his no. 35568, named by me as V. ciliata, he says: "This is the white-flowered verbenas growing in the Ft. Stockton, Sanderson, and Marathon country, and which has been determined before for me as V. pumila (to which I objected) and as V. racemosa. Of the three I favor V. ciliata. In the FLORA OF TEXAS I note that you do not give this plant as having a white corolla -- almost everything but white; whereas our plant almost always has a white corolla. In age there is a suggestion of purple coloration. This species grows in abundance in highly calcareous soils, is of prostrate growth, and usually makes rather a limited growth. It may have a connection with V. racemosa or with V. ciliata, if it is not V. ciliata itself. This number was of one plant only and was from a draw about two miles west of the Glass Mountains."

Brewster Co.: Warnock T.66, in part (Au), W.625 (Au). Cameron Co.: R. Runyon s.n. [Brownsville, 1930] (Hp).

VERBENA CILIATA var. LONGIDENTATA Perry

Bexar Co.: Barkley & Parsons 8 (Au). Cameron Co.: L. I. Davis s.n. [Palm Grove, Summer '41] (Au). Nueces Co.: A. A. Heller 1385, in part (N, Pl, Se); Tharp s.n. [11-9-32] (St).

VERBENA CILIATA var. PUBERA (Greene) Perry

Jeff Davis Co.: Tracy & Earle 162 (Cm--isotype, Vt--isotype).

VERBENA CLOVERI Moldenke

Mr. L. I. Davis, to whom we are indebted for so much of our accurate field knowledge of members of this genus, reports that V. Cloveri is found in Kennedy County. He also states that "our friend Thelma Walker doubts that a lavender flowered V. Cloveri could be considered a valid variety since she says all of the flowers are slightly on the lavender side of blue and she thinks every shade of intergrade is found. She has a much better chance to study that species... as her farm is literally covered with her plants in the spring."

Brooks Co.: Painter & Barkley 14315 (Au). Frio Co.: Painter, Lucas, & Barkley 14230 (Au). Kleberg Co.: J. F. Sinclair s.n. [Kingsville, Spring, 1940] (Au).

VERBENA DELTICOLA Small

The Ecology Class Univ. Texas s.n. [3.1.30] cited by me in the "Flora of Texas" as this species is actually V. cameronensis. I am deeply grateful to Mr. L. I. Davis for pointing out to me this and several other mis-identifications corrected in this paper. He states that "there must be a thousand pink-flowering plants of V. delticola to one of the lavender form. It seems to be a mutation that is likely to happen anywhere though and once it occurs is likely to spread locally. Although this color form is sometimes found mixed up with masses of V. ciliata var. longidentata plants, it is just as likely to be found where there are no V. ciliata varieties for miles around."

Cameron Co.: L. I. Davis s.n. [Olmito, Dec. '41] (Au); R. Runyon 327 (Au). Hidalgo Co.: Clover 566 (Me).

VERBENA ELEGANS var. ASPERATA Perry

Hidalgo Co.: Mrs. E. J. Walker 32 (N), s.n. [Feb. 9, 1942] (Au).

VERBENA HALEI Small

Smith records the common name "European vervain" for this species from Texas.

Anderson Co.: K. E. Smith s.n. [Palestine, 4/21/35] (St). Bell Co.: Cohn T.11 (Au); Cohn & Barkley T.44 (Au). Bexar Co.: Headley s.n. [March 24, 1907] (I); Metz 62 (I), 75 (I),

3240 (Au); E. D. Schulz 766 (I); Texas Agr. Exp. Sta. Herb. Exchange 3495 (Hp). Brazos Co.: Chenault s.n. [April 12, 1937] (N); Lake s.n. [May, 1890] (Pr). Brewster Co.: Warnock 583 (Au). Burnet Co.: Rose-Innes & Warnock 798 (Au). Cameron Co.: L. I. Davis s.n. [Palm Grove, Summer '41] (Au); R. Runyon s.n. [Brownsville, 1930] (Hp). Cherokee Co.: F. A. Barkley 13585 (Au). Comal Co.: Lindheimer 537 (Ka), 1076 (Me, Me, Me). Culberson Co.: U. T. Waterfall 4496 (N). Denton Co.: McCart 2006 (Au, St). De Witt Co.: M. Riedel s.n. [9-26-41] (Au). Duval Co.: Croft 119 (Ga). Galveston Co.: R. L. Crockett s.n. [Apr. 22, 1944] (Au); G. L. Fisher s.n. [Galveston, June 6, 1920] (H); Tracy 7533 (Cm). Gonzales Co.: C. G. Ward 288 (St). Gregg Co.: C. L. York s.n. [Fall, 1937] (Au), s.n. [4-2-38] (Au). Grimes Co.: Harding 579 (St); T. V. Weaver 1038 (Ml). Harris Co.: L. Anderson s.n. [Sept.-Oct. 1936] (Au); Boon 62 (Au); G. L. Fisher s.n. [Houston, Apr. 23, 1914] (Hp), s.n. [Apr. 9, 1931] (St); E. Hall 432 (Pr); Rose-Innes & Warnock 673 (Au). Hidalgo Co.: Painter & Barkley 14428 (Au, N). Jackson Co.: Tharp & Barkley 13All4 (Au, Ml, N, N). Kleberg Co.: J. F. Sinclair s.n. [Kingsville, Summer, 1940] (Au). Leon Co.: E. C. Smith s.n. [Oakwood, 5-4-1942] (Fc). Montague Co.: McCart 1634 (Au). Nueces Co.: Warnock 20999 (Au). Pecos Co.: Warnock 46166 (Au). Polk Co.: Girvin s.n. [April 12, 1940] (Au, Au); Tharp s.n. [4-12-42] (Au). Reeves Co.: U. T. Waterfall 4388 (N). Tarrant Co.: F. C. Gates 19133 (Ka); Ruth 84 (Au), 93 (Ll), 108 (Cm, Ka), s.n. [Fort Worth, June 5, 1909] (Po). Taylor Co.: Tracy 7996 (Cm, N, Vt). Travis Co.: C. C. Albers 33016 (Au); Armer 5385 (Au); Cohn & Barkley 13253 (Au); Tharp 1529 (Au), s.n. [Austin, 4/23/29] (Au, Pl), s.n. [Austin, 5/2/35] (Au, St), s.n. [Austin, 5/9/35] (Au, St); Warnock 45-5 (Au), 46104 (Au); M. S. Young 77 (Au), s.n. [4/5/18] (Au). Val Verde Co.: M. E. Jones 26229 (I). Waller Co.: Dooley 2 (Au, N). Washington Co.: C. C. Albers 33017, in part (Au); Brackett 253 [March 29, 1938] (Au), s.n. [April 21, 1939] (Au). Webb Co.: Perkins & Hall 2627, in part (Po).

VERBENA MACDOUGALII Heller

Culberson Co.: Grassl 175 (I).

VERBENA MATTHESII Turcz.

Fayette Co.: Matthes 13 [Macbride photos 34343] (Kr-- photo of isotype, N--photo of isotype).

VERBENA NEOMEXICANA (A. Gray) Small

The Sixth Grade Brownsville 34, s.n. [Nov. 1934], and Tharp 1201 cited by me in the "Flora of Texas" as this species prove, upon more careful examination, to be V. Runyoni Moldenke. I am grateful to L. I. Davis for calling my atten-



tion to these mis-identifications.

VERBENA NEOMEXICANA var. HIRTELLA Perry

The Ecology Class Univ. Tex. s.n. [2.28.30], R. H. Painter 249, and Tharp s.n. [6/19/31] cited by me in the "Flora of Texas" as this variety prove, upon re-examination, to be V. canescens var. Roemeriana.

Brewster Co.: L. T. Murray s.n. [May 22, 1928] (It); E. J. Palmer 34065 (N--isotype); Rose-Innes & Moon 1200 (Au); Rose-Innes & Warnock 537 (Au); Tharp s.n. [Wilson Ranch] (Au); Warnock 20436, in part (Au), s.n. [May 3, 1937] (Au).  
Hudspeth Co.: U. T. Waterfall 5143 (N). Presidio Co.:  
Hinckley 1971 (Au). Travis Co.: C. L. York 46035 (Au, N).

VERBENA NEOMEXICANA var. XYLOPODA Perry

The Nelson & Nelson specimen cited below is very anomalous. Its fruiting-calyxes and fruit are much larger than normal. It may prove to be a new variety or even species.

Terrell or Webb Co.: Nelson & Nelson 5138 (Au). Victoria Co.: Owens 3125 (Au). Webb Co.: Ferkins & Hall 2627, in part (Fo).

VERBENA PERENNIS Wootton

Brewster Co.: G. L. Fisher s.n. [Alpine, Aug. 24, 1932] (Hp); Warnock 287 (Au), 21090 (Au), 21205 (Au), 21279 (Au), 21827 (Al). Culberson Co.: U. T. Waterfall 3795 (N), 4510 (Au, N), 5209 (N).

VERBENA FLICATA Greene

Baylor Co.: Bridge s.n. [near Seymour, 6/16] (Cn). Bexar Co.: Metz 557 (I), 2156 (Se). Brewster Co.: Cory 43929 (Au); Rose-Innes & Moon 1169 (Au); Warnock 20436, in part (Au), 20437 (Au), 21230 (Au), s.n. [May 3, 1937] (Au). Culberson Co.: U. T. Waterfall 4171 (N), 5172 (Au, N). Ector Co.: Tharp s.n. [7/10/41] (Au). Frio Co.: Lucas, Painter, & Barkley 14227 (Au). Hidalgo Co.: Mrs. E. J. Walker s.n. [2/9/42] (Au, Au). Hudspeth Co.: Tharp 43-804 (Au); U. T. Waterfall 5348 (N). Kendall Co.: Metz 170 (I). Kleberg Co.: J. F. Sinclair s.n. [Kingsville, Spring 1940] (Au). Midland Co.: Cory 42034 (Au). Mitchell Co.: Cory 48041 (Au). Pecos Co.: Tharp 43-800, in part (Au); Warnock 46122 (Au, N). Taylor Co.: Tolstead 7103 [Herb. Texas Agr. Exp. Sta. 41986] (Au). Travis Co.: Armer 5380 (Au). Val Verde Co.: Cory 39090 (N). Ward Co.: Tracy & Earle 30 (Cm--isotype).

VERBENA FLICATA var. DEGENERI Moldenke

Pecos Co.: Tharp 43-799 (Au), 43-801 (Au), 43-802 (Au), 43-803 (Au).

## VERBENA PUMILA Rydb.

Bell Co.: Wolff 1373 (Hp). Bexar Co.: Lindheimer 434 (Ka); Metz 152 (I), 524 (I, I), 3246 (Pl); Fatoni s.n. [San Antonio, Marzi 1914] (Me, Me). Brewster Co.: Sperry 493 (W). Cameron Co.: H. C. Hanson 322 (Ka). Coke Co.: Cory 37143 (N). Comal Co.: Lindheimer 1075 (Me, Me, Me, Ok). Dallas Co.: J. Reverchon s.n. [Curtiss 1963\*\*] (Go). Edwards Co.: Cory 37068 (Au), 37070 (N); M. E. Jones 26228 (I). Frio Co.: Fainter, Lucas, & Barkley 14201 (Au), 14213 (Au). Hays Co.: Friesner 10401 (Bt). Jeff Davis Co.: Tracy & Earle 178 (Cm). Kleberg Co.: J. F. Sinclair s.n. [Kingsville, Spring, 1940] (Au). Llano Co.: G. L. Fisher s.n. [Bluffton, Apr. 20, 1931] (Bt); Rose-Innes & Warnock 793 (Au). Reeves Co.: Tracy & Earle 106 (Cm). Schleicher Co.: Cory 34444 (N). Tarrant Co.: Ruth 110 (Cm). Taylor Co.: Tolstead 7071 (Au, Au). Tom Green Co.: Cory 40913 (N). Travis Co.: C. C. Albers 34006 (Au); Armer s.n. [Austin, 4-2-29] (Pl); E. Hall 431 (Pr); Tharp 1362 (Au), 1364 (Au), 44116 (Au); Warnock 20623 (Au), 46086 (Au); M. S. Young s.n. [2/28/14] (Au, N). Williamson Co.: Wolcott 121 (Au). County undetermined: Turpin s.n. (Au, Au); M. S. Young s.n. [west of IAGN Ry.] (Au).

## VERBENA QUADRANGULATA Heller

An additional Texas reference is A. M. T. Davis, A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), p. 62. August, 1942.

Bexar Co.: Metz 755 (Hp, I). Cameron Co.: A. M. Davis s.n. [Olmito, Summer '41] (Au). Hidalgo Co.: Mrs. E. J. Walker 41 (Au, N). Nueces Co.: A. A. Heller 1385, in part (Pl), 1388 (Pl--isotype, Se--isotype). Wharton Co.: J. K. Small s.n. [April 12, 1925] (H, We). Zavala Co.: Cory 43814 (Au).

## VERBENA RACEMOSA Eggert

Brewster Co.: Cory 31653 (N), 43930 (Au); Rose-Innes & Warnock 527 (Au), 21430 (Au); Warnock 418 (Au), 20105 (Au). Glasscock Co.: Cory 42070 (Au). Jeff Davis Co.: Tracy & Earle 106a (Cm). Pecos Co.: H. R. Reed 34064 (N); Tharp 43-805 (Au), 43-806 (Au), 43-807 (Au), 43-808 (Au); Warnock T.46 (Au, Au), 46136 (Au, N). Reeves Co.: Nelson & Nelson 4985 (Au, Ka), 4995 (Au).

## VERBENA RIGIDA Spreng.

Galveston Co.: Mrs. A. F. Nelson s.n. [4/20/42] (Au); E. C. Smith s.n. [Dickinson Bayou, 5-2-1942] (Fc). Harris Co.: C. C. Albers 35004 (Au); G. L. Fisher s.n. [Houston, Sept. 14, 1913] (Hp), s.n. [Houston, Apr. 11, 1930] (Bt), s.n. [Sept. 10, 1932] (I). Travis Co.: Tharp s.n. [Austin, 5/2/35] (Bt, St). County undetermined: C. C. Albers 39008 (Au, Au).

## VERBENA RUNYONI Moldenke

An additional Texan reference is A. M. T. Davis, A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), p. 62. August, 1942. Mr. L. I. Davis, who has done much fine work on the verbenas of Texas and Mexico in the field, reports that "the nutlets of V. Runyoni are not slightly arched down the back as in V. neomexicana and they are plainly longitudinally striate from top to bottom" and the inflorescence is glandular-viscid before drying. He says "I think we had better assume that neither V. xutha nor V. neomexicana occurs in Cameron County" and that all specimens so named hitherto are really V. Runyoni. "The first part of this month [August] V. Runyoni was blooming everywhere hereabouts. Just below San Benito there was a field acres in extent where there was a plant about every two feet. Here according to the soil and moisture supply one could easily find every stage of V. Runyoni from the slender one foot high plant to the giant four and a half foot, heavy stemmed plant. But all have the same seeds and pubescence."

Cameron Co.: Cory 36467 (N); Mrs. F. Cottrell 8743 (Au); L. I. Davis s.n. [Southmost, May, 1942] (Au); Lundell & Lundell 10753 [Plant. Exsicc. Gray. 1274] (Al, Au, H, I, Ka, N, Fl, St, We); Rose & Russell 24238 (W); R. Runyon 3178 [Herb. Texas Agr. Exp. Sta. 43663] (Au), 4187 (Au, N); Sixth Grade Brownsville 34 (Au), s.n. [Nov. 1934] (Au); Tharp 1201 (Au).

## VERBENA RUNYONI f. ROSIFLORA L. I. Davis

Additional Texan references are A. M. T. Davis, A study of Boscaje de la Palma in Cameron County, Texas, and of Sabal texana (thesis), p. 62. August, 1942, and Moldenke, Known Geogr. Distrib. Verbenac. Suppl. 1: 2, nom. nud. November 15 1943.

Cameron Co.: L. I. Davis s.n. [Southmost, May, 1942] (Au --type).

## VERBENA SCABRA Vahl

Bexar Co.: Lindheimer 618 (Ka), 1077 (Me, Me, Me, Ok, Up); Metz 782 (I). Gonzales Co.: Tharp & Barkley 13850 (Au). Kerr Co.: G. L. Fisher s.n. [Kerrville, Aug. 27, 1932] (Bt). Kimble Co.: Strandtmann s.n. [Aug. 19, 1941] (Au). Liberty Co.: E. J. Palmer 8557 (W). Real Co.: Cory 39708 (Au), 39709 (N), 42774 (Au). Travis Co.: C. C. Albers 40004 (Au, Au, Au, Au, Au, Au); F. A. Barkley 13366 (Au); Strandtmann s.n. [Aug. 1, 1940] (Au). Val Verde Co.: Cory 38068 (Au, Au), 38069 (N). Walker Co.: C. C. Albers 39010 (Au). County undetermined: Lindheimer s.n. [1850] (Ka).

## VERBENA STRICTA Vent.

Cook Co.: Strandtmann s.n. [July 26, 1941] (Au). Tarrant

Co.: Ruth 162 (L1), s.n. [Fort Worth, Aug. 27, 1909] (Po).

VERBENA TENUISECTA Briq.

Galveston Co.: Mrs. A. F. Nelson s.n. [3-15-42] (Au).  
 Jasper Co.: Rose-Innes & Warnock 21818 (Au); Tharp s.n. [4/13/41] (Au, N). Jefferson Co.: C. C. Albers 34008 (Au, Au),  
s.n. [8/29/34] (Au). Nacogdoches Co.: Biggar s.n. [August 6, 1944] (Au). Polk Co.: Girvin s.n. [March 15, 1940] (Au, N);  
Tharp s.n. [5/14/42] (Au).

VERBENA TUMIDULA Ferry

Edwards Co.: Cory 38940 (N). Uvalde Co.: Cory 44509 (Au).

VERBENA URTICIFOLIA L.

Tarrant Co.: Ruth 504 (Cm).

VERBENA WRIGHTII A. Gray

Brewster Co.: Nelson & Nelson 5025 (Ka); Rose-Innes & Warnock 586 (Au); Warnock 20022 (Au), T.66, in part (Au),  
W.283, in part (Au). Culberson Co.: Hitchcock & Stanford 6782 (Pl, Se). Jeff Davis Co.: Hinckley s.n. [H. O. Canyon, July 27, 1937] (N). Pecos Co.: G. L. Fisher s.n. [July 20, 1936] (Se); Warnock C.802 (Au). Presidio Co.: Hinckley s.n. [July 9, 1941] (Au). Reeves Co.: Nelson & Nelson 4983 (Au, Ka), 5014 (Au); U. T. Waterfall 4386 (N). Ward Co.: Tracy & Earle 61 (Cm, Vt).

VERBENA XUTHA Lehm.

The Mrs. P. Cottrell 8743 cited by me in the "Flora of Texas" as Verbena xutha proves, upon re-examination, actually to be Verbena Runyoni. I am indebted to my friend, L. I. Davis, for calling my attention to this mis-identification.

Aransas Co.: Cory 45879 (Au). De Witt Co.: M. Riedel s.n. [7-4-41] (Au). Freestone Co.: Harding 399 (St). Galveston Co.: G. L. Fisher s.n. [San Leon, July 7, 1929] (Bt); Mrs. A. F. Nelson s.n. [11-2-41] (Au). Grimes Co.: T. V. Weaver 1039 (Ml, N). Harris Co.: Boon 61 (Au), 20001 (Au, N); G. L. Fisher s.n. [Houston, May 18, 1914] (Hp); Lindheimer s.n. [Houston, 1843] (Pr). Jackson Co.: Tharp s.n. [8/30/41] (Au), s.n. [Sept. 27, 1941] (Au). Jefferson Co.: C. C. Albers 34005 (Au, Au); Tharp s.n. [9/12/37] (Au, Au). Leon Co.: E. C. Smith s.n. [Oakwood, 5-12-1942] (Fc). Liberty Co.: Harding 172 (St). Robertson Co.: L. Morris 42 (Au). Travis Co.: F. A. Barkley 13365 (Au); R. H. Fainter 16 (Ka); Strandtmann s.n. [July 26, 1940] (Au); Tharp 668 (Au), s.n. [8-7-40] (Au). Victoria Co.: Tharp s.n. [McFaddin Beach, 9-11-37] (Pl). Walker Co.: Albers & Warnock 45136 (Au, N). Waller Co.: H. B. Parks 2432 (Au). Washington Co.:



C. C. Albers 33013 (Au), 33017, in part (Au); Brackett 253 (Au), s.n. [Apr. 21, 1939] (Au). Wharton Co.: E. J. Falmer 6622 (W). County undetermined: Lindheimer s.n. [Fasc. IV, 1849] (Ka).

## VITEX AGNUS-CASTUS L.

Maverick Co.: C. C. Albers 38005 (Au). Real Co.: Cory 34773 (N). Tarrant Co.: Ruth 993 (Ka, St). Travis Co.: F. A. Barkley 13081 (Al); Harpin, Waldorf, & Barkley 13081 (Au); Herb. Univ. Texas s.n. [Austin, 8/14/19] (Au). Cultivated: C. C. Albers 32019 (Au), 41003 (Au); I. Shiller 870 (Au).

## VITEX AGNUS-CASTUS var. ALBA West.

Travis Co.: McKee & Wesley 3896 (Au).

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## VERBENA XUTHA Lehm.

Washington Co.: E. Hall 434 (Pr).





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## NOTES ON THE AVICULARIA. II

J. F. Brenckle

An opportunity to observe the development of exerted achenes presented itself in the fall of 1941 when weather conditions were unusually favorable for their production. Cloudy and damp days with occasional rain were frequent in September, and during the first half of October there were eleven days without sunshine. No killing frost occurred until about October 20 so that growth continued up to that date. Four native species were observed and all agree essentially in the manner of production, but the readiness with which exerted achenes were produced and the extent of growth were quite different in each species. All species are of the fall-fruiting type, that is, flowers and fruits are very sparingly produced in spring and summer but a heavy crop of seed comes in fall. Of the four species studied, Polygonum exertum Small most readily and abundantly produced exerted achenes. The plants grow near brackish water on saturated soil, crowded among tall grasses and weeds. The pond is near Mellette, South Dakota, and is fed by the overflow of artesian wells which supply the village. About the middle of September an abundant crop of fruit and flowers was present in various stages of development. Lowest on the inflorescence were many ripe achenes, quite normal and covered by the perianth, smooth, chestnut-brown, rather narrow, 1.1--1.4 mm. wide and 2.1--2.4 mm. long. Above these were slightly larger achenes, smooth, chestnut-brown, about 1.5 mm. wide and 2.5--3.0 mm. long, mostly covered by the perianth or sometimes slightly exerted. Above these again were some immature, olivaceous, exerted achenes, and finally some blossoms. The riper achenes were quite deciduous and easily fell away during handling and pressing. It was evident that exerted achenes do not develop from fully ripe or almost ripe fruit but grow from very young fruit or from blossoms while continuously under the influence of a moist atmosphere. Following a light frost or stormy weather the normal and intermediate forms fell away and the plants had only papery, olivaceous, exerted achenes. The proportion of normal to intermediate and dilated forms depends upon weather conditions between summer and fall. A prolonged dry summer delays flowering and if followed at once by a moist fall the intermediate and exerted forms will predominate. A summer gradually merging into fall causes early flowering, and normal achenes are produced abundantly.

Polygonum ramosissimum Michx. when growing somewhat re-

moved from standing water usually produces an abundant crop of normal achenes. These plants may then dry up and die. Other plants standing near water may survive to late fall when a crop of exserted achenes is produced. Specimens of these from which the leaves and normal achenes have fallen are usually classified as P. exsertum.

Polygonum prolificum and its related forms only tardily exhibit somewhat exserted achenes. Introduced species, if and when they survive to October, usually show modified achenes which are exserted with a pointed apex. In October P. aviculare has elongated achenes with smooth, unstriated faces which become rounded and partly or entirely lose the triangular shape. The adjective "dimorphic" has been applied to these variously shaped achenes.

Polygonum commixtum Greene. With the species so far mentioned above the entire plant is involved, as well as the entire population in an area. Dr. Greene set up the species P. commixtum with the exserted and deformed achenes as the chief character. Careful examination of many specimens discloses that often the whole plant is not involved, but only a twig, a branch, or some larger part which has become thickened and condensed and on which the misshapen achenes are formed. The normal parts of the plant have the usual normal achenes. It may be noticed that the parts involved may have been injured, as by trampling. Dr. Greene's species is evidently P. Austinae with exserted and deformed achenes of this character. In various herbaria specimens with this deformity have been observed in the following species: P. Austinae, P. Douglasii, P. Engelmannii, P. sawatchense, and P. montanum.

The fully developed exserted achene presents an enlarged embryo loosely surrounded by a paper-thin, olivaceous pericarp which contains more or less air or gas. The tendency to produce exserted achenes is common in the Avicularia but is not present in the related Persicaria. That this unique character should serve some useful purpose seems almost certain. The Avicularia do not grow on submerged land nor do they long survive accidental inundation, although they are abundant on newly emerged and marginal lands. Contrarily, the Persicaria do survive inundation, and some species thrive best in shallow water. On our semi-arid glaciated prairie are many shallow lake-beds, round or elongated in shape, interrupted water channels which act as catch-basins. Some of them dry up regularly during the summer, but others may retain water for years. Our native species of Avicularia are abundant along the shorelines of these basins. They are among the pioneers which first occupy the bottoms of newly dried sloughs and lakes. The uncertain waterlevel during changes from dry to wet cycles, or the reverse, often leaves

these bottoms with bare ground where neither a meadow nor a slough flora can become established. A sudden filling of such a basin will drown standing vegetation and survival may well depend upon buoyant seed floated to a higher shoreline. We have here a logical reason for the development and usefulness of the exserted achene. Other facts corroborate this theory. The time of their production, at the beginning of a wet season, coincides with the most likely time for floods. Examination of the distribution of colonies is often very suggestive of waterlevel, windrow deposits. Tufted stems of old dead colonies may be entirely ignored as likely location points for the present year's colonies, the new being located higher or lower on these shorelines.

The Avicularia have become obligatory land inhabitants and have extended their range to higher and drier locations. That the trend has been away from water rather than toward it is demonstrated by the acquisition of protective characters in xerophytic situations which are readily discarded when the plants again occupy wet locations. One such character is the accrescent perianth which grows with the achene and fully envelopes it when mature. During dry weather this perianth exceeds and clasps the achene, becomes veined and wrinkled, and is more or less carinate. When wet conditions prevail with production of exserted achenes the perianth remains shorter and the sections are spreading and smooth. Reticulations, striations, and other markings on the achenes are probably due to shrinkage of the surface to reduce evaporation. Species of Avicularia on the coastal areas of the Maritime Provinces normally have large smooth exserted achenes surrounded by a spreading perianth. The atmosphere moist from fog, spray, and marshland provides proper conditions for this type of achene.

SUMMARY:- The exserted achene serves usefully in the dispersion of seed during periods of inundation and aids in its survival. It is produced only by species of Avicularia under certain seasonal and weather conditions. Exserted achenes have little or no diagnostic value in differentiating species.

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 ADDITIONAL NOTES ON THE GENUS PETREA. I

Harold N. Moldenke

Since the publication of my monograph of this group in Fedde's Repertorium Specierum Novarum 43: 1--48 & 161--221 (1938) two hundred and seventy additional specimens have



come to my hands and a considerable amount of new information. The new specimens, cited below, are deposited in the herbaria indicated by the following symbols: Ar = United States National Arboretum, Washington; Ba = Bailey Hortorium, Cornell University, Ithaca; Ca = University of California, Berkeley; Cm = Carnegie Museum, Pittsburgh; Dp = DePauw University, Greencastle, Indiana; Du = Dudley Herbarium, Stanford University; E = Missouri Botanical Garden, St. Louis; F = Chicago Natural History Museum, Chicago; Fl = University of Florida, Gainesville; Fs = Forrest Shreve Herbarium, Tucson, Arizona; Gt = Botanische Anstalten, Göttingen; Ha = Colegio de la Salle, Vedado, Havana; Hp = H. Hapeman Herbarium, Minden, Nebraska; I = Langlois Herbarium, Catholic University of America, Washington; Io = Iowa State College, Ames; It = Cornell University, Ithaca; Ja = Museu Nacional, Rio de Janeiro; Kr = B. A. Krukoff Herbarium, New York Botanical Garden, New York City; La = University of California at Los Angeles, Los Angeles; Lu = Botanisk Museum, University of Lund, Lund; Me = Instituto de Biologia, Universidad Nacional de México, Mexico City; Mi = University of Michigan, Ann Arbor; N = Britton Herbarium, New York Botanical Garden, New York City; Oa = Oakes Ames Economic Herbarium, Botanical Museum of Harvard University, Cambridge; Po = Pomona College, Claremont, California; S = Naturhistoriska Riksmuseet, Stockholm; Sp = Instituto de Botanica, São Paulo; U = Jenman Herbarium, Botanic Gardens, Georgetown, British Guiana; Ur = University of Illinois, Urbana; Vt = University of Vermont, Burlington; W = United States National Herbarium, Smithsonian Institution, Washington; and Z = H. N. Moldenke Herbarium, Watchung, New Jersey.

#### PETREA Houst.

Synonymy: Petraea B. Juss. apud Hook. f. & Jacks., Ind. Kew. 2: 477, in syn. 1895. -- Petraea Jacq. ex Walp., Repert. 4: 70. 1844; Junell, Symb. Bot. Upsal. 4: 43. 1934. -- Petraea L. apud Benth. in Benth. & Hook. f., Gen. Pl. 2 (2): 1149. 1876. -- Peraea L. ex Nees, Flora 4 (1): 300, sphalm. 1821; Moldenke, Prelim. Alph. List Invalid Names 33, in syn. 1940. -- Petroea L. ex Lam., Encycl. Méth. Bot. Ill. 3: pl. 539, sphalm. 1797; Neumann, Ann. Fl. Pom. 1837--1838: 254--255, sphalm. 1838; Moldenke, Prelim. Alph. List Invalid Names 35, in syn. 1940. -- Petraca Jacq. ex Hoehne, Resem. Hist. Secc. Bot. Inst. Biol. S. Paulo 153, sphalm. 1937; Moldenke, Prelim. Alph. List Invalid Names 33 & 34, in syn. 1940. -- Peholia L. ex Moldenke in Fedde, Repert. 43: 2, in syn. 1938; Moldenke, Prelim. Alph. List Invalid Names 33, in syn. 1940. -- Petria L. ex Moldenke, Prelim. Alph. List Invalid Names 35, in syn. 1940. -- Pitrea L. ex Moldenke in Fedde, Repert. 43: 2, in syn. 1938.

References: L., Gen. Pl., ed. 1, 347. 1757; Adans., Fam. Pl. 2: 12 & 200. 1763; Necker, Elem. Bot. 1: 362--389. 1790; Lam., Encycl. Méth. Bot. Ill. 3: pl. 539. 1797; Nees, Flora 4 (1): 300. 1821; Ann. Sci. Nat. Paris, sér. 1, 1: 457. 1824; Neumann, Ann. Fl. Pom. 1837--1838: 254--255. 1838; Wittstein, Handwörterb., ed. 2, 675. 1856; Turcz., Bull. Soc. Nat. Imp. Mosc. 35 (2): 328. 1862; Turcz., Bull. Soc. Nat. Imp. Mosc. 36 (2): 212. 1863; Benth. in Benth. & Hook. f., Gen. Pl. 2 (2): 1149. 1876; Ulrich, Internat. Wörterb. Pflanzennamen. 1875; Britten & Boulger, Biogr. Ind. British & Irish Botanists 135. 1893; Hook. f. & Jacks., Ind. Kew. 2: 477. 1895; Gerth van Wijk, Dict. Plant Names 971. 1911; Junell, Symb. Bot. Upsal. 4: 43. 1934; Hoehne, Resenha Hist. Comm. Viges. Anniv. Secc. Bot. 153 & 163. 1937; Standl., Field Mus. Publ. Bot. 18: 1011. 1938; Moldenke in Fedde, Repert. 43: 1--48 & 161--221. 1938; Moldenke, Prelim. Alph. List Invalid Names 33--35. 1940; Moldenke, Suppl. Alph. List Invalid Names 6 & 12. 1941; Moldenke, Known Geogr. Distrib. Verbenac. 17, 20--35, 38, 40--41, 62, 64--65, 73--75, & 97. 1942; Moldenke, Alph. List Invalid Names 34--36. 1942; Niemeyer & Stellfeld, Arquiv. Mus. Parana. 3: 8. 1943; Phytologia 2: 108. 1945; B. P. Reko, Bol. Soc. Bot. Mex. 4: 35. 1946.

Junell in the work cited above gives a detailed discussion of the gynoecium morphology of the genus, based on P. volubilis. As a result of his findings, he removes the genus Timotocia from Briquet's Tribe Petraeae and places it with Ghinia in his "subtribe" Casselleae. Necker records the common name "petrée".

In the list of Excluded Species given on page 209 of my monograph the following corrections are to be made: Petraea zanguebarica Gay, Petraea zanguebarica J. Gay, and Petraea zanguebarica J. Gay are all synonyms of Dicerocaryum zanguebarium (Lour.) Merr. of the Pedaliaceae.

#### PETREA AMAZONICA Moldenke

Le Cointe, in "A Amazonia Brasileira III, Arvores e Plantas Uteis"; p. 470 (1934), under the mis-identification "Petraea volubilis Jacq." lists the common name "viuvinha" for this species.

Additional citations: BRAZIL: Amazonas: Krukoff 4930 (N--photo of isotype, S--photo of isotype, Z--photo of isotype).

#### PETREA ARBOREA H.B.K.

Synonymy: Petraea arborea H.B.K. apud Pittier, Suppl. Plant. Usual. Venez. 55. 1939. -- Petraea Vincentiana Turcz. ex Moldenke, Prelim. Alph. List Invalid Names 35, in syn. 1942. -- Petraea arborea H.B.K., in herb. -- Petraea arborea H.B.K., in herb.

References: Urb., Symb. Ant. 3: 47--48. 1902; R. O. Williams, Guide Royal Bot. Gard. Trinidad 6 & 11. 1927; Freeman & Williams, Useful Pl. Trinidad 126. 1928; Stapf, Ind. Lond. 5: 39. 1931; Martyn, Ind. Phan. Jenman Herb. 464, mss. 1937; Phelps, Bull. Garden Club Amer., ser. 6, 2: 11. 1937; Pittier, Supl. Plant. Usual. Venez. 55. 1939.

Freeman and Williams in the reference cited above state that the species may be propagated by seed or by layering. They report that the corollas are violet in color, the sepals being of a lighter shade than the corolla, and that the sepals change to a dully ashy-gray after the corollas have dropped. Pittier in the reference cited above reports the common name "tostadito" from Venezuela, Delgado records the same name, and Williams reports "tosatido". Broadway describes the species as a "small tree or shrub" in Trinidad. The name "bejuco de Caballo" recorded by Phelps in the reference cited above does not properly apply to this species, but to F. volubilis.

The Haught 4046 specimen cited below is anomalous and may prove not to be this species. It is described as a shrub 2 m. tall, the leaves very harsh to touch, and the inflorescence showy and purple. It was collected on dry hillsides at an altitude of 600 m. The leaf-texture is more like that of P. rugosa than that of P. arborea. The label is inscribed "Dept. Caldas", but E. P. Killip asserts that it was actually collected in Magdalena.

Additional citations: TRINIDAD: W. E. Broadway 5271 (F, N--photo, S--photo, Z--photo), 7568 (F, La), s.n. [May 22, 1911] (Du--120566, F). COLOMBIA: Magdalena: Haught 4046 (N). VENEZUELA: Aragua: Delgado 135 (F); E. G. Holt 323 (Cm), 327 (Cm); Ll. Williams 10035 (F, F). Carabobo: Saer d'Heguert 831 (N). Federal District: Delgado 101 (F, N); Pittier 13573 (E); Ll. Williams 10061 (F). CULTIVATED: Trinidad: Bailey & Bailey s.n. [March 9, 1921] (N--photo, Z--photo).

PETREA ARBOREA var. BROADWAYI Moldenke

Additional citations: CULTIVATED: Trinidad: W. E. Broadway s.n. [1908] (N--photo of type, Z--photo of type).

PETREA ASPERA Turcz.

References: Pittier, Supl. Plant. Usual. Venez. 55 [as "Petreaea aspera"]. 1939; Moldenke, Known Geogr. Distrib. Verbenac. 24, 31--33, 38, 73, & 97. 1942; Phytologia 2: 108. 1945.

The Seemann 594 cited by me on page 203 of my monograph as from "Province undetermined" in Panama, is actually from the Canal Zone; the Sonntag 11 cited on the same page as from "Province undetermined" in Colombia is probably from Magdalena, but may possibly be from Bolívar (as there is a

"Volador" in each of these departments). The species is described by Williams as a vine growing into the crown of trees and shrubs, with a deep-blue calyx and purplish-blue corolla, inhabiting thickets in "tierra caliente" or "tierra subtemplada", ascending to an altitude of 730 m. Maggs describes it as a "woody climber with long trailing inflorescences of a bluebell color" growing at the edges of creeks and along forest trails. Killip calls it a slender tree, 4--6 m. tall, with drooping inflorescences, the calyx-tube green, its lobes blue, the corolla-lobes purplish-blue, inhabiting the edges of woods. Haught reports it to be a high-growing liana, 20 m. tall, growing along rivers at 50 m. altitude, with harsh leaves and showy blue inflorescences. The common name "tostadito" is recorded by Pittier and by Williams from Venezuela. It has been collected in anthesis in March, May, and June, and in fruit in March. The Macbride photograph of the type collection is erroneously labeled "Brazil".

Additional citations: PANAMA: Canal Zone: Maggs II.48 (F, N). Colon: G. P. Cooper 234 (F). COLOMBIA: Antioquia: Haught 4569 (N). VENEZUELA: Aragua: Ll. Williams 10077 (F), 10160 (F). Bolívar: Ll. Williams 11475 (F, F, F, N). Carabobo: Funck & Schlim 507 [Macbride photos 34293] (F--photo of isotype, Kr--photo of isotype, Lu--isotype, N--photo of isotype); Whetzel & Miller s.n. [Herb. Estac. Exper. Agric. 746] (W). Yaracuy: Killip 37068 (W). BRAZIL: State undetermined: Glaziou s.n. (N--photo, Z--photo).

#### PETREA ATROCOERULEA Moldenke

Additional citations: COLOMBIA: Antioquia: Kalbreyer 1634 (N--photo of type, Z--photo of type).

#### PETREA BLANCHETIANA Schau.

The Sellow specimen cited below was erroneously determined as "Petraea volubilis L." by the collector.

Illustrations: Mart., Fl. Bras. 9: pl. 45. 1851; Correa, Diccion. Pl. Uteis Brasil 1: 502. 1926.

Additional citations: BRAZIL: State undetermined: Sellow 180 (Vt).

#### PETREA BRACTEATA Steud.

Synonymy: "Petraea macrostachya Benth." sensu Fulle, Enum. Pl. Surinam. 402. 1906 [not Petraea macrostachya Benth., 1839]. -- "Petraea volubilis Jacq." sensu Fulle, Enum. Pl. Surinam. 403. 1906 [not Petraea volubilis L., 1753]. -- "Petraea racemosa Nees & Mart." sensu Fulle, Enum. Pl. Surinam. 403. 1906 [not Petraea racemosa Nees, 1821]. -- "Petraea arborea H.B.K." sensu Fulle, Enum. Pl. Surinam. 403. 1906 [not Petraea arborea H.B.K., 1818]. -- "Petraea rugosa H.B.K." sensu Fulle, Enum. Pl. Surinam. 403. 1906 [not Petraea rugosa



H.B.K., 1818].

References: Benth., Ann. Nat. Hist. 2: 448. 1839; Rulle, Enum. Pl. Surinam. 402--403. 1906; Martyn, Ind. Phan. Jenman Herb. 464--465, mss. 1937; Moldenke, Prelim. Alph. List Invalid Names 34--35. 1940; Moldenke, Alph. List Invalid Names 34--35. 1942; Moldenke, Known Geogr. Distrib. Verbenac. 33, 38, & 97. 1942; Phytologia 2: 108. 1945.

Smith describes the species as having the "inflorescence-stalk, calyx, and corolla rich blue", growing in dense forest at edge of isolated savannas. Ducke says it has violet flowers and grows on non-inundated land. Ducke 1133 was erroneously determined by him as P. Martiana, while 872 was erroneously determined by me and cited in Castanea 10: 42 (1945) as P. rugosa.

Illustrations: Miquel, Stirp. Surinam. [Nat. Verh. Holl. Maatsch. Wet. Haarlem, ser. 2, 7:] pl. 42 [as "P. macrostachya"]. 1850; Glück, Blatt- u. Blütenmorphol. Stud. 382 [as "P. Schomburgkiana"]. 1919.

Additional citations: BRITISH GUIANA: E. H. Graham 254 (Cm); A. S. Hitchcock 17249 (N--photo, Z--photo); Jenman 3882 (U), 5935 (U); Maguire & Fanshawe 22885 (N); M. R. Schomburgk 108 [Macbride photos 17574] (Kr--photo, N--photo, Z--photo), 173 (F); A. C. Smith 2626 (F, N). SURINAM: Hostmann 39 [Macbride photos 34294] (F--photo of isotype, Kr--photo of isotype, N--photo of isotype); Hostmann & Kappler 39 [Macbride photos 22776] (Kr--photo of isotype); Kegel 1179 (Gt, Gt), 1180 (Gt); Maguire 24831 (N); Nolte s.n. (Gt); Wullschlägel 411 (Gt), 1587 (Gt). BRAZIL: Amazonas: Ducke 872 (N), 1133 (N). LOCALITY OF COLLECTION UNDESIGNATED: Herb. De Candolle s.n. [Macbride photos 7875] (Kr--photo).

#### PETREA BREVICALYX Ducke

Synonymy: Petraca Kuhlmannii Moldenke, Prelim. Alph. List Invalid Names 34, in syn. 1940.

References: Ducke, Archivos Jard. Bot. Rio Janeiro 6: 87 [as "Petraca brevicalyx"]. 1933; Moldenke, Prelim. Alph. List Invalid Names 34. 1940; Moldenke, Alph. List Invalid Names 34. 1942; Moldenke, Known Geogr. Distrib. Verbenac. 38 & 97. 1942.

Ducke describes the species as a low, weak, scandent shrub, with a dark-violet calyx and violet corolla. It has been collected in anthesis also in January.

Additional citations: BRAZIL: Amazonas: Ducke 140 (F, N, S), s.n. [Herb. Rio de Janeiro 22544] (N--cotype).

#### PETREA COLOMBIANA Moldenke

One of the specimens of Lopez R. cited below includes a photograph of the species growing in situ.

Additional citations: COLOMBIA: Santander Sur: Lopez R. s.n. [Bucaramango, 12/19/1918] (Ar, Ar). CULTIVATED: Colombia: Killip & Smith 19067 (N--photo of type, S--photo of type, Z--photo of type).

**PETREA DUCKEI** Moldenke

References: Moldenke, *Phytologia* 1: 469--470. 1940; Moldenke, *Known Geogr. Distrib. Verbenac.* 38 & 97. 1942.

Scandent shrub; branches slender, grayish, minutely puberulent, glabrescent in age, somewhat lenticellate; nodes not annulate; principal internodes 1.2--11.5 cm. long; leaves decussate-opposite; petioles stout, 8--12 mm. long, minutely puberulent, flattened above; blades firmly chartaceous, stiff, rather uniformly gray-green on both surfaces, somewhat shiny above, elliptic, 10.5--16 cm. long, 4.3--8 cm. wide, abruptly acute or short-acuminate at apex (the very point often obtuse), entire, acute or rounded at base, very minutely puberulent and scabrellous on both surfaces, glabrescent and merely punctate in age, the immature blades very thin-membranous and nigrescent in drying; midrib rather stout at base, rapidly diminishing in size as the apex is approached, prominent on both surfaces; secondaries very slender, 9--15 per side, prominulous above, sharply prominent beneath; vein and veinlet reticulation abundant, prominulous on both surfaces, the tertiaries sharply prominent beneath; inflorescence axillary, racemiform, 14--25 cm. long, rather loosely many-flowered; rachis slender, minutely puberulent; pedicels slender, 2--5 mm. long, elongate to 9 mm. in fruit, minutely puberulent; calyx lilac, subtended by 1--3 foliaceous prophylla, which are thin-membranous, elliptic, venose, 5--6 mm. long, 3--4 mm. wide, sharply acute or attenuate-acuminate at apex; corolla violet; fruiting-calyx indurated, its tube 6--7 mm. long, 5--7 mm. wide at apex, very minutely puberulent, its lobes greatly enlarged, broadly elliptic, to about 13 mm. long and 12 mm. wide, pinnately venose, very minutely and obscurely puberulent, abruptly acute or obtuse at apex.

The type of this species was collected by Adolfo Ducke [Herb. Jard. Bot. Rio de Janeiro 22542] -- in whose honor it is named -- on inundated shores at Paraná de Anavilhana, on the lower Rio Negro, Amazonas, Brazil, on July 24, 1939. The species is obviously very closely related to P. insignis.

Citations: BRAZIL: Amazonas: Ducke 688 (N), s.n. [Herb. Rio de Janeiro 22542] (N--type).

**PETREA GLANDULOSA** Pittier

References: J. A. Clark, Card Index, issue 116: January 10, 1928; Pittier, *Supl. Plant. Usual. Venez.* 55 [as "Petrea glandulosa"]. 1939; Moldenke, *Known Geogr. Distrib.*

Verbenac. 32 & 97. 1942; Moldenke, Phytologia 2: 108. 1945.

Pittier, in the reference cited above, records the common name "penitente" from Venezuela.

#### PETREA INSIGNIS Schau.

References: Le Cointe, A Amazonia Brasileira III, Arvores e Plantas Uteis, 169 [as "Petreaa insignis"]. 1934; Moldenke, Prelim. Alph. List Invalid Names 35. 1940; Moldenke, Known Geogr. Distrib. Verbenac. 38, 73, & 97. 1942; Moldenke, Alph. List Invalid Names 35. 1942; Le Cointe, O Estado do Para 248 & 251 [as "Petreaa insignis"]. 1945.

Le Cointe in the references cited above records the common names "flor de S. Miguel", "flôr de S. Miguel", "viuvinha", and "flôr de folha grande", and states that the species is cultivated in parks and gardens in Pará. Spruce records the common name "flor de Espirito Santo" on his no. 1354.

Additional citations: BRAZIL: Amazonas: Schwacke 304 [Herb. Rio de Janeiro 32217a] (Ja); Spruce s.n. [in vicinibus Barra, Dec.--Mart. 1850--51] (F, Lu). Pará: Martius s.n. [Pará; Macbride photos 20348] (Kr--photo of type).

#### PETREA KOHAUTIANA Presl

References: Britton, Fl. Bermuda 320. 1918; R. O. Williams, Guide Royal Bot. Gard. Trinidad 15 [as "P. volubilis"]. 1927; Freeman & Williams, Useful Pl. Trinidad 126--127 [as "P. volubilis"]. 1928; Moldenke, Prelim. Alph. List Invalid Names 34 & 35. 1940; Moldenke, Alph. List Invalid Names 35. 1942; Moldenke, Known Geogr. Distrib. Verbenac. 28, 29, 73, & 97. 1942; Phytologia 2: 108. 1945.

Britton, in the reference cited above, records the common name "tree petrea", while Freeman and Williams record "white petrea" and "bridal wreath", but it seems probable that these last two names apply more strictly to var. alba. Duss records the common name "liane rude". Hodge states that the species grows along roadsides on Dominica. It has been collected in fruit in August. The Harvey Herbarium specimen cited below bears a very interesting label reading, in a very old hand: "Anonimos scandens ramulis asperimis a limarum instar lignum rodentibus plum.-lin. G.748. didinamia angiospermia monop. Chelone lin. Digitalis virginiana etc. Fluk. Species. ou liron licti, liane a feuilles rude bone pour Amer. l'argent an ou Citiragouli, Malpighiae Species; planta a fleurs en rosette." Delrissé records the common names "liane rude" and "fleur St. Jean."

Additional citations: HISPANIOLA: Haiti: Herb. Harvey 313 (Du--166367). GUADELOUPE: Delrissé s.n. [1844] (Du--166369); Duchassaing s.n. [1852] (Du). DOMINICA: Hodge 870 (N), 3651 (N). MARTINIQUE: Duss 1979 (F); Kohaut s.n. [Sieber, Fl. Mart. 157, in part] (N--photo of isotype, Z--photo of iso-

type), s.n. [Sieber, Fl. Mixta 374] (Lu). GRENADA: W. E. Broadway s.n. [Presbytery, June 6, 1906] (F). CULTIVATED: St. Croix: L. A. Ricksecker 329 (F).

PETREA KOHAUTIANA var. ALBA (Freeman & Williams) Moldenke

Synonymy: Petrea volubilis var. alba Freeman & Williams, Useful Pl. Trinidad 127. 1928. -- Petrea Kohautiana var. anomala Moldenke in Fedde, Repert. 43: 31. 1938. -- Petraea alba Hort. ex Moldenke in Fedde, Repert. 43: 31, in syn. 1938.

References: R. O. Williams, Guide Royal Bot. Gard. Trinidad 15. 1927; Freeman & Williams, Useful Pl. Trinidad 126--127. 1928; Moldenke, Geogr. Distrib. Verbenac. 39. 1939; Moldenke, Alph. List Common & Vern. Names 6. 1939; Lilloa 4: 309. 1939; Moldenke, Prelim. Alph. List Invalid Names 34 & 35. 1940; Moldenke, Alph. List Invalid Names 34 & 35. 1942; Moldenke, Known Geogr. Distrib. Verbenac. 73 & 97. 1942; Phytologia 2: 108. 1945.

Freeman and Williams record the common names "white petrea" and "bridal wreath". Broadway, as long ago as 1908, described the plant on his collection labels as "Petraea volubilis (white variety)", and stated that it has "branches pendent, sometimes climbing."

Additional citations: CULTIVATED: Trinidad: W. E. Broadway 3197 (S--photo), s.n. [St. Ann's, 1908] (La).

PETREA LONGIFOLIA Moldenke

Synonymy: Petraea longifolia Moldenke, Suppl. List Invalid Names 6, in syn. 1941.

References: Moldenke, Alph. List Invalid Names 34. 1942; Moldenke, Known Geogr. Distrib. Verbenac. 75 & 97. 1942.

This species is very close to P. maynensis Huber and may prove to be conspecific with it.

Additional citations: LOCALITY OF COLLECTION UNDESIGNATED: Herb. Mus. Paris s.n. (F--fragment of isotype).

PETREA MACROSTACHYA Benth.

Synonymy: Petraea guianensis Cham. ex Moldenke, Prelim. Alph. List Invalid Names 34, in syn. 1940.

References: Martyn, Ind. Phan. Jenman Herb. 465, mss. 1937; Moldenke, Prelim. Alph. List Invalid Names 34. 1940; Moldenke, Known Geogr. Distrib. Verbenac. 33, 38, & 97. 1942; Moldenke, Alph. List Invalid Names 34 & 35. 1942; Phytologia 2: 108. 1945.

Ducke describes the flowers as violet, while Smith reports the calyx "rich blue; corolla rich violet" or "calyx pale blue, marked with green" and states that the species grows in dense forests at altitudes of from 150 to 400 m. It has been collected in anthesis in January, March, and April,



and in fruit in March, April, and September. The Macbride photograph no. 34292, cited below, is erroneously labeled "Funck & Schlim 150". The Hostmann s.n. distributed as this species, from Surinam, is actually Triplaris surinamensis Cham. in the Polygonaceae, as is also the Schweinitz s.n. from the same country. The illustration in Miquel, Stirp. Surinam. [Nat. Verh. Holl. Maatsch. Wet. Haarlem, ser. 2, 7:] pl. 42 (1850) is not P. macrostachya, but is P. bracteata Steud.

Additional citations: BRITISH GUIANA: M. R. Schomburgk 158 [Macbride photos 34292] (F--photo of isotype, Kr--photo of isotype); A. C. Smith 2148 (N), 3401 (F, N). BRAZIL: Pará: Ducke s.n. [Herb. Rio de Janeiro 14294] (N).

#### PETREA MARTIANA Schau.

References: Le Cointe, A Amazonia Brasileira III, Arvores e Plantas Uteis, 470 [as "Petraea martiana"]. 1934; Moldenke, Prelim. Alph. List Invalid Names 34 & 35. 1940; Moldenke, Known Geogr. Distrib. Verbenac. 35, 38, & 97. 1942; Moldenke, Alph. List Invalid Names 34 & 35. 1942; Le Cointe, O Estado do Para 251 [as "Petraea martiana"]. 1945.

The species has been collected in anthesis in June and October, and in fruit in February and October. Ducke describes the flowers as violet and states that the species grows along the margins of woods. Le Cointe says it is cultivated in parks and gardens in Pará, and records the common name "viuvinha".

Additional citations: PERU: Loreto: W. Fox 96 (F). BRAZIL: Pará: Ducke s.n. [Herb. Rio de Janeiro 14291] (N); Sampaio 5092 [Herb. Rio de Janeiro 19128, in part] (N).

#### PETREA MAYNENSIS Huber

References: Moldenke, Prelim. Alph. List Invalid Names 35. 1940; Moldenke, Alph. List Invalid Names 35. 1942; Moldenke, Known Geogr. Distrib. Verbenac. 31, 35, 38, 40, 73, & 97. 1942.

Ducke reports the calyx as almost white and the corolla violet, while Kuhlmann describes the calyx as blue and the corolla violet, but white at the center. It has been collected in anthesis also in January and February. It is possible that P. longifolia may be conspecific with this species.

Additional citations: COLOMBIA: Putumayo: Klug 1894 (S). PERU: Loreto: Huber 1489 (N--photo of fragment, N--photo of type, Z--photo of fragment, Z--photo of type). BRAZIL: Amazonas: Ducke s.n. [Herb. Rio de Janeiro 35657] (N). Pará: Huber 3676 (N--photo, Z--photo). BOLIVIA: El Beni: J. G. Kuhlmann s.n. [Herb. Rio de Janeiro 22541] (N). La Paz: Kru-koff 10729 (N), 10735 (N). Santa Cruz: Steinbach 3470 [Herb. Inst. Miguel Lillo 38010] (N, N). CULTIVATED: Brazil: Ducke

s.n. [Para; Herb. Rio de Janeiro 22543] (N).

**PETREA NITIDULA** Moldenke

Additional citations: BRAZIL: Amazonas: Spruce 2536 (Lu), 2926 [Macbride photos 34290] (F--isotype, F--photo of isotype, Kr--photo of isotype, N--photo of isotype).

**PETREA PERUVIANA** Moldenke

Williams reports the vernacular name "sanango sachá" for this species and records its blooming and fruiting in May and June.

Additional citations: PERU: Loreto: Klug 170 (F), 637 (F--isotype); Ll. Williams 690 (F), 8106 (F).

**PETREA PERUVIANA** var. **ACUMINATA** Moldenke

Williams describes this plant as a "forest creeper", while Miss Mexia says it is a "vine climbing medium trees, altitude 110 m., frequent in cut-over woods, flowers purple, February."

Additional citations: PERU: Loreto: Mexia 6498 (F, I); Ll. Williams 647 (F).

**PETREA PUBESCENS** Turcz.

References: Pittier, Supl. Plant. Usual. Venez. 55 [as "Petrea pubescens"]. 1939; Moldenke, Alph. List Common & Vernac. Names 25. 1939; Moldenke, Known Geogr. Distrib. Verbenac. 31, 32, 34, 38, 73, & 97. 1942; Phytologia 2: 108. 1945.

Pérez Arbeláez and Cuatrecasas describe the flowers of this species as lilac. It has been collected in fruit in January, April, and August. The leaves on the García Barriga specimen cited below are anomalous in being very thin-textured. Ule 9722 is labeled "Seringal Auristella, Peru", but seems actually to have been collected in Acre Territory, Brazil. The Macbride photograph 34291, cited below, is erroneously labeled "Brazil".

Additional citations: COLOMBIA: Cundinamarca: Pérez Arbeláez & Cuatrecasas 6577 (N, W). Magdalena: H. H. Smith 1521 (Ca, Cm, Vt). Meta: García Barriga s.n. [Herb. Nac. Colomb. 5206] (W). Santander Norte: Cuatrecasas & García Barriga 10173 (W). VENEZUELA: Mérida: Funck & Schlim 1504 [Macbride photos 34291] (F--photo of isotype, Kr--photo of isotype, Lu--isotype, N--photo of isotype). BRAZIL: Acre Territory: Ule 9722 (N).

**PETREA PUBESCENS** var. **KLUGII** Moldenke

Additional citations: PERU: San Martín: Klug 4155 (E--isotype, I--isotype, S--isotype).

## PETREA RACEMOSA Nees

References: Mart., Fl. Bras. 9: pl. 45 [as "P. subserrata"]. 1851; Bocq., Rev. Verbenac. pl. 20. 1861--1863; Baillon, Hist. Pl. 11: 80, figs. 78--81. 1891; Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 157. 1895; Crevost & Pételot, Bull. Econ. Indo-chine 37: 1288 [as "P. subserrata"]. 1934; Moldenke, Annot. List 108. 1939; Hoehne, Kuhlmann, & Handro, O Jard. Bot. São Paulo 578 [as "Petraea subserrata"] 1941; Moldenke, Prelim. Alph. List Invalid Names 34 & 35. 1940; Moldenke, Alph. List Common & Vernac. Names 12, 25, 31, & 33. 1939; Moldenke, Known Geogr. Distrib. Verbenac. 38, 41, 74, & 97. 1942. 1942; Moldenke, Alph. List Invalid Names 34 & 35. 1942; Kuhlmann, Instit. de Botan. Observ. Ger. Contrib. 5: 20 & VI [as "Petraea racemosa"]. 1942; Sampaio & Peckolt, Arquiv. Mus. Nac. Rio de Janeiro 37: 375 [as "P. volubilis Vell." and "P. subserrata"]. 1943; Stellfeld, Tribuna Farmaceutica [Vellozoa] 12: 55, 62, & 102 [as "P. volubilis Vell.", "P. subserrata", and "P. sub-serrata Cham."]. 1944; Phytologia 2: 108. 1945.

Hoehne, Kuhlmann, and Handro, in the reference cited above, record the common names "flor de S. Miguel" and "viuvinha", Kuhlmann records "flor de São Miguel" and "flor de viuva", and Stellfeld lists "coroa de viuva", "grinalda de viuva", "touca de viuva", and "flor de São Miguel".

"Purple wreath" is recorded on the Ames Herbarium specimen.

Additional illustrations: Mart., Fl. Bras. 9: pl. 45 [as "P. subserrata"]. 1851; Bocq., Rev. Verbenac. pl. 20. 1861--1863; Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 157. 1895; Crevost & Pételot, Bull. Econ. Indo-chine 37: 1288 [as "P. subserrata"]. 1934.

Additional citations: BRAZIL: Bahia: Wied-Neuwied s.n. [Belmonte] (E--photo of type). Minas Geraes: G. Gardner 5127 (F); Heringer 63 [Herb. Inst. Biol. S. Paulo 39039] (Sp), s.n. [Herb. Est. Exp. de Café; Herb. Dept. Bot. Est. S. Paulo 44607] (N); Mello Barreto 3267 [Herb. Jard. Bot. Bello Horizonte 931] (F), 3268 [Herb. Jard. Bot. Bello Horizonte 11244] (F); Mosén 645 (Lu); Widgren s.n. [1845; Herb. Monac. 1645; Herb. Rio de Janeiro 31718] (Lu, Lu, N). Paraná: Dusen 15874 (Lu), s.n. [Jaguariahyva, 27.II.1914] (La, Ml). Rio de Janeiro: Hagendorf s.n. [cotype coll. of Petraea subserrata Cham.] (S--photo); Herb. Rio de Janeiro 31719 (N); Martius s.n. [1823; Macbride photos 7874] (Kr--photo). Santa Catharina: Herb. Rio de Janeiro 31775 (N). São Paulo: Amaral 3 [Herb. Inst. Biol. S. Paulo 34704] (Sp); Santoro s.n. [Herb. Inst. Agron. Est. S. Paulo 678] (Ba); Swentorzecky 6 [Herb. Dept. Bot. Est. S. Paulo 41835] (N); Zagatto s.n. [Herb. Inst. Agron. Est. S. Paulo 3096; Herb. Dept. Bot. Est. S. Paulo 44303] (Sp). State undetermined: P. Clausen s.n. [1840] (Du--166368); Sellow s.n. [Macbride photos 17575; co-

type coll. of Petraea subserrata Cham.] (Kr--photo, S--photo, Vt); Wied-Neuwied s.n. [Brasilia] (Lu). CULTIVATED: Brazil: Piere s.n. [Rio de Janeiro; Herb. Rio de Janeiro 31520] (N). Missouri: Herb. Ames s.n. [St. Louis] (Oa). New York: P. J. Connolly s.n. [New York Bot. Gard. Cult. Plants 27675] (N); Hartling s.n. [New York Bot. Gard. Cult. Plants 8885] (Ur), s.n. [New York Bot. Gard. Cult. Plants 11813] (Ur); H. N. Moldenke 4644 (N), 10409 (N).

#### PETREA RUGOSA H.B.K.

The species is reported by Haught as growing fully exposed to the sun on dry sand ridges, with very showy inflorescences of bright-blue flowers. Popenoe describes it as "a rare and handsome ornamental slender shrub", blooming in November. Ducke describes it as a woody vine, with violet flowers, growing in non-inundated woods. Dryander reports the flowers as "lilac" in color and reports the common name "chaparilla". Daniel gives the common name "pluma de reina" and states that the inflorescences are blue. The species has been misidentified as P. arborea by some workers.

Additional citations: COLOMBIA: Antioquia: Daniel 2665 (W--1857567). Caldas: Haught 2103 (N). El Valle: Dryander 2303 (W). Tolima: Hartweg 1359 (Lu). VENEZUELA: Federal District: Bonpland s.n. [Macbride photos 39477] (F--photo of type, Kr--photo of type). BRAZIL: Amazonas: Ducke 872 (W). CULTIVATED: Honduras: Yuncker 4705 (Dp). Colombia: Popenoe 1203 (Ar).

#### PETREA SCABERRIMA Moldenke

Additional citations: COLOMBIA: Cundinamarca: Purdie s.n. [Santa Fé de Bogotá] (N--photo of type, Z--photo of type).

#### PETREA VOLUBILIS L.

Synonymy: Petraea arborea (Kunth) Smith & Wiles in Forbes, Wand. Nat. East. Arch. 2: 78--79 & 514. 1885; H. J. Lam, Verbenac. Mal. Arch., addenda. 1919. -- Petrea mexicana Schiede ex Moldenke, Prelim. Alph. List Invalid Names 35, in syn. 1940. -- Petraea volubilis Merr., Plant Life Pacif. 161 & 274, sphalm. 1945. -- Petrea uolubilis Sessé & Moc., in herb.

References: Jacq., Select. Stirp. Amer. Hist. pl. 114. 1763; Jacq., Select. Stirp. Amer. Hist. Picta, pl. 173. 1780; Lodd., Bot. Cab. 8: pl. 736. 1823; Vell., Fl. Flum. 6: pl. 59. 1827; Géel, Sert. Bot. 3: cl. 14. 1832; Knowles & Westc., Floral Cab. 3: pl. 108. 1840; Journ. Hort., ser. 3, 7: 53. 1883; Forbes, Wand. Nat. East. Arch. 2: 78--79 & 514. 1885; Baillon, Hist. Fl. 11: 80, figs. 78--81. 1891; Bois, Dict. Hort. 944. 1893--1899; G. W. Oliver & W. Miller in L. H. Bailey, Cycl. Amer. Hort. 4: 1284. 1901; Millsp. & Loes. in



Engl., Bot. Jahrb. 36: Beibl. 80: 26. 1905; Gard. Chron., ser. 3, 39: 24 & 25, fig. 15. 1906; Journ. Hort., ser. 3, 54: 390. 1907; Gard. Chron., ser. 3, 51: 287. 1912; L. H. Bailey, Stand. Cycl. Hort. 5: 2562. 1916; Rehnelt, Gartenwelt 28: 367, figs. 1924; Jordahn, Gard. Chron. Amer. 30: 171. 1926; Nessel, Gartenfl. 75: 321--322, fig. 1926; Junell, Symb. Bot. Upsal. 4: 43 & 45 [as "Petraea volubilis Jacq."]. 1934; Catologo Quinta Perez Estr. San Pedro Sula 30. 1935; Phelps, Bull. Garden Club Amer., ser. 6, 2: 11. 1937; Moldenke in Fedde, Repert. 43: 1--48 & 161--221. 1938; Svensk. Bot. Tidsk. 32: 231. 1938; Standl., Field Mus. Publ. Bot. 18: 1012. 1938; Moldenke, Alph. List Common & Vernac. Names 1, 4, 6, 7, 8, 9, 12, 15, 17, 19, 23, 25, 26, 27, 28, 30, & 31. 1939; Moldenke, Suppl. List Common & Vernac. Names 24. 1940; Moldenke, Prelim. Alph. List Invalid Names 34 & 35. 1940; Calderón & Standl., Fl. Salvador., ed. 2, 238 [as "P. arborea"]. 1941; Instit. de Botan. Observ. Ger. Contrib. 2: 65 & 5; VI [as "Petraea volubilis L."]. 1942; Moldenke, Alph. List Invalid Names 34--36. 1942; Moldenke, Known Geogr. Distrib. Verbenac. 17, 20--27, 29, 62, 64, 65, 74, & 97. 1942; H. F. Macmillan, Trop. Planting & Gard., ed. 5, 122. 1943; E. D. Merr., Plant Life Pacif. 161 & 274. 1945; Moldenke, Phytologia 2: 108. 1945; Le Cointe, O Estado do Para 251 [as "Petraea volubilis Jacq."]. 1945; New York World Telegram for April 5, 1946, p. 17. 1946.

The common name "queen's-wreath" is recorded for this species by A. C. Jordahn in the reference cited above, who describes the plant as "one of Florida's lovely vines." The name "bejuca de caballo" recorded by Phelps in the reference cited above for P. arborea actually applies to P. volubilis instead. The names "choreque" and "purple wreath" are recorded by Standley (above), who reports the species as frequent in thickets and dry forests of the Pacific "tierra caliente" of Costa Rica. Gerth van Wijk lists "purple wreath", "liane rude", and "liane de St.-Jean". The Mayan name "yoxop-zimin" is recorded in Phytologia 2: 108. Grey and Hubbard in List Plants Bot. Gard. Atkins Inst. 157 (1933) record the name "queen's wreath" from Cuba. The vernacular designation "chaparro" is listed in Catologo de la Quinta Perez Estrada San Pedro Sula (above) from Honduras. According to the Lundells the species is called "piocha viejo" in Yucatán, where it is a common woody vine to 2 m. tall in the advanced deciduous forest and among second growth. Steggerda records the Mayan name "yoch opp tzimin", while Millspaugh and Loesener in the reference cited above record "opp-tzimir" and "purple-wreath". From Cuba comes the name "flor de papel", recorded by Leon. Le Cointe says (above) that in Pará it is cultivated in parks and gardens and called "viuvinha".



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THE JUNIPERS COMMONLY INCLUDED IN JUNIPERUS CHINENSIS

P. J. van Melle

The materials enumerated here, their relationships and distributions, are treated more amply in a manuscript, "Review of Juniperus chinensis", now in the press.

The present paper is intended to satisfy the requirements of formal publication of the new species, varieties and combinations contained in it. Additional Latin diagnoses have been rendered in cases where available diagnoses seemed inadequate.

1. Juniperus chinensis L. Mant. 127 (1767), 519 (1771); non Roxb. Fl. Ind. Or. III, 840 (1832); non Miquel Fl. Jap. II, 58 (1870), tt. 126, 217 figs. 1, 2, 4 (1844); not, or only in part, of authors since about 1850.
  - J. flagelliformis Loud. Ency. Trees II, 1090 (1842).
  - J. Reevesiana Hort. ex Endl. Syn. Conif. 31 (1847) sub J. cernua.
  - J. chinensis foemina Gord. Pinet. 115 (1858).
  - J. chinensis sylvestris Hort.
  - J. chinensis oblonga Hort.
  
- 1 (1). Juniperus chinensis f. aurea (Young, var.) stat. nov.
  - J. chinensis var. aurea Young ex Anon. in Gdrs. Chron. VIII, 1193 (1872).
  
- 1 (2). Juniperus chinensis f. WILSON'S WEEPING (Clarke, var.) stat. nov.
  - J. chinensis Wilson's Weeping W. B. Clarke & Co., San José, Cal., Catalog, "Garden Aristocrats" (1934).
  
2. Juniperus sphaerica Lindl. in Paxt. Flw. Gdn. I, 58 (1850); ex Farlat. in DC. Prodr. XVI, pt. 2, 488 (1865).
  - J. chinensis 2 Smithii Loud. Arbor., Frut. IV, 2505 (1838); non Hort.
  - J. chinensis mas Gord. Pinet. 115 (1858).
  
- 2a. Juniperus sphaerica var. pseudo-mas var. nov.
  - J. chinensis columnaris viridis, J. chinensis viridis of U. S. nurseries.

A speciei typo differt: Habitu angustiore pyramidalis vel anguste columnari; ramis perseveranter adscendentibus. Floribus obscuriore monoicis, i.e., planta

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tardiore fructificante. Galbulis plerumque plusminusve bilobatis apice plusminusve applanato saepe transverse constricto. In formis borealibus habitu angusto, statu juvenili protracto.

Type: Herb. van Melle, No. 93 - cultivated.

Habitat: Out of Chekiang Province northward into Hopeh Province.

2a (1). Juniperus sphaerica var. pseudo-mas f. columnaris (U. S. Dept. Agri.) comb. nov.

J. chinensis var. columnaris U. S. Dept. Agri., Bureau Plant Ind., Ninth Ann. List New Intro., No. 18577 (1920—21).

2b. Juniperus sphaerica var. dioica var. nov.

J. chinensis Beissn. in Nuov. Giorn. Bot. Ital. N. S. IV, 183—91, No. 10 (1897).

A speciei typo differt: Habitu anguste pyramidalis vel late pyramidalis vel late ovoidei; ramis in formis angustioribus (Sinam orientalem versus) perseveranter adscendentibus, in formis latioribus (Sinam occidentalem versus) saepe ultimo patentibus vel plusminusve undulatis. Floribus dioicis. Galbulis maturis bilobatis, apice applanato transverse constricto.

Type: Arnold Arbor., Giraldis, 1897, Shensi.

Specimens. Arnold Arbor.: Purdom No. 3005, southern Shensi; Meyer No. 1712, Sianfu, Shensi.

Habitat: Out of Hopeh Province westward, along the slopes of, and to the north of, the Tsinling Range, into Shensi Province; projecting into Inner Mongolia.

2c. Juniperus sphaerica var. neaboriensis (Veitch) comb. nov.

J. neaboriensis Veitch Man. Conif. 277 (1881); non Laws. ex Gord. Pinet. 96 (1858) sub J. macrocarpa; non Fitschen Handb. Nadelh. 604 (1930) sub J. chinensis.

Habitu anguste pyramidalis; ramis adscendentibus. Foliis acicularibus remotis brevibus plerumque late patentibus. Floribus dioicis. Galbulis ut in var. dioica.

Type: U. S. Dept. Agri., Bureau Plant Indus., Meyer No. 2014, Sianfu, Shensi.

Habitat: Apparently more or less local, in southern Shensi Province.

2d. Juniperus sphaerica var. pendula (Franch.) comb. nov.

J. chinensis var. pendula Franch. in Nouv. Arch. Mus. Hist. Nat. Paris Ser. 2, VII, 101 (1884); non

Beissn.; non Gaujard ex Morel in Rev. Hortic. 349—50

(1889). Non J. sphaerica var. pendula Lav. Arbor. Se-grez. 290 (1877) - nomen.

Habitu late plusminusve laxe pyramidalis, ramis ultimo patentibus undulatisve vel pendulis, certe ad apices; rariore, ut in hortorum plantis, valde et irregulariter pendulis. Ramulis pendulis. Floribus dioicis. Galbulis regulariter obovoideis vel ovoideis. Statu juvenili non protracto.

Habitat: Type locality (David), southern Shensi. Min Shan Mountains, Lower Tebbu country.

2e. Juniperus sphaerica var. Keteleeri (Hort.) comb. nov.

J. chinensis Keteleeri Hort. gall. ex Beissn. in Mittheil. Deutsch. Den. Ges. 140 (1910).

J. sinensis var. Keteleeri Venema in Jaarb. Nederl. Den. Vereen. 108—21 (1938).

Habitu anguste pyramidalis; ramis adscendentibus. Foliis squamiformibus apice acuto. Floribus dioicis. Galbulis magnis regulariter globosis. Statu juvenili non protracto. Planta mascula in hortis ignota.

Type: N. Y. Bot. Gard., Henry No. 6576.

Type locality: Mountains of northern Hupeh Province.

3. Juniperus Sheppardii (Veitch, var.) sp. nov.

J. sphaerica glauca Fort. ex Gord. Pinet. 39 (1858).

J. sphaerica Sheppardii Veitch Man. Conif. 290 (1881).

Arbor axibus pluribus principalibus habitu juvenili regulariter, adulto plusminusve irregulariter laxe lateque pyramidalis; ramis adscendentibus, certe ad apices. Statu juvenili non protracto. Aspectu comae juvenilis ex griseo argenteo-griseo, adultae ex opace griseo glaucescenti-viridi, rariore clare viridi. In statu juvenili ramulis ultimo ad apices ramorum plusminusve congestis, in statu adulto secundum ramos confertis. Surculis adultis terminalibus nutantibus. In partibus mature adultis ramulis ultimis plerumque gracilibus filiformibus saepe longissimis. Floribus monoicis vel dioicis. Galbulorum maturorum "pedunculis" erectis patentibusve vel plusminusve arcuatis non nutantibus. Galbulis maturis plerumque regulariter obovoideis vel ovoideis rariore turbinatis, ad 10 mm. latis. Seminibus 2—6, plerumque 2—4.

Type: Herb. van Melle, No. 272 (monoecious) - cultivated.

Specimens. Arnold Arbor.: S. Chen No. 3383, No. 4169, Chekiang; Herb. Univ. Anwei No. 2675, Fukien; Hongkg. Herb., Dunn Exped. No. 3507, Fukien; Chiao No. 14059, Chekiang. -- Bailey Hortorium: R. C. Ching No. 1601, No. 2018, Chekiang. -- U. S. Dept. Agri., Bur-



eau Plant Indus., S. P. I.: Access. No. 1583, Kiangsu; R. C. Ching No. 1601, Chekiang.  
 Habitat: Chekiang Province, northward into Kiangsu; southward into Fukien, Kiangsi. Anhwei.

- 3a. Juniperus Sheppardii var. torulosa (Eastw.) comb. nov.  
J. chinensis var. torulosa Eastw. in Bay Cities Garden Monthly II No. 4 (1933).  
J. chinensis kaizuka Hort. jap.  
 A speciei typo differt: Axi principali plerumque uno interdum diviso. Habitu angustiori. Statu juvenili dense conico-fastigiati aspectu griseo-viridi. Surculis adultis terminalibus non nutantibus plusminusve succulentibus. Foliis squamiformibus intense viridibus sed in formis multis pruina grisea obtectis. Floribus dioicis. Galbulis maturis forma valde variis: apice contracto vel applanato, basi decurrenti vel truncato; plerumque approximate cylindricis vel quadrangularibus interdum regulariter obovoideis; longitudine latitudinem excedentibus; plerumque violaceo-pruinosis. Seminibus magnitudine valde variis.  
 Specimens. Arnold Arbor.: Wilson 10, 10, '14, Mt. Yakushima; Wilson No. 8201, Senzu, Idzu Peninsula, Honshu -- N. Y. Bot. Gard.: C. Wright, U. S. North-Pacific Exp. (1853-56), Shimoda, Idzu Peninsula; Maximowicz, Iter Sec. 1862, Yokohama - cultivated; Maximowicz, 1863, Nagasaki.  
 Habitat: Southern parts of Korea. Japan, islands south of Honshu; perhaps wild on Idzu Peninsula, Honshu.
- 3a (1). Juniperus Sheppardii var. torulosa f. aureo-variegata (Hort.) comb. nov.  
J. chinensis aureo-variegata of some U. S. nurseries.
- 3a (2). J. Sheppardii var. torulosa f. albo-notata nom. nov.  
J. chinensis albo-variegata of some, not all, U. S. nurseries; non Veitch.
- 3b. Juniperus Sheppardii var. pyramidalis (Carr.) comb. nov.  
J. chinensis Sieb. & Zucc. Fl. Jap. II, tt. 126, 127 figs. 1, 2, 4 (1844), text, Miquel, 58 (1870).  
J. japonica Carrière Traité Gén. Conif. 33 (1855), pro parte: "Arbrisseau dressé".  
J. japonica var. pyramidalis Carr. l. c., Ed. 2, 31 (1867).  
J. chinensis pyramidalis Hort. ex Beissn. Handb. Nadelh. 120 (1891).  
J. excelsa stricta of U. S. and European nurseries.  
 Arbor plerumque axibus pluribus principalibus. A speci-

ei typo differt: Statu juvenili valde protracto saepe in senectutem retento, a adulto valde dissimili; juvenilis habitu primo dense conico-fastigiati ut in var. torulosa sed denique late columnares valde regulares, aspectu ex griseo viridi-griseo; ramulis ultimo in thyraxis densissimis erectis ad apices ramorum congestis. Habitu adulto laxe lato ultimo valde irregulari pyramidali vel diffuse arborescenti; ramis late adscendentibus, ramulis valde irregulariter dispositis; ramorum surculis terminalibus non nutantibus. Floribus dioicis. Galbulis maturis plerumque ad apicem plusminusve applanatis, regulariter vel irregulariter 2—4-lobatis, plerumque latitudine longitudinem excedentibus.

Specimens. Herb. van Melle: No. 160, 160 A, B (juvenile); No. 55 (early adolescent); No. 38 (advancedly adolescent); Nos. 88, 88 A, 162, 162 A, B, C, D, E (early adult); No. 305, 305 A (fruiting).

Habitat: Conjecturally, central and eastern Honshu, north to between 38° and 39° latitude. Probably Korea, to 39° latitude.

4. x Juniperus media (J. Sabina x sphaerica) hybr. nov.

Frutices plerumque habitu J. Sabinam similis certe in plantarum juvenis. Foliis acicularibus interdum dimorphis: his brevibus textura mollibus ut in J. Sabina, illis longioris rigidioribus ut in J. sphaerica. Floribus dioicis. "Pedunculis" galbulorum maturorum semper nutantibus. Galbulis maturis plusminusve distincte bilobatis.

4a. x Juniperus media var. arbuscula nom. nov.

J. virginiana pendulis viridis Gord. Pinet. Suppl. (1862).

J. sphaerica var. pendula Lavallée Arbor. Segrez. 290 (1877) - nomen.

J. virginiana Smithii pendula Hort. ex Beissn. Handb. Nadelh. 125 (1891).

J. chinensis Smithii Slavin in Rept. Conif. Conf. R. H. S. 103 (1932).

Frutex ramis primariis e trunco brevi adscendentibus, primo fruticem erectum habitu laxo formantibus; plerumque habitu ultimo densiori ad apices ramorum plusminusve patenti. Statu juvenili non protracto. Plantarum juvenum foliis grate fragrantibus, squamiformibus clare viridibus textura delictatula; plantarum senescentium plusminusve opace viridibus textura duriora. Planta mascula ignota. Galbulis bilobatis ad 10 mm. latis "pedunculos" graciles cernuos terminantibus.

us. Seminibus ad 6, ad 6.5 mm. longis plusminusve tenuibus.

Type: Herb. van Melle, No. 283, cultivated in N. Y. Bot. Gard.

Habitat unknown.

- 4b. x Juniperus media var. Pfitzeriana (Beissn.) comb. nov.  
J. japonica pendula Morren & A. de Vos, Index Bibliogr. in Bull. Fed. Société Hortic. Belg. 32 (1877) - nomen.  
J. chinensis pendula C. de Vos Handb. Boomen, Heest. (1885); Beissn. System. Eintheil. (1887) - nomen; Gaujard ex Morel in Rev. Hortic. 349 (1889); Fitschen, Handb. Nadelh. 606 (1930); non var. pendula Franchet.  
J. chinensis Pfitzeriana Beissn. in Mittheil. Deutsch. Den. Ges. 102 (1899).  
 Frutex odore J. Sabinae. Ramis primariis basi oblique divergentibus, arcuato patentibus; ramis ramulisque lateralibus ad apices arcuato-pendulis. Foliis squamiformibus ad apicem acutis, ex griseo-viridis ultimo (in senectute) opace viridibus. Galbulis maturis ad 10 mm. latis "pedunculos" graciles cernuos terminantibus. Seminibus 2—4, ad 5 mm. longis quam in J. sphaerica tenuioribus. Planta femina in hortis ignota.  
 Type: U. S. Nat. Herb., No. 1245121, Ching No. 52.  
 Habitat: Ho Lan Shan Mountains, Inner Mongolia.
- 4b (1). x Juniperus media var. Pfitzeriana f. aurea (Hort.) comb. nov.  
J. chinensis aurea pendula Beissn. Handb. Nadelh. 120 (1891).  
J. chinensis Pfitzeriana aurea D. Hill Murs. Co., Catalog (1938).
- 4b (2). x Juniperus media var. Pfitzeriana f. compacta (Hort.) comb. nov.  
J. chinensis Pfitzeriana compacta Bobbink & Atkins, Catalog (undated).
- 4b (3). x Juniperus media var. Pfitzeriana f. Armstrongii (Bailey) comb. nov.  
Armstrong Spreading Juniper Armstr. Nurs., Catalog. (1932).  
J. chinensis Armstrongii Bailey Hortus Suppl. (1935).
- 4b (4). x Juniperus media var. Pfitzeriana f. glauca (Hort.) comb. nov.  
Silver-blue Juniperus U. S. Plant Patent No. 422 (1940).

J. chinensis Ffitzeriana glauca Hort.

4c. x Juniperus media var. globosa (Hornibr.) comb. nov.

J. virginialis globosa Hort. jap. - pro parte.

J. chinensis nana Hort.

J. japonica globosa, J. japonica nana of Boskoop distribution.

J. japonica Bandai-sugi Hort. jap.

J. chinensis var. globosa Hornibr. Dwarf and Slow-gr. Conif. 62 (1923).

Frutex humilis odore J. Sabinae. In plantis juvenis ramis primariis oblique divergentibus apice non pendulo. Ramulis non pendulis. Statura rare 1 m. superante; ultimo plusminusve 2.5 m. latus. Foliis squamiformibus e pallide praeclare viridibus, apicem obtuso vel acuto. Foliorum ramulorum textura delicatula. Galbulorum maturorum "pedunculis" quam in J. Sabina brevioribus. Galbulis ad 5 mm. latis, latitudine longitudinem excedentibus, forma variis: apice rotundato vel plusminusve applanato; valde irregulariter gibbosis vel obscure bilobatis; vix pruinosis. Seminibus plerumque 2-4, saepe 1, ad 2.5 mm. longis. Planta mascula ignota.

Type: Herb. van Melle, No. 260, cultivated in Arnold Arbor. as J. chinensis var. plumosa.

Habitat unknown.

4c (1). x Juniperus media var. globosa f. aureo-globosa (Rehd. var.) comb. nov.

J. chinensis procumbens aurea Hort. ex Beissn. Handb. Nadelh. 120 (1891) - pro parte.

J. japonica globosa aurea of Boskoop distribution.

J. chinensis var. aureo-globosa Rehd. Manual (1923).

J. chinensis globosa f. aurea Hornibr. Dwf. & Slow-gr. Conif. 63 (1923).

J. japonica Bandai-sugi aurea Hort. jap.

4d. x Juniperus media var. plumosa (Hornibr.) comb. nov.

J. chinensis procumbens Endl. ex Beissn. Handb. Nadelh. 120 (1891), and of Boskoop distribution; non Endlicher.

J. virginialis globosa Hort. jap. - pro parte.

J. chinensis var. plumosa Hornibr., l. c. 66 (1923).

J. japonica of Boskoop distribution, and of many nurseries today; non Carr.; not clearly of any author.

J. chinensis L. Ching No. 53 ex E. H. Walker, Flants Coll. R. C. Ching, in Contrib. U. S. Nat. Herb.

XXVIII, pt. 4, 594 (1941); non L.

J. virginialis D. Hill Nurs. Co., Catalog (1942).



Frutex nanus odore J. Sabinae. In plantis juvenis ramis primariis oblique divergentibus non arcuatis. Ramis rigidibus; ramis ramulisque ad apices non pendulis. Statura ad 1.5 x 1.5 m. Surculis adultis terminalibus plusminusve succulentibus; ramulis lateralibus brevibus plusminusve rigidibus saepe apice plusminusve rotundato convexo. Foliis squamiformibus, apice obtusi-uscule vel rotundato, saepe ad dorsum valde convexis; aspectu plerumque opace viridi. Planta femina ignota.  
Type: Arnold Arbor., R. C. Ching No. 53  
Habitat: Ho Lan Shan Mountains, Inner Mongolia.

- 4d (1). x Juniperus media var. plumosa f. albo-variegata (Hort.) comb. nov.  
J. chinensis procumbens albo-variegata Hort. ex Beissn. l. c. 121 (1891).  
J. chinensis var. decumbens albo-variegata Hornibr. l. c. 66 (1923).  
J. chinensis var. plumosa albo-variegata Hornibr. l. c. Ed. 2, 106 (1938).  
J. japonica albo-variegata of Boskoop distribution.
- 4d (2). x Juniperus media var. plumosa f. aurata nom. nov.  
J. chinensis procumbens aurea Hort. ex Beissn. l. c. 120 (1891) - pro parte.  
J. japonica aurea of Boskoop distribution.  
J. chinensis var. plumosa aurea Hornibr. l. c. 66 (1923).
- 4d (3). x Juniperus media var. plumosa f. aureo-variegata (Hort.) comb. nov.  
J. chinensis procumbens aureo-variegata Beissn. l. c. 121 (1891).  
J. chinensis var. decumbens aureo-variegata Hornibr. l. c. 66 (1923).  
J. chinensis var. plumosa aureo-variegata Hornibr. l. c. Ed. 2, 105 (1938).  
J. japonica aureo-variegata, J. chinensis procumbens aureo-variegata of Boskoop distribution.
- 5a. Juniperus davurica Pallas var. Parsonsii (Hornibr.) comb. nov.  
J. chinensis var. japonica Lav. ex Slavin in Rept. Conif. Conf. R. H. S. 102 (1932) ?; non Lavallée; non ex Hornibr. l. c. 100 No. I (1938); non Vilmorin ex Wils. Conif. Tax. Japan 85 (1916); non Vilmorin.  
J. chinensis var. Parsonsii Hornibr. l. c. 96 (1938).  
J. squamata Parsonsii Bailey Hortus Sec. (1940).  
J. squamata of some U. S. nurseries; non Lamb.

J. squamata prostrata of some U. S. nurseries; non Hornibr.

Frutex humilis denique cumulum depressum regulariter rotundatum formans; gratissime fragrans. Ramis primariis in-plantis juvenis horizontaliter patentibus sed non ad humum adpressis nec decumbentibus. Ramis validis valde rigidibus, cortice laeve cinnamomeo lamelloso, ramulos longitudine gradatbs subbilaterale distributione emittentibus. Foliis acicularibus oppositis vel ternatis; squamiformibus glaucescenti-viridibus vel opace viridibus, apice acutiusculo vel obtuso. Ramorum surculis terminalibus plusminusve succulentibus non nutantibus nec adscendentibus. Ramulis ultimis adultis gracilibus filiformibus saepe longissimis. Floribus dioicis. Galbulorum maturorum "pedunculis" nutantibus. Galbulis maturis depresso globosis vel 3-4-gibbosis saepe approximate quadrangularibus usque ad maturitatem valde coerulei pruinosi, ad 10 mm. latis. Seminibus vulgo ad 6, ad 5 mm. longis.

Type: Herb. van Melle, No. 107, containing material from two plants - one male, one female.

Habitat: Conjecturally, central Korea; Japan.

5a (1). Juniperus davurica var. Parsonsii f. variegata (Hort.) comb. nov.

J. chinensis L. var. japonica Lav. f. alba Rehd. in Journ. Arnold Arbor. VI, 202 (1925) ?

J. chinensis var. expansa variegata Hornibr. l. c. 94 (1938).

J. squamata var. albo-variegata and var. variegata Bailey Hortus Sec. (1940), and of some U. S. nurseries.

J. squamata argenteo-variegata of some U. S. nurseries

6. Juniperus Sargentii (Henry, var.) Takeda ex Nakai Fl.

Jap. Kor. in Tokyo Bot. Mag. XLIV, 511 (1930); ex Koidzumi in Tokyo Bot. Mag. XXXIII, 204 (1919) - nomen; non Sasaki, List, Plants Formosa 53 (1926) - nomen (fide Masamune in Mem. Fac. Science & Agri, Taihoku Imper. Univer. XI, Dec. 1934, p. 131); doubtfully of many Japanese floras.

J. chinensis var. procumbens Nakai Veget. Quelpt. Isl. 13 (1914); Takeda Fl. Isl. Shikotan in Journ. Linn. Soc. XLII, 486 (1914); Miyabe & Miyake Fl. Saghalin 593 (1915); non Endl.; non Beissn.; not Sabina chinensis var. procumbens Antoine Cupress. Gatt. (1857).

J. davurica Nakai in Tokyo Bot. Mag. XXXI, 21 (1917); and of several other Japanese authors, in part; non Fallas.

Frutex humilis odore terebinthaceo, denique cumulum depressum plusminusve irregulariter rotundatum formans. Ramis primariis prostratis cortice cinnamomeo, ramulos longitudine gradatos subbilaterale distributione ascendentes vel suberectos apicibus patentibus emitentibus. Foliis acicularibus brevibus non rigidis; squamiformibus apice obtusiusculo vel rotundato, ex opace viridibus griseo-viridibus. Ramulis ultimis adultis vix longis vix filiformibus. Floribus dioicis. Galbulorum maturorum "pedunculis" nutantibus. Galbulis maturis forma variis, saepe approximate globosis apice plusminusve applanato, plusminusve obscure bilobatis; ante maturitatem ex viridibus griseo-viridibus, saepe ad apicem brunneo-violaceis, vix pruinosis; plerumque ad 8 mm. latis. Seminibus saepe ad 5 (in plantis tsushimensis, leg. Wilson, ad 8).  
Habitat: Mainly coastal and insular, Korea, Japan, Sakhalin.

7. Juniperus procumbens Sieb. & Zucc. Fl. Jap. II, t. 127, fig. 3 (1844), text, Miquel, 59 (1870); non Sargt. in Gdn. & Forest X, 421 (1897).  
J. chinensis var. procumbens Endl. Synopsis Conif. 20 (1847); non Beissn.; non Nakai Veget. Quelpt. Isl. (1914); non Takeda Fl. Isl. Shikotan (1914); non Miyabe & Miyake Fl. Saghalin (1915); non Sabina chinensis var. procumbens Antoine Cupress. Gatt. (1857).  
J. japonica Hort. ex Carr. Traité Gén. Conif. 33 (1855), in part; ex Hérinq Manuel Plantes IV, 314 (1857), in part; non Sargt. in Gdn. & Forest X, 421 (1897).  
J. recurva var. squamata Masters in Bull. Herb. Boiss. VI, 274 (1898); Matsumura Index Plants Jap. 11 (1905); non Parlatores.  
J. chinensis var. japonica Vilmorin Hort. Vilmor. 58 (1906); non ex Wilson, Conif., Tax. Japan 85 (1916).  
 7a. Juniperus procumbens f. nana (Hornibr., var.) stat. nov.  
J. japonica nana D. Hill Nursery Co., Catalogs up to 1942.  
J. procumbens var. nana Grootendorst ex Hornibr. Dwarf & Slow-gr. Conif. 122 (1938).

Incompletely Known:

Juniperus chinensis var. Luptonii Hort.

Of this juniper I have seen cultivated plants up to 10 feet high, but never normally developed ones; nor have I seen fruit of it. I have not been able to i-

identify it with herbarium material collected in the wild. I diagnose it tentatively as one of the inland, dioecious developments of J. sphaerica.

Juniperus chinensis var. arenaria Wilson ex Rehd. & Wils., Plants Coll. J. F. Rock, in Journ. Arnold Arbor. IX, 20 (1928).

From the description cited, and from specimens at the Arnold Arboretum I cannot diagnose this juniper. I see, however, no sufficient grounds for regarding it as a variety of J. chinensis or J. sphaerica or J. Sheppardii.

Juniperus chinensis var. tsukusiensis Masamune Prelim. Rept. Veget. Isl. Yakushima 39 (1929) - nomen; in Journ. Soc. Trop. Agri. (Taihoku Imper. Univ.) II, 152 (1930).

I have seen no specimens of this juniper. The description rendered by Masamune seems to me not to contain sufficient grounds for its identification as a variety of J. chinensis.

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ADDITIONAL NOTES ON THE GENUS PETREA. II

Harold N. Moldenke

PETREA VOLUBILIS L.

Calderón and Standley list for this species the common names "flor de Jesús", "lengua de vaca", and "adolфина". Conzatti and Sanchez report that in Mexico it is called "yerba del soltero". The New York World Telegram article cited in the previous installment of these notes calls the plant "petrea".

Detailed descriptions of the floral morphology are given by Junell in the reference cited in the previous installment, and other morphological notes will be found in Svensk. Bot. Tidsk. 32: 231. Macmillan describes the plant as blooming twice a year, and the calyx as bright heliotrope in color, "persisting long after the violet corollas have fallen." Popenoe describes the species as a half-climbing shrub, 15 feet tall, with blue flowers, "a rather common cultivated ornamental of the Cauca valley, Colombia," and "occasional in gardens, rare" in Florida. The Lundells describe the calyx as "bluish-purple, pale" or "bluish-lavender" and the corolla as "purplish". It has been col-



lected in anthesis also in September. Hinton says that it grows in the sun in the mixed forests of Guerrero. Standley describes it as a "large woody vine" or a "small vine, with blue-purple flowers, in dry thickets" in Guatemala, and C. L. Wilson reports it as a "liana common in the virgin forests" of the same country. LeSueur collected it on dunes in Tamaulipas; Steyermark as a shrub 10 feet tall on moist banks in Jalapa, Guatemala; Pringle found it "running over rocks on limestone ledges" in San Luis Potosí. Fruit has been collected in September. The beauty of the plant is well indicated by the statement in the New York World Telegram article previously referred to, where it is reported that "Mrs. Paine [a director of the Garden Club of America] glows with enthusiasm as she describes more of Costa Rica's lush plants and flowers, such as 'petrea', a kind of blue vine which she saw growing over the home of the U. S. Ambassador!"

The Bur. Fl. Ind. S. P. I. 36024, cited below, originated in the botanical garden at Saharanpur, India. The Liebmann 11280 cited on page 42 of my monograph as from "State undetermined", Mexico, is actually from either Oaxaca or Veracruz, according to information received by me recently from Professor Martínez; Liebmann 11283 is from Veracruz; Liebmann 11285 is probably from Veracruz; Schiede & Deppe s. n. [Artopaz, Mart. 29] is probably from Actopan, Veracruz; and Schiede & Deppe s. n. [Malpayo de Hautingo, April 29] is probably from Huatengo, Hidalgo. The Sturrock s. n. [Finca Mulgaba, 1916] cited on page 43 as from "Province undetermined", Cuba, is actually from Havana.

Paxton in the reference cited in the previous installment of these notes gives the common name "stapelia-flower petrea" for this species. The Buswell specimen cited below bears no indication on its label that it was collected from cultivated material, but the collector writes me that it actually was. The Jamaican specimen cited may be from cultivated material, but there is no indication on the label to this effect. The synonymy given by Ch. Crevost and A. Pételot in the reference cited is that of P. Kohautiana, but the illustration is definitely P. volubilis. The Forbes reference is extremely interesting in that it records the finding of this plant in a wild state in Timor and Java. A quotation from pages 78—79 is worth repeating here: "On one of the lower knolls I found perhaps the most interesting plant in my Javan collection, a species of Petraea (P. arborea) growing entirely wild in the forest. This genus.....is almost entirely confined to the South American continent and it is of extreme interest to find it, in this inexplicable way, cropping up in a region so far removed from the centre of its distribution. A species from the island of Timor occurs, without history, in the collection in the British Museum

made by Mr. Robert Brown, but these are the only two examples, so far as I am aware, hitherto collected uncultivated in the Old World."

Additional illustrations: Rehnelt, Gartenwelt 28: 367, figs. 1924; Nessel, Gartenfl. 75: 321—322, fig. 1926; Crevost & Fételot, Bull. Econ. Indo-chine 37: 1289 [as "P. subserata"]. 1934; Junell, Symb. Bot. Upsal. 4: figs. 80—86. 1934; H. F. Macmillan, Trop. Planting & Gard., ed. 5, 122. 1943.

Additional citations: CUBA: Oriente: León 17259 (Ha, N). JAMAICA: Hatch s.n. [August 8, 1932] (Pl--105108). PUERTO RICO: Otero 252 (N). MEXICO: Coahuila: Artamanoff s.n. (F). Guerrero: Hinton 14135 (N, N); E. W. Nelson 2318 (F); Edw. Palmer 395 (Ca, F, Me, Me, Me, Me). Michoacán: Emrick 255 bis (F). Oaxaca: C. Conzatti 2100 (Me, Me), 5305 (N); Conzatti & Sanchez 3428 (Me); Conzatti, Reko, & Makrinus 3001 (Me); Galeotti 793 [type coll. of Petraea ovata Mart. & Gal.] (Br, N--photo, Z--photo). Puebla: F. Salazar s.n. [Huauchinango] (Me). San Luis Potosí: Edw. Palmer 1064 (Io); Pringle 5003 (Fs, Me, Me, Mi), 5003 1/2 (Vt), 8004 (Cm, F, Io, It, Me, Me, Po). Tamaulipas: Berlandier 136 [type coll. of "Petraea (volubilis?) mexicana Cham."] (Du--166365, N--photo, Z--photo), 182 (Lu); LeSueur 542 (Au, F); Edw. Palmer 279 (F), 317 (F). Veracruz: Galeotti 795 [type coll. of P. mexicana H.B.K.] (Br); Matuda 1478 (Mi, N); Medellin 17 (Me); Orcutt 3042 (Du--155196); Purpus 6354 (F), 13677 (Du--184943); C. L. Smith 1017 (N, Vt). Yucatán: G. F. Gaumer 379 (F); Lundell & Lundell 7329 (Mi, N), 7413 (Mi, N); Steggerda 27a (F). State undetermined: Haenke 1582 (N); Sesse, Mociño, Castillo, & Maldonado 2225 (F). GUATEMALA: Alta Verapaz: C. L. Wilson 334 (F). Chimaltenango: J. R. Johnston 1149 (F). El Petén: Aguilar Hidalgo 362 (I); H. H. Bartlett 12133 (F), 12559 (Ca, I); C. L. Lundell 3431 (F). Izabal: Bur. Pl. Ind. s.n. [1922] (Ar); H. V. Johnson 1265 (Ia, Ia). Jalapa: Steyermark 32957 (F). Retalhuleu: P. C. Standley 88384 (N). BRITISH HONDURAS: Chanek 143 (F); Gentle 2366 (Dp, Mi), s.n. [C. L. Lundell 4972] (Ca, Hp, I). COSTA RICA: Alajuela: Brenes 13620 (F), 14290 (F), 20462 (F), 20468 (F); Orozco 316 (F). Guanacaste: C. W. Dodge 6474 (F); M. Valerio 513 (F). PHILIPPINE ISLANDS: Luzon: M. Ramos s.n. [Herb. Philipp. Bur. Sci. 12194] (Ar). CULTIVATED: Bahamas: Degener 18788 (Ml, N). Colombia: Popnoe 1214 (Ar). Cuba: León 41 (Ha); Popnoe 427 (Ar); Van Hermann 2674 (Po). Costa Rica: M. Valerio 63 (F). Florida: Bur. Pl. Ind. S. P. I. 36024 (Ar, Ar); Buswell s.n. [March 8, 1939] (Bu); Mowry & West s.n. [19 May 1932] (Fl); Popnoe 236 (Ar); Ricker 4023 (Ar); Simmonds s.n. [Bur. Pl. Ind. S. P. I. 36024] (Ar). Guatemala: L. H. Bailey 579 (N); P. C. Standley 72220 (F); Steyermark 39880 (F). Hawaiian Islands: Degener 17851 (N); O. B.

Johnson s.n. [Honolulu, 1897] (Pl--22595, Se--14931, Se--14932). Hispaniola: E. C. Leonard 10143 (Ca). Honduras: Yuncker 4524 (Dp). Mexico: Conzatti 5305 (Mi). Netherlands: Herb. Hort. Clifford s.n. [Herb. Linnaeus G.781, S.1] (E--photo of isotype).

PETREA VOLUBILIS var. ALBIFLORA (Standl.) Moldenke

Synonymy: Fetrea volubilis f. albiflora (Standl.) Standl., Field Mus. Publ. Bot. 18: 1012. 1938.

References: Standl., Field Mus. Publ. Bot. 18: 1012. 1938; Moldenke, Prelim. Alph. List Invalid Names 34. 1940; Moldenke, Alph. List Invalid Names 35. 1942; Moldenke, Known Geogr. Distrib. Verbenac. 21 & 97. 1942; H. F. Macmillan, Trop. Planting & Gard., ed. 5, 122. 1943.

The type collection was originally identified and distributed as P. arborea H.B.K. Schipp states that the variety grows in open forests. It has been collected in flower and fruit in March.

PETREA VOLUBILIS var. PUBESCENS Moldenke

Edwards describes the variety as inhabiting open mountain forests; Pringle found it running over rocks on limestone ledges, at an altitude of 400 feet. It has been collected in fruit in March. The Collector undesignated 611 and Lan-kester s.n. [El Rodeo] cited by me on page 46 of my monograph as from "Province undetermined", Costa Rica, are both actually from San José. The variety has been confused in the past with "Petrea arborea H.B.K." The common name "jasmin o'Coamecate azul" is recorded by Urbina.

Additional citations: MEXICO: Hidalgo: Urbina s.n. (Me). Oaxaca: Seler & Seler 1777 (Du--283661). San Luis Potosí: Pringle 8004, in part (Vt). HONDURAS: Comayagua: J. B. Edwards P.586 (F), P.601 (F). COSTA RICA: Province undetermined: Pittier s.n. [Herb. Instit. Physico-geogr. Nat. Costaric. 16655] (Cm).

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#### ADDITIONAL NOTES ON THE GENUS AMASONIA. I

Harold N. Moldenke

Since the publication of my monograph of this genus in Fedde, Repert. Sp. Nov. 46: 193--228 (1939) twenty-nine additional specimens and photographs of specimens have come to my hands. This surprisingly small amount of material to come in during seven years is a fair index of the paucity of

herbarium specimens of this genus to be found in the world's herbaria. The new material is deposited in the herbaria indicated by the following symbols: F = Chicago Natural History Museum, Chicago; Ja = Museu Nacional, Rio de Janeiro; Jc = J. Cuatrecasas Herbarium, Cali, Colombia; Kr = Krukoff Herbarium, New York Botanical Garden, New York; Mi = University of Michigan, Ann Arbor; N = Britton Herbarium, New York Botanical Garden, New York; and W = United States National Herbarium, Smithsonian Institution, Washington.

#### AMASONIA L. f.

References: A. L. Juss., Gen. Fl. 119—123. 1789; Neck., Elem. Bot. 1: 362—389. 1790; Wittstein, Etymolog.-bot. Handwörterb. 34. 1852; Bentham in Benth. & Hook. f., Gen. Pl. 2: 1147. 1876; Junell, Symb. Bot. Upsal. 4: 107. 1934; Moldenke, Prelim. Alph. List Invalid Names 4—5 & 42. 1940; Moldenke, Known Geogr. Distrib. Verbenac. 30, 32, 33, 36, 40, 71, & 86. 1942; Moldenke, Alph. List Invalid Names 4, 23, & 43. 1942; Phytologia 2: 91. 1945.

The generic name is erroneously accredited to Linné the elder by Wittstein in the reference cited above. Three additional common names for members of the genus are recorded: "taligale", "amazonée", and "duphysteme", the first by Jussieu and the two latter by Necker in the references cited above.

#### AMASONIA ANGUSTIFOLIA Mart. & Schau.

References: Junell, Symb. Bot. Upsal. 4: 107. 1934; Moldenke, Prelim. Alph. List Invalid Names 42. 1940; Moldenke, Known Geogr. Distrib. Verbenac. 36 & 86. 1942; Moldenke, Alph. List Invalid Names 4 & 43. 1942.

Additional citations: BRAZIL: Goyaz: G. Gardner 3411 [Herb. Monac. 924; Macbride photos 20345 & 28390] (F--photo of isotype, Kr--photo of type, Kr--photo of isotype).

#### AMASONIA ARBOREA H.B.K.

The type collection of this species was gathered in wooded places near Javita, on the banks of the Río Tuamini, Misiones del Orinoco, Venezuela. Pinkus describes the species as a shrub to 3 feet tall. The corolla is described as yellow or pale-yellow, the bracts as red or scarlet. It has been collected in fruit in May and September. In Colombia it ascends to 240 m. Williams says that it inhabits clearings on "terra firma", while Pinkus found it in rocky soil of thick forests.

Additional citations: COLOMBIA: Vaupes: Cuatrecasas 7084 (Jc). VENEZUELA: Amazonas: Cardona 166 (W); Ll. Williams 15175 (W). BRITISH GUIANA: A. S. Pinkus 2 (N).



## AMASONIA CALYCINA Hook. f.

References: J. D. Hooker in Curtis, Bot. Mag. 113: pl. 6915. 1887; Moldenke, Known Geogr. Distrib. Verbenac. 33, 71, & 86. 1942; Moldenke, Alph. List Invalid Names 43. 1942.

Hooker, in the reference cited above, states that this species is actually a native of British Guiana, but to date I have seen only cultivated material from botanical gardens in Austria, Belgium, England, Italy, New York, and Trinidad.

## AMASONIA CAMPESTRIS (Aubl.) Moldenke

References: Willd., Sp. Pl. 3: 394. 1800; Benth., Ann. Nat. Hist. 2: 450. 1838; Griseb., Fl. Brit. W. Ind. 501. 1861; Junell, Symb. Bot. Upsal. 4: 107 [as *A. erecta*]. 1934; Moldenke, Prelim. Alph. List Invalid Names 4, 5, & 42. 1940; Pulle, Fl. Suriname 4 (2): 283-284. 1940; Pittier, La Mesa de Guanipa 23 & 45 [as *A. punicea*]. 1942; Moldenke, Known Geogr. Distrib. Verbenac. 32, 33, 36, & 86. 1942; Moldenke, Alph. List Invalid Names 4 & 43. 1942; Phytologia 2: 91. 1945.

Fróes describes the species as a "low shrub". Monteiro da Costa states that the flowers are red, but he certainly means this to be a description of the bracts, not the flowers. Bentham, in the reference cited above, says for "*A. erecta*": "The corolla is said by Schomburgk and Vahl to be red, by Aublet to be yellow". Here again the reference to "red" corollas must be an error for the bracts. Monteiro da Costa says that the species inhabits low land and reports the vernacular name "herva de picapáo", while Drouet records it as inhabiting open woods. Pittier, in the reference cited above, lists the species as a constituent of the "sabanas de saetas" in Venezuela. Willdenow records the common names "aufrechte Amasonie" and "rothe Amasonie". The label of Macbride photo 22773, cited below, reads "Cen. America" in error. The plant of which this is a photograph was collected on the island of Trinidad.

Illustrations: Junell, Symb. Bot. Upsal. 4: pl. 7, fig. 2 [as *A. erecta*]. 1934.

Additional citations: TRINIDAD: Ryan s.n. [Macbride photos 22773; type coll. of *A. punicea*] (Kr--photo). BRITISH GUIANA: A. C. Smith 2441 (F). BRAZIL: Bahia: Blanchet 3156 [Macbride photos 7887 & 30184; type coll. of *A. velutina*] (F, F--photo, Kr--photo, Kr--photo). Ceará: Luetzelburg 26095 (F). Maranhão: Fróes 1862 (F, Mi), 11779 (N), 11790 (N). Pará: Drouet 2125 (F); Monteiro da Costa 263 (F).

## AMASONIA CAMPESTRIS var. SURINAMENSIS Moldenke

References: Moldenke, List Geogr. Distrib. Verbenac. 21, nom. nud. 1939; Pulle, Fl. Suriname 4 (2): 282, 284, & 285. 1940; Moldenke, Known Geogr. Distrib. Verbenac. 33 & 86. 1942.





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## THE PRESERVATION OF WELL KNOWN BINOMIALS

H. A. Gleason

The International Code of Botanical Nomenclature, as revised at Cambridge in 1930 and further amended at Amsterdam in 1935, is now followed by all working taxonomists in America. Nevertheless, there are certain facts about the Code and certain principles involved in its provisions which are not always understood by botanists, especially by non-taxonomists, and not always appreciated by the taxonomists themselves.

One of these relates to the history of codes in general but especially to the so-called Paris Code of 1867, since it is the direct progenitor, in a figurative sense, of the modern code of 1935. The Paris Code was the first formulation of nomenclatural principles and rules for which the claim of internationality was made and to which adherence by all taxonomists was expected. In the Paris Code the principle of priority was the leading feature, just as it remains today. But those who care to study the code carefully and to inquire into the circumstances of that period which led to the appointment of De Candolle to draft the code will at once realize that absolute priority was not intended and that the effect of absolute priority was probably not imagined. If there was a conflict in the general usage of names in the various countries of western Europe (America apparently received little or no consideration), the choice of the conflicting names should depend on priority of publication, other things being equal. De Candolle never insisted on investigation of the merits of all published names: those that had already been relegated to the nomenclatural waste-basket were better left there undisturbed.

Other persons doubtless realized the potential danger in a strict interpretation of the rules. Some readers will remember the presidential address of L. H. Bailey before the American Society of Plant Taxonomists, in which he told of finding the Paris Code on the library shelves at Harvard and his proposal to Asa Gray that he (Bailey) translate them into English. To which Gray replied "Mr. Bailey, you will do no such thing. Let sleeping dogs lie."

Yet Asa Gray followed the principle of priority. If there was a choice to be made between two or more names, it was his prevailing practice to adopt the oldest. And so far as I know, he did so without mentioning them as the justification for his action.

About twenty years elapsed before anyone aroused the

sleeping dog. Nathaniel Lord Britton, my former professor and for many years my superior officer at the New York Botanical Garden, whose botanical ability, measured by his accomplishments, stands second to none in the country, first attempted to follow the provisions of the code beyond its original intent. In the late eighties and nineties he, sometimes alone and sometimes with assistants, hunted out hundreds of forgotten or discarded specific epithets, combined them with the valid generic names, and introduced the new combinations to the botanical public.

Of course there was a storm of protest, although Britton was right, according to the provisions of the current International Code. But the gates were now open and the floodwaters of nomenclature inundated the fields of taxonomy. After fifty years of drainage, after forty years of damming by nomina conservanda, those fields are still miry. Hardly an issue of *Rhodora* appears in which a change of name of some eastern American plant is not proposed, strictly in accordance with the code, of course. Some of these authors, who now stand on technicalities of the code, might well remember that their own predecessors were among the loudest in condemnation of Britton, who also was guided by similar technicalities in the code of his day.

The first attempt to restore nomenclature to some degree of sanity came with the codes of 1905 and 1910. In them there was no change from the early provision for the use of the oldest valid specific epithet, which was the prime cause of the trouble, but an attempt was made to reduce the effect of this provision. The use of tautonyms was abolished; epithets used in one category were not required to be transferred to another category; a number of generic nomina conservanda were adopted; a starting point later than 1753 was fixed for certain groups. Each of these provisions tended to restrict the damage caused by the discovery of unknown names or the revival of forgotten ones. All of them have been continued in the code of 1935 and the number of nomina conservanda has been increased.

Of late years a new dam has been opened, again to flood taxonomy. This is the problem of typification, not yet thoroughly controlled by the recent codes. The waters swirl round and round between *Quercus rubra* and *Quercus borealis*, between *Euphorbia maculata* and *Euphorbia supina*, leaving marooned and helpless the poor botanist who uses names as appellations for plants and not as botanical footballs.

Football players are invited to consider this: Nowhere in the Code is there any requirement that botanists should laboriously investigate encyclopedias, books of travel, textbooks of horticulture, and similar works and attempt to apply the names which they may find therein. It does not re-

quire that they find, investigate, typify, and apply every published binomial. The code does require that they use the oldest known legitimate epithet, not the oldest one as yet unknown. If they insist on looking up hitherto unknown names, then they should be consistent and investigate all encyclopedias, all books of travel, all textbooks of horticulture, all back volumes of the Congressional Record, all printed literature in every language, and thereby be sure that they have really found the oldest name.

The current code of nomenclature is intended to achieve a definite stated purpose; it is based on certain general principles; the use of these principles to attain the goal is implemented by a long series of rules.

The purpose is the establishment of a stable nomenclature. The rules do not distinguish between stability of the past and stability of the future. On the contrary, the rules clearly intend to maintain the stability of the past and to project it into the future. This is evidenced by the general principle that no one should change names except for serious reasons, by the use of different dates of departure, by the abolition of tautonyms, by the adoption of *nomina conservanda*, and (what may seem strange to some botanists) by the homonym rule, which often permits the segregation of a genus without the publication of a new generic name.

A careful study of the opening clauses of the Code will convince any impartial reader that the Code is intended to effect stability just as far as possible by maintenance of names and just as little as possible by change of names. The definite rules which follow and which constitute the bulk of the Code should therefore be used to justify maintenance. Only when maintenance is impossible should they be used to determine the nature of the necessary change.

Those who frequently turn to the pages of the Code for guidance and others who follow the current literature of taxonomy are fully aware that there are clauses of dubious application among the rules, rules which actually or seemingly conflict, nomenclatural problems connected with typification and hybridization which are not fully met. In all such cases, the rules should be interpreted to favor the maintenance of a name rather than its change. There are nomenclatural problems the settlement of which seems to depend on mere quibbling. I should not hesitate to quibble about the interpretation of a rule if by so doing I can preserve a well known name; I should quibble in the opposite direction with equal readiness if I can thereby preserve another name. If I can find any rule which will lead to the preservation of a name, I shall adopt it, although another rule may be found which would necessitate a replacement.

In general, if botanists will search as assiduously for



reasons to maintain a name as they do for reasons to change one, a considerable number of well known names will be saved.

I now present five instances of well known plants with names long established in the literature of botany, forestry, or horticulture which have come under recent criticism. In each case strange names or new combinations have been suggested for them. While I doubt that any change of name can "throw science into confusion," (International Code, Art. 3, paragraph 1) these plants are so common or so important that any change in their names should be avoided.

#### Parthenocissus vitacea.

It is only a half-century since the existence of two species of Virginia Creeper in our flora was noted. Apparently Lazenby was the first American botanist who in 1888 and 1890 called attention to the two forms, while Knerr gave the second one a varietal name in 1893. In doing so he emphasized the lack of adhesive disks on the tendrils and mentioned a few other subordinate features. A year later Hitchcock elevated Knerr's name to specific rank as Parthenocissus vitacea, under which name it has frequently appeared in American literature.

Recently Rehder has found another name, Vitis inserta Kerner, six years older than Knerr's variety and seven years older than Hitchcock's species. He accordingly transferred it to Parthenocissus and the plant appears as P. inserta in such widely used works as Rehder's Manual of Cultivated Trees and Shrubs (1940) and Deam's Flora of Indiana (1940); Fernald accepted it in Rhodora (43: 604. 1941), where he misspelled it as incerta.

Now let us examine Kerner's original publication. It consists of a figure and a bit of description. The figure shows what might be a bit of rock or a piece of bark, probably the latter, with two stems running vertically across it. Each stem has a palmately compound, 5-foliolate leaf, one of them with a tendril opposite it; the petiole of a third leaf is shown, also opposite a tendril. Anyone will recognize it as a Virginia Creeper and Kerner verifies this by referring to the plant as Vitis (Ampelopsis) inserta. Each tendril branches with four apices; each apex has found a crevice in the bark and has there enlarged into an adhesive disk. The drawing does not show the inflorescence, which is the best diagnostic character of the species, nor can it well show whether the leaf is dull or glossy. Kerner's description is not that of a taxonomist nor is there any evidence that he wished or intended to describe a species or propose a name, although this fact is in itself no reason for neglecting his name. He is writing about the be-

havior of tendrils and nothing else. Rather than quote the original German, I append an excellent translation by Oliver (Kerner & Oliver, Natural History of Plants 1: 701.):

"Bignonia capreolata, and Vitis (Ampelopsis) inserta (whose tendrils are represented in fig. 166<sup>1</sup>) behave differently from the three tendril-plants just mentioned. Here the curved tips of the tendrils, growing towards the wall, seek the crevices and crannies of stone or bark and actually creep into them, or when only shallow grooves are to be found in the substratum, bury themselves in them.\*\*\*When established in the chinks and crevices, the ends, which until now have been hooked, swell out like a club or ball, and in a short time thicken so much that they occupy the entire crack."

This is all the descriptive matter; the remainder of the paragraph deals in more detail with the adhesive properties of the tip of the tendril.

Kerner's description is not that of a taxonomist nor is there any evidence that he wished or intended to describe a species or propose a name, although this fact is in itself no reason under the Code for neglecting his name. He is writing about the behavior of tendrils and nothing else. The only structural feature of the plant to which reference is made is the tendrils and special emphasis is placed on the production of terminal hold-fasts.

That is precisely the feature which is used by modern botanists, including Rehder, to characterize P. quinquefolia! P. vitacea is the plant almost always without hold-fasts, and yet Rehder wants to displace that well known name by the one of Kerner. Vitis inserta, inadequately and accidentally although effectually published, is merely a synonym of P. quinquefolia.

#### Nelumbo lutea.

The American lotus has regularly been known by this name since 1805, while the specific epithet for it dates back to 1799. Recently Fernald has drawn attention to Nymphaea pentapetala Walt., published in 1788, and has advocated the new name Nelumbo pentapetala (Walt.) Fern.

Fernald has stated the facts correctly. Walter thought he had two species of Lotus. One of them he misidentified with the Old World species under the name Nymphaea Nelumbo. The other he regarded as undescribed; he gave it the specific name pentapetala and a brief description: "foliis peltatis undique integris, calyce pentaphyllo, corolla magna pentapetala alba, loculis pericarpium monospermis." Now the species of Nelumbo have numerous petals, not five. Walter's plant was either a monstrosity or an aged flower from which

the other petals had fallen. Fernald expressed regret at changing a well known name, but based his regret solely on the inappropriateness of the epithet. In this he was probably guided by Recommendation XIII: "The specific epithet should \*\*\* give some indication of \*\*\* the characters \*\*\* of the species," rather than by Article 15: "The purpose of giving a name to a taxonomic group is not to indicate the characters or history of the group, but to supply a means of referring to it." He could have avoided all regret if he had relied on Article 65: "A name or epithet of a taxonomic group must be rejected when it is based on a monstrosity." I regard Walter's name as covered by this rule and reject it accordingly.

#### Acer saccharum.

It is generally accepted as a fundamental principle of good nomenclature that the publication of a misprint does not produce a legal plant-name. There are all sorts of misprints which one may note in botanical works. Most of them are obvious, but there are some supposed cases which have been interpreted in two ways, as a misprint and as an intentional act.

Recently the botanical public has been asked to substitute Acer saccharophorum for A. saccharum as the name of our familiar northern Sugar Maple. The circumstances have already been treated in great detail and exactness by Rousseau (Contr. Inst. Bot. Univ. Montreal 35: 1--66. 1940.). He, however, wished to prove his own opinion and naturally presented all the evidence which he could develop in favor of it, while excusably slighting evidence to the contrary. Since his work may not be easily available to some readers, a very brief statement of the pertinent facts may be in order. Some of these facts are taken directly from Rousseau; others from the same literature from which Rousseau drew his evidence. No additional facts are necessary for proper appraisal.

Peter Kalm, in his travels in America, soon learned to know the Sugar Maple and collected specimens of it. Two of these are still extant. One, which came into the possession of Queen Louisa Ulrika, is Sugar Maple. A second, unfortunately sent to Linnaeus, is Silver Maple.

Linnaeus described four species of American maples in 1753, A. saccharinum, A. rubrum, A. pensylvanicum, and A. Negundo. Knowing what Kalm had learned about the Sugar Maple, and unaware of the confusion of the actual specimens, he supposed that Kalm's specimen represented that tree. He accordingly named it the "sugary maple", or A. saccharinum, and gave it one of his usual brief diagnoses. The descrip-



tion fits the specimen precisely, and both plant and description leave no room for doubt that the name A. saccharinum belongs to our Silver Maple. Succeeding botanists generally supposed, as Linnaeus had, that the name applied to the Sugar Maple and it was commonly used for that tree until 1889.

The next name given the Sugar Maple was Acer sacchatum by Philip Miller. It is generally supposed that this is a genuine misprint. Since there is no controversy, it needs no discussion here. The third name was Acer saccharum Marshall; a few others were given later, but since they are pure synonyms they also need no discussion.

In 1889 Britton and Sargent called attention to the misapplication of A. saccharinum. They proceeded to use that name for the Silver Maple and have been followed by almost all botanists since. For the Sugar Maple Britton brought up Marshall's name, A. saccharum, which was soon generally adopted and has been in common use by botanists and foresters for more than half a century.

Three decades more pass by and Mackenzie, always alert for an opportunity to make trouble in nomenclature, reported that saccharum, as originally used by Marshall, was merely a misprint for saccharinum. This drew mild protests from Sudworth and Sprague, and in general botanists continued to use saccharum, even down to the last edition of Rehder's Trees and Shrubs. Rehder is not particularly averse to a change of name; neither is Fernald, who also continued to use saccharum, although recently he has added saccharophorum in parentheses. Apparently neither was convinced by Mackenzie's argument. Rousseau, examining all pertinent literature and reporting it in meticulous detail, is convinced that saccharum is a misprint.

The only valid evidence must be taken directly from Marshall's Arbustum Americanum in which the name appeared. Let us put ourselves in Marshall's position, turning the calendar back 160 years. Encouraged by Bartram, we begin to write an account of the trees known to us in America. We have a good field knowledge of many of them. When we come to the maples, we note with astonishment that we have six different species, while the great Linnaeus himself had only four. Well, we shall do the best we can with them. Here is one described by Linnaeus as "Acer foliis compositis, floribus racemosis." This seems to fit our Box Elder, which is the only maple we have with compound leaves, and we write its name in our book as Acer Negundo. Correct.

Next we take up two of our plants, both small trees with flowers in racemes, and now we are baffled. Among his four species Linnaeus has only one which will fit, "Acer foliis trilobis acuminatis serrulatis, floribus racemosis." The des-



cription fits both of ours equally. We weigh every word of it and after due deliberation we finally apply the name to -- to the wrong species. Our A. spicatum of modern times appears as A. pennsylvanicum L., while to the true A. pennsylvanicum is given a new name, A. canadense.

Now we have two Linnean names left and three species still before us. A. rubrum is characterized by Linnaeus with "foliis quinquelobis subdentatis subtus glaucis, pedunculis simplicissimis aggregatis". Two of ours, the Red Maple and the Silver Maple, have a crowded inflorescence and leaves paler beneath. Again we consider the question carefully, note that A. rubrum has leaves "quinquelobis", and with some hesitation use that name for the Red Maple. This time we are correct, but we are not fully satisfied, for in our later description of the Silver Maple we hedge by writing "This is perhaps the Acer rubrum of Linnaeus."

There are still two species to be named and only one name available, A. saccharinum. This name seems to apply, by its meaning, to the Sugar Maple: did not Kalm tell us how sugar was made from it? But Linnaeus said the leaves were "quinquepartito-palmatis acuminato-dentatis", and nothing more, while the leaves of our tree would be described as "quinque-lobatis". Our Silver Maple has five-parted leaves, to be sure, but no one in Pennsylvania makes sugar from it. Besides its leaves are whitened beneath; why did not Linnaeus mention such a conspicuous character. The whitened surface leads us to doubt whether our Silver Maple may not be the Acer rubrum, but we have already decided to use that name for our Red Maple.

There is only one obvious solution, that we have two unnamed species. We proceed to describe our Silver Maple as A. glaucum, appropriately referring to the color of the leaves. Our Sugar Maple, with merely lobed leaves, is not the one which Kalm knew and Linnaeus described. Ours is a second species of Sugar Maple, and we name it by translating its local name directly into Latin, Acer saccharum.

That is no misprint. It is only an honest attempt by Humphrey Marshall to identify his plants according to the brief available descriptions written by a foreign botanist. It was an attempt correct in only two instances; an attempt which resulted in a misidentification for A. pennsylvanicum, an attempt in which he failed to recognize in his own material any plants which corresponded to A. saccharinum L. and failed to find in literature any names which he felt he could properly use for the Silver Maple, the Sugar Maple, and the Moosewood. The total result was three supposedly new species.

Rousseau adduces one other fact as alleged proof of a misprint. Marshall's book was translated into French a few

years later by Lezermes and in the translation we find A. saccharum replaced by A. saccharinum. Rousseau believes this change was the correction of a misprint. We can more easily infer that the translator believed there was only one Sugar Maple in America and that it was an error in botanical judgement which required correction, not a misprint. Marshall gracefully bowed to European opinion and permitted the change. Such a correction, of course, can not void the validity of an earlier name.

Finally Rousseau states that A. saccharum, if not a misprint, becomes a nomen nudum, since there is no accurate means of deciding whether Marshall described the Sugar Maple or the Black Maple. The last clause of this sentence is undoubtedly true; the conclusion which he drew from it is erroneous. Rousseau implies by his statement that the name applies to one or the other of these maples. It might also apply to both, since both live in eastern Pennsylvania. If it applies to the Sugar Maple, it becomes the valid name for that species. If it applies to both species, it "must be retained for one of them, or (if it has not been retained) must be re-established" [Article 52]. Britton in 1889 considered that the name belonged to both species, and by naming the Black Maple A. saccharum var. nigrum he indicated that the typical nomenclatural element of the name applied only to the Sugar Maple. If the name applies only to the Black Maple, it has priority over and displaces A. nigrum Michx. (1803) but, since its application has been fixed by Britton's action and perpetuated by many years of usage, the burden of proof is upon those who might wish so to restrict it. Such proof has never been presented and probably can never be.

I therefore retain Acer saccharum as the valid name for the Sugar Maple.

#### Lathyrus maritimus vs. Lathyrus japonicus.

When Fernald discussed these names in 1932, he professed to regret that the International Code compelled the displacement of such a well known name as Lathyrus maritimus for such a well known plant as the Beach Pea.

The facts of the matter are simple and were well stated by Fernald. The Beach Pea lives on both Atlantic and Pacific shores of Eurasia and North America and also inland in suitable habitats. In spite of this broad distribution, it is regularly regarded as a single species. It was described from Europe by Linnaeus in 1753 as Pisum maritimum. It was described from Japan by Willdenow in 1803 as Lathyrus japonicus. It was described from Massachusetts by Bigelow in 1824 as Lathyrus maritimus. It was described from Scandinavia by

Fries in 1834 as Lathyrus maritimus. It has received other specific or subspecific epithets, none of which have any bearing on the present problem.

The earliest specific epithet is of course maritimus; the next is japonicus. Now here is the crux of the question. If Bigelow transferred the Linnean name from Pisum to Lathyrus in 1824 he then created a new and valid binomial, Lathyrus maritimus (L.) Bigel., which must stand as the name of the species. On the contrary, if Bigelow described a new species, then the transfer of the Linnean epithet to Lathyrus by Fries in 1834 merely created a homonym which is invalid under the International Code. Being invalid, the next oldest specific epithet must be used, which is japonicus.

Did Bigelow transfer an epithet, or did he describe a new species? Fernald, apparently looking for a reason to change a name, says a new species was described.

The essential purpose of the International Code is stated in Article 4. It is to strive for fixity in nomenclature. This purpose is implemented by the long series of rules and recommendations which constitutes the bulk of the code. If we are to strive for fixity of names, we must search the rules for clauses which will permit us to maintain a well known name. Fernald found clauses which permitted him to change a name. Are there other clauses which will authorize us to maintain the name? If Bigelow made a transfer, the name will automatically be maintained. Did he make such a transfer?

Some evidence on this point may be discovered by examining Bigelow's treatment of other species.

There are thirty species in his *Florula Bostoniensis* which are treated differently from the others, in that the usual diagnosis in English is preceded by a diagnosis in Latin. Of these thirty, twenty-three include no statement of synonyms of any kind, and are each preceded by an asterisk. Each of them represents the first publication of a new binomial (in one instance a trinomial) to designate what Bigelow believed to be a new species (in one instance a variety). Not all of them stand today, most of them having been previously described without Bigelow's knowledge or being otherwise untenable. The point is, that in describing a "new" species, he preceded the name by an asterisk and gave a Latin diagnosis. Five of the thirty are preceded by an asterisk, have a Latin diagnosis, but include some mention of synonyms. Bunias edentula is merely continued from its original publication in the first edition; the synonym, Cakile americana Nutt., is later than Bigelow's name. Galium Torreyi is new here as a species; its synonym is a variety, here raised to specific rank. Prunus obovata is a new species here, the synonym merely indicates that Pursh had con-



fused it with P. serotina. Prunus littoralis is also new; its synonym indicates that Michaux had confused it with P. sphaerocarpa. The fifth, Actaea alba, is followed by an explanatory note: "First published as a distinct species, in my name, in Eaton's Manual of Botany, afterward by Mr. Elliott under another name." The synonyms include Elliott's name and two varietal names under which the plant was treated by Michaux and Pursh. Considering these five with the preceding twenty-three, we are at once led to the conclusion that every species or specific name for which Bigelow was responsible was so designated by an asterisk

There are still two left over which have a Latin diagnosis but no asterisk. The first of these is Iris prismatica Pursh, a plant "first described by me in the former edition of this work under the name of I. gracilis. Two years afterwards Mr. Pursh gave it the name of I. prismatica, which name I am willing to adopt." The other is Lathyrus palustris, under which he cites "Syn. Pisum maritimum. Pursh?" In both cases the absence of an asterisk indicates a species for which Bigelow is not responsible.

We can easily interpret Pisum maritimum as the basonym, and we shall do so if we are seriously interested in the spirit of the International Code. It was not necessary to cite the original author of the name (Linnaeus); there was no other Pisum maritimum with which it could be confused. Citation of authors is for "purposes of precision" [Code, Sect. 7] and "in order that the date may be readily verified" [Article 46]. Article 44 states that "the name of a species \*\*\* is not validly published unless it is accompanied \*\*\* by the citation of a previously and effectively published description \*\*\* under another name." The mention of Pursh can be construed to cover this requirement. The Code does not specifically require the mention of volume and page.

The case is closely parallel to that of Hedysarum glutinosum Willd. (1802) and Desmodium glutinosum Wood (1845). Both names apply to the same species. If Wood's name is a transfer of Willdenow's oldest specific epithet, it becomes the valid binomial for the species. If on the other hand it is a description of a new species, its existence invalidates the later transfer of Willdenow's name to Desmodium by Schindler (1926) and necessitates the revival of the next oldest specific epithet, acuminatum Michx. (1803), in the well known binomial Desmodium acuminatum (Michx.) DC. Miss Schubert [Rhodora 44: 279] says: "Although it is true that Wood cited neither authority nor synonyms his description leaves no doubt as to his intention nor as to the identity of the plant he was considering." Here she has done precisely what Fernald refused to do for the Beach Pea and done it



probably with Fernald's knowledge and possibly with his approval. The adoption of opposite opinions for the two plants has permitted them to recommend the abandonment of two well known names.

And Fernald himself has done the same thing. In *Rhodora* 44: 424 he takes up the name Rhynchosia difformis (Ell.) DC. He says "Although DeCandolle failed to cite the synonym Archyphyllum difforme Ell., the diagnosis \*\*\* and the habitat \*\*\* are so clearly derived from Elliott that the combination should certainly be written Rhynchosia difformis (Ell.) DC."

In each of these three cases we admit the conspecificity of the plants involved and we know the source of the specific epithet used in the combination. Bigelow is the only one who cites the name-bringing synonym; Bigelow also shows by his typography that he did not regard his name as designating a new species, a change of name, or a replacement of an untenable name. How else do valid names arise except by transfer?

Following the spirit and intent of the Code, taking advantage of loopholes in Article 44, and imitating the precedent of Schubert and Fernald, I shall maintain the well known and long established name Lathyrus maritimus (L.) Bigel. for the Beach Pea.

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#### A NEW SPECIES OF DAPHNOPSIS FROM ECUADOR

Joseph V. Monachino

DAPHNOPSIS ESPINOSAE Monachino, sp. nov.

Arbuscula; foliis ellipticis ca. 4--8 cm. longis et 1.5--3 cm. latis glaberrimis; petiolis 3--4 mm. longis, 1.5 mm. latis; inflorescentiis caulifloris 1.5--2 cm. longis; floribus femineis 6--12 subumbellato-racemosis; calyce campanulato, ca. 2.5 mm. longo, extus parce pubescente, lobis rotundatis ca. 1.5 mm. longis paullo latioribus intus pubescentibus; staminodiiis et petalorum rudimentis nullis; ovario glabro; stylo 0.8 mm. longo; stigmatate capitato exserto; disco crateriformi irregulariter lobato glabro.

Vegetative parts completely glabrous except for the ciliate bud-scales; petioles about 3 or 4 mm. long and 1.5 mm. broad; leaf-blades glabrous on both surfaces from the beginning, becoming chartaceous or subcoriaceous and shining above, elliptic, narrowed at both ends, obtuse or acute at apex, 4--8 cm. long and 1.5--3 cm. broad, the reticulation prominulous; inflorescences cauliflorous, 1.5--2 cm. long,

sparsely hispidulous; only female flowers seen, 6--12 in umbelloid racemes at the ends of short (6--13 mm. long) simple peduncles; pedicels up to about 1.5 mm. long, articulate near the apex; calyx campanulate, about 2.5 mm. long, glabrescent or sparsely pubescent outside, glabrous inside, the calyx-lobes reflexed, rounded, about 1.5 mm. long and slightly broader, pubescent on the inner surface and with a tuft of hairs at the apex; staminodes and rudimentary petals none; ovary glabrous, about 1.5 mm. long; style 0.8 mm. long; stigma capitate and densely papillose, exerted from the calyx; disk conspicuous, crateriform, oblique, irregularly lobed, glabrous.

Type: Reinaldo Espinosa 205, collected at Namanola, alt. 2400--2500 m., southern Loja, Ecuador, April 18, 1946, deposited in the Britton Herbarium at the New York Botanical Garden. The type specimen consists of young leaves and flowers. The following matured flowering specimen has also been examined: Reinaldo Espinosa s.n. [Herb. Krukoff 19848] from the type locality, received in February, 1947.

Daphnopsis Espinosae has affinity with D. zamorensis Donke, the type of which was collected at Zamora, Loja. D. zamorensis, however, is described as having leaves about 18 to 27 cm. long and 5.5 to 8 cm. broad, petioles 1 to 1.5 cm. long and 0.3 to 0.4 cm. broad, and inflorescences 8 cm. long. The much smaller leaf and inflorescence size of D. Espinosae is an obvious means of distinguishing it from D. zamorensis. From other species found in Ecuador and Peru -- D. loranthifolia, D. caribaea var. ecuadoriensis, D. caribaea var. peruviansis, D. Weberbaueri, and D. Favonii -- the present species is easily distinguished by its entirely glabrous leaves and by other characters.

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## NOTES ON NEW AND NOTEWORTHY PLANTS. I

Harold N. Moldenke

The present paper is the first in a series of notes on plants of various parts of the world, based in part on field studies and in part on herbarium studies in the herbarium of the New York Botanical Garden and elsewhere. Numerous new species, varieties, forms, and hybrids will be described and several new names and combinations proposed. Abbreviations used herein for the names of herbaria in which cited specimens are deposited are in conformity with my previous publications, but for the convenience of

the readers of the present paper the ones herein used are as follows: Al = New York State Museum, Albany; Ba = Bailey Hortorium, Ithaca; Bc = Barnard College Herbarium, New York Botanical Garden, New York City; Bt = Butler University, Indianapolis; Bu = Buswell Herbarium, University of Miami, Coral Gables; C = Columbia University Herbarium, New York Botanical Garden, New York City; Cm = Carnegie Museum, Pittsburgh; Dm = C. C. Deam Herbarium, Bluffton, Indiana; Dp = DePauw University, Greencastle; Du = Dudley Herbarium, Stanford University, California; Fc = Colorado Agricultural & Mechanical College, Fort Collins; Fl = University of Florida, Gainesville; Go = Botaniska Trädgård, Göteborg, Sweden; H = Duke University, Durham; Hp = H. Hapeman Herbarium, Minden, Nebraska; Hs = Crispus Attucks High School, Indianapolis; I = Langlois Herbarium, Catholic University of America, Washington; Io = Iowa State College, Ames; It = Cornell University, Ithaca; Mi = University of Michigan, Ann Arbor; N = Britton Herbarium, New York Botanical Garden, New York City; Pl = State College of Washington, Pullman; Po = Pomona College, Claremont, California; St = Oklahoma Agricultural & Mechanical College, Stillwater; T = Torrey Herbarium, New York Botanical Garden, New York City; Ua = Utah State Agricultural College, Logan; Up = University of Pennsylvania, Philadelphia; Ur = University of Illinois, Urbana; Vt = University of Vermont, Burlington; and We = West Virginia University, Morgantown.

*AEGIPHILA HOEHNEI* var. *PUYENSIS* Moldenke, var. nov.

Haec varietas a forma typica speciei pilis ramorum ramulorumque atrobrunneis rigide patentibus et pilis foliorum non bulbosis recedit.

This variety differs from the typical form of the species in the pubescence on its branches and branchlets being dark brownish and stiffly wide-spreading and that of the upper leaf-surfaces not being bulbous-based.

The variety is described as a woody vine about 3 m. long, with off-white flowers, and was collected by W. C. Steere and W. H. Camp (no. 8283) at an altitude of 3000 feet in the vicinity of Puyo, Parroquia Puyo, Oriente, Ecuador, on May 12, 1944, and is deposited in the herbarium of the Chicago Museum of Natural History.

*ANASTRAPHIA RECURVA* var. *INTEGRIFOLIA* Moldenke, var. nov.

Haec varietas a forma typica speciei foliis integris recedit.

This variety differs from the typical form of the species in having all its leaves entire-margined.

The type was collected by Juliá Acuña Galé (no. 12780) at Río Yagrumajes, Moa, Oriente, Cuba, on April 14, 1945, and



is deposited in the herbarium of the Estacion Experimental Agronomica at Santiago de las Vegas, Havana, Cuba.

*CALPIDISCA LUNDII* (A. DC.) Moldenke, comb. nov.

*Utricularia Lundii* A. DC., Prodr. 8: 14. 1844.

*CALYPTRANTHES CAROLI* var. *LONGIPEDUNCULATA* Moldenke, var. nov.

Haec varietas a forma typica speciei pedunculis 1.5--3 cm. longis ebracteatis recedit.

This variety differs from the typical form of the species in having peduncles 1.5 to 3 cm. long, without any leaf-like bracts at its apex.

The type was collected by Brother León and Juan T. Roig (no. 13544) at Loma Pelada, Cayajabos, Pinar del Río, Cuba, on August 10, 1928, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*CISSAMPELOS LAXIFLORA* Moldenke, sp. nov.

Fruticulus scandens; ramis gracilibus sulcato-striatis adpresso-pilosis; laminis foliorum leviter chartaceis in siccitate atrobrunneis vel nigrescentibus supra nitidis non peltatis late ovatis acuminatis mucronatis, ad basin truncatis vel subtruncatis, integris supra glabris subtus minute adpresso-pilosulis.

Small vine; stems twining, slender, longitudinally sulcate-striate with many narrow striae, more or less appressed-pilose; principal internodes 3.5--7 cm. long; leaf-blades thin-chartaceous, dark-brown or nigrescent and shiny above in drying, lighter beneath, not peltate, broadly ovate, 5--8.5 cm. long, 3.5--7.5 cm. wide, acuminate at the apex, the acumination attenuate into a mucro about 3 mm. long, truncate or subtruncate at the base, entire, sometimes irregularly angulate at the widest part, glabrous above, minutely appressed-pilosulous beneath; principal veins 5, issuing from the very base of the blade, along with the secondaries and tertiaries slightly prominulous on both surfaces; staminate inflorescence axillary, 1 or 2 per axil, pedunculate, paniculate-racemose; peduncles straight, slender, 1--1.5 cm. long; rachis straight, erect, slender, 5--10 cm. long, appressed-pilose; branches filiform, usually less than 1 cm. long, spreading, pilose; bracts absent or very minute; pistillate flowers: sepal 1, thick, ovate-elliptic, about 1.6 mm. long and equally wide if pressed flat, very convex on the outer and concave on the inner surface, enfolding the remainder of the flower, rounded at apex and base, glabrous on both surfaces; petal 1, on the same side and in front of the sepal, broadly obovate-orbicular, lighter textured than the sepal and lighter in color, about 1 mm. long and wide,



rounded at apex and base, glabrous on both surfaces; pistil 1, about 1.2 mm. long, glabrate; style obsolete; stigmas 3, about 0.3 mm. long, spreading, acute; staminate flowers: sepals 4, membranous, elliptic, about 0.6 mm. long and 0.4 mm. wide, subacute at apex, narrowed at base, glabrous, very fragile; petals 4, connate; stamens 4, connate; pistillate inflorescence axillary, racemose, simple or paniculately branched, one per axil; bracts foliaceous, orbicular-ovate, 5--15 mm. long, 3--11 mm. wide, long-mucronate at apex, long-stalked at base; rachis slender, 12--18 cm. long, bearing the flowers in fascicles at intervals of 5--10 mm., the branches (if any) few and wide-spreading; fruiting racemes with 1--4 fruits in a cluster, their pedicels 10--15 mm. long, the clusters 1--1.5 cm. apart, the rachis very slender, the bracts persistent but only one subtending each cluster of fruit and therefore widely separated; fruit pyriform, about 6 mm. long and 4 mm. wide, minutely pilosulous or glabrate, nigrescent in drying, striate with several concentric tuberculate ridges.

The type of this species was collected by J. Murça Pires and G. A. Black (no. 949) at Tabatinga, Amazonas, Brazil, on November 30, 1945, and is deposited in the Britton Herbarium at the New York Botanical Garden. The type is pistillate; another pistillate collection from the same locality is no. 1072 and staminate collections are nos. 939 and 947, all collected by the same collectors at the same locality. Klug 2322, from Loreto, Peru, is probably the same species and is pistillate.

×CISTUS CULTORUM Moldenke, nom. nov.

*Cistus villosus* L. × *C. laurifolius* L. ex Rehd., Man. Cult. Trees & Shrubs, ed. 2, 646. 1940.

DESFONTAINIA PULCHRA Moldenke, sp. nov.

Suffrutex debilis; caule ramisque flexilibus griseis glabris, in statu juventute subtetragonis marginatisque; nodis distincte annulatis; internodiis abbreviatis; petiolis 1--3 mm. longis glabris compressis late marginatis; laminis coriaceis nitidis oblanceolatis 1--2 cm. longis, 5--8 mm. latis acutis saepe muticis, ad basin attenuatis, subintegris vel 2-denticulatis; floribus solitariis nutantibus.

Sprawling subshrub; stems and branches flexible, gray, glabrous, the younger parts more or less subtetragonal and margined, the outer bark readily peeling off; nodes distinctly annulate; principal internodes abbreviated, 1--2.5 cm. long; twigs numerous, short, leafy; leaves decussate-opposite; petioles 1--3 mm. long, glabrous, broadly margined and flattened; blades coriaceous, deep-green and very shiny above, pale-green or silvery beneath, oblanceolate,

1--2 cm. long, 5--8 mm. wide, acute and often mucous at the apex, gradually attenuate to the base, subentire or with two very small mucous teeth near the apex, the margins usually revolute; midrib very slender, deeply impressed above, slightly prominent beneath, the short secondaries and tertiaries impressed above, practically indiscernible beneath; inflorescence terminating the short twigs; flowers solitary, apparently nutant; pedicels about 1.5 cm. long, dull-green, glabrous, shiny; calyx dull-green, deeply 5-fid, the lobes oblong-elliptic, 6--6.5 mm. long, 2--2.5 mm. wide, acute, glabrous, shiny; corolla-tube cylindric-infundibular, scarlet-crimson outside, pale-yellow within, about 2.5 cm. long, about 4 mm. wide at the base and 10 mm. wide at the apex, glabrous; corolla-lobes rich-yellow, ovate-lingulate, about 6 mm. long and 8 mm. wide, rounded at the apex, venose, glabrous; fruit globose, fleshy, about 5 mm. long and wide, glabrous.

The type of this very distinct species was collected by Julian A. Steyermark (no. 57344), sprawling over bluffs in rich moist woods at the base of Páramo de Tamá, 4--10 km. above Betania, 2500--2895 m. altitude, Táchira, Venezuela, on July 15, 1944, and is deposited in the herbarium of the Chicago Natural History Museum (sheet no. 1205340). Its small oblanceolate entire or minutely 3-denticulate leaves distinguish it at once from all other known species of this genus.

*DESFONTAINIA STEYERMARKII* Moldenke, sp. nov.

Frutex; ramis ramulisque gracilibus griseis glabris marginatis; nodis annulatis; petiolis glabris paullo marginatis; laminis coriaceis ovato-ellipticis vel ellipticis acutis mucosis, ad basin longe cuneato-attenuatis, glabris non conspicue marginatis 4--6-denticulatis; calyce profundo 5-fido, lobis ovate-lanceolatis glabris; corolla 1.5--1.7 cm. longa.

Shrub, about 4 feet tall; branches and branchlets slender, gray, glabrous, the younger parts more or less subtetragonal and margined, the bark readily peeling off from older parts; nodes distinctly annulate; principal internodes 1.5--5 cm. long; leaves decussate-opposite, numerous, often with very much abbreviated several-leaved twigs in their axils; petioles slender, 3--8 mm. long, glabrous, slightly margined; blades coriaceous, rich-green above, pale-green beneath, not shiny, ovate-elliptic or elliptic, acute and mucous at apex, long-cuneate-attenuate to the base, with 2 or 3 irregular mucous teeth along each margin, glabrous, not revolute or very slightly so on the very margins; midrib slender, plane above, prominent beneath; secondaries very slender, 3--5 per side, mostly rather obscure above or very

slightly subimpressed in drying, conspicuous and prominent beneath; veinlet reticulation mostly obscure above or very slightly subimpressed in drying, only the largest portions subprominulous beneath; inflorescence axillary or subterminal, apparently erect, solitary; pedicels slender, 1.5--1.8 mm. long, glabrous; calyx deeply 5-fid, the lobes ovate-lanceolate, 1--1.5 mm. long, acute, glabrous; corolla-tube cylindric, orange-red, 1.5--1.7 cm. long, 2--4 mm. wide, abruptly ampliate to 6 mm. just below the limb, glabrate; corolla-lobes elliptic-lingulate, pale-yellow, about 5 mm. long and 3 mm. wide, subacute, venose, glabrate; style ca. 2 cm. long, curved at apex, glabrous; fruit elliptic or subglobose, apiculate, about 9 mm. long and 8 mm. wide, glabrous.

The type of this species was collected by Julian A. Steyermark (no. 54597), in whose honor it is named, on wooded slopes along the Río Valladolid, between Quebrada Honda and Tambo Valladolid, 2000--3000 m. altitude, Santiago-Zamora, Ecuador, on October 12, 1943, and is deposited in the herbarium of the Chicago Natural History Museum (sheet no. 1205653). The species is obviously closely related to D. splendens H.B.K. and D. spinosa Ruiz & Pav., both of which differ in their much more heavily leathery-coriaceous leaves with long teeth and greatly revolute margins and their flowers 2.5--4 cm. in length.

**ERIOCAULON CONGENSE** Moldenke, sp. nov.

Herba; foliis rosulatis numerosis crassis 10--15 cm. longis glabris, ad apicem cucullatis, ad basin ampliatis et pellucido-fenestratis; vaginis laxis 10 cm. longis strictis obscure vel non fenestratis glabris, ad apicem bilobatis, lobis ovatis 1 cm. longis subacutis; pedunculis solitariis 15 cm. longis 8-costatis glabris non tortis; capitulis globosis albis 1 cm. diametro; floribus trimeris.

Herb; stems much abbreviated; leaves rosulate, numerous, thick-textured, bright-green, 10--15 cm. long, 4--8 mm. wide at the mid-point, ampliate and pellucid-fenestrate at base, cucullate at the apex, glabrous on both surfaces; sheaths loose, about 10 cm. long, striate, very obscurely or not at all fenestrate, glabrous, 2-lobed at the apex, the lobes ovate, about 1 cm. long, subacute, glabrous, erect; peduncles solitary, about 15 cm. long, 8-costate, glabrous, not twisted; heads globose, white, about 1 cm. in diameter; involucral bractlets few, stramineous, ovate, about 4 mm. long and 2.5 mm. wide, acute, glabrous; receptacle glabrous; receptacular bractlets stramineous, oblong, about 4 mm. long and 1.5 mm. wide, long-acuminate at the apex, glabrous; staminate florets: sepals 3, black except at the base, separate except at the very base, oblanceolate, conduplicate-



falcate, about 3 mm. long, about 1.4 mm. wide if flattened out, acute at the apex, white-pilose on the back toward the apex; petals 3, connate into an infundibular, white, glabrous tube about 1.5 mm. long, the terminal free portions narrow-elliptic or oblanceolate, about 2 mm. long and 0.5 mm. wide, bearded toward the apex on the inner surface, with a narrowly elongate black gland in the center near the apex; stamens 6; filaments adnate to the corolla, 3 attached to the mid-point of the free portion of the petals, the other 3 attached to the sinuses between the petals, white, glabrous, somewhat surpassing the petals; anthers black, elliptic, about 0.4 mm. long; pistillate florets: sepals 3, black, separate, elliptic-falcate, conduplicate, about 3 mm. long and 2 mm. wide if flattened out, glabrous, subacute, short-pilosulous toward the apex on the outer surface; petals 3, firm, erect, white, narrowly oblong, separate, 2.5 mm. long, 0.5--0.7 mm. wide, obtuse, densely white-pilose on the inner surface on the upper half, with a narrowly elongate black gland in the center below the apex within; style 2 mm. long, glabrous; stigmas 3, erect, 2 mm. long; ovary subglobose, 2 mm. long and wide, 3-lobed, 3-sulcate, 3-celled, 3-ovulate.

The type of this species was collected by J. P. Chapin (no. 404) in the Kikeri meadow at the western base of Mount Mikenö, Kivu district, altitude 7200 feet, Belgian Congo, on June 20, 1927, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector describes it as a "lily-like plant with small heads of white flowers."

*ERIOCAULON ROCKII* Moldenke, sp. nov.

Herba aquatica submersa; foliis caespitosis leviter membranaceis erectis argute attenuatis ubique glabris; vaginis gracilibus adpressis glabris non striatis non tortis, lamina lanceolata erecta adpressa attenuata saepe bilobata vel fisfa; pedunculis gracillimis stramineis tricostatis paullo tortis glabris; capitulis nigris ellipticis vel hemisphaericis; floribus trimeris.

Submerged aquatic herb; stems obsolete; leaves tufted, thin-membranous, erect, 1--2.5 cm. long, about 1 mm. wide at the mid-point, sharply attenuate at the apex, glabrous throughout; sheath slender, appressed, about equaling the leaves, about 2 cm. long, not conspicuously striate, not twisted, glabrous throughout, obliquely split at the apex, the blade lanceolate, about 5 mm. long, erect, appressed, attenuate, sometimes bilobed or again split to the base; peduncles very slender, stramineous, 2.5--6.5 cm. long, 3-costate, slightly twisted, glabrous; heads black, elliptic or hemispheric, 1--4 mm. wide; involucrel bractlets black, broadly elliptic or suborbicular, about 2 mm. long and 1.5 mm. wide, rounded at the apex, very concave on the inner and



convex on the outer surface, glabrous throughout, shiny; receptacle glabrous; receptacular bractlets black, oblanceolate, about 1.9 mm. long and 0.6 mm. wide, acute or shortly subacuminate at the apex, glabrous throughout; staminate florets: sepals 3, separate almost to the base, narrowly oblong, falcate, 1.5--1.7 mm. long, about 0.3 mm. wide, the upper  $\frac{2}{3}$  black, hyaline at the base, acute, glabrous throughout or very minutely ciliolate at the very apex; petals united into a subhyaline tube 1.8--2 mm. long, no free lobes seen; stamens 6 (sometimes only 5?); filaments wide-spreading, white, about 0.4 mm. long; anthers not seen; pistillate florets: sepals 3, separate, black, elliptic, navicular, about 1.7 mm. long and 0.6 mm. wide, sharply acute at the apex, glabrous throughout; petals 3, separate, narrowly oblong or linear, gray, about 1.5 mm. long and 0.2 mm. wide, acute at the apex, glabrous throughout, not glanduliferous; style slender, about 0.6 mm. long, glabrous; stigmas 3, filiform, erect, 0.4--0.6 mm. long; ovary subglobose, about 0.5 mm. long and wide, glabrous, 3-lobed, 3-celled, 3-ovulate.

The type of this little species was collected by J. F. Rock (no. 10843) at Saba on the eastern slopes of Likiang Snow Range, Yangtze watershed, Yunnan, China, in 1923 or 1924, and is deposited in the Britton Herbarium at the New York Botanical Garden. The material dissected was old, with seeds fully ripe in the pistillate florets. The staminate florets, therefore, were not observed at their best.

#### ERIOCAULON ROBINSONII Moldenke, sp. nov.

Herba parva; foliis caespitosis levibus non fenestratis adscendentibus graminoides multinerviis obtusis glabris; vaginis cylindraceis arcte adpressis vel laxiusculis striatis leviter membranaceis vel subhyalinis, ad apicem oblique fissis, lamina lanceolata saepe bilobata erecta; pedunculis gracilibus 4-costatis tortis glabris griseis; capitulis hemisphericis vel conicis dense villosis; floribus trimeris.

Dwarf herb; stems extremely abbreviated or obsolete; leaves tufted, variable in width, thin-textured, not fenestrated, more or less ascending, grass-like, 1--4 cm. long, 1--4 mm. wide at the mid-point, apparently the earliest longest and broadest and these often not present any more at time of anthesis, many-nerved, rather blunt at the apex, glabrous; sheath cylindrical, closely appressed or rather loose, 1--1.3 cm. long, striate, thin-membranous or almost subhyaline, usually shorter than the leaves, obliquely split at the apex, the blade lanceolate, 3--4 mm. long, often bilobed or even split to the base, appressed or rather loose, erect; peduncles slender, 1--8 cm. long, usually 2--3 cm. long, 4-costate, twisted, glabrous, gray; heads hemispheric or conic, 2--5 mm. in diameter; involucrel bractlets light-

gray, broadly elliptic, sometimes hyaline, lightly pigmented toward the apex, about 2.5 mm. long and 1.9 mm. wide, obtuse at the apex, glabrous, shiny, the upper margin often more or less erose; receptacle long-villous; receptacular bractlets broadly obovate, hyaline, cucullate, about 2 mm. long and 1 mm. wide, rounded at the apex, glabrous throughout; staminate florets: sepals 3, separate, hyaline, elliptic-oblongate, decidedly falcate, about 1.3 mm. long and 0.4 mm. wide blunt at the apex, glabrous throughout; petals 3, united into a slender tube about 1.7 mm. long, the free lobes very short, about 0.2 mm. long, mucronate; stamens 6; anthers brown; pistillate florets: sepals 3, separate, narrowly oblong-lanceolate, gray, about 1.5 mm. long and 0.2 mm. wide, minutely bifid at the apex, long-pilose on the back; petals 3, separate, hyaline, narrowly oblong or linear, about 1 mm. long, long-pilose on the back, with a very narrow black gland on the back near the apex, not bearded; style filiform, about 0.5 mm. long, glabrous; stigmas 3, erect, filiform, about 1 mm. long; ovary subglobose, about 0.4 mm. long and wide, 3-lobed, 3-sulcate, glabrous, 3-celled, 3-ovulate.

The type of this species was collected by Charles Budd Robinson (no. 1043) at Nha-trang and vicinity, Annam, French Indo-china, between March 11 and 26, 1911, and is deposited in the Britton Herbarium at the New York Botanical Garden. In habit and general appearance this species greatly resembles *E. achiton* Körn. of India, but that differs in having only 2 sepals in the staminate and pistillate florets and no petals in the pistillate florets. It is a pleasure to name this species in honor of the distinguished, though ill-starred, collector to whom we owe so much of our knowledge of the flora of the Philippines and other southeastern Asiatic areas.

*ERIOCAULON YUNNANENSE* Moldenke, sp. nov.

Herba; caule valde abbreviato; foliis paucis erectis firmis graminoides multistriatis supra villosis subtus pilosulis glabrescentibus subulatic plerumque conduplicatis non fenestratis; vaginis cylindricis adpressis multistriatis glabris, ad apicem fissis, lamina lanceolata erecta adpressa attenuato-subulata glabra; pedunculis 1 vel 2 crassiusculis 5-costatis argute angulatis glabris; capitulis hemisphaericis albis; floribus trimeris.

Herb; stem greatly abbreviated, about 1 cm. long or less; leaves few, basal, erect, firm-textured, grass-like, 55--60 cm. long, about 1 cm. wide at the mid-point, many-striate, more or less villous on the upper surface and pilosulous on the lower surface toward the base and when young, glabrescent in age, subulate-tipped, often more or less conduplicate, not plainly fenestrate; sheath cylindric, appressed to

the peduncles, shorter than the leaves, 25--41 cm. long, many-striate, hardly twisted, glabrous, obliquely split at the apex, the blade lanceolate, erect, appressed, 3--6 cm. long, attenuate-subulate at the apex, glabrous; peduncles 1 or 2 per plant, relatively stout, about 5-costate with very prominent and sharp angles, glabrous (or microscopically puberulous within the sulcae); heads hemispheric, white, 10--12 mm. in diameter; involucreal bractlets broadly obovate or suborbicular, about 3 mm. long and 2.1 mm. wide, rounded or obtuse at the apex, usually membranous-margined at the apex and toward the apex and often splitting there, brownish toward the apex and in a median band to the base, villosulous on the back; receptacle very densely long-villous even between the involucreal bractlets; receptacular bractlets broadly obovate, about 3.4 mm. long and 2.1 mm. wide, dark-brown toward the apex, lighter brown or stramineous toward the base, abruptly acuminate-mucronate at the apex, densely white-pubescent on the back from the widest part to the apex and including the mucro with short antrorse hairs, not otherwise bearded, glabrous toward the base; staminate florets short-pedicellate: sepals 3, separate, navicular, broadly obovate, cannot be flattened out, dark-brown except at the base, about 2.9 mm. long, each half about 0.7 mm. wide, abruptly short-acuminate or mucronate at the apex, densely short-pubescent at the apex with white antrorse hairs, hardly distinctly bearded; petals connate into a slender stramineous tube about 1.7 mm. long, glabrous, the free lobes lanceolate, about 0.4 mm. long, sharply attenuate-acute, black-glanduliferous near the apex, pilose; stamens 6; pistillate florets short-pedicellate: sepals 3, separate, navicular, cannot be flattened out, elliptic, dark-brown on the upper half, lighter at the apex and base, about 3.2 mm. long, each half about 1 mm. wide, blunt or subacute at the apex, short-pubescent at the apex with white antrorse hairs, hardly distinctly bearded, otherwise glabrous; petals 3, separate, subhyaline, linear-oblong, about 3 mm. long and 0.2 mm. wide, subacute at the apex, densely long-villous on and near the margins at about the middle with hairs that almost reach the top of the petal, bearded at the apex, glanduliferous on the back just below the apex; style about 0.6 mm. long, glabrous; stigmas 3, erect, about 0.8 mm. long; ovary elliptic, about 1 mm. long, deeply 3-lobed and 3-sulcate, glabrous, 3-ovulate.

The type of this large and distinct species was collected by A. Henry (no. 12362) at Szemo, Yunnan, China, and is deposited in the Britton Herbarium at the New York Botanical Garden. In habit it reminds one of E. decangulare L. of the southeastern United States.



*HELIETTA CUBENSIS* Monachino & Moldenke, sp. nov.

Frutex (?); ramis gracilibus glabris suberosis; foliis 3-foliolatis; petiolis gracilibus glabris pellucido-punctatis; foliolis sessilibus leviter coriaceis oblanceolatis glabris utrinque conspicue pellucido-punctatis, subtus glaucescentibus, supra nitidis, ad apicem rotundatis, ad basin longe attenuatis vel cuneatis, integris; inflorescentiis terminalibus paniculatis amplis ubique glabris et pellucido-punctatis regulariter trifurcatis; floribus 4-meris.

Shrub (?); branches slender, glabrous, somewhat longitudinally fissured, suberose, and ridged in drying; leaves opposite, trifoliolate; petioles slender, 2--6 cm. long, glabrous, conspicuously pellucid-punctate; leaflets sessile, thin-coriaceous, oblanceolate, 3.5--12 cm. long, 1.5--4 cm. wide, glabrous and conspicuously pellucid-punctate on both surfaces, shiny above, glaucescent beneath, rounded at the apex, long-attenuate or cuneate at the base, entire, the margins slightly subrevolute (in drying, at least); inflorescence terminal, paniculate, ample, about 12 cm. long and to 14 cm. wide at the base, glabrous and pellucid-punctate throughout, regularly trifurcate, the branches wide-spreading; peduncles about 1.5 cm. long, glabrous, pellucid-punctate; inflorescence-branches or flowers borne in pairs at each node of the inflorescence, in cymose fashion, one on each side of the axis, each subtended by a triangular-acute glabrous scale-like bractlet about 1 mm. long; pedicels very slender, about 2 mm. long, glabrous; flowers 4-merous; sepals 4, heavy, tough, suborbicular, about 1 mm. long and wide, rounded at the apex, imbricate, scarious-margined, glabrous on both surfaces except for the slightly erose-ciliolate margins, very convex on the back, concave within; petals 4, oblanceolate-lingulate, about 3 mm. long and 1.3 mm. wide, translucent-margined, rounded at the apex, only slightly narrowed toward the base, glabrous, pellucid-punctate; disk large, cupuliform, the erect rim about 0.78 mm. high, irregularly undulate and scaly; stamens 4, inserted at the base of the rim of the disk, among the scales; filaments terete, about 1.3 mm. long, translucent, broadened at the base, attenuate above the disk; anthers about 0.5 mm. long, 2-celled, apiculate at the apex, the 2 cells divergent at the base; pistil solitary, central; style very short, blunt, about 0.4 mm. long, terminated by a discoid stigma of the same diameter as the style; ovary 4-celled; ovules 2 in each cell, apically attached; fruit not seen.

The type of this species was collected by Brothers Clément, Chrysogono, and Alain [Clément 3971] at Mina Cayoguan, Pta. Gorda, Oriente, Cuba, on July 21, 1944, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is obviously related to *H. glaucescens* Urb.,



the only other known West Indian species of the genus, which differs in its shorter petioles, shorter and narrower leaflets, very much smaller and narrower non-trifurcate inflorescences, puberulent inflorescence-branches, pedicels, bractlets, and sepals, more triangular-ovate and acute sepals, and slightly larger anthers.

*HYPERBAENA LONGIUSCULA* var. *CLEMENTIS* Moldenke, var. nov.

Haec varietas a forma typica speciei foliis oblongo-ellipticis 15--16.5 cm. longis, 5--6 cm. latis, ad apicem obtusis vel rotundatis, ad basin non attenuatis, et costa supra argute elevatis recedit.

This variety differs from the typical form of the species in having leaves with blades oblong-elliptic, 15--16.5 cm. long, 5--6 cm. wide, obtuse or rounded at the apex and base, not attenuate to the base, and the midrib very sharply elevated on the upper surface from the base to the apex.

The type was collected by Augustin Clément Tétéau, Brother Clément (no. 3633) on the new way to Río Yagrumajes, east of Moa, Oriente, Cuba, on May 17, 1944, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*IPOMOEA BATATAS* f. *TRIFIDA* Moldenke, f. nov.

Haec forma a forma typica speciei foliis profunde tripartitis recedit.

This form differs from the typical form of the species in having all of its leaves uniformly deeply 3-parted or the lateral lobes sometimes again bifurcate. The lobes are oblanceolate, long-acuminate at the apex, and attenuate to the base.

The type was collected by Reinaldo Espinosa (no. 492) in cultivated and irrigated land at La Fornia, alt. 1400 m., Loja, Ecuador, on June 5, 1946, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is called "camote indio" by the natives.

*IPOMOEA CARNEA* f. *ALBIFLORA* Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis recedit.

This form differs from the typical form of the species in having white corollas.

The type was collected by Reinaldo Espinosa (no. 490) at La Fornia, alt. about 1400 m., Loja, Ecuador, on June 5, 1946, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector states that it was growing among plants of the typical form.

*IPOMOEA DUMETORUM* f. *ALBA* Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis recedit.

This form differs from the typical form of the species in

having white corollas.

The type was collected by Reinaldo Espinosa (no. 215a) at La Argelia, southern Loja, Ecuador, on April 25, 1946, and is deposited in the Britton Herbarium at the New York Botanical Garden.

#### LANTANA DEFRESSA Small (Fig. 1)

Literature: Small, Bull. N. Y. Bot. Gard. 3: 436. 1905; Small, Addisonia 3: 69--70, pl. 115. 1918; Moldenke, Annot. List 108. 1939; Moldenke, Known Geogr. Distrib. Verbenac. 5 & 94. 1942.

This species used to be justly considered a rare and little-known one, but so much splendid collecting done in Florida during the past 30 years has yielded so many collections that the species can no longer be regarded as anything but well-known. The following is a list of some of the specimens recently annotated by me in my monographic work on the group:

FLORIDA: Dade Co.: Bailey & Bailey 6016 (Ba), 6217 (Ba), 6217a (Ba); N. L. Britton 156 (N), s.n. [Miami, April 1, 1903] (Cm); Buswell s.n. [May 14, 1934] (Bu), s.n. [April 21, 1935] (Bu); Demaree 10208 (Bt, Du, Hp); Elder 442 (H), 510 (H); Esselbaugh s.n. [Princeton, March 16, 1946] (Ur); Harshberger s.n. [August 15, 1911] (Up); Hawkins s.n. [Homestead, 9/16/27] (Fl, Fl); Lightfoot s.n. [Key Biscayne, Apr. 28, 1917] (Ba); B. McAllister 315a (H); H. N. Moldenke 735 (Go, H, I, N, N, Up, Ur); O'Neill 1941 (I), 7133 (I), 7134 (I), 7135 (I), 7137 (I), 7138 (I), 7140 (I), s.n. [Peters, September 17, 1929] (I), s.n. [Princeton, September 19, 1929] (I); B. H. Patterson s.n. [Miami, Feb. 2, 1918] (Cm); W. W. Rowlee s.n. [Dec. 23, 1902] (It); J. K. Small 2217 (N), 3845 (N), 7355 (N, N), 8793 (N); Small & Carter 747 (N --type), 2678 (N), s.n. [Oct. 31st to Nov. 4th, 1903] (We); Small & Mosier 5523 (N), 6367a (N); Small, Mosier, & Small 5667 (N), 6506 (N); Small & Nash 180 (N); Small & Small 4781 (N), 4808 (It), 4818 (Go, N), 6824 (Fl, Mi, N, Up); Small & Wilson 1826 (N), s.n. [May 16, 1904] (H); Tidestrom 6987 (I); Welch 1536 (Dp); J. P. Young 195 (It), 204 (It). Saint Lucie Co.: O'Neill 7145 (I).

Explanation of Figure 1: a, Habit, x 3/4; b, bractlet, x 5; c, calyx, x 5; d, pistil, x 5; e, corolla split open and flattened out, x 5.

#### LANTANA HISPIDA var. TERNATA Moldenke, var. nov.

Hæc varietas a forma typica speciei foliis ternatis recedit.

This variety differs from the typical form of the species in having its leaves whorled in groups of three.

The type was collected by Gustavo Aguirre B. and B. P.

Reko (no. 172) at Necaxa, Puebla, Mexico, in April, 1946, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*LIPPIA BRACTEOSA* (Mart. & Gal.) Moldenke, comb. nov.

*Lantana bracteosa* Mart. & Gal., Bull. Acad. Roy. Brux., sér. 1, 11 (2): 326. 1844.

*LIPPIA LIBERIENSIS* Moldenke, sp. nov.

Frutex vel arbor; ramis obscure tetragonis vel subteretibus dense breviterque pubescentibus glabrescentibus; nodis annulatis; foliis oppositis; petiolis dense breviterque pubescentibus, in statu senectute sparse strigillois vel pilosulis; laminis firme membranaceis ovato-lanceolatis ad apicem argute acutis serrulatis, ad basin acuminatis, in statu juventute utrinque dense breviterque pubescentibus, in statu senectute supra scabris et plusminusve strigosis, subtus strigillosis pulverulentisque; inflorescentiis axillaribus capitatis nutantibus.

Shrub or tree; branches and branchlets obscurely tetragonal or subterete, densely short-pubescent when very young, glabrous in age, light-brownish; nodes annulate; principal internodes 1.5--7 cm. long; leaves decussate-opposite; petioles slender, 3--5 mm. long, densely short-pubescent when very young, very sparsely strigillose or pilosulous when mature, the hairs mostly in 2 bands on the axial surface; blades firmly membranous, ovate-lanceolate, 2.5--7.5 cm. long, 1.5--3.5 cm. wide, sharply acute at the apex, regularly serrulate from the base to the apex and more or less prolonged into the petiole, densely short-pubescent on both surfaces when young, scabrous and more or less strigose above or subglabrous when mature, irregularly strigillose on the venation beneath and usually more or less pulverulent beneath when mature; inflorescence axillary, capitate, nodding, usually 2 per node near the apex of the branches or branchlets; peduncles very slender, 2--2.5 cm. long, densely short-pubescent or puberulent; heads 1.3--1.6 cm. long, 1.7--2.4 cm. wide, many-flowered; bracts broadly ovate, the lowest about 1.5 cm. long and almost 1 cm. wide at the base, subacuminate at apex, densely puberulent.

The type of this species was collected by Alberto Brenes in the vicinity of Liberia, Guanacaste, Costa Rica, in 1910, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*MOZARTIA EMARGINATA* Moldenke, sp. nov.

Frutex vel arbor; ramulis gracilibus griseis glabris; foliis oppositis; petiolis gracilibus glabris; laminis leviter coriaceis ellipticis vel oblanceolatis emarginatis, ad



Fig. 1

Lantana depressa Small



basin acutis vel acuminatis, utrinque glabris nitidisque non punctatis integris.

Shrub or tree; branchlets and twigs slender, gray, glabrous; leaves decussate-opposite; petioles slender, 6--10 mm. long, glabrous; blades thin-coriaceous, elliptic or oblanceolate, 3.5--6.5 cm. long, 1.7--3 cm. wide, emarginate at the apex, acute or acuminate at the base, glabrous and shiny on both surfaces, not noticeably punctate, entire or slightly wavy-margined, slightly subrevolute at the margins when dry; midrib slender, impressed above, very strongly prominent beneath; secondaries very slender, about the same size and strength as the tertiaries and veinlets, they, with the veinlets, forming a dense conspicuous reticulum which is equally and beautifully prominulous on both surfaces, a rather indistinct collective vein uniting the secondaries near the margins; inflorescence axillary, apparently few-flowered; flowers not seen; fruiting peduncles slender, 1.5--2 cm. long, glabrous; fruiting-calyx incrassate, glabrous, persistent, closely appressed to the base of the fruit, about 5 mm. in diameter (including the lobes), the lobes 4, ovate-triangular, about 1.5 mm. long and 1 mm. wide at the base, subacute at the apex; fruits 1--3 per peduncle, sessile on the peduncle, hard, globose, about 6 mm. long and wide, glabrous.

The type of this handsome species was collected by George C. Bucher (no. 14253) at Moa, Oriente, Cuba, in July, 1939, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*PADUS CAPULI* (Cav.) Moldenke, comb. nov.

*Frunus Capuli* Cav. ex Spreng., Syst. Veg. 2: 477. 1825.

*PAEPALANTHUS ESPINOSIANUS* Moldenke, sp. nov.

Herba caespitosa; foliis numerosis firmis patentibus lanceolato-attenuatis argute apiculatis utrinque plusminusve pilosulis glabrescentibus striatis non fenestratis; vaginis laxis glabris, ad apicem bilobatis, lobis ovatis erectis; pedunculis solitariis gracilibus brevibus 3-costatis tortis obscure pilosulis; capitulis obconico-hemisphaericis.

Tufted herb; stems very much abbreviated, long-villous at the apex, 1--2 cm. long; leaves numerous, bright-green, firm, spreading, lanceolate-attenuate, 1--1.5 cm. long, 1.5--2 mm. wide at the mid-point, sharply apiculate at the apex, more or less scattered-pilose on both surfaces when young, glabrescent in age, several-striate, not plainly fenestrate; sheath loose, glabrous, 1.3--1.5 cm. long, the basal tubular portion 7--8 mm. long, the apical portion split into 2 ovate, erect, dissimilar lobes almost 1 cm. long; peduncles solitary at the apex of each stem, slender, almost

obsolete or to 2.3 cm. long, 3-costate, twisted, obscurely pilosulous, more persistently so beneath the head; heads obconic-hemispheric, about 5 mm. in diameter; involucrel bractlets few, in 2 series, light-brown, lanceolate, about 5 mm. long, about 1.5 mm. wide at the widest point, attenuate-acute or subacuminate at the apex, glabrous and shiny throughout, surpassing the florets, concave on the inner and convex on the outer surface; receptacle long-villous; receptacular bractlets narrowly oblong, about 2.6 mm. long, light brown, darker toward the apex, navicular, about 0.4 mm. wide, more or less appressed-villous on the back with antorse hairs, not bearded; staminate florets short-pedicellate; sepals 3, separate practically to the base, dark-brown on the upper half, oblong-ob lanceolate, about 2.1 mm. long and 0.5 mm. wide, obtuse at apex, more or less villous on the back, with very much appressed antorse hairs, bearded at the apex; petals 3, united into a slender lightly stramineous tube about 1.7 mm. long, slightly ampliate at the apex, the lobes erect, lanceolate-ovate, about 0.5 mm. long, acuminate at apex, somewhat involute; stamens 3; filaments filiform, very short, inserted at the base of the corolla-lobes and opposite them; anthers not seen; pistillate florets short-pedicellate: pedicels about 0.6 mm. long; sepals 3, separate practically to the base, erect, brown, darkest on the upper half, spatulate, about 2.1 mm. long, about 0.6 mm. wide at the widest part, acute at the apex, long-villous with antorse hairs on the back, usually more or less bearded at the apex on the back; petals 3, separate to the base, fitting snugly between the ovary-wings, lightly stramineous, erect, ob lanceolate, about 2.1 mm. long and 0.6 mm. wide, acute or apiculate at apex, more or less villous on the back, especially along the margins above the middle and at the apex, not bearded, not glanduliferous; style about 0.8 mm. long, glabrous, terminated by 3 erect stigmas and 3 style-appendages which are all 0.6--0.8 mm. long; ovary elliptic, deeply 3-lobed and 3-ate, glabrous, 3-celled.

The type of this species was collected by Julian A. Steyermark (no. 54342) in dense tufts in moist places on a paramo at 11,200 feet elevation along the trail between Pailas and El Pan, Santiago-Zamora, Ecuador, on September 10, 1943, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species resembles *P. Karstenii* Ruhl. in habit. It is named in honor of Dr. Reinaldo Espinosa, who is doing such noteworthy work on the flora of Ecuador.

*PAEPALANTHUS LOXENSIS* Moldenke, sp. nov.

Herba caulescens; ramis gracilibus usque ad 10 cm. longis brachiatis dense longeque villosis; foliis numerosissimis firmis patentibus apiculatus utrinque glabris nitidis non

fenestratis; vaginis brevibus profunde fissis, lobis lanceolatis acuminatis glabris erectis; pedunculis solitariis 3-costatis paullo tortis ubique glabris; capitulis hemisphaericis griseis vel stramineis.

Caulescent matted herb; stems slender, to 10 cm. or more long, branched, densely long-villous, especially at the apex, completely hidden by the abundant imbricately sheathing leaf-bases except toward the base on older stems; leaves abundant, rather firm, spreading, about 1 cm. long or less, about 1 mm. wide at the mid-point, apiculate, essentially glabrous on both surfaces, not fenestrate; sheath hidden among the upper leaves, about 1.2 cm. long, deeply split to below the middle, the 2 lobes equal, lanceolate, about 7 mm. long, acuminate, glabrous, erect, but remote from the peduncle; peduncles usually solitary at or near the tip of each branch or stem, 4--5 cm. long, 3-costate, slightly twisted, glabrous throughout; heads hemispheric, gray or stramineous, hairy, 3--4 mm. in diameter; involucrel bractlets elliptic, very concave on the inner and convex on the outer surface, stramineous or grayish, 5--4.5 mm. long, 1.5--1.7 mm. wide, acute or slightly apiculate, more or less villous on the back especially along the margins and at the apex with antrorse hairs, usually somewhat short-bearded at the apex; receptacle densely long-villous; receptacular bractlets narrowly spatulate, 1.7--1.9 mm. long, about 0.4 mm. wide, dark-brown toward the apex, hyaline at base, blunt at apex and there densely bearded, otherwise glabrous, slightly navicular; staminate florets: sepals 3, connate only at the very base, oblanceolate, 1--1.3 mm. long, about 0.4 mm. wide, obtuse at apex, brown toward the apex, much lighter toward the base, glabrous except for the densely bearded apex; petals 3, united into an infundibular stramineous tube about 0.8 mm. long, glabrous, the lobes lanceolate, erect, about 0.4 mm. long, not glanduliferous, glabrous; stamens 3, inserted at the mouth of the corolla-tube; filaments about 0.3 mm. long, glabrous; pistillate florets: sepals 3, apparently separate to the base, spatulate, dark-brown toward the apex, much lighter or stramineous toward the base, about 1.5 mm. long and 0.6 mm. wide, rounded at apex, long-pilose on the inner surface with antrorse hairs; petals 3, separate, spatulate, hyaline, about 1.3 mm. long and 0.6 mm. wide, long-pilose along the margins and toward the apex, not bearded, not glanduliferous; style about 0.4 mm. long, glabrous; ovary subglobose, deeply 3-lobed and-sulcate, glabrous, 3-celled; stigmas 3, about 0.4 mm. long, erect; style-appendages 3, about the same length as the stigmas and issuing from the same level.

The type of this species was collected by Julian A. Steyermark (no. 54432), growing in dense mats on moist banks,



between Tambo Cachiyacu, La Entrada, and Nudo de Sabanillas, altitude 2500--3500 m., Loja, Ecuador, on October 7, 1943, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species resembles P. Glaziovii Ruhl., but differs in the length of its peduncles and in floral characters.

**PAEPALANTHUS STEINBACHII** Moldenke, sp. nov.

Herba acaulescens; foliis rosulatis leviter membranaceis recurvo-adpressis linearibus fenestratis argute attenuatis glabris; vaginis arcte adpressis glabris, ad apicem oblique fissis, lamina argute acuta; pedunculis numerosis gracillimis 2-costatis tortis glabris; capitulis hemisphaericis brunneis vel nigris.

Acaulescent herb; leaves basal, rosulate, thin-membranous, appressed to the ground or ascending, shorter than the peduncles, linear, 4--5 cm. long, about 1.5 mm. wide at the middle, many-nerved, plainly fenestrate throughout, sharply attenuate at the apex, glabrous throughout; sheaths closely appressed to the peduncle, about 3 cm. long, glabrous, obliquely split at the apex, the blade sharply acute; peduncles numerous, about 20 per plant, very slender, 6--11 cm. long, 2-costate, twisted, glabrous throughout, far surpassing the leaves; heads hemispheric, brown or black, 3--4 mm. in diameter; involucre bractlets lanceolate, hyaline or gray, 1--1.5 mm. long, acute at the apex, glabrous on both surfaces; receptacle apparently glabrous; receptacular bractlets narrowly oblong, falcate, about 2 mm. long and 0.4 mm. wide, dark-brown or black on the upper half, the lower half hyaline, acute at the apex, glabrous throughout, not bearded; staminate florets: sepals 3, elliptic, about 1.3 mm. long and 0.2 mm. wide, black, united into a slender tube at the base, acute, glabrous throughout; petals 3, about 1 mm. long, united into a hyaline tube, the free portions 0.2--0.3 mm. long, hyaline, acute, glabrous, with a black gland near the center on the back; stamens 3; anthers globose, yellow, about 0.1 mm. long; pistillate florets: sepals 3, narrow-elliptic or oblong, about 1.2 mm. long and 0.3 mm. wide, dark-brown or black except at the very base, acute, glabrous throughout; petals 3, separate to the base, falcate, narrowly oblong, about 1 mm. long and 0.1 mm. wide, brownish, glabrous throughout, not bearded, not glanduliferous; style about 0.6 mm. long, glabrous; stigmas 3, about 0.4 mm. long; ovary oblong, about 0.3 mm. long and 0.2 mm. wide, brown, slightly granular, 3-celled, 3-ovulate.

The type of this species was collected by José Steinbach (no. 2669) at Campos de Terebinto, on the banks of a small lake, Santa Cruz, Bolivia, on August 22, 1916, and is deposited in the Britton Herbarium at the New York Botanical



Garden.

*PAEPALANTHUS SUBSESSILIS* Moldenke, sp. nov.

Herba valde pumila dense caespitosa; caulibus valde abbreviatis, ad apicem dense longeque villosis; foliis rosulatis lanceolatis 6--8 mm. longis, ca. 1 mm. latis, argute apiculatis multistriatis non fenestratis, in statu juventute margine plusminusve longe ciliatis recurvatis, in statu senectute glabrescentibus; inflorescentiis subsessilibus solitariis; pedunculis 1.5--1.8 mm. longis antrorse adpresso-pilosis, bracteis 4 foliaceis ad basin connatis glabris subtentis.

Very dwarf densely caespitose herb; stems very much abbreviated, densely long-villous at the apex, obscured by the dense leaves; leaves rosulate, lanceolate, 6--8 mm. long, about 1 mm. wide at the mid-point, sharply apiculate at the apex, greatly ampliate and sheathing the stem at the base, many-striate, not fenestrate, membranous at the base, more or less long-ciliate on the margins when young, completely glabrous in age, recurved; inflorescence subsessile, solitary at the apex of the stem; typical sheath absent; peduncle absent or obsolete, 1.5--1.8 mm. long, antrorsely appressed-pilose, subtended by 4 leaf-like bracts which are connate at the base into a short tube about 1 mm. long, then bilabiate into 2 exactly similar wide-spreading lips about 3.5 mm. long, each lip deeply bifid almost to the base, each lobe ovate, about 2.5 mm. long and 1 mm. wide, attenuate to an acute apex, ascending-spreading, curvate, and appressed to the head, light-brown, glabrous throughout; heads hemispheric, 3.5--4 mm. in diameter, gray-brown, villos; involucrel bractlets few, in 1 or 2 series, broadly ovate, very concave on the inner and convex on the outer surface, brown, very dark at the apex, about 2.5 mm. long and 1.8 mm. wide, abruptly acute at the apex, glabrous throughout except for the very small tuft of short hairs on the back at the very apex; receptacle very densely long-villous; receptacular bractlets few, elliptic-ob lanceolate, about 1.7 mm. long and 0.4 mm. wide, dark-brown throughout, rounded and subcucullate at the apex, densely bearded on the back at the apex, otherwise glabrous; staminate florets: sepals 3, separate to the base, dark-brown, elliptic, concave on the inner and convex on the outer surface, about 1.3 mm. long and 0.5 mm. wide, densely bearded on the back at the apex, otherwise subglabrous; petals 3, connate into a slender hyaline tube about 0.6 mm. long, the free lobes lanceolate, about 0.3 mm. long, hyaline, erect, blunt; stamens 3, inserted about 1/2 way down the corolla-tube; filaments about 0.2 mm. long, glabrous; anthers white, oblong, about 0.4 mm. long, composed of two separate versatile thecae de-

hisping by means of longitudinal slits; pistillate florets: sepals 3, separate, broadly obovate, navicular-conduplicate, dark-brown or blackish, about 1.3 mm. long and 0.7 mm. wide (when flattened out), subcordate at the apex, rather densely long-villous on the back from below the middle to the apex, densely bearded on the back at the apex; petals 3, separate, hyaline, elliptic, about 0.8 mm. long and 0.4 mm. wide, densely long-villous on the back, not bearded, not glanduliferous; style abbreviated, about 0.1 mm. long, glabrous, terminated by 3 erect stigmas about 0.1 mm. long and 3 erect style-appendages about 0.2 mm. long; ovary subglobose, about 0.3 mm. long and wide, 3-angled, glabrous, 3-celled.

The type of this distinct species was collected by Julian A. Steyermark (no. 55495) on a dry paramo at an elevation of 10,000 feet, between Buenos Aires and Páramo de las Rosas, Lara, Venezuela, on February 11, 1944, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species resembles *P. lodiculoides* Moldenke in habit, the latter growing in similar habitats in Colombia. The collector records the common name "flor de tierra".

PHYLA STRIGULOSA (Mart. & Gal.) Moldenke, comb. nov.

*Lippia strigulosa* Mart. & Gal., Bull. Acad. Roy. Brux., ser. 1, 11 (2): 319. 1844.

PHYLA STRIGULOSA var. PARVIFOLIA (Moldenke) Moldenke, comb. nov.

*Phyla yucatana* var. *parvifolia* Moldenke, Phytologia 2: 141--142. 1946.

PTERIDIUM LATIUSCULUM f. BERDII Moldenke, Am. Midl. Nat. 35: 313, hyponym (1946), f. nov.

Haec forma a forma typica speciei laminis non ternatis differt.

This form differs from the typical form of the species in having the lowest pinnae of its fronds not much larger than those immediately above them; thus the fronds are not at all ternate. Mr. C. A. Weatherby, of the Gray Herbarium of Harvard University, in a letter to me dated August 1, 1945, agrees that this character is probably transmissible, but apparently regards it as merely a clone. The type was collected by Morris and DeEtta Berd [*H. N. Moldenke 16593*] in woodlands, North Warren, Warren County, Pennsylvania, on July 31, 1944, and is deposited in the herbarium of the Carnegie Museum at Pittsburgh. The form occurs quite abundantly in this region, usually mixed with the typical form, but often in large numbers. It has a very distinct appearance in the wild. Like the typical form, its fronds are very often heavily infested by *Cryptomyces pteridis* (Rebent.) Rehm.

## STACHYTARPHETA CONFERTIFOLIA Moldenke, sp. nov.

Frutex; ramis gracilibus subteretibus sarmentosis glabratibus; internodiis valde abbreviatis; foliis sessilibus oppositis dense confertis succulentis anguste ellipticis parvis obtusis integris, ad basin angustatis, utrinque glabris subtus dense punctatis.

Small shrub; branches slender, subterete, dark, twiggy, glabrate; twigs similar, densely foliate; internodes extremely abbreviated, 1--5 mm. long; leaves sessile, decussate-opposite, crowded, probably somewhat fleshy, narrowly elliptic, 7--13 mm. long, 2.5--5 mm. wide, obtuse at the apex, entire, narrowed to the base, glabrous on both surfaces and densely punctate beneath; midrib very slender, obscure on both surfaces; vein and veinlet reticulation indiscernible; inflorescence terminal, spicate, solitary; spikes sessile, 3--4 cm. long, densely many-flowered; flowers closely imbricate; rachis minutely puberulent, rather deeply sculptured after the fruit has fallen; bractlets lanceolate-ovate, about 6.3 mm. long and 2.7 mm. wide, gradually attenuate to the sharply acute apex, glabrous; calyx heavy-textured, tubular, about 1 cm. long and 1.8 mm. wide, glabrous throughout, its rim 5-toothed, the teeth unequal, ovate-triangular, 1.3--1.8 mm. long, 0.9--1.3 mm. wide, abruptly acute at the apex; corolla hypocrateriform, its tube slender, about 1.5 cm. long and 1.5 mm. wide, glabrous, its limb 5-parted, the lobes unequal, broadly obovate-elliptic, 5--8 mm. long, 4--7 mm. wide, rounded at the apex, slightly wavy-margined, conspicuously venose, glabrous; stamens 2, inserted about 11.7 mm. above the base of the corolla-tube; free portion of filaments filiform, about 0.9 mm. long; glabrous; anthers dorsifixed near the middle, about 1.8 mm. long; style capillary, about 2 cm. long, glabrous; stigma capitate, about 0.5 mm. wide; ovary ovate, about 1.8 mm. long and 1.3 mm. wide, glabrous; fruiting-calyx and fruit not seen.

The type of this very distinct species was collected by Louis O. Williams and Vicente Assis (no. 6639) in a campo at Serra da Mutuca, beyond Barreiro, Município of Nova Lima, at an altitude of 1400 m., Minas Geraes, Brazil, on April 15, 1945, and is deposited in the Gray Herbarium of Harvard University.

## STACHYTARPHETA STEYERMARKII Moldenke, sp. nov.

Planta lignosa; ramis acute tetragonis decussato-puberulis plerumque alatis; nodis ampliatis annulatis; foliis oppositis; petiolis dense pubescentibus paullo marginatis; laminis leviter chartaceis elliptico-ovatis acutis argute serratis, supra parce breviterque pubescentibus, subtus dense breviterque pubescentibus.



Woody plant; branches acutely tetragonal, puberulent on alternate pairs of sides, the angles often slightly margined, often somewhat ampliate and annulate at the nodes; principle internodes 1.5--4 cm. long; leaves decussate-opposite; petioles slender, about 1 cm. long, rather densely pubescent, somewhat margined; blades thin-chartaceous, elliptic-ovate, 3--4 cm. long [immature?], 1.3--2.5 cm. wide, acute at the apex, regularly sharp-serrate from almost the base to the apex, rather sparsely short-pubescent above, densely short-pubescent beneath; midrib very slender, plane above, prominent beneath; secondaries very slender, 5 or 6 per side, ascending, slightly arcuate, plane above, very slightly prominent beneath; inflorescence terminal; peduncles to about 3 cm. long, puberulent on one pair of sides like the branches; floriferous portion of the spikes to about 20 cm. long after anthesis; rachis stout, about 4 mm. in diameter, puberulent-strigillose on two opposite sides, deeply sculptured in fruit; bractlets lanceolate, 5--7 mm. long, gradually attenuate to a long-acuminate apex, appressed or recurved after anthesis, minutely puberulent or glabrate, more or less ciliolate along the margins, barely equaling the calyx during anthesis and then more densely puberulent; calyx about 5 mm. long, densely puberulent; corolla dark-violet, hypocrateriform, somewhat exserted from the calyx, its tube about 7 mm. long, glabrous.

The type of this species was collected by my good friend, Dr. Julian A. Steyermark (no. 54834), in dry rocky desert hills above La Toma, alt. 1520--1830 m., Loja, Ecuador, on October 24, 1943, and is deposited in the herbarium of the Chicago Natural History Museum. It is a pleasure to dedicate this species to Dr. Steyermark, who has done such uniformly splendid and valuable collecting in the southern United States, Central America, and South America.

*SYMBOLANTHUS MACRANTHUS* (Benth.) Moldenke, comb. nov.

*Lisianthus macranthus* Benth., Plant. Hartweg. 144. 1839.

×*VERBENA BAILEYANA* Moldenke, hybr. nov.

Herba; ramis erectis brachiatis tetragonis sulcatis albo-strigillosis; nodis annulatis; petiolis obscuris lateralibus; foliis chartaceis ovatis, ad basin cuneatis, ad apicem acutis, irregulariter inciso-laciniatis utrinque strigillosis supra scabris.

Herb; stems erect, branched, rather sharply tetragonal, sulcate between the angles, strigillose with short, stiff, white, antrorsely subappressed hairs; nodes annulate; principal internodes 2.5--5 cm. long; leaves decussate-opposite, usually with several small ones on very abbreviated twigs in their axils; petioles obsolete or to 2 cm. long and broadly



winged, merging indistinguishably into the base of the blade; blades chartaceous, rather uniformly bright-green on both surfaces, 7--10 cm. long, 2.5--6 cm. wide, ovate in outline, acute at apex, cuneately narrowed into the broadly winged petiole at the base, irregularly and deeply incised-laciniate, the lowermost lobes on the largest leaves often hastate, strigillose on both surfaces with short subappressed antrorse whitish hairs, scabrous above when the finger is drawn from the apex toward the base; midrib slender, impressed above, prominulous beneath; secondaries slender, 4 or 5 per side, ascending, not much arcuate, irregularly branched, a branch usually extending to the tip of the larger lobes; veinlet reticulation subimpressed above, plane but visible beneath; inflorescence a terminal panicle, the lowest branches of which are axillary to the uppermost much reduced leaves, the panicle about 15 cm. long and 5 cm. wide, its branches erect or ascending, strigillose-puberulent; bracts lanceolate, 5--8 mm. long, densely strigillose; bractlets similar but smaller, attenuate; calyx about 2.5 mm. long, densely strigillose, slightly exceeding the bractlets.

The type of this hybrid was collected from cultivated material in the Royal Botanical Garden at Paris in 1819 and is deposited in the Dudley Herbarium at Stanford University. It is apparently a hybrid between V. officinalis L. and V. hastata L., with, in general, intermediate characters. It is named in honor of Dr. Liberty Hyde Bailey, distinguished worker on cultivated plants, sedges, and palms.

VERBENA CONCEPCIONIS Moldenke, sp. nov.

Herba; ramis gracilibus hirsutulis; foliis oppositis vel suboppositis sessilibus; laminis chartaceis, ad apicem acutis, ad basin longe cuneatis, irregulariter 3-lobatis, lobis 3-dentatis supra rugoso-strigosis subtus strigoso-pubescentibus; spicis multifloris densis dein valde elongatis.

Herb, to about 40 cm. tall; stems erect, branched to the base, sparingly hirsute with stiff white hairs about 1 mm. long and standing at right angles to the stem; branches slender, each terminating, like the stem, in a single elongated spike, hirsutulous, less so in age; principal internodes 2--6.5 cm. long; leaves decussate-opposite, or the upper ones subopposite (like the branches), sessile; blades chartaceous, uniformly light-green on both surfaces, 2--2.8 cm. long, 10--21 mm. wide, widest at about the middle or slightly below, abruptly acute at the apex, long-cuneate at the base, irregularly 3-lobed, each lobe about 3-dentate with coarse subacute teeth, rough and strigose above, strigose-pubescent beneath, the venation somewhat impressed above and prominulous beneath; peduncles slender, continuous with the stems or branches, 2--6 cm. long, sparsely hirsute-

ulous like the stems and branches; spikes many-flowered, at first dense, later elongating to 12 cm., with the fruits rather distant toward the base, more crowded toward the apex and foliaceous bracts often subtending the lower pairs of fruits; bractlets narrow-lanceolate, about 3 mm. long, strigillose-hirsutulous, sharply attenuate-acute at the apex, almost equaling the fruiting-calyx; rachis short-pubescent and somewhat glandular; calyx about 3 mm. long, strigose with rather long white hairs and often also somewhat glandular-puberulent; corolla-tube about 5 mm. long, puberulent outside above the calyx, its limb about 2 mm. wide; fruiting-calyx not accrescent, strigose and somewhat glandular-puberulent.

The type of this species was collected by Louis Néé (no. 57) at Concepción, Chile, between 1789 and 1791, and is deposited in the herbarium of the Jardín Botánico at Madrid.

VERBENA JORDANENSIS Moldenke, sp. nov.

Herba perennis brachiatis; ramis obtuse tetragonis densiuscule patenteque pubescentibus brunneis; foliis oppositis subsessilibus; petiolis alatis; laminis ovatis tripartitis, partibus lobatis vel incisais, lobis angustis obtusis supra asperulo-strigillosis subtus in reticulo venularum patenti-pilosulis subrevolutis; inflorescentiis axillaribus racemosis paucifloris.

Perennial herb, about 16 cm. tall, abundantly branched from the base, bushy; branches decussate-opposite, obtusely tetragonal, rather densely spreading-pubescent, brown when dry; principal internodes 1--2 cm. long; leaves decussate-opposite, subsessile; petioles 1 mm. long or less, winged; blades ovate, tripartite, 7--25 mm. long, 5--15 mm. wide, each of the 3 divisions again lobed or incised, the lobes narrow and obtuse, more or less asperulous-strigillose above, spreading pilosulous on the venation and margins beneath, the margins subrevolute; midrib and secondaries subimpressed above, prominulous beneath; inflorescence axillary, racemose, the racemes few-flowered, 1--2 cm. long in fruit, usually less than 1 cm. long at anthesis; peduncles filiform, obsolete in anthesis, to 1 cm. long in fruit, and spreading-pubescent like the branches; bractlets ovate, about 3 mm. long, 1 mm. wide at the base, attenuate to the sharply acute apex, rather irregularly long-ciliate along the margins, especially toward the base, reflexed in age; calyx tubular, about 4 mm. long, 5-costate, very shortly 5-apiculate on the rim, the costae spreading-pubescent, otherwise glabrate, the apiculations coherent after anthesis; corolla hypocrateriform, its tube narrow-cylindric, about 4 mm. long, the limb about 2 mm. wide, glabrous, irregularly 5-lobed; ovary subtended by a cupuliform disk about 1 mm.

in diameter, which remains in the axil of the bractlet after the fruiting-calyx and fruit have been shed; fruiting-calyx not enlarged, readily splitting when the fruit matures, the apiculations remaining coherent almost up to the time of shedding of the fruit; nutlets narrowly oblong, about 2 mm. long, reticulate-scrubulate on the back on the upper half, with parallel longitudinal ridges on the lower half, glabrous, shiny.

The type of this most interesting and distinct species was collected by José Eugenio Leite (no. 3474) in wet places and fields, Campos do Jordão, at an elevation of 1600 m., São Paulo, Brazil, in April, 1945, and is deposited in his herbarium. The conspicuous disks beneath the ovary, which remain in the axils of the reflexed bractlets after the fruiting-calyx and fruit have been shed, render this species most remarkable and show its relationship to V. thymoides Cham.

VERBENA MARITIMA Small (Fig. 2)

Literature: Small, Bull. N. Y. Bot. Gard. 3: 436. 1905; Moldenke, Annot. List 108. 1939; Prelim. Alph. List Invalid Names 26. 1940; Known Geogr. Distrib. Verbenac. 5 & 101. 1942; Alph. List Invalid Names 25. 1942; Addisonia 21: 59--60, pl. 702. 1942.

Synonyms: Glandularia maritima Small, Man. Southeast. Fl. 1138. 1933. Verbena Aubletia var. maritima Curtiss ex Moldenke, Addisonia 21: 60, in syn. 1942.

This species is usually considered to be a rare species by most herbarium curators because of its very limited distribution and the general paucity of material representing it in their collections. However, much splendid collecting in Florida over the past 30 years has brought to light so much material of Verbena maritima and it grows there in such profusion that it cannot really be considered to be a little known plant any more. Following is a list of the material of this species which has come to me recently during the course of my monographic studies of the group. Harris has reported it also from Martin and Monroe Counties.

FLORIDA: Brevard Co.: F. S. Blanton 6309 (I, N), 6479 (I); A. B. Burgess 638 (N); Curtiss 1963\* (Bc, C, Cm, I, Up, Vt), 5706 (Al, Ec, Fl, Io, N, N, Po, Ur), s.n. [Fla.] (C); Degener s.n. [Tropic, Aug. 15, 1933] (Ba); N. Hotchkiss s.n. [Feb. 5, 1935] (N); McFarlin 6608 (N); H. N. Moldenke 219a (N, Up, Ur); O'Neill s.n. [June 11, 1929] (I), s.n. [July 8, 1929] (I), s.n. [south of Cocoa Beach, August 9, 1929] (Fl, I); W. H. Rhoades s.n. [Cocoa, 12-8-27] (Fl); U. C. Smith s.n. [Georgiana, Jany. 31, '91] (Up). Broward Co.: C. C. Deam 60837 (Dm, N). Collier Co.: Sheenan s.n. [Leaning Oak] (N), s.n. [Godden's Mission, March 7, 1919] (N). Dade Co.: Bailey



Fig. 2

Verbena maritima Small



& Bailey 6278 (Ba, Ba), 6388 (Ba); N. L. Britton 220 (N), 296 (N); Buswell s.n. [April 3, 1942] (Bu); C. C. Deam 60417 (Dm, N), 60940 (Dm, N); A. P. Garber s.n. [Miami, May 1877] (Vt); Hawkins s.n. [Royal Palm State Park, 1-25-28] (Fl); Henderson s.n. [Cape Florida] (T); Herb. Columbia Univ. s.n. [Cape Florida] (C); Hunnell 5835 (Ua); Lightfoot s.n. [Key Biscayne, Apr. 28, 1917] (Ba); B. McAllister 27 (H); H. N. Moldenke 549 (Go, N, Up, Ur), 586 (Go, H, N, N, Up, Ur); Mulvania 12 (Hp); O'Neill 7596 (Bt, Du, Hp, Hp, I, N, N, St, Ur), s.n. [Jan. 30, 1933] (I); B. H. Patterson s.n. [Feb. 7, 1918] (Cm, Cm); J. K. Small 2100 (N), 8123 (N), 8594 (N), 8599 (N), s.n. [beach opposite Miami, November 1904] (Ur); Small & Carter 1077 (N--type, N--isotype), 2994 (N), s.n. [January 16, 1909] (We); Small, Carter, & Small 3311 (N), s.n. [February 1911] (H, Fl); Small & Small 5422 (Fl, N), s.n. [July 9, 1915] (N); Small & Wilson 1961 (N); Weber & Hawkins s.n. [Homestead, 3-1-28] (Fl). Flagler Co.: O'Neill s.n. [August 7, 1929] (I); West & Arnold s.n. [Flagler Beach, 10/10/40] (Fl). Indian River Co.: Small, DeWinkeler, & Mosier 11123 (N), s.n. [April 3, 1924] (It, Mi). Lee Co.: J. K. Small 8347 (N). Palm Beach Co.: Bailey & Bailey 6523 (Ba, Ba); A. B. Burgess 783 (N); W. H. Rhoades s.n. [near Palm Beach] (Hs, Hs); J. K. Small 2124 (N), 8509 (Go, Io, It, N); Small, Mosier, & DeWinkeler 10891 (Up); E. West s.n. [Jupiter, 5-12-33] (Fl). Saint Lucie Co.: A. B. Burgess 713 (N). Volusia Co.: B. H. Patterson s.n. [Daytona, Nov. 28, 1917] (Cm); J. K. Small 8674 (N); Small & DeWinkeler 9856 (Mi). County undetermined: Herb. Le Roy s.n. [Florida] (C).

Explanation of Figure 2: a, Habit, x 3/4; b, flower, x 2 1/4; c, calyx and its subtending bractlet, x 2 1/4; d, corolla slit open and flattened out, x 2 1/4; e, pistil, x 2 1/4; f, immature flower, abnormal.

VERBENA MATRITENSIS Moldenke, hybr. nov.

Herba; caulis tetragonis densiuscule hirsutulis, pilis albidis rigidis patentibus; foliis lanceolatis leviter chartaceis argute acutis, ad basin cuneato-acuminatis, irregulariter dentatis vel inciso-dentatis supra strigoso-scabris, subtus strigilloso-scabrellis; inflorescentiis paniculatis.

Apparently a natural or artificial hybrid between V. carolina L. and V. hastata L., exhibiting more or less intermediate characters; stems tetragonal, rather densely hirsutulous with whitish, stiff, spreading hairs; leaves lanceolate, thin-chartaceous, 4.5--7 cm. long, 1.4--2.4 cm. wide, sharply acute at the apex, cuneate-acuminate at the base, irregularly dentate or incised-dentate along the margins from almost the base to the apex, strigose-scabrous above, strigillose-scabrellous beneath; inflorescence paniculate, or 1 or 2 spikes terminating short lateral branches; spikes

narrow, elongate, to about 7 cm. long, rather densely flowered, apparently not setting seed, the short peduncles and slender rachis puberulent with appressed gray hair; bractlets lanceolate, about 2 mm. long, acuminate, glabrate on the back, sparsely ciliolate along the margins at the widest part; calyx strigillose, slightly exceeding the subtending bractlets; corolla-tube about 4 mm. long, its limb about 2 mm. wide.

The type of this hybrid was collected in the Royal Botanic Garden at Madrid, Spain, and is deposited in the Britton Herbarium at the New York Botanical Garden.

VERBENA NEEI Moldenke, sp. nov.

Herba parva; caulibus gracilibus decumbentibus vel ascendentibus apicem versus brachiatis breviter pubescentibus, pilis albis rigidis; ramis brevibus; foliis oppositis sessilibus; laminis crasso-chartaceis irregulariter incisobatis revolutis utrinque strigoso-pubescentibus, ad basin longe cuneatis, lobis acutis; spicis sessilibus vel subsessilibus laxiuscule multifloris.

Herb, to about 20 cm. tall; stems slender, rather harshly short-pubescent with stiff white hairs about 0.5 mm. long, apparently decumbent or ascending, several issuing from the base of the plant, branched toward the apex; branches short, terminating (like the stem) in an elongated spike; leaves decussate-opposite, sessile; blades thick-chartaceous, 1--2 cm. long, 5--12 mm. wide, widest at or below the middle, irregularly incised-lobed, the margins revolute, strigose-pubescent on both surfaces, long-cuneate at the base, the lobes acute; spikes sessile or subsessile, to 10 cm. long, rather loosely many-flowered, usually about 3 spikes at the apex of the stem, the flowers densely crowded in bud, barely imbricate in fruit; bractlets lanceolate, about 2.5 mm. long, acuminate at the apex, strigillose on the back, somewhat shorter than the fruiting-calyx; calyx about 2.5 mm. long, densely strigose; corolla slightly exerted; fruiting-calyx about 3 mm. long, densely strigose.

The type of this species was collected by Louis Née (no. 108) -- in whose honor it is named -- on the pampas at Buenos Aires, Argentina, between 1789 and 1791, and is deposited in the herbarium of the Jardin Botánico at Madrid.

X VIOLA MILLERI Moldenke, nom. nov.

*Viola affinis* x *triloba* Brainerd, Vermont Agr. Exp. Sta. Bull. 239: 44--45. 1924; Moldenke, List Observ. Fl. Watchung 24. 1940.

VIORNA PSEUDOCOCCINEA (Schneid.) Moldenke, comb. nov.

*Clematis pseudococcinea* Schneid., Wien Ill. Gartenz. 29:

15. 1904; Ill. Handb. Laubholz. 1: 279. 1904.

*WEIGELTIA SCHLIMII* var. *INTERMEDIA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit inflorescentiis ♀ sessilibus vel subsessilibus, floribus ♂ 5 mm. longis, petalis 2 mm. latis, antheribus 1 mm. longis glabris, filamentis 1 mm. longis, et fructibus ca. 1 cm. in diametro.

This variety differs from the typical form of the species in having sessile or subsessile pistillate inflorescences (observed in fruit) and slightly larger flowers (observed in bud only), the petals being about 5 mm. long and 2 mm. wide, the glabrous anthers as long as the filaments, each about 1 mm. long, and the fruit about 1 cm. in diameter, smooth, very wrinkled in drying. In the typical form of the species the pistillate inflorescences (in fruit) have a peduncle about 5.5 cm. long, the petals are only 4 mm. long and 1 mm. wide, the filaments are about 2 mm. long, and the anthers are very small, about 0.25 mm. long, pilose at the base, while the fruit is only about 7 mm. in diameter, pustulate, not wrinkled. In *W. multiflora* A. C. Sm. the pistillate inflorescences are not known, but the staminate flowers have their petals 3.5--5 mm. long and 1.9--2.5 mm. wide, the anthers about 1 mm. long and the filaments about 2 mm. long, and the leaves are relatively much narrower and differ markedly in the details of their venation.

The type of this variety was collected by José Cuatrecasas (no. 17312) at San Isidro, altitude 5--100 m., Río Cajambre, on the Pacific coast, El Valle, Colombia, between May 2 and 5, 1944, and is deposited in the Britton Herbarium at the New York Botanical Garden.

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ADDITIONAL NOTES ON THE GENUS *TIMOTOCIA*. I

Harold N. Moldenke

Since the publication of my monograph of this genus in Fedde, *Repert. Sp. Nov.* 39: 129--153 (1936) seventy-nine additional specimens and photographs of specimens have been examined. The small number of specimens that have come to light in these eleven years is a good indication of the scarcity of material of this genus in the world's herbaria and the rarity of the members of the group. The material hereinafter cited is deposited in the herbaria indicated by the following symbols: B = Botanisches Museum, Berlin; Br = Jardin Botanique de l'Etat, Brussels; Cb = Delessert Herbar-



ium, Conservatoire et Jardin Botaniques, Geneva; Dc = De Candolle Herbarium, Conservatoire et Jardin Botaniques, Geneva; E = Missouri Botanical Garden, St. Louis; Ed = Royal Botanic Garden, Edinburgh; Ja = Museu Nacional, Rio de Janeiro; K = Royal Botanic Gardens, Kew; Kr = Krukoff Herbarium, New York Botanical Garden, New York City; Lu = Botanisk Museum, University of Lund, Lund; Mu = Botanisches Museum, Munich; N = Britton Herbarium, New York Botanical Garden, New York City; P = Muséum National d'Histoire Naturelle, Paris; Us = Botaniska Institutionen, Uppsala; W = United States National Herbarium, Smithsonian Institution, Washington; and Z = H. N. Moldenke Herbarium, Watchung, New Jersey.

#### TIMOTOCIA Moldenke

References: Casselia Nees & Mart., Nov. Act. Physico-med. Acad. Caes. Leopold.-Carol. Nat. Cur. 11: 73, pl. 6, figs. A & B. 1823; Reichenb., Conspect. Reg. Veg. 1: 117. 1828; Walp., Repert. 4: 40. 1845; Schau. in A. DC., Prodr. 11: 527. 1847; Paxt., Fl. des Serres pl. 361. 1848; Paxt., Mag. Bot. 15: 75. 1849; Schau. in Mart., Fl. Bras. 9: 173, pl. 32. 1851; Bocq., Rev. Verb. 141, pl. 16. 1861--1863; Benth. in Benth. & Hook. f., Gen. Pl. 2 (2): 1148. 1876; Junell, Symb. Bot. Upsal. 4: 18. 1934; Moldenke in Fedde, Repert. Sp. Nov. 39: 129. 1936; Moldenke, Alph. List Invalid Names 12. 1942. Timotocia Moldenke in Fedde, Repert. Sp. Nov. 39: 129--153. 1936; Chron. Bot. 3: 311. 1937; Alph. List Invalid Names 12. 1942; Known Geogr. Distrib. Verbenac. 38, 40, 41, 74, & 100. 1942; Prelim. Alph. List Invalid Names 14. 1940; Alph. List Citations 237 & 264. 1946.

Junell in the reference cited above states that the floral morphology, especially that of the gynoeceium and androeceium, and the vegetative morphology point to a close relationship between this genus and Ghinia Schreb. The two genera are, however, widely separated in the classification of Briquet. Reichenbach, in the reference cited above, places the genus (as Casselia Nees) among the accepted genera in his section Verbeneae of the family Labiatae.

#### TIMOTOCIA CHAMAEDRYFOLIA (Cham.) Moldenke

On page 145 of my monograph four specimens of Saint-Hilaire s.n. [Olho d'Agoa, 1816--1821] are cited from the Paris herbarium. The figure should be 3, since one of these sheets is now in the Britton Herbarium at New York.

Illustrations: Warming, Dansk. Vid. Selsk. Skrift, ser. 6, 6: 197. 1892; Drude, Okol. Pflanzen [Die Wissensch. 1:] 66. 1913.

Additional citations: BRAZIL: Goyaz: J. E. Pohl 442 (N). Minas Geraes: Saint-Hilaire s.n. [Olho d'Agoa, 1816--1821] (N); Sellow 1517 [Macbride photos 17576] (Kr--photo of type,



F--isotype), 1519 (B, B, B). Rio de Janeiro: Sellow s.n. [Payal, 1818] (B, B).

**TIMOTOCIA CONFERTIFLORA** Moldenke

The Macbride photograph cited below is erroneously labeled "Gardner 3371" and "Rasselin 3371".

Additional citations: BRAZIL: Goyaz: G. Gardner 3369 [Macbride photos 34298] (Br--isotype, Kr--photo of isotype).

**TIMOTOCIA CONFERTIFLORA** var. **LACINIATA** Moldenke

This plant has been misidentified in some herbaria as Lantana brasiliensis Link.

Additional citations: BRAZIL: Goyaz: G. Gardner 3370 [Macbride photos 34297] (Br--isotype, Ed--isotype, Kr--photo of isotype).

**TIMOTOCIA GLAZIOVII** Briq. & Moldenke

This species has been misidentified in some herbaria as "Lantana turneraefolia Cham.", "Lippia turneraefolia Cham.", and "Scrophul."

Additional citations: BRAZIL: Goyaz: Glaziou 21890 [Macbride photos 24626, in part] (B, Br, K, Kr--photo); J. E. Pohl 2158 [Herb. Imp. Vindob. 142; Macbride photos 34296] (Kr--photo of type). State undetermined: J. E. Pohl s.n. (Br).

**TIMOTOCIA HASSLERI** (Briq.) Moldenke

Material of this species is mixed with Basistemum spinosus (Chod.) Moldenke, of the Scrophulariaceae, on the Berlin sheet of Hassler 7350, cited below.

Additional citations: PARAGUAY: Hassler 7350, in part (B), 7889 [Macbride photos 24627] (Cb--isotype, Kr--photo of type, N--fragment of type, P--isotype), 10760 (Cb, Cb, F).

**TIMOTOCIA HYMENOCALYX** (Briq.) Moldenke

Additional citations: PARAGUAY: Fiebrig 4092 [Herb. Monac. 4147] (Cb, Cb, Ed, Mu); Hassler 7637 [Macbride photos 24628] (Cb--isotype, Kr--photo of type, P--isotype). CULTIVATED: Paraguay: Rojas 2406 [Herb. Parag. Jard. Bot. Parag. 10834] (Mu).

**TIMOTOCIA INTEGRIFOLIA** (Nees & Mart.) Moldenke

References: Casselia semiserrata Hort. ex Moldenke, Prelim. Alph. List Invalid Names 14, in syn. 1940; Alph. List Invalid Names 12, in syn. 1942.

Illustrations: Faxt., Flore des Serres, ser. 1, 4: pl. 361 (colored). 1848; Faxt., Mag. Bot. 15: 75 (colored). 1849.

Additional citations: BRAZIL: Piauhy: G. Gardner 2272 (N). Rio de Janeiro: L. Riedel 404 (Dc); Riedel & Luschnath

1328 (N); Ule s.n. [Oct. 1899] (B). State undetermined: Lund 394 (Cb). CULTIVATED: Belgium: Hort. Mons. s.n. [1839; type coll. of Casselia semiserrata Hort.] (Br). ILLUSTRATION, colored (Br).

TIMOTOCIA INTEGRIFOLIA var. FISCHERI (Mart.) Moldenke

The Macbride photograph 20347 cited on page 137 of my monograph as a photograph of an isotype of this variety is actually a photograph of the type. The collection label on the Krukoff Herbarium sheet cited below is inscribed "Brazil", apparently in error, for the plant of which this is a photograph was collected in cultivation in Germany, though it may have originated in Brazil.

Additional citations: CULTIVATED: France: Herb. Baillon s.n. [Hort. Paris] (P). Germany: Lucae s.n. [Herb. Kummer; Herb. Monac. 1281; Macbride photos 20347] (Kr--photo of type, Mu--photo of type).

TIMOTOCIA MANSOI (Schau.) Moldenke

References: Casselia Mansii Schau. ex Moldenke, Prelim. Alph. List Invalid Names 14, in syn. 1940; Alph. List Invalid Names 12, in syn. 1942. Casselia Mansoi Schau. in A. DC., Prodr. 11: 527. 1847; Schau. in Mart., Fl. Bras. 9: 75, pl. 32. 1851; Junell, Symb. Bot. Upsal. 4: 18. 1934. Casselia peduncularis Mart. ex Moldenke, Prelim. Alph. List Invalid Names 14, in syn. 1940; Alph. List Invalid Names 12, in syn. 1942.

Illustrations: Mart., Fl. Bras. 9: pl. 32, fig. 2. 1851; Bocq., Rev. Verbenac. pl. 16. 1861--1863; Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 157. 1895.

Additional citations: BRAZIL: Goyaz: G. Gardner 3371 (Br, Cb, Cb, P); Weddell 2789 (P). Matto Grosso: Collector undesignated s.n. [Morro do Ernesto Cuiaba; as "Casselia Mansii Schau."] (Br); Malme 2524 (Lu, Us); Silva-Manso s.n. [Herb. Martius 1025; Herb. Monac. 421; Macbride photos 24629] (Br--isotype, Dc--type, Kr--photo of isotype, Mu--isotype, N--photo of type, P--isotype, Z--photo of type). State undetermined: Herb. Baillon s.n. (P); J. E. Pohl 144 [type coll. of Casselia peduncularis Mart.] (Br), s.n. (Br). BOLIVIA: Santa Cruz: Steinbach 5566 (Cb). ILLUSTRATIONS: Mart. Fl. Bras. pl. 32 (B).

TIMOTOCIA ROSULARIS (Sandw.) Moldenke

This species is described by Archer and Gehrt as having long tuberous roots and pink flowers with the odor of cinnamon (Cinnamomum zeylanicum).

Additional citations: BRAZIL: Matto Grosso: Archer & Gehrt 152 (N, W), s.n. [Herb. Inst. Biol. S. Paulo 36320] (N); Malme 2449a (B, E--photo, N--photo, Z--photo).

## TIMOTOCIA SERRATA (Nees &amp; Mart.) Moldenke

References: Casselia serrata Nees & Mart., Nov. Act. Physico-med. Acad. Caes. Leopold.-Carol. Nat. Cur. 11: 75--76, pl. 6, fig. A. 1823; Junell, Symb. Bot. Upsal. 4: 18 & 19. 1934.

Junell, in the reference cited above, discusses the gynoecium morphology of this species.

Illustrations: Nov. Act. Physico-med. Acad. Caes. Leopold.-Carol. Nat. Cur. 11: pl. 6, fig. A. 1823; Symb. Bot. Upsal. 4: fig. 25 & pl. 1, fig. 1. 1934.

Additional citations: BRAZIL: Bahia: Wied-Neuwied s.n. [Brasilia] (Br, Lu). Minas Geraes: Dusén s.n. [Herb. Rio de Janeiro 32253] (Ja); Glaziou 13060 [Macbride photos 24626, in part] (Kr--photo).

## TIMOTOCIA VERONICAEFOLIA (Cham.) Moldenke

Additional citations: BRAZIL: Minas Geraes: Sellow 1518 [Macbride photos 17577] (Kr--photo of type & isotype).

## TIMOTOCIA ZELOTA Moldenke

Additional citations: BRAZIL: Minas Geraes: Blanchet 3133 (Cb--isotype).

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ADDITIONAL NOTES ON THE GENUS AMASONIA. II

Harold N. Moldenke

## AMASONIA L. f.

Taligalea and Amasonia are both included among the accepted genera in the section Verbeneae of the family Labiatae by H. G. L. Reichenbach in his Conspect. Reg. Veg. 1: 117 (1828).

## AMASONIA CAMFESTRIS (Aubl.) Moldenke

Additional citations: SURINAM: Maguire 23780 (N). BRAZIL: Maranhão: G. Don H.136 ["85"] (Br).

## AMASONIA HIRTA Benth.

The type collection of this species was made "in Brazil by Pohl and Langedorff" according to Bentham's original description, not by Schomburgk as erroneously stated by me on page 205 of my monograph. The Pohl s.n. [Villa Boa; Herb. Monac. 931] collection cited by me on the same page is actually from the state of Goyaz.

Additional citations: BRAZIL: Goyaz: Ule 451 [Herb. Rio

de Janeiro 32275] (Ja). Mattogrosso: Martius 583 [Herb. De Candolle 827; Herb. Monac. 929; Macbride photos 7886 & 20346] (Kr--photo, Kr--photo). Minas Geraes: Tamberlik s.n. (F). São Paulo: L. Riedel s.n. [Villa Franca, June 1834](W).

AMASONIA LASIOCAULOS Mart. & Schau.

References: Moldenke, Prelim. Alph. List Invalid Names 5 & 42. 1940; Alph. List Invalid Names 4 & 43. 1942; Known Geogr. Distrib. Verbenac. 36 & 86. 1942; Phytologia 2: 91. 1945.

Cuatrecasas collected this species at an altitude of 230 m. in Colombia, and describes the bracts and calyx as red and the corolla as yellow, blooming in September. The "Ducke 85" cited on page 210 of my monograph is an error for Huber 85.

Additional citations: COLOMBIA: Vaupes: Cuatrecasas 7017 (W).

AMASONIA OBOVATA Gleason

References: Fedde, Bot. Jahresber. 59 (2): 416. 1939; Moldenke, Known Geogr. Distrib. Verbenac. 32 & 86. 1942.

The species is described by Steyermark as a "shrubby herb" or shrub, growing at 200--1095 m. altitude, with a single, simple, erect stem 4 to 5 feet tall, membranous leaves that are dark- or dull-green above and pale dull-green or dull-purple beneath, bracts dark-red or deep rose-red, corolla pale-greenish, filaments greenish-white, and anthers brown-lavender, blooming in August. The species is doubtfully distinct from A. arborea H.B.K.

Additional citations: VENEZUELA: Amazonas: Steyermark 57871 (F--1205147, N), 57980 (F--1205146, N).

AMASONIA SPRUCEANA Moldenke

References: Moldenke, Known Geogr. Distrib. Verbenac. 30, 32, 36, 71, & 86. 1942.

Cuatrecasas describes this species as having "bracts and flowers red". He collected it at an altitude of 200 m. in Colombia, in flower and fruit in September.

Additional citations: COLOMBIA: Vaupes: Cuatrecasas 6853 (W). VENEZUELA: Amazonas: Spruce 3288 [Macbride photos 28391] (F--photo of isotype, Kr--photo of isotype).

Excluded species:

Amasonia integerrima Spreng. apud Standl., Contrib. U. S. Nat. Herb. 23: 1335. 1926 = Bravaisia integerrima (Spreng.) Standl.

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ADDITIONAL NOTES ON THE GENUS PETREA. III

Harold N. Moldenke

PETREA Houst.

This genus is placed in the section Verbeneae of the family Labiatae, as an accepted genus, by H. G. L. Reichenbach in his Conspect. Reg. Veg. 1: 117 (1828), where he writes the name "Fetrea L." It is classified in the same way by Reichenbach in Mössler, Handb. Gewächsk., ed. 1, 1: xxvi (1827) and ed. 3, 1: lxxv (1833).

An excluded species is Petrea scandens Née, in herb., which is a synonym of Coffea arabica L. of the Rubiaceae.

PETREA ARBOREA H.B.K.

Steyermark records the common name "nacareno" for this plant and describes it as a shrub 5 feet tall with chartaceous leaves, wrinkled along the outer margin, and bracts deep-purple, growing at altitudes of 1065--1220 m.

Additional citations: VENEZUELA: Lara: Steyermark 55546 (F--1205142).

PETREA ASPERA Turcz.

Steyermark records the common name "flor de mayo" and describes the plant as a high-climbing liana with "firmly membranaceous-chartaceous" or "subcoriaceous-chartaceous" leaves that are deep- or rich-green above and dull-green or paler rich-green beneath, the calyx rich-lavender with purplish-blue midrib, the corolla deep-lavender, blooming in April at altitudes of 230--820 m. in rocky upland chaparral and valley savannas.

Additional citations: VENEZUELA: Sucre: Steyermark 62368 (F--1205703, N), 62801 (N).

PETREA BRACTEATA Steud.

A common name for this species in British Guiana is "sandpaper vine" and the plant is described as a soft gray "rope" with stems 1--2 cm. thick, growing in the crowns of small trees by creeks; with leathery, supple or stiff, rugose, scabrous leaves, the upper surface of the young ones "navy-blue green like the spike"; flowers in small axillary or terminal dark purple-green spikes, the corolla tubular, purple or violet-purple, hairy in the throat; the epicalyx membranous, violet or pale-blue when fully expanded.

Additional citations: BRITISH GUIANA: Forest Dept. Br. Guiana 4470 [F.1734] (N), 4471 [F.1735] (N).



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## DEBUTS OF WOODY PLANTS IN CULTIVATION

Data on Introduction and First Appearances -- in relation to those in Rehder's MANUAL OF CULTIVATED TREES AND SHRUBS, Ed. 1940.

P. J. van Melle

These data are submitted by way of a casual contribution rather than of an exhaustive study. They represent an accumulation in the compiler's notes -- many of them by-products of other inquiries. The years or blanks in the right-hand columns are those occurring in the MANUAL. Except in the few instances marked "(\*)" the nomenclature employed is that of the MANUAL.

The presentation of these data in relation to that work implies no criticism of it. On the contrary, the MANUAL is regarded as a great central structure, about which minor contributions like this cluster themselves like little shops between buttresses of a cathedral. The method saves needless duplication of information conveniently available. Only such data are given here as are at variance with, or not given in the MANUAL. Data of this kind should perhaps always be regarded as more or less tentative -- subject to adjustment upon further investigation. Some allowances should be made for misidentifications of materials in the sources cited. Reasonable care has been exercised to avoid cases of discernible misidentifications.

Intriguing as is the subject of plant debuts, it appears not to have been explored exhaustively. Partly because of the greater accessibility of English literature, much is known, comparatively, about introductions into England, and little about those into continental Europe, the records of which are, moreover, for a large part not readily available. Too little is known popularly about the important introductions from Japan by von Siebold and by Maximowicz, and those by Russian travellers, from Siberia, Mongolia and North-China. Specialized investigation might bring out worth-while facts about seeds and living plants received in Paris from the French missionary, Armand David, of whose introductions little is known. Among them is probably, for instance, the comparatively important Pfitzer Juniper of gardens.

Much study remains to be made of the history of plant introductions before it can be viewed in a proper perspective and in relation to explorations projected from many lands.

A few titles of periodicals, catalogs and other works appearing in the lists in more or less abbreviated form

- A.H.B. .... Annales d'Horticulture et de Botanique. Leiden, 1858--1862. Published by von Siebold and W. H. de Vriese. Devoted largely to plants brought from Japan and from Java.
- Ann. Soc. Agricult. Annales de la Société d'Agriculture et de Botanique de Gand.
- Bretschneider ..... E. Bretschneider - History of European Botanical Discoveries in China. 1898.
- Bull. F.S. .... Bulletin de la Fédération des Sociétés d'Horticulture en Belgique.
- Cox ..... E. H. M. Cox - Plant Hunting in China. 1945.
- Gartfl. .... Gartenflora.
- Hort. Berol. .... Hortus Berolinensis. A catalogue of the Botanical Garden at Berlin.
- Hort. Breit. .... Hortus Breiterianus. A catalog of a semi-commercial botanical collection maintained in Leipsig by Christian August Breiter. 1817.
- Hort. Dinegro ..... A catalog, by D. Viviani, of a botanical collection privately owned by J. Car. Dinegro, in Genoa. 1802.
- Illustr. Hortic. .. L'Illustration Horticole.
- Leiden ..... Many data otherwise unannotated of plants cultivated in Leiden have been derived from a jubilee publication: Hortus Academicus Lugduno Batavus, by H. Veendorp and Baas Becking, 1938. Other data have been derived from old indices of this Academic Garden.
- Montreuil ..... Refers to a "Catalogue des Arbres dans les jardins de M. Lemonnier à Montreuil - copie sur de ms. de l'auteur, dont M. le Prof. Adrien de Jussieu

est en possession." It is dated 1774. We found it, in the library of the New York Botanical Garden, bound in a "Catalogue méthodique des végétaux cultivés dans le Jardin des Plantes de la Ville de Versailles", by F. H. Philippar, 1843.

- Pavlovsk ..... Refers to a catalog, by I. A. Weinmann, of an Imperial Garden in Pavlovsk, near Petrograd.
- Prince ..... Catalogs of the Wm. Prince nursery - the "Linnaean Botanic Garden" - Flushing.
- Rev. Hortic. .... *Révue Horticole*.
- Soc. Gardeners .... "Catalogue of Trees, Shrubs, Plants and Flowers both exotic and domestic which are propagated for sale in the Gardens near London". By "A Society of Gardeners". 1730. - The similarity of the style of this work to that of Philip Miller's *Gardeners Dictionary* suggests that he compiled or edited it.
- Von Siebold & Co. . The catalogs referred to include the "Kruidekundige Naamlijsten" in the 1844 and 1845 yearbooks of the *Nederlandsch Koninklijke Maatschappij tot Aanmoediging v. d. Tuinbouw*. (These Yearbooks are the "Annuaire Pays-bas" of some authors).
- Von Siebold ..... "Sur l'Etat de l'Horticulture au Japon et sur l'Importance des plantes usuelles et d'ornement introduites et cultivées dans le Jardin d'Acclimation de M. Ph. von Siebold à Leide". A brochure by von Siebold. 1863.
- Uppsala ..... *Hortus Upsalensis*, 1748. - A catalog, by Linnaeus, of his garden at Uppsala.



<i>Abelia grandiflora</i> .....	Journal d'Horticulture Pratique IV 1847: 67 -- then cult. as <i>A. rupestris</i> .....	Orig. bef. 1880
<i>Abies Frazeri prostrata</i> ...	Gartfl. 1856: 69 - At Rinz, Frankfurt, as <i>A.</i> <i>hudsonica</i> ( <i>A. F.</i> var. <i>pumila</i> ) .....	----- Int. 1848
<i>Nordmanniana</i> .....	Monza 1845, as <i>Picea N.</i> .....	----- Int. 1865
<i>Veitchii</i> .....	Hovey's Magazine 1863: 10 - Int. by Thos. Hogg into the U. S., 1862, as <i>A. Veitchiana</i> .....	----- Cult. 1859
<i>Acanthopanax Sieboldianus</i> .	A.H.B. 1858: 185 - Int. before 1858 .....	-----
<i>Acer campestre</i> .....	Soc. Gardeners - Cult. 1730 .....	-----
<i>campestre teuricum</i> .....	Monza 1844 .....	-----
<i>caudatum</i> .....	Illustr. Hort. 1854 - Cult. at Chiswick .....	----- Cult. 1910
<i>floridanum</i> .....	Prince, 1831, as <i>A. floridum</i> - "Flowering Maple" ....	----- Int. ?
<i>hybridum</i> .....	Monza 1842 .....	-----
<i>japonicum</i> .....	Von Siebold & Co. Catalog 1844 .....	----- Int. 1864
<i>laevigatum</i> .....	Bull. F.S. 1864: 254 - Cult. in Belgium 1864 .....	----- Int. 1907
<i>Lobellii</i> .....	Naples 1819 .....	----- Cult. 1838
<i>Negundo aureo-var.</i> .....	Bull. F.S. 1864: 256 - Cult. in Belgium 1864 .....	----- Cult. 1865
<i>californicum</i> .....	Bull. F.S. 1864: 256 - Cult. in Belgium 1864 .....	----- Int. 1901
<i>oblongum</i> .....	Leiden 1831 .....	-----
<i>palmatum dissectum</i> .....	Pavia 1797, as <i>A. dissectum</i> ? .....	-----
<i>platanoides palmatifidum</i>	Bull. F.S. 1864: 255 - Cult. in Belgium 1864 .....	-----
<i>Pseudoplatanus Leopoldii</i>	Gartfl. 1865: 237 - At Booth nursery, Hamburg .....	-----
<i>variegatum</i> .....	Soc. Gardeners - Cult. 1730 .....	-----
<i>rubrum tomentosum</i> .....	Hort. Breiter. 1817, as <i>A. tomentosum</i> .....	-----
<i>rufinerve</i> .....	Cox 195 - Int. to Petrograd by Maximowicz before 1865	----- Int. 1879
<i>Aesculus californica</i> .....	Gartfl. 1855: 36 - Survived the winter in England, 1855. Listed as <i>Pavia c.</i> .....	----- Int. 1855
<i>carnea</i> .....	Montpelier 1814 (from Trianon Gardens) .....	----- Orig. bef. 1818
<i>Hippocast. albo-var.</i> .....	Bull. F.S. 1864: 256 - Cult. in Belgium (fol. arg.- var.) .....	-----

<b>Aesculus Hippocast.</b>		
Baumenii	..... Tuinbouwfloora 1856: 29 - Orig. by Bauman before 1825 Gartfl. 1855: 232 - Dble-white form cult. 1576	
luteo-var.	..... Bull. F.S. 1864: 256 - Cult. in Belgium (fol. aureo- var.)	
hybrida	..... Monza 1813. Montpellier 1813 (from Trianon Garden)	Orig. bef. 1815 Int. 1785
perviflora	..... Leiden 1719	
Favia strosanguinea	..... Monza 1813, as A. P. fl. rubra	
turbinata	..... Int. by v. Siebold to Leiden 1860-62	Int. bef. 1880
Aethionena coridifolium	..... Vienna 1843. Prague 1844	Int. 1871
Alangium platanifolium	..... Von Siebold & Co. Catalog 1848, as Marlea p.	Int. 1867
Alnus cordata	..... Naples 1812, as A. cordifolia	Int. 1820
fruticosa	..... Gartfl. 1865: 24 - then cultivated at Petrograd	Cult. 1888
glutinosae quercifolia	..... Monza 1842. Vienna 1842	
hirsuta Rupr.	..... Gartfl. 1862: 15 - Cult. at Petrograd as A. h. Fisch.	Cult. 1888
sibirica	..... Gartfl. 1862: 15 - Cult. at Petrograd as A. sib. Fisch.	
incana acuminata	..... Gartfl. 1862: 15 - Cult. at Petrograd, as var. lac- iniata	
maritime	..... Monza 1813	Int. 1878
subcordata	..... Monza 1844	Int. 1860
Ampelopsis breviped.elegans	..... Int. by v. Sieb. to Leiden, 1829, as Cissus hetero- ph. fol. pictis	Cult. 1855
Maximowiczii	..... Int. by v. Sieb. to Leiden, 1855	Cult. 1868
orientalis	..... Strasbourg 1807, as Cissus or.	Int. 1818
Andromeda angustifolia	..... Kew 1811, as A. polifolia angustifolia	Cult. 1879
glaucaeaphylla latifolia	..... Monza 1814, as A. polifolia latifolia	
Aralia chinensis	..... Prague 1776	Int. ?
Arctostaphylos Uva-ursi	..... Prague 1776, as Arbutus U-u.	Cult. 1800
Arctous alpinus	..... Montreuil 1774. Prague 1776, as Arbutus alp. (?)	Cult. 1789
Aristolochia kaempferi	..... Von Siebold & Co. Catalog 1844 - Int. by v.S. in 1841	Cult. 1854

<i>Aronia arbutifolia</i> .....	Leiden 1686 .....	Int. abt. 1700
<i>Artemisia-Abrotanum</i> .....	Uppsala 1748 .....	Long cult.
<i>austriaca</i> .....	Hort. Dinero, Genoa 1802 .....	Cult. 1810
<i>camphorata</i> .....	Naples 1812 .....	Cult. 1820
<i>pontica</i> .....	Uppsala 1748 (Art. no. 3) .....	Cult. 1810
<i>salina</i> .....	Neples 1812 .....	Cult. 1935
<i>Asparagus verticillatus</i> .....	Montreuil 1774 .....	Cult. 1894
<i>Astragalus massiliensis</i> .....	Prague 1776, as <i>A. Tragacantha</i> .....	Cult. 1783
<i>Atraphaxis frutescens</i> .....	Uppsala 1748, as <i>Polygonum fr.</i> .....	Cult. 1770
<i>Atriplex portulacoides</i> .....	Prague 1776 .....	Cult. 1800
<i>Berberis buxifolia nana</i> .....	Rev. Hortic. 1867: 260 - Cult. as <i>B. dulcis nana</i> .....	-----
<i>canadensis</i> .....	Leiden 1690 .....	Cult. 1730
<i>empetrifolia</i> .....	Hort. Breiter. 1817, as <i>B. empetrifolia</i> Willd. .....	Cult. 1827
<i>turcomanica integerrima</i> .....	Cracow 1864, as <i>B. int.</i> .....	-----
<i>vulgaris enuclea</i> .....	Soc. Gardeners - Cult., London, 1730 .....	-----
<i>alba</i> .....	Soc. Gardeners - Cult., London, 1730 .....	-----
<i>Betula davurica</i> .....	Monza 1842 .....	Cult. 1883
<i>Ermani</i> .....	Cartfl. 1862: 15 - then cult. in Petrograd .....	Cult. 1880
<i>fruticosa</i> .....	Monza 1813 .....	Cult. 1876
<i>glandulosa</i> .....	Monza 1844 .....	Int. 1880
<i>mandshurica kamtschat.</i> ..	Cartfl. 1862: 15 - then cult. in Petrograd, as <i>B. cems.</i> .....	Cult. 1917
<i>Middendorffii</i> .....	Jardin du Crest, Geneva 1896 .....	Cult. 1904
<i>pendula fastigiata</i> .....	Rev. Hortic. 1872: 24 - Cult. 1871 .....	-----
<i>purpureis</i> .....	Rev. Hortic. 1875: 96 - Int. in 1875, by Paillot .....	-----
<i>nana</i> .....	Montreuil 1774. Prague 1776 .....	Cult. 1789
<i>Broussonetia Kasinoki</i> .....	Von Siebold & Co. Catalog 1844 - Int. by v. S. 1843 ..	Int. abt. 1844
<i>Bruckenthalia spiculifolia</i> .....	Vienna 1843, as <i>B. spiculiflora</i> .....	Cult. 1880
<i>Buddleia intermedia</i> .....	Rev. Hortic. 1873: 151 - Orig. by Carrière in 1871 ..	Orig. abt. 1870
<i>japonica</i> .....	Rev. Hortic. 1867: 289 - Cult., Paris Museum 1865 ..	Int. abt. 1866
<i>salvifolia</i> .....	Amsterdam 1857 .....	Cult. 1873

Buxus semperv. angustifol.	Freibourg 1829	-----
semperv. myrtifolia	Monza 1814	-----
Callicarpa dichotoma	Von Siebold & Co. Catalog 1845	Int. 1857
japonica	Von Siebold & Co. Catalog 1844, as C. Murasaki, Int. 1841	Int. abt. 1845
Calligonum aphyllum	Naples 1812, as C. Pallasii	-----
polygonoides	Prague 1776	-----
Celastrus fert. ferax	Hort. Berol. 1807, as C. laevigatus	-----
fertilis nanus	Monza 1813, as C. nanus	-----
Calycotome spinosa	Prague 1844	Cult. 1846
villosa	Prague 1844	Cult. 1893
Camphorosma monspeliaca	Prague 1776. Pavia 1797	Cult. 1880
Campsis grfl. Thunbergii	Von Siebold & Co. Catalog 1845	-----
Caragana arborescens	Uppsala 1748, as C. sibirica	Int. 1752
frutex	Uppsala 1748, as Robinia no. 3	Int. 1752
pygmaea	Uppsala 1748, as Robinia no. 4	Int. 1751
Carpinus Bet. Carpinizza	Vienna 1842	-----
Betula incisa	Monza 1842	-----
pendula	Bull. F.S. 1864: 259 - Cult. 1864	-----
quercifolia	Monza 1813	-----
caroliniana	Soc. Gardeners - Cult., London, 1730	Int. 1812
Cassiope hypnoides	Prague 1776, as Andromeda h.	Int. 1798
tetragona	Prague 1776, as Andromeda t.	Int. 1810
Catalpa bignon. nana	Rev. Hortic. 1872: 200, as C. Kaempferi - From seed, received at Paris Museum in 1838	-----
Bungei	Rev. Hortic. 1872: 200 - From seed received at Paris Museum in 1838	Cult. 1877
Ceanothus ovatus	Montpelier 1813	Cult. 1830
Celastrus orbic. punctata	Von Siebold & Co. Catalog 1845, as C. punctatus	-----
Celtis australis	Soc. Gardeners - Cult., London, 1730. Montreuil 1774	Int. 1796
glabrata	Prague 1844 - obtained from Petrograd	Cult. 1870



- Celtis occidentalis* . . . Monza 1813 . . . . . Int. abt. 1825  
*pumila* . . . . . Prince, Catalog 1831 . . . . . Int. 1876  
*Tournefortii* . . . . . Soc. Gardeners' - Cult., London, 1730 (fructo luteo  
 angustiore) . . . . . Int. 1739  
*Ceratostigma plumbagin.* . . . Amsterdam 1857, as *Plumbago Larpentae* . . . . .  
*Cercis chinensis* . . . . . Von Sieb. Co. Cat. - From Theijsmann, Java, 1843, as  
*C. japonica* . . . . . Int. bef. 1850  
*Chaenomeles lagenaria* . . . . . Sertum Botanicum 1832 - In Europe since 1796, as *P.*  
*jap.* . . . . . Int. bef. 1800  
*Chamaecyparis nootkatensis* . . . . . Carrière, *Traité Gén. des Conif.* - Into France from  
 Russia, 1851 . . . . . Int. 1853  
*nootkatensis glauca* . . . . . Gartfl. 1856: 83 - Cult., Petrograd, 1856 . . . . .  
*obtusa brevireamea* . . . . . Bretschneider I: 610 - Living plants from Japan by  
 Maximowicz, 1864, as *Chamaecyp. brevireamea* . . . . . Int. 1919  
*nana aurea* . . . . . Bull. F.S. 1866: 117 - Exhib. in Belgium, 1865 . . . . .  
*pisifera squarrosa* . . . . . Int. into Netherlands by von Sieb. before 1855 as  
*Retinospora squarrosa* . . . . . Int. 1843  
 Note: The "*Retinospora squarrosa Veitchii*" of nur-  
 series was Int. by Veitch in 1861.  
*Chimonanthus praecox* grfl. . . . . Von Siebold & Co. Catalog 1844, as *C. fragrans* grfl.  
*Chiogenes hispidula* . . . . . Prague 1776, as *Vaccinium hispid.* (?) . . . . . Int. abt. 1880  
*Cistus corbariensis* . . . . . Vienna 1843 . . . . .  
*glaucus* . . . . . Monza 1844, as *C. Ledum* Lam. . . . . Cult. 1900  
*heterophyllus* . . . . . Naples 1812 . . . . . Int. 1817  
*pulverulentus* . . . . . Hort. Breiter. 1817, as *Helianthemum pulv.* . . . . . Cult. 1929  
*villosus tauricus* . . . . . Monza 1842. Cracow 1864, as *C. tauricus* . . . . . Cult. 1898  
*Cladrastis lutea* . . . . . Prague 1776, as *Sophora tinctoria* . . . . . Int. 1812  
*Clematis Buchaniana* . . . . . Rev. Hort. 1877: 40 - Cult. 1877 . . . . . Int. ?  
*florida Sieboldii* . . . . . Von Siebold Co. Catalog 1844 - Int., v. S. to Leiden,  
 1829 . . . . . Int. 1837  
*macropetala* . . . . . Monza 1842 . . . . . Int. 1910

<i>Clematis paniculata</i> .....	Int. by v. Sieb. to Leiden, 1830 .....	Int. 1864 ?
<i>reticulata</i> .....	Monza 1842 .....	Int. bef. 1884
<i>songarica</i> .....	Prague 1844. In France, 1853, as <i>C. Gebleri</i> .....	Int. bef. 1880
<i>stans</i> .....	Gartfl. 1870: 203 - From seeds, by Maxim. from Japan	-----
<i>virginiana</i> .....	Leiden 1719 .....	Int. 1720
<i>Clerodendron trichotomum</i> ..	Prince, Catalog 1822, as <i>Volkameria jap.</i> Petrograd, 1824 .....	Cult. 1880
<i>Clethra barbinervis</i> .....	Bull. F.S. 1865: 219 - Exhib. in Belgium, by v. Siebold, in 1864 .....	Int. 1870
<i>Colutea melenocalyx</i> .....	Jardin du Crest, Geneva, 1896 .....	Cult. 1905
<i>Cornus alba sibirica</i> .....	Monza 1813 .....	-----
<i>asperifolia</i> .....	Freibourg 1829 .....	Cult. 1836
<i>Bretschneideri</i> .....	Journ. Soc. Nat'l d'Horticult. France 1899: 1037 - Seeds int. into Paris in 1880 by Bretschneider ....	Cult. 1887
<i>mas variegata</i> .....	Monza 1813, as <i>C. mas fol. var.</i> .....	-----
<i>flava</i> .....	Monza 1813, as <i>C. mas fructu fl.</i> .....	-----
<i>sanguinea</i> .....	Soc. Gardeners - Cult., London, 1730 ( <i>Cornus</i> no. 2) .	Long cult.
<i>variegata</i> .....	Soc. Gardeners - Cult., London, 1730 .....	Orig. bef. 1770
<i>Coronilla glauca</i> .....	Amsterdam 1857, as <i>C. glauca</i> .....	-----
<i>Corylopsis spicata</i> .....	Leiden 1856. Von Siebold & Co. Catalog 1858 .....	Int. 1863
<i>Cotoneaster buxifolia</i> .....	Ann. de Flore et de Pomone 1833-34: 176 - Cult. since several years at the Jardin des Plantes .....	Int. 1919
<i>Lindleyi</i> .....	Cracow 1864 .....	Int. 1924
<i>racemiflora Royleana</i> .....	Illustr. Hort. 1853 - then cultivated .....	-----
<i>rotundifolia lanata</i> .....	Gartfl. 1858: 321, as <i>C. lanata</i> - Cult. in England ..	-----
<i>uniflora</i> .....	Vienna 1843 .....	Cult. 1907
<i>Crataegus Crus-galli pyra-</i>	-----	-----
<i>canthifolia</i> .....	Prince, Catalog 1831 .....	-----
<i>salicifolia</i> .....	Prince, Catalog 1831: 51, as <i>C. linearis</i> ; p. 52, as <i>C. salicifolia</i> .....	-----
<i>splendens</i> .....	Monza 1842 .....	-----

<i>Crataegus heterophylla</i> .....	Montpellier 1813 .....	Int. abt. 1816
<i>intricata</i> .....	Leiden 1686 .....	Cult. 1750
<i>Lambertiana</i> .....	Gartfl. 1864: 313, as <i>C. Lambertii</i> - then cultivated	Cult. 1871
<i>x Lavellei</i> .....	Cult. at Segreze since 1867 .....	Orig. bef. 1880
<i>macracantha</i> .....	Montpellier 1813, as <i>Mespilus glandulosa</i> .....	Int. abt. 1820
<i>monogyna pendula</i> .....	Bull. F.S. 1864: 264 - then cult. in Belgium .....	-----
<i>pentagyna</i> .....	Hort. Breiter. 1817 .....	Cult. 1836
<i>prunifolia</i> .....	Montreuil 1774, as <i>Mespilus pr.</i> .....	Cult. 1797
<i>punctata aurea</i> .....	Segreze 1858, as <i>C. p. xanthocarpa</i> .....	-----
<i>sanguinea</i> .....	Montpellier 1813, as <i>Mespilus s.</i> .....	Cult. 1822
<i>sorbifolia</i> .....	Monza 1813 (cites Hort. Noisett.) .....	Cult. 1877
<i>viridis</i> .....	Montreuil 1774, as <i>Mesp. viridis</i> . Prague 1776 .....	Cult. 1827
<i>Cryptomeria "japonica jap."</i>	Von Siebold & Co. Catalog 1848, as <i>C. japonica</i> .....	Int. 1861
<i>japonica nana</i> .....	Carrière, Traité Général Confif. 1867 - Int. bef. 1855	-----
<i>araucarioides</i> .....	Bull. F.S. 1864: 145 - then cultivated .....	-----
<i>Cupressus semp. horizont.</i>	Carrière, Traité Gén. des Confif. 1867 - Int. 1548 or before .....	-----
<i>semperv. stricta</i> .....	Vienna 1842 .....	Int. ?
<i>Cytisus diffusus</i> .....	Prague 1776, as <i>Genista humifusa</i> . Hort. Breiter. 1817	Int. ?
<i>procumbens</i> .....	Hort. Breiter. 1817, as <i>Genista pr.</i> .....	Int. 1755
<i>supinus</i> .....	Uppsala 1748 (C. no. 2) .....	Int. 1875
<i>Daphne Blagayana</i> .....	Vienna 1842 .....	-----
<i>collina neapolitana</i> .....	Prince, Catalog 1831, as <i>D. neapol.</i> .....	-----
<i>Mazereum alba</i> .....	Prince, Catalog 1822 .....	-----
<i>oleoides</i> .....	Prague 1776 .....	Int. 1815
<i>Decumaria barbata</i> .....	Prague 1776 .....	Int. 1785
<i>Deutzia parviflora</i> .....	Jardin du Crest, Geneva, 1896 : refers to Gartfl. 1862 t. 370 .....	Int. 1883
<i>purpurascens</i> .....	Jardin du Crest 1896 - Int. from seeds from Delavay to the Jardin des Plantes .....	Int. 1888
<i>scabra angustifolia</i> .....	Gartfl. 1856: 364 - Cult., Petrograd, as <i>D.cren.ang.</i>	-----

- Deutzia scabra candidissima* Rev. Hortic. 1872: 60 - Orig. by Otto, Froebel & Co. of Zurich, as "candidissima alba" -----  
*staminea* Brunon. .... Rev. Hortic. 1877: 302 - then cultivated ..... Cult. 1597  
*Diospyros Kaki costata* .... Leiden 1594 ..... Cult. 1889  
*Lotus* ..... Jardin des Plantes 1843, as D. pub. Padua 1857 ..... Cult. 1870  
*virginiana pubescens* .... Bretschneider I - Int. by Maximowicz from Japan, 1864 ..... Int. 1900  
*Distylum racemosum* ..... Illustr. Hortic. 1854 - Cult., Chiswick, as *E. serrata* .....  
*Ehretia thyrsoiflora* .....  
*Elaeagnus angustifolia*  
*spinoea* ..... Frague 1776 .....  
*multiflora* ..... Segreze 1861 - Acc. to Lavellee, int. by v. Siebold, 1850 ..... Int. 1862  
*pungens reflexa* ..... Journ. d'Horticult. Pratique 1845: 20 - Int. by von Siebold; cult. 1837. Jardin des Plantes 1843, as *E. reflexa* .....  
  
*Simonii* ..... Rev. Hortic. 1873: 19 - then cultivated .....  
*umbellata parvifolia* .... Vienna 1842, as *E. parvifolia* Royle ..... Cult. 1843  
*Elsholtzia fruticans* ..... Illustr. Hortic. 1854 - Cult., Chiswick, as *E. polystacha* ..... Int. abt. 1903?  
  
*Enkianthus quinqueflorus* .. Sertum Botanicum 1829 - Int. 1812 .....  
*Ephedra altissima* ..... Monza 1813 ..... Int. 1823  
*fragilis campylopoda* .... Gartfl. 1862: 21 - Cult., Berlin, 1861, as *E. c.* .... Cult. 1912  
*europaea* ..... Int. by von Siebold before 1856 ..... Int. abt. 1860  
*fimbriata* ..... Parkinson, Theatrum, 1640 - then cultivated ..... Long cult.  
*Fortunei radicans* ..... Flore des Serres 1851 - then cultivated ..... Cult. 1920  
*reticulata* ..... Int. by von Siebold, 1860-62 ..... Int. abt. 1865  
  
*picta* ..... Int. by von Siebold, 1860-62, as *E. radicans* var. japonica argenteo-var. .. Int. by von Siebold, 1830 .....  
*aureo-var.* ..... Int. by von Siebold, 1830 .....  
*macroptera* ..... Bretschneider I - Int. by Sargent into Arn.Arb., 1892 ..... Cult. 1906



<i>Eunymus nana</i> .....	Pavia 1803, as <i>E. linifolia</i> .....	Int. 1830
<i>Euscaphis japonica</i> .....	A. H. B. 1858 - then recently int. by von Siebold ...	Int. 1890
<i>Fagus grandifolia</i> .....	Montreuil 1774, as <i>F. ferruginea</i> .....	Int. abt. 1800
<i>sylvatica asplenifolia</i> ..	Hort. Breiter. 1817. Leiden 1818	-----
<i>cristata</i> .....	Monza 1813 (from Hort. Noisett.) .....	-----
<i>tricolor</i> .....	Bull. F.S. 1864: 267 - then cultivated .....	-----
<i>Forsythia suspensa</i> .....	Hort. Breiter. 1817, as <i>Syringa suspensa</i> .....	Int. 1724
<i>Fraxinus americana</i> .....	Leiden 1719 .....	Int. 1891
<i>chinensis</i> .....	Prince, Catalog 1823 .....	-----
<i>excelsior aurea</i> .....	Ghent 1802 .....	-----
<i>crispa</i> .....	Monza 1813 .....	-----
<i>diversifolia</i> .....	Montpellier 1813, as <i>F. monophylla</i> . Ghent 1817, as <i>F.</i> <i>simplicifolia</i> .....	-----
<i>nana Hayne</i> .....	Ghent 1817, as <i>F. nana Duhamel</i> .....	-----
<i>pendula</i> .....	Ghent 1802 .....	-----
<i>mandshurica</i> .....	Cracow 1864, as <i>F. mandshurica</i> Hort. Petrop. ....	Int. 1882
<i>pennsylvan. lanceolata</i> ..	Monza 1813. Montpellier 1813, as <i>F. viridis</i> .....	Int. 1824
<i>quadrangulata</i> .....	Monza 1813 .....	Int. 1823
<i>rotundifolia</i> .....	Soc. Gardeners - Cult., London, 1730 .....	Cult. 1750
<i>Gaultheria humifusa</i> .....	Cult., Edinburgh, from seed coll. 1827 by Drummond	Cult. 1830
<i>Genista anglica</i> .....	Montreuil 1774. Prague 1776 .....	Cult. 1789
<i>horrida</i> .....	Montpellier 1813 .....	Cult. 1821
<i>januensis</i> .....	Hort. Dinegro, Genoa 1802 .....	Cult. 1826
<i>ovata W. &amp; K.</i> .....	Montpellier 1813, as <i>G. ovata Willd.</i> .....	Cult. 1819
<i>pilosa</i> .....	Montreuil 1774. Prague 1776 .....	Cult. 1789
<i>sericea</i> .....	Hort. Breiter. ....	Int. 1923
<i>tinctoria</i> .....	Prague 1776 .....	Cult. 1789
<i>Gleditsia ferox</i> .....	Montpellier 1813 .....	Int. 1822
<i>Halimium Libanotis</i> .....	Prague 1776, as <i>Cistus L.</i> Hort. Breit. 1817, as <i>Hell-</i> <i>anthemum Libanoticum</i> .....	Cult. 1894
<i>Hedera colchica dentata</i> ...	Gartfl. 1863: 174 - Cult. in Petrograd 1863 .....	-----

- Hedera nepalensis* ..... Prince, Catalog 1831, as *H. helix fructu flavo* ? ..... Int. 1880  
*Helianthemum carum* ..... Pavia 1797, as *Cistus canus* ..... Int. 1823  
*nummularium roseum* ..... Naples 1812, as *H. roseum* .....  
*oelandicum* ..... Prague 1776, as *Cistus o.* ..... Cult. 1933  
*pilosum* ..... Prague 1776, as *Cistus p.* ..... Int. bef. 1600  
*Hibiscus syriacus* ..... Leiden 1592 .....  
*Holodiscus discolor ariae-*  
*folius* ..... Gartfl. 1853: 90, as *Spiraea a.* - Cult. 1853 .....  
*Hudsonia ericoides* ..... Prague 1776 ..... Int. 1805  
*Hydrangea involucrata* ..... Ann. Soc. Agricult. 1846 - Cult., Ghent, 1846 ..... Cult. 1864  
*macrophylla* Sm. .... Ghent 1802, as *H. hortensis* .....  
*coerulea* ..... Monza 1813, as *H. mutabilis fl. coerul.* ..... Cult. 1846  
*paniculata* ..... Int. by von Siebold into Leiden 1856 ..... Int. bef. 1864  
*scandens* ..... Catalog, Brioleit & Goiffon, 1880 ..... Cult. 1904  
*serrata* ..... Bull. F.S. 1865: 220 - Int. by von Siebold. Exhibited  
in Belgium, 1864, as *H. Thunbergii* ..... Cult. 1870  
*Hypericum cernuum* ..... Journal d'Horticult. Pratique de la Belgique I  
(1857): 2 - int. as *H. oblongifolium Choisy*. Int.  
by Thos. Lobb for Veitch. .... Int. abt. 1910  
*patulum uralum* ..... Gartfl. 1862: 21 - Cult. in Berlin, as *H. uralum* .....  
*Iberis Fruitii* ..... Monza 1842 .....  
*semperv. Garrexiana* ..... Naples 1812 ..... Cult. 1868  
*Ilex Aquifolium baccifl.* .. Soc. Gardeners - Cult., London, 1730 (*baccis luteis*) .....  
*Aquifolium ferox* ..... Naples 1812, as *I. ferox* .....  
*heterophylla* ..... Monza 1813, as *I. echinata* .....  
*crenata* ..... Illustr. Hort. 1858: 8 - Cult., Turnham Green, 1858 Int. 1864  
*integra* ..... Von Siebold & Co., Catalog 1844 ..... Int. 1864  
*latifolia* ..... Monza 1813, as *I. Cassine latifol.* Int. by v. Siebold  
into Leiden 1829 ..... Int. 1840  
*micrococca* ..... Bretschneider I: 553 - Int. by Fortune via Standish &  
Noble abt. 1860 ..... Cult. 1934

Ilex Ferado .....	Cartfl. 1854: 312 - Int. from Madeira, 1760 .....	-----
Ferado platyphylla .....	Montpellier 1813 .....	-----
rotunda .....	Chent 1802 .....	Int. abt. 1850
serrata .....	Von Siebold & Co. Catalog 1845 .....	Int. 1866
Jasminum floridum .....	Int. by von Siebold into Ghent 1830 .....	Int. 1850
humile glabrum .....	Vienna 1842. Monza 1844, as <i>J. Wallichianum</i> .....	-----
officinale affine .....	Illustr. Hortie. 1854 - Cult. at Chiswick 1853 .....	-----
grandiflorum .....	Horticulteur Français 1852: 51 - Int. into Europe 1613 .....	-----
Juniperus chinensis aurea .	Int. by Young's Nursery, Surrey, England, 1872 .....	-----
chinensis mas .....	See <i>J. sphaerica</i> Lindl. sensu van Melle	-----
Pfitzeriana .....	See <i>x J. media Pfitzeriana</i> van Melle	-----
pyramidalis Beissn. ...	See <i>J. Sheppardii pyramidalis</i> van Melle	-----
communis suecica .....	Montreuil 1774 .....	-----
excelsa stricta .....	See <i>J. Sheppardii pyramidalis</i> van Melle	-----
horizontalis .....	Chent 1817, as <i>J. prostrata</i> Don .....	Int. 1836
(*) <i>x media Pfitzeriana</i> van Melle .....	Van Melle - "Review of <i>J. chinensis</i> " 1947: 82 - Prob- ably int. into France in the 1860's by Armand David. Exhibited in Antwerp, 1875, as <i>J. japonica</i> pendula .....	-----
(*) Sheppardii van Melle	Int. by Fortune abt. 1850 via Standish & Noble. Cult. in England in 1858 as <i>J. sphaerica glauca</i> Fortune (Gordon Pinetum, 1858: 120) .....	Not listed
(*) Sheppardii pyramid- alis van Melle .....	Von Siebold & Co. Catalogs 1844, as <i>J. japonica</i> and as <i>J. chinensis</i> var. <i>japonica</i> . - Int. by v. Sieb., 1843. Cultivated in England in 1875 as <i>J. excelsa</i> <i>stricta</i> Rolleson .....	-----
(*) <i>sphaerica</i> Lindl. ....	Van Melle - "Review of <i>J. chinensis</i> " 1947: 41, 42 - Int. through seeds, sent by Fortune to Standish &	-----

Juniperus sphaerica Ket- eleeri van Melle .....	Noble abt. 1845. First grown in England as <i>J. chinensis</i> mascula and <i>J. c. mas</i> .....	-----
Keessen Nursery Catalog, Aalsmeer 1906, as <i>J. Ketel- eeri</i> .....	Keessen Nursery Catalog, Aalsmeer 1906, as <i>J. Ketel- eeri</i> .....	Not listed
Kadsura japonica .....	Int. by von Siebold into Leiden 1829 .....	Int. 1846
Kerria japonica .....	Freibourg 1829. Von Siebold, from Japan to Ghent, 1830 .....	Int. 1834
japonica pleniflora .....	Von Siebold & Co. Catalog 1844 - Int. 1700 .....	Int. 1805
Kochia prostrata .....	Prague 1844 .....	-----
Laburnum anagyr. quercifol. ....	Munich 1829, as <i>Cytisus</i> <i>Lab. quercifolium</i> .....	Orig. bef. 1838
Larix sibirica .....	Montreuil 1774 .....	Int. 1806
Lespedeza japonica .....	Thibaut & Keteleer 1870-71, as <i>Desmodium</i> <i>jav.</i> .....	-----
Ligustrum indicum .....	Venice 1847, as <i>L. Wallichianum</i> .....	Cult. 1933
japonicum .....	Int. by von Siebold into Leiden 1829. Freiburg 1829 .....	Int. 1845
obtusifolium .....	Int. by von Siebold 1843 .....	Int. abt. 1860
ovalifolium .....	Int. by von Siebold, from Buitenzorg, Java, 1834 .....	Cult. 1847
variegatum .....	Rev. Hort. 1862: 330 - Orig. at Paris Museum 1861, as <i>L. ovalifol. aureum</i> .....	-----
vulgare argenteo-var. ....	Soc. Gardeners - Cult., London, 1730 .....	-----
aureo-var. ....	Soc. Gardeners - Cult., London, 1730 .....	-----
Lindera umbellata .....	Int. by von Siebold into Ghent 1830, as <i>Sassafras</i> Thunbergii .....	Int. 1892
umbell. hypoglauca .....	Bretschneider I: 609 - Living material, by Maximowicz from Japan 1864 .....	Cult. 1880
Liriodendron tulip. integ- rifolia .....	Monza 1813, as <i>fol. integris</i> .....	-----
Loiseleuria procumbens ....	Montreuil 1774. Frague 1776, as <i>Azalea procumbens</i> ..	Cult. 1800
Ionocera alpigena nana ....	Leiden 1737 .....	-----
biflora .....	Prince, Catalog 1831, as <i>Xylosteum bifl.</i> .....	Cult. 1889
coerulea .....	Soc. Gardeners - Cult., London, 1730, as <i>Chamaeceras-</i>	-----



us mont. fruct. sing. coeruleis. Montreuil 1774 ...	Long cult.
Botanisch. Literaturblatt. und Annalen der Gewachskunde, Regensburg 1830: 519 - Int. by Ledebour abt. 1830, as L. Pallasi	-----
Prince, Catalog 1823, as Caprifolium pubescens	Int. abt. 1825
Prague 1844	Int. 1878
Monza 1842. Cracow 1864	Not int.
Hort. Dinagro, Genua 1802, as L. quercifolia	-----
Hort. Dinagro, Genua 1802	-----
Gartfl. 1853: 3, as var. flava - then cultivated	-----
Gartfl. 1853: 3 - then cultivated	-----
Cracow 1864	Int. ?
Gartfl. 1860: 58 - then cultivated	Cult. 1885
Soc. Gardeners - Cult., London, 1730, as Chamaecerasus dumetorum	Long cult.
Prague 1776	-----
Leiden 1740	Long cult.
Hering - Manuel des Plantes I: 44 - Orig. by Cels, 1831	-----
Gartfl. 1856: 223 - Orig. by J. Rinz, Frankfurt, as M. Yulan var. grandis, before 1854	-----
Von Siebold & Co. Catalog 1844 - Int. 1804	Int. 1865
Gartfl. 1856: 86 - Orig. at Vicenza before 1852. Int. in Germany by A. Topf of Erfurt, 1852	-----
Int. 1760. Freibourg 1829	Int. 1865
Petrograd 1824	Cult. 1825
Sertum Botanicum 1831 - Orig. bef. 1830. Hering - Manuel des Plantes I - Orig. by Cachet, at Angers	-----
Cult. 1836	-----
Rev. Hortic. 1854 - Disc'd 1850. Gartfl. 1855: 98 - Orig. by Auguste Napoleon Baumann	Orig. bef. 1854
Lonicera coerulea altaica	-----
hirauta	-----
hispida	-----
orientalis Lam.	-----
Fericylmenum quercina	-----
serotina	-----
sempervirens sulfurea	-----
superba	-----
villosa	-----
Webbiana	-----
Xylosteum	-----
Lycium chilense	-----
halimifolium	-----
Magnolia Alexandrina	-----
grandis	-----
kobus	-----
Lennei	-----
obovata	-----
pyramidata	-----
speciosa	-----
spectabilis	-----
Mahoberberis Neubertii	-----

Mahonia Aquifolium .....	Prince, Catalog 1822, as Berberis A., "Mr. Lewis' Mountain Holly" .....	Int. 1823
gracilis .....	Monza 1845 .....	Cult. 1900 ?
japonica .....	Illustr. Hortic. 1854 - Cult. at Chiswick 1853 .....	-----
napeulensis .....	Monza 1844, as Berberis nep. Spreng. ....	Cult. 1850
repens rotundifolia .....	Rev. Hortic. 1881: 250, as M. Aquifol. rotundifolia - then cultivated .....	-----
Malus baccata .....	Prague 1776 .....	Int. 1784
floribunda .....	Int. by von Siebold into Leiden before 1856 .....	Int. 1862
glabrata Rehd. ....	Monza 1842, as Pyrus glabrata Hort. Vindabon. ....	Int. 1912
micromelus .....	Von Siebold & Co. Catalog 1845, as Pyrus spectabilis var. japonica Kaido ? .....	Int. abt. 1856
spectabilis albi-plena ..	Monza 1813, as Pyrus spect. fl. plenis pallidis .....	-----
sylvestris .....	Montreuil 1774. Monza 1814, as Pyrus Malus var. sylv. (**)	-----
(**) Sieboldii .....	Von Siebold & Co. Catalog 1845, as Sorbus Toringo ..	Int. 1856
Mammillaria vivipara .....	Prague 1844 .....	Int. 1913
Menispermum dauricum .....	Gartfl. 1862: 18 - Cult., Petrograd 1862 .....	Int. 1883
Morus alba macrophylla .....	Von Siebold & Co. Catalog 1845, as M. Tokwa var. macrophylla .....	-----
alba pendula .....	Int. by Teas, 1888 .....	-----
multicaulis .....	Thos. Hogg Catalogue 1834, as M. multicaulis .....	-----
Myrica Gale .....	Soc. Gardeners, as Rhus myrtifolia Belgica - Cult. 1730 .....	-----
Nitraria Schoberi .....	Prague 1776 .....	Cult. 1750
Orixa japonica .....	Gartfl. 1855: 36 - Survived the winter in England, 1855 .....	Cult. 1870
Osmanthus Fortunei .....	Von Siebold & Co. Catalog 1844, as O. japonica .....	Cult. 1856
Pachysandra term. variegata	Gartfl. 1863: 192 - then cultivated .....	Int. 1856
Paederia scandens .....	Prague 1776. Prince, Catalog 1830, as P. foetida .....	Int. 1907
Faenicia suffr. papaveracea	Von Siebold & Co. Catalog 1844 - Int. 1789 .....	Int. 1806
Parthenocissus tricuspid.		-----

Veitchii .....	Jardin du Crest 1896 - Int. 1868 .....	-----
Penstemon fruticosus .....	Prague 1844, as <i>P. fruticosus</i> Booth .....	Cult. 1924
Philsadelphus cor. pumilus .	Freibourg 1829, as var. <i>nanus</i> .....	-----
laxus .....	Monza 1813 .....	Cult. 1825
mexicanus .....	Journ. Soc. Nat'l d'Horticult. de France 1899: 796 - Int. by Hartweg into R. H. S. Gdn. in 1835 .....	Cult. 1842 Cult. 1888 Int. bef. 1860
nepalensis .....	Prince, Catalog 1830 .....	-----
satsumanus .....	Von Siebold & Co. Catalog 1845 .....	-----
Phylliria latifol. spinosa	Prince, Catalog 1820 .....	-----
Photinia glabra .....	Illustr. Hortie. 1854 - Cult. at Chiswick 1853 .....	Cult. 1903 ?
Phyllodoce coerulea .....	Montreuil 1774. Prague 1776, as <i>Andromeda coerulea</i> .	Cult. 1800
Physocarpus Opulus luteus .	Prince, Catalog 1831, as <i>Spiraea Opulus lutea</i> .....	Orig. bef. 1864
Picea Abies Clanbrasil. . . .	Monza 1842, as <i>Picea exc. Cl. Amsterdam</i> 1857, as Pinus <i>Ficea Cl.</i> .....	-----
Abies elegans .....	Gartfl. 1857: 334 - then cultivated .....	-----
monstrosa .....	Gartfl. 1857: 334 - then cultivated .....	-----
nana .....	Amsterdam 1857, as Pinus <i>Picea nana</i> .....	-----
nigra .....	Monza 1842, as <i>Picea excelsa nigra</i> .....	-----
pendula .....	Monza 1842, as <i>Picea excelsa pendula</i> .....	-----
pygmaea .....	Monza 1842, as <i>Picea exc. pygmaea</i> .....	-----
viminialis .....	Vienna 1842, as Pinus <i>Abies viminialis</i> .....	-----
jezoensis .....	Gartfl. 1852: 320 - Illustr. in Flore des Serres 1851. Int. by Standish & Noble before 1852 .....	Int. 1878 Int. 1837
orientalis .....	Montreuil 1774 .....	-----
pungens .....	Gartfl. 1855: 35 - Cult. in England as <i>Abies Menz-</i> <i>iesii</i> .....	Int. 1862
Pinus cembroides Parryana .	Journ. Soc. Nat'l d'Horticult. France 1855: 84 - Listed among novelties of 1854, as <i>P. Parryana</i> ....	Int. abt. 1885
halepensis brutia .....	Vienna 1842, as <i>P. brutia Tenore</i> .....	-----
Mugo rostrata .....	Vienna 1842. Amsterdam 1857, as <i>P. uncinata Ramond</i> .	-----
rotundata .....	Vienna 1842. Monza 1844, as <i>P. obliqua</i> .....	-----

- Pinus nigra caramanica* .... Vienna 1842, as *P. Pallasiana* .....  
*Peuce* ..... Illustr. Hortic. 1854 - Cult. at Chiswick 1853 ..... Int. 1863  
*tabulaeformis* ..... Illustr. Hortic. 1854 - Cult. at Kew 1853, as *P. sinensis* ..... Int. 1862  
  
*Platanus acerifol.* *cantabricigenis* ..... Bull. Soc. Dendrologique de France, Aug. 15, 1920: 44 - known in England before 1731 .....  
*acerifol.* *pyramidalis* ... Bull. Soc. Dendrologique de France, Aug. 15, 1920: 44 - Orig. 1850 .....  
*occidentalis* ..... Bull. Soc. Dendrologique de France, Aug. 15, 1920: 44 - Int. into England by Tradescant in 1636 ..... Int. 1640  
*orientalis cuneata* ..... Munich 1829, as *P. cuneatus* Willd. ....  
*Podocarpus macroph.* *Maki* .. Int. by v. Sieb. into Ghent, 1830, as *P. chinensis* Sw. Int. 1840  
*Polygonum multiflorum* .... Petrograd 1824 ? Von Sieb. & Co. Catalog 1845 ..... Int. 1881  
*Foncirus trifoliata* ..... Prince, Catalog 1823, as *Citrus trifoliata* ..... Int. abt. 1850  
*Populus euphratica* ..... Gartfl. 1858: 170 - Wagner nursery Catalog, Riga, as *P. diversifolia* Schrenck (from Soongaria) ..... Cult. 1920  
*nigra italica* ..... Rev. Hortic. 1867: 305 - From Italy into France, 1745 Orig. bef. 1750  
*laurifolia* *Lindleyana* ... Prague 1844, as *P. Lindleyana* Hort. .... Orig. bef. 1867  
*suaveolens* *Fisch.* ..... Petrograd 1824 ..... Int. 1834  
*tremula pendula* ..... Gartfl. 1862: 16 - then cult. in Petrograd .....  
*Poterium spinosum* ..... Uppsala 1748, as *P. Sanguisorba*. Strasbourg 1807 .... Cult. 1905  
*Prunus Amygdalus amara* .... Uppsala 1748, as *Amygdalus* var. *amara* .....  
*Amygdalus dulcis* ..... Monza 1813, as *Amygdalus communis dulcis* .....  
*fragilis* ..... Monza 1842, as *Amygdalus communis fragilis* .....  
*angustifolia* ..... Munich 1829, as *Cerasus chिकासа Mohx.* ..... Int. 1874 ?  
*glandulosa albo-plena* ... Curtis Botanical Magazine t. 2176, as *Amyg. pumilus*, int. by Fortune, 1846 ..... Int. abt. 1855?  
*Mahaleb xanthocarpa* ..... Naples 1819, as *Prunus M. fructu flava* .....  
*maritima* ..... Hort. Breiter. 1817 ..... Int. 1818  
*microcarpa* ..... Monza 1842 ..... Int. 1890



- Prunus Mume albo-plena* .... Von Siebold & Co. Catalog 1848 .....  
*napaulensis* ..... Illustr. Hortic. 1854 - Cult. at Chiswick, as *P. nepal.* .... Int. 1881  
*pedunculata* ..... Prague 1844, as *Amygdalus p. Pallas* ..... Int. bef. 1860  
*Persica versicolor* ..... Illustr. Gartenzeitung 1861 - Int. by von Siebold ..  
*pumila depressa* ..... Prince, Catalog 1822, as *P. depressa* ..... Cult. 1864  
*Reverchonii* ..... Hort. Breiter. 1817, as *P. pygmaea Willd.* ..... Int. 1916  
*serrotina salicifolia* ... Montreuil 1774, as *Cerasus serrotina* ..... Int. 1820  
*serrulata Amanogawa* .... Paul Russell - The Orient. Flwg. Cherries: 27 - Int. by David Fairchild 1906 .....  
 Fugenzo (James H. Veitch) ..... Russell - Orient. Flwg. Cherries: 46 - Int. by Veitch, 1892 .....  
*Lannesiana* ..... Rev. Hortic. 1866: 370 - then cult. as *Cerasus Lann.* Int. bef. 1870  
*Ukon* ..... Von Siebold & Co. Catalog 1867, as *Cerasus (Pr.) pseudocerasus fl. pl. virentibus?* .....  
*sibirica* ..... Prague 1776 ..... Int. abt. 1800  
*subhirtella autumnalis* .. Russell - Orient. Flwg. Cherries: 13 (*Jugatsu-Zakura*) - Int. into England abt. 1906 ..... Int. bef. 1909  
*pendula* ..... Ellwanger & Barry Catalog 1846-47, as *Cerasus pendula tenella campestris* ..... Int. 1862  
*tomentosa* ..... Monza 1842, as *Amygdalus nanus camp.* ..... Cult. 1870  
*triloba (single-flwd.)* .. Von Siebold - "Sur l'Etat" - Int. by him bef. 1863 .. Int. 1884  
*Pseudosasa japonica* ..... Rev. Hortic. 1871: 388 - then cultivated ..... Int. 1850  
*Pterostyrax hispida* ..... Von Siebold & Co. Catalog 1845, as *Bambusa metake* .. L'Horticulteur Français 1870-71: 329 - Newly int. by Thibaut & Keteleer ..... Int. 1875  
*Punica Granatum flavescens* Prince, Catalog 1820 .....  
*Granatum nana* ..... Montreuil 1774. Ghent 1817, as *P. nana* .....  
*pleniflora* ..... Prince, Catalog 1820 .....  
*Pyrus nivalis* ..... Prague 1776 ..... Cult. 1800  
*Pashia* ..... Illustr. Hortic. 1854 - Cult., Chiswick, as *P. vario-*

Quercus Delachampii .....	losa .....	Int. 1908
Frainetto .....	Monza 1844 .....	Cult. 1900
Glandulifera .....	Naples 1819 .....	Cult. 1838
Hartwissiana .....	Von Siebold & Co. Catalog 1844, as <i>Q. stellata</i> Thunb. Amsterdam 1857 .....	Cult. 1877
heterophylla .....	Gartfl. 1856: 61 - Fruiting in Nikita Gdn., Crimea 1856 .....	Cult. 1857
x hispanica dentata .....	Monza 1813 .....	Cult. 1822
h. diversifolia .....	Vienna 1842, as <i>Q. Cerris fulhamensis</i> .....	-----
iberica Bieb. ....	Journ. Soc. Nat'l d'Horticult. de France 1856: 372, as <i>Q. Ilex diversifolia</i> - then cultivated .....	-----
Ilex Fordii .....	Gartfl. 1862: 16 - Cult.; Petrograd, as <i>Q. i. Steven</i> Journ. Soc. Nat'l d'Horticult. de France 1856: 372, as <i>Q. Fordii</i> - then cultivated .....	Cult. 1890
gramuntia .....	Montreuil 1774, as <i>Q. gramuntia</i> .....	-----
rotundifolia .....	Montpellier 1813 .....	-----
infectoria .....	Hort. Breiter. 1817 .....	Int. 1850
laevis .....	Monza 1813 .....	Int. abt. 1834
macranthera .....	Gartfl. 1862: 18 - then cult. in Petrograd .....	Int. bef. 1873
mongolica Turcz. ....	Monza 1844, as <i>Q. mongolica</i> Booth .....	Int. 1879
Muehlenbergii .....	Hort. Breiter. 1817, as <i>Q. castanifolia</i> .....	Int. 1822
petraea laciniata .....	Jardin des Plantes 1843 .....	-----
mespilifolia .....	Jardin des Plantes 1843 .....	-----
purpurea .....	Monza 1842 .....	-----
pyrenaica .....	Montpellier 1813, as <i>Q. Toza</i> Bosc .....	Int. 1822
reticulata .....	Journ. d'Horticulture Pratique 1846: 16 - Cult., Orleans 1832 .....	Cult. 1883
robur fastigiata .....	Monza 1813. Montpellier 1813 .....	-----
filicifolia .....	Gartfl. 1862: 18 - then cult. in Petrograd .....	-----
pectinata .....	Journ. Soc. Nat'l d'Horticult. France 1856: 372 - then cultivated .....	-----

<i>Quercus robur variegata</i> ...	Monza 1813, as <i>Q. robur</i> fol. var. ....	Int. 1819
<i>stellata</i> .....	Monza 1813 .....	Int. 1819
<i>undulata</i> .....	Journ. Soc. Nat'l d'Horticult. de France 1856: 372 - then cultivated .....	Int. 1917
<i>Rhamnus Alaternus angustif.</i>	Soc. Gardeners - Cult., London, 1730 .....	
<i>Alaternus integrifolia</i> ..	Montpelier 1813, as <i>R. integrifolia</i> .....	
<i>californica</i> .....	Illustr. Hortic. 1854 - Cult., Chiswick, 1853 .....	Cult. 1871
<i>Frangula</i> .....	Montreuil 1774 .....	Long cult.
<i>latifolia</i> .....	Montreuil 1774 .....	Cult. 1860
<i>libanotica</i> .....	Rev. Hortic. 1880: 80 - Int. via Petrograd .....	Cult. 1905
<i>Pallasii Fisch. &amp; Meyer</i> .	Vienna 1843. Monza 1844 .....	Cult. 1890
<i>spathulosefolia</i> .....	Vienna 1843. Monza 1844 .....	Cult. 1870
<i>Rhododendron carolinianum</i> .	Monza 1814, as <i>R. punctatum</i> Vent. ....	Cult. 1815
<i>dauricum</i> .....	Montreuil 1774. Prague 1776 .....	Cult. 1780
<i>halense</i> .....	Cracow 1864, as <i>R. intermedia</i> Tausch .....	Cult. 1870
<i>lapponicum</i> .....	Prague 1776, as <i>Azalea lapponica</i> .....	Int. 1825
<i>linearifolium</i> .....	Bretschn. I: 607 - Int. by Maximow. from Japan, 1864	Int. bef. 1867
<i>luteum</i> .....	Prague 1776, as <i>Azalea pontica</i> .....	Int. 1792
<i>Metternichii</i> .....	Int. by von Siebold bef. 1863 .....	Int. ?
<i>obtusum</i> .....	Prince, Catalog 1830 .....	Int. abt. 1844
<i>reticulatum</i> .....	Bretschneider I: 607 - Int. by Maximowicz from Japan, as <i>R. rhombicum</i> , 1864 .....	Int. 1865
<i>scabrum</i> .....	Bretschneider, as cited - Int. by Maximowicz from Japan, as <i>R. subanceolatum</i> , 1864 .....	Cult. 1911
<i>Walllichii</i> .....	Gartfl. 1855: 36 - Survived the winter in England, 1855 .....	Cult. 1856
<i>Rhodothamnus Chamaecistus</i> .	Montreuil 1774. Prague 1776 .....	Int. abt. 1790
<i>Rhodotypos scandens</i> .....	"Hortus Academicus" - Int. by von Siebold into Leiden before 1860 .....	Int. 1866
<i>Rhus chinensis</i> .....	Cox: 42 - Cult. at Chelsea, 1710 .....	Cult. 1784
<i>coriaria</i> .....	Leiden 1594 .....	Cult. 1648

Rhus succedana	Prague 1776. Int. by v. Sieb. into Ghent 1830	.....	Cult. 1863
Toxicodendron	Leiden 1685. Uppsala 1748	.....	Cult. 1937
typhina	Leiden 1628	.....	Cult. 1629
vernicipia	Int. by von Siebold into Leiden 1829	.....	Cult. 1874
Ribes aciculare	Monza 1842	.....	Cult. 1903
Dikuscha	Prague 1844	.....	Int. bef. 1911
fasciculata	Rev. Hortio. 1877: 436 - Cult. as R. japonica	.....	Cult. 1844
Grossularia uva-crispa	Soc. Gardeners - Cult., London, 1730	.....	-----
Houghtonianum pallidum	Amsterdam 1857, as R. pallidum	.....	-----
multiflorum	Hort. Breiter. 1817	.....	Int. abt. 1818
rotundifolium	Hort. Berol. 1806, as R. triflorum	.....	Cult. 1809
stenocarpum	Jardin du Crest, Geneva, 1896	.....	Cult. 1903
Robinia neo-mexicana	Jardin du Crest, Geneva, 1896 - Int. into the Arnold Arboretum 1892	.....	Int. 1921
Pseudoacacia	Int. into France through seeds, by Jean Robin, 1601	.....	Int. abt. 1635
Decaisneana	Hovey's Magazine 1862: 117 - Orig. by Villeneuve, at Manosque, 1862	.....	Cult. bef. 1860
x Rosa alba "Maiden's Blush"	Orig. at Kew, 1807. Not listed in the MANUAL	.....	
alba "Mme. Plantier"	Orig. by Plantier, 1835. Not listed in the MANUAL	.....	
Rosa agrestis	Montpelier 1813, as R. sepium Thuill.	.....	Cult. 1878
Banksiae lutescens	Von Siebold & Co. Catalog 1844 - Int. 1824	.....	Int. abt. 1870
normalis	Von Siebold & Co. Catalog 1844, as R. Banksiae - Int. 1807	.....	Cult. 1877
borbonia	Monza 1814	.....	Orig. bef. 1819
canina	Uppsala 1748. Montreuil 1774	.....	-----
carolina	Montreuil 1774. Prague 1776	.....	Int. 1826
villosa	Prague 1844, as R. Lyonii Pursh	.....	Cult. 1877
centifolia parvifolia	Freibourg 1829, as R. burgundica ?	.....	-----
chinensis minima	Von Siebold & Co. Catalog 1844 - as R. Lawrenceana, int. 1810	.....	-----



<i>Rosa chinensis mutabilis</i> ..	Hort. Breiter. 1817, as <i>R. mutabilis</i> ? .....	Cult. 1934
<i>chinensis semperflorens</i> .	Freibourg 1829, as <i>R. indica semperfl.</i> .....	
<i>davurica</i> .....	Frague 1844 .....	Int. 1910
<i>Eglantaria</i> .....	Uppsala 1748, Montreuil 1774 .....	
<i>gallica officinalis</i> .....	Naples 1812, as <i>R. provincialis</i> .....	
<i>versicolor</i> .....	Monza 1814. Hort. Breiter. 1817 .....	
<i>inodora</i> .....	Hort. Breiter. 1817, as <i>R. caryophyllacea</i> .....	Cult. 1875
<i>Iwara</i> .....	Von Siebold & Co. Catalog 1844 - Int. 1832 .....	
<i>Manetti</i> .....	Rev. Hortic. 1883: 143 - Orig. 1832; from Monza into England in 1840 .....	
<i>marginata</i> .....	Frague 1844, as <i>R. Jundzillii</i> .....	Cult. 1870
<i>montana</i> .....	Hort. Breiter. 1817. Naples 1819 .....	Cult. 1872
<i>multiflora</i> .....	Von Siebold & Co. Catalog 1844 - Int. 1804. Monza 1814. Freibourg 1829 .....	Int. bef. 1868
<i>nitida</i> .....	Leiden 1649 .....	Cult. 1807
<i>pendulina</i> .....	Montreuil 1774, Prague 1776 .....	Cult. 1789
<i>reversa</i> .....	Hort. Breiter. 1817. ....	Cult. 1820
<i>Roxburghii</i> .....	Freibourg 1829. Prince, Catalog 1830 .....	
<i>rubrifolia</i> .....	Strasbourg 1807. Monza 1813. Montpelier 1813 .....	Int. 1814
<i>sempervirens</i> .....	Montreuil 1774. Prague 1776 .....	
<i>prostrata</i> .....	Montpelier 1813, as <i>R. prostrata</i> .....	
<i>scandens</i> .....	Naples 1812, as <i>R. scandens</i> .....	
<i>spinosa. pimpinellifolia</i>	Prague 1776. Ghent 1802. Hort. Dingro, Genoa 1802 ..	
<i>stylosa</i> .....	Montpelier 1813 .....	Cult. 1838
<i>virginiana</i> .....	Montreuil 1774 .....	Int. bef. 1807
<i>Woodsii</i> .....	Monza 1842 .....	Cult. 1880
<i>Rubus ccesius</i> .....	Ghent 1802 .....	
<i>Chamaemorus</i> .....	Prague 1776 .....	Int. 1789
<i>crataegifolius</i> .....	Bretschneider I: 605 - Int. from Japan, through seed, by Maximowicz, 1863 .....	
<i>fruticosus</i> .....	Ghent 1802 .....	Int. 1875

<i>Rubus hispidus</i> .....	Prague 1776 .....	-----
<i>idaeus</i> .....	Uppsala 1748, Ghent 1802 .....	-----
<i>nemorosus</i> .....	Hort. Breiter. 1817, as <i>R. nemorosus</i> Willd. ....	Cult. 1925
<i>mutans</i> .....	Journ. d'Horticult. Pratique de la Belg. II (1858) - cult. in England 1858 .....	Cult. 1860 Int. 1818
<i>parvifolius</i> .....	Prague 1776 .....	-----
<i>plicatifolius</i> .....	Gartfl. 1862: 18 - Cult. in Petrograd as <i>R. villosus</i> Ait. ....	-----
<i>trivialis</i> .....	Hort. Breiter. 1817 .....	Cult. 1825
<i>ulmifolius</i> .....	Munich 1829 .....	-----
<i>velox</i> .....	Petrograd 1862 .....	-----
<i>Ruscus aculeatus</i> .....	Uppsala 1748, (Ruscus no. 1) .....	Cult. bef. 1750
<i>aculeatus angustifolius</i> .	Apothecaries' Garden, Paris 1769, as <i>R. angustifolius</i>	-----
<i>latifolius</i> .....	Apothecaries' Garden, Paris 1769, as <i>R. latifolius</i> .	-----
<i>Sagaretia theezans</i> .....	Prague 1776, as <i>Rhamnus theezans</i> . Brought by von Siebold into Leiden, 1829. Prince, Catalog 1830 ...	Int. 1908 Int. abt. 1800
<i>Salicornia fruticosa</i> .....	Prague 1776 .....	Cult. ?
<i>perennis</i> .....	Strasbourg 1807, as <i>S. herbacea</i> .....	-----
<i>Salix alba vitellina</i> .....	Montreuil 1774, Ghent 1802, as <i>S. vitellina</i> .....	-----
<i>ambigua</i> .....	Hort. Breiter. 1817 .....	Cult. 1872
<i>aurita</i> .....	Montreuil 1774, Prague 1776 .....	Long cult.
<i>Bebbiana</i> .....	Prince, Catalog 1831, as <i>S. rostrata</i> ? .....	Int. 1889
<i>caesia</i> .....	Amsterdam 1857 .....	Cult. 1871
<i>cinerea</i> .....	Montreuil 1774, Prague 1776 .....	Long cult.
<i>daphnoides</i> .....	Strasbourg 1807, Ghent 1817 .....	Cult. 1829
<i>dasyclados</i> .....	Hort. Breiter. 1817, as <i>S. acuminata</i> Sm. ....	Cult. 1829
<i>formosa</i> .....	Montreuil 1774 .....	Cult. ?
<i>fragilis</i> .....	Montreuil 1774, Prague 1776 .....	Long cult.
<i>glabra</i> .....	Vienna 1842 .....	Cult. 1870
<i>glauca</i> .....	Montreuil 1774, Prague 1776 .....	Cult. 1813
<i>grandifolia</i> Ser. ....	Munich 1829, Cracow 1864 .....	Cult. 1871

<i>Salix hastata</i> .....	Montreuil 1774. Prague 1776 .....	Int. 1780
<i>helvetica</i> .....	Hort. Breiter. 1817 .....	Cult. 1872
<i>herbacea</i> .....	Prague 1776 .....	Cult. 1789
<i>hippohaifolia</i> .....	Ghent 1817 .....	-----
<i>holosericea</i> .....	Monza 1813. Ghent 1817 .....	Cult. 1829
<i>japonica</i> Thunb. ....	Int. by von Siebold 1841 .....	Cult. 1874
<i>lanata</i> .....	Montreuil 1774. Prague 1776 .....	Cult. 1789
<i>lepponium</i> .....	Prague 1776 .....	Cult. 1789
<i>livida</i> .....	Ghent 1817, as <i>S. Starkeana</i> ? Freibg. 1829, as <i>S. depressa</i> .....	Cult. 1872
<i>lucida</i> .....	Prince, Catalog 1822 .....	Cult. 1830
<i>Myrsinites</i> .....	Montreuil 1774. Prague 1776 .....	Cult. 1789
<i>pedicellaris</i> Pursh .....	Jardin des Plantes 1843, as <i>S. pedicellata</i> P. L., Am. sept. ....	Int. 1911
<i>phyllicifolia</i> .....	Prague 1776 .....	Cult. 1809
<i>purpurea</i> Lambertiana .....	Prince, Catalog 1831 .....	-----
<i>pendula</i> .....	Gartfl. 1862: 18 - Cult. in Petrograd as <i>S. americana</i> pendula and <i>S. purpurea pendula</i> .....	Long cult.
<i>repens</i> .....	Montreuil 1774. Prague 1776 .....	Cult. 1789
<i>reticulata</i> .....	Prague 1776 .....	-----
<i>rubens palustris</i> .....	Monza 1813, as <i>S. Russelliana</i> .....	Cult. 1872
<i>Seringeana</i> .....	Strasbourg 1807. Munich 1829. Amsterdam 1857 .....	Cult. 1898
<i>serpyllifolia</i> .....	Prague 1776. Ghent 1817, as <i>S. serpyllifolia</i> Willd. .	Cult. 1876
<i>silesiaca</i> Willd. ....	Vienna 1842 .....	-----
<i>undulata</i> .....	Monza 1813 .....	-----
<i>Sambucus nigra laciniata</i> ..	Uppsala 1748 ( <i>Sambucus</i> no. 1, var. b) .....	-----
<i>racemosa laciniata</i> .....	Amsterdam 1857 .....	-----
<i>Santolina neapolitana</i> .....	Naples 1812 .....	Cult. 1930
<i>Sapindus Mukorossi</i> .....	Int. by von Siebold 1830 .....	Cult. 1877
<i>Sapium sebiferum</i> .....	Cox : 42 - Cult. at Chelsea, 1705. Prince, Catalog 1823, as <i>Stillingia</i> s. Von Siebold & Co., Catalog	-----

1845, as <i>Stillingia</i> s. . . . .	Cult. 1850
Schisandra coccinea . . . . .	-----
Hort. Breiter. 1817. Prince, Catalog 1823 . . . . .	-----
Smilax aspera mauretanica . . . . .	-----
Naples 1812, as <i>S. mauretanica</i> . . . . .	-----
China . . . . .	-----
Int. by von Siebold 1829 . . . . .	Int. 1759 and
	again 1907 ?
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Solanum Dulcam. indivisum . . . . .	-----
Cartfl. 1862: 18 - Cult. in Petrograd as <i>S. persaicum</i> , 1862 . . . . .	-----
Sophora japonica pendula . . . . .	-----
France, Catalog 1831 . . . . .	-----
japonica pubescens . . . . .	-----
Frague 1776, as <i>S. tomentella</i> L. Montpelier 1813 . . . . .	Cult. 1830
Sorbus Aria . . . . .	Long cult.
Leiden 1686 . . . . .	-----
Aria Decaisneana . . . . .	-----
Lavallee - Icones Arbor. Segrezianum (1880) t. 17 - Cultivated at Segreze since 1858 . . . . .	Cult. 1880
Stachyurus praecox . . . . .	Cult. 1865
Int. by von Siebold before 1863 . . . . .	Int. 1876
Stauntonia hexaphylla . . . . .	Int. 1872
Rev. Hortic. 1872: 291 - Cult. at Lake Maggiore, 1872	-----
Stephenandra incisa . . . . .	-----
Cartfl. 1854: 411, as <i>Spiraea</i> l. - then cultivated . . . . .	-----
Stewartia monadelpha . . . . .	-----
Hovey's Magazine 1863 - Int. by Thos. Hogg into the U. S. from Japan, 1862 . . . . .	Cult. 1903
ovata . . . . .	Cult. 1800 ?
Shent 1817 . . . . .	Cult. 1874
Pseudocamellia . . . . .	-----
Int. by von Siebold before 1863 . . . . .	-----
Styrax Obassia . . . . .	-----
Hovey's Magazine 1863: 10 ("obtusa", probably an error for <i>Obassia</i> ) - int. by Thos. Hogg into the U. S. from Japan, 1862 . . . . .	Int. 1879
Symphoricarpos albus . . . . .	-----
Prague 1776, as <i>Vaccinium album</i> ? Prince, Catalog 1820 . . . . .	Int. 1879 ?
Symplocos tinctoria . . . . .	-----
Prague 1776, as <i>Hopea tinctoria</i> . . . . .	Cult. 1780
Syringa amurensis . . . . .	-----
Prince, Catalog 1822, as <i>S. sibirica</i> . . . . .	Int. abt. 1855
persica alba . . . . .	-----
Ghent 1802 . . . . .	-----
lacinata . . . . .	-----
Soc. Gardeners - Cult., London, 1730 . . . . .	-----
Tamarix africana . . . . .	-----
Naples 1812 . . . . .	-----
Tuinbouwfloora 1856: 23 - Cult., Lyon 1841; at Medical School, Paris 1843 . . . . .	Cult. 1853



Teucrium Chamaedrys .....	Uppsala 1748 (Teucrium no. 4) .....	Cult. 1750
Thuja occ. Douglasi-pyram.	Bull. F.S. 1864: 145 - Exhibited in Belgium, 1863, as <i>T. asplenifolia</i> ? .....	-----
occ. Ellwangeriana .....	Int. by Ellwanger & Barry, bef. 1867, as "Tom Thumb" Vervaeana .....	-----
Vervaeana .....	Bull. F.S. 1864: 147 - Exhibited in Belgium, 1863, as <i>T. Vervaeana</i> .....	-----
orientalis aurea .....	Bull. F.S. 1865: 222 - Exhib. in Belgium, 1864 .....	-----
decussata .....	Carrière - Traité Gén. des Conif. (1867) - Int. abt. 1852 .....	-----
flagelliformis .....	Carr. - Traité Gén. des Conif. (1867) - Disc'd abt. 1818 .....	-----
Meldensis .....	Journ. Soc. Nat'l d'Horticult. France 1855: 438 - Listed as <i>Biota Meldensis</i> , "a new conifer". Origin- ated at Meaux, France, 1852 .....	-----
stricta .....	Vienna 1842, as <i>T. orient. pyramidalis</i> .....	-----
Thujaopsis dolabrata nana ..	Carrière - Traité Général des Conifères (1867) - Int. from China, 1861 .....	-----
dolabrata variegata .....	Bull. F.S. 1864: 144, 181 - Exhib. in Belgium, 1863 .	-----
Thymus Seryllum lanugin. .	Uppsala 1748 .....	-----
Tilia americana macrophyll.	Bull. F.S. 1864: 289, as <i>T. laxiflora</i> - then cult. . .	-----
dasystyla .....	Gartfl. 1862: 17 - then cult. in Petrograd .....	Cult. 1880
flaccida .....	Bull. F.S. 1864: 288, as <i>T. praecox</i> - then cultivated	-----
flavescens .....	Gartfl. 1862: 21 - then cult. in Berlin .....	-----
neglecta .....	Monza 1813, as <i>T. pubescens</i> Ait. .....	Cult. 1830
platyphyllos aurea .....	Prince, Catalog 1831 .....	-----
rubra .....	Prince, Catalog 1831, as <i>T. p. corallina</i> .....	-----
vitifolia .....	Journ. d'Horticult. Pratique 1847: 215 - cult. in Belgium 1847 .....	-----
Trachelospermum jasmin. . .	Jardin Fleuriste 1851 t. 61 - Cult. 1851 .....	-----
Tripterygium Regelii .....	Bretschneider I: 604, as <i>T. Wilfordii</i> - int. by Meximowicz from Kyushyu, 1863 (seeds) .....	Int. 1905

Trochodendron aralioides ..	Bretschneider I: 502 - Int. by Maximowicz from Japan.	
Ulmus carpiniifol. suberosa	Flowered in Petrograd in 1876 .....	Cult. 1894
fulva .....	Pavlovsk 1824, as U. s. Frince, Catalog 1831 .....	-----
pumila .....	Monza 1813 .....	Cult. 1830
Vaccinium Arctostaphylos ..	Amsterdam 1857, as U. pumila Willd. ? .....	Cult. 1860
Myrtillus .....	Frague 1776 .....	Int. 1800
Oxyccocus .....	Montreuil 1774. Frague 1776 .....	Cult. 1789
uliginosum .....	Montreuil 1774. Frague 1776 .....	Cult. 1789
virgatum tenellum .....	Montreuil 1774. Frague 1776 .....	Cult. 1789
Vitis-idaea .....	Monza 1842, as V. tenellum Ait. ....	Cult. 1898
Viburnum burejaeticum .....	Montreuil 1774. Frague 1776 .....	Cult. 1789
grandiflorum .....	Cartfl. 1862: 407 - Int. by Maximowicz .....	Cult. 1900
japonicum .....	Illustr. Hort. 1854 - Cult. at Chiswick 1853 .....	Int. 1914
lantena .....	Monza 1844 .....	Int. 1859
nudum angustifolium .....	Uppsala 1748 (Viburnum no. 1) .....	Long cult.
Opulus roseum .....	Journ. d'Horticult. Pratique IV 1847: 215 - Cult. in Belgium as V. anglicum .....	-----
prunifolium .....	Apothecaries' Garden, Paris, 1769. Uppsala 1748 .....	Int. 1727
tomentosum .....	Leiden 1686 .....	-----
Vinca minor atropurpurea ..	Neerland's Plantentuin 1867 t. 51 - Int. by von Siebold through seeds, 1862 .....	Int. abt. 1865
minor multiplex .....	France, Catalog 1831, as V. minor punicea .....	-----
Vitex Agnus-castus rosea ..	France, Catalog 1831, as V. minor pl. ....	-----
Vitis Davidii .....	Naples 1812. Frince, Catalog 1831 .....	-----
Thunbergii .....	Rev. Hort. 1883: 5 - Int. 1881 .....	Cult. 1885
vulpina L. ....	Von Siebold - "Sur l'Etat" - Int. by him bef. 1863 ..	Cult. 1879
Wisteria floribunda .....	Veendorp & Baas Becking - "Hortus Academicus" - Cult. in Leiden 1719 .....	Int. 1806
japonica .....	Hort. Breiter. 1817, as Glycine fl. Willd. ....	Int. 1830
Xanthoceras sorbifolia ....	Int. by von Siebold into Ghent 1830 .....	Int. 1878
	Cartfl. 1876: 346 - Specimens then found in the	

	Crimea, planted about 50 years ago (= abt. 1826) ..	Int. 1866
<i>Zanthoxylum alatum</i> plani-		
<i>spinum</i> .....	Int. by von Siebold into Leiden before 1860 .....	Cult. 1880
<i>schinifolium</i> .....	Bretschneider I: 603 - Seeds brought from Japan by Maximowicz. Flowered in 1871 .....	Cult. 1877
<i>Zelkova serrata</i> .....	Von Siebold & Co., Catalog 1844, as <i>Ulmus Keaki</i> ? ...	Int. abt. 1860
<i>Zenobia pulverulenta</i> nuda .	Monza 1813, as <i>Andromeda cassinifolia</i> .....	-----
<i>Zygophyllum Fabago</i> .....	Prague 1776 .....	-----

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(\*) See introduction, page 249.

(\*\*) *Malus Toringo* (Sieb.) Oudemans in *Tuinbouwfloora* III: 148 (1856).

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ADDITIONAL NOTES ON BLAKEA AND TOPOBEA

H. A. Gleason

1. To anyone who has examined the anthers, the distinction between Blakea and Topobea is obvious. Nevertheless it is impossible to refer a plant without anthers to either genus, since the various patterns of leaves, inflorescence, bracts, and calyx are often repeated in both. It is quite probable that some species described without flowers have been assigned to the wrong genus. I described Topobea alternifolia without knowledge of the flowers and twenty years elapsed before the collection of flowering specimens showed my error and led me to transfer the species to Blakea.

Cogniaux admitted twenty-four species of Topobea in his monograph of 1891. Some of these he had not seen himself, nor were the anthers described by the original author. Whether these species actually belong to Topobea can only be surmised. They must have been assigned there solely on their general facies and that is completely unreliable.

Since then sixteen species have been proposed and not yet transferred. Of these barbata Gl., Brenesiana Standl., brevibractea Gl., cuspidata Gl., discolor Hochr., Durandiana Cogn., floribunda Gl., longisepala Gl., pubescens Gl., and rupicola Hoehne undoubtedly belong to this genus, while feruginea Gl., Maurofernandeziana Cogn., pluvialis Standl., rosea Gl., Storkii Standl., and urophylla Standl. may or may not belong, so far as my present knowledge of them is concerned.

2. When Blakea calyptrata was described, it was noted that a second sheet from a thousand meters lower elevation differed in no "technical" characters except the width of the bracts; it was given a varietal name. Now a third sheet has been seen which again differs in no important characters except the shape of the leaf. While the type of the species came from the western slope of the Cordillera Occidental, alt. 980-1180 m., this was collected on the eastern slope at an altitude of 2500 m. I propose varietal rank for it also.

BLAKEA CALYPTRATA Gl. var. OVATA, var. nov. A typo differt foliis ovato-lanceolatis acuminatis.

Type, Cuatrecasas 21684, collected at Hoya del Río Cali, en La Palma, Dept. del Valle, Colombia.

3. Examination of additional material and repeated comparison with older collections still convince me that the species mentioned by me (Bull. Torrey Club 72: 1. 1945) form



a group easily segregated by their general similarity and therefore a practical group for purposes of identification. I am not satisfied, however, that the species are actually phylogenetically related, as stated by me earlier (Ann. Mo. Bot. Gard. 28: 434. 1941).

Blakea Andreana Cogn. was the first species of the group to be described. The type was collected near Vije in the valley of the Cauca River, alt. 1800 m. So far as foliage is concerned, it is duplicated by Quatrecasas 22188, from the western Cordillera of El Valle, alt. 1950-2000 m., and his 21599 from the same general region, alt. 2250-2260 m. The upper surface of the leaf lacks white punctation, but is sparsely marked with black dots which look like the mouth of pits, but which are actually only saucer-shaped depressions. The primary veins curve inward near the end of the leaf to form a half circle, the blade is broadly rounded at the summit, and the terminal apiculum is lacking or rudimentary.

Plants of the Eastern Cordillera, referred by me (1945) to B. Andreana, are more or less white-punctate on the upper leaf-surface, the blade is short-acuminate, and the primary veins meet the midvein at a very acute angle. They may be described as new.

**BLAKEA ORIENTALIS** sp. nov. Arbor 20 m. alta. Petioli crassi, 2--3 cm. longi, minute furfuracei. Laminae subcoriaceae, ellipticae, usque ad 18 cm. longae 9 cm. latae, abrupte breviterque acuminatae, basi late cuneatae, 3-nerviae jugo marginali neglecto, supra glabrae subnitentes sparse albo-punctatae, subtus brunnescentes fere glabrae. Pedunculi solitarii complanati glabri ca. 4 cm. longi. Bracteae fere aequales, ad medium connatae, coriaceae, late rotundatae, glabrae, 2 cm. longae. Sepala bracteas 8 mm. excedentia, semicircularia, late rotundata, coriacea, rubescentia. Petala rosea obovata subcoriacea 4 cm. longa. Antherae late semiobovatae, 8 mm. longae; connectivo basi in calcar rectum breve producto.

Type, Lawrance 153, in high forest, region of Mt. Chapon, Boyacá, Colombia, alt. 2250 m. I also refer here tentatively Killip & Smith 20197 from Norte de Santander, in which the leaves are proportionately broader, more abruptly acuminate, and very densely white-punctate above and the leaves and sepals much thinner in texture.

4. **TOFOBEA REDUCTA** sp. nov. Liana, ramis gracilibus juvenilibus, petiolis, et pedunculis tenuissime furfuraceis. Folia valde dimorpha; petioli majorum usque ad 7 mm. longi; laminae ellipticae chartaceae, 5--8 cm. longae, 2.5--3.7 cm. latae, caudato-acuminatae, basi obtusae, 5-plex-nerviae, utrinque glabrae subnitentes; petioli minorum vix 1 mm. longi; laminae ovatae, 3--8 mm. longae. Flores solitarii, peduncu-

lis ca. 15 mm. longis. Bractea ad basin distinctae, ca. 3 mm. longae. Hypanthium poculiforme, 2.5 mm. longum. Calycis tubus ca. 0.5 mm. longus; lobi late rotundati ca. 1 mm. longi. Fetala ovata, 3 mm. longa. Antherae crasse subulatae, 2 mm. longae, basi tuberculo dorsali ornatae.

Type, Custrecasas 21082, from Río Calima, in the Choco region of El Valle, Colombia, alt. 30--50 m. Since the specimen exhibits only a single flower, no dissection has been made and the dimensions stated above are approximate. The anthers are clearly visible and leave no doubt of the generic position of the plant. Only three species with anisophyllous leaves have hitherto been described. Of these T. glabrescens Tr. has sessile, cordate-clasping leaves; T. insignis Tr., has much larger 5-nerved leaves, setose stem, and bracts longer than the calyx. T. anisophylla Tr., to which our plant is most closely related, has subsessile leaves broadly rounded or subcordate at base, much longer peduncles and bracts equaling the calyx.

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#### NOTES ON SOME AMERICAN PLANTS

H. A. Gleason

#### Sida Elliottii and Sida inflexa.

Sida Elliottii is a well known species of the southeastern states, represented in the larger herbaria by ample series of specimens. Such manuals as Gray, seventh edition, Britton & Brown, second edition, and Small give its range as extending north to Virginia and Missouri. A recent collection of the Virginian plant by Fernald has led him to examine the species carefully and as a consequence to segregate the plants of Virginia, Missouri, Tennessee, and one collection from Alabama as Sida inflexa Fern.

The differences between S. Elliottii and the proposed species are stated by Fernald (Rhodora 40: 463, 464) as shown below.

1. S. E. (a) Stems nearly glabrous, (b) 1.5--8 dm. tall.  
S. i. (a) Caule minute stellato-puberulo, (b) 0.6--1.2 m. alto.
2. S. E. (a) Cauline leaves linear, (b) mostly 1.5--5 cm. long, (c) 1.5--7 mm. wide.  
S. i. (a) Foliis lanceolato-vel lineari-oblongis, (b) 2.5--6 cm. longis, (c) 0.4--2 cm. latis.

3. S. E. (a) Flowers mostly solitary in the axils and (b) on peduncles up to 2.5 cm. long.  
S. i. (a) Floribus plerumque corymbosis terminalibus, (b) pedunculis ad 1.7 cm. longis.
4. S. E. Calyx at most strigose on the ribs at base.  
S. i. Calycibus basi plus minusve villosa-hirsutis.
5. S. E. Carpels (a) with prominent erect teeth, (b) glabrous or nearly so on the back.  
S. i. Carpellis apice valde incurvatis, (b) dorso hispidis.

Of these characters, impressive in their totality, no. 1 may be neglected as descriptive but not diagnostic, since the dimensions of one are mostly included in those of the other. Under no. 2, the actual dimensions overlap very much, but the ratio of length to width seems derivable from the stated figures at 7--10 times as long as wide in S. Elliottii and 3--6 times in S. inflexa. Under no. 3, the second part of the statement refers only to maximum dimensions. The first part, although purely qualitative refers to a condition which can generally be recognized, although there is no surety that a corymbose inflorescence does not eventually become axillary by elongation of the internodes. Numbers 4 and 5, especially the latter, appear to afford the best diagnostic characters.

The Britton Herbarium contains forty sheets of S. Elliottii in the broad pre-segregation sense, of which six are from Tennessee and Missouri and are referable by Fernald's citations to S. inflexa. Also among the forty are three from Alabama, from which state Fernald also cites S. inflexa. The remaining thirty-one are from Florida and the Gulf Coast and are referable to S. Elliottii according to the geographic distribution stated by Fernald. These sheets have been carefully examined by me. Leaf-width has generally been measured by eye-piece micrometer under a magnification of 10. Pubescence of calyx and carpels has been observed under a binocular magnifying 23 times. Not every sheet illustrates all of the characters stated by Fernald.

2. Ratio of length to width of leaf. Sixteen Gulf Coast plants show the broadest leaves 3--6 times as long as wide, thereby corresponding to the character of the more northern S. inflexa. Fifteen show the broadest leaf seven times as long as wide, or more, agreeing with Fernald's statement for S. Elliottii. The narrowest upper leaves, so far as observed, are 8--24 times as long as wide. In the Alabama plants, the lower leaves are 2.3--3 times, the upper 12--15 times as long as wide. In the Tennessee and Missouri plants, the lower are 3--6, the upper 8--12 times as long as wide, in the latter features transcending the figures stated by Fernald



for S. inflexa.

3. Corymbose or axillary flowers. In 10 Gulf Coast sheets the flowers may be described as corymbose, a character adduced for S. inflexa. In 18 they are axillary, as stated for S. Elliottii. In two Alabama sheets they are axillary; in one they are corymbose. In six Tennessee and Missouri plants (S. inflexa) they are all corymbose.

4. Pubescence of the calyx. Fernald states that the calyx of S. Elliottii is at most strigose on the ribs at base. No strigose calyx was observed in all 40 sheets. Eleven Gulf Coast plants (S. Elliottii) are distinctly villous with soft, spreading, slender hairs on the midrib of each sepal, as stated for S. inflexa; 19 are not villous. Of the six Tennessee and Missouri plants (S. inflexa) all are villous on the midribs. Fernald does not state the pubescence of the surface of the calyx. In two sheets from the Gulf Coast and one from Alabama, it is glabrous; in two sheets from the Gulf Coast and one from Tennessee (S. inflexa) it is nearly glabrous; in all others it is distinctly but minutely stellate.

5a. Direction of the beak. In 11 sheets from the Gulf Coast (S. Elliottii) the beaks are erect; also in two from Alabama, and in four (S. inflexa) from Tennessee and Missouri. In three sheets, all from the Gulf Coast (S. Elliottii), they are incurved, but the incurving is apparently due to the direction of pressure when the plants were dried. In the other sheets mature carpels are not present or not easily visible.

5b. Pubescence of the carpels. In every sheet where carpels are exhibited the beaks of the carpel are minutely hispidulous. Also in every sheet the back of the carpel below the base of the beaks is glabrous.

In summary, carpels with naturally incurved beaks and hispid on the back do not exist in our specimens of the species, even in the specimens cited by Fernald as S. inflexa. Villous calyces exist in the specimens referable to S. inflexa but also in a third of the Gulf Coast plants. Corymbose inflorescence exists in S. inflexa, but also in a third of the Gulf Coast plants. In the Gulf Coast region there is no correlation between villous calyces and corymbose inflorescence. The distinction between the two in proportions of their leaves is largely fictitious.

In conclusion, I can not recognize S. inflexa Fern. as a species, nor even as a variety or form.

Sium suave.

Sium suave Walt. is a widespread species across the northern states and adjacent Canada from the Atlantic to the



Pacific. When well grown in our northern wet sunny meadows, or farther west in the open prairie "sloughs", it becomes a great husky plant up to 2 meters tall or even more, with a stem 3 cm. in diameter near the base and very prominently and sharply angled. Under such favorable circumstances the principal leaves may be 3 dm. long with as many as 17 leaflets and these up to 17 cm. long and 5 cm. wide.

But the plant is exceedingly variable in stature, leaflet-shape, and dimensions. The leaflets may be linear and only 2 mm. wide, the stem may be slender and weak, the umbels comparatively few. The umbels nevertheless retain their usual appearance, except for an occasional reduction in the number of primary rays, and the character of the rays, the pedicels, and the fruit seems to be as uniform as one expects to find within a single species. Whether these variations are genetic and consequently heritable, or are caused by a variable environment, such as amount of shade, depth of water or the water table, or competition from surrounding vegetation, is as yet unknown. Long familiarity with the plant in the field has led me to believe that much of its variability is caused by the environment. I have no proof that such is the case; it is merely an impression based on cumulative experience.

Sium Carsonii Durand has been recognized by some as a species since its first publication in 1867 and is still so considered by Mathias and Constance in 1945. It was reduced to varietal rank by Stevens in 1910 and to a mere form of S. suave by Fassett in 1921. Fassett's disposition, with which I agree, was accepted by Fernald in 1943 (in print) or earlier.

Sium floridanum was described by Small in 1933 in his usual sketchy fashion and based on two specimens in the herbarium of The New York Botanical Garden, both from the Chipola River in Florida. Extracting his contrasting characters both from his key and his descriptions and placing them together, we have the following, with the upper line of each pair referring to S. suave, the lower to S. floridanum:

1. Plant 6--19 dm. tall, stout.
1. Plant smaller and more slender.
2. Dilated petiole auriculate at the top.
2. Dilated petiole oblique at the top.
3. Leaflets 11--17, linear to linear-lanceolate or rarely wider.
3. Leaflets 3--11, ovate to elliptic-lanceolate.
4. Leaflets saliently sharp-serrate or incised.
4. Leaflets finely appressed-serrate.
5. Umbel-rays slender.
5. Umbel-rays filiform.

6. Larger corollas fully 2 mm. wide.  
 6. Larger corollas less than 2 mm. wide.

As to the significance of these differences, let us examine the type and compare it with northern plants always accepted as S. suave.

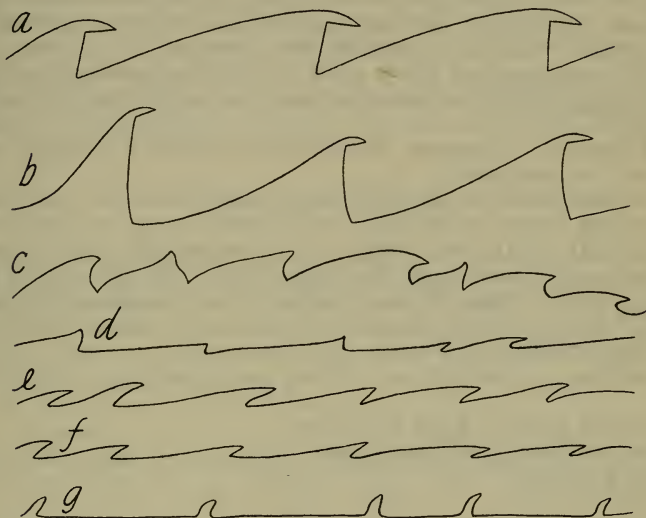


Fig. 1

Leaf-margins

1. The type specimen and a duplicate of it are the tops of plants. They do not indicate that the plant was smaller. The thickness of the stems, in comparison with plants of S. suave measured at the same distance from the summit, does not indicate that the plants were significantly more slender. Some plants of S. suave, as Blake 5456 from New Brunswick, are much stouter; others, as Hartmann 215 from New Hampshire, are equally slender.

2. The petiole of the type of S. floridanum does taper gradually to the summit. In S. suave it may taper gradually, or be abruptly narrowed, or very distinctly auriculate.

3. The largest leaves of the type have only 9 leaflets. On the upper and uppermost leaves this number is progress-

ively reduced to 7, 5, 3, and 1. In S. suave there may be as many as 17; other plants show, as far as the dried specimens indicate, a lower maximum, often 11 or 9, in one instance 7, while the leaves are again progressively reduced upward to 5, 3, or even 1.

4. The leaf-serration of S. suave varies greatly and apparently without relation to any other structural feature. Six leaf-margins of northern plants are shown in our Fig. 1 (p. 285), all magnified 8 diameters. The type of S. floridanum is very uniform in the character of its serration and a typical centimeter is also shown in our figure. I trust that the reader will try to decide for himself, on the basis of Small's statements, which part of the figure represents S. floridanum before turning to the clue in the last paragraph below.

5. Small's statement needs more explicit statement before it can be discussed.

6. Measurements of dry flowers have been made repeatedly, selecting always those that were pressed open to exhibit their full width, but making no allowance for the distention caused by flattening of the hypanthium. The type of S. floridanum varies from 18 to 23 units on my eye-piece micrometer, while S. suave varies from 18 to 26. This corresponds to approximately 1.7--2.2, or 1.7--2.4 mm.

Mathias and Constance add two characters:

7. Bracts 6--10, 3--15 mm. long.

7. Bracts 2--5, 2--5 mm. long.

8. Rays 10--20.

8. Rays 6--10.

In the type of S. floridanum the bracts on 3 umbels are 2, 5, and 5; their lengths are 2.7, 3.6, and 6.6 mm. The bracts in S. suave are usually either 5 or 8, the larger number holding for somewhat more than half the plants; umbels with 3 or 2 bracts are occasional and one bractless plant has been seen.

Fernald in 1943 added another character, or rather defined one suggested by Small:

9. Peduncle, primary rays, and pedicels angulate.

9. Peduncle, primary rays, and pedicels filiform.

The statement concerning S. suave is correct as to peduncle and primary rays. The pedicels may or may not appear angled when dry, but every specimen which I have examined after boiling has been essentially terete. The type of S. floridanum has the peduncle and primary rays just as strongly angled as in inflorescences of similar size in S. suave. The

pedicels also appear angled when dry.

It seems clear to me that there are no definite morphological features associated with S. floridanum which might justify its maintenance as a species. Its sole character is that of general frailty or debility in contrast with the sturdiness and virility of the usual type and such a character might easily be the result of a shaded environment on a typically sun-loving plant. The same conclusion is suggested by Fernald's statements that its petioles are widely spreading, while those of S. suave are ascending.

The source of the seven leaf-margins illustrated in Fig. 1 (p. 285) is: (a) Jones 12593, from Illinois; (b) Hartman 215 from New Hampshire; (c) type of S. floridanum; (d) Fernald & Wiegand 5954 from Newfoundland; (e) Deam 21292 from Indiana; (f) Gleason & Gleason 197 from Michigan; and (g) Senn 1516 from Ontario.

#### Rhamnus lanceolatus.

Rhamnus lanceolatus Pursh is a well known species of the Middle West, where it inhabits rich moist soil and is, in general, the sole representative of the genus. From southern Illinois southward its range overlaps with that of R. carolinianus Walt.

Pursh's description reads:

R. inermis, arborescens; foliis lanceolatis serrulatis utrinque acutis subtus pubescentibus. On the side of hills: Tennessee. Lyon. v. s. in Herb. Lyon. Berries black.

Pursh had four other species in his Flora and it is noteworthy that this is the only one without mention of floral characters and the only one of our three native species which he had not seen growing.

Twenty-four years later Torrey and Gray knew this plant directly from Kentucky and Missouri specimens and accepted Pursh's statement that it grew also in Tennessee. Their description must have been written primarily from the actual material at hand, but through deference to Pursh's "foliis... subtus pubescentibus" they stated "more or less pubescent beneath." At the same time and place they described as new R. parvifolius, with pubescent leaves and tetrandrous flowers, based on a Barton specimen from Harper's Ferry, W. Va. The type of the species is at the New York Botanical Garden and confirms what Torrey and Gray wrote in their appendix two years later: "We have reason to suspect that this plant is not distinct from R. lanceolatus." Other specimens agreeing with Barton's type occur from southern Pennsylvania to Alabama. All have leaves densely pubescent at anthesis



with apparently golden-brown hairs and remaining pubescent at maturity.

West of the mountains, where the species is comparatively common, the leaves may or may not be sparsely pubescent at anthesis and are regularly glabrescent by maturity. Finding no other character to distinguish the two populations, I propose to recognize them as well marked geographical varieties:

Rhamnus lanceolatus Pursh, var. lanceolatus. Speciei paratypica, foliis molliter pubescentibus.

RHAMNUS LANCEOLATUS Pursh, var. GLABRATUS Gl., var. nov. Foliis juventute glabris vel parce villosulis, maturitate glabris. Rich moist woods at low elevations, west of the mountains, Kentucky and Tennessee to Nebraska and Arkansas. Type, Deam 787, Brookville, Franklin County, Indiana, in Herb. N. Y. Bot. Gard.

### Triadenum.

The few species of Triadenum, although segregated generically more than a century ago, have often been considered as forming merely one section of the large genus Hypericum. Britton adopted the genus Triadenum in the Illustrated Flora and was followed by Small and Rydberg. The characters of the genus are well known. The petals are imbricate rather than convolute; the stamens are only nine and are united into three fascicles of three stamens each; these fascicles alternate with three conspicuous hypogynous glands; the petals are pink, flesh-color, or greenish instead of yellow. It is purely a matter of personal opinion whether these characters are considered of sufficient importance to warrant the segregation of a genus. In my personal opinion they are, and I am accordingly discussing our American species under the generic name Triadenum.

For many years our plants have been classified in two species, T. petiolatum (Walt.) Britt. and T. virginicum (L.) Raf.

As to the first of these, Fernald showed clearly in 1936 that it consisted of two populations, to one of which he gave a varietal name, maintaining the other as the typical element of the species without a distinctive name. Walter had described them both as species of Hypericum in 1788 but unfortunately one of his names, H. petiolatum, was a homonym antedated by H. petiolatum L. The oldest valid name for this species under the genus Hypericum is H. Walteri Gmel. The other of Walter's species, H. tubulosum, has been described in recent literature as T. longifolium Small, over which the specific epithet tubulosum has more than a century priority.

It is again purely a matter of personal opinion whether

these two populations are considered as two species, or as two varieties of one species, or as a single species. In my opinion they are species. Fernald has pointed out correctly the difference in the leaves. The sepals of tubulosum average about 1 mm. longer and are almost always acute. The leaves of tubulosum have no superficial glands and also lack the translucent glands found in the other species.

While valid names for both are available in Hypericum, new combinations are necessary when the plants are placed in Triadenum.

TRIADENUM WALTERI (Gmel.) comb. nov. Hypericum Walteri Gmel. Syst. Nat. 2: 1159. 1791. Hypericum petiolatum Walt. Fl. Car. 191. 1788; not H. petiolatum L. 1762. H. tubulosum Walt. var. Walteri Lott, Jour. Arnold Arb. 19: 279. 1938. Triadenum petiolatum Britt. Ill. Fl. 2: 437. 1897.

TRIADENUM TUBULOSUM (Walt.) comb. nov. Hypericum tubulosum Walt. Fl. Car. 191. 1788. T. longifolium Small, Bull. Torrey Club 25: 140. 1898. H. petiolatum var. tubulosum Fern. Rhodora 38: 436. 1936. H. Walteri var. tubulosum Lott, Jour. Arnold Arb. 19: 151. 1938.

Fernald has also indicated the differences between the northern and southern forms of T. virginicum. These differences are so clear-cut that Spach separated the plants specifically a century ago and one can only wonder why they were neglected by all (so far as I know) American botanists for an even hundred years. On the basis of these differences Fernald proposed to distinguish the plants varietally, but here again I believe that he did not go far enough and that we shall do better to treat them as species. Again a new combination is necessary.

TRIADENUM FRASERI (Spach) comb. nov. Hypericum Fraseri Spach, Ann. Sci. Nat. Bot. II. 5: 168. 1836. H. virginicum var. Fraseri Fern. Rhodora 38: 434. 1936.

I have measured 155 fruits of the aggregate species under an eyepiece micrometer, using a magnification which permitted accuracy to the tenth of a millimeter. The sepals of the northern T. Fraseri vary from 2.8 to 4.9 mm. long, measured from the sinus, with an average length of 3.77 mm. Furthermore these sepals are always obtuse and usually actually rounded at the summit. Also, they are wider at the middle than at the base and consequently commonly appear elliptic or spatulate in general outline. The sepals of the southern T. virginicum vary from 4.3 to 8.4 mm. long and average 5.86 mm.; only one plant exhibited sepals less than 5 mm. long. These sepals taper toward the summit, which is sometimes acuminate, more commonly acute, and rarely narrowly obtuse. Because of the long terminal taper they appear lanceolate or oblong-lanceolate in outline.

The styles of the northern T. Fraseri, as they persist on



the fruit, vary from 0.6 to 1.5 mm. long and average 1.06 mm. Measurements were made only on the fruit, since they are rarely completely visible in flowers without boiling and dissecting. The styles of T. virginicum vary from 1.9 mm. (two instances) to 3.5 mm. and average 2.72 mm.

When the dimensions of the sepals and styles are plotted together [see the chart on page 290], they show that the aggregate is composed of two completely separate populations.

The distribution of the aggregate is in some ways similar to that of Sarracenia purpurea, which consists of a southern population chiefly confined to the coastal plain and a northern one extending far inland. T. virginicum (L.) Raf. is essentially a plant of the coastal plain from Nova Scotia to the Gulf coast, but extends inland across New York into southern Ontario and reappears in northern Indiana. T. Fraseri (Spach) Gl. is essentially a boreal plant, extending from Newfoundland and Labrador to Manitoba and southward to Connecticut, New York, northern Indiana, and Nebraska, or at higher altitudes to West Virginia.

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#### A LETTER FROM FERDINAND VON MUELLER

H. A. Gleason

There recently came into my possession a hand-written letter from the noted Australian botanist, Sir Ferdinand Jakob Heinrich von Mueller, addressed to B. Daydon Jackson (1), which has some biographical and bibliographical interest. Von Mueller was born in Germany in 1825, emigrated at an early age to Australia, became a British subject, devoted his life to a study of the flora of Australia, was government botanist for forty-four years and director of the Melbourne Botanic Garden for sixteen years, was created Baron by the King of Württemberg in 1871, was knighted by Queen Victoria, and died in 1896. His career therefore shows some parallelism with those of Sir Richard and Sir Robert Schomburgk, who were also born in Germany. The letter reads:

21.11.83.

Herewith, dear Mr. Jackson, I beg to send you a copy of part of a letter from Dr. Fournier (2), just received, concerning the priority of Vahea over Landolphia, as this question will interest you not only for these genera but in many other respects for your nomenclator (3). I also forward a copy of the important prospectus, found by Dr. Fournier, as



this renders it conclusive, how far the "illustration des genres" had actually appeared up to 1796. As you and Mr. Britten (4) took such an interest in clearing up the dates (5) of Rees' Cyclopaedia (6), you likely will give some attention to this question now.

I intended to have written a letter on the subject in Trimen's (7) journal or rather now Britten's journal of Botany (8), but I have been suffering for fully two months from so severe a bronchial catarrh, that I had to keep to my rooms all that time; the cough has slightly abated now, but as there is some emphysema, it is doubtful whether I will recover. My parents both died early on phthisis, and hereditary inclination to that fatal disease brought me out to this warmer clime so soon as I left the University. In the wet season it is however even here too cold for me. I am just going up into a mild forest region with the hope of benefitting from the moist equable air there. I feel very weak. Am very sorry to hear of Mr. Bentham's failing strength, but hope, that after some rest he will still be able to resume his grand phytographic labours.

Respectfully your

Ferd. von Mueller.

Only a part of Fournier's letter was copied and sent to Jackson. It reads:

Paris, le 24 Septembre 1883.

Très honoré Monsieur-

Je reponds d'abord à la partie de votre lettre qui concerne l'époque de publication de la partie botanique de l'Encyclopédie (10). J'ai correspondu déjà sur ce sujet pour vous avec M. de Candolle (11), qui a du vous transmettre ma réponse. De plus, en rendant compte dans le Bulletin de la Société de France t. XXIX, Revue, C p. 137 (1882), de votre Literary Reference to the Caoutchouc Vaheas, j'ai transcrit le texte de Millin, qui prouve que la genre Vahea a été publié antérieurement à 1797.

Aujourd'hui je me trouve en possession de nouveaux renseignements, grace à un prospectus publié le 21 Nov. 1796 par l'éditeur de l'Encyclopédie, prospectus qu'un heureux hasard à fait entrer dans ma bibliothèque. Je vous en adresse ci-joint un extrait.

Publication

de la soixantième livraison de l'Encyclopédie  
à Paris, rue des Poitevins No. 18.

Le 1-er Frimaire, an cinquième de la République française  
(le lundi 21 Novembre 1796, vieux style)

Cette livraison est composée

1<sup>o</sup> de la dix septième des planches d'histoire naturelle, formant la septième centurie de celles de la botanique, par le citoyen Lamarck (12), de l'Institut national, professeur

et administrateur du Muséum d'Histoire Naturelle.

.....

Le volume de planches, qui fait partie de cette livraison, est le septième centurie de celles de la botanique, et présente la continuation de l'ouvrage intitulé: Illustration des genres. Ces planches sont gravées avec le plus grand soin, et la plupart des figures sont originales.

Elles offrent, depuis la planche 601 jusqu'à la 700<sup>e</sup> inclusivement, 164 genres, parmi lesquels il s'en trouve quantité de nouveaux. . . . Les genres exposés dans cette livraison appartiennent à la Diadelphie entière, à la Polyadelphie et à la plus grande partie de la Syngénésie. . . . Dans la soixante-unième livraison nous publierons le première partie du tome IV<sup>e</sup> du Dictionnaire de botanique, par le citoyen Lamarck.

The letter, with its accompanying correspondence, therefore becomes of bibliographic value, indicating definitely that the publication of plates 601--700 of the Illustration des Genres actually appeared in 1796. The accepted date of publication has heretofore been 1797.

One can only guess the history of the letter since 1883, or the early part of 1884, when it reached Mr. Jackson. Probably it was mislaid among some herbarium specimens, sent to America with duplicates, lay unobserved for more than forty years, and finally came to light among some old papers at the Biological Station of the University of Michigan.

#### Footnotes

- (1) B. Daydon Jackson (1846--1927), editor of the *Index Kewensis*.
- (2) Eugène Pierre Nicolas Fournier (1834--1884).
- (3) *Index Kewensis*, 1893--1895, with supplements 1--8, 1901--1934.
- (4) James Britten (1846--1924), editor of *Journal of Botany* 1880--1924.
- (5) *Jour. Bot.* 15: 107, 108. 1877; 18: 87, 88. 1880.
- (6) Abraham Rees, *The cyclopaedia; or universal dictionary of arts, sciences, and literature*. London, 1806--1820.
- (7) Henry Trimen (1843--1896), editor of *Journal of Botany* 1871--1879.

- (8) Journal of Botany, founded 1863, now in its eightieth volume.
- (9) George Bentham (1800--1884).
- (10) Encyclopédie méthodique. Botanique par M. le Chevalier de Lamarck. Paris, 1783--1817.
- (11) Alphonse Louis Pierre Pyramus de Candolle (1806--1893).
- (12) Jean Baptiste Antoine Pierre Monnet de Lamarck (1744--1829).

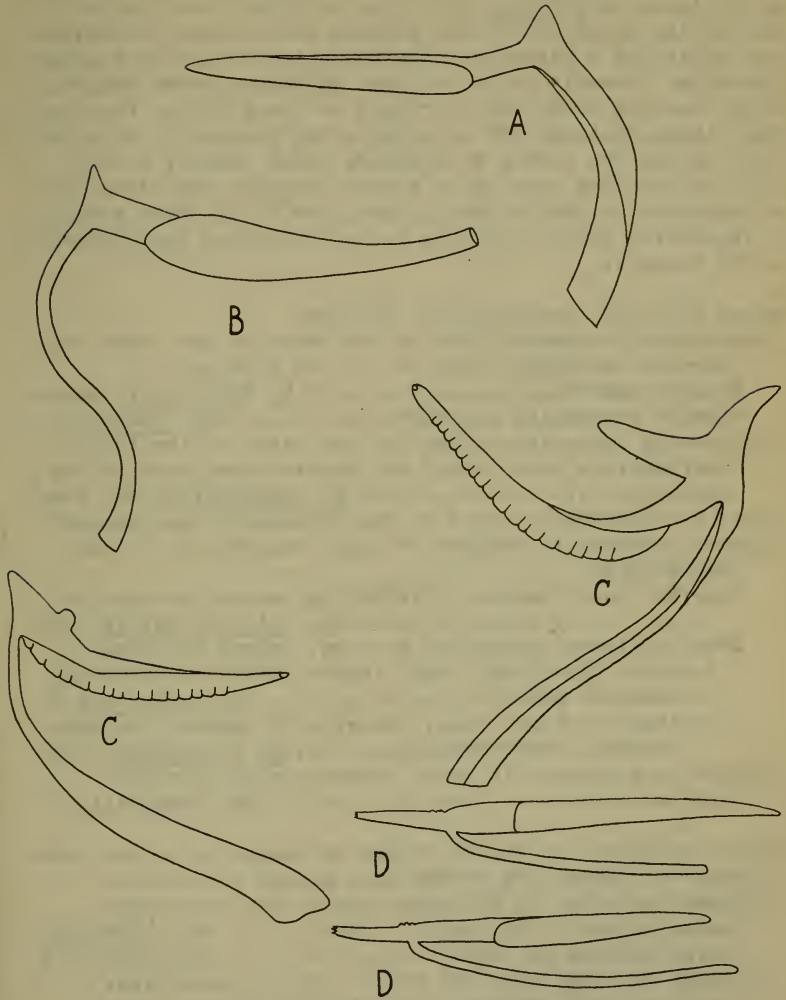
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NEW OR NOTEWORTHY MELASTOMES, CHIEFLY ECUADOREAN

H. A. Gleason

There is in South America a group of seven species within the genus Meriania which have a conspicuous habitual similarity. This is due, on superficial examination, to their broad 5-nerved leaves, usually elliptical in shape, their inflorescence with well developed central axis, and the densely pubescent, cinereous or ferruginous hypanthium. Closer examination reveals other features of similarity of a more technical nature. The hairs of the hypanthium are wholly or partly enlarged at base and there roughened or stellate, while the terminal portion is slender, smooth, and curved-ascending. The hairs of the lower leaf-surface are conspicuously or minutely stellate at base, with an erect simple bristle.

In the four species which inhabit Venezuela and Colombia we find also a strong similarity in the stamens (Fig. 1). The anthers are flattened tangentially; the thecae are scarcely in contact, so that the connective is visible from the anterior side. On the posterior side the connective is not elevated; it is prolonged straight back. The Peruvian species has a connective which appears quite different, but which can be readily homologized with the more northern species. In the Bolivian species we find a real divergence. Here the connective is prolonged into a large basal spur and a smaller dorsal spur. This plant, M. boliviensis Cogn., was originally assigned by its author to the section Eumeriania, characterized by unappendaged anthers and solitary flowers. Later, in his monograph of the family, he placed it in section Umbellatae, with paniculate flowers but with unappendaged anthers. Apparently Cogniaux never made a dissection



Lateral views of stamens, X 5

- A. Meriania cuneifolia, isomorphic  
 B. M. colombiense, isomorphic  
 C. M. boliviense, dimorphic  
 D. M. quintuplinervis, dimorphic

Fig. 1



of the flowers.

It is not my present purpose to attempt to decide whether the division of Meriania into five sections is valid, or whether the structure of the anthers should take precedence over habit and pubescence in determining intrageneric relationships. I merely point out that there are seven species which resemble each other strongly in these latter features. Since these features are so patent, the group will be recognized by any one trying to identify these species or any still undescribed species of similar nature. The seven may be separated by the following keys, the first based wholly on vegetative characters, the second utilizing the structure of the stamens.

Leaves 5-nerved, conspicuously dentate.

Pubescence cinereous, that of the veins on the lower leaf-surface no longer than that of the surface.

Flowers numerous.....M. Weberbaueri Macbr.

Flowers apparently solitary.....M. loxensis Gl.

Pubescence ferruginous, that of the veins on the lower leaf-surface much longer and coarser than that of the surface.....M. Steyermarkii Gl. ined.

Leaves 5-ply-nerved, entire or very obscurely denticulate.

Leaves subacute to rounded at base, broadest at or near the middle.

Exterior teeth scarcely projecting beyond the sepals....  
.....M. quintuplinervis Naud.

Exterior teeth projecting 2--3 mm. beyond the sepals.

Pedicels 15--20 mm. long; leaves softly subtomentose beneath, acute.....M. colombiana Gl.

Pedicels 5--8 mm. long; leaves very sparsely pubescent beneath, short-acuminate.....M. boliviensis Cogn.

Leaves long-cuneate at base, broadest much above the middle.....M. cuneifolia Gl.

Connective below the thecae terete or channeled on the lower (anterior) side, the dorsal spur minute or lacking.

Filament attached to the very base of the connective.

Leaves obtuse or rounded at base.....M. colombiana.

Leaves cuneate at base.....M. cuneifolia.

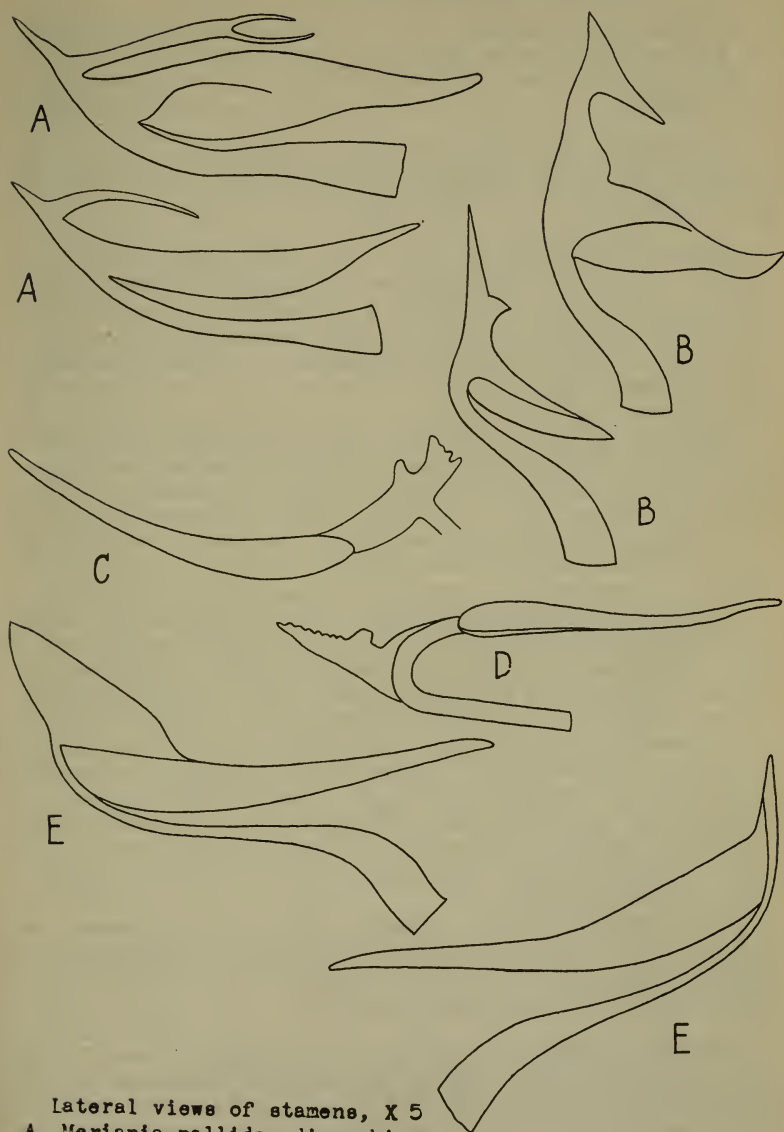
Filament attached near the middle of the connective.

Exterior teeth scarcely projecting beyond the sepals;  
leaves 5-ply-nerved.....M. quintuplinervis.

Exterior teeth conspicuously projecting; leaves 5-nerved  
.....M. Steyermarkii.

Connective elevated into a very flat, triangular or 2-lobed, basal spur.

Leaves 5-nerved, conspicuously dentate; connective not lobed.



Lateral views of stamens, X 5  
 A. Meriania pallida, dimorphic  
 B. M. macrophylla, dimorphic  
 C. M. Steyermarkii, isomorphic  
 D. M. loxensis, isomorphic  
 E. M. Weberbaueri, dimorphic

- Spur of the connective extending well forward on the back of the anther.....M. Weberbaueri.  
 Spur entirely below the base of the anther..M. loxensis.  
 Leaves 5-plexi-nerved; connective of the larger stamens 2-lobed.....M. boliviensis.

The mention of M. Steyermarkii at this place is under no circumstances to be construed as publication, which will be effected elsewhere; no Latin diagnosis is here provided.

MERIANIA CUNEIFOLIA sp. nov. Sect. Umbellatae. Caules, petioli, folia subtus, paniculae, et hypanthia dense pubescentes, pilis basi incrassatis barbellatis, apice simplicibus. Dentes exteriores calycis ultra sepala producti. Stamina satia dimorpha; antherae complanatae; connectivum infra thecas rectum, dorso minute calcaratum, basi ima ad filamentum affixum.

Shrub 1.5 m. tall. Panicle, hypanthia, stems, and lower leaf-surface softly cinereous, the hairs slender, smooth, and curved-ascending above an enlarged, roughened or stellate base. Petiole 2--3 cm. long. Blades oblanceolate, up to 15 cm. long and 4 cm. wide, abruptly and sharply acuminate, entire, long-cuneate at base. Panicle terminal, the 5-merous flowers in subumbellate terminal clusters on pedicels 4--8 mm. long. Hypanthium campanulate, 5.2 mm. long to the torus. Calyx irregularly ruptured to the torus, the lobes 8.5 mm. long, pubescent like the hypanthium, slightly thickened along the median line but with no developed exterior teeth. Petals "buff-salmon", rotund, 13 mm. long. Stamens dimorphic; filaments 6.4 or 8.5 mm. long, flat, becoming concave at the summit; thecae 8.3 or 5.3 mm. long, strongly flattened tangentially; connective prolonged straight back 2.5 mm., channeled on the lower side, affixed to the filament at its very base, bearing a large or very small, broadly conic, obtuse or rounded basal dorsal spur. Style straight, 21 mm. long; stigma truncate.

Prov. Santiago-Zamora, Ecuador, dense forest between Campanas and Arenillas, altitude 2195 meters, Steyermark 53543. The species is further contrasted with its apparent relatives in the preceding paragraphs.

MERIANIA LOXENSIS sp. nov. Sect. Umbellatae. Caules, petioli, folia ad nervos subtus, et hypanthia dense sed tenuiter pubescentes, pilis basi incrassatis barbellatis, apice simplicibus. Dentes exteriores calycis ultra sepala bene producta. Stamina isomorpha; antherae complanatae; connectivum infra thecam in calcar dorsalem tuberculatum elevatum.

Shrub 3 m. tall. Stems, veins of the lower leaf-surface, petioles, and hypanthia thinly cinereous, the hairs slender,

smooth, and curved-ascending above an enlarged roughened or minutely stellate base. Petioles 10--15 mm. long. Blades firm, elliptic, up to 10 cm. long and 5 cm. wide, acute, denticulate in the distal half, rounded at base, very obscurely 5-plexi-nerved, densely stellate-furfuraceous on the veins beneath, on the surface very minutely and sparsely stellate, a few of the hairs ending in a very short erect bristle. Flowers 5-merous, apparently solitary, on a pedicel 8 mm. long. Hypanthium campanulate, 8 mm. long to the torus, very thick-walled. Calyx-tube prolonged 1--1.5 mm.; sepals broadly ovate, thin, 3.5 mm. long, acute; exterior teeth adnate nearly to the summit of the sepals, projecting 3.5--5 mm. Petals "deep salmon-vermillion", obovate, 27 mm. long. Stamens isomorphic; filaments strongly flattened; anthers subulate, tangentially flattened, 9.4 mm. long; connective prolonged down the back as a sharp narrow ridge, greatly dilated immediately below the thecae, and below the summit of the filament prolonged 3.3 mm. into a flattened or subconic obtuse organ strongly tuberculate toward the tip. Ovary superior, 10-costate; stigma truncate.

Prov. Loja, Ecuador, Sotobosque, between Tambo Cachiyacu, La Entrada, and Nudo de Sabanillas, Steiermark 54468.

**MERIANIA PALLIDA** sp. nov. Sect. Fachymeriae. Arbor 20 m. alta, ramis juvenilibus 4-angulatis pallide furfuraceo-puberulis. Petioli usque ad 6 cm. longi, scuto dorsali ornati. Laminae firmae, ellipticae, usque 29 cm. longae 14 cm. latae, obtusae, integrae, basi rotundatae, 3-nerviae, jugo conspicuo marginali neglecto, supra glabrae opacae, subtus griseae arcte stellato-tomentosulae; venae secundariae supra planae, subtus elevatae, 5--8 mm. dissitae, sub angulo 80° divergentes. Panicula ca. 1 dm. longa; rachis compressa pulverulenta; pedicelli 5-8 mm. longi. Hypanthium late poculiforme, ad torum 5 mm. longum, primum sparse griseo-stellulatum, mox glabrescens. Calycis tubus 1.5 mm. longus, truncatus; dentes exteriores minuti, ca. 0.1 mm. longi. Petala rosea, ca. 15 mm. longa, inequilatera, late oblonga. Filamenta glabra torta, basi lata, ad apicem angustata, 7 vel 7.5 mm. longa. Antherae subulatae, 9 vel 8 mm. longae, poro dorso-terminali dehiscentes. Connectivum ad dorsum antherae basin versus gradatim incrassatum, infra antheram in calcar assurgentem 4 vel 3.4 mm. longum productum; appendix dorsalis in ser. ext. ad basin connectivi, subulata, 6 mm. longa, apice bifurcata; in ser. int. ultra medium connectivi, subulata, 3.5 mm. longa.

Type, Cuatrecasas 15567, from Dept. del Valle, Colombia, Cordillera Occidental, vertiente occidental, Hoya del río Sanjuniquin, lado izquierdo, La Laguna, bosques, 1250--1400 m. alt., described as "Arbol 20 m., 30 cm. diám.; hoja cori-



ácea, gruesa, frágil verde esmeralda en el haz, pálida; ceniciento blanquecina en el envés; pétalos cárdeno vivo muy brillantes; cáliz verde o purpúreo; corteza grisáceo amarillenta pálida; madero amarilla."

The plant was originally identified by me as M. macrophylla (Benth.) Triana. While certainly closely related to that species, it differs in such important respects that its recognition as a species is necessary (see Fig 2, p. 297). In M. macrophylla the two spurs of the connective are of approximately the same size, the leaves are shorter and more ovate, ferruginous rather than cinereous; in M. pallida the two spurs are very unequal, and the subulate anterior spur is bifurcate in the larger stamens, the leaves are elongate and elliptic and distinctly cinereous.

**CALYPTRELLA DENTICULATA** sp. nov. Folia elliptica vel obovato-elliptica, utrinque acuminata, 5-nervia. Flores longe pedicellata, 5-meri. Calyx ante anthesin apice 5-dentatus, ad anthesin non circumscissus, irregulariter ruptus in lobos 3--5 triangulares. Antherae 5.5 mm. longae. Stylus 17 mm. longus.



Fig. 3 Calyptrella denticulata, stamens X 6

Shrub up to 4.5 m. tall, the young stems, petioles, panicle, hypanthium, and lower leaf-surface stellate with minute hairs about 0.1 mm. across. Leaves elliptic or obovate-elliptic, up to 19 cm. long and 8 cm. wide, abruptly short-acuminate, entire, tapering to the base, 5-nerved or weakly 3-pli-nerved with an additional pair of marginal veins, glabrous above, soon glabrescent beneath except for a little persistent stellate pubescence along the nerves. Panicle terminal, 3--6 cm. long, many-flowered, its branches tending to nod. Hypanthium cup-shaped, about 4 mm. long to the torus, firm-walled, thinly stellate. Sepals in bud closely connate to the summit, where the minute exterior teeth project slightly, at anthesis irregularly ruptured into 3--5 broadly triangular lobes with convex side, the tube about 1 mm. long, the lobes about 2 mm. long. Petals obliquely subrotund, 9 mm. long, 10 mm. wide. Filaments flattened, 5.6 mm. long, opening by a minute pore; connective extending along

the thecae as a slender sharp ridge, below the thecae greatly thickened and prolonged 1.5 mm., bearing a thick dorso-basal spur. Ovary nearly free, 5-celled; style slender, 17 mm. long; stigma punctiform.

Prov. El Oro, Ecuador, forested slopes between Pampa de los Cedros, northeast of San Pablo, and Curtinca, altitude 2285--2430 meters, Steyermark 53809; his number 54167, also from Prov. El Oro, is the same. Number 52781, collected a short distance to the north in Prov. Azuay, shows no point of difference in the flower, but the leaves are conspicuously 5-ply-nerved, the inner pair of veins arising about 15 mm. above the base of the leaf.

This is the eighth species of Calyptrella to be described. (An unpublished name under this genus is attached to H. H. Smith 3, found in many herbaria; the plant does not belong to this genus or even to this tribe of the family.) The eight may be distinguished by the following key.

Petals ovate to lanceolate, acute or acuminate.

Flowers 6-merous; panicles 1--3 dm. long.

Fedicles 2--6 mm. long; Ecuador to Bolivia.....C. cucullata (Don) Triana.

Fedicles obsolete, or less than 1 mm. long.

Leaves about half as wide as long; Mexico.....C. Galeottii Naud.

Leaves about three-fourths as wide as long, or wider; Costa Rica, Colombia.....C. cyclophylla Donn. Sm.

Flowers 4-merous.

Panicle 2 dm. long; leaves rounded at base, 7-nerved, stellate-puberulent beneath; Peru....C. robusta Cogn.

Panicle 5--10 cm. long; leaves acute or obtuse at base, 3-nerved (excluding the marginals).

Leaves coriaceous, minutely lepidote beneath; Peru....C. tristis Triana.

Leaves thin, glabrous beneath; Peru.....C. gracilis Triana.

Petals obovate to subrotund.

Flowers 4-merous; petals 4 mm. long; leaves 3-nerved, rounded at base; Colombia.....C. littoralis Gl.

Flowers 5-merous; petals 9 mm. long; leaves 5-nerved, narrowed to the base; Ecuador.....C. denticulata Gl.

MICONIA ZAMORENSIS sp. nov. Sect. Amblyarrhena. Panicula cum hypanthio longe glanduloso-hirsuta. Sepala patula, obovata, dentibus exterioribus subulatis. Petala late rotundato-obcordata. Ovarium setis ca. 10 glanduliferis coronatum; stylus tenuissime villosulus; stigma peltatum.

Stem, petioles, and branches of the panicle freely hirsute with slender spreading hairs 2--3 mm. long, those of

the panicle mostly gland-tipped, those of the petioles mostly simple, those of mature stems entirely simple. Petioles 1.5--3.5 cm. long. Blades thin, elliptic-oblong, up to 12.5 by 6.5 cm., acuminate, minutely serrulate, rounded or broad-

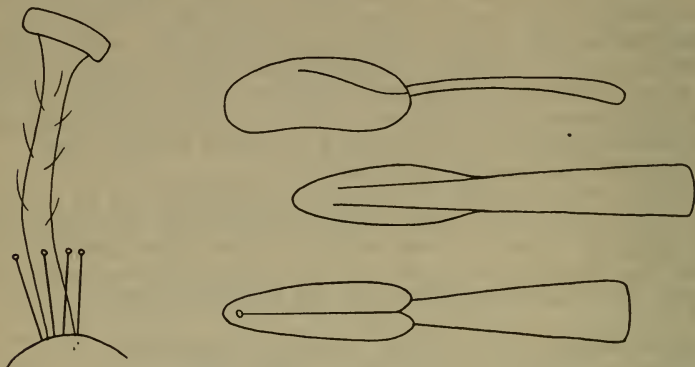


Fig. 4 Miconia zamorensis, style and stamens X 10

ly obtuse at base, 5-nerved or weakly 5-pli-nerved, hirsute with yellowish hairs 2--2.5 mm. long, those of the upper side avoiding the veins, those of the lower side on the veins only. Panicle about 1 dm. long, including the long peduncle, loosely branched and few-flowered; actual pedicels only 0.5 mm. long. Flowers 5-merous. Hypanthium broadly cup-shaped, 2 mm. long to the torus. Sepals round-obovate, 1.6 mm. long from the sinuses, much exceeding the subulate exterior teeth. Petals 2.7 mm. long, 3.3 mm. wide. Stamens isomorphic; filaments flat, gradually tapering from a wide base, glabrous; anthers oblong, 4-celled, 2.4 mm. long, opening by a ventro-terminal pore; connective simple. Ovary inferior, crowned by about 10 erect glandular setae; style (immature) 4 mm. long, obscurely villosulous; stigma peltate, not angled, 1.1 mm. in diameter.

"Shrub 5 feet tall; petals white; filaments white; anthers yellow; calyx greenish-white; pedicels and peduncle pale salmon; leaves membranous, shining and deep green above, pale green below." Prov. Santiago-Zamora: high wooded slopes above Valladolid, altitude 2100--2400 meters, Steyermark 54701. Among the 141 described species of this section, the great majority of which are represented in the herbarium of the New York Botanical Garden by authentic specimens, detailed drawings, or notes, not one has similarly glandular-hirsute pubescence. In foliage and especially in inflores-



cence, M. zamorensis resembles M. Killipii Gl. of Colombia, and M. megastigma Gl. of Ecuador. Both of these have glandular filaments and styles and anthers of entirely different shape.

MICONIA BARBIPILIS sp. nov. Sect. Amblyarrhena. Folia ovata, supra bullata asperrima, subtus, sicut caulis, rachis, et hypanthium, pilis conicis basi dense barbatis oblecta. Filamenta stylusque sparse glanduloso-puberula. Stigma late peltatum 5-angulatum.

A shrub 3 meters tall. Stem stoutly 4-angled, densely ferruginous with stoutly conic or nearly ovoid hairs barbellate at base, slender above. Petioles similarly pubescent, 3--7 cm. long. Blades ovate, up to 25 cm. long and 15 cm. wide, subacuminate, broadly rounded at base, 7-nerved; upper surface bullate, the principal bullae terminated by a conic ascending hair about 0.5 mm. long; lower side foveolate, the veins all marked by a row of barbellate hairs like those of the stem but shorter. Panicle 15 cm. long, sparsely branched, pubescent like the stem. Flowers 5-merous, sessile, subtended by ovate bracts 3.5--4 mm. long. Hypanthium cup-shaped, thick-walled, about 3 mm. long to the torus, densely beset with ovoid ascending hairs about 0.5 mm. long and barbellate at the base. Calyx-tube prolonged about 0.8 mm.; sepals semicircular, thin, about 0.9 mm. long above the sinuses; exterior teeth continuous, pubescent like the hypanthium but more sparsely, terminating in a very short conic projection. Petals white, obliquely obovate, about 5 mm. long and nearly as wide. Stamens isomorphic; filaments broad and flat, sparsely and minutely glandular-puberulent; anthers oblong, 4-celled, 3.3 mm. long, opening by a minute ventro-terminal pore; connective simple. Ovary inferior, apparently 5-celled; style columnar, at least 5 mm. long, densely glandular-puberulent; stigma peltate, 5-angled, 2.1 mm. wide.

"Shrub 10 feet tall; petals white; calyx dull olive-green; leaves deeply and finely rugose both sides, dull buff-green below, dark green above; anthers yellow." Province Santiago-Zamora, trail between Failas and El Pan, altitude 2255--3445 meters, Steiermark 54308.

In Cogniaux' monograph there is a group of twelve species described as "folia supra appendicis crassis conicis vel pyramidatis strigosa" or "folia supra bullis setiferis pustulata." Our plant is related to these species and to the four recently described members of the same group, M. frontinoana Gl., M. trichrona Macbr., M. Fennellii Gl., and M. pseudo-radula Cogn. & Gl. Among these M. barbipilis is the only species with barbellate pubescence, as described above.

There is in the Andes of Ecuador and Colombia a small group of species in the section Amblyarrhena of the vast ge-



us Miconia which not only have the same general aspect, as seen mounted on herbarium sheets, but also agree in certain points of structure. They probably constitute a distinct species-group. At least four of them seem to be apparently low plants, almost herbaceous of stem, freely and diffusely branched. The other two are variously advertised as shrubs, low trees, or trees, usually with no statement of height, although one specimen is designated as a tree four feet tall. When dry, all species have a dull green or bluish green cast. The leaves are thin, ovate, and prominently reticulate on the lower surface. The petals are broadly obovate, slightly retuse, and nearly equilateral; the flat filaments are not geniculate and taper uniformly from a broad base to a narrow summit. The plump anthers tend to be slightly obovate; they are essentially isomorphic, but in the epipetalous series the connective narrows toward the base, while in the episepalous series it broadens and is obscurely bilobed; in all but one species it is prolonged briefly below the thecae into an inconspicuous dorsal lobe. The filaments and style are glabrous; the stigma is capitate. The six species may be separated by the following brief key.

Pubescence of the hypanthium and panicle stellate, either wholly or with simple hairs also....M. psychophila Naud.

Pubescence of the hypanthium and panicle entirely of unbranched hairs.

Pubescence entirely of long spreading unbranched hairs.

Hairs partly or chiefly gland-tipped.

Exterior teeth thick and rounded, not surpassing the sepals.....M. caesia Cogn. & Gl.

Exterior teeth subulate, much longer than the sepals..  
.....M. nigripes Cogn. & Gl.

Hairs all simple.

Leaves plane; exterior teeth not projecting beyond the sepals; flowers 5-merous.....M. subalpina Gl.

Leaves bullate; exterior teeth projecting; flowers 4-merous.....M. acalophoides Naud.

Pubescence of minute incurved hairs; flowers 4-merous.....  
.....M. innata Gl.

M. scabriuscula Cogn., a Bolivian species which I have not seen, was stated by the author to be related to M. acalophoides. It is said to have bullate leaves and a long-setose calyx, as in that species, but 5-merous flowers. The exterior teeth were not mentioned by Cogniaux.

MICONIA INNATA sp. nov. Sect. Amblyarrhena. Frutex 6 dm. altus, cauli cum petiolo pubescente, pilis flexuosis usque

ad 1 mm. longis. Petioli 1--2 cm. longi. Laminae tenues, ovatae, opace virides subtus pallidiores, obtusae, irregulariter crenulatae, basi rotundatae vel subcordatae, 5-nerviae

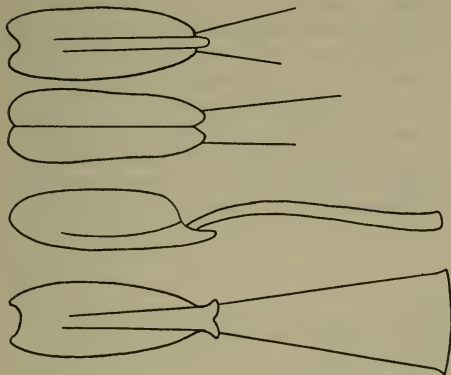


Fig. 5 *Miconia innata*, stamens X 18

vel fere 5-plinerviae, supra fere glabrae, subtus ad venas sicut cauli pubescentes. Panicula pyramidalis 5--6 cm. longa, minute pubescens, pilis incurvis 0.2 mm. longis. Flores 4-meri. Hypanthium tubulosum, ad torum 2 mm. longum, sicut panicula pubescens. Calycis tubus 0.2 mm. productus; sepala triangularia obtusa, a sinibus 0.7 mm. longa; dentes exteriores rotundata crassa, ca. 0.2--0.3 mm. in diametro.

Petala obovata alba, 2 mm. longa. Stamina fere isomorpha; filamenta complanata, 1.6 mm. longa; thecae oblongae obtusae 4-loculares, poro satis lata terminalis dehiscentes; connectivum minutissime productum in lobum dorsalem, in stam. ser. ext. obscure bilobum, in ser. int. angustatum. Stigma capitatum.

Prov. Santiago-Zamora, Ecuador, between Pailas and El Pan, altitude 2255--2445 meters, Steyermark 54309.

*MICONIA HIRSUTIVENA* sp. nov. Sect. Cremanium. Caules, petioli, et basibus venarum majorum longe hirsuta. Flores 5-meri. Antherae isomorphae, obovato-oblongae, 2-loculares, connectivo basi producto in lobum unicum dorsalem late obovatum. Stylus clavatus; stigma truncatum. Folia elliptica acuminata 3-nervia glabra, venis exceptis.

Shrub 3 m. tall, the stems roughly hirsute with simple hairs about 3 mm. long. Petioles 6--10 mm. long, similarly hirsute. Blades thin, elliptic, up to 12 cm. long by 5 cm. wide, slenderly acuminate, entire, obtuse or subrotund at base, 3-nerved with an additional pair of marginal veins, glabrous on both sides except for the hirsute bases of the primary veins. Panicle about 1 dm. long, merely furfuraceous. Flowers 5-merous, all on pedicels 1--1.5 mm. long. Hypanthium cup-shaped, 1.8 mm. long to the torus, glabrous.

Calyx-tube nearly erect, 0.8 mm. long; sepals truncate-triangular, about 0.4 mm. long; exterior teeth merely totally adnate thickenings. Petals obovate, inequilateral, white, 1.9 mm. long. Stamens isomorphic; filaments flat, 3.3 mm. long, tapering from a broad base, geniculate at two-thirds of their length, glabrous; anthers oblong, 1.3 mm. long; connective greatly thickened below and prolonged about 0.3 mm. below the thecae, not lobed. Style gradually enlarged distally, glabrous, 3.5 mm. long; stigma truncate.

Prov. El Oro, Ecuador, between Paccha and Puente Grande, altitude 1830--2430 meters, Steyermark 54142. The species appears related to M. divergens Triana, in which the panicle and upper leaf-surface are pilose and the flowers smaller.

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NOTES ON NEW AND NOTEWORTHY PLANTS. II

Harold N. Moldenke

AEGIPHILA FARINOSA Moldenke, sp. nov.

Arbor; ramulis crassis tetragonis cavis dense ochraceo-farinosis; petiolis crassis dense ochraceo-farinosis; laminis late ellipticis vel subobovatis breviter acuminatis, ad basin attenuato-acutis vel breviter acuminatis, integris supra parce farinosis glabrescentibus, subtus farinosis; inflorescentiis axillaribus vel supra-axillaribus bifurcatis fulvo-farinosis; calyce truncato integro vel minutissime 4-angulato.

Tree to 8 m. tall; bark almost flat, gray-ochraceous, succulent, clear-ochre in section; wood pliant, white; branchlets apparently stout, tetragonal, hollow, ampliate and flattened at the nodes, densely ochraceous-farinose, slightly tuberculate-lenticellate; nodes not annulate; principal internodes 3--4 cm. long; leaves decussate-opposite; petioles stout, 3--4 cm. long, densely ochraceous-farinoses; blades membranous-chartaceous, clear-green above when fresh, somewhat lighter beneath, broadly elliptic or very slightly obovate, 13.5--24 cm. long, 6--10 cm. wide, short-acuminate at apex, attenuate-acute or short-acuminate at base, entire, sparsely farinose above but glabrescent in age except for the densely farinose midrib, sparsely farinose beneath, more densely so on the midrib and larger veins; midrib stout, prominulous above, very prominent beneath; secondaries slender, 9 or 10 per side, arcuate-ascending, arcuately joined in many loops some distance from the margins, plane above, prominulous beneath; vein and veinlet reticulation conspicu-



ous on both surfaces and very slightly prominulous, usually densely farinose; inflorescences axillary or supra-axillary, 2 per node, several times bifurcate, their branches densely tawny-farinose, stout, firm, widely divergent; bractlets and prophylla linear-elongate, 1--7 mm. long, very densely tawny-farinose; calyx campanulate, about 4 mm. long and wide, densely tawny-farinose, its rim truncate, entire or very obscurely 4-apiculate; corolla hypocrateriform, yellowish-white, violet outside at the extremities, the tube broadly cylindric, about 4 mm. long, glabrous or slightly farinose outside, often slightly farinose at the throat within, its rim 4-parted, the lobes broadly elliptic, about 5 mm. long and 3 mm. wide, entire, glabrous on both surfaces or slightly farinose at the base; stamens exserted; filaments filiform, white, projecting about 1 mm. from the corolla-limb when this is erect, about 5 or 6 mm. when this is wide-spreading; anthers yellowish-white; pistil included.

The type of this interesting species was collected by José Cuatrecasas (no. 21689) at La Palma on the right bank of the Río Pichindé, Hoya del Río Cali, on the eastern slopes of the Cordillera Occidental, El Valle, Colombia, at an altitude of 2500 m., on July 24, 1946, and is deposited in the Britton Herbarium at the New York Botanical Garden.

ALONSOA WARSCENICZII f. COCCINEA Moldenke, f. nov.

Haec forma a forma typica speciei corollis coccineis recedit. - This form differs from the typical form of the species in its scarlet corollas. The type was collected by me (no. 7827) from cultivated plants at Watchung, Somerset Co., New Jersey, on July 30, 1933, and is deposited in the Britton Herbarium at the New York Botanical Garden.

ALOYSIA CHIAPENSIS Moldenke, sp. nov.

Frutex; ramis ramulisque obtuse tetragonis dense hirsutulis; internodiis valde abbreviatis; petiolis gracillimis densissime hirsutulis vel villosulis; laminis chartaceis lanceolatis, ad apicem acutis vel rotundatis, serrulatis, ad basin acutis, supra rugosis et dense pustulato-strigosis, subtus densissime tomentellis; inflorescentiis congestis.

Shrub, apparently considerably branched; stems subterete or obscurely tetragonal, gray, glabrate; branches and branchlets obtusely tetragonal, brownish, densely hirsutulous, not resinous-punctate, less densely so in age; nodes not annulate; principal internodes mostly greatly abbreviated, 2--30 mm. long, occasionally to 6.5 cm. long on vigorous shoots; leaves decussate-opposite, apparently caducous; leaf-scars large, prominent, corky, more or less lunate, on divergent sterigmata; petioles very slender, 1--4 mm. long, very densely hirsutulous or villosulous with white hairs;



leaf-blades (immature?) chartaceous, uniformly green on both surfaces, lanceolate, 1--2.5 cm. long, 4--9 mm. wide, acute or rounded at apex, uniformly serrulate from apex to base with small blunt teeth, acute at base, rugose above and densely strigose with white, pustulate-based, antrorse hairs, very densely tomentellous or short-pubescent beneath, the hairs on the larger venation beneath sometimes strigose on younger leaves; the very slender midrib and about 7 pairs of close ascending-divergent secondaries somewhat impressed above and prominent beneath, the abundant veinlet reticulation also more or less impressed above and prominent beneath; inflorescence axillary, 2--6 per node, greatly congested toward the tips of the branchlets, but apparently also produced on entirely leafless branches, about equaling the leaves where these are present (but the leaves may still be immature), divergent or drooping, very densely many-flowered, 1--3 cm. long; peduncles very slender, 5 mm. long or less, very densely hirsutulous; bractlets large, foliaceous, conspicuous, lanceolate, about 6.5 mm. long and 2.5 mm. wide, 3-nerved, attenuate-subacuminate at apex, rather densely short-pubescent with microscopically glandular-capitate hairs and sericeous-villosulous with much longer whitish antrorse hairs on the back, only microscopically puberulent on the inner surface; calyx cupuliform, 2-parted, 1--1.2 mm. long, densely setulose-hirsute on the outside with stiff widely spreading hairs as long as or longer than the diameter of the calyx, each segment navicular, obtuse at apex, glabrous within; corolla infundibular or hypocrateriform, about 3.8 mm. long in all, its tube cylindrical, about 0.7 mm. wide at base, constricted immediately above the ovary to 0.3 mm., ampliate to 0.9 mm. at apex, puberulent or short-pubescent with spreading hairs from just above the ovary to the apex on the outer surface, densely pubescent within, its limb about 1.5 mm. wide, 5-lobed, the lobes unequal, the largest less than 1 mm. wide and 0.5 mm. long, rounded, undulate-margined, glabrous on the inner and pubescent on the outer surface; stamens 4, didynamous, inserted about 0.8 mm. below the mouth of the corolla-tube; filaments practically obsolete; anthers very small, apparently effete; pistil one; style capillary, about 2.1 mm. long, glabrous; stigma lateral, oblique, about 0.4 mm. long; ovary subglobose, about 0.6 mm. long and wide, glabrous.

The type of this remarkable species was collected by Carl Albert Purpus (no. 10519) on rocky banks at Monserrate, Chiapas, Mexico, in March, 1925, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is obviously related to A. barbata (T. S. Brandeg.) Moldenke, of Baja California, and may like that species be polygamo-dioecious. It differs from A. barbata in its pubes-

cence, leaf-size and shape, and especially the much smaller size of its flowers.

*ALOYSIA REICHII* var. *TRILOBATA* Moldenke, var. nov.

Haec varietas a forma typica speciei foliis semper 3-lobatis recedit. - This variety differs from the typical form of the species in having all its leaves 3-lobed.

The type was collected by Rodolfo Wagenknecht (Looser 4238) at Río Turbio, dept. Elqui, Coquimbo, Chile, on October 19, 1940, and is deposited in the Britton Herbarium at the New York Botanical Garden. It was inaccurately reported by me in *Lilloa* 6: 312 (1941) as typical *A. Reichii* Moldenke, whose leaves are mostly unlobed.

*ALOYSIA TERNIFOLIA* Moldenke, sp. nov.

Frutex; ramulis gracilibus subtetragonis striatis griseis adpresso-pubescentibus; foliis ternatis; petiolis gracillimis densiuscule adpresso-pubescentibus; laminis chartaceis ellipticis abrupte acutis vel obtusiusculis, apicem versus 6--12-dentatis, supra minute scabrello-puberulis, subtus molliter puberulis; inflorescentiis spicatis multifloris.

Shrub; branchlets slender, subtetragonal, somewhat striate-ridged, gray, appressed-pubescent with very short grayish hair; nodes annulate; principal internodes 2.5--4 cm. long; leaves ternate; petioles very slender, 1--5 mm. long, rather densely appressed-pubescent with very short white or grayish hairs like the branchlets, slightly margined especially toward the apex; blades chartaceous, bright-green, only very slightly lighter beneath, elliptic, 4--7.5 cm. long, 1.2--3 cm. wide, abruptly acute or bluntish at apex, the lower  $\frac{2}{3}$  of the margin entire, the upper  $\frac{1}{3}$  with 6--12 broad and rather blunt antrorse teeth, minutely scabrelous-puberulent above under a handlens, softly puberulent with obscure hairs beneath, slightly dense on the larger venation; inflorescence spicate, in the upper leaf-axils, 2 or 3 per node, 7--9 cm. long, many-flowered, rather dense, all except the very lowest flowers more or less imbricate; peduncles very slender, 1.5--3 cm. long, densely white-puberulent; rachis very slender, densely white-puberulent; bractlets lanceolate, 1.5--3 mm. long, 0.5 mm. wide, long-acuminate, appressed-puberulent on the back; calyx deeply 2-labiate, the lips divergent, about 2.8 mm. long, finely appressed-puberulent on the outside, each usually 2-lobed or 2-toothed at the apex; corolla hypocrateriform, its tube 3.5--4 mm. long, about 1 mm. wide at the base, ampliate to 2 mm. at the center and from there to the apex, glabrous outside, densely tomentose within, the limb 2-lipped, the upper lip 2-lobed, the lower lip 3-lobed, the lobes lingulate-orbicular, 1.5--2 mm. long and wide, the margins slightly undulate, glabrous

outside, pubescent at the base within; stamens 4, inserted near the apex of the corolla-tube, included, didynamous; filaments obsolete or to 0.5 mm. long; anthers 2-celled; style stoutish, about 1.3 mm. long, glabrous, firm; stigma capitate, slightly 2-lobed; ovary obovate, about 1 mm. long and 1.3 mm. wide, glabrous, 2-celled.

The type of this very distinct species was collected by Per Karl Hjalmar Dusén (no. 4228) at a rivulet at Itaiacoca, near Ponta Grossa, Santa Cruz, Argentina, March 17, 1904, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

ALOYSIA VIRGATA var. PLATYPHYLLA (Briq.) Moldenke, comb.nov.

*Lippia virgata* var. *elliptica* Briq., Ann. Conserv. & Jard. Bot. Genève. 7-8: 304. 1904.

CALLICARPA CANDICANS var. PERRYANA (Dop) Moldenke, comb.nov.

*Callicarpa cana* var. *Perryana* Dop, Bull. Soc. Hist. Nat. Toulouse 64: 504. 1932.

CHLOANTHES GRANDIFLORA Moldenke, sp. nov.

Frutex, caulibus densissime lanato-tomentosis; internodiis abbreviatis; foliis sessilibus crassis, ad apicem obtusis vel subacutis, integris utrinque densissime lanato-tomentosis; floribus solitariis vel fasciculatis axillaribus.

Apparently shrubby; stems subterete, very densely lanate-tomentose, less densely so at the apex; principal internodes abbreviated, about 1 cm. long below the inflorescences and to 2.5 cm. long among the inflorescences; leaves decussate-opposite, sessile, thick-textured, 1.8--3 cm. long, 8--13 mm. wide, obtuse or subacute at apex, entire, very densely white-lanate-tomentose on both surfaces or becoming merely densely stellate on both surfaces; midrib and a few long-ascending secondaries sometimes barely visible through the tomentum; flowers solitary or in small clusters in the upper ten leaf-axils, the lower ones often borne on stout white-lanate peduncles 1--2 cm. long; calyx campanulate, deeply 5-parted almost to the base, the lobes equal, elliptic, about 8 mm. long, 3.5--4 mm. wide, acute at the apex, densely lanate-tomentose on the outer surface with white hairs, venose; corolla large, showy, tubular, the tube about 2 cm. long, slightly asymmetrical and curvate, about 4 mm. wide at the base and to above the ovary, ampliate to 12 mm. near the apex, glabrous or very obsoletely puberulent outside, glabrate within except for the densely villous-tomentose ring above the ovary, venose, the limb 2-lipped, the upper lip 2-lobed, the lower lip 3-lobed, the lobes ovate-orbicular, 3--4 mm. long, 4--5 mm. wide, rounded, puberulent on the outer surface, venose; stamens 4, inserted at about the middle of



the corolla-tube, included, didynamous; filaments flattened, 6--7 mm. long, glabrous; anthers bifid; style capillary, about 17 mm. long, glabrous, included or equaling the corolla-tube; stigma unequally and shortly bifid; ovary small, about 1 mm. long and wide, farinose-pulverulent.

The type of this species was collected by J. Mauritson somewhere in Western Australia in September, 1936, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*CONGEA CHINENSIS* Moldenke, sp. nov.

Frutex scandens; ramis dense villosopubescentibus; nodis annulatis; petiolis dense villosis; laminis ellipticis acuminate, ad basin rotundatis vel subcordatis, integris supra leviter pilosulis subtus plusminusve dense piloso-punctulatis; inflorescentiis paniculatis; bracteolis involucri 4 ellipticis vel suboblanceolatis ad basin connatis utrinque dense albo-tomentosis obtusis vel subacutis.

Woody vine; stems branched; branches rather slender, subterete or very obtusely tetragonal, densely villous-pubescent with more or less appressed antrorse brownish hair, less so in age; principal internodes 3.5--6 cm. long; nodes distinctly annulate; leaves decussate-opposite; petioles rather stout, 5 mm. long or less, densely villous like the branchlets; blades dark-green and brunnescent in drying above, lighter beneath, chartaceous, elliptic, 7--10.5 cm. long, 3.5--4.2 cm. wide, acuminate at apex, usually rounded or subcordate at base, entire, lightly pilosulous above, more densely pilose on the larger veins, more or less densely pilose-punctulate beneath, more densely so on the larger veins; midrib very slender, slightly prominent above, prominent beneath; secondaries slender, 4--6 per side, arcuate-ascending, plane above, prominent beneath; vein and veinlet reticulation obscure above, subprominent beneath; inflorescence racemose, in pairs in the upper axils, forming a large terminal panicle; peduncles slender, 5--9 cm. long, densely villous like the branches, annulate and bracteate at the nodes of the rachis; bracts foliaceous, elliptic-lanceolate, 1.5--6 cm. long, 4--20 mm. wide, decreasing in size toward the apex of the inflorescence, in pairs at the nodes, similar to the leaves in color, texture, and pubescence or more densely pubescent on both surfaces; pedicels slender, 6--15 mm. long, densely villous, two per node; involucre composed mostly of 4 bractlets, elliptic or slightly oblanceolate, connate at base to form a cup about 6 mm. high, the free portions 2--2.5 cm. long, obtuse or subacute at apex, densely white-tomentose on both surfaces; flowers about 5 per head, densely white-villous-tomentose with short appressed hairs on the outer surface.



The type of this distinct species was collected by H. T. Tsai (no. 52611) in Yunnan, China, in 1932, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm. It was determined as C. tomentosa Roxb. by R. C. Ching, and so distributed, but differs pronouncedly from that species in the large involucrel cups and in other characters. Its involucrel cups are similar to those of C. connata Fletcher and C. siamensis Fletcher, of Thailand, which, however, may be distinguished at once by their uniformly 3-parted involucrel cups.

HELIPTERUM ROSEUM f. ALBUM (L. H. Bailey) Moldenke, stat. nov.

Helipterum album Hort. ex L. H. Bailey, Cycl. Am. Hort. 3: 726. 1906.

LANTANA EHRENBERGIANA Moldenke, sp. nov.

Frutex; ramis obtuse tetragonis submarginatis glabris; ramulis gracillimis numerosis tetragonis antrorse strigosis glabrescentibus; internodiis abbreviatis; petiolis strigosis; laminis firme chartaceis ovatis obtusis, ad basin subtruncatis, serratis supra strigosis rugosis subtus dense griseo-tomentellis; capitulis subglobosis; bracteis ovatis foliaceis strigillosis acutis vel breviter acuminatis.

Shrub; branches obtusely tetragonal, slightly margined on the angles, glabrous, gray; branchlets and twigs very slender, numerous, tetragonal, antrorsely strigose-pubescent, becoming glabrescent in age; principal internodes 0.5--2.8 cm. long, mostly quite abbreviated; leaves decussate-opposite; petioles 1--4 mm. long, densely antrorse-strigose; blades firmly chartaceous, rather dark-green above, lighter beneath, ovate, to 3 cm. long and 2 cm. wide, obtuse at apex, subtruncate at base and slightly cuneately attenuate into the petiole in the middle, coarsely serrate along the margins from base (except the cuneate prolongation) to apex with rounded rather appressed antrorse teeth, strigose above and usually rugose, densely gray-tomentellous beneath; midrib slender, impressed above, prominent beneath; secondaries slender, 4 or 5 per side, impressed above, prominent beneath; vein and veinlet reticulation impressed above, usually not obvious beneath; inflorescence axillary toward the tips of the twigs, apparently usually one per node, ascending or erect; peduncles very slender, 1--4 cm. long, strigose; heads subglobose, 1--1.5 mm. wide, densely flowered; bracts ovate, foliaceous, to 7 mm. long and 5 mm. wide, acute or shortly acuminate, strigillose; corolla slightly surpassing the bracts.

The type of this species was collected by Carl August Ehrenberg -- in whose honor it is named -- at Santo Domingo,

Dominican Republic, Hispaniola, in or before 1839, and is deposited in the Meisner Herbarium at the New York Botanical Garden.

*LANTANA MEARNSII* var. *CONGOLENSIS* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum tenuiter chartaceis vel submembranaceis supra scabrellis subtus plusminusve leviter puberulis; inflorescentiis 2--6 aggregatis, pedunculis gracilibus in longitudine valde variabilibus plerumque 2.5--3 cm. longis; spicis usque ad 3 cm. elongatis; bracteis lanceolatis attenuato-acuminatis laxe puberulis.

This variety differs from the typical form of the species in its thin-chartaceous or even submembranous leaf-blades which are scabrellous above and more or less lightly puberulent beneath. The inflorescences are 2--6 per node, the slender peduncles very variable in length, usually 2.5--3 cm. long. The spikes elongate to 3 cm. after anthesis, and the bracts are lanceolate, 7--10 mm. long, 2--3 mm. wide at the base, attenuate-acuminate at the apex, loosely puberulent.

The type of this variety was collected by Feller (no. A. 46) at Congo da Lemba, Belgian Congo, on April 24, 1913, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels. A common name is "disisusu na bakala". The corolla is described as white by the collector, who also states that the plant is boiled down for vapor baths.

*LANTANA MEARNSII* var. *LATIBRACTEOLATA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit pedunculis usque ad 1 cm. longis ternatis et bracteis 7--9 mm. longis, 4--5 mm. latis, ad apicem triangulari-acutis rectis imbricatis densiuscule breviterque pubescentibus ciliatis.

This variety differs from the typical form of the species in its uniformly short-peduncled spikes, the peduncles only 1 cm. long or less, 3 per node, and its broadly ovate bracts which are 7--9 mm. long and 4--5 mm. wide at the base, abruptly narrowed to the triangular-acute apex, erect, imbricate, rather densely short-pubescent and ciliate-margined. The leaves are thin-chartaceous, scabrellous-puberulent above, densely tomentellous beneath.

The type of this variety was collected by Joseph Charles Corneille Bequaert (no. 5490) in the steppes at the edge of a lake, Kabare, Belgian Congo, on August 29, 1914, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels. The corolla is described by the collector as red-violet.

*LIPPIA CHEVALIERII* Moldenke, sp. nov.

Herba (?); ramis gracillimis stramineis subteretibus obscure strigillosis; foliis ternatis vel verticillatis subsessilibus; laminis chartaceis oblanceolatis acutis, ad basin cuneato-attenuatis, argute serratis supra parciuscule strigosis, subtus dense strigosis; inflorescentiis axillaribus 3--6 aggregatis; capitulis oblongo-cylindricis densissime flavo-tomentosis; bracteolis ovatis acuminatis.

Herbaceous (?); branches very slender, stramineous, subterete, striate, rather obscurely strigillose; nodes annulate; principal internodes elongate, 5--13 cm. long; leaves ternate or in 4's, subsessile; blades chartaceous, often rather thin, bright-green above, grayish-green beneath, oblanceolate, 4--6 cm. long, 1.3--2 cm. wide, acute at apex, cuneate-attenuate at base, sharply serrate except at and near the base, the teeth small and rather obtuse, antrorse, rather sparsely strigose above, much more densely so beneath; midrib very slender, usually plane above, prominent beneath; secondaries very slender, 4 or 5 per side, ascending, almost indiscernible above, prominulous beneath; vein and veinlet reticulation indiscernible above, rather obscure beneath, flat; inflorescence axillary only, 3--6 per node in the uppermost 2 or 3 nodes, usually shorter than the subtending leaves; peduncles slender, 5--15 mm. long, densely white-pubescent with antrorse hairs; heads oblong, cylindric, 4--11 mm. long, 5--6 mm. wide, very densely yellow-tomentose, all save the lowest bractlets completely hidden by the yellow tomentum; lowest bractlets ovate, about 3 mm. long and 2 mm. wide, acuminate, densely tomentose on the back; corolla about 4 mm. long in all, its limb about 2 mm. wide.

The type of this species was collected by August J. B. Chevalier (no. 67) -- in whose honor it is named -- at Toukota, French Soudan, French West Africa, on December 28, 1898, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

**LIPPIA DOMINGENSIS** Moldenke, sp. nov.

Frutex decumbens; caulis prostratis gracilibus saepe ad nodos radicantibus glabris; ramis tetragonis dense brunneo-puberulis resinosis glabrescentibus; foliis oppositis vel ternatis numerosis parvissimis; petiolis gracillimis strigilloso-puberulis resinosis; laminis crassiusculis ovalibus vel suborbicularibus, ad apicem rotundatis, ad basin acutis, supra valde bullatis rugosisque scaberrimisque regulariter dentatis, subtus adpresso-pubescentibus.

Prostrate or spreading shrub; stems to 4 feet long, slender, gray, often rooting at the nodes, glabrous, the bark exfoliating in age; branches numerous, short, very slender, tetragonal, densely brownish-puberulent, resin-



ous, glabrescent in age; branchlets and twigs numerous, very slender, tetragonal, densely brownish-puberulent, resinous; nodes annulate; principal internodes abbreviated, 3--20 mm. long; leaves decussate-opposite or ternate, numerous, very small; petioles very slender, 1--2.5 mm. long, strigillose-puberulent, resinous; blades very small, rather thick-textured, bright-green above, somewhat lighter beneath, oval or suborbicular, 4--15 mm. long, 3--11 mm. wide, rounded at apex, acute at base, deeply bullate above, the margins regularly dentate with small rounded rather spreading teeth, rugose and very scabrous above, appressed-pubescent or strigose beneath and somewhat resinous; midrib slender, deeply impressed above, very prominent beneath; secondaries very slender, 3--6 per side, ascending, rather straight, deeply impressed above, very prominent beneath; tertiaries very slender, connecting the secondaries and at right angles to them, rather straight and subparallel, deeply impressed above, prominent beneath; inflorescence axillary, sparse, less than 1 cm. long in all, about equaling the subtending leaves; peduncles very slender, 4--5 mm. long, densely puberulent and resinous; heads few-flowered, subglobose, not elongating in fruit; bractlets elliptic or oblanceolate, 2.5--3 mm. long, 1 mm. wide, obtuse or subacute at apex, resinous-puberulent; corolla white, its tube 3--4 mm. long, slightly surpassing the subtending bractlets; corolla-limb 1--1.5 mm. wide.

The type of this species was collected by Richard A. and E. S. Howard (no. 8110) at the edge of a limestone ravine in pine woods along the trail between Federnales and Aceitinal, alt. 4200 feet, prov. Barahona, Dominican Republic, between August 8 and 12, 1946, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collectors note that only 4 flowers open at a time in each head.

*LIPPIA LEPIDA* Moldenke, sp. nov.

Planta pumila, ad basin lignosa, usque ad 15 cm. alta; caulibus gracilibus subteretibus dense breviterque pubescentibus saepe glanduliferis; foliis oppositis sessilibus ellipticis obtusis argute serratis, ad basin subacutis vel obtusis, supra dense breviterque pubescentibus, subtus albo-tomentosis; inflorescentiis capitatis; bracteis magnis ovato-ellipticis acutis glanduloso-pubescentibus imbricatis

Dwarf plant, apparently from a woody base, to 15 cm. tall; stems slender, subterete, densely short-pubescent with spreading often gland-tipped hairs, brown macroscopically, but glistening-silvery microscopically; nodes 2--4, not annulate; internodes 2.5--5.5 cm. long, or the very lowest abbreviated to 1 cm. or less; leaves 1--4 pairs, de-



cussate-opposite, sessile, elliptic, 7--14 mm. long, 4--8 mm. wide, obtuse at apex, sharply serrate, subacute or obtuse at base, densely short-pubescent above and white-tomentose beneath; inflorescence capitate, usually two at each of the 1 or 2 upper nodes and a single terminal one; peduncles very slender, 1--3.5 cm. long, densely glandular-pubescent like the stems; heads hemispheric, about 1 cm. long and 1.5 cm. wide, densely many-flowered; bracts large, ovate-elliptic, about 5 mm. long and wide, acute at apex, glandular-pubescent, overlapping; corolla rose, hypocrateriform, projecting about 5 mm. beyond the bracts, its limb 5 mm. or more wide.

The type of this little species was collected by A. F. M. Glaziou (no. 21891) near the encampment at Corrego do Brejo, Goyaz, Brazil, in March or April, 1883, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

LIPPIA SCHLIEBENI Moldenke, sp. nov.

Fruticulus; caulibus griseis obtuse tetragonis scabrellis; ramulis tetragonis brunneis breviter pubescentibus vel puberulis; foliis oppositis numerosis; petiolis dense puberulis; laminis chartaceis ovatis acutis dense serrulatis, as basin acuminatis, supra scabris bullatisque, subtus adpresso-canescendo-puberulis; inflorescentiis axillaribus spicatis usque ad 2 cm. elongatis.

Dense bush; stems and branches gray, obtusely tetragonal, scabrellous; twigs tetragonal, short-pubescent or puberulent, brownish; nodes not annulate; leaf-scars elevated, corky; principal internodes 2--15 mm. long on twigs, to 5 cm. long on the main stem; leaves decussate-opposite, numerous; petioles slender, 1--6 mm. long, densely puberulent; blades chartaceous, bright-green above, lighter beneath, ovate, 1.5--3 cm. long, 5--15 mm. wide, acute at apex, densely serrulate, acuminate at base, scabrous and bullate above, appressed canescent-puberulent beneath; midrib slender, deeply impressed above, prominulent beneath; secondaries slender, 3--5 per side, ascending, not much arcuate, deeply impressed above, prominulent beneath; vein and veinlet reticulation beautifully conspicuous and deeply impressed above, prominulent beneath; inflorescence axillary, abundant, spicate, 2 per node; peduncles slender, 2--6 cm. long, densely puberulent, glabrescent in age; spikes subcapitate during anthesis, elongate to 2 cm. in fruit, densely many-flowered; bracts ovate, numerous, reflexed during anthesis, about 5 mm. long and 3 mm. wide, attenuate at apex, densely puberulent on both surfaces; corolla hypocrateriform, white, surpassing the subtending bract by about 3 mm., densely pubescent on the outer surface, its limb about 3 mm. wide

The type of this species was collected by H. J. Schlieben

(no. 5596) -- in whose honor it is named -- at Mucraplateau, Bakari, 80 km. west of Lindi, alt. 600 m., Tanganyika Territory, on October 26, 1934, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

*LIPPIA STROBILIFORMIS* Moldenke, sp. nov.

Fruticulus (?); caulibus gracilibus tetragonis sulcatis strigillosis; ramis paucis brevibus; foliis oppositis; petiolis gracilibus strigosis; laminis firme chartaceis lanceolatis vel ellipticis acutis regulariter serrulatis, ad basin acutis, supra scabris subbullatisque, subtus puberulis resinoso-granulatisque; inflorescentiis axillaribus spicato-strobiliformibus numerosis; bracteis magnis perspicuis.

Stems slender, tetragonal, ridged and sulcate, strigillose; branches few, short; nodes not annulate; principal internodes 3.5--6 cm. long; leaves decussate-opposite; petioles slender, 2--5 mm. long, strigose; blades firmly chartaceous, grayish-green on both surfaces, lanceolate or elliptic, 3--6 cm. long, 1--2 cm. wide, acute at apex, regularly serrulate along the margins, acute at base, scabrous and slightly subbullate above, puberulent and resinous-granular beneath; midrib slender, subprominulous above, prominulous beneath; secondaries slender, 6--8 per side, ascending, only slightly arcuate, subimpressed above, prominulous beneath; vein and veinlet reticulation subimpressed above, subprominulous beneath; inflorescence axillary, spicate-strobiliform, 2 per node, abundant; peduncles slender, firm, ascending, 1--3.8 cm. long, tetragonal, strigillose; spikes very densely capitate, to 2 cm. long and 1.5 cm. wide; bracts large and conspicuous, very numerous, very closely imbricate and appressed antrorsely, ovate, about 7 mm. long, 4--5 mm. wide, abruptly acute or subacuminate at apex, very densely appressed-pubescent with antrorse hairs which project prominently beyond the margins and form what appears macroscopically like a light border to the bracts; corolla hypocrateriform, its tube 7--8 mm. long, densely puberulent outside, the limb about 4 mm. wide.

The type of this handsome species was collected by Captain Storms (no. 3) at Karema, Tanganyika Territory, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels. The long slender roots are remarkable because of the large number of sessile nodules which they bear. These nodules are 2--4 mm. in diameter.

*LIPPIA STROBILIFORMIS* var. *ACUMINATA* Moldenke, var. nov.

Hæc varietas a forma typica speciei recedit foliis sæpe ternatis, inflorescentiis sæpe ternatis, spicis dense capitatis, bracteis valde patentibus non adpressis lanceolato-ovatis longe acuminatis dense puberulis.

This variety differs from the typical form of the species in having often ternate leaves and inflorescences and in having the bracts of its dense capitate spikes wide-spreading, not appressed, lanceolate-ovate, about 1 cm. long, 4--4.5 mm. wide, long-acuminate at the apex, densely puberulent, without a light border. The mature spikes are 2 cm. wide and the peduncles are to 4.5 cm. long.

The type of this variety was collected by Père Hyacinthe Vanderyst (no. 17168) in the region of Panzi, Belgian Congo, in 1925, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

*LIPPIA STROBILIFORMIS* var. *PARVIFOLIA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis parvioribus, petiolis 1 mm. longis vel obsoletis, laminis ellipticis 1.5--3 cm. longis, 6--14 mm. latis; bracteis patentibus vel reflexis ovatis non addressis breviter acuminatis.

This variety differs from the typical form of the species in its smaller leaves, the petioles being 1 mm. long or obsolete, the blades elliptic, 1.5--3 cm. long, 6--14 mm. wide; inflorescences 2--4 per node, 1--5 cm. long; and the bracts spreading or reflexed, closely imbricate but not appressed, ovate, 7--8 mm. long, 3--4 mm. wide, short-acuminate at the apex, densely appressed-puberulent, sometimes subrevolute along the margins, without a lighter margin or with an obscure one.

The type of this variety was collected by Père Hyacinthe Vanderyst (no. 23423) at Mérode, Belgian Congo, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

*LIPPIA WOODII* Moldenke, sp. nov.

Herba; caulibus plerumque simplicibus dense puberulis; foliis oppositis paucis; petiolis strigoso-puberulis; laminis chartaceis rectis anguste ellipticis supra scabris subbullatisque, subtus dense puberulis vel breviter pubescentibus; inflorescentiis capitato-spicatis multifloris

Herb; stems subterete toward the base, subtetragonal toward the apex, mostly unbranched, densely puberulent, less densely so in age; nodes not annulate; principal internodes 3--14.5 cm. long; leaves decussate-opposite, few, usually with a very much abbreviated branchlet and a few small leaves in their axils; petioles slender, 1--5 mm. long, strigose-puberulent; blades chartaceous, rather grayish-green on both surfaces, apparently erect on the stem, narrowly elliptic, 4--6 cm. long, 8--12 mm. wide, scabrous and subbullate above, densely puberulent or short-pubescent beneath; midrib slender, impressed above; secondaries very slender, 4--6 per side, impressed above, ascending, not much



arcuate, prominulous beneath; veinlet reticulation impressed above, prominulous beneath; inflorescence capitate-spicate, 2 per node at the uppermost 2 or 3 nodes, about equaling the subtending leaves; peduncles slender, 2--4.5 cm. long, densely short-pubescent with brown hairs; spikes capitate, about 1 cm. long, 1.2--1.4 cm. wide, densely many-flowered; bracts narrowly lanceolate, the lowest about 7 mm. long, 2--2.5 mm. wide, long-acuminate or caudate at apex, densely short-pubescent with subappressed hairs, far surpassing the flowers; corolla hypocrateriform, 3--4 mm. long, densely short-pubescent with whitish hairs outside, the limb 1--1.5 mm. wide.

The type of this species was collected by J. Buchanan (J. Medley Wood 6937) at Blantyre, Nyassaland, and is no. 83373 in the herbarium of the Chicago Natural History Museum.

LYCHNIS COELI-ROSA f. COERULEA Moldenke, f. nov.

Haec forma a forma typica speciei corolla coeruleis recedit. - This form differs from the typical form of the species in its sky-blue corollas.

The type was collected by me (no. 10021) from cultivated plants at Villa Elsinore, Watchung, Somerset Co., New Jersey on July 31, 1937, and is deposited in the Britton Herbarium at the New York Botanical Garden.

MENTHA GENTILIS f. VARIEGATA Moldenke, f. nov.

Haec forma a forma typica speciei foliis albo-variegatis recedit. - This form differs from the typical form of the species in having its leaf-blades variegated with white.

The type was collected by me (no. 8648) from cultivated plants at Leonia, Bergen Co., New Jersey, on July 15, 1935, and is deposited in the Britton Herbarium at the New York Botanical Garden.

NICOTIANA ALATA var. GRANDIFLORA f. RUBELLA Moldenke, f. nov.

Haec forma a forma typica varietatis corolla rubellis recedit. - This form differs from the typical form of the variety in its pink corollas.

The type was collected by me (no. 8122) from cultivated plants at Villa Elsinore, Watchung, Somerset Co., New Jersey, on July 25, 1934, and is deposited in the Britton Herbarium at the New York Botanical Garden.

NIGELLA DAMASCENA f. PLENIFLORA Moldenke, f. nov.

Haec forma a forma typica speciei corollis plenis recedit. - This form differs from the typical form of the species in its "doubled" corollas.

The type was collected by me (no. 3038) from cultivated plants at Villa Elsinore, Watchung, Somerset Co., New Jer-



sey, on August 9, 1926, and is deposited in the Britton Herbarium at the New York Botanical Garden.

NOLANA ATRIFLORIFOLIA f. ALBA (Fletcher) Moldenke, comb.nov.

Nolana paradoxa var. alba Fletcher in L. H. Bailey, Cycl. Am. Hort. 4: 1092. 1906.

X ROSA DAWSONI Moldenke, nom. nov.

Rosa multiflora Thunb. x R. borboniana Desp. ex Rehd., Man. Cult. Trees & Shrubs, ed. 2, 445. 1940

X ROSA FELICITA Moldenke, nom. nov.

Rosa sempervirens L. x R. chinensis Jacq. ex Rehd., Man. Cult. Trees & Shrubs, ed. 2, 448. 1940.

RUDBECKIA HIRTA f. FLENIFLORA Moldenke, f. nov.

Haec forma a forma typica speciei capitulis plusminusve toto ligulatis recedit. - This form differs from the typical form of the species in having its flower-heads with several to many supernumerary series of rays.

The type was collected by me (no. 2058) in a grassy field in the valley between the First and Second Mountains, Watchung, Somerset Co., New Jersey, on July 27, 1924, and is deposited in the Britton Herbarium at the New York Botanical Garden.

SANVITALIA PROCUMBENS f. FLENIFLORA Moldenke, nom. nov.

Sanvitalia procumbens var. flore-pleno Hort. ex Barclay in L. H. Bailey, Stand. Cycl. Hort. 3: 3071. 1935.

STACHYTARPHETA AMPLEXICAULIS Moldenke, sp. nov.

Herba suffrutescens; caulibus ut videtur simplicibus teretibus dense puberulis; foliis oppositis amplexicaulis; laminis chartaceis brunnescentibus ovatis, ad apicem attenuatis vel acuminatis, serratis, ad basin abrupte angustatis, supra minute pulverulis vel glabrescentibus, subtus dense puberulis; inflorescentiis solitariis spicatis densifloris.

Suffrutescent herb; stems apparently simple, terete, densely puberulent, straight; principal internodes 9-10 cm. long; leaves decussate-opposite, amplexicaul at base; blades chartaceous, dark-green on both surfaces, brunnescent in drying, ovate, 4.5--8.5 cm. long, 1.9--4 cm. wide, attenuate or acuminate at apex, serrate along the margins with appressed rounded very regular teeth, abruptly narrowed at base into a broadly winged petiole about 1 cm. long and 8 mm. wide, cordate-clasping around the stem, the auricles of the opposite leaves overlapping each other, minutely and very inconspicuously pulverulent or glabrescent above, densely puberulent beneath; midrib slender, plane above, very incon-

spicuously prominent beneath; secondaries very slender, about 5 per side, arcuate-ascending, obscure above, slightly prominent and densely puberulent beneath; vein and veinlet reticulation indiscernible above, the tertiaries only prominent beneath; inflorescence terminal, solitary, spicate; peduncles short, 1--2 cm. long, puberulent-pulverulent; spikes (immature) 6--11 cm. long, densely flowered; rachis puberulent, shallowly sculptured in age, ridged; bractlets lanceolate, about 1 cm. long, long-attenuate or caudate at apex, puberulent; calyx tubular, about 12 mm. long, puberulent, irregularly toothed at apex, the teeth 1--2 mm. long, triangular, sharply acute; corolla hypocrateriform, blue, the tube projecting 5 mm. or more from the calyx, glabrous.

The type of this very distinct species was collected by Auguste François Marie Glaziou (no. 13063) at Congonhas do Campo, Minas Geraes, Brazil, in June or July between 1861 and 1895, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

*TECTONA GRANDIS* var. *GLABRIFOLIA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis subtus ut videtur glabris valde pallidis subargenteis.

This variety differs from the typical form of the species in having the puberulence on the lower leaf-surface so closely appressed and obscure as to impart to the leaves a glabrous appearance except under the microscope. The lower leaf-surfaces are also very pale, almost silvery.

The type of the variety was collected by John W. Gillespie (no. 4544) on the overland trail to the other side of the island, in the mountains south of Levuka, Ovalau, Fiji Islands, at an altitude of 250 meters, on January 31, 1928, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector states that the plants were doubtless introduced.

*TITHYMALOPSIS IPECACUANHAE* f. *LINEARIS* Moldenke, f. nov.

Haec forma a forma typica speciei foliis linearibus rubris recedit. - This form differs from the typical form of the species in its linear and red leaf-blades.

The type was collected by me (no. 10478) in sand along a roadside at Smithtown, Suffolk Co., New York, on May 29, 1938, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*VERBENA HUNZIKERI* Moldenke, sp. nov.

Herba brachiata, ad basin sublignosa; caulibus procumbentibus; ramis numerosis gracilibus adacendentibus irregulariter laxaque piloso-pubescentibus glabrescentibus; petiolis elongatis gracillimis dense patento-pubescentibus; lam-

inis deltoideo-ovatis, ad apicem attenuatis, ad basin truncatis, crasse dentatis supra parce pilosis subtus dense piloso-pubescentibus; inflorescentiis terminalibus depresso-spicatis multifloris.

Branching herb, somewhat woody at the base; stems procumbent; branches numerous, slender, ascending, irregularly and loosely pilose-pubescent with whitish hairs of various lengths and standing out almost at right angles to the stems, glabrescent in age, tetragonal; nodes annulate; principal internodes 1.5--5 cm. long; leaves decussate-opposite; petioles elongate, very slender, 6--13 mm. long, densely spreading-pubescent like the younger branches; blades thin-chartaceous, rather uniformly bright-green on both surfaces or slightly lighter beneath, deltoid-ovate, 1.8--3.5 cm. long, 9--18 mm. wide, regularly narrowed from the broad base to the attenuate apex, truncate at base, coarsely and rather irregularly sharp-toothed along the margins with antrorse teeth, sparsely pilose above, densely pilose-pubescent beneath, less densely so in age and the hair then mostly concentrated on the larger venation; midrib very slender, plane above, slightly prominulous beneath; secondaries very slender, 4--6 per side, ascending, only slightly arcuate, obscure or very slightly subimpressed above, obscure or slightly prominulous beneath; inflorescence terminal, depressed-spicate, many-flowered; peduncles slender, continuous with the stem, rather densely pilose-pubescent like the stems, often with some gland-tipped hairs, 2--3 cm. long; spikes up to about 3 cm. long and 3.5 cm wide in anthesis; bractlets narrowly lanceolate, about 4 mm. long and 1 mm. wide, glabrate except for the long-ciliate margins, sharply attenuate at apex; calyx tubular, about 8 mm. long, short-pilose on 4 parallel ribs, otherwise subglabrate, the sharply acute teeth 1--1.5 mm. long, irregular; corolla-tube 1.3--1.8 cm. long, more or less puberulent outside, its limb to 1.3 cm. wide, the lobes deeply cordate.

The type of this species was collected by Armando T. Hunziker (no. 6812) -- in whose honor it is named -- in the alder formation along the highway between Alto del Clavillo and Alpachiri, Tucumán, Argentina, on September 18, 1946, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is obviously related to V. phlogiflora Cham. and V. incisa Hook. whose densely pubescent calyxes at once distinguish them.

VERBENA LINDBERGI Moldenke, sp. nov.

Herba; caulibus 1 m. altis brachiatis obtuse tetragonis reflexo-hispidulis; ramis adscendentibus tetragonis sulcatis hispidulis; petiolis 1--2 mm. longis breviter hispidulis vel obsolete; laminis chartaceis oblongo-lanceolatis acutis, ad



basin abrupte acutis vel subtruncatis, remote serrulatis, supra strigilloso-scabris, subtus secus venulis sparsiuscule hispidulis; inflorescentiis spicatis paniculatis paucifloris juventute conglobatis, senectute usque ad 1.5 cm. elongatis.

Herb; stems 1 m. or more tall, branched above, obtusely tetragonal, hispidulous with reflexed hairs about 1 mm. long, wearing off at the base of the stem in age; branches decussate-opposite, slender, ascending, tetragonal, sulcate in drying, hispidulous like the stems; nodes annulate; principal internodes 5.5--14 cm. long; leaves rather sparse, decussate-opposite, sessile or subsessile; petioles, when present, 1--2 mm. long, short-hispidulous; blades chartaceous, dark-green above, slightly lighter beneath, oblong-lanceolate, 2--4 cm. long, 6--11 mm. wide, acute at apex, abruptly acute or subtruncate at base, rather remotely serrulate along the margins, the points of the appressed teeth 4--5 mm. apart on mature leaves, strigillose-scabrous with whitish antrorse bulbous-based hairs above, rather sparsely short-hispidulous along the venation beneath; midrib indiscernible above, very inconspicuously prominulous beneath, very slender; secondaries very slender, about 3 per side, ascending, indiscernible above, very indistinctly prominulous beneath; vein and veinlet reticulation indiscernible above, obscure beneath; inflorescence spicate, terminating each lateral branch and in a panicle of about 6 branches at the apex of the stem; peduncles slender, tetragonal, sulcate in drying, hispidulous, 1--7.5 cm. long, those terminating the branches usually quite short; spikes rather few-flowered, densely conglobate when young, elongating to about 1.5 cm. in fruit and the lower fruits then imbricate but not especially densely so; bracts in the terminal panicle foliaceous, lanceolate, 0.5--2 cm. long, 1--5 mm. wide, attenuate to the sharp apex, short-hispidulous on both surfaces, sessile, in decussate-opposite pairs; bractlets lanceolate, about 2.5 mm. long and 1 mm. wide, sparsely puberulent, the margins often ciliolate, attenuate at apex, about half as long as the fruiting-calyx; calyx tubular, 4--5 mm. long, short-toothed, spreading-puberulent with antrorse hairs; corolla-tube about 5 mm. long, its limb about 1.5 mm. wide.

The type of this species was collected by Gösta A. Lindberg (no. 136) -- in whose honor it is named -- in swamps at Ribeiro dos Buggris, in the neighborhood of Caldas, Minas Geraes, Brazil, on November 1, 1854, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

XVERBENA OSTENI Moldenke, hybr. nov.

Planta hybrida naturalis; caulibus gracilibus plusminusve dense breviterque pubescentibus, novellis patento-pubes-



centibus vel hirsutulis; pedunculis ca. 1.5 cm. longis vel subobsoletis dense patenti-hirtellis; capitulis dense paucifloris; bracteolis lanceolatis longe attenuatis ciliatis.

A natural hybrid between V. peruviana (L.) Britton and V. platensis Spreng., with intermediate characters; stems slender, more or less densely short-pubescent, the younger parts spreading-pubescent or hirtellous; petioles about 1 mm. long, hirtellous; blades small, ovate, 1--1.5 cm. long, 4--9 mm. wide, coarsely dentate, pustulate-scabrous and very sparsely or more densely strigose-hirsutulous above, scattered-pubescent or hirsutulous beneath, especially on the larger venation; peduncles about 1.5 cm. long or almost obsolete, densely spreading-hirtellous with hair of several lengths; heads densely rather few-flowered; bractlets lanceolate, 5--6 mm. long, long-attenuate, densely short-pubescent, long-ciliate on the margins; calyx about 1 cm. long, densely hirsutulous, irregularly apiculate; corolla light-red, its tube glabrous, about 15 mm. long, its limb about 15 mm. wide.

The type of this natural hybrid was collected by Cornel. Osten -- in whose honor it is named -- between plants of the parent species at Coquimbo, dept. Soriano, Uruguay, on November 16, 1894, and is deposited in the herbarium of the Museo de Historia Natural at Montevideo.

VERBENA PERUVIANA f. ROSEA Moldenke, f. nov.

Haec forma a forma typica specieicorollis roseis recedit. - This form differs from the typical form of the species in having pink instead of bright-scarlet corollas.

The type was collected by Cornel. Osten at Arroyo Grande, dept. Soriano, Uruguay, on October 3, 1895, and is deposited in the herbarium of the Museo de Historia Natural at Montevideo.

XANTHOXALIS EUROPAEA var. ATROPURPUREA (Planch.) Moldenke, comb. nov.

Xalis corniculata var. atropurpurea Planch., Fl. Serres 12: 47. 1857.

XYLOPHACOS PURSHII var. INTERIOR (M. E. Jones) Moldenke, comb. nov.

Astragalus purshii var. interior M. E. Jones, Astragalus 222. 1923.

XYLOPHACOS PURSHII var. LEUCOLOBUS (M. E. Jones) Moldenke, comb. nov.

Astragalus purshii var. leucolobus M. E. Jones, Contrib. West. Bot. 10: 61. 1902.

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THE KNOWN GEOGRAPHIC DISTRIBUTION OF THE MEMBERS OF THE VERBENACEAE AND AVICENNIACEAE. SUPPLEMENT 6

Harold N. Moldenke

Continued studies of herbarium material of the Avicenniaceae, Symphoremaceae, Stilbaceae, and Verbenaceae have brought to light 481 new country or island records in these groups, 443 new state, province, or department records, and 222 new county or parish records not previously recorded by me in my tabulation of the known geographic distribution of the accepted members of these groups [Moldenke, H. N., The known geographic distribution of the members of the Verbenaceae and Avicenniaceae, 104 pp. 1942; Supplement 1, 4 pp. 1943; Supplement 2, in Bot. Gaz. 106: 158--164. 1944; Supplement 3, in Castanea 10: 35--46. 1945; Supplement 4, in Am. Journ. Bot. 32: 609--612. 1945; Supplement 5, in Bol. Soc. Venez. Cienc. Nat. (in press)]. The specimens on which these records are based will all be cited in my forthcoming monographs of the genera involved, or in the supplements thereto, but as it will probably be some years before these generic monographs are all published, it has been thought advisable to make the specific and varietal records available to students working on the flora of given areas. The 7,000 herbarium specimens on which these new records are based are deposited in the herbaria of the New York Botanical Garden, Missouri Botanical Garden, United States National Museum, Cornell University, New York State Museum, University of Texas, L. H. Bailey Hortorium, Jardin Botanique de l'Etat at Brussels, Museo de Historia Natural at Montevideo, University of Miami, Chicago Natural History Museum, Gray Herbarium of Harvard University, Botaniska Trädgård at Göteborg, Museo Paranaense at Curitiba, Universidad Nacional de México at Mexico City, Instituto Miguel Lillo at Tucumán, Princeton University, Jardin Botánico at Madrid, Naturhistoriska Riksmuseet at Stockholm, Instituto Darwinian at San Isidro, Southern Methodist University, Vanderbilt University, and the private herbaria of Harry Ahles, José Eugenio Leite, C. L. Lundell, and Mary Thais.

As in previous installments of these records, an asterisk (\*) following a name indicates that the plant is endemic to that country or island, as far as now known.

CANADA:

Quebec:

Verbena hastata L. (Assomption County)

Nootka Island:

Verbena lasiostachys Link

Verbena robusta Greene

UNITED STATES OF AMERICA:

New Hampshire:

Verbena hastata L. (Carroll County)

New York:

Verbena urticifolia var. leiocarpa Perry & Fernald  
(Westchester County)

Pennsylvania:

Phyla lanceolata (Michx.) Greene (Dauphin & Mifflin  
Counties)

Maryland:

Verbena hastata L. (Baltimore County)

North Carolina:

Phyla nodiflora (L.) Greene (Iredell County)

South Carolina:

Phyla lanceolata (Michx.) Greene (Berkeley County)

Verbena canadensis (L.) Britton (Abbeville County)

Verbena urticifolia var. leiocarpa Perry & Fernald  
(Lexington County)

Georgia:

Callicarpa americana L. (Lowndes County)

Phyla nodiflora (L.) Greene (Glynn County)

Verbena hastata L. (Chatham County)

Florida:

Clerodendrum indicum (L.) Kuntze (Pinellas County)

Lantana camara var. mista (L.) L. H. Bailey (Pinellas &  
Polk Counties)

Lantana ovatifolia Britton (Martin County)

Phyla nodiflora (L.) Greene (DeSoto County)

Alabama:

Verbena bonariensis L. (Crenshaw County)

Ohio:

Phyla lanceolata (Michx.) Greene (Licking County)

Illinois:

Phyla lanceolata (Michx.) Greene (Hancock, Perry, &  
Whiteside Counties)

x Verbena illicita Moldenke (Cass County)

Verbena stricta Vent. (Bureau County)

Indiana:

Verbena bracteata Lag. & Rodr. (Madison County)

Verbena simplex Lehm. (Jay County)

Verbena urticifolia L. (Marshall & Vermillion Counties)

Iowa:

Verbena simplex Lehm. (Benton County)

Verbena urticifolia L. (Poweshiek County)

Kentucky:

Phyla lanceolata (Michx.) Greene (Jefferson County)

x Verbena Blanchardi Moldenke (Warren County)

x Verbena Engelmannii Moldenke -- to be deleted

Tennessee:

Verbena simplex Lehm. (Blount County)

Verbena urticifolia L. (Lewis County)

Michigan:

Verbena hastata L. (Eaton County)

Wisconsin:

x Verbena Deamii Moldenke (Pierce County)

Minnesota:

Verbena hastata L. (Meeker & Yellow Medicine Counties)

Verbena simplex Lehm. (Rock County)

South Dakota:

Verbena bracteata Lag. & Rodr. (Roberts County)

Verbena hastata L. (Deuel & Tripp Counties)

Verbena stricta Vent. (Deuel County)

Kansas:

x Verbena Perriana Moldenke (Sedgwick County)

Verbena Wrightii A. Gray (Finney County)

Missouri:

Phyla lanceolata (Michx.) Greene (Greene County)

Louisiana:

Verbena brasiliensis Vell. (Tensas Parish)

Verbena canadensis (L.) Britton (Orleans Parish)

Verbena Halei Small (Plaquemines Parish)

Nevada:

Aloysia Wrightii (A. Gray) Heller (Clark County)

Colorado:

Verbena ambrosifolia Rydb. (Weld County)

Verbena stricta Vent. (El Paso County)

Verbena Wrightii A. Gray (Boulder County)

Nebraska:

Verbena stricta Vent. (Otoe County)

Oklahoma:

Verbena bracteata Lag. & Rodr. (Garvin County)

Verbena canadensis (L.) Britton (Garvin County)

Texas:

Aloysia ligustrina (Lag.) Small (Atascosa, Coke, Gillespie, Reeves, & Zavalla Counties)

Aloysia ligustrina var. Schulzii (Standl.) Moldenke (Jim Hogg, Jim Wells, Kinney, & Zapata Counties)

Aloysia Wrightii (A. Gray) Heller (Coke & Live Oak Counties)

Callicarpa americana L. (Freestone, Hardin, & Shelby Counties)

Callicarpa americana var. lactea F. J. Muller (Jasper County)

Citharexylum brachyanthum (A. Gray) A. Gray (Zapata County)

Lantana horrida H.B.K. (Karnes, Kenedy, & Tarrant Count-



ies)

- Lantana macropoda Torr. (Bexar, Jim Hogg, & La Salle Counties)
- Phyla cuneifolia (Torr.) Greene (Dallam, Hale, & Lubbock Counties)
- Phyla incisa Small (Calhoun, Frio, Kenedy, La Salle, Mitchell, Palo Pinto, & Williamson Counties)
- Phyla lanceolata (Michx.) Greene (Bowie, Colorado, Donley, Kaufman, & Matagorda Counties)
- Phyla nodiflora (L.) Greene (Hardin & McLennan Counties)
- Phyla nodiflora var. reptans (H.B.K.) Moldenke (Val Verde County)
- Phyla strigulosa (Mart. & Gal.) Moldenke (Cameron, Hidalgo, & Wood Counties)
- Phyla strigulosa var. parvifolia (Moldenke) Moldenke (Burnett, Hidalgo, Presidio, Starr, & Uvalde Counties)
- Phyla yucatana Moldenke -- to be deleted
- Phyla yucatana var. parvifolia Moldenke -- to be deleted
- Tetraclea Coulteri A. Gray (El Paso & Tom Green Counties)
- Tetraclea Coulteri var. angustifolia (Woot. & Standl.) A. Nels. & Macbr. (Brewster County)
- Verbena ambrosifolia Rydb. (Reeves County)
- Verbena bipinnatifida Nutt. (Andrew, Bastrop, Borden, Deaf Smith, Hardman, Jefferson, Mason, McLennan, Randall, & San Patricio Counties)
- Verbena bonariensis L. (Jasper County)
- Verbena bracteata Lag. & Rodr. (Bowie, Comal, Hale, Hudspeth, Mitchell, Swisher, & Wood Counties)
- Verbena brasiliensis Vell. (Hardin, Jefferson, Orange, & Wharton Counties)
- Verbena canadensis (L.) Britton (Jasper & Upshur Counties)
- Verbena canescens var. Roemeriana (Scheele) Perry (Coleman & Guadalupe Counties)
- Verbena ciliata Benth. (Brooks & MacMullen Counties)
- Verbena Cloveri Moldenke (LaSalle County)
- Verbena Cloveri var. lilacina Moldenke -- to be deleted
- Verbena Halei Small (Aransas, Brooks, Coleman, Jefferson, & Wharton Counties)
- Verbena Matthesii Turcz. -- to be deleted
- Verbena perennis Wooton (Hudspeth County)
- Verbena plicata Greene (Andrews, Atascosa, Jim Wells, Sterling, Uvalde, Wilbarger, & Winkler Counties)
- Verbena pumila Rydb. (Baylor, Ector, Jack, Kinney, Lubbock, Medina, Montague, Randall, Red River, Ward, Wichita, & Wilbarger Counties)
- Verbena quadrangulata Heller (Willacy County)
- Verbena Runyoni Moldenke (Brazoria County)
- Verbena scabra Vahl (Hardin County)

- Verbena tenuisecta Briq. (Angelina County)  
Verbena urticifolia L. (Wise County)  
Verbena urticifolia var. leiocarpa Perry & Fernald (Cass County)  
Verbena Wrightii A. Gray (Hudspeth County)  
Verbena xutha Lehm. (Bastrop, Calhoun, Ellis, Fayette, & Hardin Counties)  
Vitex Negundo var. heterophylla (Franch.) Rehd. (Brazos County)  
Vitex Negundo var. incisa (Lam.) C. B. Clarke -- to be deleted

## New Mexico:

- Tetraclea Coulteri var. angustifolia (Woot. & Standl.) A. Nels. & Macbr. (Eddy County)  
Verbena bipinnatifida Nutt. (Dona Ana County)  
Verbena bracteata Lag. & Rodr. (Baca County)  
Verbena Halsei Small (Otero County)  
Verbena plicata Greene (Eddy County)  
Verbena Wrightii A. Gray (Luna County)

## Arizona:

- Lantana macropoda Torr. (Santa Cruz County)  
Verbena canadensis (L.) Britton -- to be deleted  
Verbena carolina L. (Gila County)  
Verbena ciliata var. pubera (Greene) Perry (Gila County)  
Verbena plicata Greene (Yavapai County)

## Washington:

- Verbena hastata L. (Clarke County)

## Oregon:

- Verbena bracteata Lag. & Rodr. (Coos, Hood River, & Sherman Counties)  
Verbena hastata L. (Columbia County)  
Verbena lasiostachys var. scabrida Moldenke (Curry & Jackson Counties)

## California:

- Lantana Camara var. mista (L.) L. H. Bailey (San Diego County)  
Phyla incisa Small (Fresno & Imperial Counties)  
Phyla lanceolata (Michx.) Greene (Contra Costa County)  
Phyla nodiflora (L.) Greene (Fresno County)  
Phyla nodiflora var. canescens (H.B.K.) Moldenke (Imperial, Kern, Merced, & Yolo Counties)  
Phyla nodiflora var. reptans (H.B.K.) Moldenke (Sacramento County)  
Phyla nodiflora var. rosea (D. Don) Moldenke (Amador County)  
Verbena brasiliensis Vell. (Solano County)  
Verbena lasiostachys f. albiflora Moldenke (San Mateo County)\*  
Verbena lasiostachys var. scabrida Moldenke (Alameda, Co-

- lusa, San Mateo, & Siskiyou Counties); delete the "\*" Verbena laeiostachya var. septentrionalis Moldenke (Amador, Del Norte, Nevada, San Benito, Santa Barbara, Shasta, Trinity, & Tulare Counties)  
Verbena menthaefolia Benth. (Riverside County)  
Verbena officinalis L. (Amador County)  
Verbena robusta Greene (Merced & San Benito Counties)

## MEXICO:

- Aloysia barbata (T. S. Brandeg.) Moldenke -- delete Chiapas  
Aloysia chiapensis Moldenke (Chiapas)\*  
Bouchea prismatica (L.) Kuntze (Michoacán)  
Burroughsia appendiculata (Robinson & Greenm.) Moldenke (San Luis Potosí)  
Citharexylum Altamiranum Greenm. (Hidalgo)  
Citharexylum Berlandieri B. L. Robinson (Oaxaca)  
Citharexylum flabellifolium S. Wats. (Carmen Island)  
Citharexylum Schottii Greenm. -- delete the "\*" Lantana bipinnatifida Sessé & Moc. -- to be deleted  
Lantana Camara var. aculeata (L.) Moldenke (Colima & Sinaloa)  
Lantana frutilla Moldenke (Guanaajuato)  
Lantana hispida H.B.K. (Chiapas)  
Lantana involucrata L. (Socorro Island)  
Lantana organoides Mart. & Gal. -- to be deleted  
Lantana repens Sessé & Moc. -- to be deleted  
Lantana scorta Moldenke (Oaxaca & Sinaloa)  
Lantana trifolia L. (Chiapas)  
Lantana tuxtlensis Sessé & Moc. -- to be deleted  
Lantana velutina Mart. & Gal. (Tlaxcala)  
Lippia alba (Mill.) N. E. Br. (Guanaajuato)  
Lippia praeceosa (Mart. & Gal.) Moldenke (Chiapas, Jalisco, Oaxaca, & Puebla)\*  
Lippia callicarpaefolia H.B.K. (Veracruz)  
Lippia graveolens H.B.K. (Chiapas & Tamaulipas)  
Lippia hypoleia Briq. (Oaxaca)  
Lippia nutans B. L. Robinson & Greenm. -- to be deleted  
Lippia Palmeri S. Wats. (Magdalena Island)  
Lippia Palmeri var. spicata Rose (Sonora & Tiburon Island)  
Lippia substrigosa Turcz. (Tabasco)  
Lippia umbellata Cav. -- delete Sonora  
Phyla incisa Small (Baja California, Federal District, & Sinaloa)  
Phyla lanceolata (Michx.) Greene (Sinaloa)  
Phyla nodiflora (L.) Greene (Nayarit)  
Phyla scaberrima (A. L. Juss.) Moldenke (Campeche & Veracruz)  
Phyla strigulosa (Mart. & Gal.) Moldenke (Campeche, Guerrero, Michoacán, Nuevo León, San Luis Potosí, Vera-

cruz, & Yucatán)

Phyla strigulosa var. parvifolia (Moldenke) Moldenke (Hidalgo, Jalisco, México, Michoacán, Morelos, Nuevo León, San Luis Potosí, Sinaloa, & Tamaulipas)

Phyla yucatanana Moldenke -- to be deleted

Phyla yucatanana var. parvifolia Moldenke -- to be deleted

Priva grandiflora (Ort.) Moldenke (Oaxaca)

Verbena canescens H.B.K. (México)

Verbena carolina L. (Querétaro)

Verbena ciliata Benth. (San Pedro Nolasco Island)

Verbena elegans H.B.K. (Michoacán)

Verbena gracilis Desf. (Guanajuato)

Verbena longifolia Mart. & Gal. (Coahuila)

Verbena neomexicana (A. Gray) Small (Sonora)

Verbena neomexicana var. hirtella Perry (Baja California)

Verbena perennis var. Johnstoni Moldenke (Coahuila)

Verbena Wrightii A. Gray (San Luis Potosí)

#### GUATEMALA:

Citharexylum hirtellum Standl. (Izabal)

Lantana trifolia L. (Retalhuleu)

Phyla stoechadifolia (L.) Small (Guatemala)

Phyla strigulosa (Mart. & Gal.) Moldenke (Alta Verapaz, El Petén, & Izabal)

Phyla yucatanana Moldenke -- to be deleted

#### BRITISH HONDURAS:

Phyla strigulosa (Mart. & Gal.) Moldenke

Phyla yucatanana Moldenke -- to be deleted

#### HONDURAS:

Phyla strigulosa (Mart. & Gal.) Moldenke

Phyla yucatanana Moldenke -- to be deleted

#### COSTA RICA:

Citharexylum Cooperi Standl. (Guanacaste)

Citharexylum Schottii Greenm. (Alajuela)

Cornutia grandifolia var. normalis (Kuntze) Moldenke (Alajuela & Guanacaste)

Lantana canescens H.B.K. (Guanacaste)

Lantana costaricensis Hayek (Heredia)

Lantana glandulosissima Hayek (San José)

Lantana hirta Grah. (Heredia)

Lantana montevidensis (Spreng.) Briq. (San José)

Lantana trifolia L. (Puntarenas & San José)

Lippia alba (Mill.) N. E. Br. (Guanacaste & San José)

Lippia Brenesii Standl. -- to be deleted

Lippia cardiostegia Benth. (Heredia & San José)

Lippia controversa Moldenke (Puntarenas)

Lippia graveolens H.B.K. (Guanacaste)

Lippia liberiensis Moldenke (Guanacaste)\*

Petrea volubilis var. pubescens Moldenke (Alajuela)

Phyla nodiflora var. longifolia Moldenke (Limón)



- Phyla scaberrima (A. L. Juss.) Moldenke (Alajuela)  
Priva aspera H.B.K. (Alajuela)  
Priva lappulacea (L.) Pers. (Alajuela & Guanacaste)  
Rehdera trinervis (Blake) Moldenke (Alajuela)  
Stachytarpheta Calderonii Moldenke (Guanacaste)  
Verbena litoralis H.B.K. (Alajuela, Heredia, & Puntarenas)  
Verbena rigida Spreng. (Cartago)

## PANAMA:

- Clerodendrum molle H.B.K. (Panamá)  
Lantana Camara var. aculeata (L.) Moldenke (Taboga Island)  
Phyla betulaeifolia (H.B.K.) Greene (Panamá)  
Phyla nodiflora var. longifolia Moldenke (Manzanillo Island)  
Phyla strigulosa (Mart. & Gal.) Moldenke (Panamá)

## BAHAMAS:

- Phyla strigulosa var. parvifolia (Moldenke) Moldenke  
Phyla yucatanana var. parvifolia Moldenke-- to be deleted

## CUBA:

- Duranta Fletcheriana Moldenke (Pinar del Río)  
Phyla strigulosa (Mart. & Gal.) Moldenke (Havana, Las Villas, Matanzas, & Oriente)  
Phyla strigulosa var. parvifolia (Moldenke) Moldenke (Havana, Matanzas, & Oriente)  
Phyla yucatanana Moldenke -- to be deleted  
Phyla yucatanana var. parvifolia Moldenke -- to be deleted

## JAMAICA:

- Phyla nodiflora var. reptans (H.B.K.) Moldenke -- to be deleted  
Phyla strigulosa var. parvifolia (Moldenke) Moldenke  
Phyla yucatanana var. parvifolia Moldenke -- to be deleted  
Verbena brasiliensis Vell.

## TORTUE:

- Lantana montevidensis (Spreng.) Briq.

## HISPANIOLA:

- Lantana Ehrenbergiana Moldenke (Dominican Republic)\*  
Lantana exarata Urb. & Ekm. (Dominican Republic)  
Lantana montevidensis (Spreng.) Briq. (Dominican Republic); delete Haiti  
Phyla strigulosa (Mart. & Gal.) Moldenke (Dominican Republic)  
Phyla strigulosa var. parvifolia (Moldenke) Moldenke (Dominican Republic)  
Phyla yucatanana Moldenke -- to be deleted

## FUERTO RICO:

- Phyla strigulosa var. parvifolia (Moldenke) Moldenke  
Phyla yucatanana var. parvifolia Moldenke -- to be deleted

## ST. THOMAS:

- Stachytarpheta cayennensis (L. C. Rich.) Vahl

## ST. JOHN:

Lantana arida Britton

## ST. CROIX:

Lantana arida BrittonPhyla nodiflora var. reptans (H.B.K.) Moldenke -- to be deletedPhyla strigulosa (Mart. & Gal.) MoldenkePhyla strigulosa var. parvifolia (Moldenke) MoldenkePhyla yucatana var. parvifolia Moldenke -- to be deleted

## ST. MARTIN:

Lantana arida BrittonPhyla nodiflora var. reptans (H.B.K.) Moldenke -- to be deletedPhyla strigulosa var. parvifolia (Moldenke) MoldenkePhyla yucatana var. parvifolia Moldenke -- to be deleted

## GUADELOUPE:

Duranta repens L.Phyla strigulosa var. parvifolia (Moldenke) MoldenkePhyla yucatana var. parvifolia Moldenke -- to be deleted

## DOMINICA:

Lantana radula Sw.Phyla nodiflora var. reptans (H.B.K.) Moldenke -- to be deletedPhyla strigulosa var. parvifolia (Moldenke) MoldenkePhyla yucatana var. parvifolia Moldenke -- to be deleted

## MARTINIQUE:

Lantana involucrata var. odorata (L.) MoldenkePhyla strigulosa var. parvifolia (Moldenke) MoldenkePhyla yucatana var. parvifolia Moldenke -- to be deleted

## BARBADOS:

Phyla nodiflora var. reptans (H.B.K.) Moldenke -- to be deletedPhyla strigulosa var. parvifolia (Moldenke) MoldenkePhyla yucatana var. parvifolia Moldenke -- to be deleted

## ST. VINCENT:

Lantana radula Sw.Phyla nodiflora var. reptans (H.B.K.) Moldenke -- to be deletedPhyla strigulosa var. parvifolia (Moldenke) MoldenkePhyla yucatana var. parvifolia Moldenke -- to be deleted

## GRENADA:

Lantana Camara var. mista (L.) L. H. BaileyLantana involucrata var. odorata (L.) Moldenke

## TRINIDAD:

Lantana radula Sw.Phyla nodiflora var. rosea (D. Don) Moldenke -- to be deletedPhyla strigulosa var. parvifolia (Moldenke) Moldenke

## COLOMBIA:

Aegiphila bogotensis (Spreng.) Moldenke (El Valle)

Aegiphila farinosa Moldenke (El Valle)\*  
Amasonia lasiocaulos Mart. & Schau. (Vaupes)  
Citharexylum subflavescens Blake (El Valle)  
Lantana foetida Rusby -- to be deleted  
Lantana glutinosa Poepp. (El Valle & Tolima)  
Lantana salicifolia H.B.K. (El Valle)  
Lippia Briquetii Moldenke (Cundinamarca)  
Lippia hirsuta L. f. (El Valle)  
Stachytarpheta straminea Moldenke (El Valle)

## VENEZUELA:

Aegiphila bogotensis (Spreng.) Moldenke (Lara)  
Aegiphila Fendleri Moldenke (Federal District)  
Aegiphila laxiflora Benth. (Monagas)  
Aegiphila membranacea Turcz. (Mérida)  
Aegiphila mollis H.B.K. (Mérida)  
Aegiphila perplexa Moldenke (Monagas)  
Aegiphila quinduensis (H.B.K.) Moldenke (Monagas)  
Aegiphila roraimensis Moldenke (Bolívar)  
Aegiphila Steyermarkii Moldenke (Bolívar)\*  
Aegiphila Steyermarkii var. obtusifolia Moldenke (Bolívar)\*  
Aegiphila venezuelensis Moldenke (Bolívar)\*  
Aegiphila verrucosa Schau. (Federal District)  
Callicarpa acuminata H.B.K. (Trujillo)  
Citharexylum spinosum L. (Bolívar)  
Citharexylum subflavescens Blake (Mérida)  
Cornutia microcalycina Pavon & Moldenke (Mérida)  
Duranta Steyermarkii Moldenke (Monagas)\*  
Lantana canescens H.B.K. (Monagas)  
Lantana foetida Rusby -- to be deleted  
Lantana glutinosa Poepp. (Aragua, Bolívar, & Cojedes)  
Lantana maxima Hayek (Federal District)  
Lantana velutina Mart. & Gal. (Carabobo)  
Lippia hirsuta L. f. (Táchira)  
Petrea arborea H.B.K. (Lara)  
Stachytarpheta australis Moldenke (Cojedes)  
Vitex capitata Vahl (Apure & Monagas)  
Vitex triflora Vahl (Amazonas)

## BRITISH GUIANA:

Aegiphila roraimensis Moldenke -- delete the "\*\*

## ECUADOR:

Aegiphila alba Moldenke (Azuay)  
Aegiphila Hoehnei var. puyensis Moldenke (Oriente)\*  
Clerodendrum fragrans var. pleniflorum Schau. (Loja)  
Clerodendrum Ulei Moldenke (Santiago-Zamora)  
Cornutia microcalycina Pavon & Moldenke (El Oro)  
Duranta Sprucei Briq. (El Oro, Loja, & Pichincha)  
Lantana Moritziana Otto & Dietr. (El Oro)  
Lantana rugulosa H.B.K. (El Oro & Loja)  
Phyla betulaeifolia (H.B.K.) Greene (El Oro)

- Phyla nodiflora var. reptans (H.B.K.) Moldenke (Loja)  
Phyla strigulosa (Mart. & Gal.) Moldenke (Guayas)  
Stachytarpheta cayennensis (L. C. Rich.) Vahl (Guayas)  
Stachytarpheta jamaicensis (L.) Vahl (Guayas)  
Stachytarpheta Steyermarkii Moldenke (Loja)\*  
Stachytarpheta straminea Moldenke (Loja)  
Verbena bonariensis L. (Pichincha)  
Verbena crithmifolia Gill. & Hook. (Guayas)  
Verbena laciniata (L.) Briq. (Azuay)  
Verbena litoralis H.B.K. (Loja)  
Verbena microphylla H.B.K. (Azuay)

## GALAPAGOS ISLANDS:

- Lantana peduncularis Anderss. (Abingdon, Albemarle, Barrington, Charles, Chatham, Gardner, North Indefatigable, & Tower)  
Lippia rosmarinifolia Anderss. (Abingdon & Albemarle)  
Lippia salicifolia Anderss. (Charles)  
Phyla strigulosa (Mart. & Gal.) Moldenke (Duncan & Hood)  
Friya lappulacea (L.) Pers. (Charles)

## PERU:

- Aloysia scorodonioides (H.B.K.) Cham. (Lima)  
Clerodendrum molle H.B.K.  
Junellia juniperina var. grisea (I. M. Johnst.) Moldenke (Moquegua)  
Junellia minima (Meyen) Moldenke (Moquegua)  
Lantana Camara var. mista (L.) L. H. Bailey (Lima)  
Lantana foetida Rusby -- to be deleted  
Lantana glutinosa Poepp. (Apurimac, Cuzco, Libertad, & Lima)  
Lantana Haughtii Moldenke (Junín)  
Lantana scabiosaeflora H.B.K. (Libertad)  
Lippia alba (Mill.) N. E. Br. (Libertad)  
Phyla nodiflora (L.) Greene  
Verbena bonariensis L.  
Verbena clavata Ruiz & Pav. -- delete the ""  
Verbena litoralis H.B.K. (Libertad)  
Verbena Matthewsii Briq. (Loreto)

## BRAZIL:

- Aegiphila casseliaeformis Schau. (Rio de Janeiro)  
Aegiphila integrifolia (Jacq.) Jacks. -- delete Goyaz  
Aegiphila Sellowiana Cham. -- delete Mattogrosso  
Aegiphila Surfaceana Moldenke (Pará)  
Aloysia chamaedryfolia Cham. (Rio Grande do Sul)  
Aloysia ligustrina var. paraguariensis (Briq.) Moldenke (Paraná)  
Aloysia virgata var. elliptica (Briq.) Moldenke (Minas Geraes)  
Aloysia virgata var. platyphylla (Briq.) Moldenke (Santa Catharina)



- Amasonia lessiocaloa Mart. & Schau. -- delete the "\*"
- Duranta Benthami Briq. (Minas Geraes)
- Duranta repens L. (Minas Geraes)
- Lantana aristata (Schau.) Briq. (Goyaz & Faiuhy)
- Lantana aristata var. glabrescens Pilger (Mattogrosso)\*
- Lantana brasiliensis Link (Mattogrosso)
- Lantana Camara var. aculeata (L.) Moldenke (Rio de Janeiro)
- Lantana Camara var. nivea (Vent.) L. H. Bailey (Bahia)
- Lantana canescens var. integrifolia Moldenke (Rio de Janeiro)
- Lantana foetida Rusby -- to be deleted
- Lantana glutinosa Poepp. (Bahia, Minas Geraes, Pará, Rio Grande do Sul, & São Paulo)
- Lantana hypoleuca Briq. (Rio Grande do Sul & Rio de Janeiro)
- Lantana macrophylla (Cham.) Schau. is the correct form for this name
- Lantana minasensis Moldenke (Rio de Janeiro)
- Lantana Pohliana Schau. (Bahia, Minas Geraes, & Rio de Janeiro)
- Lantana radula Sw. (Pernambuco, Santa Catharina, & São Paulo); delete the "\*"
- Lantana Riedeliana Schau. (Rio de Janeiro)
- Lantana trifolia L. (Paraná)
- Lippia arechavaletae Moldenke (Paraná)
- Lippia attenuata Mart. -- to be deleted
- Lippia hermannioides Cham. -- to be deleted
- Lippia iodophylla Schau. (Rio de Janeiro)
- Lippia microcephala Cham. (Goyaz & Rio Grande do Sul)
- Lippia trachyphylla Briq. (Paraná)
- Petrea macrostachya Benth. (Pará)
- Petrea maynensis Huber (Amazonas)
- Petrea rugosa H.B.K. -- to be deleted
- Stachytarpheta australis Moldenke (Maranhão & Rio Grande do Sul)
- Stachytarpheta confertifolia Moldenke (Minas Geraes)\*
- Stachytarpheta gesnerioides var. cuneata Schau. (Goyaz)
- Stachytarpheta glauca Cham. (Minas Geraes)
- Stachytarpheta lactea Schau. (Minas Geraes & Rio de Janeiro)
- Stachytarpheta Maximiliani var. glabrata Schau. (Rio Grande do Sul)
- Verbena alata Cham. (Paraná)
- Verbena ephedroides Cham. (Minas Geraes)
- Verbena hispida Ruiz & Pav. (São Paulo)

## BOLIVIA:

- Acantholippia deserticola (R. A. Phil.) Moldenke (Fotosí)
- Aloysia Fiebrigii (Hayek) Moldenke (Sucre)
- Aloysia ligustrina var. paraguariensis (Briq.) Moldenke

(Tarija)

Aloysia scorodonioides var. detonsa (Briq.) Moldenke (Chiquisaca)Aloysia virgata var. elliptica (Briq.) Moldenke (Chaco & Santa Cruz)Aloysia virgata var. platyphylla (Briq.) Moldenke (La Paz)Duranta Benthami Briq. -- delete the "\*"Junellia bisulcata (Hayek) Moldenke (Potosí)Junellia uniflora (R. A. Phil.) Moldenke (Potosí)Lampaya Castellani Moldenke (Potosí)Lantana Fiebrigii Hayek (Cochabamba & La Paz)Lantana foetida Rusby -- to be deletedLantana glutinosa Poepp. (Cochabamba, El Beni, & La Paz)Lantana ovata Hayek -- delete the "\*"

## PARAGUAY:

Aloysia virgata var. platyphylla (Briq.) MoldenkeLantana foetida Rusby -- to be deletedLantana glutinosa Poepp.Lantana montevidensis (Spreng.) Briq.Lippia bothrioura Briq. -- delete the "\*"Lippia trachyphylla Briq. -- delete the "\*"Verbena rigida var. obovata (Hayek) Moldenke -- delete the "\*"Verbena storeoclada Briq. -- delete the "\*"

## URUGUAY:

Aloysia ligustrina var. paraguariensis (Briq.) MoldenkeAloysia virgata var. elliptica (Briq.) MoldenkeLantana Camara var. aculeata (L.) MoldenkeLantana foetida Rusby -- to be deletedLantana glutinosa Poepp.Lantana ovata HayekLippia bothrioura Briq.Phyla nodiflora (L.) GreeneVerbena corymbosa Ruiz & Pav.Verbena megapotamica Spreng.x Verbena Osteni Moldenke\*Verbena peruviana f. rosea Moldenke\*Verbena rigida var. obovata (Hayek) MoldenkeVerbena storeoclada Briq.

## CHILE:

Aloysia Fonckii (R. A. Phil.) Moldenke (Atacama)Aloysia Reichii var. trilobata Moldenke (Coquimbo)\*Diostea scoparia (Gill. & Hook.) Miers (Aconcagua & Colchagua)Junellia spathulata (Gill. & Hook.) Moldenke (Aconcagua & Curicó)Junellia uniflora (R. A. Phil.) Moldenke (Santiago)Lantana Cumingiana Hayek -- to be deletedLantana glutinosa Poepp.

- Phyla nodiflora var. rosea (D. Don) Moldenke (Coquimbo)  
Verbena clavata Ruiz & Pav.  
Verbena concepcionis Moldenke (Concepcion)\*  
Verbena hispida Ruiz & Pav. (Colchagua)  
Verbena litoralis H.B.K. (Coquimbo)

## ARGENTINA:

- Acantholippia deserticola (R. A. Phil.) Moldenke (Jujuy)  
Acantholippia hastulata Griseb. (Salta)  
Aloysia chamaedryfolia Cham. (Misiones)  
Aloysia pulchra (Briq.) Moldenke (Misiones)  
Aloysia scorodonioides var. detonsa (Briq.) Moldenke (Jujuy)  
Aloysia ternifolia Moldenke (Santa Cruz)\*  
Aloysia virgata var. elliptica (Briq.) Moldenke (Chaco, Corrientes, Formosa, Santiago del Estero, & Tucumán)  
Aloysia virgata var. platyphylla (Briq.) Moldenke (Chaco, Jujuy, Misiones, Santiago del Estero, & Tucumán)  
Junellia digitata (R. A. Phil.) Moldenke (Salta)  
Junellia juniperina (Lag.) Moldenke (Jujuy & La Rioja)  
Junellia longidentata Moldenke (Salta)  
Junellia minima (Meyen) Moldenke (Jujuy)  
Junellia patagonica (Speg.) Moldenke (Santa Cruz)  
Junellia seriphioides (Gill. & Hook.) Moldenke (Jujuy)  
Junellia serpyllifolia (Speg.) Moldenke (Chubut)  
Junellia Silvestrii (Speg.) Moldenke (Santa Cruz)  
Junellia Struthionum (Speg.) Moldenke (Neuquen)  
Junellia thymifolia (Lag.) Moldenke (Chubut & Santa Cruz)\*  
Junellia tridactylites (Lag.) Moldenke (Chubut)  
Junellia Wilczekii (Briq.) Moldenke (Santa Cruz)  
Lampaya Castellani Moldenke -- delete the "\*" "  
Lantana achyranthifolia Desf. (Buenos Aires)  
Lantana cordobensis Moldenke (Buenos Aires)  
Lantana foetida Rusby -- to be deleted  
Lantana glutinosa Poepp. (Buenos Aires, Formosa, Misiones, Salta, & Tucumán)  
Lantana Junelliana Moldenke (Buenos Aires)  
Lantana montevidensis (Spreng.) Briq. (Buenos Aires)  
Lippia turbinata Griseb. (Buenos Aires)  
Stachytarpheta australis Moldenke (Misiones)  
Stachytarpheta cayennensis f. albiflora Moldenke (Misiones)  
Verbena dissecta Willd. (La Pampa)  
Verbena ephedroides Cham. (Misiones)  
Verbena flava Gill. & Hook. (Chubut)  
Verbena gracilescens (Cham.) Herter (Mendoza)  
Verbena Hookeriana (Covas & Schnack) Moldenke (Buenos Aires, Catamarca, Córdoba, La Pampa, La Rioja, Río Negro, & San Luis)  
Verbena Hunzikeri Moldenke (Tucumán)\*

- Verbena Neei Moldenke (Buenos Aires)\*  
Verbena scrobiculata Griseb. (Córdoba & San Luis)  
Verbena tenera Spreng. (La Rioja)  
Verbena tristachya Troncoso & Burkart (Corrientes & Entre Ríos)\*

## MADEIRA:

- Verbena rigida Spreng.

## CANARY ISLANDS:

- Phyla nodiflora (L.) Greene (Tenerife)  
Verbena rigida Spreng. (Tenerife)

## BELGIUM:

- Phyla nodiflora (L.) Greene

## FRANCE:

- Verbena officinalis var. prostrata Gren. & Godr.

## PORTUGAL:

- Verbena supina L.

## SPAIN:

- Lantana Camara var. aculeata (L.) Moldenke  
Verbena supina L.

## BALEARIC ISLANDS:

- Phyla nodiflora var. rosea (D. Don) Moldenke (Majorca & Minorca)  
Vitex Agnus-castus L. (Majorca & Minorca)

## GREECE:

- Verbena officinalis L.

## CYPRUS:

- Vitex Agnus-castus L.

## SICILY:

- Phyla nodiflora var. reptans (H.B.K.) Moldenke

## ALBANIA:

- Verbena officinalis L.

## ALGERIA:

- Phyla nodiflora var. suborbicularis (L. Chev.) Moldenke  
Verbena officinalis var. macrostachya Benth.  
Verbena supina f. erecta Moldenke

## CYRENAICA:

- Verbena supina L.

## TRIPOLITANIA:

- Verbena officinalis L.

## EGYPT:

- Lantana montevidensis (Spreng.) Briq.  
Phyla nodiflora var. canescens (H.B.K.) Moldenke  
Phyla nodiflora var. suborbicularis (L. Chev.) Moldenke  
Verbena supina f. erecta Moldenke

## FRENCH WEST AFRICA:

- Chascanum marrubiifolium Fenzl (Tibesti)  
Lippia adoënsis Hochst. -- to be deleted  
Lippia Chevalierii Moldenke (French Soudan & Senegambia)  
Verbena officinalis L. (Mauritania)



## ANGLO-EGYPTIAN SUDAN:

Verbena supina f. erecta Moldenke (Nubia)

## ERITREA:

Lantana kisi A. Rich.

Phyla nodiflora var. suborbicularis (L. Chev.) Moldenke

## FATMAH ISLAND:

Phyla nodiflora (L.) Greene

## FRENCH GUINEA:

Lippia adoënsis Hochst. -- to be deleted

Lippia Chevalierii Moldenke

## SIERRA LEONE:

Lantana Camara var. aculeata (L.) Moldenke

Stachytarpheta jamaicensis (L.) Vahl

## GOLD COAST:

Lippia adoënsis Hochst. -- to be deleted

Lippia rugosa A. Chev.

## TOGOLAND:

Lantana Camara L.

Lippia adoënsis Hochst. -- to be deleted

Lippia rugosa A. Chev.

## FRENCH EQUATORIAL AFRICA:

Lantana Camara var. aculeata (L.) Moldenke (Gabun)

Lippia rugosa A. Chev. (Ubangi-chari)

Phyla nodiflora (L.) Greene (Chad Territory)

Stachytarpheta angustifolia (Mill.) Vahl (Ubangi-chari)

## BELGIAN CONGO:

Lantana Camara var. aculeata (L.) Moldenke

Lantana Mearnsii var. congolensis Moldenke

Lantana Mearnsii var. latibracteolata Moldenke

Lantana viburnoides Vahl

Lippia adoënsis Hochst. -- to be deleted

Lippia grandifolia Hochst.

Lippia javanica (Burm. f.) Spreng.

Lippia rugosa A. Chev.

Lippia Whytei Moldenke

Phyla nodiflora (L.) Greene

Phyla nodiflora var. reptans (H.B.K.) Moldenke

Verbena officinalis L.

## UGANDA PROTECTORATE:

Lantana Mearnsii var. latibracteolata Moldenke

Lippia javanica (Burm. f.) Spreng.

Lippia Whytei Moldenke

## TANGANYIKA TERRITORY:

Gmelina arborea Roxb.

Lantana Camara var. aculeata (L.) Moldenke

Lantana Mearnsii var. congolensis Moldenke

Lantana Mearnsii var. latibracteolata Moldenke

Lantana scabrifolia Moldenke -- delete the "\*"

Lippia Baumii Gürke

Lippia javanica (Burm. f.) Spreng.  
Lippia scabra Hochst. -- to be deleted  
Lippia Schliebeni Moldenke  
Lippia strobiliformis Moldenke  
Lippia Whytei Moldenke

## ZANZIBAR PROTECTORATE:

Lippia javanica (Burm. f.) Spreng.  
Lippia scabra Hochst. -- to be deleted

## KENYA:

Lantana kisi A. Rich.  
Lantana scabrifolia Moldenke  
Lippia Baumii Gürke  
Lippia javanica (Burm. f.) Spreng.  
Lippia scabra Hochst. -- to be deleted  
Lippia Schliebeni Moldenke  
Lippia Whytei Moldenke

## ANGOLA:

Lantana Mearnsii var. congolensis Moldenke (Loanda)  
Lippia strobiliformis var. acuminata Moldenke  
Vitex golungensis J. G. Baker\*

## SOUTHERN RHODESIA:

Lantana Mearnsii var. congolensis Moldenke  
Lantana Mearnsii var. latibracteolata Moldenke

## BRITISH NYASALAND PROTECTORATE:

Lippia Whytei Moldenke -- delete the "\*" "  
Lippia Woodii Moldenke

## PORTUGUESE EAST AFRICA:

Holmskioldia tettensis (Klotzsch) Vatke (Mozambique)  
Lantana salvifolia Jacq. (Mozambique)  
Lippia javanica (Burm. f.) Spreng. (Mozambique)  
Phyla nodiflora var. reptans (H.B.K.) Moldenke (Lourenço Marques)

## SOUTHWEST AFRICA:

Lippia Baumii Gürke  
Phyla nodiflora (L.) Greene

## UNION OF SOUTH AFRICA:

Lantana salvifolia Jacq. (Basutoland)  
Lippia javanica (Burm. f.) Spreng. (Cape of Good Hope, Natal, & Transvaal)  
Lippia scabra Hochst. -- to be deleted  
Lippia Woodii Moldenke (Transvaal)  
Phyla nodiflora (L.) Greene (Transvaal)  
Phyla nodiflora var. reptans (H.B.K.) Moldenke (Natal)  
Verbena bonariensis L. (Cape of Good Hope)  
Verbena officinalis L. (Transvaal)  
Verbena rigida Spreng. (Basutoland)

## SEYCHELLES ISLANDS:

x Stachytarpheta abortiva Dans.

## MASCARENE ISLANDS:

Gmelina elliptica J. E. Sm. (Mauritius)  
Holmskioldia sanguinea Retz. (Mauritius)  
Phyla nodiflora var. canescens (H.B.K.) Moldenke (Mauritius)

## ARABIA:

Lantana viburnoides Vahl (Yemen)  
Phyla nodiflora (L.) Greene (Yemen)  
Phyla nodiflora var. reptans (H.B.K.) Moldenke

## REUNION:

Verbena bonariensis L.

## UNION OF SOCIALIST SOVIET REPUBLICS:

Verbena officinalis L. (Adzharian)  
Verbena supina L. (Stalingrad)

## TURKEY:

Phyla nodiflora (L.) Greene  
Verbena supina L.  
Verbena supina f. erecta Moldenke

## SYRIA:

Phyla nodiflora (L.) Greene  
Verbena officinalis L.

## IRAN:

Phyla nodiflora (L.) Greene

## NEPAL:

Phyla nodiflora (L.) Greene

## INDIA:

Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr.  
Gmelina arborea var. canescens Haines (Bihar & Orissa)\*  
Gmelina arborea var. glaucescens C. B. Clarke (Bihar & Orissa)\*  
Gmelina elliptica J. E. Sm.  
Holmskioldia sanguinea Retz. (Chamba)  
Lantana Camara var. nivea (Vent.) L. H. Bailey (Madras)  
Lantana dubia Wall. (Madras)  
Lantana indica Roxb. (United Provinces)  
Lantana salvifolia Jacq. (Punjab & United Provinces)  
Tectona grandis var. glabrifolia Moldenke (Madras)  
Verbena officinalis L. (Chamba)

## FRENCH INDIA:

Gmelina arborea Roxb.

## CEYLON:

Phyla nodiflora (L.) Greene

## MANCHUKUO:

Vitex Negundo var. heterophylla (Franch.) Rehd.  
Vitex Negundo var. incisa (Lam.) C. B. Clarke -- to be deleted

## CHINA:

Callicarpa Bodinieri Léveillé (Sikang)  
Callicarpa cana L. -- to be deleted

Callicarpa candicans (Burm. f.) Hochr. (Hupeh & Kwangtung)

Callicarpa Dielsii (Léveillé) P'ei -- to be deleted

Callicarpa integerrima var. serrulata Li (Kwangtung)\*

Callicarpa longifolia Lam. (Szechuan)

Callicarpa rubella var. Dielsii (Léveillé) Li (Chekiang, Kwangsi, Kwangtung, & Kweichow)\*

Caryopteris Forrestii Diels is the correct form for this name

Caryopteris incana (Thunb.) Miq. (Sikang)

Caryopteris incana var. brachypoda (Hand.-Mazz.) Moldenke -- to be deleted

Caryopteris terniflora Maxim. (Sikang)

Caryopteris trichosphaera W. W. Sm. (Sikang)

Clerodendrum Bungei Steud. (Sikang)

Clerodendrum elachistanthum Merr. (Kwangsi)

Clerodendrum kiangsiense Merr. (Chekiang & Kiangsi)\*

Clerodendrum kwangtungense var. puberulum Li (Kwangtung)\*

Clerodendrum trichotomum var. Fargeei (Dode) Rehd. (Kiangsu & Sikang)

Congea chinensis Moldenke (Yunnan)\*

Congea tomentosa Roxb. -- to be deleted

Premna subcapitata Rehd. (Sikang)

Tsoongia axillariflora var. trifoliolata Li (Kwangtung)

Verbena officinalis L. (Sikang)

Vitex canescens Kurz (Szechuan)

Vitex Negundo L. (Sikang)

Vitex Negundo var. cannabifolia (Sieb. & Zucc.) Hand.-Mazz. (Sikang)

Vitex Negundo var. heterophylla (Franch.) Rehd. (Honan, Hopeh, Shansi, Shantung, Shensi, Sikang, & Szechuan)

Vitex Negundo var. heterophylla f. multifida (Carr.) Rehd. (Hopeh)\*

Vitex Negundo var. incisa (Lam.) C. B. Clarke -- to be deleted

Vitex Negundo var. incisa f. multifida (Carr.) Rehd. -- to be deleted

Vitex yunnanensis W. W. Sm. (Sikang)

#### JAPAN:

Caryopteris divaricata (Sieb. & Zucc.) Maxim. (Hokkaido & Honshiu)

Caryopteris incana (Thunb.) Miq. (Kiushiu)

Verbena officinalis L. (Kiushiu)

#### MAÇAO:

Phyla nodiflora (L.) Greene

#### HAINAN ISLAND:

Callicarpa cana L. -- to be deleted

Callicarpa candicans (Burm. f.) Hochr.

#### FRENCH INDO-CHINA:

Callicarpa cana L. -- to be deleted



- Callicarpa cana var. Perryana Dop -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr. (Annam, Cambodia, & Cochinchina)  
Callicarpa candicans var. Perryana (Dop) Moldenke (Cochinchina)\*  
Sphenodesme Jackiana (Wall.) Schau. (Cochinchina)  
Taoongia axillariflora var. trifoliolata Li (Tonkin)  
Vitex canescens Kurz (Cochinchina)  
Vitex leptobotrys H. Hallier (Cambodia)  
Vitex pinnata L. (Annam)

## THAILAND:

- Lantana Camara var. aculeata (L.) Moldenke

## FEDERATED MALAY STATES:

- Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr.

## STRAITS SETTLEMENTS:

- Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr. (Malacca & Penang Island)

- Gmelina asiatica L. (Penang Island)  
Gmelina elliptica J. E. Sm. (Malacca)  
Lantana Camara var. aculeata (L.) Moldenke (Singapore)  
Sphenodesme barbata (Wall.) Schau. (Malacca)  
Sphenodesme Jackiana (Wall.) Schau. (Malacca)  
Tectona grandis L. f. (Malacca)  
Vitex trifolia var. simplicifolia Cham. (Singapore)

## PHILIPPINE ISLANDS:

- Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr. (Bohol, Cebu, Culi-on, Luzon, Mindanao, Mindoro, Negros, Palawan, & Panay)  
Lantana Camara var. aculeata (L.) Moldenke (Luzon)  
Phyla nodiflora var. reptans (H.B.K.) Moldenke  
Vitex Negundo var. heterophylla (Franch.) Rehd. (Luzon)  
Vitex Negundo var. incisa (Lam.) C. B. Clarke -- to be deleted

## MARIANNA ISLANDS:

- Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr. (Saipan & Tinian)

## CAROLINE ISLANDS:

- Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr. (Pelew Islands)

## SUMATRA:

- Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr.

## JAVA:

- Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr.  
Holmskioldia sanguinea Retz.

## KAMBANGAN:

Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr.

## BRITISH NORTH BORNEO:

Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr.  
Lantana Camara var. aculeata (L.) Moldenke

## CELEBES:

Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr.  
Duranta repens L.

## LESSER SUNDA ISLANDS:

Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr. (Banka, Lombok,  
 Salajar Islands, Sumbawa, & Timor)

## NEW GUINEA:

Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr. (Dutch New Guinea)  
Paradaya chrysoclada K. Schum. -- to be deleted  
Paradaya splendida F. Muell. (Northeastern New Guinea)  
Gmelina Ledermanni H. J. Lam (Northeastern New Guinea)

## HAWAIIAN ISLANDS:

Duranta repens L. (Oahu)  
Vitex trifolia L. (Oahu)

## BISMARCK ARCHIPELAGO:

Callicarpa cana L. -- to be deleted  
Callicarpa candicans (Burm. f.) Hochr. (Hermit Islands &  
 New Ireland)

## SOLOMON ISLANDS:

Avicennia marina var. resinifera (Forst.) Bakh. (Malaita)

## NEW CALEDONIA:

Lantana tiliaefolia Cham.  
Oxera Morierii Vieill. is the correct form for this name  
Premna foetida Reinw.  
Stachytarpheta australis Moldenke

## TONGA ISLANDS:

Premna taitensis var. rimatarensis F. H. Br. (Vavan Isl.)

## FIJI ISLANDS:

Lantana Camara var. aculeata (L.) Moldenke (Viti Levu)  
Tectona grandis var. glabrifolia Moldenke (Ovalau)

## AUSTRALIA:

Chloanthes grandiflora Moldenke (Western Australia)\*  
Clerodendrum costatum R. Br. (Queensland)\*  
Duranta repens L. (New South Wales)  
Verbena officinalis L. (South Australia)

## LIZARD ISLAND:

Callicarpa pedunculata R. Br.

## NEW ZEALAND:

Avicennia marina var. resinifera (Forst.) Bakh. (Rangitoto Island)

Teucrium parvifolium Hook. f. (North Island & South Island)

## CULTIVATED:

- Aloysia chamaedryfolia Cham. (France)  
Aloysia polystachya (Griseb.) Moldenke (Argentina)  
Aloysia triphylla (L'Hér.) Britton (Ecuador)  
Bouchea prismatica (L.) Kuntze (Spain)  
Callicarpa americana L. (Alabama & Spain)  
Caryopteris incana (Thunb.) Miq. (Belgium & Sweden)  
Citharexylum montevidense (Spreng.) Moldenke (Uruguay)  
Clerodendrum nutans Wall. (Florida)  
Clerodendrum splendens G. Don (Queensland)  
Congea tomentosa Roxb. (Trinidad & Venezuela)  
Congea velutina Wight (Belgian Congo & Java)  
Congea villosa Wight (India & Straits Settlements)  
Cornutia grandifolia (Schlecht. & Cham.) Schau. (Florida)  
Duranta repens L. (Egypt, Sicily, & Spain)  
Duranta repens var. alba (Masters) L. H. Bailey (Bermuda & Mexico)  
Duranta repens var. microphylla (Willd.) Moldenke (Trinidad)  
Gmelina elliptica J. E. Sm. (Belgium)  
Holmskioldia sanguinea Retz. (England)  
Holmskioldia speciosa Hutch. & Corbish. (Hawaiian Islands)  
Lantana achyranthifolia Desf. (Germany, New York, & Spain)  
Lantana annua L. (Spain)  
Lantana antidotalis Schum. & Thonn. (Belgian Congo)  
Lantana arida Britton (Belgium & Spain)  
Lantana boyacana Moldenke (Belgium)  
Lantana Camara L. (Belgium, France, Germany, Spain, & Texas)  
Lantana Camara var. aculeata (L.) Moldenke (Belgium, Germany, & Spain)  
Lantana Camara var. mista (L.) L. H. Bailey (Spain)  
Lantana Camara var. mutabilis (Hook.) L. H. Bailey (New York)  
Lantana Camara var. nivea (Vent.) L. H. Bailey (Belgium & Scotland)  
Lantana Chamissonis (D. Dietr.) Benth. (France)  
Lantana dubia Wall. (Germany & Spain)  
Lantana foetida Rusby -- to be deleted  
Lantana fucata Lindl. (France)  
Lantana glandulosissima Hayek (Scotland)  
Lantana glutinosa Poepp. (France & Uruguay)  
Lantana Haughtii Moldenke (Spain)  
Lantana hirta Grah. (Belgium)  
Lantana involucrata L. (France)  
Lantana involucrata var. odorata (L.) Moldenke (Belgium)  
Lantana montevidensis (Spreng.) Briq. (Belgium, France,

Mexico, & Texas)

Lantana reticulata Pers (France)

Lantana salvifolia Jacq. (Belgium & Germany)

Lantana tiliaefolia Cham. (Germany)

Lantana trifolia L. (Belgium, France, Germany, New York, Scotland, Spain, & Trinidad)

Lantana undulata Schrank (Germany)

Lantana urticaefolia Mill. (France)

Lantana velutina Mart. & Gal. (Belgium, France, & Scotland)

Lippia alba (Mill.) N. E. Br. (Belgium, Costa Rica, Germany, & Maryland)

Lippia callicarpaefolia H.B.K. (France)

Lippia graveolens H.B.K. (Costa Rica)

Lippia javanica (Burm. f.) Spreng. (France)

Lippia micromera Schau. (Hawaiian Islands)

Lippia scabra Hochst. -- to be deleted

Petraeovitex multiflora (J. E. Sm.) Merr. (Java)

Phyla lanceolata (Michx.) Greene (California)

Phyla nodiflora (L.) Greene (Italy)

Phyla nodiflora var. reptans (H.B.K.) Moldenke (Germany)

Phyla nodiflora var. rosea (D. Don) Moldenke (Belgium)

Phyla nodiflora var. suborbicularis (L. Chev.) Moldenke (France)

Phyla scaberrima (A. L. Juss.) Moldenke (France & Germany)

Fremna corymbosa var. obtusifolia (R. Br.) Fletcher (Cuba)

Fremna corymbosa var. sambucina (Wall.) Moldenke (Belgium)

x Stachytarpheta adulterina Urb. & Ekm. (Java)

Stachytarpheta angustifolia (Mill.) Vahl (Germany & Spain)

Stachytarpheta cayennensis (L. C. Rich.) Vahl (Belgium & Germany)

Stachytarpheta elatior Schrad. (Belgium)

Stachytarpheta jamaicensis (L.) Vahl (Belgium, Java, & Spain)

Stachytarpheta mutabilis (Jacq.) Vahl (Belgium & France)

Stachytarpheta urticaefolia (Salisb.) Sims (Belgium & Spain)

Tectona grandis L. f. (Belgian Congo)

Tectona grandis var. glabrifolia Moldenke (Ceylon)

Verbena bipinnatifida Nutt. (Belgium)

Verbena bipinnatifida var. latilobata Perry (Mexico)

Verbena bonariensis L. (Belgium & Peru)

Verbena bracteata Lag. & Rodr. (Belgium & France)

Verbena canadensis (L.) Britton (Belgium, Germany, Italy, & Spain)

Verbena carolina L. (Spain)

Verbena elegans H.B.K. (New York)

x Verbena Engelmannii Moldenke (Spain)



- Verbena hastata L. (Belgium, England, France, Germany, & Spain)
- Verbena hispida Ruiz & Pav. (France & Germany)
- x Verbena hybrida Voss (Brazil)
- Verbena incisa Hook. (Germany & Spain)
- Verbena lasiostachys Link (France, Germany, & Spain)
- Verbena litoralis H.B.K. (France & Spain)
- x Verbena matritensis Moldenke (Spain)\*
- Verbena mendocina R. A. Phil. (New York)
- Verbena menthaefolia Benth. (Spain)
- Verbena officinalis L. (Belgium, Quebec, & Spain)
- Verbena peruviana (L.) Britton (Belgium)
- Verbena phlogiflora Cham. (Belgium & Germany)
- Verbena rigida Spreng. (Belgium, Peru, & Spain)
- Verbena santiaguensis (Covas & Schnack) Moldenke (New York)
- Verbena simplex Lehm. (Belgium, Czechoslovakia, France, & Spain)
- Verbena stricta Vent. (France)
- Verbena supina L. (Belgium & France)
- Verbena tenera Spreng. (Belgium & Texas)
- Verbena tenuisecta Briq. (Kenya)
- Verbena urticifolia L. (Germany, Pennsylvania, & Spain)
- Verbena xutha Lehm. (Belgium)
- Vitex Agnus-castus f. rosea Rehd. (Texas)
- Vitex altissima var. alata (Willd.) Moldenke (Florida)
- Vitex Negundo var. heterophylla (Franch.) Rehd. (Arizona, Austria, Barbados, Belgium, Brazil, British Guiana, California, Denmark, District of Columbia, England, France, Germany, Illinois, Italy, Kansas, Martinique, Massachusetts, Missouri; Mongolia, New Jersey, New York, Oklahoma, Pennsylvania, Russia, Spain, Sweden, Switzerland, Trinidad, & Virginia)
- Vitex Negundo var. heterophylla f. multifida (Carr.) Rehd.
- Vitex Negundo var. incisa (Lam.) C. B. Clarke -- to be deleted
- Vitex parviflora A. L. Juss. (Florida)

## FOSSILIZED:

- Clerodendrum robustum Klotzsch (Pleistocene of Cameroons)\*
- Clerodendrum Thomasii Moldenke (Pleistocene of Cameroons)
- Vitex Doniana Sweet (Pleistocene of Cameroons)
-

THE KNOWN GEOGRAPHIC DISTRIBUTION OF THE MEMBERS OF THE

ERIOCAULACEAE. SUPPLEMENT 1

Harold N. Moldenke

Several thousand additional specimens of Eriocaulaceae have been examined by the writer since the publication in 1946 of his "The known geographic distribution of the members of the Eriocaulaceae". These specimens have brought to light 92 new country or island records, 139 new state, province, or department records, and 61 new county or parish records not previously recorded. Also 121 additional scientific names must be added to the alphabetic list of scientific names proposed in this group, including mis-spellings and mis-accreditations. The addition of these names brings the total of scientific names now accounted for to 2181; the total accepted genera to 11 and species and varieties 1202. The actual specimens on which these records are based will eventually be published by the writer in others of his series of papers on this family. They are deposited in the herbaria of the New York Botanical Garden, New York State Museum, University of Texas, L. H. Bailey Hortorium, Barnard College, Jardin Botanique de l'Etat at Brussels, Butler University, University of Miami, Columbia University, University of California at Berkeley, Carnegie Museum, University of Cincinnati, DePauw University, Leland Stanford University, Earlham College, Botaniska Trädgård at Göteborg, Duke University, Cornell University, University of California at Los Angeles, Universidad Nacional de Mexico at Mexico City, Instituto Miguel Lillo, Princeton University, Jardin Botanico at Madrid, Museo Nacional de Historia Natural at Buenos Aires, Naturhistoriska Riksmuseum at Stockholm, Instituto Darwinian at San Isidro, Vanderbilt University, and the University of Vermont.

CANADA:

Quebec:

Eriocaulon septangulare With. (Pontiac County & Mistassini Region)

UNITED STATES OF AMERICA:

Maine:

Eriocaulon septangulare With. (Androscoggin County)

Vermont:

Eriocaulon septangulare With. (Grand Isle, Rutland, Windham, & Windsor Counties)

## Massachusetts:

Eriocaulon septangulare With. (Bristol County)

## Rhode Island:

Eriocaulon septangulare With. (Washington County)

## New York:

Eriocaulon Farkeri B. L. Robinson (Albany, Orange, & Ulster Counties)Eriocaulon septangulare With. (Albany, Columbia, Oneida, Onondaga, Rockland, & Schenectady Counties)

## New Jersey:

Eriocaulon decangulare L. (Hunterdon County)

## Pennsylvania:

Eriocaulon decangulare L.

## Virginia:

Eriocaulon decangulare L.Eriocaulon septangulare With.Lachnocaulon anceps (Walt.) Morong (Sussex County)

## North Carolina:

Eriocaulon compressum Lam. (Buncombe & Rowan Counties)Eriocaulon decangulare L. (Jackson County)Lachnocaulon anceps (Walt.) Morong (Martin County)

## South Carolina:

Eriocaulon compressum Lam. (Darlington County)Eriocaulon decangulare L. (Darlington & Greenville Counties)Lachnocaulon anceps (Walt.) Morong (Darlington County)Syngonanthus flavidulus (Michx.) Ruhl. (Lexington County)

## Georgia:

Syngonanthus flavidulus (Michx.) Ruhl. (Lowndes County)

## Florida:

Eriocaulon compressum Lam. (Baker County)Eriocaulon decangulare L. (Escambia County)Eriocaulon lineare Small (Volusia County)Eriocaulon Ravenelii Chapm. (Hillsborough & Lee Counties)Lachnocaulon anceps (Walt.) Morong (Escambia & Saint Johns Counties)Syngonanthus flavidulus (Michx.) Ruhl. (Marion & Seminole Counties)

## Alabama:

Syngonanthus flavidulus (Michx.) Ruhl. (Baldwin County)

## Mississippi:

Eriocaulon compressum Lam. (Hancock County)

## Louisiana:

Eriocaulon compressum Lam. (Orleans Parish)

## Texas:

Eriocaulon compressum Lam. (Hardin & Jefferson Counties)Eriocaulon decangulare L. (Anderson, Austin, Freestone,

Jasper, Jefferson, Newton, Robertson, Rusk, & Tyler  
Counties)

Eriocaulon Körnickianum Van Heurck & Muell.-Arg. (Polk  
County)

Eriocaulon texense Körn. (Austin, Leon, Milam, & Robertson  
Counties)

Lachnocaulon anceps (Walt.) Morong (Jefferson, Newton, &  
Tyler Counties)

#### MEXICO:

Eriocaulon Benthami Kunth (Veracruz)

Eriocaulon capitulatum Moldenke\*

Eriocaulon Ehrenbergianum Klotzsch (Federal District)

Eriocaulon microcephalum H.B.K. (Federal District)

Eriocaulon paradoxum Moldenke\*

Eriocaulon Pringlei S. Wats. (México)

#### CUBA:

The records given for "Santa Clara" should be changed to  
read "Las Villas"

#### COLOMBIA:

Paepalanthus columbiensis Ruhl. (El Valle)

Paepalanthus crassicaulis Körn. (Santander Norte)

Paepalanthus ensifolius (H.B.K.) Kunth (Magdalena)

Paepalanthus Lindenii Ruhl. (Santander Norte)

Paepalanthus muscosus Körn. (El Cauca)

Paepalanthus pilosus (H.B.K.) Kunth (Santander Norte)

Syngonanthus caulescens (Poir.) Ruhl. (Santander Norte)

#### VENEZUELA:

Carptotepala insolita Moldenke (Bolívar)\*

Eriocaulon guianense Körn. (Amazonas)

Eriocaulon dimorphopetalum Moldenke (Bolívar)\*

Eriocaulon melanocephalum Kunth (Bolívar)

Eriocaulon Steyermarkii Moldenke (Bolívar)\*

Eriocaulon tenuifolium Klotzsch (Bolívar)

Leiothrix Steyermarkii Moldenke (Bolívar)\*

Leiothrix umbratilis Moldenke (Bolívar)\*

Paepalanthus capillaceus Klotzsch (Bolívar)

Paepalanthus capillaceus var. proliferus Gleason (Ama-  
zonas)

Paepalanthus columbiensis Ruhl. (Mérida)

Paepalanthus convexus Gleason (Bolívar)

Paepalanthus crassicaulis Körn. (Mérida)

Paepalanthus dendroides (H.B.K.) Kunth (Mérida)

Paepalanthus dichotomus Klotzsch (Bolívar)

Paepalanthus fraternus N. E. Br. (Bolívar)

Paepalanthus Gleasonii Moldenke (Amazonas & Bolívar)

Paepalanthus Karstenii Ruhl. (Mérida & Táchira)

Paepalanthus Maguirei Moldenke (Amazonas)

Paepalanthus meridensis Klotzsch (Táchira)

Paepalanthus muscosus Körn. (Mérida)



- Paepalanthus pauper Moldenke (Amazonas)  
Paepalanthus perplexans Moldenke (Bolívar)\*  
Paepalanthus pilosus (H.B.K.) Kunth (Mérida)  
Paepalanthus roraimensis Moldenke (Bolívar)\*  
Paepalanthus Schomburgkii Klotzsch (Bolívar)  
Paepalanthus squamuliferus Moldenke (Bolívar)\*  
Paepalanthus Steyermarkii Moldenke (Bolívar)\*  
Paepalanthus subacaulescens N. E. Br. (Bolívar)  
Paepalanthus subsessilis Moldenke (Lara)\*  
Paepalanthus subtilis Miq. (Amazonas & Bolívar)  
Paepalanthus truxillensis Körn. (Táchira)  
Philodice Hoffmannseggii Mart. (Amazonas)  
Rondonanthus micropetalus Moldenke (Bolívar)\*  
Rondonanthus roraimae (Oliv.) Herzog (Bolívar)  
Syngonanthus biformis (N. E. Br.) Gleason (Amazonas & Bolívar)  
Syngonanthus caulescens (Poir.) Ruhl. (Amazonas)  
Syngonanthus duidae Moldenke (Amazonas)\*  
Syngonanthus eriophyllus var. glanduliferus Ruhl. (Bolívar)  
Syngonanthus fertilis (Körn.) Ruhl. (Bolívar)  
Syngonanthus glandulosus Gleason (Bolívar)  
Syngonanthus gracilis (Körn.) Ruhl. (Amazonas, Bolívar, & Sucre)  
Syngonanthus gracilis var. glabriusculus Ruhl. (Amazonas)  
Syngonanthus gracilis var. hirtellus (Steud.) Ruhl. (Amazonas)  
Syngonanthus heteropeplodes Herzog (Amazonas)  
Syngonanthus longipes Gleason (Bolívar)  
Syngonanthus simplex (Miq.) Ruhl. (Amazonas)  
Syngonanthus tricostatus Gleason (Bolívar)  
Syngonanthus umbellatus (Lam.) Ruhl. (Amazonas)  
Syngonanthus venezuelensis Moldenke (Bolívar)\*  
Syngonanthus verticillatus (Bong.) Ruhl. (Bolívar)

## BRITISH GUIANA:

- Eriocaulon guianense Körn.  
Eriocaulon heterodoxum Moldenke\*  
Paepalanthus brunneus Moldenke\*  
Paepalanthus capillaceus var. proliferus Gleason -- delete the "\*"
- Paepalanthus filipes Moldenke\*  
Paepalanthus Gleasonii Moldenke -- delete the "\*"
- Paepalanthus griseus Moldenke\*  
Paepalanthus pauper Moldenke  
Philodice Hoffmannseggii Mart.  
Syngonanthus glandulosus Gleason -- delete the "\*"
- Syngonanthus guianensis Moldenke\*  
Syngonanthus longipes Gleason -- delete the "\*"
- Syngonanthus savannarum Moldenke\*



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## FROM TEXTS TO PLANTS - OR FROM PLANTS TO TEXTS?

P. J. van Melle

A Difference of Approach, Illustrated by Juniperus chinensis var. globosa Hornibrook, and var. plumosa Hornibr., Dwf. & Slow-growing Conif., 62 and 66 (1923) sensu Cornman and

x J. media var. globosa (Hornibr.) van Melle, and var. plumosa (Hornibr.) van Melle in Phytologia 2 : 191 (1946).

In a thesis: "Studies in the Genus Juniperus" (Cornell University, March 1947) on the taxonomy of junipers cultivated in the United States, John F. Cornman excoriates a paper published by me in Phytologia (as cited), "The Junipers Commonly Included in Juniperus chinensis". His strictures seem excessively voluminous and immoderate, almost obsessive, inappropriate to the usually objective nature of a thesis, and poorly substantiated. He washes my face for me, quite behind the ears, for instance, for my treatment of the above-mentioned Hornibrookian epithets, which, says he, I interchanged, in misunderstanding of taxonomic principle and procedure.

Actually I did no such thing. On the basis of evidence reviewed below I interpret Hornibrook's var. globosa as pistillate. This conclusion is employed by me as a fixed point for the treatment of the wobbly globosa-plumosa complex of Hornibrook, whose 1923 texts appear to me inapt, inconclusive and somewhat confused, while his 1938 texts are more definitely erroneous in important parts. Cornman describes the var. globosa Hornibr. as staminate, and as equalling my var. plumosa (Hornibr.). We cannot both be right.

Of my designation of a Ching No. 53 sheet as the type of my var. plumosa he says that any novice would at once note the discrepancy. I trust that, if he would compare with my designated type sheet (U. S. Nat'l Herb. No. 1245122) unmistakable material of my var. plumosa, the result would fall out more favorable to me. There is no more unmistakable indication of what my var. plumosa is than to describe it as equal (including leaf glands) to Cornman's var. aureo-variegata or my f. albo-variegata - minus the variegations. It equals reverted, green parts of these variants. I reject as inconstant and unreliable the gland character noted by Cornman in his var. aureo-variegata.

If from his point of view I seem to have mistakenly identified my plumosa material with the Ching sheet cited by him he is, of course, free, and in his light bound, to disagree

with me. Such disagreements are no rare occurrence between workers. But it is hardly customary for one to call another practically a nitwit over them or to allege "fundamental error", "misunderstanding of the type method as employed in orthodox taxonomic procedure", etc. It may well be that Cornman, by failing to review my designated type sheet, by reviewing, instead, a sheet not cited in my 1946 paper, and by attaching Van Melle type labels to sheets not so designated by me (pp. 280, 298) permitted himself a taxonomic peccadillo or two.

On p. 291 he says: "Upon inquiry as to why he apparently interchanged Hornibrook's names and descriptions, van Melle writes: 'My treatment of the two varieties represents, in the main, the traditional horticultural grouping. While I base my varietal names on Hornibrook, I did so without any particular deference to Hornibrook's texts'. This violates the basic premise of taxonomy and plant nomenclature, and the conclusions cannot be considered seriously."

I am duly mortified at this public quotation from my correspondence, ungroomed as it was for publication, and looking all the more vulnerable away from its context. My intention was, of course, "the letter of Hornibrook's texts".

From the literature of cultivated plants I gather an impression that a worker's veneration of the letter of texts is proportioned approximately to his own knowledge of his materials. In many cases only that knowledge can provide a proper basis for the evaluation of texts. Without it one becomes easily a slave to the letter of texts - a sort of taxonomic automaton; and there is constant danger of arriving at concepts which, however orthodoxly derived from texts, may bear only a sketchy likeness to existing kinds of plants.

If then, in Cornman's eyes, I seem a little disrespectful of Hornibrook's letter (but does not he, himself, play rather freely with that author's foliage descriptions?), my only defense is that I have had these junipers under observation for over 35 years. My experience with them dates back to 1911, when, at Bobbink & Atkins, Rutherford, N. J. - then large importers - it was my job to check against invoices incoming shipments from Europe and Japan. The junipers under discussion here then constituted a considerable item. The var. plumosa, sensu van Melle, was then coming in from Boskoop mainly as J. japonica, to a lesser extent also as J. chinensis procumbens; the var. globosa, sensu van Melle, as J. japonica globosa, rather rarely as J. japonica nana, and more rarely as J. chinensis procumbens globosa. The name nana was then not in use in Boskoop to an appreciable extent. It was more particularly an English term for the var. globosa, sensu Van Melle.

I am well aware, then, that Hornibrook, in 1923, under

his vars. globosa and plumosa, was not describing theretofore unknown junipers, but was only endeavoring, more or less successfully, to describe kinds that had been long and widely known. Thus, in working over his texts, my principal concern was not: "How can I best preserve the letter of his texts?", but rather: "How can I best manage to present the several elements in this complex correctly and in an orderly grouping?"

Generally, in studies of this sort, my procedure is approximately this: Make an "index plantarum" - an inventory of the elements which require to be accounted for. Enumerate them, even if, at first, only by numbers or letters. Study them; group them as you come to think they should be. Do your own, initial job of taxonomy on them, and give it time to age. Keep correcting, revising, refining. Then compare your work with past treatments. In turn, study this literature; accept from it what revisions or corrections seem in order. But insofar as your own insights continue to appear preferable to you, hold on to them, and do not hesitate to re-interpret, emend or reject past treatments. Trust your own eyes. Finally, express your findings in terms of the available nomenclature. And all this within a not too strict interpretation of the laws.

This sort of thing, says Cornman (pp. 242, 243), is not taxonomy. Unanointed logic! Blasphemy! One can have no truck with it.

Indeed, it is not the way of much of what passes among us for the taxonomy of cultivated conifers. Not all of it, nor even, one hopes, the greater part, but much of it, consists of wholly or largely literary, unrealistic concepts of kinds, derived perhaps through the most meticulous taxonomic procedures from texts and specimens which cannot be identified with known kinds of plants without the aid of extraneous, circumstantial evidence of a chronological or other purely logical nature. It consists on the one hand of ignorance of the living plants involved and on the other hand of a morbid veneration of decrepit texts and specimens.

Some of Cornman's work appears to me to be of this kind. For instance, his J. chinensis, which may be said to occupy a pivotal place in his Thesis, and which ought to represent a fairly concise concept, does not, in my opinion, represent any one definable kind, discerned and then named. It represents, rather, an effort to account for a J. chinensis in terms of the literature of that species - than which there is not a more befuddled chapter in all the taxonomy of junipers. Cornman's var. typica comprises a galaxy of junipers, and a number of obscure literary entities. For instance, of the J. virginica of Thunberg he says: "There is no reason to suppose that he had anything but J. chinensis." One asks:



what grounds are there to suppose that he did have it? And that the J. japonica cernua and dimorpha of Roxburgh represent it?

On pp. 242 and 243 Cornman says of my inclusion in J. chinensis L. of the "variety" oblonga: "In general, van Melle's papers now published must be rejected because of their fundamental errors. He deprecates herbarium specimens as inadequate, as indeed they usually are, but from only a poor photograph of the type of Linnaeus' J. chinensis he attaches Linnaeus' name to what we know as var. oblonga. Thus he rejects customary logic without a trial and depends solely upon circumstantial evidence and 'the resources of disciplined intuition'."

That is a mouthful. In my "Review of J. chinensis et al." (New York Botanical Garden, April, 1947) I admit my inability to identify satisfactorily with the Linnaean type and texts, on a basis of their intrinsic value only, any one known kind of juniper. I admit frankly that my interpretation of the Linnaean record is based for a large part upon the best of chronological and circumstantial evidence at my command. I doubt that Cornman is in a position to do better with it. I regard as the most telling aspect of the specimen the denseness of its (exclusively juvenile) foliage; and of the texts: "Folia....magis quam in reliquis conferta" and "distinctissima densitate foliorum." All this checks very well with the one, distinct, juniper associated by me with J. chinensis: the almost exclusively pistillate J. chinensis foemina of nurseries, originally, and still widely, known as J. chinensis. To its name was added, in the 1850's, the epithet "foemina" to distinguish it from seedlings then being distributed in England by Standish & Noble of the monoecious J. sphaerica Lindl. -- which then, as they do today, bore only or almost exclusively staminate flowers in their youth. These seedlings were at the time erroneously believed to represent the staminate counterpart of the earlier-cultivated, pistillate J. chinensis; and they were called J. chinensis mas or mascula.

Cornman's J. chinensis L. agrees with mine to the extent that he includes the "foemina" material in his var. typica. Only, while I limit my citations to that entity plus its obvious synonyms (including the oblonga name), he presents the var. oblonga as highly distinct. In addition, he cites under his var. typica all manner of other junipers, such as my J. sphaerica vars. dioca and neaboriensis, which are conspicuously different things from the "foemina" material.

This is my view of the oblonga name: It was given in 1914 by Bobbink & Atkins to an importation from Europe, while I was in their employ. It was my judgement then, and has been ever since, that the material so named differed in no manner

worth recognition from that which had been theretofore known at Bobbink & Atkins and elsewhere as J. chinensis and J. chinensis foemina. It is very well possible that, at the time, it appeared to somebody as a little different in general aspect - in the way that many a batch of the "foemina" material, perhaps pruned a little differently, or grown on a different soil or under different conditions, looks a little different from another. Comparisons at the time, and since - many of them based upon large plants distributed under the two names - convince me that the oblonga listing represented nothing but a new name for a very old thing. Probably no juniper has been sent into the world under more different names than the old "foemina" material.

Is there anything about my disposition of this name to warrant Cornman's allegation of "fundamental error" or "rejection of customary logic without trial"?

But, to return to the vars. globosa and plumosa Hornibr. - my first move toward a treatment of this complex was the making of an inventory of the elements in it, known to be in cultivation. This inventory revealed the existence of the following two groups, a and b:

Group <u>a</u> , consisting of 2 elements, <u>both pistillate:</u>	Group <u>b</u> , consisting of 4 elements, <u>all staminate:</u>
<u>a</u> , the typical green form	<u>b</u> , the typical green form
<u>a</u> 1, a yellow-suffused form	<u>b</u> 1, a yellow-suffused form
	<u>b</u> 2, a yellow-variegated form
	<u>b</u> 3, a white-variegated form

My index did not include the globosa cineria element described by Hornibrook in 1923 from a small plant, now extinct. A corresponding element was known in England about 1910 as nana glauca. It does not appear to have become widely grown in Europe. Again, in 1940, Grootendorst described a J. chinensis Blaauw's Variety (possibly the same element) as a novelty from Japan, about to be introduced in Europe. The illustration of this plant suggests the habit of my staminate group b.

The idea of these two, apparently closely related groups, one pistillate, the other staminate, may look artificial. Indeed, the fact that no staminate seedling of my pistillate group appears to have been known is noteworthy. It is matched in other kinds of juniper. None is known of my x J. media var. arbuscula, of J. procumbens Sieb. & Zucc., or of J. squamata var. Meyeri Rehd. The last recorded, cultivated material of the J. chinensis foemina of nurseries (J. chinensis L. sensu van Melle) is represented by the f. aurae (Young), which originated in England before 1872. Yet pistillate plants of these several kinds fruit freely in nurseries.

I do not propose to explain the phenomenon. I merely report it. It seems probable that apomixy is involved. The matter merits investigation. At any rate, I need not hesitate to present my groups a and b, respectively, as pistillate and staminate. In each of them the constituent elements are mutually identical except as to color, and for a not consistent tendency in a 1 and in b 1 and 2 toward protracted juvenility. Neither do I hesitate to reject Cornman's presentation of his var. aureo-variegata as intermediate between my two groups.

My pistillate group a equals the materials shipped into the United States from Boskoop in large quantities as J. japonica globosa and globosa aurea; my staminate group b, those shipped in from Boskoop mainly as J. japonica japonica aurea, aureo-variegata and albo-variegata, and to a lesser extent by corresponding chinensis procumbens listings.

It seems that Hornibrook's globosa group (including the misplaced f. cineria) was matched in England by a group of three nana listings. An R. H. S. Award of Merit was given on December 10, 1908 "To J. chinensis nana aurea from Messrs. Waterer, Bagshot. Three new dwarf forms of the Chinese juniper were shown - nana, nana glauca and nana aurea."

It seems certain that both the globosa and plumosa groups were included in Beissner's J. chinensis procumbens of 1891, and in the notoriously inclusive japonica listings as far back as the early 1870's - at which time, also, the Pfitzer Juniper made its debut, in France, as J. japonica pendula.

The first clear separation of the two groups discernible to me is that of the Boskoop listings in the early 1900's of J. japonica, with 3 variants, and J. japonica globosa, with 1 variant. However, it is on the more or less formal literature of their names that one must base one's choice of names. Therefore, Hornibrook's texts merit consideration. Yet, if it were not that his names have become established in horticulture I might well have rejected them as nomina dubia. For I see in them very little literal, descriptive, distinguishing value. I preferred, however, to explore what sense might be discovered below their textual surface, and from the related nana listings of 1923. Thus I discovered implications more compelling than the letter of the texts.

Except for the aureo-variegata and albo-variegata elements, my treatment of the complex is based, nomenclaturally, upon Hornibrook's 1923 edition. I need not accept the 1938 treatment, even though my grouping of the variants and my reduction to synonymy of the var. decumbens with var. plumosa, and my citation, under the latter, of the J. japonica and J. chinensis procumbens of Boskoop concur with the 1938 edition.

While Hornibrook nowhere states outright the sex of the



materials except that of his globosa cineria, he says in 1923 that his var. globosa and f. aurea are of the same sex; that they have not yet borne fruit, while "form 3 (cineria) is a male plant." Again, in 1938: "Var. globosa cineria is a different form; it is a male plant." Does not this imply that his var. globosa and its aurea form were pistillate?

In 1923 he lists a var. nana (Hochst.) as follows: "A form received from the Arnold Arboretum without description. Extremely slow-growing....it would seem to be the erect form of the var. globosa, its sprays being similar to that variety in size and general appearance." Living plants at the Arnold Arboretum harking back to material received there as var. nana, from Waterer in 1909, and from Farquhar in 1917, are all pistillate, identical with my a element - with my var. globosa. They do not differ from it by any supposed erect character, by which, only, Hornibrook distinguished this material from his var. globosa. The type specimen of my var. globosa was taken from the Farquhar material, even though this is labelled var. plumosa in the Arboretum.

I think that I am on safe enough ground in identifying Hornibrook's globosa group, consisting (exclusive of the misplaced cineria form) of 2 elements, with my pistillate group a, which consists of 2 elements. Having done this, - then, if Hornibrook's plumosa group (consisting of 4 elements) is to be interpreted at all in terms of the known junipers within the complex, I am bound to identify it with my staminate group b which consists of 4 elements. In the case of two of Hornibrook's four plumosa elements - his aureo-variegata and albo-variegata - anyone may ascertain for himself that these (the only known variegated elements in the complex) are both staminate. Since nothing in the 1923 edition militates otherwise, I assume, as a matter of simple logic, that Hornibrook's plumosa aureo-variegata and albo-variegata, minus their variegations, equal his var. plumosa. Such is the composition of my plumosa group;  $b_2$  minus 2 equals b;  $b_3$  minus 3 equals b.

This is no over-simplification. Thus, my treatment of the globosa-plumosa complex is reduced to the grouping of its several elements under a pistillate and a staminate type, as shown in my a and b schedule. Each group has its consistent, distinct characters. All that is needed to place any of the elements under its proper heading is to know either its sex or its habit. My Latin diagnoses attribute to the pistillate and to the staminate groups the characters that go with them. This involves no undue violence to Hornibrook's 1923 texts. But it is at variance with the habit ascribed by him in the 1938 edition to the J. japonica and J. chinensis procumbens of Boskoop - names which he associates with his var. plumosa. I quote: "As grown in large quantities in Holland,



this form (plumosa) makes eventually a somewhat loose shrub about twice as broad as high.....Hitherto this form has been sent out by well-known Dutch nurseries under the names J. japonica and J. chinensis procumbens." This is not the habit of these two Boskoop listings, but that of the J. japonica globosa of Boskoop - my var. globosa (Plate X in my "Review"). A true, youthful habit phase of the J. japonica of Boskoop is shown by Hornibrook under his var. globosa, in the Report, Conf. Conference (1932) and in his 1938 edition. This is the habit of the staminate material - not that of the var. nana, not of his var. globosa of 1923.

I conclude that Hornibrook at no time appeared to know clearly, one from the other, the green types of his vars. globosa and plumosa. Had he understood them well, he would not have been as uncertain as he appears to be in 1938 about where to place his variegated forms. I quote: "On the whole they approach nearest in habit and foliage to J. c. var. plumosa Hornibr.....and possibly the best way out of the existing confusion is to classify them as forms of var. plumosa; the suggestion to do so originates with Mr. Herman J. Grootendorst of Boskoop, whose firm has grown and observed these forms for a great many years, and on consideration I agree with him." Actually, these staminate forms which he places with his var. plumosa are variants of the material depicted by him under his var. globosa. No careful worker, aware of these defects in Hornibrook's post-1923 treatment would wish to perpetuate them; and it is because of them that I exercise my right to reject all or part of the post-1923 treatments.

Cornman follows me in associating the habit "ultimately twice as high as wide" with the pistillate sex; but, unaware of Hornibrook's mis-description of the J. japonica of Boskoop and of the implied pistillate nature of the 1923 var. globosa, he reverses my names. To his variegated material he ascribes, erroneously, the habit of the pistillate and the sex of the staminate group, as well as a gland character different from that which he notes under his vars. globosa and plumosa.

In terms of the known elements in the complex his var. aureo-variegata is neither flesh nor fish. There are no such intermediate elements; and the glands in the variegated material are as variable as they are throughout the complex. Cornman sidesteps the impasse of his aureo-variegata material by saying: "There is no compulsion to classify it nomenclaturally as a variant of either" variety.

I believe that in retaining the grouping of my a and b schedule, in line with the usage of Boskoop and with Hornibrook's nomenclatural grouping, I have preserved a helpful perspective, which is lost in Cornman's treatment. I believe

that my investigation of Hornibrook's treatments is at least as thorough as Cornman's, and more closely related to the living materials involved; and that Cornman, having failed to discover the implications and defects noted by me, was at a disadvantage, and in no position to spank anybody.

He errs, also, in lumping with his var. aureo-variegata the albo-variegata element, on a basis of preserved specimens. I should not dare do such a thing, knowing that white variegations of junipers often turn to various pale to deep shades of yellow on herbarium sheets, in a short or longer period of time. Actually, the albo-variegata material differs from the aureo-variegata both in the color and in the size of the variegated parts. The effect (as Hornibrook notes correctly) is a speckled one; - like that of J. Sabina f. variegata.

Then, having thrown out Hornibrook's albo-variegata listing, he proceeds to transfer its synonym, J. chinensis procumbens albo-variegata of Beissner (1891), to the var. alba Rehd. But I shall not go into a detailed criticism of Cornman's dispositions. I have limited myself to two of the numerous instances in which his sweeping condemnation of my work appears wholly out of order. It would have been unreasonable to expect his thesis on cultivated junipers to be a work of mature skill. It is an initial effort. If he is to do effective work in this field, he may well arrange to swap certain apparent mental attitudes for new ones.

For instance, he may well cultivate a more critically inquisitive mind in relation to problems of the origins of many of these materials. To dismiss them, with a sort of finality, as "garden forms" and "clons" seems a facetious and unscientific way of disengaging oneself from one of the most important and difficult inquiries concerning them. It is a charming, but unrealistic thought that such things as "J. chinensis" vars. pyramidalis, Sheppardii, Parsonsii, Pfizeriana, etc., are found in horticultural cabbage patches.

On p. 244 he says that all the cultivated varieties of J. chinensis, except var. Sargentii, "so far as has yet been shown, are apparently variants selected from cultivated plants; most of them are clons." I object particularly to the word "apparently". For instance, in the case of his var. Sheppardii (my J. Sheppardii), of which we have in cultivation monoecious material and dioecious, in both sexes, and a diversity of color forms, I do not believe that it can be "apparent" to any able observer that this aggregate represents a variant selected from any cultivated kind, let alone, directly or indirectly from the strictly dioecious "foemina" material. This goes as well for J. sphaerica Lindl., of which clearly and obscurely monoecious as well as dioecious

phases and varieties, in both sexes, are cultivated. The Pfitzer Juniper - a selected variant? Of what?

Cornman criticizes me sharply for identifying some of my junipers with wild materials. I can see nothing but prejudice in that attitude. In the case of Japanese specimens cited by me for my J. Sheppardii var. torulosa (Eastw.), he does not review these sheets, but passes them by with the brief, erroneous observation that all are from Honshu, and none unquestionably wild. Yet they include Wilson's collection from Yakushima, reported by him as wild, and another of his collections from the Idzu Peninsula, which he reports as "said to be wild". Inasmuch as herbarium specimens of this variety are mostly very clearly recognizable, I suppose that Cornman would have to admit them as identical with the cultivated material of torulosa, if he were to account for them. In the cases of the Sheppardii and sphaerica entities, he ignores the occurrence in cultivation of monoecious materials. I believe that I could show him cultivated plants of J. sphaerica of every degree of monoecism. The thought seems to be repulsive to him that among the so-called varieties of J. chinensis there should be perfectly good wild species and varieties; and he leans over so far in this prejudice that in a number of instances his judgement seems seriously impaired. While he accounts faithfully for every monoecious species published as such, for instance, by Martinez and Florin, he jabbars about the monoecism of J. sphaerica Lindl. representing, perhaps, only an abnormality of the type specimen, while it is abundantly manifest in cultivation.

It seems to me that in relation to the origins of cultivated junipers we must either bury all thought under platitudes such as that cited from Cornman's thesis (p. 244), or else explore every avenue of inquiry. I can see no valid objection to the traditional practice of checking cultivated materials of unknown origin against herbarium records of wild plants, which is what I have done. That, at least, represents a mode of inquiry into the origins of cultivated plants. The opposite of it is Cornman's refusal to admit the wild nature of Faurie's specimens of J. procumbens Sieb. & Zucc. Bound to diagnose it as a cultivated variety of J. chinensis, he suggests that Faurie may have had his notes mixed up.

There is, I think, no more justification, in the absence of positive evidence, for ascribing to any of these junipers a garden origin than for declaring them to be wild. The one assumption is as prejudiced as the other. Yet, I think it is perfectly legitimate to speculate and conjecture about their origins, as long as conjectures are clearly presented as such.

If Cornman is to do effective and intelligible work on

our cultivated junipers I believe that he will have to do a sorting-out job on his J. chinensis, which is, as yet, in my opinion, a loosely inclusive, undefinable concept, based not upon observation of living plants, but upon the literature of what he probably believes to be that of J. chinensis, but which, from the 1850's on, is largely that of J. sphaerica. He is more likely to arrive at clarity in the matter from the study of living plants than from the literature.

I regret that his initial contribution becomes for me the occasion of this rebuttal. I congratulate him upon his ordination, and trust that he will increase in wisdom and in stature; that he will come to contribute much to the knowledge of cultivated junipers. He is as yet over-dependent upon texts. I hope that he may come to work increasingly from living plants toward texts, and bring with him into this field a refreshing breeze of first-hand knowledge of the living plants. That is what is mostly needed.

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NOTES ON NEW AND NOTEWORTHY PLANTS. III

Harold N. Moldenke

ALOYSIA VIRGATA var. ELLIPTICA (Briq.) Moldenke, comb. nov.

Lippia virgata var. elliptica Briq., Ann. Conserv. & Jard. Bot. Genev. 7--8: 304. 1904.

This was published as "var. platyphylla" through typographic error in Phytologia 2: 310. 1947.

BUDDLEIA MEGALOCEPHALA f. ALBILANATA Moldenke, f. nov.

Haec forma a forma typica speciei tomentis albis recedit. -- This form differs from the typical form of the species in its very dense tomentose pubescence on the branches, branchlets, petioles, lower leaf-surfaces, peduncles, and calyxes being white.

The type was collected by Jacob F. Brenckle (no. 47-283) at high altitudes in the pine barrens east of Lake Atitlan, Guatemala, on February 21, 1947, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector describes it as a thick and short tree, the old trees leaning over and supporting on their trunks epiphytic ferns, orchids, mosses, etc.

GITHAREXYLUM ULEI var. CALVESCENS Moldenke, var. nov.

Haec varietas a forma typica speciei foliis subtus non hirtellis recedit. -- This variety differs from the typical



form of the species in not having its leaf-blades hirtellous along the larger venation beneath.

The type was collected by R. Froes (no. 1719) near the river, Candido Mendes, Maracassumé River region, Maranhão, Brazil, on May 2, 1932, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector describes it as a tree 20 feet tall, with whitish flowers, and records the common name of "tarumá branco".

*DURANTA VESTITA* var. *GLABRESCENS* Moldenke, var. nov.

Haec varietas a forma typica speciei ramis ramulisque foliisque inflorescentiisque sparsissime puberulis vel glaberratis recedit. -- This variety differs from the typical form of the species in having its branches, branchlets, leaves, and inflorescences only very sparsely puberulent or even glabrous.

The type was collected by J. Kiehl and A. S. Costa Serra [Herb. Inst. Agron. do Estado São Paulo, Secc. Bot. 4027; Herb. Inst. Bot. São Paulo 42081] at Cascata, São Paulo, Brazil, on December 14, 1938, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*ERIOCAULON SCHIMPERI* var. *GIGAS* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit: floribus masculis tubo sepalorum ca. 2 mm. longo, lobis 4.5 mm. longis, et tubo petalorum 5 mm. longo, lobis 2.5 mm. longis; floribus foeminis sepalis 5.5 mm. longis et petalis 4.5 mm. longis. -- This variety differs from the typical form of the species in having the sepal-tube about 2 mm. long, the lobes about 4.5 mm. long, and the petal-tube 5 mm. long and its lobes 2.5 mm. long in the staminate flowers. In the pistillate florets the sepals are 5.5 mm. long and the petals 4.5 mm. long. The heads and leaves also average larger than in the typical form of the species, and the involucre bractlets are more sharply acuminate.

The type was collected by I. R. Dale (no. 3397) in the Marakwet Hills, Kenya, in June of 1935, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

*ERIOCAULON STEINBACHII* (Moldenke) Moldenke, comb. nov.

*Paepalanthus Steinbachii* Moldenke, *Phytologia* 2: 231--232. 1947.

My good friend and colleague, Dr. Alberto Castellanos, has very kindly pointed out an error in my diagnosis of this species. The flowers which I had dissected were apparently abnormal or so far past anthesis that the stamen characters were obscure. The normal staminate flowers have six (not three) stamens. Also, the peduncle is 3-costate (not 2-costate). The plant is obviously an *Eriocaulon*, rather than a

Paepalanthus. It has been suggested that it may be E. leptophyllum Kunth. In Kunth's species, however, the leaves are 4.5--8.5 cm. long, 0.5--1 mm. wide; the peduncles are solitary or sometimes 2 or 3 per plant, 5- or 6-costate, and 12-16 cm. tall; the sheaths are 4 cm. long; the heads are subglobose, slightly compressed in drying, white-villous at the apex; the involucreal bractlets are obovate, brunneous-fuscos, obtuse; the receptacular bractlets are narrowly obovate, subacuminate, puberulent on the back, ciliolate toward the apex; the staminate florets have the sepals connate to the middle or beyond, oblong, very obtuse, puberulent on the back at the top, the petals united half way up, obtuse, pilose, and the anthers black; and the pistillate florets have the sepals obovate, rather obtuse, puberulent at the top, and the petals subspatulate, white, pilosulous, and black-glanduliferous. In E. Steinbachii, on the other hand, the leaves are 4--5 cm. long, about 1.5 mm. wide at the midpoint; the peduncles are numerous, about 20 per plant, 3-costate, 6--11 cm. tall; the sheaths are 3 cm. long; the heads are hemispheric, not compressed, brown or black, not white-villous on the top; the involucreal bractlets are lanceolate, acute, hyaline or gray; the receptacular bractlets are narrowly oblong, acute, glabrous throughout; the staminate florets have the sepals connate at the base only, the free part elliptic, acute, glabrous throughout, the petals united  $2/3$  to  $4/5$  their length, acute, glabrous throughout, the anthers yellow; and the pistillate florets have the sepals narrow-elliptic or oblong, acute, glabrous throughout, and the petals narrowly-oblong, brownish, glabrous throughout, not glanduliferous.

LANTANA MONTEVIDENSIS f. ALBIFLORA Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis recedit. -- This form differs from the typical form of the species in having white corollas.

The type was collected by Robert W. Schery (no. 584) in sandy soil in the treeless "subalpine" area, with Velloziaceae associates, at 1000 m. altitude, Municipality of Morro do Chapéu, Bahia, Brazil, in April of 1944, and is deposited in the Britton Herbarium at the New York Botanical Garden. The plant is described by the collector as 5 dm. tall, with white flowers.

LIPPIA EKMANI Moldenke, sp. nov.

Herba perennis; caulibus ut videtur simplicibus rectis subtetragonis stramineis sparsissime asperulis glabrescentibus; internodiis elongatis; foliis ternatis; petiolis subobsoletis; laminis chartaceis ellipticis acutis vel submucronatis subintegris vel supra mediam paucidentatis, ad basin

rotundatis vel subacutis, utrinque dense resinoso-punctatis, supra asperis, subtus laevibus glabratisque; inflorescentiis terminalibus racemiformibus.

Perennial herb; stems apparently simple and erect, sub-tetragonal, to about 80 cm. tall, stramineous, very sparsely and obscurely asperulous above, becoming smooth in age; internodes elongated, 7--8.5 cm. long; leaves ternate; petioles inconspicuous or subobsolete, to 2 mm. long, subglabrous or with a few scattered hairs; blades chartaceous, uniformly bright-green on both surfaces, elliptic, 2.3--4.5 cm. long, 1.3--2.3 cm. wide, acute or submucronate at the apex, subentire or with a few very much appressed teeth above the middle, rounded or subacute at the base, densely resinous-punctate on both surfaces, asperous above, smooth and glabrous (or with a very few scattered microscopic hairs) beneath; midrib plane or subimpressed above, prominulous beneath; secondaries very slender, arcuate-ascending, 3 or 4 per side, terminating in the sinuses between the marginal teeth; inflorescence terminal, racemiform, 15--20 cm. long, the 4--6 straight erect sympodia 2--4 cm. long, tetragonal, rather densely resinous-glandular and puberulent; peduncles similar to the stems, 4--6 cm. long, tetragonal, asperous-puberulent and resinous-glandular; heads numerous, the uppermost in pairs on the rachis, the lower in whorls of 3--5, the upper sessile or on slender pilosulous and resinous stalks 2--6 mm. long, the lower on stalks to 2 cm. long; the individual heads hemispheric, 1--1.5 cm. wide, eventually to 1 cm. long, many-flowered; bracts 3 at each node of the rachis, narrowly elliptic, to 1 cm. long and 4 mm. wide, attenuate-subacuminate at the apex, attenuate-acute at the base, sessile, asperulous-puberulent and resinous-glandulose on both surfaces; bractlets subtending the individual flowers broadly elliptic-subovate, about 5 mm. long and 3 mm. wide, acuminate at the apex, asperulous-strigillose and resinous-glandular on the back; corolla exserted, its tube about 5 mm. long, densely resinous-glandular and puberulous on the outside, the limb 4--5 mm. wide, glabrous on both surfaces or slightly resinous at the base on the outside.

The type of this handsome and very distinct species was collected by Erik Leonard Ekman (no. 1974) at Posadas, Misiones, Argentina, in 1907 or 1908, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

OXERA OBLONGIFOLIA var. ARTENSIS (Dubard) Moldenke, comb. nov.

Oxera nerifolia var. artensis Dubard, Bull. Soc. France 53: 712. 1906.

OXERA OBLONGIFOLIA var. SINUATA (Dubard) Moldenke, comb. nov.



Oxera nerifolia var. sinuata Dubard, Bull. Soc. France  
53: 712. 1906.

PAEPALANTHUS WILLIAMSII Moldenke, sp. nov.

Herba perennis caulescens; caulibus elongatis firmis, juventute villosulo-tomentosis, senectute glabrescentibus atro-brunneis; foliis graminaceis ad apicem caulis rosulatis erecto-patentibus, ad basin dense albo-lanatis; vaginis multistriatis oblique fissis; pedunculis 8 elongatis 5- vel 6-costatis glabris; capitulis hemisphaericis duris rigidis.

Caulescent perennial herb, apparently at least 7 dm. tall, probably taller; stems elongate, thin, firm, more or less villosulose-tomentose, especially on the youngest parts, the tomentum wearing off in age, exposing a smoothish deep-brown stem; stem-leaves numerous, rather densely overlapping, more or less appressed or the lower ones variously spreading, grass-like, about 4 cm. long, 3--4 mm. wide at the mid-point, sharply attenuate at the apex, sessile and but very slightly narrowed at the base, not clasping, microscopically puberulent or glabrous on both surfaces, often villosulous at the base with whitish hairs like the stems; stems terminated by a dense tuft of often somewhat longer, erecto-spreading, less attenuate or merely acute leaves, densely whitish-lanate at the base and between the leaves, the longest leaves to 8 cm. long and 6 mm. wide at the mid-point, the innermost smallest and only 2.5 cm. long; sheaths 5--6 cm. long, many-striate, only very slightly twisted, closely appressed, the rim obliquely split; peduncles about 8 per plant, arising from the center of the terminal tuft of leaves, 30--32 cm. long, 5- or 6-costate, slightly twisted, glabrous throughout or microscopically puberulent just beneath the head; heads hemispheric, tough, rigid, about 10 mm. in diameter; involucrel bractlets very numerous, flavescent-brunneous, in about 5 imbricate series, increasing in size inwards, scarious, tough, convex on the outer and concave on the inner surface, thicker at the base, lanceolate, 2--3.5 mm. long, 1.2--2 mm. wide, acute at the apex, glabrous and very shiny throughout on both surfaces; receptacle densely white-villous; receptacular bractlets white, navicular, narrow-elliptic, about 3.2 mm. long and 1 mm. wide at the middle, attenuate or subacuminate at the apex, glabrous on both surfaces; staminate florets on a pedicel about 1 mm. long; sepals 3, white, separate, navicular, elliptic, about 2 mm. long and 0.6 mm. wide, attenuate at apex, puberulous on the back; petals 3, equal, free almost to the base, hyaline, elliptic, erect, the free part about 1.2 mm. long and 0.4 mm. wide, somewhat navicular, closely adnate before anthesis, acute at apex, glabrous on both surfaces; stamens 3, plainly opposite the petals, inserted at the very base of the



free portion of the petals; filaments 0.4 mm. long, white, glabrous; anthers oblong, about 0.3 mm. long, dorsifixed just below the apex, the 2 thecae slightly spreading at the base; rudimentary 3-parted pistil yellowish, about 0.2 mm. long; pistillate florets sessile: sepals 3, separate to the base, firm, erect, whitish or slightly flavescent, chaffy, oblong-ob lanceolate, about 3 mm. long and 0.6 mm. wide, somewhat navicular, enfolding the rest of the flower, snapping off easily at the base, acute at apex, densely pilose-pubescent on both surfaces; petals 3, whitish or faintly flavescent, erect, firm, oblanceolate-elliptic, 1.8--2.1 mm. long, 0.5--0.6 mm. wide, scuminate at apex (often 3-lacinate in age), long-villous on both surfaces with white hairs, sometimes less so in age, not bearded, not glanduliferous; stigmas 3, 0.1--0.2 mm. long; style-appendages 3, arising at the same level as the stigmas and longer than they, 0.3--0.6 mm. long, erecto-spreading, glabrous; style stout, about 0.4 mm. long, glabrous, brown at base; ovary subglobose, about 0.8 mm. long and wide, glabrous, 3-angled, 3-celled, 3-ovulate.

The type of this species was collected by Llewelyn Williams (no. 15051) -- in whose honor it is named -- in low places near the palm grove "Caraná" in the savanna of San Antonio, Río Orinoco, Amazonas, Venezuela, at an altitude of 121 m., on April 27, 1942, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is a great pleasure to dedicate this species to this noted collector and botanist, who has done such wonderful work on the flora of Venezuela and Peru.

*POLYGALA CURTISSII* f. ALBA Moldenke, f. nov.

Haec forma a forma typica speciei racemis densis et floribus albis recedit. -- This form differs from the typical form of the species in its densely congested inflorescences and white flowers.

The type was collected by me (no. 19269) on road embankments and shoulders along the Blue Ridge Mountains Parkway near Galax, Carroll Co., Virginia, on August 28, 1947, and is deposited in the herbarium of Oregon State College.

*PORTULACA GRANDIFLORA* f. PLENA Moldenke, f. nov.

Haec forma a forma typica speciei corollis plenis recedit. -- This form differs from the typical form of the species in its "doubled" corollas.

The type was collected by me (no. 4118) from cultivated material at Watchung, Somerset Co., New Jersey, on September 3, 1928, and is deposited in the Britton Herbarium at the New York Botanical Garden. I cannot find that this form has hitherto been validly named in botanical literature.

*STACHYTARPHETA LAEVIS* Moldenke, sp. nov.

Herba robusta; ramis tetragonis ubique glabris nitidis brunnescentibus; foliis oppositis; petiolis gracilibus alatis ubique glabris; laminis leviter chartaceis ovatis brunnescentibus subacutis vel obtusis, ad basin rotundatis, regulariter serratis utrinque glabris nitidisque; spicis terminalibus solitariis elongatis ubique glabris.

Coarse herb; branches tetragonal, completely glabrous and shiny, brunnescent; principal internodes 3--5 cm. long; leaves decussate-opposite, usually with a cluster of very small ones on much abbreviated twigs in their axils; petioles slender, 2--10 mm. long, winged, completely glabrous; blades thin-chartaceous, ovate, brunnescent in drying, 2.5--5 cm. long, 1--2.8 cm. wide, subacute or blunt at apex, rounded into the broadly winged petiole at base, uniformly serrate from base to apex with acute or submucronate teeth, completely glabrous and shiny on both surfaces; midrib and the 4 or 5 pairs of slender secondaries plane above, prominent beneath; vein and veinlet reticulation obscure, usually only the larger tertiaries discernible; spikes terminal, solitary, elongate, to about 36 cm. long, about 1 cm. wide (including the corollas); peduncle very short or obsolete; rachis slender, glabrous, sculptured after anthesis; bractlets narrow-lanceolate, about 8 mm. long and 1 mm. wide, long-attenuate at apex, somewhat scarious-margined, glabrous or subglabrate, subappressed, slightly shorter than the calyx; corolla about 1 cm. long, pale-blue, the limb 5 mm. wide.

The type of this species was collected by Carl Axel Magnus Lindman (no. A.607) in shady places along roadsides, Porto Alegre, Rio Grande do Sul, Brazil, on November 3, 1892, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm. The collector states that the plant is used medicinally as a stomachic.

*STACHYTARPHETA LOEFGRENI* Moldenke, sp. nov.

Frutex; ramis gracilibus tetragonis submarginatis densissime pubescentibus vel subvillosis; foliis oppositis; petiolis alatis dense villosopubescentibus; laminis chartaceis late ellipticis acutis vel subacuminatis, ad basin longe acuminatis supra mediam serratis supra scabridis pilosulisque subtus dense velutino-tomentellis; spicis terminalibus ut videtur 3 dense multifloris; bracteolis anguste lanceolatis longe attenuatis vel caudatis valde divergentibus, densissime longeque ciliatis.

Shrub; branches slender, tetragonal, slightly margined at the angles, very densely pubescent or subvillosous, less densely so in age, the hairs yellowish when young, grayish in age; principal internodes 2--8 cm. long, more abbreviated on the younger parts; leaves decussate-opposite; petioles 5--

10 mm. long, winged, densely villous-pubescent with yellowish or white hairs, flattened above; blades chartaceous, grayish-green on both surfaces, broadly elliptic, to about 9.5 cm. long and 5 cm. wide, acute or subacuminate at the apex, long-acuminate into the winged petiole at the base, serrate from the middle to the apex with broad-based, rounded, and rather appressed teeth, scabridous and more or less pilosulous above, densely velvety-tomentellous beneath; midrib plane or very slightly subimpressed above, prominent beneath; secondaries slender, about 5 per side, plane or very slightly subimpressed above, prominulous beneath; vein and veinlet reticulation fine, the larger parts plainly visible; spikes terminal, apparently 3, the two lower ones shorter, all densely many-flowered, to about 8 cm. long, to 2.5 cm. wide; peduncle obsolete or very short; rachis completely hidden by the closely imbricate flowers; bractlets narrow-lanceolate, 11-15 mm. long, about 2 mm. wide at the base, long-attenuate or caudate at apex, widely divergent from the rachis during anthesis, very densely long-ciliate on the margins, otherwise glabrate or obscurely pilosulous; corolla very large and showy, about 3 cm. long.

The type of this most distinctive species was collected by Alberto Löffgren (no. 692) in "caatinga" at Ingazeiro, Ceará, Brazil, on April 26, 1910, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*STACHYTARPHETA MOLLIS* Moldenke, sp. nov.

Frutex; ramis obsolete tetragonis densissime tomentosis; foliis firme chartaceis oppositis sessilibus, laminis ellipticis acutis, ad basin rotundatis, supra mediam serratis, utrinque dense villosis; costa venis majoribusque supra impressis subtus valde prominentibus; spicis solitariis terminalibus brevibus ubique dense villosis.

Shrub; branches obsolete tetragonal, very densely tomentose with sordid-gray or brownish hair; principal internodes 4-7 cm. long; leaves firmly chartaceous, opposite, sessile, the blades elliptic, 3.5-5 cm. long, 2-3 cm. wide, acute at apex, rounded at base, serrate from the middle to the apex with rather coarse and rounded more or less appressed teeth, densely villous on both surfaces with sordid-gray hairs; midrib, the 3-5 slender secondaries, and the larger veinlets impressed above and prominent beneath; spike solitary, terminal, short, about 7 cm. long, densely villous throughout, about 2 cm. in diameter (exclusive of corollas); peduncle very short, densely villous; rachis densely villous but completely hidden by the closely imbricate flowers; bractlets lanceolate, 11-12 mm. long, 2-3 mm. wide at the base, long-attenuate or acuminate at apex, densely villous on the back, equaling or slightly exceeding the villous cal-



yx; corolla brick-red, showy.

The type of this distinct species was collected by Auguste François Marie Glaziou (no. 21906) between Sobradinho and Lagoa do Mestre d'Armas, Goyaz, Brazil, in November or December, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*STACHYTARPHETA SESSILIS* Moldenke, sp. nov.

Herba pumila; caule simplice vel 1-ramuloso gracile stramineo tetragono laxe patenti-hirsuto; foliis oppositis sessilibus membranaceis oblongis argute acutis, ad basin rotundatis vel subtruncatis, serratis utrinque sparse hirsutulis; spicis solitariis terminalibus; rhachide crasso albo-hirsutulo post anthesin profunde excavato; bracteolis magnis lanceolatis acuminatis argute adpressis stramineis subglabratissimis vel minutissime ciliolatis.

Low herb, to about 35 cm. tall; stems simple or with one erect branch, slender, stramineous, tetragonal, loosely hirsute with soft white hairs 1--2 mm. long standing at right angles to the stem, normally equally hirsute from apex to base; principal internodes 2--4 cm. long; leaves decussate-opposite, sessile, membranous, oblong, 2.5--3.5 cm. long, 1.1--1.2 cm. wide, sharply acute at the apex, rounded or subtruncate at the base, serrate with rather coarse and short teeth from the base to the apex, sparsely hirsutulous on both surfaces, more densely so along the midrib beneath; midrib very slender, plane above, prominentulous beneath; secondaries very slender, about 5 per side, practically indiscernible above, faint beneath; veinlet reticulation indiscernible; spikes solitary, terminal, to about 16 cm. long, about 5 mm. wide (exclusive of the corollas); peduncles obsolete; rachis stout, whitish-hirsutulous, deeply excavated after anthesis, plainly visible between the bractlets; bractlets large, lanceolate, 8--9 mm. long, 2--2.5 mm. wide, acuminate at the apex, barely contiguous and not at all imbricate at maturity, closely appressed to the rachis, subglabrous and stramineous or very minutely ciliolate toward the apex and strigillose-pilose toward the base; calyx equal to or slightly shorter than the bractlets, microscopically strigillose; corolla-tube 10--12 mm. long, glabrous, the limb about 1 cm. wide.

The type of this unmistakable species was collected by Alberto Löfgren (no. 160) in "caatinga" at Salvacão, Ceará, Brazil, on March 6, 1910, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*SYNGONANTHUS AKURIMENSIS* Moldenke, sp. nov.

Herba perpumila acaulescens; foliis rosulatis numerosis linearibus recurvatis densiuscule patenti-pubescentibus, ad



apicem obtusis saepe recurvatis; pedunculis numerosis tricostratis gracillimis paulo tortis glabris stramineis; vaginis arcte adpressis dense incanis, pilis arctissime adpressis inflatis minutis bulboideis; capitulis hemisphaericis albidis vel niveis, parvis 2--4 mm. latis.

Very dwarf acaulescent herb; leaves rosulate, numerous, linear, recurved, 3--15 mm. long, 0.5--1 mm. wide, rather densely spreading-pubescent with short white hairs, less so in age, blunt and often subuncinately recurved at the apex; peduncles several to 8 per plant, 2--5 cm. long, 3-costate, very slender, slightly twisted, glabrous, stramineous; sheaths 5--10 mm. long, closely appressed, densely incanous with very closely appressed inflated minute bulb-like hairs which are usually without any capillary appendage, but sometimes appendaged ones are interspersed, obliquely split at the apex; heads hemispheric, white or whitish, 2--4 mm. in diameter; involucre bractlets oblanceolate, white or stramineous, about 1.5 mm. long and 0.8 mm. wide, rounded in outline but irregularly erose-laciniate at the apex, glabrous and shiny on both surfaces; receptacle densely long-pilose with white hairs; staminate florets: borne on a capillary stalk about 0.6 mm. long; sepals 3, hyaline, separate, elliptic, about 0.7 mm. long and 0.3 mm. wide, glabrous, not glanduliferous; petals 3, hyaline, apparently separate (?), of the same size, shape, and texture as the sepals, glabrous and not glanduliferous; pistillate florets: sepals 3, separate, hyaline, oblong, about 1.9 mm. long and 0.8 mm. wide, acute at the apex, glabrous; petals 3, linear, hyaline, connate at the middle, but easily separating in age, about 1.1 mm. long and 0.2 mm. wide, long-pilose near the middle on the inner surface with hyaline hairs reaching about to the apex, not glanduliferous; style subobsolete or to 0.1 mm. long, glabrous, its appendages 3, about 0.4 mm. long; stigmas 3, about 0.2 mm. long; ovary 3-celled.

The type was collected by Francisco Tamayo (no. 3234) in sandy soil on Cerro Akurimá, Bolívar, Venezuela, in March of 1946, and is deposited in the United States National Herbarium at Washington. The collector says that the plants grow from 5 to 8 cm. tall. The remarkable hairs of the sheaths are most characteristic.

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THE KNOWN GEOGRAPHIC DISTRIBUTION OF THE MEMBERS OF THE  
ERIOCAULACEAE. SUPPLEMENT 2

Harold N. Moldenke

The following records are a continuation of the series

begun by me in *Phytologia* 2: 349--352 (1947).

UNITED STATES OF AMERICA:

New York:

Eriocaulon septangulare With. (Cayuga County)

Delaware:

Eriocaulon compressum Lam. (Sussex County)

Eriocaulon septangulare With. (New Castle County)

North Carolina:

Lachnocaulon anceps (Walt.) Morong (Pender County)

Lachnocaulon minus (Chapm.) Small (Bladen County)

Michigan:

Eriocaulon septangulare With. (Baraga County)

Texas:

Eriocaulon texense Körn. (Jefferson County)

California:

Eriocaulon cinereum R. Br. (Stanislaus County)

COLOMBIA:

Paepalanthus ensifolius (H.B.K.) Kunth (Santander Norte)

VENEZUELA:

Paepalanthus Tatei Moldenke (Lar<sup>a</sup>)

Paepalanthus truxillensis Körn. (Lar<sup>a</sup>)

Paepalanthus Williamsii Moldenke (Amazonas)\*

Syngonanthus akurimensis Moldenke (Bolívar)\*

SURINAM:

Paepalanthus Maguirei Moldenke

Paepalanthus polytrichoides Kunth

Paepalanthus tafelbergensis Moldenke\*

Syngonanthus eriophyllus var. glandulosus Ruhl. -- delete  
the " " "

Syngonanthus gracilis (Körn.) Ruhl.

Syngonanthus surinamensis Moldenke\*

FRENCH GUIANA:

Eriocaulon guianense Körn. -- delete the " " "

Syngonanthus caulescens (Poir.) Ruhl.

ECUADOR:

Paepalanthus andicola Körn. (Loja)

Paepalanthus ensifolius (H.B.K.) Kunth (Azuay, Carchi, &  
Loja)

Paepalanthus Espinosianus Moldenke (Santiago-Zamora)\*

Paepalanthus Karstenii Ruhl. (Loja)

Paepalanthus loxensis Moldenke (Loja)\*

Syngonanthus macrocaulon Ruhl.

PERU:

Paepalanthus pilosus (H.B.K.) Kunth (Cuzco)

Syngonanthus caulescens (Poir.) Ruhl. (San Mart<sup>in</sup>)

BRAZIL:

Eriocaulon Beauverdi Moldenke (S<sup>ao</sup> Paulo)\*

Eriocaulon cipoense Alv. Silv. (Minas Geraes)\*

Eriocaulon crassiscapum Bong. (Rio de Janeiro & Rio Grande do Sul) -- delete the "\*"

Eriocaulon dictyophyllum Körn. (Paraná)

Eriocaulon gibbosum Körn. (Goyaz & Rio de Janeiro)

Eriocaulon giganteum (Beauverd) Beauverd -- to be deleted

Eriocaulon heteroepalon Alv. Silv. (Minas Geraes)\*

Eriocaulon Humboldtii Kunth (Amazonas)

Eriocaulon leptophyllum Kunth -- delete the "\*"

Eriocaulon longepedunculatum Alv. Silv. -- to be deleted

Eriocaulon melanocephalum Kunth (Amazonas)

Eriocaulon modestum Kunth -- delete the "\*"

Eriocaulon paludicola Alv. Silv. is the correct form for this name

Eriocaulon Silveirae Moldenke (Minas Geraes)\*

Leiothrix cuscutoides Alv. Silv. (Minas Geraes)\*

Leiothrix Edwallii Alv. Silv. (São Paulo)\*

Leiothrix hirsuta var. Magalhãesii Alv. Silv. (Minas Geraes)\*

Leiothrix obtusifolia Alv. Silv. (Minas Geraes)\*

Leiothrix sclerophylla Alv. Silv. (Minas Geraes)\*

Paepalanthus Dusenii Ruhl. (São Paulo)

Paepalanthus fasciculatus (Rottb.) Körn. (Pará)

Paepalanthus myocephalus (Mart.) Körn. (Pernambuco)

Paepalanthus neopulvinatus Moldenke (Minas Geraes)\*

Paepalanthus paucifolius Alv. Silv. (Minas Geraes)\*

Paepalanthus pulvinatus Alv. Silv. -- to be deleted

Paepalanthus Warmingianus Körn. (Minas Geraes)

Syngonanthus anthemiflorus (Bong.) Ruhl. -- delete the "\*"

Syngonanthus caulescens (Poir.) Ruhl. (Paraná, Pernambuco, & Rio Grande do Sul)

Syngonanthus centauroides var. subappressus Ruhl. (Rio Grande do Sul)

Syngonanthus Fischerianus (Bong.) Ruhl. (Amazonas & Pará)

Syngonanthus gracilis var. glabriusculus Ruhl. -- delete the "\*"

Syngonanthus gracilis var. hirtellus (Steud.) Ruhl. -- delete the "\*"

Syngonanthus heteroeploides Herzog -- delete the "\*"

Syngonanthus rufo-albus Alv. Silv. (Minas Geraes)\*

Syngonanthus Widgrenianus (Körn.) Ruhl. (São Paulo)

#### BOLIVIA:

Eriocaulon Steinbachii (Moldenke) Moldenke (Santa Cruz)\*

Leiothrix flavescens (Bong.) Ruhl. (El Beni)

Paepalanthus muscosus Körn. (La Paz)

Paepalanthus speciosus (Bong.) Ruhl. (Santa Cruz)

Syngonanthus caulescens (Poir.) Ruhl. (Santa Cruz)

Syngonanthus Fischerianus (Bong.) Ruhl. (Santa Cruz)

#### PARAGUAY:

Eriocaulon magnum Abbiatti

## URUGUAY:

Eriocaulon Arechavaletae Herter is the correct form for this name

Eriocaulon modestum Kunth

## ARGENTINA:

Eriocaulon Arechavaletae Moldenke -- to be deleted

Eriocaulon crassiscapum Bong. (Misiones)

Eriocaulon leptophyllum Kunth (Corrientes)

Eriocaulon magnum Abbiatti (Chaco)

Eriocaulon missionum Castell. (Misiones)\*

Eriocaulon Sellowianum Kunth (Corrientes)

Eriocaulon sp. indet. -- to be deleted

Syngonanthus anthemiflorus (Bong.) Ruhl. (Misiones)

Syngonanthus caulescens (Poir.) Ruhl. (Misiones)

## UNION OF SOCIALIST SOVIET REPUBLICS:

Eriocaulon Euergerianum Körn. (Buryato-Mongolskaya)

Eriocaulon chinorossicum Lom (Far Eastern Territory)\*

Eriocaulon nipponicum Maxim. (Buryato-Mongolskaya)

Eriocaulon robustius (Maxim.) Mak. (Far Eastern Territory)\*

## ABYSSINIA:

Eriocaulon Schimperii Körn. -- delete the " " "

## SIERRA LEONE:

Paepalanthus Lamarckii Kunth

## FRENCH WEST AFRICA:

Eriocaulon bifistulosum Van Heurck & Muell.-Arg. (French Soudan)

## FRENCH EQUATORIAL AFRICA:

Paepalanthus Lamarckii Kunth (Gabun)

## BELGIAN CONGO:

Eriocaulon Schimperii Körn.

## RUANDA &amp; URUNDI:

Eriocaulon Schimperii Körn.

## UGANDA:

Eriocaulon Volkensii Engl.

## TANGANYIKA TERRITORY:

Eriocaulon mesanthemoides Ruhl. -- delete the " " "

Eriocaulon Schimperii Körn.

Eriocaulon Volkensii Engl. -- delete the " " "

## MAFIA ISLAND:

Paepalanthus Lamarckii Kunth

## KENYA:

Eriocaulon Schimperii var. gigas Moldenke\*

## BRITISH NYASALAND PROTECTORATE:

Eriocaulon mesanthemoides Ruhl.

Eriocaulon Schimperii Körn.

## INDIA:

Eriocaulon Dalzellii Körn. (Bengal) -- delete the " " "

Eriocaulon Dianae Fyson -- delete the " " "

Eriocaulon luzulaefolium Mart. (Madras)



Eriocaulon Vanheurckii Muell.-Arg. -- delete the "\*"   
 SALSETTE ISLAND:

Eriocaulon Dianas Fyson

Eriocaulon Vanheurckii Muell.-Arg.

BURMA:

Eriocaulon cinereum R. Br.

CEYLON:

Eriocaulon Dalzellii Körn.

CHINA:

Eriocaulon alpestre Hook. f. & Thoms. (Fukien)

Eriocaulon Euergerianum Körn. (Kwangtung & Yünnan)

Eriocaulon cristatum Mart.

Eriocaulon Rockii Moldenke (Yünnan)\*

Eriocaulon truncatum Hamilt. (Kiangsi & Kweichow)

Eriocaulon yunnanense Moldenke (Yünnan)\*

JAPAN:

Eriocaulon atrum Nakai (Honshiu)

Eriocaulon cinereum R. Br. (Musashi)

Eriocaulon nipponicum Maxim. (Honshiu)

Eriocaulon robustius (Maxim.) Mak. is the correct form for   
 this name

Eriocaulon sikokianum Maxim. (Hilachi & Kiushiu)

HAINAN ISLAND:

Eriocaulon Buergerianum Körn.

FRENCH INDO-CHINA:

Eriocaulon Robinsonii Moldenke (Annam)\*

Eriocaulon truncatum Hamilt. (Annam)

THAILAND:

Eriocaulon glabriflorum Ridl.

Eriocaulon ubonense H. Lecomte

TERUTAU ISLAND:

Eriocaulon glabriflorum Ridl.

FEDERATED MALAY STATES:

Eriocaulon glabriflorum Ridl. -- delete the "\*"   
 STRAITS SETTLEMENTS:

Eriocaulon cristatum Mart. (Malacca)

Eriocaulon glabriflorum Ridl. (Langkawi Islands)

LIUKIU ISLANDS:

Eriocaulon australe R. Br. (Iriomote Island)

BISMARCK ARCHIPELAGO:

Eriocaulon brachypeplon Körn. (New Ireland)\*

AUSTRALIA:

Eriocaulon graphitinum F. Muell. & Tate (South Austral-   
 ia)\*; this is the correct form for this name

Eriocaulon spectabile F. Muell. (Northern Territory &   
 Queensland)\*

Eriocaulon Tatei Ruhl. (Northern Territory)\*

Eriocaulon tortuosum F. Muell. (Northern Territory)\*

FOSSILIZED:

Eriocaulon porosum Lesq. (Eocene of Colorado)\*

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Addenda and errata to the alphabetic list of scientific names proposed in the Eriocaulaceae, including mis-spellings and mis-accreditations

Carptotepala MoldenkeCarptotepala insolita MoldenkeDupatya caulescens (Poir.) Kuntze = Syngonanthus caulescens (Poir.) Ruhl.Dupatya elegans (Bong.) Kuntze = Syngonanthus elegans (Bong.) Ruhl.Dupotya Kuntze = Paepalanthus Mart.Dupotya flavidula (Michx.) Kuntze = Syngonanthus flavidulus (Michx.) Ruhl.Eriaucolon L. = Eriocaulon L.Eriaucolon elongatum Bong. = Paepalanthus elongatus (Bong.) Körn.Eriaucolon gnaphalodes Michx. = Eriocaulon compressum Lam.Eriocaulon alatum H. LecomteEriocaulon alpestre var. perpusillum NakaiEriocaulon alpestre var. robustius Maxim. = Eriocaulon robustius (Maxim.) Mak.Eriocaulon annamense H. LecomteEriocaulon Arechavaletae Castell. = Eriocaulon magnum AbbiattiEriocaulon Arechavaletae HerterEriocaulon Arechavaletae Moldenke = Eriocaulon Arechavaletae HerterEriocaulon argenteum Heyne = Eriocaulon quinquangulare L.Eriocaulon argentinum Castell. = Eriocaulon leptophyllum KunthEriocaulon articulatum (Huds.) Morong = Eriocaulon septangulare With.Eriocaulon articulatum var. submersum Haberer = Eriocaulon septangulare With.Eriocaulon atratum Thwaites = Eriocaulon subglaucum Ruhl. [not E. subcaulescens Hook. f.]Eriocaulon atrum NakaiEriocaulon barba-caprae FysonEriocaulon Beauverdi MoldenkeEriocaulon Boni H. LecomteEriocaulon brevipedunculatum Merr.Eriocaulon brizoides (Kunth) Steud. = Syngonanthus gracilis var. Koernickeanus Ruhl.Eriocaulon bromelloideum H. LecomteEriocaulon Brownianum var. nilagirensis Fyson = Eriocaulon nilagirensis Steud.

- Eriocaulon capitulatum Moldenke  
Eriocaulon caricifolium Gardn. = Syngonanthus laricifolius  
 (Gardn.) Ruhl.  
Eriocaulon caulescens Kunth = Syngonanthus caulescens  
 (Poir.) Ruhl.  
Eriocaulon cauliferum Mak.  
Eriocaulon chinorossicum Lom  
Eriocaulon Christopheri Fyson  
Eriocaulon cipoense Alv. Silv.  
Eriocaulon Comptonii Rendle  
Eriocaulon congensense Moldenke = Eriocaulon Schimperii Körn.  
Eriocaulon conicum (Fyson) C. E. C. Fischer  
Eriocaulon coreanum H. Lecomte  
Eriocaulon cristatum Heyne = Eriocaulon cristatum Mart.  
Eriocaulon Cuatrecasasi Moldenke = Dichromena monostachya  
 (Böckl.) C. B. Clarke, Cyperaceae  
Eriocaulon cubralense Alv. Silv. = Eriocaulon cabralense  
 Alv. Silv.  
Eriocaulon decemangulare L. = Eriocaulon decangulare L.  
Eriocaulon dimorphopetalum Moldenke  
Eriocaulon ovoideum Britton & Small = Eriocaulon ovoideum  
 Britton & Small  
Eriocaulon falcatum Bong.  
Eriocaulon gibbosum var. brevifolium Körn. = Eriocaulon  
gibbosum Körn.  
Eriocaulon gibbosum var. longifolium Körn. = Eriocaulon  
gibbosum Körn.  
Eriocaulon gnaphaloides Michx. = Eriocaulon compressum Lam.  
Eriocaulon gnaphaloides Michx. = Eriocaulon compressum Lam.  
Eriocaulon graphiticum Tate = Eriocaulon graphitinum F.  
 Muell. & Tate  
Eriocaulon graphitinum F. Muell. & Tate  
Eriocaulon heterodoxum Moldenke  
Eriocaulon heteropeplon Alv. Silv.  
Eriocaulon hexangulare L. = Eriocaulon sexangulare L.  
Eriocaulon leptodictyon A. Gray = Eupatorium leptodictyon  
 A. Gray, Carduaceae  
Eriocaulon ligulatum Bon. = Paepalanthus lingulatus (Bong.)  
 Kunth  
Eriocaulon ligulatus Bong. = Paepalanthus lingulatus  
 (Bong.) Kunth  
Eriocaulon lingulatus Bong. = Paepalanthus lingulatus  
 (Bong.) Kunth  
Eriocaulon missionum Castell.  
Eriocaulon palludicola Alv. Silv. = Eriocaulon paludicola  
 Alv. Silv.  
Eriocaulon paradoxum Moldenke  
Eriocaulon quadriangulare Lour. = Eriocaulon sexangulare L.  
Eriocaulon quinquangulare Heyne = Eriocaulon cristatum Mart.

- Eriocaulon Robinsonii Moldenke  
Eriocaulon robustium (Maxim.) Mak. = Eriocaulon robustius (Maxim.) Mak.  
Eriocaulon robustius (Maxim.) Mak.  
Eriocaulon robustum var. caulescens Fyson = Eriocaulon atratum var. major Thwaites  
Eriocaulon Rockii Moldenke  
Eriocaulon Schimperi var. gigas Moldenke  
Eriocaulon septangulare Kunth = Eriocaulon septangulare With.  
Eriocaulon septentrionalis (Huds.) Morong = Eriocaulon septangulare With.  
Eriocaulon serotinum Walt. = Eriocaulon decangulare L.  
Eriocaulon setaceum Hook. f. = Eriocaulon intermedium Körn.  
Eriocaulon sexangulare Fyson = Eriocaulon longifolium Nees  
Eriocaulon Sieboldianum Steud. = Eriocaulon cinereum R. Br.  
Eriocaulon Steinbachii (Moldenke) Moldenke  
Eriocaulon Steyermarkii Moldenke  
Eriocaulon subcaulescens Hook. f. = Eriocaulon subcaulescens Hook. f.  
Eriocaulon Volkensii var. Mildbraedii Ruhl.  
Eriocaulon Wightianum Hook. f. = Eriocaulon robusto-Brownianum Ruhl. & E. Brownianum Mart.  
Eriocaulon yunnanense Moldenke  
Eriocaulon zeylanicum Körn. = Eriocaulon ceylanicum Körn.  
Eriocaulon zeylanicum var. subcaulescens Fyson = Eriocaulon subglaucum Ruhl.  
Eriocaulon 7-angulare With. = Eriocaulon septangulare With.  
Hyphdra amplexicaulis Vahl = Tonina fluviatilis Aubl.  
Lachnanthes Michauxii Kunth = Lachnocaulon anceps (Walt.) Morong  
Leiothrix cuscutoides Alv. Silv.  
Leiothrix Edwallii Alv. Silv.  
Leiothrix hirsuta var. Magalhãesii Alv. Silv.  
Leiothrix obtusifolia Alv. Silv.  
Leiothrix sclerophylla Alv. Silv.  
Leiothrix Steyermarkii Moldenke  
Leiothrix umbratilis Moldenke  
Paepalanthus aereus Alv. Silv. = Paepalanthus aereus Alv. Silv.  
Paepalanthus aereus Alv. Silv.  
Paepalanthus angustus Alv. Silv. = Paepalanthus augustus Alv. Silv.  
Paepalanthus anreus Alv. Silv. = Paepalanthus aureus Alv. Silv.  
Paepalanthus arborecens Alv. Silv. = Paepalanthus arborescens Alv. Silv.  
Paepalanthus bifidus Kunth = Paepalanthus bifidus (Schrad.) Kunth  
Paepalanthus brunneus Moldenke



- Paepalanthus caulescens (Poir.) Kunth = Syngonanthus caulescens (Poir.) Ruhl.  
Paepalanthus desinfolius Alv. Silv. = Paepalanthus densifolius Alv. Silv.  
Paepalanthus diversifolius Alv. Silv. = Paepalanthus diversifolius Alv. Silv.  
Paepalanthus elegans (Bong.) Kunth = Syngonanthus elegans (Körn.) Ruhl.  
Paepalanthus elegans Mart. = Syngonanthus elegans (Körn.) Ruhl.  
Paepalanthus Espinosianus Moldenke  
Paepalanthus filipes Moldenke  
Paepalanthus glaucopodus Alv. Silv. = Paepalanthus glaucopodus Alv. Silv.  
Paepalanthus griseus Moldenke  
Paepalanthus Gustarvii Alv. Silv. = Paepalanthus Gustavii Alv. Silv.  
Paepalanthus jordadensis Alv. Silv. = Paepalanthus jordanensis Alv. Silv.  
Paepalanthus loxensis Moldenke  
Paepalanthus Maguirei Moldenke  
Paepalanthus myocephalus Mart. = Paepalanthus myocephalus (Mart.) Körn.  
Paepalanthus myriocephalus Mart. = Paepalanthus myocephalus (Mart.) Körn.  
Paepalanthus myriophyllus Alv. Silv. = Paepalanthus myriophyllus Alv. Silv.  
Paepalanthus oereus Alv. Silv. = Paepalanthus aereus Alv. Silv.  
Paepalanthus orthogonolis Alv. Silv. = Paepalanthus orthogonalis Alv. Silv.  
Paepalanthus paucifolius Alv. Silv.  
Paepalanthus pauper Moldenke  
Paepalanthus perplexans Moldenke  
Paepalanthus pisrophorus Alv. Silv. = Paepalanthus spirorphorus Alv. Silv.  
Paepalanthus polyclados Alv. Silv. = Paepalanthus polycladus Alv. Silv.  
Paepalanthus ramosissimos Alv. Silv. = Paepalanthus ramosissimus Alv. Silv.  
Paepalanthus rhyzocephalus Alv. Silv. = Paepalanthus rhizocephalus Alv. Silv.  
Paepalanthus robustus Alv. Silv. = Paepalanthus robustus Alv. Silv.  
Paepalanthus roraimensis Moldenke  
Paepalanthus scopulorum Moldenke  
Paepalanthus serralapensis Moldenke  
Paepalanthus squamuliferus Moldenke  
Paepalanthus Steinbachii Moldenke = Eriocaulon Steinbachii

(Moldenke) Moldenke

- Paepalanthus Steyermarkii Moldenke  
Paepalanthus subsessilis Moldenke  
Paepalanthus syngonan-thoides Alv. Silv. = Paepalanthus syngonanthoides Alv. Silv.  
Paepalanthus tafelbergensis Moldenke  
Paepalanthus tenuiculis Alv. Silv. = Paepalanthus tenuicaulis Alv. Silv.  
Paepalanthus tortilis Mart. = Paepalanthus tortilis (Bong.) Mart.  
Paepalanthus umbillatus Kunth = Syngonanthus umbellatus (Lam.) Ruhl.  
Paepalanthus vehetinus Alv. Silv. = Paepalanthus velutinus Alv. Silv.  
Paepalanthus viridifolius Alv. Silv. = Paepalanthus rigidifolius Alv. Silv.  
Paepalanthus Warmingii Körn. = Paepalanthus Warmingianus Körn.  
Paepalanthus Williamsii Moldenke  
Paepalanthus sp. Niederlein = Eriocaulon argentinum Castell.  
Rondonanthus Herzog = Rondonanthus Herzog  
Rondonanthus micropetalus Moldenke  
Syngonanthus akurimensis Moldenke  
Syngonanthus caulescens Ruhl. = Syngonanthus caulescens (Poir.) Ruhl.  
Syngonanthus duidae Moldenke  
Syngonanthus elegans (Bong.) Ruhl. = Syngonanthus elegans (Körn.) Ruhl.  
Syngonanthus elegans var. rufescens Ruhl. = Syngonanthus elegans (Körn.) Ruhl.  
Syngonanthus gracilis Molfino = Eriocaulon argentinum Castell.  
Syngonanthus guianensis Moldenke  
Syngonanthus lagopodioides (Michx.) Ruhl. = Syngonanthus lagopodioides (Griseb.) Ruhl.  
Syngonanthus minutulus (Steud.) Moldenke  
Syngonanthus rufo-albus Alv. Silv.  
Syngonanthus savannarum Moldenke  
Syngonanthus surinamensis Moldenke  
Syngonanthus venezuelensis Moldenke  
Syngonanthus Wilsoni Moldenke = Syngonanthus Wilsonii Moldenke

The 161 names in the preceding list are supplementary to the 2060 names listed by me on pages 28 to 60 of my booklet entitled "The known geographic distribution of the members of the Eriocaulaceae", published in 1946.

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THE KNOWN GEOGRAPHIC DISTRIBUTION OF THE MEMBERS OF THE  
VERBENACEAE, AVICENNIACEAE, STILBACEAE, AND SYMPHOREMACEAE.  
SUPPLEMENT 7

Harold N. Moldenke

CANADA:

Ontario:

Verbena hastata L. (Wentworth County)

Verbena urticifolia L. (Essex County)

British Columbia:

Verbena hastata L. (York County)

Vancouver Island:

Verbena bracteata Lag. & Rodr.

UNITED STATES OF AMERICA:

Maine:

Verbena hastata L. (Cumberland & Hancock Counties)

New Hampshire:

Verbena hastata L. (Hillsboro County)

Rhode Island:

Verbena hastata L. (Kent County)

Connecticut:

Verbena urticifolia var. leiocarpa Perry & Fernald  
(Hartford County)

Delaware:

Verbena simplex Lehm. (Sussex County)

Maryland:

Verbena hastata L. (Wicomico County)

Virginia:

Verbena canadensis (L.) Britton (Princess Anne County)

Verbena hastata L. (Roanoke County)

Verbena officinalis L. (Dinwiddie & Henrico Counties)

Verbena urticifolia L. (Albemarle, Rockingham, & York  
Counties)

Verbena urticifolia var. leiocarpa Perry & Fernald  
(Carroll & Princess Anne Counties)

South Carolina:

Lantana Camara L.

Verbena urticifolia var. leiocarpa Perry & Fernald  
(Williamsburg County)

Ohio:

Verbena bracteata Lag. & Rodr. (Scioto County)

Verbena canadensis (L.) Britton (Pike County)

xVerbena hybrida Voss (Ashtabula County)

Verbena simplex Lehm. (Franklin County)

Vitex Negundo var. heterophylla (Franch.) Rehd.  
(Preble County)

## Illinois:

Verbena hastata L. (Pope County)Verbena stricta f. albiflora Wadmond (Winnebago County)

## Michigan:

Verbena canadensis (L.) Britton (Berrien County)

## Wisconsin:

Verbena stricta f. albiflora Wadmond

## Minnesota:

Verbena hastata L. (Mower County)Verbena urticifolia var. lelocarpa Perry & Fernald (Mower County)

## Missouri:

Verbena canadensis (L.) Britton (Saline County)Verbena stricta Vent. (Pemiscot County)

## Colorado:

Verbena bipinnatifida Nutt. (Boulder County)

## Texas:

Phyla cuneifolia (Torr.) Greene (Floyd County)Phyla incisa Small (Erath County)Phyla strigulosa var. parvifolia (Moldenke) Moldenke (Cameron County)Verbena bipinnatifida Nutt. (Castro & Hockley Counties)Verbena bracteata Lag. & Rodr. (Erath County)Verbena pumila Rydb. (Hockley & Willacy Counties)Verbena quadrangulata Heller (Cherokee County)Verbena tenuisecta Briq. (Shelby County)

## Arizona:

Verbena bracteata Lag. & Rodr. (Cochise & Pima Counties)Verbena Goodingii var. nepetifolia Tidestr. (Yuma County)

## California:

Phyla nodiflora var. reptans (H.B.K.) Moldenke (Lake County)Phyla nodiflora var. rosea (D. Don) Moldenke (Santa Barbara County)Verbena Abramsi Moldenke (Lake, Orange, & Trinity Counties)Verbena lasiostachys var. scabrida Moldenke (Ventura County)

## MEXICO:

Aloysia triphylla (L'Hér.) Britton (Tlaxcala)Citharexylum affine D. Don (Aguascalientes)Lantana Camara L. (Aguascalientes)Lantana hispida H.B.K. (México)Lippia Pringlei Briq. (Aguascalientes)Phyla strigulosa (Mart. & Gal.) Moldenke (Coahuila & Oaxaca)Phyla strigulosa var. parvifolia (Moldenke) Moldenke (Guanajuato & Querétaro)Verbena Andrieuxii Schau. (San Luis Potosí)



Verbena perennis var. Johnstoni Moldenke (Zacatecas)

GUATEMALA:

Lippia hypoleia Briq. (Alta Verapaz)

Lippia nodiflora var. reptans (H.B.K.) Moldenke (Guatemala)

HONDURAS:

Lippia cardiostegia Benth. (Gracias)

Lippia lucens Standl. (Comayagua)

COSTA RICA:

Citharexylum Standleyi Moldenke (Cartago)

Lippia graveolens H.B.K. (San José)

Lippia Torresii Standl. (Cartago)

Stachytarpheta angustifolia (Mill.) Vahl (Limón)

PANAMA:

Lippia americana L. (Herrera)

Lippia hemisphaerica Jacq. -- to be deleted

CUBA:

Lippia acuminata C. Wright (Las Villas)

Nashia nipensis (Urb.) Moldenke (Oriente)\*

JAMAICA:

Priva mexicana (L.) Pers.

HISPANIOLA:

Citharexylum Schulzii Urb. & Ekm. (Dominican Republic)

ST. JOHN:

Clerodendrum aculeatum (L.) Schlecht.

ST. KITTS:

Lantana involucrata L.

COLOMBIA:

Citharexylum Poeppigii Walp. (Méta)

Congea tomentosa Roxb. (Antioquia)

Lippia americana L. (Atlántico, Bolívar, Cundinamarca, Guajira, Magdalena, & Santander Norte)

Lippia hemisphaerica Jacq. -- to be deleted

Stachytarpheta canescens H.B.K. (Cundinamarca)

Stachytarpheta straminea Moldenke (El Cauca)

Vitex orinocensis var. multiflora (Miq.) Huber (Caqueta)

VENEZUELA:

Aegiphila grandis Moldenke (Mérida)

Aegiphila integrifolia (Jacq.) Jacks. (Bolívar)

Aegiphila racemosa Vell. (Mérida)

Ghinia spicata (Aubl.) Moldenke (Bolívar)

Lantana armata Schau. (Bolívar)

Lippia americana L. (Zulia)

Lippia hemisphaerica Jacq. -- to be deleted

Phyla betulaeifolia (H.B.K.) Greene (Amazonas)

Stachytarpheta elatior var. Jenmani Moldenke (Aragua & Guericó)

Stachytarpheta Sprucei Moldenke (Bolívar)

Vitex compressa Turcz. (Lará)

Vitex Negundo var. heterophylla (Franch.) Rehd. (Aragua)

## ECUADOR:

- Aloysia scorodonioides (H.B.K.) Cham. (Loja)  
Cornutia microcalycina var. pulverulenta Moldenke (Chimbo-  
 razo)  
Lantana scabiosaeflora H.B.K. (Loja)  
Lantana Sprucei Hayek (Loja)  
Lantana Svensonii Moldenke (Loja)  
Lantana trifolia L. (Loja)  
Lippia americana L. (Guayas)  
Lippia hemisphaerica Jacq. -- to be deleted  
Lippia hyptoides Benth. -- to be deleted  
Petrea Andrei Moldenke (Loja)  
Phyla betulaeifolia (H.B.K.) Greene (Loja)

## PERU:

- Junellia Hayekii Moldenke (Arequipa)  
Lantana Moritziana Otto & Dietr. (Madre de Dios)  
Lippia alba (Mill.) N. E. Br. (Lima)  
Petrea pubescens Turcz. (Madre de Dios)

## BRAZIL:

- Citharexylum Glaziovii Moldenke -- delete Rio de Janeiro  
Citharexylum laetum Hiern is the correct form for this  
 name; delete Maranhão  
Citharexylum Ulei var. calvescens Moldenke (Maranhão)\*  
Duranta vestita Cham. -- delete São Paulo  
Lantana canescens H.B.K. -- São Paulo  
Lantana montevidensis f. albiflora Moldenke (Bahia)\*  
Lippia asperrima Cham. (Paraná)  
Lippia lacunosa Mart. & Schau. (Mattogrosso)  
Lippia Morongii Kuntze (Mattogrosso)  
Lippia nana Schau. (Minas Geraes)  
Lippia pedunculosa Hayek (Bahia)  
Lippia phryxocalyx Briq. (Mattogrosso)  
Lippia pumila Cham. (Paraná)  
Lippia turnerifolia Cham. (Santa Catharina)  
Stachytarpheta azurea Moldenke --to be deleted  
Stachytarpheta laevis Moldenke (Rio Grande do Sul)\*  
Stachytarpheta Loeffgreni Moldenke (Ceará)\*  
Stachytarpheta lythrophylla Schau. (Ceará)  
Stachytarpheta Maximiliani Schau. (Minas Geraes & Rio de  
 Janeiro)  
Stachytarpheta mollis Moldenke (Goyaz)\*  
Stachytarpheta polyura Schau. -- delete the " " "  
Stachytarpheta sessilis Moldenke (Ceará)\*  
Stachytarpheta simplex Hayek (Mattogrosso)  
Vitex orinocensis var. multiflora (Miq.) Huber (Amazonas)

## BOLIVIA:

- Citharexylum Poeppigii var. margaritaceum Poepp. & Molden-  
 ke (La Paz)  
Lippia alba (Mill.) N. E. Br. (El Peni)

Lippia boliviana Rusby (Tarija)

Lippia trachyphylla Briq. (Cochabamba)

PARAGUAY:

Lippia imbricata Kuntze

Lippia phryxocalyx Briq. -- delete the "\*"

Lippia tegulifera Briq. -- delete the "\*"

Lippia tegulifera var. parvifolia Briq. -- to be deleted

Lippia turnerifolia Cham.

Lippia xerophylla Briq. -- to be deleted

Stachytarpheta polyura Schau.

URUGUAY:

Lippia asperrima var. longipedunculata Moldenke -- to be deleted

Verbena tenera var. albiflora Kuntze

CHILE:

Lippia disepala R. A. Phil. -- to be deleted

ARGENTINA:

Aloysia triphylla (L'Hér.) Britton (Buenos Aires)

Aloysia virgata var. elliptica (Briq.) Moldenke (Jujuy)

Lantana micrantha Briq. (Jujuy)

Lippia alba (Mill.) N. E. Br. (Corrientes)

Lippia asperrima Cham. (Jujuy)

Lippia asperrima var. longipedunculata Moldenke -- to be deleted

Lippia Ekmani Moldenke (Misiones)\*

Lippia Crisebachiana Moldenke (Jujuy)

Lippia lupulina Cham. (Misiones)

Lippia Morongii Kuntze (Misiones)

Lippia tegulifera var. ovata Briq. (Misiones)

Lippia turnerifolia Cham. (Misiones)

Verbena dissecta Willd. (Catamarca)

Verbena storeoclada Briq. (Santiago del Estero)

ALGERIA:

Chascanum marrubiifolium Fenzl

UGANDA PROTECTORATE:

Clerodendrum volubile P. Beauv.

KENYA:

Premna Holstii Gürke

Vitex Volkensii Gürke

INDIA:

Clerodendrum Phlomidis L. f. (Bengal)

Holmskioldia sanguinea Retz. (Madras)

CHINA:

Clerodendrum Leveillei Fedde (Yunnan)\*

BELEP ISLANDS:

Oxera oblongifolia var. artensis (Dubard) Moldenke (Art)\*

NEW CALEDONIA:

Oxera oblongifolia var. sinuata (Dubard) Moldenke\*

Oxera pulchella var. Deplancheana Dubard\*

Oxera pulchella var. microcalyx Dubard\*

Oxera subverticillata var. candelabrum Beauvis.\*

AUSTRALIA:

Chloanthes Stoechadis R. Br. -- delete the "\*"

NEW ZEALAND:

Chloanthes Stoechadis R. Br.

CULTIVATED:

Bouchea fluminensis (Vell.) Moldenke (Brazil)

Callicarpa dichotoma (Lour.) K. Koch (Florida)

Caryopteris incana var. nana Moldenke (Oregon)\*

Caryopteris incana var. superba (Dreer) Bobbink & Atkins  
is the correct form for this name; known from New Jersey, New York, & Pennsylvania.

Citharexylum ellipticum Sessé & Moc. (California)

Citharexylum Glaziovii Moldenke (Brazil)

Clerodendrum speciosissimum Van Geert (Massachusetts)

Clerodendrum trichotomum var. tomentosum Moldenke (New York)

Clerodendrum ugandense Prain (California)

Clerodendrum viscosum Vent. (Cuba)

Lippia alba (Mill.) N. E. Br. (Hispaniola)

Lippia Pringlei Briq. (Germany)

Monochilus gloxinifolius Fisch. & Mey. (Russia)

Verbena platensis Spreng. (New York)

Vitex parviflora A. L. Juss. (Maryland)

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ADDITIONAL NOTES ON THE GENUS AEGIPHILA. VIII

Harold N. Moldenke

Many hundreds of additional specimens of this genus have been examined by me since the publication of the seventh installment of these notes in 1941, and much additional information has come to light. The material of the group from nine additional herbaria has been studied. The abbreviations employed to designate these herbaria hereinafter are as follows: Bt = Butler University, Indianapolis; Cm = Carnegie Museum, Pittsburgh; Du = Dudley Herbarium, Stanford University; Io = Iowa State College, Ames; Me = Instituto de Biología, Universidad Nacional de México; Si = Instituto Darwinion, San Isidro; Ug = Museo de Historia Natural, Montevideo; Ur = University of Illinois, Urbana; and Vt = University of Vermont, Burlington. All other abbreviations herein employed have been explained in previous installments of this series or in my original monograph.



References: Reichenb., *Conspect. Reg. Veg.* 1: 117. 1828; Steud., *Nom. Bot.*, ed. 2, 1: 29. 1840; Le Cointe, *A Amazonia Brasileira III, Arvores e Plantas Uteis* 127. 1934; León, *Revista de la Sociedad Geográfica de Cuba* 2: 44. 1942; Sampaio & Peckolt, *Arquiv. Mus. Nac. Rio Jan.* 37: 334. 1943; Le Cointe, *O Estado do Para* 232. 1945; Wynne, *Tax. Index* 8: entry 226. 1945; Reko, *Bol. Soc. Bot. Mex.* 4: 35. 1946; Irmão Augusto, *Flora do Rio Grande do Sul* 230. 1946.

Wynne, in the reference cited above, misspells this generic name "Aegiphala"; Steudel, in the reference cited above, spells it "Aegiphyla", and this spelling is recorded in synonymy in the "Index Kewensis". Reichenbach, in the reference cited above, writes it "Aegiphila L." and gives it as a valid genus in the Labiatae, section Verbeneae; he also gives Manabea Aubl. as a valid genus in the same section. Le Cointe in the 1934 reference cited above records the common name "cipo pitomba" for an unidentified species of this genus from Brazil, and in his 1945 work (cited above) he records the common name "uruarana" for an unidentified species of this genus from Pará. Sampaio and Peckolt, in their paper entitled "A nomenclatura das espécies na 'Flora Fluminense' de Conceição Veloso e sua correspondência atual" (cited above) state that A. inflexa Vell., A. stipulata Vell., and A. umbellata Vell. are actually rubiaceous. In this they follow Schauer. In my booklet "An alphabetic list of invalid and incorrect scientific names proposed in the Verbenaceae and Avicenniaceae", pages 2 & 3 (1942), I reduced A. inflexa to Psychotria, subgenus Mapouraea, and A. umbellata to Feramea.

#### AEGIPHILA ACULEIFERA Moldenke

Steere describes the flowers of this species as pale yellow, blooming in January; Skutch calls it a small tree. It grows on mountainsides in the cloud forest in Colombia, at an altitude of 2500 m. The Steere collection does not exhibit the glandular apiculations normally found on the leaf-blades of this species. It has been identified by Killip as "Aegiphila aff. A. glandulifera".

Additional citations: COSTA RICA: Alajuela: Skutch 3255 (S). COLOMBIA: Méta: Steere 7091 (W--1833960).

#### AEGIPHILA ALBA Moldenke

Holdridge, Teesdale, Myer, Little, Horn, & Marrero, *Forêts West. & Cent. Ecuador* 46 (1947) record the common name "margarita". Little also records the names "lulu", "margarita", "masamoro", and "savaluca de montana" on herbarium labels. He describes the plant as a tree 26 to 66 feet tall, with a trunk diameter of 6 to 12 inches at breast height, the bark light-gray, smooth, with slight cracks and with li-

chen patches. He states that the white flowers are borne in clusters along the stem or in "axillary clusters", the flower buds green. On his no, 6439 he states that the flowers themselves are greenish. It has been collected in flower in April, May, and June; immature fruit was collected in April and mature fruit in May. He describes the species as common and dominant in wet tropical forests, common in cut-over woods, and very common in cacao plantations. His no. 6439 was found at an altitude of only 150 feet, while Steyermark's plant was growing at an elevation of 850 meters! This latter collector describes the plant as a shrub 10 feet tall, with subcoriaceous erect leaves, inhabiting steep slopes in rich rain-forest jungles.

Additional citations: ECUADOR: Azuay: Steyermark 52756 (F--1205652, N). El Oro: E. L. Little 6675 [U. S. Forest Serv. 98564] (N). Esmeraldas: E. L. Little 6331 [U. S. Forest Serv. 98292] (W--1877593). Los Ríos: E. L. Little 6439 [U. S. Forest Serv. 98266] (N). Pichincha: E. L. Little 6154 [U. S. Forest Serv. 96814] (W--1877632).

#### AEGIPHILA AMAZONICA Moldenke

The species has been collected by Ducke in non-inundated forests on terra firma, blooming in January.

Additional citations: BRAZIL: Amazonas: Ducke 864 (N, W--1875692).

#### AEGIPHILA ANOMALA Pittier

Austin Smith states that this species is "usually a shrub" although it may become a tree 13 m. tall, the base of the trunk to 40 cm. in diameter, the bark dark-brown, suberose, and roughened, the leaves membranous, nearly flaccid, and light-green, the buds "buffy green", and the white flowers produced in "nearly globose" clusters. He found it in heavy clay-loam soil in nearly open exposures in hilltop woodlands at the upper limit of the tropical zone, blooming in July. It has been erroneously distributed as A. Valerii Standl.

Additional citations: COSTA RICA: Alajuela: Brenes 6652 [518] (N), 15661 [189] (N); A. Smith N.Y.138 (N).

#### AEGIPHILA BOGOTENSIS (Spreng.) Moldenke

The Dawe 192 previously cited as from "Department undetermined", Colombia, is actually from Cundinamarca. Steyermark records the common name "yuco blanco" for this species and describes the plant as a tree 20 feet tall, with leaves that are dark-green above and pale-green beneath, the stem, petiole, calyx, and under surface of the midrib tawny, the corolla-tube pale-green and waxy, the lobes creamy-white. He describes the wood as "good", and states that the tree "grows very tall" in moist cloud forests on south- and

southwest-facing slopes, at altitudes of 2530--2375 m., flowering in February. Killip found it at altitudes of 2900 to 3200 m., blooming in August, with "creamy or waxy-white" corollas. Cuatrecasas found it at altitudes of 2700 to 3100 m., blooming in January and April, fruiting in April and September. He describes it as a large tree in woods, with white or ochraceous-white corollas. Daniel records the common name "saca-ojo", and says the tree is 5--7 m. tall, the fruit rounded and green in July. Garcia y Barriga records the common name "queso fresco", and says the tree grows to 10 m. tall, at altitudes of 1900--2100 m., fruiting in January. Tomás found it at 3000 m., flowering in July, and Dryander at 2900 m., fruiting in August. It has been mistaken for a species of Brunfelsia and thus distributed.

Additional citations: COLOMBIA: Antioquia: Daniel 3283 (N); Tomás 1512 (N). Caldas: Dryander 2809 (W--1879534); Killip 9811 (N); Tomás 2415 (W--1857909). Cundinamarca: Cuatrecasas & Jaramillo 12014 (W--1850860); H. Garcia y Barriga 11032 (W--1852224). El Valle: Cuatrecasas 20812 (N). Nariffo: Cuatrecasas 11963 (W--1799876). VENEZUELA: Lará: Steyermark 55265 (N).

#### AEGIPHILA BRACHIATA Vell.

References: Sampaio & Peckolt, Arquiv. Mus. Nac. Rio Jan. 37: 334. 1943; Lombardo, Flora Arb. Arbores. Urug. 185 & 201. 1946; Irmão Augusto, Flora do Rio Grande do Sul 231 & 236. 1946.

Irmão Augusto on page 236 of the work cited above spells the name "Aegiphila brachyata Vell.", which he gives as a synonym under A. triantha Schau. Lombardo states that the plant is a shrub 2--3 m. tall, sparsely branched, found in the departments of Tacuarembó, Treinta, and Tres of Uruguay. He also states that Arechavaleta published a photograph of a flowering branch of this plant in An. Mus. Nac. Montevid. 4: 62, pl. 1 (1902), along with a description.

The Curran specimen cited below has very small flowers for this species, and is thus anomalous. The Sellow specimen cited below is perhaps an isotype of A. triantha.

Additional citations: BRAZIL: Rio de Janeiro: Curran 636 (N). State undetermined: Sellow s.n. [Brasilia] (Vt).

#### AEGIPHILA CHRYSANTHA Hayek

The Poeppig 2314 collection is also the type collection of A. lutea Poepp.

Additional citations: PERU: Loreto: Poeppig 2314 [Macbride photos 34313] (Kr--photo of logotype).

#### AEGIPHILA CORDATA Poepp.

Additional citations: PERU: Loreto: Poeppig 2158 [Mac-

bride photos 34312] (Kr--photo of type).

AEGIPHILA CORDATA var. COLOMBIANA Moldenke

Cuatrecasas describes this plant as a vine with "ramas sepia verdoso claro", bright-green leaves and calyx, and yellowish-white corollas, inhabiting woods at elevations of 5 to 20 m., blossoming in February. It has been confused with A. racemosa Vell.

Additional citations: COLOMBIA: El Valle: Cuatrecasas 13993 (N).

AEGIPHILA CORDIFOLIA (Ruíz & Pav.) Moldenke

The type collection of this species, made by Ruíz and Pavon at "Panatahua" -- a locality which hitherto could not be accurately located as to department -- actually came from Huánuco, Peru, and should be so cited.

AEGIPHILA COSTARICENSIS Moldenke

Additional citations: MEXICO: Chiapas: Matuda 2101 (Dp--28971). COSTA RICA: Alajuela: A. Smith 1818 (N).

AEGIPHILA CUATRECASASI Moldenke

Cuatrecasas describes this species as a small or large tree, to 10 m. tall, with soft wood, the leaves subcoriaceous, flexible, clear-green or gray-green, or "hoja herbacea gruesa", the fruit produced in glomerules, fleshy, yellowish-green, 15--18 mm. long, with a firm epicarp, 4-seeded. He found the tree at altitudes of from 5 to 1750 m., fruiting in April.

Additional citations: COLOMBIA: El Valle: Cuatrecasas 17075 (N), 21007 (N).

AEGIPHILA DEPPEANA Steud.

The Liebmann 11957, previously cited as from "State undetermined", Mexico, is probably actually from Puebla, according to a letter received by me from M. Martínez, dated May 5, 1945. The Macbride photograph cited below is a photograph of the type specimen of A. Berteriana Schau. The Dugand & Jaramillo collection cited below was made at an altitude of 200--250 m., where the species was blooming in January. Ferris 6259 exhibits leaves which are membranous in texture and are glabrate on both surfaces -- it obviously represents the A. pacifica of Greerman, which may, after all, turn out to be a valid species or, at least, variety.

Additional citations: MEXICO: Oaxaca: Martínez-Calderón 418 (Me). Tres Marias Islands (Maria Madre): Ferris 6259 (Du--145788). COLOMBIA: Atlántico: Dugand & Jaramillo 4056 (N, W--1900073). Magdalena: Bertero s.n. [Herb. DeCandolle 850; Macbride photos 33932] (Kr--photo); H. H. Smith 881 (Cm,



Vt), 1864 (Cm, Vt).

**AEGIPHILA ELATA Sw.**

References: Abh. Akad. Berl. 215. 1831; Contrib. Univ. Mich. Herb. 8: 60. 1942; Roig y Mesa, Plant. Med. Cuba 411 & 770. 1945.

The Hahn s.n. from "Potrero", Mexico, cited previously as from "State undetermined", is probably from Veracruz, according to a letter from my friend, M. Martínez, dated May 5, 1945, and should be so cited. The synonym "Aegiphila cornifolia Kunth" is recorded by the "Index Kewensis". The species is described by Matuda as a woody vine in second growth, savannas, and advanced forests of Tabasco. Gentle says it is a woody vine, with yellow flowers and fruit, inhabiting secondary forests on river banks in British Honduras, where he found it in flower and fruit in August. Roig y Mesa, in the work cited above, records the common name "guairo santo de costa". The British Guiana Forest Department specimen cited below bears the inscription "5 cm. diam. gray-brown papery-barked rope from crown of tree; leaves thinly fleshy; fls. in terminal compound inflorescences; calyx pale-green, glabrous, 3-lobed; corolla tubular, palest cream, lobes erect-spreading; stamens white."

Additional citations: FLORIDA: Dade Co.: Buswell s.n. [July 25, 1935] (Bu). CUBA: Las Villas: R. A. Howard 6441 (N). Oriente: Alain & Crisogono 307 (Ha); Hioram 6611 (Ha), 6710 (Ha, Ha, N, N); León 10113 (Ha), 18185 (Ha). JAMAICA: Maxon & Killip 747 (Ur). MEXICO: Tabasco: Matuda 3406 (Du--299395). BRITISH HONDURAS: Gentle 3569 (N), 3578 (N), 3579 (N). HONDURAS: Atlántida: Yuncker, Koepper, & Wagner 8377 (S). COLOMBIA: Bolívar: Moritz 1478 (Vt). Cundinamarca: H. García y Barriga 12129 (W--1900406). BRITISH GUIANA: Herb. Forest Dept. Br. Guian. 4027 [F.1291] (N).

**AEGIPHILA ELEGANS Moldenke**

Additional citations: BRAZIL: Amazonas: Krukoff 8701 (S).

**AEGIPHILA FALCATA Donn. Sm.**

Wedel describes this species as a tree 15 feet tall, with yellow flowers, blooming in September.

Additional citations: PANAMA: Bocas del Toro: Wedel 683 (E).

**AEGIPHILA LARINOSA Moldenke**

See original description in Phytologia 2: 306--307. 1947.

Specimens examined: COLOMBIA: El Valle: Cuatrecasas 21689 (N--type).

**AEGIPHILA FENDLERI Moldenke**

Steyermark describes this species as a woody vine, with membranous leaves which are deep grass-green above and buff-green beneath, and the calyx and bracts pale buff-green. He found it on seaward-facing north mountain slopes, at altitudes of 1830 to 2130 m., blooming in June.

Additional citations: VENEZUELA: Federal District: Steyermark 56959 (N).

AEGIPHILA FERRUGINEA Hayek & Spruce

Diels in his Contrib. Conocim. Veg. Flora Ecuador [trans. R. Espinosa] 268 (1938) cites Diels 783, from Carchi, as this species. Wiggins describes it as a shrub to 6 m. tall. He collected it at an altitude of 9700 feet, blossoming in August.

Additional citations: ECUADOR: Carchi: Wiggins 10685 (Du-311630). Pichincha: Spruce 5473 [Macbride photos 34311] (Kr-photo of type).

AEGIPHILA FILIPES Mart. & Schau.

Smith collected this species at an altitude of 5000 feet in Magdalena, blossoming in February.

Additional citations: COLOMBIA: Magdalena: H. H. Smith 1831 (Cm, Vt). BRAZIL: Amazonas: Krukoff 8041 (S), 8042 (S).

AEGIPHILA FLORIBUNDA Moritz & Moldenke

Additional citations: VENEZUELA: Aragua: Moritz 1765 [Macbride photos 34310] (Kr--photo).

AEGIPHILA FLUMINENSIS Vell.

References: Sampaio & Peckolt, Arquiv. Mus. Nac. Rio de Jan. 37: 334. 1943.

Additional citations: BRAZIL: Rio de Janeiro: Riedel & Luschmath 323 (N).

AEGIPHILA GLANDULIFERA Moldenke

Fruiting-calyxes and fruit of this species have now been seen, so the following information can be appended to the species description: fruiting-calyx cupuliform, 4--4.5 mm. long, about 9 mm. wide, minutely pulverulent-puberulent, its rim truncate, entire or slightly erose; fruit ochraceous, later black, oblong-elliptic, 8--10 mm. long, 6--9 mm. wide, glabrous.

Diels in Contrib. Conocim. Veg. Flora Ecuador [translated by Espinosa] 268 (1938) cites Diels 94 from Tunguragua, and describes the corolla as greenish-yellow, the anthers clear-yellow. Haught says it is a small tree, 5 m. tall, very sickening-fetid, with white rather showy flowers, blooming in November at an altitude of 100 m. He believes that his no. 2061 is a different species from his no. 1629, but I re-

gard both collections as representing the same species. Klug reports the common name "chirapa sachá", and describes the plant as a shrub 2 m. tall, with cream-colored flowers in April, growing in forests at an altitude of 220 m. Krukoff found it in old clearings, a shrub 12 feet tall, with a stem diameter of 2 inches. Cuatrecasas says it is a small tree to 8 m. tall, with thin-herbaceous gray-green leaves, green calyx, and yellow corollas, growing at altitudes of 5--50 m. He found it in flower and fruit in February and March. Ginzberger describes it as a shrub with yellow-green flowers in August. It has been confused with A. filipes Mart. & Schau.

Additional citations: COLOMBIA: El Valle: Cuatrecasas 16356 (N, N). Santander Sur: Haught 2061 (F--929606, N, W--1742327). PERU: Loreto: Klug 3016 (F--685001). BRAZIL: Amazonas: Krukoff 8290 (F--929898, N). Pará: Ginzberger 902 (F--934891).

**AEGIPHILA GLANDULIFERA** var. **PYRAMIDATA** L. C. Rich. & Moldenke

This plant somewhat resembles A. laevis (Aubl.) Gmel., but may be distinguished by its more elongated terminal panicles, its thin-membranous leaf-blades, which are densely marked with glandular disks along the midrib beneath, and its densely strigillose or short-strigose branchlets, peduncles, rachis, pedicels, and petioles.

**AEGIPHILA GLEASONII** Moldenke

This species differs from all other Guianan species of the genus in having abbreviated, sessile, glomerate, about 6-flowered cymules in the axils of the extremely large leaves. The leaf-blades are to 42 cm. long and 16 cm. wide.

**AEGIPHILA GLOMERATA** Benth.

Little reports the common names "palo flojo", "palo de cereuchara", and "arritagua" for this plant. He describes it as a small tree, 16--40 feet tall, with a trunk diameter of 4--6 inches at breast height, gray or light-gray, rough, fissured, shredding bark, the fissures about 3 mm. deep and 1 cm. wide. opposite pubescent leaves, axillary flower clusters, and yellow corollas. He found it in dry forests, flowering and fruiting in June. His no. 6693, cited below, represents the first fruiting collection known.

Additional citations: ECUADOR: El Oro: E. L. Little 6693 [U. S. Forest Serv. 98639] (W--1878649), 6696 [U. S. Forest Serv. 98613] (W--1878642).

**AEGIPHILA GLORIOSA** Moldenke

Additional citations: BRAZIL: Bahia: Blanchet 1998 (F--976379).

## AEGIPHILA GRANDIS Moldenke

Cuatrecasas describes this species as a small tree, 5 m. tall. He found it fruiting in March at an altitude of 200 m. Triana found it flowering in August at an altitude of about 1800 m.

Additional citations: COLOMBIA: Caquetá: Cuatrecasas 8700 (W--1795403). Cundinamarca: Mutis 4554 (F--712945, N--photo, Z--photo); Triana 2080 [Macbride photos 28379] (F--830241--photo, Kr--photo), 3712 [2] (Jc). Tolima: Goudot s.n. [Portachuelo, Quindiu] (F--642172--photo of type). VENEZUELA: Mérida: Steyermark 56458 (F--1221913, N).

## AEGIPHILA GRAVEOLENS Mart. &amp; Schau.

This binomial is sometimes inaccurately credited to "Schau. & Mart." or "Mart. & Schum."

Additional citations: BRAZIL: São Paulo: A. Gehrt 30081 (F--895955), s.n. [Herb. Inst. Biol. S. Paulo 30081] (F--895767); Lund 796 [Macbride photos 7880] (F--645500--photo of type, Kr--photo of type, N--photo of type).

## AEGIPHILA GUIANENSIS Moldenke

This species may be distinguished quickly from the similar A. integrifolia (Jacq.) Jacks. in its branches being densely short-villous with yellowish pubescence and its young leaf-blades being densely lanate-tomentose beneath. Killip and Cuatrecasas describe it as a small tree with the young inflorescence greenish. They found it in dense tidal forests. Pittier found it at 90 m. elevation, blooming in June, while Triana found it flowering in January at an elevation of 300 m.

Additional citations: COLOMBIA: Chocó: Killip & Cuatrecasas 39091 (N). Cundinamarca: Triana 2084 [Macbride photos 28380] (F--830245--photo, Kr--photo). Méta: Triana 3713 [4] (Jc). VENEZUELA: Bolívar: H. Pittier 13401 (Kr). BRITISH GUIANA: M. R. Schomburgk 404, in part (F--642175--photo of type).

## AEGIPHILA HASSLERI Briq.

This plant is illustrated by Arechavaleta, An. Mus. Nac. Montevideo 4: 62, pl. 1 (1902), under the name of A. triana. This is the picture to which Lombardo refers in his Flora Arb. Arbores. Urug. 185 & 201 (1946) -- see under A. brachiata in these present notes. The specimen on which the picture was based was collected in Uruguay by Cornelio B. Cantera. Jörgensen describes A. Hassleri as a small tree, 2--4 m. tall, with sulphur-yellow corolla and yellow fruit, very common in hedges and thickets, in flower and fruit in September. Schröder calls it a "large tree".

Additional citations: PARAGUAY: Fiebrig 260 (F--642177--



photo); Hassler 3193 [Macbride photos 24613] (F--772047--photo of cotype, Kr--photo of cotype); Jørgensen 3662 (Du--185439). URUGUAY: Schröder s.n. [Herb. Osten 16059] (Ug); Arechavaleta s.n. [Herb. Osten 13002] (Ug). ARGENTINA: Misiones: D. Rodriguez 566 [Herb. Inst. Miguel Lillo 32532] (N).

**AEGIPHILA HAUGHTII** Moldenke

Schunke describes this species as a tree, 8 m. tall, with a stem 28 cm. in circumference and white flowers, blooming in March. He collected it "on rising ground."

Additional citations: ECUADOR: Guayas: Haught 2904 (N--fragment of type, N--photo of type, W--1707582--type, Z--photo of type). PERU: Loreto: Schunke 338 (W--1459225).

**AEGIPHILA HERZOGII** Moldenke

Additional citations: BOLIVIA: Santa Cruz: Herzog 1369 [Macbride photos 22381] (F--642176--photo of isotype, F--830239--photo of isotype, Kr--photo of isotype).

**AEGIPHILA HIRSUTA** var. **COLOMBIANA** Moldenke

See the original description of this variety in *Castanea* 10: 44 (1945). The type collection was made in wet woods along the Río San Miguel, at an altitude of 360 m., on the Ecuador-Colombia boundary.

Specimens examined: COLOMBIA: Putumayo: Cuatrecasas 11032 (W--1798861--type).

**AEGIPHILA HIRSUTISSIMA** Moldenke

References: Pittier, *Supl. Plant. Usual. Venez.* 54. 1939.

**AEGIPHILA HOEHNEI** var. **PUYENSIS** Moldenke

See the original description of this variety in *Phytologia* 2: 214 (1947). It is a woody vine, about 3 m. long, with off-white flowers, blooming in May at an altitude of 3000 feet.

Specimens examined: ECUADOR: Oriente: Steere & Camp 8283 (F--1163157--type, N--photo of type, Si--photo of type, Z--photo of type).

**AEGIPHILA HOEHNEI** var. **SPECTABILIS** Moldenke

See the original description of this variety in *Castanea* 10: 44--45 (1945). The collectors describe it as a woody vine, with white green-tinged corollas, growing in forests at the edge of mangrove belt, blooming in June.

Specimens examined: COLOMBIA: El Valle: Killip & Cuatrecasas 38978 (N--type).

**AEGIPHILA INSIGNIS** Moldenke

Additional citations: PERU: Ancachs: Rufz & Pavon 3/94

(F--850850), this fragment, collected in 1797, may be part of the type collection.

AEGIPHILA INTEGRIFOLIA (Jacq.) Jacks.

References: Jacq., Hist. Stirp. Amer. 15, pl. 173, fig. 7. 1780; Jacks., Ind. Kew. 1: 386. 1895; Junell, Symb. Bot. Upsal. 4: 82 & 83. 1934; Pittier, Supl. Plant. Usual. Ver.z. 54. 1939; Lanjouw & Uitten, Rec. Trav. Bot. Néerl. 37: 152. 1940; Irmão Augusto, Flora do Rio Grande do Sul 231 & 236. 1946; Veloso, Mem. Inst. Oswaldo Cruz 44: 267, 282, 292, & 335. 1946.

Lanjouw and Uitten, in the reference cited above, tell of discovering the actual type specimen of Manabea arboreus (and therefore of the genus Manabea) of Aublet in Herb. Denaisiff 3: 109 -- a flowering branch closely resembling Aublet's plate. Junell, in the reference cited above, discusses the gynoecium morphology of the species and gives an illustration of it in his Fig. 133. Jackson, in the reference cited above, records this binomial as "Aegiphila integrifolia Jacq.", while Irmão Augusto on page 236 of his work cited above, gives "Aegiphylla discolor Willd." and "Aegiphylla integrifolia Jacq." as synonyms. Veloso, on page 335 of the work cited above, records the species as "Aegiphila arboreus". He states that the species is a tree about 3 m. tall, the trunk 10 cm. in circumference, with latex, growing in more or less wet places in climax and subclimax associations of Lecythis-Sickingia, Virola-Tapirira, and Tapirira-Simaruba. He reports that the seeds are used by the natives.

The specimens collected by Ruiz & Pavon at "Pantahua" and "Chichao", Peru, and recorded in Brittonia 1: 339 (1934) as from an undetermined department of Peru, are actually from Huánuco and should be so cited. The Cuatrecasas 8873 collection exhibits especially small and silky leaves, even though the plant is in full anthesis. It may represent an as yet undescribed variety or species, although the inflorescence is very typical of A. integrifolia. It is described as having white flowers, blooming in March. Williams 2052 also does not seem to be typical material and resembles some of Ducke's material which represents another species. Lawrence 548 has very small flowers and very obovate leaves, and on this account is not typical. Schunke 343 has the immature leaves golden-velutinous, and is described as a bush 4 m. tall, with a stem 10 cm. in circumference and white flowers, blooming in March, at altitudes of 100--125 m.

McCarroll describes A. integrifolia as a "large tree", 9 m. tall, its white flowers with a "lively delicate odor", growing at 1550 m. elevation. Metcalf says it is a bush 2--2.5 m. tall, with "dirty-brown" fruit in May and June, in

dense growth on moist shaded banks in regions with much fog and rain, at an altitude of 1900 m. Klug describes it as a tree 5 m. tall, with white flowers, at altitudes of 1200 to 1600 m. Williams records the common name "tabaquillo" and describes it as a shrub or tree, 3--12 m. tall, with a rounded crown, trunk 30 cm. in diameter, straight and without branches for the first 4 m., the outer bark gray and rough, the inner bark rather thick and clear-chestnut or dark-red in color, the wood light in color, and the flowers white or whitish. He also notes that "la labura y el diramen son de color rosado y susceptible a los ataques de insectos". He found it in rocky places and in high secondary woods on terra firma, at altitudes of 120-125 m., blooming in August and September. Cuatrecasas describes it as a small tree, 6 m. tall, the stem 10 cm. in diameter, branches white-tomentose, the leaves herbaceous and clear- or gray-green on the upper surface, pale or clear-green on the under surface, the calyx greenish-white or pale yellowish-green, and the corolla white, blooming in May at altitudes of 5 to 80 m. The Britton Herbarium specimen of his no. 17491 includes a large strip of the bark.

Additional citations: VENEZUELA: Amazonas: Ll. Williams 13174 (Ve), 15854 (W--1876460), 16005 (W--1876541). Bolívar: Steyermark 57675 (F--1221911, N); Tamayo 2982 (W--1906645). COLOMBIA: Boyacá: Lawrence 548 (F--708632). Caquetá: Cuatrecasas 8873 (W--1795006). El Valle: Cuatrecasas 17369 (N, N), 17491 (N). BRITISH GUIANA: Maguire & Fanshawe 23080 (N), 23476 (N). PERU: Huánuco: Ruiz & Pavon 12/67 (F--712587). Loreto: J. M. Schunke 343 (F--997587, N); Ll. Williams 2052 (F--613150), 2795 (F--608731). San Martín: Klug 3468 (F--736254). Puno: McCarroll 94 (N); R. D. Metcalf 30667 (W--1876045). BOLIVIA: La Paz: M. Bang 584 (Cm, Io--32313).

#### ÆGIPHILA INTERMEDIA Moldenke

The description given in Phytologia 1: 397--398 (1940) under A. salticola Moldenke applies to the Ducke s.n. [Herb. Rio de Jan. 25593] collection there cited, but this collection seems better placed under A. intermedia. It is, in fact, very possible that A. salticola should be reduced to synonymy under A. intermedia. Williams records the common name "tabaquillo", and collected it in flower in May. Ducke describes it as a small tree, with white flowers, blooming in January, growing in secondary non-inundated forests.

Additional citations: VENEZUELA: Amazonas: Ll. Williams 13174, in part (W--1800206). BRAZIL: Amazonas: Ducke 136 (F--901732). Maranhão: Herb. Gen. Mus. Para. 2270 [Macbride photos 28382] (F--830240--photo of isotype, Kr--photo of isotype).

AEGIPHILA LAETA H.B.K.

Haught describes this plant as a slender shrub, 2 m. tall, tending toward a tree-like habit, with very inconspicuous flowers, blooming in August, growing in forests at an altitude of 250 m. Daniel describes the corollas as cream-colored and the fruit red, each with 3 or 4 seeds. He found it in flower and fruit in July.

Additional citations: COLOMBIA: Antioquia: Daniel 2047 (N). Goajira: Haught 4316 (N, W--1709284). Magdalena: Bonpland 1664 (F--976536--fragment of type); Daniel 2047, in part (F--1007465); H. H. Smith 330 (Ca--584593, S).

AEGIPHILA LAEVIS (Aubl.) Gmel.

An additional synonym is Aegiphila longifolia Willd. ex Moldenke, Suppl. List Invalid Names 1, in syn. 1941. Lanjouw & Uitten in Rec. Trav. Néerl. 37: 152 (1940) tell of discovering the type specimen of Aublet's Manabea laevis in Herb. Denaiffe 3: 109 -- a flowering branch closely resembling Aublet's plate. The name written on the Aublet photograph cited below is, curiously enough, "Aegiphila laevis (Jacq.) Gmel." Cuatrecasas describes the species as a large vine or small tree, with subcoriaceous, rather thick and flexible leaves, which are dark-green and slightly shiny on the upper surface and clear-green on the lower surface, the calyx pale-green or greenish-yellow, the corolla yellowish or "clear-green", blooming in February, March, and May, and fruiting in May. He found it at altitudes of 1--50 m.

Additional citations: COLOMBIA: El Valle: Cuatrecasas 14302 (N), 15946 (W--1853869), 17705 (N). SURINAM: Kappler 543 (F--588407--fragment); Maguire & Stahel 22782 (N). FRENCH GUIANA: Aublet s.n. (F--642180--photo of isotype).

AEGIPHILA LANATA Moldenke

The mis-spelling "Aegiphila lanta" is recorded in Moldenke, Suppl. List Invalid Names 1, in syn. (1941).

Additional citations: BRAZIL: Goyaz: Glaziou 21917 [Macbride photos 28383] (F--830246--photo of isotype, Kr--photo of isotype).

AEGIPHILA LANCEOLATA Moldenke

The collection number is written "D.1642" on the specimen cited below.

Additional citations: BRAZIL: State undetermined: J. E. Pohl 1642 (F--869797--fragment).

AEGIPHILA LAXICUPULIS Moldenke

The "Aegiphila martinicensis L." listed by Calderón & Standley, Lista Preliminar de Plantas de El Salvador, Flora Salvadoreña, ed. 2, 235 (1941) is actually A. laxicupulis,



and the common name "palo de zope" applies to this species. The mis-spellings "A. laxicaulis" and "A. laxicupula" are recorded -- the former in my Suppl. List Invalid Names 1, in syn. (1941) and the latter in Alph. List Invalid Names 2, in syn. (1942). Skutch describes the species as a small tree 15 to 30 feet tall, the trunk 7 inches in diameter at breast height, with cream-colored corollas, blooming in September in second-growth thickets and woods, at an altitude of 2600 feet. He describes the species as "dioecious" and says his no. 1280 represents the staminate and his no. 1310 the pistillate form.

Additional citations: GUATEMALA: Quezaltenango: Skutch 1280 (F--933625), 1310 (F--933704). NICARAGUA: Matagalpa: Rothschuh 628 (F--642187--photo).

#### AEGIPHILA LAXIFLORA Benth.

This species somewhat resembles A. membranacea Turcz., but may be distinguished by its smaller leaves (3--10.5 cm. long, 1.5--5 cm. wide), its very slender or filiform peduncles, sympodia, and inflorescence-branches, its very light-gray or almost white stems and larger branches, and its minutely puberulent or glabrate branchlets. Steyermark describes it as a shrub, 15 feet tall, with membranous erect leaves, which are deep-green above and dull paler-green beneath, calyx greenish, and corolla greenish-yellow, blooming in April at altitudes of 700 to 800 m.

Additional citations: VENEZUELA: Bolívar: Steyermark 57719 (F--1221900, N). Monagas: Steyermark 62242 (F--1205704). BRITISH GUIANA: M. R. Schomburgk 772 [Macbride photos 28384] (F--830242--photo of isotype, F--869788--fragment of isotype, Kr--photo of isotype).

#### AEGIPHILA LEHMANNII Moldenke

Lawrance describes this species as a tree 20 feet tall, the trunk 6--7 inches in diameter, with white to cream-colored odorous flowers, blooming in June. He found it in a heavy forest front, at an altitude of 4500 feet.

Additional citations: COLOMBIA: Boyacá: Lawrance 156 (F--708505). Chocó: Triana 2083, in part [Macbride photos 28385] (F--830243--photo, Kr--photo).

#### AEGIPHILA LHOTZKIANA Cham.

Two additional synonyms are Aegiphila glandifera Casar. ex Moldenke, Prelim. Alph. List Invalid Names 2, in syn. (1940) and A. glandulifera Casar. ex Moldenke, Suppl. List Invalid Names 1, in syn. (1941). Mello Barreto describes it as a tree 3 m. tall or even 4 m. tall, with white flowers in November. Markgraf collected it at an altitude of 1000 m. It has been confused with A. Sellowiana and A. verticillata.



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## A NOTE ABOUT AN ALLEGED DISCUSSION OF JUNIPERUS

John F. Cornman

In the November 1947 issue of this Journal there appeared an article (1) about investigations I have made in the taxonomy of the genus Juniperus. Since I have not established a reputation through taxonomic publications, I feel obligated to discuss briefly the nature of the material reviewed by vanMelle, the validity of a serious allegation, and, in the interest of objectivity, to present a paragraph not quoted by vanMelle.

Faramount is the fact that the paper under discussion is a thesis submitted to the Cornell University Graduate School. Two copies are required by the Faculty of the Graduate School and, after being catalogued, they are deposited in the University archives. While one of the copies is made available to interested research workers, the paper itself has no more significance than any other unpublished manuscript.

Since I have not published on Juniperus, no defense of unpublished taxonomic details is necessary. The intricacies presented by vanMelle in the November paper are not new material, and thus do not alter my personal opinions on the technicalities. It is intended that my own observations will be published as a series of papers on taxonomic and related problems in the genus.

The thesis manuscript contains no comment on vanMelle's completed book (2), for it was not published until later. We await a discussion of that work by a competent and disinterested reviewer.

On page 354 of his November paper vanMelle states that I have attached "vanMelle type labels to sheets not so designated by me". Regardless of the intent, these words are an accusation of forgery. VanMelle has cited the thesis pages (280,298) on which appear photographs of the allegedly mutilated sheets. There the interested taxonomist will see routine annotation slips with my own name conspicuously printed in black typeface.

Credits for assistance in the preparation of a voluminous paper are traditionally rendered in the Preface. Since I shall not again have occasion to publish what I said there, I quote the pertinent passage:

"Mr. P. J. vanMelle of the Poughkeepsie Nursery has pointed out many cogent facts about cultivated Junipers, both in the field and in correspondence. This assistance was continued long after it became evident that our viewpoints were widely divergent. Rather strong criticisms are made here of Mr. vanMelle's treatment of the J. chinensis group. Such disagreement with so good a friend and guide is regrettable. It is directed solely at his interpretations and treatment. The writer retains a

great respect and admiration for Mr. vanMelle's ability as a plantsman, for his knowledge of his particular group, and especially for his patient good nature."

- 
- (1) vanMelle, P. J. in *Phytologia* 2:353-363, 1947.  
 (2) vanMelle, P. J. Review of *Juniperus chinensis* et. al. New York, April 1947.
- 

### NOTES ON POLYGONUM. III

J. F. Brenckle

Polygonum Exsiccatum (Avicularia) Fascicle 1, issued in January 1947, is the first of a series to be issued at irregular intervals. There will be 36 copies of this exsiccatum, the specimens of each number to be as much alike as possible and to be collected on the same date and at the same place. The specimens have been selected to bring together forms that are often mistaken for each other and also to group species for a phylogeographical study and classification which is to be published later. Several new species and forms are introduced, specimens of which in this fascicle may be considered as co-type material.

The exsiccatum is being distributed to active collaborators and some larger herbaria. Contributions to this series are solicited.

#### List of species and forms in Fascicle One:

- No. 1. Polygonum interior new species, forma vernalis.  
 No. 2. Polygonum interior new species.  
 No. 3. Polygonum interior new species, forma rostratum.  
 No. 4. Polygonum interior var. Turneri Brenckle new variety.  
 No. 5. Polygonum ramosissimum Michx., forma vernalis.  
 No. 6. Polygonum ramosissimum Michx.  
 No. 7. Polygonum ramosissimum Michx., forma rostratum.  
 No. 8. Polygonum latum Small, forma vernalis.  
 No. 9. Polygonum latum Small.  
 No. 10. Polygonum prolificum (Small) Robins. var. autumnale Brenckle new name.  
 No. 11. Polygonum prolificum (Small) Robins. var. profusum Brenckle new variety.  
 No. 12. Polygonum prolificum (Small) Robins. var. profusum Brenckle forma rostratum.  
 No. 13. Polygonum achoreum Blake.  
 No. 14. Polygonum camporum Meisn., forma vernalis.

- No. 15. Polygonum camporum Meisn., forma rostratum.  
 No. 16. Polygonum argyrocoleon Steud.  
 No. 17. Polygonum argyrocoleon Steud.  
 No. 18. Polygonum Faronychia Cham. & Schl.  
 No. 19. Polygonum Faronychia Cham. & Schl.  
 No. 20. Polygonum majus (Meisn.) Piper.  
 No. 21. Polygonum emaciatum A. Nels.  
 No. 22. Polygonum emaciatum A. Nels.  
 No. 23. Polygonum Englemanni Greene.  
 No. 24. Polygonum sawatchense Small.  
 No. 25. Polygonum tenue Michx.

Polygonum interior new species.

Herba annua atroviridis rectis gracilis multibrachiata striata 4--8 dm. alta dein rubescens; ramis patentibus attenuatis argute angulatis; foliis caulium oblongo-lanceolatis ad basin apicemque acutis 3--6 cm. longis 3--8 mm. latis fugacibus; foliis ramorum reductis linearibus vel nullis; ocreis pallidis ad basin rubellis inconspicuis.

Annual, dark green, erect, slender, much branched from the base, striate, 4--8 dm. high, becoming reddish with age; branches spreading, attenuate, sharply angled; stem-leaves oblong-lanceolate, pointed at each end, short-petioled, 3--6 cm. long, 3--8 mm. wide, fugacious; branch-leaves reduced, linear or absent; ocreae pale, reddish at the base, inconspicuous; perianth sharply triangular, carinate, divided to near the base into 5 segments, the 3 outer longer, white-margined or pink-edged, 3 mm. long, pedicellate; achenes narrow, pointed, with the apex edges sharper than those of the body, one of the faces slightly umbonate, chestnut-brown, smooth, vaguely puncticulate, 2--3 mm. long, some later achenes becoming attenuated to 6 mm. long and exserted.

Among vegetation at the margins of ponds or in ditches. The species differs from Polygonum exsertum and Polygonum leptocarpum in that it matures most of its achenes within the pericarp and produces exserted achenes late in the season or none. The plants are generally smaller and more slender than P. exsertum.

Specimens examined: South Dakota, Brenckle nos. 3726, 3727, 3852, 3848, 3865, 4165, distributed as P. exsertum; North Dakota, Stevens nos. 212, 442, 463, 656; Alberta, Turner nos. 2314, 4283; Saskatchewan, W. P. Fraser no. 10, Aug. 1939.

Type locality: margin of a pond fed by artesian wells, half mile northeast of Mellette, South Dakota. The type specimen is deposited in the Britton Herbarium at the New York Botanical Garden. Co-type material is distributed in Fascicle 1, nos. 1, 2, 3.

Polygonum interior var. Turneri new variety.

Herba annua flavido-viridis; caule recto 6--9 dm. alto, med-



iam elongato 6--7.5 cm. longo, basin versus incrassato; foliis 3--7 cm. longis 3--8 mm. latis.

Annual, yellowish green; stem erect, 6--9 dm. high, the middle sections elongated, 6--7.5 cm. long, the lower half thickened; leaves 3--7 cm. long, 3--8 mm. wide.

Collected by Dr. George H. Turner near Fort Saskatchewan, Alberta, the type locality being one mile north of Fort Saskatchewan. The type specimen is deposited in the Britton Herbarium at the New York Botanical Garden. Co-type material is distributed in Fascicle 1, no. 4.

Polygonum prolificum (Small) Robins.

This species is widely distributed, its area extending from the Atlantic seaboard to the Inter-Mountain regions, Utah, and from Canada to Texas. It is completely at home on the Inland Plains in various semi-arid and humid locations where it assumes a variety of forms. It may be erect, slender and sparingly branched, or it may become a robust, bushy, much branched and spreading plant, or be completely prostrate. It was first described as a variety of P. ramosissimum, but to this species it has no close phylogenetic relationship. The general structure of the plant, leaves and achenes are quite distinct, nor do the species hybridize. My conclusion is that this species and its ancestor have long occupied this inland American area and were common on the shores of our ancient Inland Sea. The following two varieties are distributed as nos. 10, 11, and 12 in Fascicle 1.

Polygonum prolificum (Small) Robins. var. autumnale Brenckle, new name.

Published as P. autumnale in the Bulletin of the Torrey Botanical Club, vol. 68, p. 495.

Polygonum prolificum (Small) Robins. var. profusum new variety.

Herba annua robusta late patens ramosissima, seminibus plerumque autumnale productis.

A robust wide-spreading annual, bushy, branching heavily from the base. Its main crop of seed is produced in the fall. Common in South Dakota. The type locality is a wet meadow half a mile northeast of Mellette, South Dakota. The type specimen is deposited in the Britton Herbarium at the New York Botanical Garden. Co-type material is distributed as nos. 11 and 12 in Fascicle 1.

The Phylad Polygonum Paronychia.

The species represented by nos. 13 to 25 of Fascicle 1 are evidently genetically related and with some others form a well-defined phylad of polygonums. The area of origin and the known distribution are indicated. The characters common to the spe-

cies of this section are (1) a raven-black achene, which, while maturing, does not pass through shades of brown or chestnut coloration. Usually it is smooth and shining, but may become more or less punctate or striate in some species; (2) a distinctive and often large colored perianth; (3) the structure of the leaves is suggestive, mostly narrow with revolute edges, a prominent mid-rib and plication in some species.

Folygonum Faronychia Cham. & Schl. is a perennial with woody stems. Its area is restricted, extending along the seacoast from mid-California to British Columbia; clearly a relic species. The habitat given is "prostrate on sand along the coast." Fascicle 1, specimen no. 18. Material collected from a clay bluff was erect and bushy, and is represented by specimen no. 19.

Folygonum majus (Meisn.) Piper is represented by two forms: (1) a robust, larger, woody-stemmed form which at times is biennial and perhaps perennial. The area of this form is along the shores and benches of the Columbia and Snake Rivers at elevations of 50 to 200 feet. The benches mentioned represent old seacoast lines before elevation of the country and were then occupied, no doubt, by the ancestral F. Faronychia. (2) A more slender herbaceous form which occurs over the same area and to higher elevations surrounding it. This form is often difficult to distinguish from F. spergulariaeforme because the achenes, leaves, flowers and distribution are similar.

Additional members of this phylad will be distributed in future fascicles.

Folygonum emaciatum A. Nels.

This is a subspecies of Folygonum Douglassii Greene. Its area is the more arid mountain regions. The distinguishing characters are the linear leaves, slender stems, and striated achenes which are somewhat shorter, 2.5--3 mm. long. Represented by nos. 21 and 22 in Fascicle 1.

-----

Among a number of polygonums sent me by Reverend Ernest Lapage of Quebec, collected in northern Canada and Alaska, is one which is here described as a new species:

Fersicaria Onsellii new species.

Herba annua parva; caule breve basin versus brachiato prostrato; ramis gracilibus obscure 3- vel 4-angulatis rubello-brunneis 1--6 cm. longis foliosis; foliis oblongo-lanceolatis vel spatulatis ad apicem rotundatis, ad basin in petiolum brevem attenuatis, 1.5--3 cm. longis, 2--5 mm. latis, saepe subtus tomentosis; inflorescentiis axillaribus terminalibusque, racemis interruptis ad apicem sphaericis vel ovalibus, 5--8 mm. longis, 5 mm. latis.

A small annual; stems short, several- to many-branched near

the tap-root, prostrate; branches slender, obscurely 3- or 4-angled, reddish-brown, 1--6 cm. long, leafy; leaves oblong-lanceolate or spatulate, rounded at the end and tapering to a short petiole, often tomentose on the lower side, 1.5--3 cm. long, 2--5 mm. wide; inflorescence in the axils of leaves and in terminal, interrupted racemes, the terminal section being spherical or oval, 5--8 mm. long, and 5 mm. wide; perianth greenish, flattened, 5-parted to near the base, the sections white-edged and sometimes reddish-tinted; achenes lenticular, circular, biconcave, slightly umbonate, dark brown, dull, 2.5 mm. in diameter.

Type locality: on the Nabesna Road, Mile 89, in Alaska, June 24, 1947, collected by Dutilly, Iapage, and O'Neill no. 21556. This dwarf subarctic plant is related to Fersicaria tomentosa (Schrank) Bicknell and Fersicaria scabra (Moench). The leafy inflorescence and the dull, reddish-brown achenes clearly distinguish it. I take pleasure in naming this species in honor of Rev. Hugh O'Neill, who has long collected and studied the northern Canadian and Alaskan floras. The type specimen is deposited in the Langlois Herbarium at the Catholic University of America, Washington, D. C.

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#### A NEW SPECIES OF EUPATORIUM FROM THE WEST INDIES

Joseph V. Monachino

In 1945 I had the pleasure of identifying specimens of phanerogams collected by José I. Otero and C. E. Chardon on Mona Island, an island having an area of about twenty square miles and lying midway between Puerto Rico and Hispaniola. These specimens are to serve as botanical vouchers for species to be discussed in Dr. Otero's forthcoming article on the vegetation of Mona Island. A new species of Eupatorium was discovered among the collection. As it might be a rather long time before his manuscript appears in print, Dr. Otero has requested that I legitimize the name of this novelty by formal publication at this time.

EUPATORIUM OTEROI Monachino, sp. nov. Fruticulus glaber; foliis oppositis non punctatis, petiolis ca. 1--2 cm. longis, laminis ovatis vel ovato-lanceolatis, ca. 2.5--5 cm. longis, 1.5--3.5 cm. latis, ad apicem acutis vel obtusis, ad basin late cuneatis, plerumque serratis; inflorescentiis corymbosis multicapitatis, capitulis ca. 12-floribus, involucriis cylindrico-ellipticis, 4.5--5 mm. longis, bracteis imbricatis ca. 4-seriatis oblongis vel anguste spathulato-oblongis, ca. 2--4

mm. longis, 0.6 mm. latis, ad apicem rotundatis vel obtusis, 3-striatis, apicem versus parce ciliatis, caeterum glabris; seminibus ca. 2--3 mm. longis glabris, pappi setis ca. [1--] 1.6--2.3 mm. longis.

Shrubby, glabrous; leaves opposite, not punctate nor resinous, pergameneous, the petioles about 1--2 cm. long, sparsely minutely ciliate at the base, the blades ovate to ovate-lanceolate, ca. 2.5--5 cm. long, 1.5--3.5 cm. broad, acute to obtuse at apex, broadly cuneate at base, serrate to coarsely crenate-dentate or rarely entire, 3-nerved from the base, the reticulation moderately expressed; inflorescence in many-headed corymbs, glabrous; capitulum sessile or short-peduncled, ca. 12-flowered [number of achenes], the flowers light purple [fide Britton], the involucre cylindric-elliptic, 4.5--5 mm. long; bracts imbricated in about 4 series, rather rigid, oblong to narrowly spatulate-oblong, about [1.6--] 2--4 mm. long, 0.6 mm. broad, rounded or obtuse at apex, usually 3-striate (sometimes with 1 or 2 fainter lines), sparsely ciliate toward the apex, otherwise glabrous, achenes 3--5-angled, dark brown, ca. 2--3 mm. long, completely glabrous, smooth, the pappus of ca. 20--25 bristles, white, barbellate, ca. [1--] 1.6--2.3 mm. long.

Type: Otero & C. E. Chardón 821, limestone plateau, Mona Island, March 9, 1944, deposited in the Britton Herbarium at the New York Botanical Garden, New York City, with a fragment in the United States National Herbarium, Washington.

Additional material examined: Mona Island, Puerto Rico:

Britton, Cowell & Hess 1672, coastal rocks, Sardinera, Feb. 20-26, 1914; F. L. Stevens 6376, Dec. 20-21, 1913 (N. Y. Bot. Gd.)

Eupatorium Oteroi obviously belongs under the genus Osmia in Britton & Wilson's Botany of Porto Rico and the Virgin Islands (Scientific Survey of Porto Rico and the Virgin Islands, New York Acad. Sci. 2 (2): 287. 1925). It is easily distinguished from all the species of Osmia described therein, however, by the non-punctate character of its leaves.

In a very superficial way, E. Oteroi bears a resemblance to E. corymbosum Aubl. It belongs in the Ser. Imbricata, Sect. Cylindrocephala, as defined by De Candolle (Prod. Syst. Nat. 5: 141. 1836) or Sect. Cylindrocephala as defined by B. L. Robinson (Proc. Am. Acad. Arts & Sci. 54 (4): 269, 270. 1918).

Two species of Eupatorium are reported from Mona Island by N. L. Britton (The vegetation of Mona Island, Annals Missouri Bot. Gard. 2: 49. 1915). The one named E. atriplicifolium Lam. is E. Oteroi, judging from the material deposited in the herbarium of the New York Botanical Garden. The second species is E. odoratum L.

S. F. Blake was kind enough to compare a fragment of the type collection, and reports that he was not able to match it in the West Indian material of Eupatorium at the United States National Herbarium.



NOTES ON NEW AND NOTEWORTHY PLANTS. IV

Harold N. Moldenke

ALOYSIA VIRGATA var. FLATYPHYLLA (Briq.) Moldenke, comb. nov.

Lippia virgata var. platyphylla Briq., Ann. Conserv. & Jard. Bot. Genève. 7--8: 304. 1904.

BOUCHEA FLUMINENSIS var. PILOSA Moldenke, var. nov.

Haec varietas a forma typica speciei ramulis foliisque rhachideque calyceque insigniter longe pilosis recedit.

This variety differs from the typical form of the species in having the branchlets, leaves, rachis, and calyx conspicuously long-pilose. The leaves are alternate or subalternate, deeply serrate.

The type was collected by Christopher Sandeman (no. 4776) in shade and semi-shade at Iguazú Falls, alt. 500 feet, Misiones, Argentina, in May, 1944, and is deposited in the herbarium of the Royal Botanic Gardens at Kew. The collector describes the plant as a weak-growing shrub with rosy-lilac flowers which fade and drop very rapidly after being gathered.

CLERODENDRUM WALLII Moldenke, sp. nov.

Fruticulus; ramulis subgracilibus dense fusco-tomentosis; foliis ternatis; petiolis gracilibus densissime fusco-tomentosis; laminis membranaceis ovato-ellipticis vel ellipticis vel lanceolatis, ad apicem acutis vel aliquatenus attenuatis, ad basin acutis vel acuminatis, regulariter serratis, supra dense puberulis, subtus densissime cinereo-tomentellis.

Bush; branchlets rather slender, densely tomentose with fuscous hair, less so in age; nodes annulate; principal internodes 1.5--3.5 cm. long; leaves ternate; petioles slender, 4--6 mm. long, very densely fuscous-tomentose; blades membranous, dark-green above, much lighter beneath, ovate-elliptic, elliptic, or lanceolate, 4--7 cm. long, 1.5--3 cm. wide, acute or somewhat attenuate-acute at apex, acute or acuminate at base, regularly serrate from the widest part to the apex with acute or obtuse antrorse teeth, rather densely puberulent above, very densely tomentellous beneath with cinereous hair; midrib very slender, plane above, prominulous beneath; secondaries very slender, 4 or 5 per side, arcuate-ascending, plane above, subprominulous beneath, arcuately joined near the margins, not leading directly into the teeth; vein and veinlet reticulation fine, usually visible on both surfaces but not at all prominulous; inflorescence apparently terminal, about 3.5 cm. long and 2--2.5 cm. wide, many-flowered, composed of several pairs of small cymes, densely fuscous- or incanous-tomentellous throughout, the lowest pair of cymes sometimes subtended by 3 foliaceous bracts

similar to the leaves in all respects but smaller; peduncles slender, 1--2.5 cm. long, densely tomentellous; pedicels very slender, 1--4 mm. long, densely tomentellous; calyx tubular, about 4 mm. long and 1.5 mm. wide, densely short-pubescent, its rim 5-toothed, the teeth narrow, erect, about 1.5 mm. long, subacute, pubescent; corolla white, exserted, its tube about 5 mm. long, lightly glandular or granular-puberulent on the outer surface.

The type of this species was collected by Erik Wall -- in whose honor it is named -- at Port Ball, Uganda, on August 2, 1926, and is deposited in the Erik Wall Herbarium at Stockholm. It was identified by Berthold Thomas as "Clerodendrum aff. Odontocalyx Thomas".

DURANTA SPRUCEI var. BREVIRACEMOSA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit racemis usque ad 3 cm. longis paucifloris et laminis foliorum supra glabris subtus parce disperso-puberulis.

This variety differs from the typical form of the species in having racemes only to about 3 cm. long and few-flowered, and leaf-blades that are glabrous above and merely sparsely scattered-puberulent beneath, the puberulence more dense on the midrib and secondaries.

The type was collected by Oscar Haught (no. 6097) along roadsides on the Zipaquira-Pacho highway, at an altitude of 2000 m., Cundinamarca, Colombia, on August 20, 1947, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector describes the plant as a stout shrub, 2 m. tall, with rather showy purple flowers, and says it is abundant at the type locality.

GYPSOPHILA PANICULATA f. PLENIFLORA Moldenke, f. nov.

Haec forma a forma typica speciei corollis plenis recedit. This form differs from the typical form of the species in its "doubled" corollae.

The type was collected by H. N. Moldenke (no. 8069) from cultivated material at Watchung, Somerset County, New Jersey, on July 4, 1934, and is deposited in the Britton Herbarium at the New York Botanical Garden. Although common in cultivation, this form does not appear to have been validly named hitherto.

JUNELLIA SERIPHIOIDES var. GLABRA Moldenke, var. nov.

Haec varietas a forma typica speciei ramis ramulisque spinisque foliisque calicibusque glabris vel subglabris et calicibus 5--8 mm. longis recedit.

This variety differs from the typical form of the species in its glabrous or subglabrous branches, branchlets, spines, leaves, and calyx, and in its calyxes being 5--8 mm. long.

The type of the variety was collected by Carlos A. O'Donell

(no. 3240) at Puerto Madryn, Chubut, Argentina, on October 24 or 25, 1945, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*LANTANA ARISTATA* var. *SUBSESSILIS* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit inflorescentiis numerosis axillaribus congestis brevissime pedunculatis vel subsessilibus; laminis foliorum subtus dense pubescentibus vel subvelutinis; caulibus densiuscule breviterque pubescentibus, pili contortis patentibus; bracteolis dense hirtellis.

This variety differs from the typical form of the species in having its rather numerous inflorescences crowded on very short peduncles in the leaf-axils, or subsessile; the under surface of the leaves is densely pubescent or subvelutinous; the stems are rather densely short-pubescent with twisted spreading hairs; and the bractlets are densely hirtellous.

The type was collected by A. G. Schulz (no. 1456) on hill-sides at Jujuy (Capital), alt. 1200 m., Jujuy, Argentina, in February, 1936, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*LANTANA CIFERRIANA* Ekm. & Moldenke, sp. nov.

Frutex humilis perbrachiata; ramis gracilibus acutiuscule tetragonis prorsus albedo-strigillosis; foliis numerosis parvis; petiolis dense albo-strigillosis saepe submarginatis; laminis leviter chartaceis oblongis vel ovalibus vel subrotundis, ad apicem rotundatis, ad basin acutis vel plerumque acuminatis, regulariter serrulatis, supra strigilloso-puberulis, subtus dense puberulis et parce resinoso-granulosis; corolla alba.

Low shrub, abundantly branched; branches slender, rather acutely tetragonal, rather uniformly whitish-strigillose throughout; nodes rather obscurely annulate; principal internodes 0.4--4 cm. long; leaves numerous, decussate-opposite, small; petioles very slender, 2--5 mm. long, densely white-strigillose, often submarginated; blades thin-chartaceous, deep-green above, somewhat paler beneath, oblong or oval, varying to subrotund, 5--14 mm. long, 4--10 mm. wide, rounded at the apex, acute or usually acuminate at base, uniformly serrulate except at the very base with rounded rather appressed teeth, strigillose-puberulent above, densely puberulent and somewhat resinous granular beneath; midrib and the 3 or 4 pairs of ascending secondaries very slender, often slightly subimpressed above, subprominulous beneath; veinlet reticulation often subimpressed above, obscure beneath; inflorescence axillary near the tips of the twigs, 1 or 2 per node, capitate; peduncles very slender or filiform, 1.5--3.8 cm. long, rather densely white-strigillose like the branches and twigs; heads hemispheric, to 1.3 cm. long and 1.5 cm. wide in anthesis, ovate in fruit; bractlets broadly elliptic or oval, 5--7 mm. long, 4--6 mm. wide, blunt at apex,

lightly strigillose on the upper surface, more densely whitish-strigillose on the lower surface; corolla pure white, its tube about 5 mm. long, densely puberulent outside, the limb about 4 mm. wide, lightly puberulent outside and somewhat resinous-granular.

The type of this species was collected by E. L. Ekman (no. H.15967) on dry sterile hillsides at Hatillo, Valle del Cibao, prov. Santiago, Dominican Republic, on September 17, 1930, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm. The species is dedicated to Dr. R. Ciferri, who urged Ekman to pay more attention to the species of the Lantana reticulata-Lantana involucrata complex.

LANTANA CUJABENSIS var. PUNCTATA Moldenke, var. nov.

Haec varietas a forma typica speciei foliis minoribus plusminusque bullatis subtus dense resinoso-punctatis et in venas plusminusque breviter pilosis recedit.

This variety differs from the typical form of the species in having smaller more or less bullate leaves which are densely resinous-punctate beneath and more or less short-pilose on the venation beneath.

The type was collected by Fred Alexander Barkley, Jairo Correa Velásquez, and Gabriel Gutiérrez Villegas (no. 1536) in an open pasture close to Ceja, altitude about 2180 m., Antioquia, Colombia, on November 1, 1947, and is deposited in the herbarium of the Facultad Nacional de Agronomía, Medellín, Colombia.

LANTANA GLUTINOSA var. ORIENTALIS Moldenke, var. nov.

Haec varietas a forma typica speciei caulibus ramisque foliisque bracteolisque densissime puberulis, bracteolis brevioribus angustioribusque ad apicem obtusis, et corollis albis recedit.

This variety differs from the typical form of the species in having the pubescence on the stems, branches, leaves, and bractlets much shorter (very densely puberulent rather than villous-hirsute), the bractlets much shorter and narrower, obtuse at the apex, and the corollas white.

The type of this variety was collected by J. Hanbury-Tracy (no. 31) in fairly dry ground among spaced scrub and low trees at La Mesa, dist. Campo Ella, altitude 5000 feet, Mérida, Venezuela, on August 14, 1938, and is deposited in the herbarium of the Royal Botanic Gardens at Kew.

LANTANA HAUGHTII var. OBTUSIBRACTEATA Moldenke, var. nov.

Haec varietas a forma typica speciei bracteolis ad apicem regulariter obtusis vel rotundatis recedit.

This variety differs from the typical form of the species in having its bractlets uniformly obtuse or even rounded at the a-



pex.

The type was collected by Oscar Haught (no. 5132) in dry pastures at Mercaderes, altitude 1100 m., Cauca, Colombia, on October 24, 1946, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector describes the plant as a slender shrub to 2 m. tall, with showy inflorescences of rose-colored flowers.

*LANTANA HAUGHTII* var. *PARVIFOLIA* Moldenke, var. nov.

Haec varietas a forma typica speciei bracteolis ad apicem uniforme obtuseque rotundatis et laminis foliorum 1--1.8 cm. longis et 6--13 mm. latis recedit.

This variety differs from the typical form of the species in having its bractlets all obtusely rounded at the apex and the leaf-blades only 1--1.8 cm. long and 6--13 mm. wide.

The type was collected by Oscar Haught (no. 5902) near Chocanta, Cundinamarca, Colombia, on June 30, 1947, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector describes the plant as a low spreading shrub, 50 cm. tall, with flowers that open cream-color and turn red, "unusually beautiful for the genus".

*LANTANA LEUCOCARPA* Urb. & Ekm., sp. nov.

Frutex humilis; ramis elongatis horizontaliter reclinatis gracillimis dense hispidulis tetragonis; foliis numerosis; petiolis gracillimis hispidulis; laminis membranaceis atroviridibus triangulari-ovatis, ad apicem obtusis, ad basin truncatis vel subtruncatis, regulariter serratis, supra parce puberulis, subtus dense puberulis; corollis roseo-purpureis; fructibus albis.

Low shrub; branches elongated, horizontal-reclining, very slender, densely hispidulous with divaricate grayish rather stiff hairs, less so on the more exposed parts, rather acutely tetragonal or sometimes obtusely so; nodes not plainly annulate; principal internodes 1.5--4 cm. long; leaves abundant, decussate-opposite; petioles very slender, 1--3 mm. long, hispidulous like the branches; blades membranous, rather uniformly deep-green on both surfaces, triangular-ovate, 1.5--2.8 cm. long, 9--16 mm. wide, obtuse at apex, truncate or subtruncate at base, uniformly serrate from the widest part to the apex with rounded teeth, lightly puberulent above, densely puberulent beneath; midrib and the 4--6 pairs of ascending secondaries very slender, obscure above, very faintly prominent beneath; veinlet reticulation obscure or indiscernible; inflorescence axillary, capitate; peduncles very slender or filiform, 2.5--3.5 cm. long, spreading-pubescent, 2 per node, abundant; heads hemispheric, about 1 cm. long and 1.5 cm. wide at anthesis, many-flowered; bractlets ovate, 5--6 mm. long, 5 mm. wide at the base, triangular-acute at apex, puberulent on the upper

surface, densely short-pubescent on the lower surface; corolla rose-purple, its tube about 5 mm. long, very densely puberulent outside, the limb about 5 mm. long and 4 mm. wide, densely puberulent on the back; fruit perfectly white.

The type of this curious species was collected by E. L. Ekman (no. H.15998) in fields on hillsides at Hato del Yaque, Valle del Cibao, prov. Santiago, Dominican Republic, on September 27, 1930, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*LANTANA PARANENSIS* Moldenke, sp. nov.

Herba perennis vel suffrutescens; caule ut videtur simplex obtuse tetragono dense glanduloso-pubescente and albo-hirsutulo; petiolis gracillimis glanduloso-pubescentibus et hirsutulis vel subobsoletis; laminis firme chartaceis utrinque griseo-viridibus ellipticis vel suboblanceolatis, ad apicem obtusis vel rotundatis, ad basin acutis vel attenuatis, crassiuscule serrato-dentatis utrinque dense glanduloso-pubescentibus, subtus parce hirsutulis; venis supra argute impressis.

Perennial herb or subshrub; stem apparently simple, to 3 dm. tall, obtusely tetragonal, densely glandular-pubescent and also hirsutulous with longer, divaricate, white, non-glandulose hairs, the hairs densest toward the apex of the stem; nodes not plainly annulate; principal internodes 1.5--4 cm. long; leaves decussate-opposite; petioles very slender, 1--2 mm. long and glandular-pubescent and hirsutulous, or subobsolete; blades firmly chartaceous, rather grayish-green on both surfaces, elliptic or almost oblanceolate, 2.5--4 cm. long, 5--11 mm. wide, obtuse or rounded at the apex, acute or attenuate at base, rather coarsely serrate-dentate to below the middle with rather bluntish revolute-margined teeth, rather densely glandular-pubescent on both surfaces, the lower surface also bearing scattered hirsutulous hairs like the stems; the midrib and venation deeply impressed above, giving the blade a decidedly bullate appearance, very prominent beneath; inflorescence axillary, 2 at each of the upper nodes, about equaling the subtending leaves; peduncles very slender, to 3.5 cm. long, densely glandular-pubescent and hirsutulous like the stems; heads hemispheric, about 6 mm. long and 10 mm. wide; bractlets narrow-elliptic, 4.5--5 mm. long, about 1 mm. wide, densely glandular-pubescent and hirsutulous, blunt or subacute at apex; corolla slightly surpassing the bractlets, puberulent on the outer surface.

The type of this species was collected by Per Karl Hjalmar Dusen in the campo at Lago, Paraná, Brazil, on December 2, 1910, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm. Its narrow, blunt, bullate leaves and glandulose pubescence render this a very distinct and unmistakable species.

*LIPPIA CAMPESTRIS* Moldenke, sp. nov.

Planta perennis humilis ad basin lignosa; caulibus numerosis simplicibus dense glanduloso-pubescentibus et albo-hirsutulis; foliis sessilibus ovatis, ad apicem subacutis vel obtusis, ad basin rotundatis vel cordatis, integris ciliatis utrinque hirsutulo-pubescentibus, subtus parce glandulosis.

Dwarf perennial, woody at the base; stems numerous, simple, 15--17 cm. tall, rather densely glandular-pubescent and also hirsutulous with much longer, divaricate, white, glandless hairs; nodes not noticeably annulate; leaves decussate-opposite, sessile; blades ovate, 7--16 mm. long, 4--10 mm. wide, the lower pairs increasingly smaller, subacute or obtuse at apex, rounded or cordate at base, entire, ciliate, hirsutulous-pubescent on both surfaces and somewhat glandulose beneath; larger venation rather obscure above, very faintly subprominulous beneath; inflorescence axillary, 2 per node, in the median or upper axils; peduncles very slender, 1.5--2.3 cm. long, rather densely glandulose-pubescent and hirsutulous; heads hemispheric, less than 1 cm. long; bractlets ovate, about 5 mm. long, 2 mm. wide at the base, triangular-attenuate at apex, densely glandular-pubescent and hirsutulous; corolla about 7 or 7.5 mm. long, the tube about equaling the bractlets, uniformly puberulent outside, the limb puberulent on the back, glabrous within.

The type of this species was collected by Per Karl Hjalmar Dusén on a campo at Jaguarihyva, Paraná, Brazil, on October 9, 1911, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*LIPPIA CHACENSIS* Moldenke, sp. nov.

Frutex; caulibus gracilibus obtuse tetragonis canescento-puberulis dein strigillosis; ramis ut videtur paucis brevibus; foliis numerosis; petiolis gracillimis dense canescento-strigosis; laminis leviter chartaceis anguste ellipticis, ad apicem acutis, ad basin attenuatis vel subacuminatis, uniforme serrulatis, supra dense adpresso-strigillosis, subtus densissime flavescento-velutinis.

Shrub, 6--7 dm. tall; stems slender, obtusely tetragonal, canescent-puberulent, strigillose on the older parts; nodes rather indistinctly annulate; branches apparently few and short; leaves decussate-opposite, abundant; petioles very slender, 2--6 mm. long, densely canescent-strigose; blades thin-chartaceous, lighter beneath, narrowly elliptic, 2--6 cm. long, 5--15 mm. wide, acute at the apex, uniformly serrulate along the margins to below the middle, attenuate or subacuminate at base, densely appressed-strigillose above, very densely velutinous with very short flavescent hairs beneath; the slender midrib and 5 or 6 pairs of secondaries, and often the larger veinlets, slightly subimpressed above, prominulous beneath; in-



florescence axillary, 1 or 2 per node, shorter than the subtending leaves; peduncles very slender, 1--1.5 cm. long, canescent-strigillose; heads hemispheric or oblong, to about 1 cm. long; bractlets broadly ovate, 4--4.5 mm. long, about 2 mm. wide at the base, acuminate at apex, densely strigose or strigillose, canescent, glandulose; corolla-tube about 6 mm. long, very densely strigose on the outside, the limb about 4 mm. wide, glabrous or slightly pubescent at the base.

The type of this species was collected by Robert E. Fries (no. 1445) in an open grassy campo at Tatarenda, Gran Chaco, Bolivia, on March 22, 1902, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm. The collector describes the species as rare and the flowers as "lividis".

*LIPPIA LORENTZII* Moldenke, sp. nov.

Frutex; ramis ut videtur multibrachiatis irregularibus griseis; ramulis gracilibus obtuse tetragonis canescento-strigillosis; internodiis abbreviatis; foliis confertis; petioliis gracillimis vel obsolete dense canescento-strigillosis; laminis parvis lanceolato-ellipticis utrinque dense canescento-strigillosis acutis uniforme serrulatis, ad basin longe attenuatis; spicis elongato-capitatis; bracteolis ovatis acuminatis.

Shrub; stems apparently much branched and irregular, gray; branchlets slender, obtusely tetragonal, canescent-strigillose; nodes rather indistinctly annulate; internodes abbreviated, 5--30 mm. long; leaves decussate-opposite, mostly clustered on very short twigs; petioles very slender, 1 mm. long or obsolete, densely canescent-strigillose; blades small, lanceolate-elliptic, densely canescent-strigillose on both surfaces, 5--15 mm. long, 3--5 mm. wide, acute at apex, uniformly serrulate almost to the long-attenuate base; the slender midrib and secondaries more or less impressed above and very prominent beneath; inflorescence axillary, 2 per node; peduncles very slender, 1 cm. long or less, densely canescent-strigillose; spikes elongate-capitate, about 1 cm. long; bractlets ovate, 2.5--3 mm. long, acuminate at apex, densely canescent-strigose, ciliate; corolla 4--5 mm. long, puberulent outside.

The type of this species was collected by P. G. Lorentz and G. Hieronymus at Dragones, Salta, Argentina, in the middle of August, 1873, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*LIPPIA ROSMARINIFOLIA* var. *STEWARTI* Moldenke, var. nov.

Haec varietas a forma typica speciei laminis foliorum pin-nato-lobatis recedit.

This variety differs from the typical form of the species in having pinnately lobed leaf-blades, the lobes on smaller leaves being tooth-like, divergent, 1--3 per side.

The type was collected by Alban Stewart (no. 3307) on the



sides of the mountain, to 4000 feet altitude, Tagus Cove, Albe-marle Island, Galapagos Islands, on March 27, 1906, and is deposited in the herbarium of the California Academy of Sciences.

*PAEPALANTHUS ANDICOLA* var. *VILLOSUS* Moldenke, var. nov.

Haec varietas a forma typica speciei per omnes partes densiore albo-villosis et praecipue vaginis longe albo-villosis recedit.

This variety differs from the typical form of the species in being more densely white-villous throughout and especially in having the sheaths villous with long white hairs from the base to within about 1 mm. of the truncated apex.

The type was collected by Oscar Haught (no. 5878) on steep dry slopes, altitude 1800 m., along the Gacheta-Ubala highway, Cundinamarca, Colombia, on June 20, 1947, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*STACHYTARPHETA JAMAICENSIS* f. *MONSTROSA* (Moldenke) Moldenke, comb. nov.

*Stachytarpheta indica* f. *monstrosa* Moldenke, Prelim. List Invalid Names 7, hyponym (1940); *Phytologia* 1: 433-434. 1940.

*STACHYTARPHETA RIVULARIS* Moldenke, sp. nov.

Suffrutescens; ramis acutiuscule tetragonis stramineis, juventute et ad nodos parciuscule longeque pilosis, dein et ad internodos glabris; petiolis late alatis utrinque parcissime pilosulis vel glabris; laminis leviter chartaceis ellipticis breviter acuminatis, ad basin longe acuminatis, supra subscabridis, utrinque parcissime strigilloso-pilosulis glabrescentibus; rhachide profundo excavato dense puberulis sub anthesin.

Suffrutescens, 3--4 m. tall; branches rather acutely tetragonal, stramineous, rather sparsely long-pilose at and near the nodes, especially on the younger parts, glabrous on the internodes and older parts; younger nodes annulate; principal internodes 2--4.5 cm. long; leaves decussate-opposite; petioles indistinct, broadly winged, about 2 cm. long, the wings tapering into the base of the blade, very sparsely and indistinctly pilosulous or glabrate on both surfaces; blades thin-chartaceous, elliptic, uniformly green on both surfaces, 7--9.5 cm. long, 3--4.5 cm. wide, short-acuminate at apex, long-acuminate into the petiole at base, somewhat scabridous above, very sparsely strigillose-pilosulous on both surfaces, especially along the larger venation, when young, glabrescent in age; midrib slender, plane above, prominent beneath; secondaries very slender, 5--7 per side, ascending, slightly arcuate, indistinctly anastomosing in many loops near the margins, plane above, prominent beneath; veinlet reticulation rather sparse; inflorescence spicate, terminal, to about 30 cm. long in fruit; rachis stout, deeply excavated, densely puberulent in anthesis,

obscurely so in fruit; peduncle short, 2.5--3.5 cm. long; flowers imbricate; bractlets ovate-lanceolate, 5--6 mm. long, ca. 1.5 mm. wide near the base, subacuminate at apex, glabrous or subglabrous except for the minutely ciliolate margins; calyx 9-10 mm. long, subglabrate or glabrous; corolla about 2.3 cm. long, maroon.

The type of this distinct species was collected by Ynes Mexia (no. 1789a) along a stream at Arroyo de Los Tapeistes, altitude 1425 m., Hacienda del Ototal, San Debastian, in the Sierra Madre Occidental, Jalisco, Mexico, on March 3, 1927, and is deposited in the herbarium of the California Academy of Sciences at San Francisco. The collector records the common names "chupa-miel" and "chupa-muerto". The species seems to be related to S. acuminata P. DC., but may be distinguished at once by its foliar and inflorescence characters.

#### STILBACEAE Lindl.

This family name begins as such in Lindley's "The Natural System of Botany", ed. 2, p. 279 (1836), where there is a fine description of the family and the name is validly published in every respect. In Lindl., Veg. Kingd., ed. 2, pp. 594 & 607 (1847) Lindley repeats the name Stilbaceae as a valid and accepted family segregated from the Verbenaceae, although Lindley always referred to families as "natural orders" -- a practice continued even in such manuals as Asa Gray's Manual until a rather recent date. On page 43 of the 1847 work Lindley cites also a "Suborder" Stilbacei in the fungi -- obviously as a subfamily and not of family rank. He gives no indication that anyone had proposed or regarded it as of "order" or family rank up to that date. This name Stilbacei for a group of fungi starts in Link, Abhandlungen der Königl. Akademie der Wissenschaften zu Berlin 1824: 181 (1826). It has been claimed by some botanists that this name is a family name, is an orthographic variant of Stilbaceae, antedates Lindley's name by ten years, and therefore invalidates Lindley's name.

A study of Link's paper, entitled "Entwurf eines phytologischen Pflanzensystems nebst einer Anordnung der Kryptophyten", which covers pages 145 to 194 of the volume cited above, shows conclusively that Link did not regard this group as a family in our present sense of the term, and was not proposing the name as a family name. He classifies the group under his "Cl. I. Cryptophyta" [p. 154], "O. 1. Fungi" [p. 162], "Subordo 3. Vycetes" [p. 168], "Reihe XI" [p. 177; see p. 179, lines 31 and 33, for proof of his application of the term "Reihe" to these categories], and "Familie IV. Gastromycetes" [p. 181]. That he regards his groups I. Epiphyti, II. Sclerotiaceae, III. Tremel-loidei, IV. Gastromycetes, V. Sphaeriacei, VI. Sarcomycetes, VII. Phalloidei, and VIII. Agaricini as families is plainly indicated by the text. For instance, under Epiphyti he says

"Diese Familie enthält die Anfänge viele andern Familien". Under Castromyces he says "Auch diese Familie ist aus mehreren kleinern Haufen zusammengesetzt", and he then proceeds to enumerate and (in most cases) describe ten such "Haufen" or groups within the family, namely, (1) Dimidiati, (2) unnamed, (3) Nemasporei, (4) Sporigastrei, (5) Stilbacei, (6) Lycoperdei, (7) Cyathoidi, (8) Carpobolei, (9) Tuberacei, and (10) unnamed.

It thus seems apparent that Link proposed the name Stilbacei as a subfamily group. The earliest reference that I have been able to discover for Stilbaceae as a family name in the fungi, with a validating description or reference to an earlier validating description, is by Lindau in Rabenhorst, *Krypt. Fl.*, ed. 2, 8: 5 (1904). The earlier reference to "Stilbaceae Fries" in Saccardo, *Syl. Fungi* 16: 1082 (1902) is unaccompanied by a validating description or reference to a validating description. The possibility that Link's Stilbacei was validly raised from subfamily to family rank between 1826 and 1836 seems remote, especially since Lindley in 1836 knew of no such action. I am therefore maintaining Lindley's Stilbaceae as a legitimate and valid name in the phanerogams, and am regarding Lindau's and Fries' "Stilbaceae" for the fungous group an illegitimate homonym which must be replaced.

**SYNGONANTHUS STEYERMARKII** Moldenke, sp. nov.

Herba minuta caespitosa; caulibus valde abbreviatis; foliis linearibus vel acicularibus rectis numerosis arcte imbricatis (non adpressis) obtusis glabris; pedunculis solitariis ca. 5 mm. longis teretibus non striatis non contortis glabris; vaginis adpressis glabris non striatis non contortis, ad apicem fissis 2-lobatis, lobis subspathulatis rotundatis; capitulis solitariis subglobosis sordidis 4--6-floris.

Minute tufted herb, forming moss-like mats; stems greatly abbreviated, the entire plants usually less than 1 cm. tall; leaves bright-green, linear or acicular, 2--3 mm. long, erect, numerous, closely imbricate but not appressed, blunt-pointed, glabrous but often enclosing a cushion-like mass of whitish hairs at the tip of the stem; peduncle solitary, about 5 mm. long, terete, not striate nor twisted, glabrous; sheath appressed, about 3 mm. long, glabrous, not striate nor twisted, split at the apex, the 2 lobes completely separate, each about 1.5 mm. long, subspatulate, rounded at the apex; heads solitary, subglobose, sordid-white, about 1.5 mm. wide, 4--6-flowered; involucre bractlets 6 or less, dark-brown or brownish-black, shiny, firm-textured, broadly ovate or suborbicular, about 1.3 mm. long and wide, acute at the apex, densely ciliate-margined with whitish cilia; receptacle densely long-villous; receptacular bractlets brown, elliptic-oblongate, about 0.8 mm. long and 0.3 mm. wide, acute at the apex and there densely bearded; pistillate florets only seen: sepals 3, brown, separate almost



to the base, broadly elliptic, about 1 mm. long and 0.6 mm. wide, more or less concave on the inner and convex on the outer surface, acute at the apex, more or less long-pilose on the back with easily rubbed-off hairs, densely and persistently white-bearded at the apex on the back; petals 3, connate into a slender, erect, hyaline tube about 0.9 mm. long or less, long-pilose; ovary deeply 3-lobed, about 0.6 mm. long, glabrous, 3-celled, 3-ovulate; style about 0.2 mm. long, glabrous; the 3 stigmas and 3 style-appendages all about 0.2 mm. long and arising from the same point.

The type of this very distinct and amazing species was collected by my good friend, Julian A. Steyermark (no. 57372) -- in whose honor it is named -- on limestone outcrops of the Páramo de Tamá, altitude 3045--3475 m., near the Colombia-Venezuelan boundary, Táchira, Venezuela, on July 15, 1944, and is deposited in the Britton Herbarium at the New York Botanical Garden. The general aspect of the plant is that of a very minute Paepalanthus.

VERBENA AUSTRALIS Moldenke, sp. nov.

Herba; caulibus decumbentibus, ad apicem adscendentibus, non valde brachiatis, gracilibus acute tetragonis sulcatis leviter strigilloso-pubescentibus; foliis paucis; petiolis gracilibus marginatis strigillosis; laminis leviter chartaceis ovatis profunde trilobatis, lobis dissectis obtusis, supra parce obscureque strigillosis, subtus punctatis et densiore strigillosis; bracteolis lanceolatis albo-ciliatis caeterum glabris.

Herb with decumbent stems, ascending at their tips, not much branched; stems and branches slender, acutely tetragonal, sulcate, lightly strigillose-pubescent with spreading or subappressed hairs; principal internodes 2--8.5 cm. long; nodes annulate; leaves rather sparse, decussate-opposite, sometimes with a few small ones in their axils; petioles slender, 3--5 mm. long, margined, strigillose; blades thin-chartaceous, rather uniformly bright-green on both surfaces, ovate in outline, 1--3 cm. long, 0.8--1.8 cm. wide, deeply 3-lobed, the lobes again dissected with rather broad and blunt secondary lobes, very sparsely and obscurely strigillose above, somewhat more densely so and punctate beneath, the very slender midrib and secondaries often slightly subimpressed above and prominent beneath, veinlet reticulation indiscernible on both surfaces; inflorescence spicate, terminal and in the uppermost axils, densely congested in anthesis, later elongating to about 3 cm.; peduncles slender, tetragonal, rather densely strigillose-pilosulous with very short white antrorse hairs; rachis densely puberulent; bractlets lanceolate, 3--4 mm. long, about 1 mm. wide, acute at apex, glabrate except for the white-ciliolate margins; calyx tubular, about 5 mm. long, very minutely strigillose on the 5 ribs or glabrate, the teeth short, a-



cute, not appendaged, membranous and purplish between the ribs toward the apex; corolla-tube about 6 mm. long, very sparsely and minutely pilosulous on the outside above the calyx; corolla-limb about 5 mm. wide, very minutely and sparsely pilosulous on the outside.

The type of this species was collected by Per Karl Hjalmar Dusén (no. 13190) in wet almost swampy soil at Jaguariashyva, Faraná, Brazil, on October 10, 1911, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*VERBENA CHEITMANIANA* Moldenke, sp. nov.

Herba porrecta; caulibus saepe procumbentibus gracillimis elongatis acute tetragonis strigillosis vel glabrescentibus; ramis pauciusculis gracillimis elongatis porrectis acute tetragonis saepe subsulcatis densiuscule albido-strigillosis, pilis brevissimis reflexis; foliis ut videtur ad apicem ramulorum aggregatis; petiolis gracilibus marginatis dense piloso-pubescentibus, pilis subadpressis albidis antrorsis; laminis membranaceis non brunnescentibus, triangulari-ovatis attenuato-acutis, ad basin cuneato-acuminatis, irregulariter incisissaepe plusminusque distincte trilobatis utrinque adpresso-strigillosis, lobis integris vel plerumque incisissaepe, dentibus acutis.

Sprawling herb; stems often procumbent, very slender, elongate, scutely tetragonal, strigillose or glabrescent; branches rather few, very slender, elongate, sprawling, scutely tetragonal, often slightly sulcate between the angles, rather densely strigillose with very short and whitish reflexed hairs; nodes annulate; principal internodes 1.5--7.5 cm. long; leaves decussate-opposite, apparently often numerous only toward the tips of the branches; petioles slender, 1--1.5 cm. long, margined, densely pilose-pubescent with subappressed, whitish, antrorse hairs; blades membranous, somewhat lighter green beneath, not brunnescent in drying, triangular-ovate in outline, 1.5--4 cm. long, 1--3 cm. wide, attenuate-acute at the apex (or merely acute on smaller leaves), cuneately acuminate into the petiole at base, irregularly incised, often more or less distinctly 3-lobed, appressed-strigillose on both surfaces, more densely so when immature, the lobes entire or more usually incised, the teeth all acute at apex; midrib and the 1--3 pairs of secondaries very tenuous, plane or obscure above, very slightly prominulous beneath; veinlet reticulation indiscernible above, obscure beneath; inflorescence terminal and in the uppermost leaf-axils, the floriferous portion congested-spicate, densely many-flowered, apparently 2--3.5 cm. long, showy; peduncles very slender, 6--10 cm. long, rather obtusely tetragonal, sometimes slightly sulcate, stramineous, fairly densely short-pilose or strigillose with whitish reflexed hairs; bractlets lanceolate, 4--6 mm. long, about 1 mm. wide at the base, long-attenuate at the apex, rather densely strigose with antrorse white hairs;

calyx cylindric, 8--9 mm. long, densely strigose with closely appressed, antrorse, white hairs, its rim unequally toothed, the teeth long-aristate, the tips connivent before and after anthesis, purplish; corolla-tube 10--11 mm. long, glabrous or very obscurely pilosulous above the calyx outside, villous in the throat within; corolla-limb 7--8 mm. wide, patent, the lobes deeply cordate at the apex, glabrous on both surfaces.

The type of this most interesting species was collected by Robert E. Fries (no. 477) in shady places under Salix Humboldtiana at Fiquete, on the sandy banks of Río San Francisco, Jujuy, Argentina, on August 21, 1901, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm. The species reminds one in the general appearance of its leaves of the North American V. canadensis (L.) Britton. It is named in honor of Philip Cheitman, American educator and ardent student of Nature, who has rendered considerable help to me in my researches on tropical and extra-tropical American plants.

X VERBENA CLEMENSORUM Moldenke, hybr. nov.

Herba rudis ut videtur alta et multibrachiata; caulibus ramulisque acutiuscule tetragonis striato-canaliculatis glabris; nodis plerumque elongatis; foliis chartaceis rigidis ovatis profunde irregulariterque incisissaepe trilobatis, supra plusminusque scabris vel scabro-marginatis, subtus scabris.

Coarse herb, apparently quite tall and much-branched; stems and branches rather acutely tetragonal, striate-canaliculate, glabrous; nodes annulate; principal internodes mostly elongate, 3.5--6.5 cm. long; leaves chartaceous, stiff, uniformly green on both surfaces, ovate in outline, deeply and irregularly incised, the larger more or less 3-lobed, 2.5--8 cm. long, 1--3 cm. wide, the smaller ones very scabrous above, the larger ones glabrous or scabrous-margined, all more or less scabrous beneath (especially the smaller ones just beneath the inflorescence), the slender midrib and secondaries usually impressed above and quite prominent beneath, the margins usually more or less subrevolute; petioles absent or so strongly alate as to merge completely with the blade; inflorescence spicate, compound, the peduncles and rachis acutely tetragonal, minutely and rather sparsely puberulent-pulverulent, apparently somewhat glandular, the floriferous portion of the spikes elongate (often to 20 cm. long), rather densely flowered; bractlets ovate, upwardly curvate, about 2 mm. long, subacuminate at apex, keeled on the back, minutely puberulent-pulverulent on the back, ciliolate-margined, about equaling or slightly shorter than the calyx; calyx 2--2.5 mm. long, glandular-puberulent; corolla-tube about 3 mm. long, subglabrate or very minutely pulverulent outside, the limb about 2 mm. wide; cocci about 1.6 mm. long.

The type of this natural hybrid was collected by Mary Knapp Clemens at Jackson, Amador County, California, on September 13,

1920, and is deposited in the herbarium of the California Academy of Sciences. It is named in honor of Mrs. Clemens and her husband, Joseph Clemens, who have done such noteworthy collecting of members of this group in Michigan, Oklahoma, Texas, Utah, California, the Philippines, Australia, and French Indochina. The plant seems to be a hybrid, but its parentage is not certain. Verbena officinalis L. is probably one parent and the other may be V. robusta Greene, as both these species are known from Amador County.

VERBENA DISSECTA f. ALBA Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis recedit.

This form differs from the typical form of the species in having white corollas.

The type was collected by Santiago Venturi (no. 7068) in a prado at Balcozna, dept. Del Alto, Catamarca, Argentina, at an altitude of 1250 m., on January 18, 1928, and is deposited in the herbarium of the California Academy of Sciences.

VERBENA DUSENII Moldenke, sp. nov.

Herba mediocriter alta recta; caulibus ramisque argute tetragonis minute puberulis vel dein glabrescentibus sarmentosis, apicem versus purpureis; petiolis gracilibus marginatis minute parceque puberulis; laminis ovatis leviter chartaceis trifido-dissectis utrinque parcius minuteque strigilloso-puberulis, lobis irregulariter incisus acutis.

Apparently a rather tall erect herb; stems and branches sharply tetragonal, minutely puberulent or eventually glabrescent on the larger parts, the upper portions often decidedly purplish, twiggy; principal internodes 2--9.5 cm. long; nodes annulate; leaves rather abundant, decussate-opposite, often with several smaller ones in their axils; petioles slender, 3--7 mm. long, margined and on the larger leaves often not distinct from the blade, minutely and sparsely puberulent, especially on the margins; blades ovate in outline, thin-chartaceous, somewhat lighter green beneath, 1.5--3.5 cm. long, 1--3.3 cm. wide, trifid-dissected, the lobes irregularly incised, acute, the lower ones widely divergent, very sparsely and minutely strigilloso-puberulent on both surfaces (mostly on the lamina above and on the venation beneath), the very slender midrib and secondaries plane or subimpressed above, slightly prominulous beneath, a few short tertiaries often also discernible beneath; inflorescence spicate, terminal and in the uppermost axils, subcapitate flattened in anthesis, the floriferous portion later elongating to 7 cm., dense, showy; peduncles rather stoutish, tetragonal, mostly purplish, 6--10 cm. long, rather sparsely strigilloso with reflexed whitish hairs; bractlets conspicuous, green, rather broadly elliptic, 5--8 mm. long, 2--3.2 mm. wide, acuminate at apex, glabrous except for the long-ciliate margins;



calyx tubular, 9--10 mm. long, 1--1.5 mm. wide, 5-costate, purplish (especially on the ribs), densely white-hispidulous on the ribs, less so in age, the 5 teeth caudate-apiculate, 1.5--2 mm. long, purple; corolla showy, its tube about 15 mm. long, puberulent above the calyx, its limb 10--13 mm. wide, very sparsely puberulent on the outside, the lobes deeply cordate-notched at the apex; anthers glandular-appendaged.

The type of this very showy species was collected by Per Karl Hjalmar Dusén (no. 7108) -- in whose honor it is named -- in rather swampy ground at Pinhaes, Paraná, Brazil, on October 29, 1908, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*VERBENA HUMIFUSA* var. *RETICULATA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum ellipticis vel obovatis vel suborbicularibus acutis, ad basin cuneatis vel subacuminatis, in petiolum alatum brevem angustatis vel subsessilibus, crasse dentatis supra pustulato-bullatis et albo-pilosis (pilis adpressis antrorsis), subtus densiuscule patento-hirsutulis.

This variety differs from the typical form of the species in having its leaf-blades varying from elliptic to obovate or suborbicular, 0.7--3 cm. long, 0.6--1.5 cm. wide, usually acute at apex (rounded on the smallest leaves), cuneate or subacuminate at base, narrowed into a very short winged petiole or subsessile, coarsely dentate from the widest part to the apex with acute or obtuse rather regular teeth, not lobed, pustulato-bullate above and rather abundantly hairy with white appressed entrorse hairs, rather densely spreading-hirsutulous on the venation beneath; the midrib, secondaries, and veinlet reticulation deeply impressed above and very uniformly prominent beneath.

The type of this variety was collected by Per Karl Hjalmar Dusén (no. 15714) on the campo, altitude 800 m., between Lago and Desiro Ribas, Paraná, Brazil, on October 22, 1914, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*VERBENA LOBATA* var. *HIRSUTA* Moldenke, var. nov.

Haec varietas a forma typica speciei ramis ramulisque petiolisque pedunculisque bracteolisque calicibusque et pagina inferiora laminarum densissime albo-vel flavescendo-hirsutis recedit

This variety differs from the typical form of the species in having the branches, branchlets, and twigs, as well as the petioles, lower leaf-surfaces, peduncles, bractlets, and calyxes very densely hirsute with widely spreading white or flavescent hairs. The upper leaf-surface is also more hirsute than in the typical form.

The type of this variety was collected by Gustaf Oskar An-



deresson Malme (no. 1260) in the grassy edges of a marsh at Pinhal, near Santa Maria, Rio Grande do Sul, Brazil, on January 27, 1902, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm. The collector describes the corolla as blue.

VERBENA MACDOUGALII f. ALBIFLORA Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis recedit.

This form differs from the typical form of the species in having white corollas.

The type was collected by Francis Ramaley (no. 16847) at Alamosa Canyon, Alamosa County, Colorado, at an altitude of 8000 feet, on September 14, 1938, and is deposited as sheet no. 42339 in the herbarium of the University of Colorado at Boulder. It was incorrectly labelled as Verbena stricta Vent.

VERBENA MORICOLOR Moldenke, sp. nov.

Herba; caulibus ramisque gracilibus tetragonis parce irregulariterque albido-pilosis, juventute densiuscule hirsutulis; petiolis irregulariter brevissimeque pilosis et parce hirsutulis; lamina leviter chartaceis lanceolatis attenuato-acutis, ad basin obtusis vel abrupte acutis, irregulariter dentatis, supra densiuscule strigoso-pubescentibus, subtus dense pubescentibus; corolla purpurea.

Herb, to 1 m. tall; stems and branches slender, more or less tetragonal, sparsely and irregularly pilose with whitish hairs of various length, the youngest parts rather densely hirsutulous with sharp-pointed hairs about 1 mm. long borne at right angles to the branch; nodes annulate; principal internodes elongated, 7.5--13 cm. long; leaves decussate-opposite; petioles slender, 1.5--2 cm. long, irregularly pilose with very short hairs and sparsely hirsutulous with long sharp-pointed hairs like on the younger branches; blades thin-chartaceous, somewhat lighter beneath, lanceolate, 4--8 cm. long, 1--2.3 cm. wide, attenuate-acute at the apex, obtuse or abruptly acute at the base, irregularly dentate from base to apex with rather broad subacute teeth, the larger irregularly interspersed among smaller ones toward the base of the blade and often doubly dentate, rather densely strigose-pubescent above, densely pubescent beneath with hairs of various lengths; midrib slender, plane or slightly subimpressed above, slightly prominulous beneath; secondaries about 7 pairs, very slender, ascending, hardly arcuate, indiscernible above, rather obscure beneath; veinlet reticulation indiscernible; inflorescence terminal, spicate, the flowering portion apparently elongating to about 7 cm.; peduncles similar to the upper branches or stems in texture, shape, and pubescence, 1--7.5 cm. long; rachis rather densely pilose-pubescent with hairs of various lengths; bractlets lanceolate, about 4 mm. long, attenuate to the apex, sparsely puberulent on

the back, the margins regularly ciliate; calyx cylindric, 6--7 mm. long, about 1 mm. in diameter, rather sparsely puberulent-pilosulous, the teeth 0.5 and 0.9 mm. long, subulate; corolla hypocrateriform, purple, its narrow-cylindric tube 13--14 mm. long, densely pilose-puberulent above the calyx, its limb 6--7 mm. wide, much darker in the throat, glabrous within, subglabrate outside.

The type of this handsome species was collected by Santiago Venturi (no. 5397) among spiny plants on hillslopes at Sierra de Calilegua, altitude 800 m., dept. Ledesma, Jujuy, Argentina, on October 11, 1927, and is deposited in the herbarium of the California Academy of Sciences at San Francisco. The species is obviously related to *V. phlogiflora* Cham. and *V. incisa* Hook., but differs conspicuously in its much smaller calyx and corolla.

*VERBENA REGNELLIANA* Moldenke, sp. nov.

Herba; caulibus saepe decumbentibus radicanibus; ramis ascendentibus vel rectis obtuse tetragonis brunnescentibus saepe submarginatis parce pilosis vel glabrescentibus; foliis numerosis brunnescentibus; petiollis gracilibus valde alatis parce pilosis; laminis leviter chartaceis ovatis irregulariter incisae vel trifidis supra percissime pustulato-pilosis (pilis albidis brevissimis adpressis), subtus parce adpresso-pilosulis, lobis acutis vel apiculatis subrevolutis.

Herb; stems often decumbent and rooting at the nodes; branches ascending or erect, obtusely tetragonal, brunnescent in drying, often slightly margined, sparsely pilose or glabrescent; principal internodes 1--7.5 cm. long; nodes annulate; leaves abundant, decussate-opposite, often with a cluster of small ones in their axils, brunnescent in drying; petioles slender, 2--5 mm. long, plainly winged, sparsely pilose; blades thin-chartaceous, darker above than beneath, ovate in outline, 1.5--4.5 cm. long, 0.8--2.6 cm. wide, irregularly incised, the larger trifid, the lobes often with a single exterior divergent tooth, acute or apiculate, very sparsely pustulate-pilose above with extremely short appressed whitish hairs, sparsely appressed-pilosulous (but not pustulate) on the larger venation and on the margins beneath, the margins usually very slightly revolute; venation mostly indiscernible or obscure above, the midrib and very slender secondaries conspicuously prominent beneath, but the veinlet reticulation indiscernible; inflorescence spicate, long-pedunculate, terminal and also axillary in the uppermost axils, the floriferous portion apparently short and dense or elongating to about 4 cm. after anthesis; peduncles very slender, brunnescent, 3--7.5 cm. long, very sparsely pilosulous; bractlets ovate-lanceolate, about 3 mm. long and 1 mm. wide, sharply attenuate or subacuminate at apex, subglabrate except for the ciliate margins and sometimes a very few microscopic hairs at the apex; calyx tubular, about 4 mm. long

and 1.3 mm. wide, very sparsely and minutely pilosulous, the teeth about 0.5 mm. long; corolla-tube 5--6 mm. long, sparsely and very minutely pilosulous above the calyx; corolla-limb about 4 mm. wide, minutely pilosulous on the outer surface.

The type of this distinctive species was collected on the swampy banks of the rapidly-flowing Rio Verde at Caldas, Minas Geraes, Brazil, on November 20, 1867, by Anders Frederik Regnell (no. III.939) -- in whose honor it is named -- and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*VERBENA SPECTABILIS* Moldenke, sp. nov.

Herba; caulibus brevibus obtuse tetragonis brachiatis densiuscule breviterque brunneo-pubescentibus, pilis reflexis; ramis gracilibus rectis vel ascendentibus obtusiuscule tetragonis plerumque sulcatis dense breviterque sordido-pubescentibus, pilis reflexis; petiolis plerumque obsolete; laminis chartaceis ovatis acutis, ad basin angustatis, irregulariter dentatis vel subincisis, supra densiuscule adpresso-strigosis, subtus adpresso-pubescentibus; bracteolis lanceolatis.

Herb, about 45 cm. tall; stems rather short, obtusely tetragonal, mostly branched at or near the base, rather densely short-pubescent with reflexed brownish hairs; branches slender, erect or ascending, rather obtusely tetragonal, usually sulcate between the angles, densely short-pubescent with reflexed sordid-gray hairs; nodes annulate; principal internodes 2--4 cm. long; leaves decussate-opposite; petioles very short or usually obsolete; blades chartaceous, rather uniformly green on both surfaces, ovate, 2.5--4 cm. long, 0.8--2 cm. wide, acute at apex, acuminate narrowed into the broadly winged petiole at base, irregularly dentate or occasionally subincised from the apex to the widest point, the lowest teeth sometimes lobe-like and divergent on larger leaves, rather densely appressed-strigose above, appressed short-pubescent beneath; midrib and the 5--8 pairs of secondaries very slender, usually impressed above, prominulous beneath, the secondaries rather straight, ascending, branching at the apex and a branch extending to the tip of each tooth; inflorescence terminal and in the uppermost leaf-axils, congested-spicate, the floriferous portion 2.5--3.5 cm. long, densely many-flowered, apparently not elongating after anthesis; peduncles slender, 3--6.5 cm. long, densely short-pubescent with reflexed whitish hairs, often jointed at about the midpoint and there bearing a pair of lanceolate bracts 7--8 mm. long; floral bractlets lanceolate, about 4 mm. long, about 1 mm. wide at the base (or narrower), attenuate at the apex, closely appressed to the calyx, densely short-pubescent with spreading whitish hairs; calyx cylindric, about 9 mm. long, 5-costate, densely short-pubescent with spreading whitish hairs, its rim unequally aristate-toothed, purplish, the longer



appendages about 1 mm. long, often twisted-connivent before and after anthesis; corolla purple, showy, its tube 10--15 mm. long, rather densely puberulent above the calyx outside, its limb about 9 mm. wide.

The type of this handsome species was collected by Erik Leonard Ekman (no. 1980) along the small stream called Magdalena at Loreto, Fosadae, Misiones, Argentina, on February 6, 1908, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*VERBENA SWIFTIANA* Moldenke, sp. nov.

Herba pumila gracilis; caulibus gracilibus saepe semi-procumbentibus et radicanibus, acute tetragonis glabris brunnescentibus; ramis numerosis saepe simplicibus rectis gracillimis acute tetragonis glabris brunnescentibus; foliis numerosis membranaceis utrinque uniforme brunnescentibus; petioliis gracillimis glabris, vel alatis obscuris; laminis linearibus vel angustissime ellipticis et integris vel ovatis et trifidis utrinque glabris, lobis terminalibus integris vel paucidentatis vel incisis.

Low slender herb to about 3 dm. tall; stems slender, often partly procumbent and rooting at the nodes, acutely tetragonal, glabrous, brunnescent; branches numerous, often simple or nearly so, erect, very slender, acutely tetragonal, glabrous, brunnescent; nodes annulate; principal internodes 1--2 cm. long; leaves numerous, membranous, uniformly brunnescent on both surfaces in drying, variable in shape; petioles very slender and 1--3 mm. long, glabrous, or obscure and winged, merging into the blade; blades 1--2 cm. long, varying from linear or very narrowly elliptic and entire to ovate and trifid with the large terminal lobe entire or several-toothed or -incised, glabrous on both surfaces; midrib very tenuous, mostly indiscernible above, very slightly prominulous beneath; secondaries and veinlets indiscernible on both surfaces; inflorescence terminal, spicate, rather few-flowered, to about 5 cm. long, the flowers rather distant during and after anthesis; peduncles slender, exactly similar to the branches in color and texture, 1--1.5 cm. long; rachis exactly similar to the peduncle; bractlets lanceolate, about 1 mm. long and 0.5 mm. wide, acuminate at the apex, lightly strigillose; calyx tubular, about 1.5 mm. long and 0.75 mm. wide, lightly strigillose outside, the rim very shortly toothed; corolla-tube very slender, about 3 mm. long, very sparsely and minutely strigillose toward the apex; corolla rose, its limb about 3 mm. wide, very lightly and minutely strigillose toward the base outside.

The type of this species was collected by G. J. Schwarz (no. 3402) at Corpus, dept. San Ignacio, Misiones, Argentina, on September 19, 1946, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm. The species is named



in honor of Josiah Otis Swift (1870-- ), well-known naturalist, founder of the Yosian Brotherhood which in the past quarter of a century has brought the beauties of the great out-of-doors to over 150,000 Americans, chiefly in the vicinity of New York City, and author of the daily column "News Outside the Door" which has popularized Nature-study among millions of newspaper readers.

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NOTES ON SOUTH AMERICAN MELASTOMES

H. A. Gleason

The genus Centradenia, with seven known species, has always been considered endemic to Central America, ranging from Panama to southern Mexico. Haught has recently collected plants along the western coast of Colombia which, although bearing only immature flowers, undoubtedly represent C. Maxoniana Gl. So far as known to me, this is the first collection from the South American continent, and leaves Heterocentron the only endemic genus of the family in Central America.

Haught has also collected in Colombia plants of Miconia barbicaulis Gl. which exactly match the type specimen. The species was originally described from the eastern slope of the Andes in Ecuador. Haught's collection was made on the western slope of the mountains and approximately four hundred miles north of the type locality.

CALYPTRELLA STELLATA Gl., sp. nov. A speciebus sex differt petalis subrotundis nec acutis nec acuminatis; a C. littorali Gl. differt floribus 5-meris magnis foliis 5-nerviis; a C. denticulata Gl. differt foliis et hypanthiis stellato-tomentosis atque longe villosis, floribus majoribus, dentibus calycis exterioribus multo majoribus 2.5 mm. longis.

A large shrub or small tree with clear red flowers. Younger stem densely villous with short crowded hairs. Leaves obovate-oblong, 5-nerved, entire, abruptly short-acuminate, obtuse or rounded at base, glabrous above, densely white-stellate-tomentose beneath and also villous with pale brown hairs. Hypanthium densely stellate and also villous, 8 mm. long to the torus. Calyx 4.5--5 mm. long, irregularly ruptured at anthesis, usually into 3 lobes, pubescent like the hypanthium but with shorter hair; exterior teeth triangular, 2.5 mm. long. Petals rotund-obovate, 13 mm. long and wide. Filaments 8.5 mm. long; anthers 11.6 mm. long, tangentially flattened, the stout connective prolonged 2 mm. to the filament and terminating in an obscure

obtuse basal spur.

Type, Espinosa 1544, in the herbarium of the New York Botanical Garden, collected at Huiaco, near Loja, Ecuador, alt. 2250 meters.

A key to the eight species of Calyptrella then known was published in Phytologia 2: 301 in 1947. Our plant traces through the key directly to C. denticulata, also from Ecuador, but differs from it conspicuously in certain characters not mentioned in the key. In C. denticulata, the pubescence of the leaves and the hypanthium is restricted to stellate hairs, lacking the long simple ones, the leaves are narrowed to the base, the hypanthium and calyx are only half as large, the exterior teeth are merely minute points, the petals and stamens are considerably smaller.

CONOSTEGIA HAUGHTII Gl., sp. nov. Frutex 1.5 m. altus, ramis folisque juvenilibus arctissime furfuraceis mox glabrescentibus. Folia membranacea, elliptico-oblancoolata vel oblanceolata, usque ad 22 cm. longa 7.5 cm. lata, acuminata ad apicem obtusum, integra, basi longe cuneata fere ad caulem, petiolo libero tantum 2--3 mm. longo, valde 5-ple-nervia, subtus pallida. Panicula laxe pauciflora, 4--6 cm. longa. Flores 5-meri in cymulis 3-floris terminalibus. Alabastrum obovoideum, obtusum, 3.5 mm. longum, tenuissime furfuraceum; hypanthium 2.2 mm. longum. Petala alba, ovata, obtusa, equilatera, 3.2 mm. longa, 1.9 mm. lata. Stamina 10, isomorpha; filamenta leviter complanata, 1.5 mm. longa; antherae oblongae, 1.5 mm. longae; connectivum simplex. Ovarium inferum; stylus gracilis, 4.7 mm. longus; stigmae fere punctiformi.

Type, Haught 4939, collected at Quebrado Isaias, east of Turbo, Dep't. Antioquia, Colombia, altitude about 50 meters, in the herbarium of the New York Botanical Garden. The species stands out sharply from the other Colombian plants of the genus by its apparently glabrous foliage, strongly 5-ple-veined leaves, and small few-flowered cymes.

MICONIA MEDUSA Gl., sp. nov. Sect. Cremanium. Frutex; rami graciles, petioli, et foliorum pagina inferiore tomentosi, pilis elongatis contortis parce ramosis. Folia longe petiolata, membranacea, oblongo-oblancoolata, breviter acuminata, spinuloso-ciliata (dentibus ascendentibus, 0.5 mm. longis), 3-nervia, supra glabra. Panicula terminalis, valde reducta, non vel vix ramosa, 2--5 cm. longa. Flores 5-meri ad nodos sessiles fasciculati. Hypanthium poculiforme, glabrum. Calyx ad anthesin in lobos 5 triangulares hyalinos 0.4--0.5 mm. longos ruptus; dentes exteriores triangulares, erecti, 0.2 mm. longi. Petala alba, fere orbicularia, 1.25 mm. longa. Filamenta 1.6 mm. longa, ultra medium geniculata. Antherae oblongae, 0.8 mm. longae, poris 2 latis ventro-terminalibus dehiscentes. Ovarium

inferum, (?) 3-loculare. Stylus rectus, 3 mm. longus, apicem versus clavatus ad stigma rotundatum.

Type, Espinosa 1559, collected 5 km. southeast of Loja, Ecuador, alt. 2300--2400 meters, in the herbarium of the New York Botanical Garden.

There is no doubt that this plant finds its nearest relative in the Peruvian M. aprica Gl., in which the minute flowers are similarly congested and the pubescence is irregularly branched. It differs from our plant in its much wider and thicker leaves, scabrous above, with shorter and sparser tomentum and larger spinulose teeth, in the well developed branched panicle, the much larger anthers, and the prolonged connective.

FACHYDESMIA Gl., gen. nov.

Among the Haight collection is another melastome which displays such remarkable differences from all other members of the family known to me that I am constrained to describe it as a new genus.

Caulis circum basin petioli valde expansus. Panicula trichotoma, axi centrali non evoluto et panicula corymbiformi. Ovarii summum ad parietam hypanthii connexum per membranas 10 radiatim divergentas. Connectivum antherae valde dilatatum et thecas ubique excedens, sursum in lobum unum rotundatum vel truncatum, deorsum in lobos 2 rotundatos. Thecae antherae parvae, in medio connectivi affixae et vix elevatae, sursum in partem sterilem divergentem breviter productae, late poculiforme, poro magno terminali dehiscentem.

FACHYDESMIA HAUGHTII Gl., sp. nov. Frutex 1 m. altus, caule ramoso, sparse furfuraceo. Fetioli 8--12 mm. longi. Laminae elliptico-ovatae, usque ad 120 mm. longae 57 mm. latae, subacuminatae, ciliatae (ciliis spinulosis 1--2 mm. longis), basi late rotundatae, 3-nerviae, supra glabrae, subtus sparse furfuraceae secus venas primarias. Panicula fere 1 dm. longa lataque. Hypanthium late campanulatum, 1.5 mm. longum ad torum, 3 mm. in diametro, minutissime furfuraceum. Calycis tubus 0.5 mm. productus, sinus late rotundatis; lobi obtuse triangulares, 1 mm. longi, minute eroso-ciliati; dentes exteriores adnati, triangulares. Petala alba, late elliptica, 4.3 mm. longa, inequilatera. Stamina 10. Filamenta ca. 4 mm. longa, supra medium geniculata, ad apicem valde dilatata. Connectivum 2 mm. longum, in ser. staminum exteriore apice truncatum, in ser. interiore ovatum obtusum. Thecae vix elevatum, poro divergente 0.8 mm. in diametro dehiscentes.

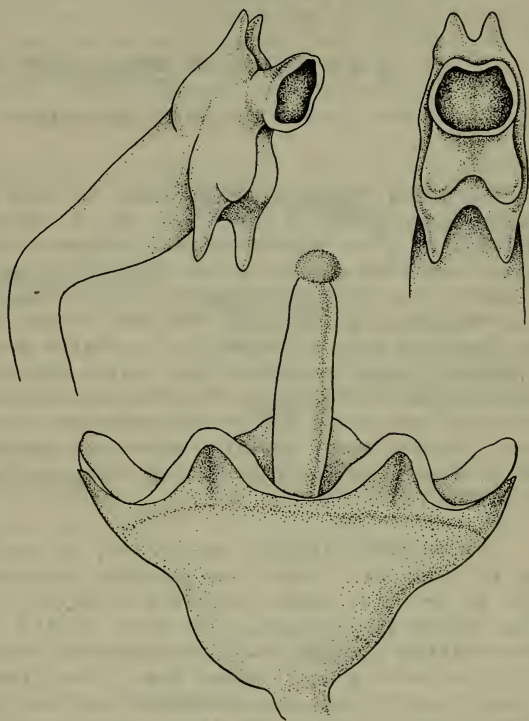
Type, Haight 5201, collected west of Tambo, on the west slope of the Cordillera Occidental, Dep't. Cauca, Colombia, altitude 2200 meters, in wet forest.

The peculiar features of the plant are summarized in the



generic diagnosis. The spathe-like expansion of the stem about the base of the petioles is known also in four species of Miconia, M. scutata, annularis, stipularis, and manicata. A corymbiform panicle

very rarely appears in the genus. The connection of the ovary-summit with the wall of the hypanthium has not been observed by me in the Miconieae: it consists of ten thin radiating membranes extending from the very summit of the ovary to the wall of the hypanthium as far as the torus, and dividing the cavity into as many chambers each of which is in the bud occupied by an anther. The remarkably large connective extends well below the minute thecae, which is common in many species of Melastomes, and also well beyond the thecae, a condition which I



Front and side view of anther; hypanthium, calyx, and style. x 8.3

have not noted elsewhere in the family. The two thecae are small and tangentially flattened. Before dehiscence, as seen in an unopened flower-bud, they are slightly distended; after dehiscence they are scarcely elevated above the surface of the connective. At the upper end of the thecae the broadly cup-shaped sterile portion diverges at right angles from the connective and terminates in a large pore. The total length of the thecae, including the pore, is about half that of the connective.

In general aspect and in most technical characters the plant suggests Miconia, to which it must be related, but it differs so greatly in its anthers from every species known to me that



it can not be associated with any of them, nor assigned to any of the eleven sections of the genus.

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A NEW SPECIES OF PTYCHOCARPUS FROM PERU

Joseph V. Monachino

The genus Ptychocarpus Kuhlmann belongs in the tribe Casearieae (Benth. & Hook. Gen. Pl. 1: 795; Engl. & Prantl Pflanzenf. 3<sup>6a</sup>: 46). It is easily distinguished at sight from other American genera in the Flacourtiaceae by its inflorescence habit. P. apodanthus, the only hitherto known species, was reported as seemingly frequent in the state of Pará, Brazil; it has also been collected in the Matto Grosso (Krukoff 1342; Tabajaza, upper Machado River, terra firma; November 13, 1931; distributed as "Ferebea ?"). The simple, clearly defined position of this genus and species made it an easy matter to recognize the following novelty, which was chanced upon among a set of unidentified specimens filed as Sapotaceae at the New York Botanical Garden.

PTYCHOCARPUS KILLIPII Monachino, sp. nov. Arbor glaber 6--8 m. altus; petiolis 4--6 mm. longis; laminis ca. 15--20 cm. longis et 4--7 cm. latis punctatis oblongo-oblancheolatis, ad apicem cuspidato-acuminatis, ad basin acutis, nerviis primariis lateralibus utroque ca. 12 distantibus adscendentibus arcuatis; inflorescentiis axillaribus sessilibus glomeratis ca. 8 mm. longis paucifloris dense bracteatis; floribus masculis: perianthio urceolato ca. 6 mm. longo intus prope basin dense piloso, caeterum glabro, lobis 4 imbricatis ovatis ca. 1.5 mm. longis; staminibus 8, filamentis ligulatis ca. 1.5 mm. longis et 0.5 mm. latis.

Glabrous tree 6--8 m. tall; stipules caducous; leaves alternate, the petioles 4--6 mm. long, thick, the blades about 15--20 cm. long and 4--7 cm. broad, closely translucent-punctate, oblong-oblancheolate, abruptly cuspidate-acuminate, narrowed and acute at base, faintly serrulate on the upper margins, the principal lateral nerves about 12 pairs, widely spaced and clearly ascending-arcuate, connected near the margins of the blade, the reticulation loose, a little raised on the underside of the blade; inflorescences closely resembling those of P. apodanthus, axillary, sessile, glomerate, about 8 mm. long, few-flowered, densely bracteate, the bracts overlapping so as to impart a strobile-like appearance to the inflorescences, orbicular to oblong, up to 6 mm. long and 3 mm. broad, flat to

cucullate, rounded at the apex, punctate; only male flowers seen, the perianth urceolate, about 6 mm. long, densely pilose near the base within, otherwise glabrous, punctate, the lobes 4, imbricate, ovate, about 1.5 mm. long and as broad; stamens 8, the filaments strap-shaped, flat, inserted at about the middle of the perianth-tube, alternately longer and shorter, those opposite the perianth-lobes twice as long, about 1.5 mm. long and 0.5 mm. broad, the anthers oblong, about 1 mm. long, reaching the throat of the perianth; rudimentary ovary as in P. apodanthus.

Type: E. P. Killip & A. C. Smith 29936, collected in dense forest, alt. about 100 m., at Mishuyacu, near Iquitos, dept. Loreto, Peru, September 24--28, 1929; deposited in the Britton Herbarium at the New York Botanical Garden.

F. Killipii is easily distinguished from the only other known species in the genus, P. apodanthus Kuhlmann. The principal lateral nerves of the leaves are about half as many and ascending-arcuate, not spreading and straight. The indumentum within the perianth-tube is denser than that of P. apodanthus. The filaments are strap-shaped, and those alternate with the perianth-lobes are manifest, although about half the length of the longer ones; they are inserted at about the middle of the perianth-tube. The filaments opposite the perianth-lobes in P. apodanthus are broadly deltoid, and the alternate ones hardly apparent; they are inserted at the throat of the perianth-tube.

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ADDITIONAL NOTES ON THE GENUS AEGIPHILA. IX

Harold N. Moldenke

AEGIPHILA BRACHIATA Vell.

The species has been collected in low woods among fields at an altitude of 50 meters in a region where the average annual rainfall is 1.5 m. and the average temperature varies from 5° to 35° C. during the year. It has been collected in anthesis in February and October, and has been confused with Citharexylum by some herbarium workers.

Additional citations: BRAZIL: Rio Grande do Sul: Friedrichs 32928 (N); Henz 32936 (S); Rambo 990 (N). State undetermined: Sellow 1269 [Macbride photos 17590] (N--photo).

AEGIPHILA CANDELABRUM Briq.

Additional citations: PARAGUAY: Hassler 8120 [Macbride photos 24621] (N--photo of type).

## AEGIPHILA CHRYSANTHA Hayek

Additional citations: ECUADOR: Guayas: Eggers 14348 [Macbride photo 20349] (N--photo). PERU: Loreto: Poeppig 2314 [Macbride photo 34313] (N--photo of logotype).

## AEGIPHILA CONTURBATA Moldenke

Additional citations: BRAZIL: Maranhão: Newman s.n. [Macbride photo 28377] (N--photo of type).

## AEGIPHILA CORDATA Poepp.

Additional citations: PERU: Loreto: Poeppig 2158 [Macbride photo 34312] (N--photo of type).

## AEGIPHILA CORDIFOLIA (Rufz &amp; Fav.) Moldenke

Additional citations: PERU: Huánuco: Rufz & Favon s.n. [Miña, Panatahua; Macbride photo 28378] (N--photo of isotype).

## AEGIPHILA COSTARICENSIS Moldenke

Additional citations: MEXICO: Chiapas: Matuda 572 (Mh), 2101 (Mh).

## AEGIPHILA CRENATA Moldenke

Additional citations: BRAZIL: Paraná: Dusén 10541 [Macbride photo 30182] (N--photo of isotype).

## AEGIPHILA DEPPEANA Steud.

Additional citations: MEXICO: Chiapas: Seler & Seler 2005 (Gg--245897). JUANA RAMIREZ ISLAND: E. Palmer 464 (Gg--34499). COLOMBIA: Magdalena: Balbis s.n. [Macbride photo 33932] (N--photo).

## AEGIPHILA ELATA Sw.

Additional citations: MEXICO: Tabasco: Matuda 3031 (Mh), 3081 (Mh), 3406 (Mh). BRITISH HONDURAS: Gentle 2633 (Mh), 2843 (Mh), 3350 (Mh); Schipp 216 (Gg--172812). JAMAICA: W. Harris 11746 (Gg--31928); Swartz s.n. (S--isotype).

## AEGIPHILA FALCATA Donn. Sm.

Two vernacular names not before recorded for this species are reported by Matuda from Chiapas. They are "taco" and "táquito".

Additional citations: MEXICO: Chiapas: Matuda 666 (Mh). GUATEMALA: Tiquesata: E. Wall s.n. [21/4/28] (Ew), s.n. [24/4/28] (Ew).

## AEGIPHILA FERRUGINEA Hayek &amp; Spruce

Additional citations: ECUADOR: Imbabura: Lehmann 4700 [Macbride photo 17584] (N--photo). Fichincha: Spruce 5473 [Macbride photo 34311] (N--photo of type).



Fig. 1. Aegiphila bracteolosa Moldenke



## AEGIPHILA FILIPES Mart. &amp; Schau.

Haught describes this plant as a slender shrub with cream-colored flowers.

Additional citations: COLOMBIA: Cundinamarca: Haught 6124 (N). BRAZIL: Pará: Martius s.n. [Macbride photo 20350] (N--photo of cotype).

## AEGIPHILA FLORIBUNDA Moritz &amp; Moldenke

Additional citations: VENEZUELA: Aragua: Moritz 1765 [Macbride photo 34310] (N--photo).

## AEGIPHILA FOETIDA Sw.

Additional citations: JAMAICA: Swartz s.n. (S--isotype).

## AEGIPHILA GLANDULIFERA Moldenke

Romero C. describes the plant as a shrub 6 meters tall.

Additional citations: COLOMBIA: Chocó: Romero C. 503 (N).

## AEGIPHILA GRANDIS Moldenke

Additional citations: COLOMBIA: Cundinamarca: Triana 2080 [Macbride photo 28379] (N--photo).

## AEGIPHILA GUIANENSIS Moldenke

Additional citations: COLOMBIA: Cundinamarca: Triana 2084 [Macbride photo 28380] (N--photo).

## AEGIPHILA HASSLERI Briq.

Additional citations: BRAZIL: Rio Grande do Sul: Buck 31389 (N). PARAGUAY: Haseler 3193 [Macbride photo 24613] (N--photo of cotype). URUGUAY: Fuques s.n. [Lombardo 4153] (N).

## AEGIPHILA HERZOGII Moldenke

Additional citations: BOLIVIA: Santa Cruz: Herzog 1369 [Macbride photo 28381] (N--photo of isotype).

## AEGIPHILA INTEGRIFOLIA (Jacq.) Jacks.

Sandeman describes the flowers of this species as cream-colored.

Additional citations: PERU: Cuzco: Sandeman 3676 (K). BOLIVIA: Santa Cruz: Peredo s.n. [21-III-1946] (N).

## AEGIPHILA INTERMEDIA Moldenke

Additional citations: BRAZIL: Maranhão: Herb. Gen. Mus. Para. 2270 [Macbride photo 28382] (N--photo of isotype).

## AEGIPHILA LANATA Moldenke

Additional citations: BRAZIL: Goyaz: Glaziou 21917 [Macbride photo 28383] (N--photo of isotype).



Fig. 2. Aegiphila gloriosa Moldenke

## AEGIPHILA LAXIFLORA Benth.

Additional citations: BRITISH GUIANA: M. R. Schomburgk 772 [Macbride photo 28384] (N--photo of isotype).

## AEGIPHILA LEHMANNII Moldenke

Additional citations: COLOMBIA: Chocó: Triana 2083, in part [Macbride photo 28385] (N--photo).

## AEGIPHILA LHOTZKIANA Cham.

Additional citations: BRAZIL: Bahia: Casaretto 2022 [Macbride photo 24614] (F--686352, F--772034--photo, Kr--photo, N--photo). Minas Geraes: Heringer s.n. [Herb. Esc. Sup. Agr. Lavras 274; Herb. Dept. Bot. Est. S. Paulo 42456] (N); Markgraf 3281 [Brade & Mello Barreto 12140; Herb. Jard. Bot. Belo Horizonte 28444] (F--1009600); Mello Barreto 3270 [Herb. Jard. Bot. Belo Horizonte 11249; Herb. Rio de Jan. 32273] (F--933076, Ja), 9347 [Herb. Jard. Bot. Belo Horizonte 25608] (F--948145), 9736 [Herb. Jard. Bot. Belo Horizonte 25641] (F--948135), 9796 [Herb. Jard. Bot. Belo Horizonte 25515] (F--948143); Sampaio 344 [Herb. Rio de Jan. 32270] (Ja). Paraná: Jönsson 1028a (F--668473). São Paulo: Zagatto s.n. [Herb. Inst. Agron. Est. S. Paulo 2469; Herb. Dept. Bot. Est. S. Paulo 40171] (Sp). State undetermined: Herb. Rio de Jan. 32272 (Ja); Sellow s.n. [Brasilia; Macbride photo 17585] (F--663064--photo, Kr--photo, N--photo, Vt).

## AEGIPHILA LONGIFOLIA Turcz.

Cuatrecasas describes this plant as a scandent shrub, blooming in November, inhabiting savannas at an altitude of 240 meters.

Additional citations: COLOMBIA: Méta: Cuatrecasas 7730 (Jc). Santander Sur: Schlim 688 [Macbride photo 24616] (F--772036--photo of isotype, Kr--photo of isotype, N--photo of isotype).

## AEGIPHILA LUSCHNATHI Schau.

Synonymy: Aegiphila Luschnatii Schau. apud Hook. f. & Jacks., Ind. Kew. 1: 46, sphalm. 1895; Aegiphila Luschnathii Schau. apud Briq., Bull. Herb. Boiss., ser. 2, 4: 1167, sphalm. 1904.

This species has occasionally been confused in the herbarium with A. laxiflora Benth.

Additional citations: BRAZIL: Rio de Janeiro: Guillemin s.n. [St. Thérèse 1839] (Du--166414); Luschnath s.n. [Herb. Martius 1040; Macbride photo 7879] (F--645715--photo of cotype, Kr--photo of cotype, N--photo of cotype).

## AEGIPHILA MACRANTHA Ducke

Additional items for the description: fruiting-calyx accrescent, woody, light-brown, 2.5--3.5 cm. in diameter, 1.2--2 cm. long, with a rough warty surface, otherwise glabrous, borne on





Fig. 3. Aegiphila obducta Vell.



a short pedicel; fruit broadly ovoid-ellipsoid, about 3--4 cm. long and 2.4--3.4 cm. wide. "green, speckled with brown" (when immature?), brown when dried, minutely asperous-granular, sometimes only 1 or 2 maturing in an inflorescence. It is a woody climber found in mixed forests.

Additional citations: BRITISH GUIANA: De la Cruz 2836 (Cm); Herb. Forest. Dept. Br. Guian. 3011 (S), 5295 [F.2550] (N); Sandwith 1202 (S). BRAZIL: Para: Ducke 843 (N).

#### AEGIPHILA MAGNIFICA Moldenke

This plant is said by Standley to be "rare" or "scerce". He found it at an altitude of 700 m. in Guatemala, fruiting in March in wet thickets. The calyx and fruit are very similar to those of A. paniculata. Baker describes it as a woody vine climbing over trees in shaded places.

Additional citations: GUATEMALA: Escuintla: P. C. Standley 89280 (N). Suchitepéquez: P. C. Standley 62196 (F--982650). NICARAGUA: Chinandega: C. F. Baker 204 (Du--76164--isotype, Gg--31927--isotype).

#### AEGIPHILA MARTINICENSIS Jacq.

References: Seymour, Host Ind. Fungi N. Am. 588--589. 1929; Fittier, Supl. Plant. Usual. Venez. 54. 1939; Roig y Mesa, Plant. Medic. Cuba 410--411 & 770. 1945.

An additional synonym is Aegiphyla martinicensis Jacq. ex Moldenke, Suppl. List Invalid Names 1, in syn. (1941). Roig y Mesa, on page 410 of the reference cited above, records the common name "bois cobré" from Martinique and Guadeloupe. He quotes Gómez de la Maza to the effect that it is a diuretic medicinal tea; a syrup made from it is used in the treatment of asthma. Shafer reports the corollas a white or yellow. The species has been collected in anthesis in January, February, and October, and in fruit in February and March. Holdridge found it in brush pastures at an altitude of 300 feet in Puerto Rico. The Dudley Herb. 166413, labeled as this species, is actually Psychotria sulzneri Small. Cooper describes our plant as a tall shrub or small tree, 10--15 feet tall, with creamy-white flowers, and found it at altitudes of 1800 to 2000 feet on Dominica. He records the common name "sylvania" from there.

Additional citations: PUERTO RICO: Holdridge 423 (N); Otero 308 (Bt--39906), 696 (Bt--52435). MONTSERRAT: Shafer 162 (Cm), 197 (Cm), 539 (Cm), 652 (Cm), 668 (Cm). DOMINICA: G. P. Cooper 60 (F--766225), 167 (Ca--549811, F--771385); Eggers 501 [Herb. Prager 18669] (Gg, Gg--31926). MARTINIQUE: Bailey & Bailey 206 (Ba); Ponthieu s.n. (S). WEST INDIES (island undesignated): Swartz 9 (S). COLOMBIA: Norte de Santander: Cuatrecasas 12845 (W--1851043). LOCALITY UNDESIGNATED: Collector undesig. 158 (Q).

#### AEGIPHILA MEDITERRANEA Vell.



Fig. 4. *Aegiphila racemosa* Vell.

References: Moldenke, *Phytologia* 1: 238 (1937) & 393. 1940; Sampaio & Peckolt, *Arquiv. Mus. Nac. Rio de Jan.* 37: 334. 1943.

In the first of the references cited above I ventured the opinion that the Rodriguez specimen there recorded was collected in the state of Rio de Janeiro, Brazil. It now appears that the specimen actually was collected in Misiones, Argentina. The plant was confused by the collector with Cordia Sellowiana Cham.

The herbarium labels which accompany Macbride's photograph no. 34358 are inscribed "Brazil Moldenke", implying that I collected the plant there depicted. Actually it was collected by George Gardner in 1836.

Additional citations: BRAZIL: Rio de Janeiro: G. Gardner 100 [Macbride photo 34358] (F--977197--photo, Kr--photo, N--photo). ARGENTINA: Misiones: D. Rodriguez 457 [Herb. Inst. Miguel Lillo 57251] (N), s.n. [Lillo 10448] (G).

#### AEGIPHILA MEDULLOSA Moldenke

Additional citations: BRAZIL: Rio de Janeiro: Saint-Hilaire C.50 (F--977114--fragment of type).

#### AEGIPHILA MEMBRANACEA Turcz.

Williams describes the plant as a shrub 2 m. tall, with orange fruit. His collection is a splendid fruiting specimen. Triana's collection was made at an altitude of 450 m. and was in anthesis in January. Steyermark's notes indicate a shrub 10 feet tall, with greenish-white corollas and filaments, grass-green calyx and rachis, and membranaceous leaves which are deep-green above and dull-green beneath. He found the plant in rich damp forests, at an altitude of 1925--2075 m., blooming in May. The label on the Chicago Natural History Museum's specimen of Hostmann 89 is inscribed "French Guiana?" The collection was made in Surinam.

Additional citations: COLOMBIA: Méta: Triana 3713, in part [5] (Jc). VENEZUELA: Bolívar: Ll. Williams 11220 (Ve). Mérida: Steyermark 56379 (F--1205613, N). SURINAM: Hostmann 89 [Macbride photo 24617] (F--633329--photo of isotype, F--686351--fragment of isotype, F--772031--photo of isotype, Kr--photo of isotype, N--photo of isotype).

#### AEGIPHILA MOLLIS H.B.K.

An additional synonym is Aegiphila pubescens (H.B.K.) Willd. ex Moldenke, *Suppl. List Invalid Names* 1, in syn. (1941). All the Bolivian material cited by me as this species in *Brittonia* 1: 406 (1934) and *Phytologia* 1: 239--240 (1937) & 394 (1940) is probably A. Steinbachii Moldenke. The Steinbach 3168 cited in these references is the type collection of A. Steinbachii. The Woodson, Allen, & Seibert 1174 from Panama and Dugand G. 639 from Colombia are anomalous in their extremely short pubescence



Fig. 5. Aegiphila Valerii Standl.



and may actually represent A. puberulenta Moldenke. H. H. Smith 870 in the University of California herbarium may be regarded as typical of the long-pubescent A. mollis. The Elias 581 and Haught 2288, cited as A. mollis in Brittonia 1: 405 (1934) and Phytologia 1: 239 (1937) & 394 (1940) prove actually upon re-examination to be A. puberulenta. The Goudot 2 cited in Phytologia 1: 239 as from an undetermined department of Colombia is actually from either Bolívar or Magdalena. It was collected at "El Volador", and there is a "Volador" in each of these departments.

The original description of A. salutaris H.B.K. states that the type was collected on the shores of the Orinoco close to Santo Thomas del Angostura. The Humboldt 983 cited by me in Phytologia 1: 283 (1938) and in the present contribution is also labelled "Herb. Willdenow 2834" -- which is the herbarium number given for the type collection -- but was collected at San Carlos on the Río Negro, Amazonas, Venezuela.

Dugand G. collected the species at an altitude of only 60--150 m. and describes it as a "shrubby small tree 4--5 m. tall" with the stem 15 cm. in diameter at the base. Cuatrecasas describes it as a very leafy shrub with green branches and greenish-yellow or ochraceous corollas or a small tree to 6 m. tall, growing at altitudes of 1400 to 1750 m., fruiting in March. He has found it along roadsides and in cultivated places. Haught describes it as a scrambler to 4 m. tall. Steyermark notes the corolla as pale-yellow, the rachis pale-green, and the leaves membranaceous, deep-green and reticulated above, gray-green beneath, growing at altitudes of 1065 to 2430 m.

Additional citations: PANAMA: Chiriquí: Woodson, Allen, & Seibert 1174 (F--969465, N). COLOMBIA: Atlántico: Dugand G. 639 (F--744565). Cauca: Lehmann 6692 [Macbride photo 17568] (Kr--photo, N--photo). El Valle: Cuatrecasas 13869 (N), 14462 (N, W-1852246). Cundinamarca: Boynland s.n. (F--976412); Cuatrecasas 8287 (W--1774636); Triana 3713 [2; 300; 678] (Jc). Magdalena: Haught 3686 (W--1708528); H. H. Smith 868 (Cm, Vt), 870 (Ca--584908, Cm, Vt), 1860 (Cm, Vt). Meta: Jaramillo, Mesa, Idrobo, & Fernández 332 (W--1900437). Tolima: Cuatrecasas 10516 (W--1796541). Department undetermined: Apolinar-María 122 (F--1007353). VENEZUELA: Amazonas: Humboldt 983 [Herb. Willdenow 2834; Macbride photo 17588] (F--663067--photo, Kr--photo, N--photo). Federal District: Fittier 7855 (Du--297798, Gg--311279). Guárico: Chardon 117 (W--1801748). Mérida: Steyermark 56314 (N). Miranda: T. González s.n. [Fetare arriba] (Ve). State undetermined: Humboldt XII [Herb. Willdenow 2838; Macbride photo 17586] (F--663065--photo, Kr--photo, N--photo).

#### AEGIPHILA MOLLIS var. INTERMEDIA Moldenke

Elias describes this plant as a tree 3--5 m. tall, with a smooth trunk, dark bark marked with gray spots, branching from

near the ground, the primary branches ascending, the secondary branches spreading or nutant, and the flowers gray-green. Dugand G. says it is a shrub with rather elongate branches, opposite leaves, and small tubular white flowers, growing on shaded banks of small streams in forests. It has been collected at altitudes up to 400 m., blooming in August and fruiting in January. It has been confused with A. cordifolia (Ruíz & Pav.) Moldenke. The Elias 673, cited as A. puberulenta Moldenke in Brittonia 1: 413 (1934) and Phytologia 1: 259 (1937), is actually A. mollis var. intermedia.

Additional citations: COLOMBIA: Atlántico: Dugand G. 1137 (F--930328); Elias 1458 (F--859231). Bolívar: Elias 673 (N--photo, W--1442993, Z--photo). Magdalena: H. H. Smith 329 (Ca--584590--isotype, Cm--isotype, Vt--isotype).

#### AEGIPHILA MONSTROSA Moldenke

Williams describes this plant as a slender tree or tall shrub, up to 25 feet in height, the bark light-gray, with a pale-brown tinge, moderately smooth, less than 1/4 inch thick, the inner bark light-brown, the trunk branching from the base, 4 inches in diameter, the fruit rounded, attached to the branches. He found it at the edge of roadways in fairly dense forests, and records the common names "café cimarrón" and "talalachi". Edwards found it in a dense tropical forest; Standley and Steyermark in low or wet thickets. The fruit is described by the two latter collectors as green or light-green, appearing in March. Standley collected it at sea-level. B. P. Reko in Mitobotanica Zapoteca, pp. 97 & 127 (1945) records the common name "tala lachi", which, he says, is probably a corruption of "be-la lachi" or "be-laga lachi".

Additional citations: MEXICO: Oaxaca: L. Williams 9120 (F--897547). BRITISH HONDURAS: H. H. Bartlett 11941 (F--659095), 13011 (F--659092); Forestry Dept. 13 (F--1001403); Gentle 263 (F--663977), 404 (F--713022), 948 (F--699375, Gg--237829). GUATEMALA: El Petén: C. L. Lundell 1492 (F--662818). Izabal: P. C. Standley 73129 (F--990806); Steyermark 38038 (F--1034591). HONDURAS: Atlántida: P. C. Standley 55268 (F--583996). Cortés: J. B. Edwards P.717 (F--759597, N). Yoro: Von Hagen & Von Hagen 1020 (F--943155).

#### AEGIPHILA MULTIFLORA Ruíz & Pav.

The Dombey s.n. from "Pasón Huaru-huari", cited in Phytologia 1: 251 (1937) as from an undetermined department, is actually from Madre de Dios. Metcalf describes the species as a bush 2--5 m. tall, with green calyx and lavender corollas, inhabiting dry open places in rocky soil in a region of much fog, at an altitude of 2700 m., blooming in May.

Additional citations: PERU: Huanuco: Ruíz & Favon s.n. [Huasachuaes & Falleo] (F--633375--photo of isotype). Puno: R. D.

Metcalf 30550 (W--1834986); Vargas C. 1311 (F--989516). Department undetermined: Dombey s.n. [Chili et Perou] (F--998416); Rufz 187 [Macbride photo 17587] (F--663066--photo, Kr--photo, N--photo); Rufz & Pavon 12/70 (F--712584, F--845337).

*AEGIPHILA NERVOSA* Urb.

Additional citations: JAMAICA: Swartz s.n. (F--633326--photo of type). HISPANIOLA: Haiti: Ekman H.472 (F--642166--photo).

*AEGIPHILA NOVOPRIBURGENSIS* Moldenke

The photograph of the label of the Delessert Herbarium isotype of this species, cited below, seems to prove definitely that the number of the type collection of this species is "194" [not "134" as hitherto cited by me in *Brittonia* 1: 350 (1934) and *Phytologia* 1: 251 (1937)].

Additional citations: BRAZIL: Rio de Janeiro: P. Clausen 194 [Macbride photo 28386] (F--830244--photo of isotype, Kr--photo of isotype, N--photo of isotype).

*AEGIPHILA OBDUCTA* Vell.

References: Lewkowitsch, Chem. Tech. & Analyt. Oils, ed. 6, 678, 1922; Hoshne, O Jard. Bot. S. Paul. 576--577, 1941; Sampaio & Peckolt, Arquiv. Mus. Nac. Rio de Jan. 37: 334, 1943.

An additional synonym is *Aegiphila obducata* Vell. apud Sampaio & Peckolt, Arquiv. Mus. Nac. Rio de Jan. 37: 334, in syn. 1943. The accepted specific name is also spelled with a capital initial letter in this reference.

Dusén reports the plant as growing at the edge of virgin forests; Mello Barreto describes it as a tree 3--5 m. tall. The Mello Barreto specimens are typical of the large-flowered bullate-leaved form of the species; the Handro represents the thin non-bullate-leaved form with smaller flowers. The flowers of at least the former form are described as odoriferous. Williams & Assis describe the plant as a "vine", with purple flowers, growing in forests at an altitude of 1400 m. Lewkowitsch, in the reference cited above, reports that a little-known Brazilian oil is extracted from this species. Niederstadt has determined that the yield is 21.6 percent. The oil has a specific gravity of 0.9579 at 26° C., its saponification value is 199.5, its iodine value 64.15, and its acid value 72.2. The species has been collected in anthesis in June, and in fruit in December.

Additional citations: BRAZIL: Minas Geraes: Mello Barreto 9109 (F--933081), 9111 (F--933073); Williams & Assis 7914 (G, N). Paraná: Dusén 8143 (F--668475); Jönsson 379a (Ca--533218, F--668474). Rio de Janeiro: Brade 10542 [Herb. Rio de Jan. 22947] (Ja); Herb. Rio de Jan. 31720 (Ja). Santa Catharina: Schwacke IV.184 [Herb. Rio de Jan. 32271] (Ja). São Paulo: Herb. Rio de Jan. 32268 (Ja). State undetermined: Herb. Rio de



Jan. 32267 (Ja), 32274 (Ja). CULTIVATED: Brazil: São Paulo: Handro, pl. viv. 442 [Herb. Inst. Biol. S. Paulo 33523] (F--895762).

AEGIPHILA ODONTOPHYLLA Donn. Sm.

Additional citations: COSTA RICA: Guanacaste: Ørsted 11174 [Macbride photo 22775] (Kr--photo, N--photo). Heredia: Pittier 288 (F--633320--photo of type).

AEGIPHILA PANAMENSIS Moldenke

Woodson has described the corolla of this plant as lemon-yellow or "greenish-cream", Matuda as yellowish-white. It has been collected in anthesis in August, and at altitudes of 1200 to 1500 m.

Additional citations: MEXICO: Chiapas: Matuda 2115 (Mh), 16791 (N). COSTA RICA: Alajuela: Brenes 4320 [105; 9516] (N), 9557 [180; 4395] (N). PANAMA: Chiriquí: Woodson & Schery 758 (N). Coclé: Woodson, Allen, & Seibert 1247 (F--969482, N), 1249 (F--969481, N), 1756 (N). Darién: P. H. Allen 856 (F--1005206).

AEGIPHILA PANICULATA Moldenke

Steyermark describes this plant as a vine, with pale-green leaves and orange fruit; Allen says it is a tree to 3 m. tall. It has been collected in fruit in October, November, and January. The Brenes 16823 and Steyermark 30757, cited below, have very typical fruit for this species and very typical fruiting-calyxes. They need only be compared with fruiting sheets of A. panamensis for proof that the two species are quite distinct. The Allen 1123 cited below was distributed as A. falcata Donn. Sm., but has the closely investing cupuliform calyx and conspicuously punctate leaves of A. paniculata. It was collected at an altitude of only 35 m.

Additional citations: GUATEMALA: Chiquimula: Steyermark 30757 (F--1037191). COSTA RICA: Alajuela: Brenes 16823 [2] (F--858958, N). PANAMA: Panamá: P. H. Allen 1123 (F--1005205).

AEGIPHILA PARAGUARIENSIS Briq.

Rojas collected this species "hanging over cliff", and Dusén found it at an altitude of 730 m.

Additional citations: BRAZIL: Mattogrosso: H. H. Smith s.n. [Herb. Rio de Jan. 32269] (Ja). Paraná: Dusén 15963 (F--668476). São Paulo: Heiner 270 (S). PARAGUAY: Hassler 4498 [Macbride photo 24618] (F--772032--photo of cotype, Kr--photo of cotype, N--photo of cotype); Rojas 12768 (N).

AEGIPHILA FARVIFLORA Moldenke

The label on the Macbride photographs, cited below, reads "2296" in error. The plant depicted is Spruce 589.

Additional citations: BRAZIL: Fará: Spruce 589 [Macbride



photo 28387] (F--830276--photo of isotype, Kr--photo of isotype, N--photo of isotype).

**AEGIPHILA PAVONIANA** Moldenke

Haught describes this as a small tree about 5 m. tall, with fairly conspicuous inflorescences of cream-colored flowers, blooming in December at an altitude of 100 m.

Additional citations: ECUADOR: Guayas: Haught 3004 (N).

**AEGIPHILA PERNAMBUCENSIS** Moldenke

Moraes Vasconcellos has found this plant in woods and records the common names "caféiro de cabra" and "cafeliro de cabra". The species is closely related to A. australis Moldenke and not to A. crenata with which it has been confused, but which belongs in a different subgroup of the genus.

Additional citations: BRAZIL: Parahyba: Moraes Vasconcellos 841 (N), 853 (N), s.n. [Herb. Serv. Florest. Est. S. Paulo 841] (W--1564377), s.n. [Herb. Serv. Florest. Est. S. Paulo 455] (W--1564367). Pernambuco: Fickel 3042 (Du--255725--isotype, Mi--isotype).

**AEGIPHILA FERPLEXA** Moldenke

Steyermark describes this plant as a tree 20--25 feet tall, with firmly membranous leaves, rich-green above, pale dull-green beneath, calyx rich-green, corolla greenish-yellow, and style whitish, blooming in April at an altitude of 1200--1480 m.

Additional citations: VENEZUELA: Monagas: Steyermark 62260 (N).

**AEGIPHILA PERUVIANA** Turcz.

Klug has collected this species at altitudes of 1200 to 1600 meters.

Additional citations: PERU: San Martín: Klug 3511 (F--736324) Spruce 4275 [Macbride photo 24619] (F--772033--photo of isotype, N--photo of isotype).

**AEGIPHILA FLATYPHYLLA** Briq.

Additional citations: PARAGUAY: Hassler 8056 [Macbride photo 24620] (F--772028--photo of isotype, Kr--photo of isotype, N--photo of isotype).

**AEGIPHILA PUBERULENTA** Moldenke

This plant is described as a shrub 2--4 m. tall or a tree, with white or creamy-yellow corollas which soon fall off, fragrant, blooming in June and October, at altitudes of 50 to 510 m. It inhabits thickets and is abundant on limestone soil. It has been widely confused with A. mollis, A. mollis var. intermedia, and A. glandulifera. The Elias 673 cited as A. puberulenta in Brittonia 1: 413 (1934) and Phytologia 1: 259 (1937) proves to

be A. mollis var. intermedia. Common names recorded by Dugand are "bollo limpio" and "San Juan de la verdad". This distinguished botanist notes that his no. 720, cited below, is "probably the same as no. 639", but I regard the latter as A. mollis.

Additional citations: COLOMBIA: Atlántico: Dugand G. 256 [Mus. Yale School of Forestry 22545] (F--664070), 720 (F--744907); Elias 581 (N), 1102 (F--699290, N, N, N). Bolívar: Dugand & Jaramillo 3431 (W--1852289). Magdalena: Haught 2288 (N). VENEZUELA: Aragua: Ll. Williams 10222 (F--946533).

#### AEGIPHILA QUINDUENSIS (H.B.K.) Moldenke

Williams reports this to be a shrub or small tree, 1.5 m. tall, with light-gray fairly smooth bark, creamy-white corollas, and globular yellowish or vermilion fruit. The fruit is very large, 1.3--1.5 cm. in diameter, the fruiting-calyx very shallowly cupuliform, wide-spreading, about 1 cm. wide. heavy, glabrous, its rim distinctly lobed. The species has been found in bloom in May, and at altitudes of 450--960 m. It has often been confused with A. martinicensis. Steyermark describes it as a tree 20 feet tall, with membranous leaves that are dark-green above and pale-green beneath, the calyx pale yellow-green, the corolla pale-yellow, and the filaments whitish. He found it at altitudes of 1200 to 1450 m.

Additional citations: VENEZUELA: Aragua: Pittier 14993 (W--1833196), 15474 (W--1909582), 15481 (W--1909584); Ll. Williams 10251 (F--946419, F--989699, Gg--295555), 10391 (F--948392). Carabobo: Karsten s.n. (F--642170--photo). Monagas: Steyermark 62046 (N).

#### AEGIPHILA RACEMOSA Vell.

Sampaio & Peckolt in Arquiv. Mus. Nac. Rio de Jan. 37: 334 (1943) reduce this species to A. cuspidata Mart., but this is an error. Martius' species is conspecific with A. vitelliniflora. Steyermark describes the plant as a "vining shrub", 15 to 25 feet tall. Monteiro da Costa calls it a "vine", blooming in January, called "cawuira", inhabiting lowlands, and used in aromatic baths for nervous diseases.

Additional citations: VENEZUELA: Mérida: Steyermark 56728 (F--1221912, N). BRITISH GUIANA: De la Cruz 4292 (Cm), 4552 (Cm); Herb. Forest Dept. Br. Guian. 3081 [F.345] (K). BRAZIL: Pará: Monteiro da Costa 240 (F--693925).

#### AEGIPHILA RIEDELIANA Schau.

Sampaio & Peckolt in Arquiv. Mus. Nac. Rio de Jan. 37: 334 (1943) reduces A. serrata Vell. to A. graveolens Mart. & Schau., but as has been pointed out by me in Brittonia 1: 311 (1934) it seems more properly to belong with A. Riedeliana.

Additional citations: BRAZIL: Bahia: J. E. Fohl 4392 [Macbride photo 34309] (Kr--photo of cotype, N--photo of cotype).

Rio Grande do Sul: Rambo 29169 (N).

*AEGIPHILA RORAIMENSIS* Moldenke

Steyermark describes this species as a shrub 5--8 feet tall, with subcoriaceous leaves that are dark-green above and dull-green beneath with gray-buff pubescence, stems buff-pubescent, and calyx gray-buff. He found it in woods bordering a savanna on a ridge above La Laja, at the base of Sororopan-tepui, alt. 1375--1460 m., blooming in November. It has been confused with the genus Citharexylum.

Additional citations: VENEZUELA: Bolivar: Steyermark 60812 (N).

*AEGIPHILA SALTICOLA* Moldenke

The supplementary characters given by me for this species in *Phytologia* 1: 397--398 (1940) applies only to the Ducke specimen there cited. It seems, on re-examination, that this specimen may actually be A. intermedia Moldenke. It is possible that A. salticola is actually conspecific with A. intermedia. Mexia records the common name "genipapo do matta".

Additional citations: BRAZIL: Maranhão: Fróes 11856 (N). Pará: Mexia 5922 (Gg--286582--isotype).

*AEGIPHILA SCANDENS* Moldenke

Ducke describes this as a woody climber with greenish-white flowers, blooming in March, growing in old secondary forests on terra firma.

Additional citations: BRAZIL: Amazonas: Ducke 1190 (N, W--1832444).

*AEGIPHILA SCHIMPFII* Moldenke

The type collection of this species, cited by me in *Phytologia* 1: 266 (1937) as from "Biscay, Ecuador", was actually collected at Bucay, Guayas, Ecuador. Svenson in *Am. Journ. Bot.* 33: 480 (1946) describes the species as a shrub 6--9 feet tall, with yellow flowers and exserted stamens, found along streams near sea-level, blooming in April.

Additional citations: ECUADOR: Guayas: Svenson 11448 (N).

*AEGIPHILA SELLOWIANA* Cham.

References: Hoehne, Kuhlmann, & Handro, *O Jard. Bot. S. Paul.* 577. 1941; *Instit. de Bot. Observ. Ger. Contrib.* 5: 19 & I. 1942; Hoehne, *Relat. Anual Inst. Bot.* 1944: 118. 1944.

It has been collected in fruit in March and April. Additional common names are "pau de tamanco", "tamanqueira", "tamanqueiro", "cinzeiro", and "papagaio". Mexia describes it as a slender tree 10 m. tall, with a pithy stem and long straggling branches and slightly fragrant greenish-white or white flowers and fruit in heavy clusters, growing in second-growth woods commonly.

## A PROPOSAL TO STABILIZE PLANT NAMES

Elbert L. Little, Jr.

The essential points in botanical nomenclature are fixity of names and rejection of names which may cause error or "throw science into confusion" (Art. 4, International Rules of Botanical Nomenclature. Ed. 3. 1935). All systematic botanists should strive towards a more stable nomenclature, especially for the benefit of workers in other branches of plant science throughout the world, so that botany can make satisfactory progress (Art. 1).

### THE PROBLEM

A serious obstacle to the goal of stability of names is the revival in recent years of many old, abandoned names. Some were so obscurely published that they were unknown to contemporary botanists and escaped notice of indexers. Other names were poorly described in the first place and are of doubtful application in the absence of type specimens. Except for the fact that under the Rules they retain priority from their original publication, these long-lost names are new names. However, as old names under the Rules, these names must be accepted, even if other names meanwhile have become established in usage. Also, these old names must be credited to their original authors, who scarcely deserve to be so honored now at this late date.

Four recent changes in names of trees of the United States will serve as examples. These old names upsetting existing nomenclature were not in Index Kewensis.

Abies nobilis A. Dietr. (Fl. Berlin 793. 1824), an obscure synonym and earlier homonym, was the basis for the rejection in 1940 of A. nobilis (Dougl.) Lindl. (Penny Cycl. 1:30. 1833), a name universally established in usage without synonyms. As the latter technically was invalid as a later homonym, it was renamed A. procera Rehd. (Rhodora 42: 522. 1940).

Juglans microcarpa Berland. in Berland. & Chovel (Diario Viage Comisión Límites Mier Terán 276. 1850). This briefly described name concealed in a Mexican diary of travels apparently was unknown to botanists until adopted by Johnston (Arnold Arboretum Jour. 25: 436. 1944) to replace the familiar name, J. rupestris Engelm. ex Torr. (in Sitgreaves, Rpt. Exped. Zuni Colo. Rivers 171, pl. 15. 1853), which was without known synonyms.

Ulmus rubra Muhl. (Amer. Phil. Soc. Trans. 3: 165. 1793). This name in a local flora list, proposed merely as a new name



without description for U. americana Marsh. (Arbustr. Amer. 156. 1785), not L. (Sp. Pl. 226. 1753), was revived in 1945, after 152 years of dormancy, by Fernald (Rhodora 47: 203-204. 1945). The name in universal use which now must be rejected as a synonym is U. fulva Michx. (Fl. Bor.-Amer. 1: 172. 1803).

Cotinus obovatus Raf. (Autikon Botanikon 82. 1840), briefly described in a rare work of Rafinesque, apparently was not again accepted until a facsimile reprint of this rare book was published in 1941. The established name, C. americanus Nutt. (No. Amer. Sylva 3: 1, pl. 81. 1849), thus was technically invalid as a synonym. Accordingly, C. obovatus Raf. was adopted by Little (Okla. Acad. Sci. Proc. 23: 21-23. 1943).

Other illustrations will be familiar to readers. Changes such as these, not uncommon in current taxonomic publications, not only do no good but create confusion in violation of Art. 4. As a result, taxonomy is injured in its relations with other branches of botany, whose workers do not understand how continual changes in names can constitute progress towards stability.

The problem, therefore, is to find a way to prohibit or lessen the revival of old, abandoned names.

#### POSSIBLE SOLUTIONS

Several solutions of the problem may be considered. Perhaps the simplest would be the establishment of a code of ethics among taxonomists, a gentlemen's agreement not to take up these old names. Possibly Art. 5, to follow established custom in the absence of a rule, might be stretched to cover these cases. However, the prevailing custom seems to be the opposite, to bring to light all these old names as soon as possible. A few botanists say that when they run across an old name that might upset the accepted nomenclature, they put the book back on the shelf. This admirable practice, though, merely postpones the upheaval and permits it to become greater, for sooner or later another worker with different ideas probably will discover the same name in the same book. Then, the apparent oversight of the old name by the first monographer may be interpreted by the second as evidence of lack of thoroughness in bibliographic work. Seldom do new combinations follow revival of old names. The reward for the discovery is the example of careful bibliographic work and perhaps a sense of importance in causing the change. As the temptation to revive an old name is great, voluntary agreement seems unlikely as a solution.

The problem may become progressively less important in the future, as more and more old names are adopted, because, after all, the number of different rare books printed in the past from 1753 to date does have a limit which eventually will be

approached. On the other hand, publication of obscure scientific books and journals continues.

Good modern library facilities, including bibliographic, abstract, and indexing services and wide circulation of publications tend to prevent recently published names from being overlooked. However, the enormously increased quantity of botanical publications in recent years operates to offset the library aids.

Art. 38, requiring Latin diagnoses for names of new groups of plants published after Jan. 1, 1935, probably will be of great value in the future in making illegitimate various obscurely, inadequately, and incidentally published names otherwise valid.

Other solutions involve exception to the fundamental principle of priority (Art. 16). During certain times in the past, retention of names lacking priority was accomplished through the influence of leading workers. In some ways priority seems to conflict with stability. That priority is not sacred is shown by the long list of nomina generica conservanda adopted under Art. 21 and without which nomenclature would be chaotic and exceedingly unstable. Under this rule any rediscovered old generic names which would cause disadvantageous changes can be formally rejected.

Conservation of specific names in exception to priority has been rejected decisively at previous Botanical Congresses and is not a likely solution. It does not seem feasible to make a special exception in the Rules for a single specific name, when it is simpler to retain the older name. Rules affecting names in general published under similar conditions are less complex in operation than rules permitting special exceptions and requiring action by an International Botanical Congress upon each name.

One attempt toward stability was the adoption at the last Congress in 1935 of a motion for a committee to draw up a list of economic plants under the Rules and that this list remain in use for a period of ten years. Though the list was not prepared, a list of standard generic names was issued. In one country an official tree list including a few invalid but well-known names was adopted by foresters.

Proposals have been made to amend the Rules to reject names in certain old or rare works. For example, at the last Congress a proposal to reject names in a list of old works not using binomials was referred to a committee for study. However, a rule containing a list of books would be of questionable value and would not eliminate confusion, because there would still be other and rarer books not covered.

A radical suggestion has been made to establish new starting points of priority, such as modern monographs. Even the Rules (Art. 20) permitted later starting points than 1753 for a few

groups. Perhaps in the distant future, when nomenclature becomes extremely complicated, this suggestion may be adopted by necessity.

Another but rather discouraging possible solution is that, if world peace is not established, the atomic bomb and global warfare might lead to the destruction of civilization, including the botanists with their books, herbaria, and Rules. Then, at some later date there might arise an altogether different system of botanical nomenclature with a new set of rules, new starting date, and entirely new names.

#### THE PROPOSAL

I believe an addition to the Rules is desirable to help maintain stability by prohibiting the revival of old, abandoned names. An informal note that I favor "amending the rules to disallow priority changes due to later discoveries in obscure books 100 years or more old" has been published (W. A. Dayton, Jour. Forestry 41: 373. 1943). My proposed addition to the International Rules of Botanical Nomenclature follows:

Article 63 bis. A name (of a taxonomic group) more than one hundred years old but which has not been accepted as valid, so far as known, by any subsequent author (exclusive of indexes of nomenclature) within the first one hundred years after publication (or by Jan. 1, 1950, in the case of a name published before 1850) must be rejected as a nomen extinctum if it is an earlier synonym or earlier homonym of any name otherwise valid and accepted in use.

In other words, an extinct name, or nomen extinctum, is a name which was accepted by no other authors within the first hundred years after publication but which during this time has been replaced by another name or has been used for another group. As both the old, unused name and its synonym or homonym cannot be retained in use, the old name, upon its discovery is retained in accord with the principle of fixity of names.

Though this proposal would apply to all taxonomic groups, its chief value would be for names of species and their subdivisions. Retention of generic names in exception to strict priority as nomina conservanda has been provided under Art. 21.

Under this proposal, acceptance by a second author within a century automatically guarantees a name its priority. However, mere listing of the name as a synonym by later authors would not constitute acceptance. Neither publication of the name in a second work by the original author nor reprint of the original work, such as a facsimile edition of a rare book, would count. It has seemed best to exclude indexes of nomenclature as not constituting acceptance of the name by a second author.



Some indexes do not attempt to pass upon the validity or synonymy of their names. Many overlooked specific names were omitted from Index Kewensis, though upon discovery afterwards were included in the Supplements. Also, some names of doubtful identity are listed by indexes as a bibliographic record.

The year 1950, when this proposal would become effective, if adopted as a rule, has been set as the starting date to apply to all names more than one hundred years old; that is, names published between 1753 and 1850. Without this starting date the proposal would be retroactive (Art. 2) to names becoming one hundred years old in 1853 and successive years, and some names restored after an interval of more than one hundred years but now already accepted in usage would be invalidated. In the future, names published after 1850 would automatically be rejected upon remaining unknown and unaccepted by a second author for a century. For example, an obscure name published in the year 1868 would retain its validity and priority if discovered and used by a second author before 1968. If not discovered until after 1968, this name would be rejected provided it had a synonym or homonym.

The final clause, "if it is an earlier synonym or earlier homonym of any name otherwise valid and accepted in use," is essential. When I first discussed my proposal, one botanist protested that a few names of taxonomic groups of small size or of restricted geographic distribution might pass a century known but dormant because later botanists had had no occasion to refer to them. To invalidate these dormant names without synonyms would leave their taxonomic groups nameless. So, if it has acquired neither a synonym nor a homonym, the old name retains its priority and is not rejected as an extinct name.

The proposed rule would work like this. A systematic botanist in the course of his work discovers an obscure name in a rare book more than a hundred years old and from the description identifies it with a later name in use. Or, he recalls that a later homonym is in use. A search through pertinent literature fails to disclose acceptance of this old name by another author. Thus, the old name clearly must be rejected as a romen extinctum. The discoverer then publishes a taxonomic note formally rejecting the name and giving himself due credit. Thus, one more name in use is retained, and one or two confusing changes in names are avoided.

There would also be broader effects. This proposal would automatically invalidate many known names of doubtful identity, especially those inadequately described and without type specimens, if afterwards they are ever found synonymous with later names in use. For example, future workers need not spend time on the names of Rafinesque which have not been taken up by another author, probably several thousand names. This proposal would simplify the nomenclature of varieties by preventing ac-



ceptance of many old, briefly described varieties. Otherwise, these old varietal names, which generally are not indexed, may cause confusion as the taxonomists of the future turn more to the recognition of subdivisions of species.

To a minor extent, this proposal would contradict Art. 61, which rejects later homonyms but which was not adopted until 1930. A later homonym would be legitimate in those infrequent cases not already corrected where the earlier homonym is more than one hundred years old and has not been adopted by a second author. Thus, some later homonyms invalidated in 1930 by Art. 61 but not yet renamed could be retained in usage.

The application of Art. 21, which provides for conserved names, would be simplified by this proposal. Some very old generic names, particularly earlier homonyms not yet formally made nomina rejicienda, would automatically be rejected as nomina extincta. There would be no need to act upon these names individually and add the later names to the already lengthy list of nomina conservanda. The following examples of generic names of trees proposed by me for conservation (Madroño 7: 240-251. 1944) could be retained without special action under this proposal: Cedrus Trew, Condalia Cav., Rhacomia L., Bucida L., and Halesia Ellis.

The suggested time limit of one hundred years could be lowered, if desired. For example, Art. 21 suggests that in the selection of nomina conservanda preference be given to names which have come into general use in the fifty years following their publication.

In some instances it may be difficult to determine whether the old name has been taken up by a second author. There is the possibility that a name once rejected as a nomen extinctum would afterwards be found in a later work and would have to be adopted. Also, it may not always be clear whether an author mentioning a name accepts it as valid. However, all names not conserved are subject to some risk of change.

This proposed addition to the International Rules has been submitted to Dr. W. H. Camp, Chairman, Committee on Nomenclature, American Society of Plant Taxonomists, New York Botanical Garden, New York 58, N. Y. The Committee is considering proposals for amendment to the Rules to be officially sponsored by the Society at the next International Botanical Congress in 1950.

A discussion of this proposal is presented here, in order that interested botanists may consider it. Perhaps improvements in the proposal and its phraseology will be suggested and appropriate examples will be offered. Whether a majority of systematic botanists would favor adding to the complicated Rules a proposal of this kind to lessen the revival of old, abandoned names is not known.



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## NOTES ON NOMENCLATURE OF TREES

Elbert L. Little, Jr.

Here included are notes on the nomenclature of longleaf pine (Pinus palustris Mill.), Siebold walnut (Juglans ailan-  
tifolia Carr.), and sugar maple (Acer saccharum Marsh.) and  
a new combination in Glycosmis.

### LONGLEAF PINE, PINUS PALUSTRIS

The name Pinus palustris Mill. (Gard. Dict. Ed. 8, Pinus  
No. 14. 1768) has been applied, with some confusion, to two  
species of pines of southeastern United States. Most recent  
authors have adopted Pinus palustris Mill. for the longleaf  
pine and Pinus caribaea Morelet (Rev. Hort. Côte d'Or 1: 105.  
1851 (not seen); Soc. Hist. Nat. Moselle Bul. 7: 100. 1855)  
for the slash pine.

However, Small (Man. Southeast. Fl. 4, 5. 1933) used Pinus  
palustris for a variation of slash pine known also as swamp  
pine and applied to other variations of slash pine the names P.  
caribaea and P. heterophylla (Ell.) Sudw. (Torrey Bot. Club  
Bul. 20: 45. 1893; not P. heterophylla K. Koch, 1849, nor  
Presl, 1849). For the longleaf pine, Small accepted P. aus-  
tralis Michx. f. (Hist. Arbr. Amér. Sept. 1: 64, pl. 6. 1810).  
Previously, Small (Fl. Southeast. U. S. 27. 1903) had used P.  
palustris for the longleaf pine, with P. australis as a syno-  
nym. Sargent (Silva No. Amer. 11: 151. 1897) summarized the  
older references adopting P. palustris and P. australis for the  
longleaf pine. Recent authors accepting P. palustris for the  
swamp pine and P. australis for the longleaf pine include Van  
Dersal (Native Woody Plants U. S. U. S. Dept. Agr. Misc. Pub.  
303: 187, 191. 1938) and De Vall (Fla. Acad. Sci. Proc. 5 (1940):  
121-132. 1941).

As it is the oldest name, Pinus palustris Mill., "the three-  
leaved Marsh, American Pine with the longest leaves," should  
be adopted for one particular species, if the description is  
considered adequate for recognition of a species. Unfortunately,  
the original description, based upon Pinus Americana palus-  
tris trifolia, foliis longissimis DuRoi (Traité Arbr. Arbust.  
France 2: 126. 1755), is rather brief. The specific epithet,  
translated by Miller as "marsh," is misleading for the large,  
upland longleaf pines, as is Miller's statement that they grow  
"naturally on swamps in many parts of North America, where I  
have been informed they grow to the height of twenty-five or  
thirty feet." However, he added: "Their leaves are a foot or

more in length, growing in tufts at the end of the branches, so have a singular appearance ..."

Pinus australis Michx. f., "the long leaved pine," accompanied by a Latin diagnosis, a colored plate, and 22 pages of French description and discussion, including turpentine, is identified beyond doubt as the familiar longleaf pine. However, F. A. Michaux cited as synonym "P. palustris, Linn." and indicated that he was renaming P. palustris because that name was not appropriate for a species not of swamps. His exact words (p. 65) were: "J'ai pensé également que la dénomination spécifique d'australis étoit préférable à celle de palustris, sous laquelle cette espèce est décrite par les botanistes; car cette dernière donne une idée absolument fautive de la nature du sol où croît cet arbre." The substitute name, P. australis, is not especially appropriate either, as there are several species of southern pines. Miller's name was not cited as author, but the mention of Linnaeus probably is sufficient to connect the name and synonymy irregularly through Willdenow's edition (Ed. 4) of 'Linnaeus' Species Plantarum (4 (1): 499. 1805) and older references, such as Michaux (Fl. Bor.-Amer. 2: 204. 1803), back to Miller's original publication.

Thus, under Art. 60 (1) of the International Rules, P. australis Michx. f. is invalid, as it was nomenclaturally superfluous when published. It must be rejected and cannot be used for the longleaf pine. Furthermore, under Art. 59, P. palustris must not be rejected merely because it is badly chosen or disagreeable in stating the habitat incorrectly as marshes.

Pinus palustris Mill., the name generally used, should be retained for the longleaf pine. Its identity seems clear in spite of the minor inaccuracies in the original description noted above. No other species of this region has needles more than a foot long. Even F. A. Michaux in renaming the species recognized Miller's short description as applying to the longleaf pine. Continued use of Miller's name for a second species would result in further confusion.

The name Pinus caribaea Morelet apparently is the oldest available name for the slash pine. Whether the more northern variation merits specific segregation or is more properly a geographic race not requiring a separate scientific name is uncertain. Additional field study of these variations would be desirable. The available specific name for this swamp pine is P. elliotii Engelm. (Acad. Sci. St. Louis Trans. 4: 186, pl. 1-3. 1880). However, the differences seem no greater than those of geographic races of certain other species of pines with extensive ranges.

## SIEBOLD WALNUT, JUGLANS AILANTIFOLIA

While checking the nomenclature of the trees of the United States, I observed that the scientific name of the cultivated Siebold walnut from Japan, Juglans sieboldiana Maxim., was technically invalid as a later homonym of the fossil species J. sieboldiana Göppert. Accordingly, I adopted J. ailantifolia Carr. for the Siebold walnut (Wash. Acad. Sci. Jour. 33: 132. 1943).

Rehder (Arnold Arboretum Jour. 26: 68. 1945) accepted this nomenclatural change and made a new combination for the variety, Juglans ailantifolia var. cordiformis (Maxim.) Rehd. Afterwards Rehder (Arnold Arboretum Jour. 26: 472. 1945) adopted for the specific name J. cordiformis Maxim., published simultaneously with J. sieboldiana Maxim. and previously united with the latter as the variety. The new combination J. cordiformis var. ailantifolia (Carr.) Rehd. was proposed also.

However, by odd coincidence Maximowicz's two new species of Juglans published on adjacent pages both are invalid as later homonyms. J. cordiformis Maxim. is not available either, because of the much earlier J. cordiformis Wangerh., a name not in Index Kewensis but familiar as the basonym of Carya cordiformis (Wangerh.) K. Koch, bitternut hickory. Thus, J. ailantifolia Carr. remains the valid name for the Siebold walnut.

The essential synonymy of the species and variety are summarized below. Additional later synonyms were cited by Rehder.

## JUGLANS AILANTIFOLIA Carr.

## SIEBOLD WALNUT

Juglans sieboldiana Maxim., Acad. Impér. Sci. St.-Pétersb. Bul., sér. 3, 18: 60, fig. 1872. Not Juglans sieboldiana Göppert, Tert. Fl. Insel Java 154. 1854; nomen nudum. Not Juglans sieboldiana Göppert, Tert. Fl. Schosnitz Schles. 36, pl. 25, fig. 2. 1855 (fossil, Miocene, Silesia).

Juglans cordiformis Maxim., Acad. Impér. Sci. St.-Pétersb. Bul., sér. 3, 18: 62, fig. 1872. Not Juglans cordiformis Wangerh., Beitr. Forstwiss. Nordamer. Holz. 25, pl. 10, fig. 25. 1787; as "Juglans."

Juglans ailantifolia Carr., Rev. Hort. [Paris] 50: 414, fig. 85-86. 1878.

## JUGLANS AILANTIFOLIA Carr. var. CORDIFORMIS (Makino) Rehd.

## FLAT SIEBOLD WALNUT (heartnut)

Juglans cordiformis Maxim., Acad. Impér. Sci. St.-Pétersb. Bul., sér. 3, 18: 62, fig. 1872; later homonym.

Juglans sieboldiana var. cordiformis [Maxim.] Makino, Bot. Mag. Tokyo 9: 313. 1895; 15: 94. 1901.

Juglans ailantifolia var. cordiformis Rehd., Arnold Arboretum Jour. 26: 68. 1945.



Juglans cordiformis var. ailantifolia (Carr.) Rehd., Arnold  
Arboretum Jour. 26: 472. 1945.

#### SUGAR MAPLE, ACER SACCHARUM

The scientific name of the sugar maple, Acer saccharum Marsh. (Arbustr. Amer. 4. 1785), has been the subject of much controversy in recent years. Some botanists have rejected this name as a misspelling or orthographical error of A. saccharinum L. (Sp. Pl. 1055. 1753) and have taken up A. saccharophorum K. Koch (Hort. Dendrol. 80. 1853) or A. nigrum Michx. f. (Hist. Arbr. For. Amér. Sept. 2: 238, pl. 16. 1812), if the two species are united. Majority opinion seems to favor retention of the widely accepted name, A. saccharum. This name probably can be retained under Art. 6, which provides for following established custom where the consequences of rules are doubtful. However, it is hoped that the permanent International Executive Committee to interpret the Rules in doubtful cases (Art. 73) will issue an Opinion on Acer saccharum. Otherwise the nomenclature will remain unsettled and subject to future proposals for change from time to time.

So much has been written about the nomenclature of the sugar maple that it is difficult to contribute new information. The most detailed history is that by Rousseau (Nat. Canad. 67: 161-200, 201-224, illus. 1940. Reprinted as: Univ. Montréal Inst. Bot. Contrib. No. 35, 66 p., illus. 1940. Also, No. 36: 36-37. 1940). In rejecting A. saccharum Marsh., Rousseau has led others to accept A. saccharophorum K. Koch. Attempts to interpret Marshall's intention, of which the latest is by Gleason (PHYTOLOGIA 2: 201-212. 1947), have not been entirely satisfactory, because the interpretations have differed.

Though now established in usage, Acer saccharum was not adopted by other authors until more than a century after its publication in 1785. Britton (N. Y. Acad. Sci. Trans. 9: 10. 1889; Cat. Fl. N. J. Geol. Surv. N. J. Rpt. 2 (1): 78. 1890) revived the name in 1889 and made the combination A. saccharum var. nigrum (Michx. f.) Britton. Widespread acceptance probably dates back only about forty years to the publication in 1908 of the seventh edition of Gray's Manual by Robinson and Fernald. Older botanists still active learned the names in the sixth edition of Gray's Manual by Watson and Coulter (1889), in which the sugar maple was A. saccharinum Wangenh. and the silver maple was A. dasycarrum Ehrh. The double change of A. saccharinum from the sugar maple to silver maple and the substitution of the unfamiliar, almost identical name, A. saccharum, for the sugar maple doubtless caused temporary confusion and was unpopular. Surely it was a greater disturbance than the present proposed change from A. saccharum to A. saccharophorum.

Sargent (Gard. and Forest 2: 364. 1889; 4: 148. 1891) at first refused to take up A. saccharum, interpreting it as a misprint. Noting also that Marshall's plant could not be satisfactorily determined from the description and that Marshall left no herbarium, Sargent concluded (p. 148) that "the only safe way is to pass over his name entirely." In his *Silva* (*Silva No. Amer.* 2: 97. 1892) Sargent adopted A. barbatum Michx. (*Fl. Bor.-Amer.* 2: 252. 1803). However, in a supplementary volume (*Silva No. Amer.* 13: 7. 1902), he rejected that name as based on a mixture and reluctantly accepted A. saccharum "for the sake of uniformity of nomenclature," while repeating his objections.

Adoption of Marshall's name has not been universal. In 1913 Nieuwland (*Amer. Midland Nat.* 3: 182. 1913) rejected A. saccharum as "absurd and besides homonymous" and "ungrammatical." Mackenzie (*Rhodora* 28: 111-112, 233-234. 1926) contended that this "fictitious name" should be abandoned. Introducing new evidence, he noted that in the French edition of Marshall's book, published in 1788, the spelling was corrected to A. saccharinum, and he cited an earlier spelling, A. sacchatum Mill. (*Gard. Dict. Abridged. Ed. 6, Acer No. 6. 1771*). Small accepted Marshall's name in his *Flora* (*Fl. Southeast. U. S.* 741. 1903) but rejected it in his *Manual* (*Man. Southeast. Fl.* 824. 1933) as "merely a misspelling."

Marshall's *Arbustrum Americanum* (169 p. Philadelphia, 1785) was a popular catalog in English, without Latin descriptions, authors' names, and citations, and thus differed from the technical botanical books of that age. As explained in the introduction (p. viii), the catalog contained Linnaean names and English names, generic descriptions, and "a plain and familiar description of the appearance, manner of growth, &c." of the species and varieties, with notes on the soil, habitat, and uses. The book closed with a page devoted to an advertisement stating that seeds and growing plants were offered at a reasonable rate by the author.

The arguments for and against Acer saccharum Marsh. as the name for the sugar maple may be summed up as follows:

**AFFIRMATIVE.** 1. Marshall in 1785 published the name Acer saccharum with the common name "sugar maple" and with a popular, English description which can be interpreted and accepted as fitting the sugar maple, at least in part.

2. Technically the sugar maple was then without a scientific name, as Acer saccharinum L. referred to the silver maple.

3. Positive proof that "saccharum" is a changed spelling of "saccharinum," whether intentional or accidental, is lacking and probably cannot be obtained.

4. The name Acer saccharum Marsh. is now established in

usage, and change of names would create confusion.

NEGATIVE. 1. The popular, English description of Acer saccharum Marsh. is indefinite. As Marshall left no herbarium, positive identification of the name cannot be made.

2. In order to account for Linnaeus' four species of maples native in the United States, Acer saccharum must correspond to A. saccharinum of Linnaeus. Marshall did not list both names.

3. The name Acer saccharinum was confused at that time and applied both to the silver maple and the sugar maple.

4. It is highly improbable that a botanist in the year 1785 would have assigned a new specific name almost identical with the Linnaean name of another species in the same genus and known from the same region.

5. Positive proof that "saccharum" is a changed spelling of "saccharinum," whether intentional or accidental, cannot be offered because Marshall's popular book omitted the technical details. Authors and citations of previously published names were not stated, and new species were not indicated.

6. Contemporary authors did not accept Acer saccharum as a valid name for a new species. Also, in both the French and German editions of Marshall's book, the translators changed the spelling to A. saccharinum.

7. Not until more than a century later, in 1889, was Acer saccharum finally adopted by another author, one who was making a revolutionary attempt to restore old names having priority. In the meantime other authors, such as Torrey and Gray (1840), had knowingly passed over the name.

The simplest conclusion from all these lines of evidence is that Marshall described the sugar maple but that the spelling "saccharum" was an error for "saccharinum." If Acer saccharum Marsh. had remained in disuse, would present-day botanists now revive and accept the name, in view of the above evidence? I think not. Perhaps Acer saccharum owes its acceptance largely to the reform movement in which so many names were changed at the same time.

Acer sacchatum Mill. (Gard. Dict. Abridged. Ed. 6, Acer No. 6. 1771), apparently an error for "saccharinum," can be rejected as superfluous when published (Art. 60), because Miller quoted Linnaeus' Latin description of A. saccharinum and cited "Lin. Sp. Pl. 1055." In other editions from 1768 on, Miller (Gard. Dict. Ed. 8. 1768) used the spelling A. saccharinum and associated Linnaeus' name with the sugar maple instead of the silver maple, as did Wangenheim (Beytr. Forstwiss. Nordamer. Holz. 26, pl. 11, fig. 26. 1787) and many later authors. A. saccharum Marsh. cannot be discarded so readily, because Marshall did not cite Linnaeus nor even mention authors of

previously described names.

Another of Marshall's names revived by Britton as basonym for the pecan, Juglans pecan Marsh. (Arbustr. Amer. 69. 1785), has been rejected by Rehder (Arnold Arboretum Jour. 22: 571-572. 1941), by Little (Amer. Midland Nat. 29: 501-502. 1943), and by Fernald (Rhodora 49: 194-196. 1947). Anyone verifying Marshall's "description" will see that the name is almost a nomen nudum. Nevertheless, the name was widely accepted for a time and now must be discarded.

It seems that a majority of the botanists concerned wish to retain the widely accepted name, Acer saccharum Marsh. It certainly is simpler and less confusing to retain a doubtful name already in use than to attempt a change. As Gleason (PHYTOLOGIA 2: 203. 1947) has remarked, in all such cases the rules should be interpreted to favor the maintenance of a name rather than its change. Though my personal choice (Rhodora 46: 445. 1944) would be A. saccharophorum, I agree that perhaps it is best, "for the sake of uniformity of nomenclature," to retain Marshall's name.

GLYCOSMIS PARVIFLORA (Sims) Little, comb. nov.

CHINESE GLYCOSMIS

Limonia citrifolia Willd., Enum. Fl. Hort. Berol. 448. 1809.

Not Limonia citrifolia Salisb., Prodr. 320. 1796.

Limonia parviflora Sims, Curtis's Bot. Mag. 50: pl. 2416. 1823.

Glycosmis citrifolia (Willd.) Lindl., Roy. Hort. Soc. London Trans. 6: 72. 1826.

This species, commonly known as Glycosmis citrifolia (Willd.) Lindl., is an unarmed, evergreen shrub or small tree native of southern China, French Indo-China, and Thailand. It is cultivated and naturalized at Key West, Florida, according to Small (Man. Southeast. Fl. 759. 1933) and Everett (Addisonia 21: 29. 1940). Everett stated also that it is suitable for cultivation in the warmer parts of southern United States.

Some authors have included this species in G. pentaphylla (Retz.) DC., Malay glycosmis. However, in the latest summary of the genus, Swingle (in Webber and Batchelor, Citrus Industry 1: 157. 1943) maintained the two as distinct.

Forest Service,  
United States Department of Agriculture,  
Washington, D. C.



NOTES ON NEW AND NOTEWORTHY PLANTS. V

Harold N. Moldenke

*ALOYSIA LYCIOIDES* var. *PARAGUARIENSIS* (Briq.) Moldenke, comb. nov.

*Lippia ligustrina* var. *paraguariensis* Briq., Ann. Conserv. & Jard. Bot. Genève 7--8: 305. 1904.

*ALOYSIA LYCIOIDES* var. *SCHULZII* (Standl.) Moldenke, comb. nov.

*Lippia ligustrina* var. *Schulzii* Standl., Field Mus. Publ. Bot. 4: 256. 1929.

*DURANTA PARVIFOLIA* Moldenke, sp. nov.

Frutex ramosus; ramis ramulisque graciliusculis rigidis griseis glabratibus, juventute acutiuscule tetragonis, senectute obsolete tetragonis; hornotinis gracilibus brunnescentibus adpresse strigillosis; nodis saepe spinosis; foliis oppositis numerosis; petiolis strigilloso-puberulis; foliis crassis oblanceolato-ellipticis, ad apicem rotundatis vel obtusis, ad basin longe acuminatis, conspicue revoluta-marginatis, integerrimis vel subintegris, supra glabris, subtus minute puberulis vel glabrescentibus.

Shrub, about 2.5 m. tall, abundantly branched; branches and branchlets rather slender, stiff, light-gray, glabrate, rather acutely tetragonal when young, obsoletely tetragonal in age; youngest twigs slender, brownish in drying, strigillose with closely appressed hairs; nodes not amulate but often bearing a pair of stiff ascending spines less than 1 cm. long, very sharp; principal internodes 0.4--2.5 cm. long, usually decidedly abbreviated; leaves decussate-opposite, abundant; petioles very slender, 2--5 mm. long, strigillose-puberulent; blades thick-textured, bright-green above, brunnescent in drying, lighter beneath, oblanceolate-elliptic, 0.8--2.6 cm. long, 5--11 mm. wide, usually rounded or obtuse at the apex, rarely subacute, long-acuminate at base, definitely and conspicuously revolute-margined, entire or sometimes with a few tiny erect teeth at or near the apex, glabrous (except for the midrib) and very shiny above or with a few widely scattered hairs, very minutely and inconspicuously puberulent along the venation or glabrous beneath; midrib slender, deeply impressed and short-strigillose above, very prominent beneath; secondaries 2 or 3 per side, arcuate-ascending, deeply impressed above and very prominent beneath, anastomosing near the margins; veinlet reticulation subimpressed above when viewed under a hand lens, obscure beneath; inflorescence axillary, abundant, opposite, 2--6 cm. long, rather few-flowered, nutant; peduncles (1 cm. or less long) and rachis very slender, brunnescent like the youngest twigs, densely appressed-strigillose; pedicels filiform, 1--6 mm. long, usually quite elongated, densely appressed-strigillose; a few foliaceous bracts sometimes present toward the base

of the racemes; bractlets and prophylla linear, 1--2 mm. long, densely appressed-strigillose, brunnescent; calyx tubular, 4--6.5 mm. long, about 2 mm. in diameter, densely appressed-pubescent with more or less antrorse whitish hairs, 5-ribbed, 5-plaited, the rim shortly 5-toothed and 5-apiculate; corolla blue, its tube 8--9 mm. long, densely sordid-puberulent, its limb 8--9 mm. wide.

The type of this species was collected by Mello Barreto (no. 11057) in capão, Campo do Faco, Minas Geraes, Brazil, on November 6, 1940, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*JUNELLIA CHUBUTENSIS* Moldenke, sp. nov.

Frutex; ramis gracilibus griseis vel albidis suberoso-striatis glabris; ramulis brevissimis stramineis gracillimis dense pubescentibus; foliis decussatis caducis; petiolis pubescentibus; laminis firmis oblongis integris, ad apicem acutis vel obtusis, plerumque subrevoluto-marginatis, utrinque densiuscule breviter pubescentibus; pilis ad basin bulbosis.

Shrub; branches slender, light-gray or almost white, corky-ridged, glabrous; branchlets apparently very short, stramineous, very slender, rather abundantly pubescent with erect whitish hairs; nodes not amulate; principal internodes much abbreviated, 1--5 mm. long on the branchlets, 2--17 mm. long on the branches; leaves decussate-opposite, apparently caducous; petioles 0.5 mm. long, pubescent; blades firm-textured, oblong, uniformly dark-green on both surfaces, 4--9 mm. long, 1.5--4.5 mm. wide, acute or obtuse at the apex and base, entire, mostly subrevolute at the margins, rather densely short-pubescent on both surfaces with erect, stiff, bulbous-based hairs; midrib prominent beneath, impressed above; secondaries and veinlets not visible on either surface; inflorescence subcapitate, 1--2 cm. long in fruit, about 1.3 cm. wide in fruit, dense; bractlets and prophylla linear, about 2 mm. long, very densely pubescent; calyx tubular, about 5 mm. long and 2 mm. wide, very densely pubescent with gray hairs, 5-toothed, the teeth apiculate; corolla-tube about 8 mm. long, glabrous, its lobes about 2 mm. long, glabrous; fruiting-calyx slightly enlarged, plainly 5-ribbed, densely pubescent; cocci 4, oblong-triangular, about 5 mm. long, broadly 2-alate (the wings each almost 1 mm. wide), glabrous and nitid above, densely cinereous-strigillose beneath, slightly subcucullate at both ends.

The type of this remarkably distinct species was collected by Carlos A. O'Donnell at Puerto Madryn, Chubut, Argentina, on October 24, 1945, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*JUNELLIA ECHEGARAYI* var. *CORDIFOLIA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis valde variabilibus oblanceolato-spathulatis vel ellipticis vel subrotundis vel ovatis, ad basin longe attenuatis vel rotundatis vel cordatis, et sarmentis pedunculisque rhachideque calicibusque bracteolisque tantummodo puberulis.

This variety differs from the typical form of the species in having its leaves very variable in size and shape, usually 4--8 mm. long and 1--4 mm. wide, sometimes oblanceolate-spatulate, sometimes elliptic or subrotund or ovate, the base long-attenuate on the narrow leaves but rounded or cordate on the broader ones, and the pubescence on the twigs, peduncles, rachis, calyxes, and bractlets merely puberulent.

The type was collected by C. and G. Grandjot (no. 4714) near Uspallata, at an altitude of 2300 m., Las Heras, Mendoza, Argentina, on December 21, 1937, and is deposited in the Herbario Ruiz Leal, Godoy Cruz, Mendoza.

*JUNELLIA ECHEGARAYI* var. *PUBERULENTA* Moldenke, var. nov.

Haec varietas a forma typica speciei samentis pedunculisque rhachideque calicibusque bracteolisque tantummodo puberulis recedit.

This variety differs from the typical form of the species in having the pubescence of its twigs, peduncles, rachis, calyxes, and bractlets merely puberulent.

The type was collected by C. and G. Grandjot (no. 4713) in the close proximity of Uspallata, at an altitude of 2300 m., Las Heras, Mendoza, Argentina, on December 21, 1937, and is deposited in the Herbario Ruiz Leal, Godoy Cruz, Mendoza. The leaf-shape here is as in the typical form and does not show the striking variation seen in var. cordifolia.

*JUNELLIA LIGUSTRINA* (Lag.) Moldenke, comb. nov.

Verbena ligustrina Lag., Gen. & Sp. Nov. 18. 1816.

*JUNELLIA O'DONELLI* Moldenke, sp. nov.

Frutex humilis caespitosus; caulibus irregularibus griseis pulverulentis vel glabris; ramis ramulisque numerosis brevibus sarmentosis densiuscule puberulis; internodiis valde abbreviatis; foliis numerosis decussatis sessilibus trifidis viridibus utrinque puberulis valde revoluto-marginatis, ad apicem subulato-acutis; costa supra valde impressa.

Low matted shrub; stems to 3 dm. long, irregular, with flaky bark, pulverulent or glabrescent, gray; branches and branchlets numerous, short, tufted, rather densely puberulent, twiggy; internodes much abbreviated, 1--4 mm. long throughout; leaves numerous, decussate-opposite, sessile, often with miniature ones in their axils, trifid almost to the base, bright-green on both surfaces, the segments narrowly linear, 2--4 mm. long, 0.5 mm. wide or less, the 2 lateral ones quite divergent on mature leaves, puberulent on both surfaces, decidedly revoluto-margined, subulate-acute at the apex, the midrib impressed above and decidedly prominent beneath on each segment; veinlets indiscernible; inflorescence terminal, few-flowered, usually 2--5-flowered; calyx tubular, 6--7 mm. long, about 2 mm. wide, puberulent, distinctly 5-ribbed, 5-toothed, the teeth apiculate, ciliate; corolla-tube about 9 mm. long, glabrous, the lobes about 2 mm. long, bifid at the apex, often reflexed, glabrous; stamens equaling the mouth of the corolla-tube.



The type of this species was collected by Carlos A. O'Donnell (no. 4000) -- in whose honor it is named -- at Güer Aike, Santa Cruz, Argentina, on December 15, 1945, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*LANTANA CAMARA* f. *PARVIFOLIA* Moldenke, f. nov.

Haec forma a forma typica speciei recedit caulibus ramisque inermibus, internodiis 1--2 cm. longis, et foliis uniforme parvioribus.

This form differs from the typical form of the species in being of smaller stature, having completely unarmed stems and branches, with the principal internodes only 1--2 cm. long, and with uniformly smaller leaves, the ovate or rarely suborbicular often rather obtuse blades only 1--2.5 cm. long and 1--2 cm. wide, the peduncles 1--1.5 cm. long.

The type was cultivated in the greenhouses of the New York Botanical Garden from seed collected by E. J. Alexander and T. MacDougall (no. 1580) along a roadside near Tehuantepec, Oaxaca, Mexico, in late May, 1945, and is deposited in the Britton Herbarium at the New York Botanical Garden. The characters of the plant seem to breed true and so I am constrained to award it a scientific designation.

*LANTANA DINTERI* Moldenke, sp. nov.

Frutex; caulibus ramisque pallide griseis vel albidis glabris; samentis gracilibus obtuse tetragonis leviter puberulis resinoso-granulosis; internodiis plerumque abbreviatis; foliis decussatis vel approximatis numerosis; petiolis gracillimis dense puberulis et resinoso-granulosis; foliis leviter chartaceis utrinque viridibus lanceolatis, ad apicem rotundatis vel subacutis, regulariter serrato-dentatis, ad basin acuminatis, supra minute asperulis, non scabris, subtus densissime resinoso-punctatis, juventute adpresso-puberulo-pulverulentis.

Shrub; stems and branches decidedly woody, the bark very light-gray or white, glabrous, fissured; twigs slender, obtusely tetragonal, lightly puberulent and resinous-granular, greenish-stramineous; nodes not plainly annulate; principal internodes abbreviated, mostly 3--22 mm. long or on the larger branches to 4.5 cm. long; leaves abundant, decussate-opposite or rarely approximate; petioles very slender, 2--6 mm. long, densely puberulent and resinous-granular; blades thin-chartaceous, bright-green on both surfaces or slightly lighter beneath, lanceolate, 2--3.8 cm. long, 6--14 mm. wide, rounded or subacute at apex, regularly serrate-dentate almost to the base, acuminately narrowed into the petiole at base, minutely asperulous above but not rough to touch, very densely resinous-punctate beneath, minutely appressed-puberulent-pulverulent on the venation beneath when immature; midrib very slender, plane above, prominulous beneath; secondaries very slender, 6 or 7 per side, ascending, hardly arcuate, plane above, prominulous beneath; vein and veinlet reticulation abundant, usually indiscernible above, conspicuous beneath on immature leaves, often much less so on mature leaves; inflorescence capitate, axillary



and usually only 1 per axil, shorter than the subtending leaf; peduncles filiform, 6--15 mm. long, tetragonal, finely puberulent and resinous-granular; heads dense, rather few-flowered, 7--13 mm. long, 10--15 mm. wide; bractlets ovate, large, conspicuous, closely imbricate, the lowermost often much larger and divergent, 7--10 or more mm. long, 3 or more mm. wide, acuminate at apex, sparsely and minutely strigillose and resinous-granular, the lowermost often foliaceous, the margins often subrevolute; corolla white, its tube 5--7 mm. long, puberulent on the outside, the limb to 5 mm. wide.

The type of this very distinct species was collected by Kurt Dinter (no. 6823) at Kalksberg, Karibib, Southwest Africa, on January 12, 1934, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm. The species is named in honor of the collector who has done such very noteworthy work on the flora of Southwest Africa.

*LANTANA FUCATA* f. *ALBIFLORA* Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis recedit.

This form differs from the typical form of the species in having pure white corollas.

The type was collected by A. R. Cuzzo (no. 918) at Serrazuela, Punta de Sierra, dept. Cruz del Eje, Córdoba, Argentina, on November 8, 1945, and is deposited in the Britton Herbarium at the New York Botanical Garden.

*LANTANA MICRANTHA* var. *ARMATA* Moldenke, var. nov.

Haec varietas a forma speciei typica recedit caulibus dense armatis et corollis atropurpureis.

This variety differs from the typical form of the species in having the stems abundantly armed with stout hooked prickles and the corollas dark-purple in color.

The type was collected by Martin Cárdenas (no. 2380) in dry argillaceous soil on the road to Vacas, above Arami, at an altitude of 2600 m., Cochabamba, Bolivia, in February, 1944, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector describes the plant as a thorny shrub about 6 dm. tall, with dark-purple flowers.

*LANTANA MICRANTHA* f. *VIOLACEA* Moldenke, f. nov.

Haec forma a forma typica speciei corollis roseis vel purpureis vel rubellis recedit.

This form differs from the typical form of the species in having its corollas lilac, pink, purple, rose, or carmine in color.

The type was collected by A. G. Schulz (no. 1459) at the edge of mountains, Colonia Benítez, Chaco, Argentina, in November, 1935, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector describes the plant as a shrub 2--3 m. tall, the foliage with a disagreeable odor, and the flowers uniformly lilac in color. Other collections with pink, purple, rose, or carmine flowers, however, had better be placed with the type in this color-form.

*LIPPIA AFRICANA* Moldenke, sp. nov.

Frutex; ramis subgracilibus obtusiuscule tetragonis albido-strigosis densiuscule resinoso-granulosis; foliis decussatis; petiolis gracillimis strigosis resinoso-granulosis; laminis chartaceis utrinque viridibus ellipticis, ad apicem et basin acutis, regulariter adpresso-serratis, supra bulboso-strigosis et subbullatis, subtus dense breviterque pubescentibus et resinoso-granulosis.

Shrub; branches rather slender, rather obtusely tetragonal, strigose with whitish antrorse hairs and rather densely resinous-granular; nodes annulate; principal internodes 3--5.8 cm. long; leaves decussate-opposite, usually with a cluster of smaller ones on much abbreviated twigs in their axils; petioles very slender, 1--3 mm. long, antrorsely strigose and resinous-granular like the branches; blades chartaceous, bright-green on both surfaces, elliptic, 2--3 cm. long, 8--13 mm. wide, acute at apex and base, regularly appressed-serrate, strigose above with bulbous-based whitish antrorse hairs and subbullate, densely short-pubescent and densely resinous-granular beneath; midrib very slender, impressed above, prominent beneath; secondaries very slender, 2--4 per side, arcuate-ascending, impressed above, prominulous beneath; vein and veinlet reticulation abundant, impressed above, the larger parts prominulous beneath; inflorescence spicate, abundant, 2 or 3 per node, usually borne at each of the upper 8 or more nodes, surpassing the subtending leaves; peduncles slender, 2.5--4 cm. long, densely strigillose and resinous-granular, rarely terminated by two equal divergent spikes; floriferous spikes subcapitate or elongating to about 13 mm., to 9 mm. wide, densely many-flowered; bractlets ovate, 5--5.5 mm. long, about 2.5 mm. wide, attenuate-acuminate at the apex, densely strigose and resinous-granular; corolla 5--6 mm. long, usually subequaling the subtending bractlet, the tube puberulent-granular at the apex on the back, the limb 1.5--2 mm. wide.

The type of this species was collected by Erik Wall in a forest 9 miles west of Nylstroom, at an altitude of 4300 feet, Transvaal, Union of South Africa, on October 3, 1938, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm. The species has been collected quite often in recent years, but has hitherto been confused with "*L. asperifolia* Rich." with which it has usually been identified with a question or of which it has been regarded as a form or variety. The size of the heads and bractlets distinguishes it at once.

*LIPPIA AFRICANA* var. *VILLOSA* Moldenke, var. nov.

Haec varietas a forma typicae speciei recedit ramis sarmen-tisque petiolisque laminisque foliorum bracteolisque villosis.

This variety differs from the typical form of the species in the villous pubescence on branches, twigs, petioles, leaf-blades, peduncles, and bractlets, and in its larger flowering-heads, the heads being to 13 mm. wide and the bractlets to 7 mm. long.

The type of this variety was collected by Åke Holm (no. 32)

on a steppe on the western side of Mount Elgon, at an altitude of 2200 m., Uganda, on March 20, 1938, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*LIPPIA LUPULIFORMIS* Moldenke, sp. nov.

Frutex; ramulis gracilibus acute tetragonis griseis pustulato-asperis; hornotinis dense substrigosis (pilis albidis bulbosis) dense resinoso-granulosis brunneis; sterigmis foliorum elevatis perspicuis divergentibus; alabastris dense villosis; foliis decussatis vel ternatis vel approximatis; petiolis densiuscule substrigoso-villosulis resinoso-granulosis marginatis; foliis chartaceis ovatis, ad apicem rotundatis vel subacutis, ad basin acutis vel acuminatis vel rotundatis, supra valde scabris bullatis, utrinque dense breviterque pubescentibus, subtus dense resinoso-granulosis, uniforme serrato-dentatis.

Shrub to 1.5 m. tall; branchlets slender, acutely tetragonal and grayish, pustulate-asperous, the younger parts and twigs rather densely substrigose with whitish bulbous-based hairs and densely resinous-granular, brownish; leaf-scars elevated on conspicuous divergent sterigmata; buds densely white-villous; nodes annulate on young twigs, not annulate on older branches; principal internodes 1.2--3.2 cm. long on older branchlets, abbreviated to 2--9 mm. on twigs; leaves decussate-opposite or rarely ternate or approximate; petioles slender, 1--5 mm. long, rather densely substrigose-villosulous and resinous-granular, margined, deeply canaliculate above; blades chartaceous, dark-green above, lighter beneath, ovate, 1.7--3.5 cm. long, 0.9--2 cm. wide, rounded or subacute at apex, acute or acuminate at base or sometimes rounded, very scabrous and bullate above, densely short-pubescent on both surfaces, densely resinous-granular beneath, uniformly serrate-dentate from base to apex, the teeth often decidedly revolute-margined; midrib impressed above, prominent beneath; secondaries very slender, about 5 per side, ascending, hardly arcuate, impressed above, prominent beneath; vein and veinlet reticulation abundant, usually deeply impressed above and prominent beneath; inflorescence spicate, axillary, surpassing the subtending leaf, 1 or 2 per node; peduncles slender, 4--6.5 cm. long, asperous-hirsutulous and resinous-granular, tetragonal; spikes at first capitate, later elongating to 2 cm., 1.5--2 cm. wide, strobiliform, densely many-flowered; bractlets large and conspicuous, densely imbricate, ovate, 8--10 mm. long, 4--7 mm. wide, acute or sub-acuminate at apex, rather sparsely strigillose and granular; corolla-tube 6--7 mm. long, densely gray-pubescent on the outside, the limb 4--5 mm. wide.

The type of this species was collected by H. Rudatis (no. 1145) at G'Merrum, at an altitude of 650 m., Dumisa, district Alexandra, Natal, Union of South Africa, on September 11, 1910, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

*LIPPIA VIOLACEA* Moldenke, sp. nov.

Frutex; ramis stramineis vel brunnescentibus obtusiuscule



tetragonis breviter pubescentibus, pilis uncinatis ad basin bulbosis; ramulis densissime pubescentibus virgatis; foliis decussatis numerosis; petiolis gracillimis dense cinereo-pubescentibus; foliis ellipticis vel ovatis chartaceis, ad apicem acutis vel obtusis, ad basin acutis, serrulatis, supra dense puberulis et resinoso-punctulatis, subtus dense breviterque pubescentibus et plusminusve resinoso-punctulatis.

shrub, about 2 m. tall; branches stramineous or brunnescent, rather obtusely tetragonal, short-pubescent with uncinately bulbous-based hairs; branchlets much more densely pubescent with sordid-gray or cinereous hairs, virgate; nodes annulate; principal internodes 1--4.8 cm. long; leaves decussate-opposite, numerous; petioles very slender, 1--4 mm. long, densely cinereous-pubescent; blades more or less diamond-shaped or elliptic, varying to ovate, chartaceous, 1.3--2.5 cm. long, 9--15 mm. wide, acute or obtuse at apex, regularly serrulate from below the middle to the apex, acute at base, densely puberulent and resinous-punctulate above, very densely short-pubescent and more or less resinous-punctulate beneath; midrib very slender, subimpressed above, prominulous beneath; secondaries very slender, 4 or 5 per side, ascending, not arcuate, often subimpressed above, subprominulous beneath, not at all anastomosing, each secondary or one of its branches ending in a sinus between two teeth; veinlet reticulation obscure or subimpressed above, plane beneath; inflorescence axillary, capitate, 2 per node, 1.5--2 cm. long, mostly about equaling the subtending leaves; peduncles very slender, about 1 cm. long, densely short-pubescent with rather appressed sordid-cinereous hairs; heads densely flowered, hemispheric, 1--1.5 cm. wide; bractlets lanceolate-lingulate, about 5 mm. long and 1.5 mm. wide, strigillose; calyx about 5 mm. long, densely white-hirsute especially on the margins and resinous-granular; corolla violet, its tube 5--6 mm. long, rather scattered-strigillose or puberulent above the calyx, its limb about 5 mm. wide.

The type of this species was collected by Mendes Magalhães (no. 1768) on the campo between Capivari and Pico do Itambé, Serra Quebrada, município Serro, Minas Geraes, Brazil, on May 3, 1942, and is deposited in the Britton Herbarium at the New York Botanical Garden.

**PAEPALANTHUS STANDLEYI** Moldenke, sp. nov.

Herba; caule valde abbreviato; foliis rosulatis numerosis viridibus nitentibus ligulatis obtusis firmis satis revolutomarginatis, subtus parvisime obscureque puberulis, supra pulverulentis, multo-nervatis; pedunculis numerosis crassiusculis sexangulatis subcompressis densissime villosis.

Herb; stem much abbreviated; leaves tufted, numerous, bright-green, shiny, strap-shaped, broadest at the base, 6--8 cm. long, 8--9 mm. wide at the middle, obtuse at the apex, firm-textured, somewhat revolute-margined especially toward the apex, very finely and usually obscurely puberulent beneath, pulverulent above, many-nerved; peduncles 15 or more per plant, rather stout, 27--30 cm. long, 6-angled, somewhat flattened,



very densely and persistently villous from base to apex with uniform fulvous-brunneous hairs; sheaths cylindrical, usually about equaling the leaves, 6--6.5 cm. long, rather closely appressed to the peduncle, many-costate, rather densely pubescent with spreading brownish hairs, obliquely split at the apex, the blade lanceolate, about 1 cm. long, erect, appressed to the peduncle; heads obovate-hemispheric, 1--1.2 cm. high, 2--2.3 cm. wide, very snowy; involucrel bracts broadly ovate, leathery, deep chestnut-brown and very shiny on both surfaces, 7--9 mm. long, 4--5 mm. wide at the base, long-attenuate or subacuminate at the apex, in 4 or 5 series, the outermost ones densely tomentellous or subvillous, the inner ones white-villosulous on the lower half and pulverulent above, long-ciliate with white hairs on the margins; receptacle very densely and conspicuously white-villous with multicellular white hairs about 5 mm. long; receptacular bractlets numerous, linear, 6--6.5 mm. long, about 0.5 mm. wide, dark-brown on the upper half, light-brown toward the base, densely villous-barbellate on the inner surface at and near the apex; staminate flowers apparently of two types: in the one type the sepals are 3, connate only at the very base, stramineous, oblanceolate, about 4 mm. long and 1 mm. wide, triangular-acute at the apex, glabrate on both surfaces except for a few, erect, irregular, translucent hairs on the margins, densely villous-barbellate at the apex with straight, erect, white hairs extending about 4 mm. beyond the apex of the sepal; petals 3, about 2 mm. long, connate for about half their length into a tube about 0.7 mm. wide, brownish, the free apex triangular-acute, about 0.5 mm. long, densely long-ciliate with regular, erect, white hairs; stamens 3; filaments 0.6 mm. long; anthers oblong, about 0.8 mm. long and 0.4 mm. wide; style-vestiges 3, club-shaped, about 0.6 mm. long; in the second type the corolla-tube is 4--5 mm. long, subhyaline, densely villous within, often invaginated at the apex, the filaments elongated to 6 mm.; pistillate florets: sepals 3, separate to the base or practically so, oblong, stramineous, about 4 mm. long and 0.9 mm. wide, 1-ribbed, glabrate on both surfaces except for the apex which is long-barbellate with a dense tuft of erect, straight, white hairs extending 1.5 mm. beyond the apex of the sepal; petals 3, separate to the base, elliptic, about 4.1 mm. long and 1.5 mm. wide, acute or rarely retuse at the apex, stramineous, glabrate on both surfaces and shiny except for the rather uniformly white-ciliate margins and apex, not barbellate; staminodes 3, about 1.5 mm. long; pistils 3; styles glabrous, 5--5.5 mm. long, forked at the apex, the branches about 1 mm. long; ovary 3-lobed, 3-sulcate, 3-celled, glabrous.

The type of this extremely handsome and distinct species was collected by Mello Barreto (no. 9688) in a sandy campo at Bia Vista - Extracção, município Diamantina, Minas Geraes, Brazil, on November 9, 1937, and is deposited in the Britton Herbarium at the New York Botanical Garden. It was determined by the collector of *P. plumosus* (Bong.) Körn., but differs conspicuously from that species in its much larger stature. The species was regarded, on the basis of a Mexia collection, by Dr. P. C.

Standley as P. Warmingianus (Körn.) Körn., which, however, differs in its smooth peduncles, less attenuated involucrel bractlets, and floral characters.

SABINA VIRGINIANA var. CREBRA (Fernald & Griscom) Moldenke, comb. nov.

Juniperus virginiana var. crebra Fernald & Griscom, Rhodora 37: 133, pl. 333. 1935.

STACHYTARPHETA PARAGUARIENSIS Moldenke, sp. nov.

Frutex 1--2 m. altus; ramis gracilibus acute tetragonis saepe marginatis dense breviterque pubescentibus, hornotinis velutinis; ramulis sarmentosis densissime velutino-pubescentibus cinereis; petiolis obscuris latissime alatis; laminis submembranaceis utrinque atroviridibus in siccitate brunnescentibus, ovatis, at apicem acutis vel obtusis, ad basin longe acuminatis, crasse serratis utrinque dense breviterque pubescentibus; corollis coeruleis.

Shrub, 1--2 m. tall; branches slender, acutely tetragonal, often margined, densely short-pubescent with cinereous hairs, velutinous on the younger parts; branchlets and twigs similar to the branches but even more densely velutinous-pubescent, cinereous; nodes annulate; principal internodes 1.3--8.4 cm. long; leaves decussate-opposite, often with several smaller ones in their axils; petioles obscure, 3--15 mm. long, very broadly winged, indistinguishable from the leaf-base; blades submembranous, dark-green on both surfaces, brunnescent in drying, ovate, 3--7.5 cm. long, 1.3--3.2 cm. wide, obtuse or acute at apex (in outline), long-acuminate into the petiole at base, coarsely serrate from below the middle to the apex with broadly triangular acute or subapiculate teeth, densely short-pubescent on both surfaces, subvelutinous on the midrib and secondaries beneath when immature, the hairs canescent or cinereous; midrib slender, flat above, prominulous beneath; secondaries very slender, 4--6 per side, ascending, hardly at all arcuate, flat above, subprominulous beneath; veinlet reticulation obscure, except for the larger tertiaries beneath; inflorescence spicate, terminal, to about 20 cm. long, closely many-flowered; flowers imbricate; rachis rather slender, densely canescent-puberulent, rather deeply sculptured after anthesis; peduncles obsolete or to 2 cm. long and densely canescent-velutinous; bracts lanceolate, about 5 mm. long, 1--1.3 mm. wide, long-attenuate to the subacuminate apex, cinereous-puberulent, usually densely white-ciliate on the margins (especially when young); calyx tubular, about 8 mm. long, 1--1.3 mm. wide, densely short-pubescent with brownish hairs, 5-ribbed, the rim 5-toothed, the teeth mucronate, almost 1 mm. long; corolla sea-blue, its tube about 1 cm. long, obscurely pulverulent-puberulent or glabrescent above the calyx, its limb about 1 cm. wide, glabrate.

The type of this distinct species was collected by Teodoro Rojas (no. 13615) on hillslopes among small trees at Fuerte Olimpo in the Chaco region of Paraguay on October 18, 1946, and

is deposited in the Britton Herbarium at the New York Botanical Garden.

*STILBE VERTICILLATA* (Ecklon & Zeyher) Moldenke, comb. nov.  
*Trichocephalus verticillatus* Ecklon & Zeyher, *Enum. Pl. Afr. Austr.* 131. 1835.

*STILBE VERTICILLATA* var. *CUSPIDATA* (H. H. W. Pearson) Moldenke, comb. nov.

*Stilbe mucronata* var. *cuspidata* H. H. W. Pearson in *Thiselton-Dyer, Fl. Cap.* 5: 184. 1901.

*TITHYMALOPSIS IPECACUANHAE* f. *ORBICULATA* Moldenke, f. nov.

Haec forma a forma typica speciei foliis orbiculatis viridibus recedit.

This form differs from the typical form of the species in its green orbicular leaf-blades.

The type was collected by H. N. Moldenke (no. 10476) in sandy soil along a roadside at Smithtown, Suffolk Co., New York, on May 29, 1938, and is deposited in the Britton Herbarium at the New York Botanical Garden. The form probably corresponds, in part, at least, to Boissier's "*Euphorbia ipecacuanha* var. *portulacoides*", but anyone who has observed these plants growing will agree that it deserves only form rank.

*VERBENA KUNTZEANA* Moldenke, sp. nov.

Herba; caulibus basin versus saepe decumbentibus; ramis graciliusculis obtuse tetragonis saepe sulcatis dense hirsutulo-pubescentibus griseo-sordidis, pilis plerumque glanduliferis; petiolis indistinctis late alatis; laminis chartaceis ovatis, ad apicem acutis, ad basin acuminatis, crassiuscule regulariterque serratis utrinque dense hirsutulo-pubescentibus, pilis supra plerumque bulbosis.

Herb, several-branched from the base, the lower part of the stems often decumbent; stems and branches rather slender, obtusely tetragonal, the sides often sulcate, densely hirsutulous-pubescent with widely divergent, grayish-sordid, mostly gland-tipped hairs; nodes annulate; principal internodes 2--5 cm. long; leaves decussate-opposite; petioles rather obscure, broadly winged and merging into the leaf-base; blades chartaceous, bright-green above, paler beneath, ovate, 2.5--5 cm. long, 1.4--2 cm. wide, acute at apex, acuminate into the winged petiole at base, rather coarsely but regularly serrate from the widest part to the apex, the teeth rather broadly triangular, obtuse or subacute, densely hirsutulous-pubescent on both surfaces, the hairs often slightly bulbous-based above; midrib slender, impressed above, prominulous beneath; secondaries slender, 3--5 per side, ascending, impressed above, prominulous beneath; veinlet reticulation plane or subimpressed above, the larger parts subprominulous beneath; inflorescence terminal, subcapitate; peduncles slender, 6--8 cm. long, tetragonal, sulcate, densely glandular-hirsutulous; floriferous portion of



the inflorescence about 3.5 cm. long, to 2.5 cm. wide in anthesis; bractlets elongated, linear-lanceolate, 11--13 mm. long, densely glandular-hirsutulous with whitish hairs, often somewhat incurved after the flowers have fallen; rachis densely glandular-hirsutulous; calyx tubular, the tube about 15 mm. long and 2 mm. wide, densely glandular-hirsutulous with whitish hairs, the rim 5-apiculate, the apiculations linear-caudate, unequal, densely glandular-hirsutulous with whitish hairs, the longest ones about 4 mm. long; corolla-tube 15--20 mm. long, densely short-pubescent on the outside, the limb about 10 mm. wide, minutely puberulent on the outer surface, glabrous within.

The type of this distinct species was collected by Carl Axel Magnus Lindman (no. A.3649) at Paraguari, Paraguay, in October, 1893, and is deposited in the herbarium of the Naturhistoriska Riksmuseet at Stockholm. The collector notes that the native name is "flor de vovia". It was first identified by Briquet as V. paraguayensis var. latiuscula Briq. and then as V. platen-sis Spreng. It is named in honor of Carl Ernst Otto Kuntze, who has done such splendid collecting of Verbenaceae and related groups in Asia, Africa, and America, whose keen insight has detected so many varieties and forms worthy of nomenclatural rank, and who fought so eloquently and heroically for fair play and honesty in botanical nomenclature, albeit a losing battle.

**VERBENA MAIMII** Moldenke, sp. nov.

Frutex usque ad 1.7 m. altus; ramis ramulisque viridibus acute tetragonis ubique glaberrimis nitidisque saepe sulcatis; foliis minutis indistinctis sessilibus oblongis vel linearibus firmis utrinque viridibus decussatis adscendentibus utrinque adpresso-strigillosis, ad apicem acutis 1-nervatis.

Shrub to about 1.7 m. tall, much-branched; branches and branchlets green, acutely tetragonal, completely glabrous throughout, shiny, often sulcate between the angles; twigs numerous, ascending-erect, slender, acutely tetragonal, green and shiny, glabrous; principal internodes 2--5 cm. long; nodes not annulate; leaves very tiny and indistinct, giving the plant an aphyllous appearance, sessile, oblong or linear, rather firm-textured, uniformly bright-green on both surfaces, decussate-opposite, ascending, 3--8 mm. long, about 1 mm. wide, appressed-strigillose on both surfaces, acute at apex, 1-nerved, the midrib slightly elevated beneath and subimpressed above; inflorescence spicate, very abundant, usually in groups of 3 at the tip of each twig, often aggregated in paniculate fashion, the terminal spike usually short-pedunculate, the lateral ones longer-pedunculate, the floriferous portion elongating to almost 3 cm. after anthesis; peduncles very slender, glabrous or minutely strigillose, 3--15 mm. long, tetragonal, green; rachis rather densely strigillose-puberulent with whitish hairs especially visible after the calyxes have fallen off; bractlets lanceolate, very small and obscure, about 1 mm. long, strigose with appressed antrorse whitish hairs, acute at apex; calyx tubular, about 3 mm. long, densely white-strigose with



appressed antrorse hairs, the rim 5-apiculate; corolla blue, its tube about 4 mm. long, glabrous except at the very apex where it is densely white-strigose like the calyx, its limb 3--4 mm. wide, puberulent in the throat within and strigose at the base outside, the lobes glabrous on both surfaces.

The type of this distinct species was collected by Gustaf Oskar Andersson malmé (no. 1141) -- in whose honor it is named -- in a swamp at Villa Rica, Rio Grande do Sul, Brazil, on January 22, 1902, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

**VERBENA PULCHRA** Moldenke, sp. nov.

Herba; caulibus procumbentibus vel ascendentibus simplicibus argute tetragonis sulcatis scabris; foliis decussatis; petiolis gracilibus sparsiuscule strigosis marginatis; laminis chartaceis ellipticis vel anguste lanceolatis vel oblanceolatis irregulariter dentatis, ad apicem acutis, ad basin attenuatis vel acuminatis, supra scabrido-strigillosis, subtus molliter breviterque pubescentibus, pilis ad basin bulbosis; corolla pulchra.

Herb; stems procumbent or ascending, several, not branched, sharply tetragonal, sulcate between the angles, scabrous with many short reflexed hairs; principal internodes 3--8 cm. long; nodes more or less annulate; leaves numerous, decussate-opposite, usually with clusters of smaller ones in their axils; petioles slender, 5--8 mm. long, rather sparsely strigose with short antrorsely curved hairs, margined; blades chartaceous, somewhat lighter beneath, elliptic or narrow-lanceolate, varying to oblanceolate, 1.5--5.5 cm. long, 6--15 mm. wide, acute at apex, attenuate or acuminate at base, rather irregularly dentate from the apex almost to the base with rather broadly triangular acute teeth, slightly scabridous-strigillose above, rather softly short-pubescent beneath with bulbous-based hairs; midrib very slender, plane above, prominulent beneath; secondaries very slender, 4 or 5 per side, plane above, prominulent beneath; veinlet reticulation mostly indiscernible above, conspicuous (but not elevated) beneath; inflorescence terminal and in the uppermost axils, the floriferous portion very dense, at first flattened-subcapitate, later elongating to 3 cm. but remaining very dense; peduncles rather stout, 6--8.5 cm. long, tetragonal and sulcate like the stems, reflexed-pilose and more or less rough to the touch; bractlets lanceolate, 4--9 mm. long, 1--1.4 mm. wide, attenuate-acute or subacuminate at the apex, glabrous (or very sparsely pilosulous) except for the long-ciliate margins; calyx tubular, 10--12 mm. long, about 1 mm. wide, 5-costate, purplish especially toward the apex, ciliate-pubescent on the ribs, the teeth unequal, 1--2 mm. long, filiform-appendaged; corolla showy, its tube 15--17 mm. long, very sparsely and minutely puberulent or merely pulverulent outside above the calyx, its limb to 15 mm. wide, pilose in the throat.

The type was collected by Per Karl Hjalmar Dusén (no. 9334) in wet thickets at Calmon, Paraná, Brazil, on March 13, 1910,

and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm. The calyxes on the type specimen are mostly infested with a fungus which forms tiny brown dots over the surface, which dots under the microscope reveal themselves to be masses of tint brown filaments.

VERBENA PULCHRA var. PALUDICOLA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum tantummodo 2.4--4.3 cm. longis, 1--2 cm. latis et corollis albis oculiroseis.

This variety differs from the typical form of the species in its leaves being shorter, the blades only 2.4--4.3 cm. long, 1--2 cm. wide, and the corollas white except for a red "eye".

The type was collected by Wilhelm Gustav Herter (no. 99937) in a rather wet sandy marsh, at an altitude of 150 m., exposed to the sunlight in an arroyo, Reanqueras, Rivera, Uruguay, between March 24 and 27, 1907, and is deposited in the Britton Herbarium at the New York Botanical Garden.

VITEX RUFESCENS var. ABLUDENS (Moldenke) Moldenke, comb. nov.

Vitex Perriana var. abludens Moldenke, Alph. List Common Names Verbenac. 21, hyponym (1939); Trop. Woods 64: 39. 1940.

VITEX SPRUCEI var. LONGIDENTATA (Moldenke) Moldenke, comb. nov.

Vitex spongiocarpa var. longidentata Moldenke, Phytologia 2: 31. 1941.

VITEX TRIFOLIA var. SIMPLICIFOLIA f. ALBIFLORA (Y. Matsumura) Moldenke, comb. nov.

Vitex rotundifolia var. albiflora Y. Matsumura, Amatores Herbarii 10: 54. 1943.

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THE KNOWN GEOGRAPHIC DISTRIBUTION OF THE MEMBERS OF THE  
VERBENACEAE, AVICENNIACEAE, STILBACEAE, AND SYMPHOREMACEAE.  
SUPPLEMENT 9

Harold N. Moldenke

Since the preparation of the eighth supplement to this list several thousand additional specimens of these groups have been examined from the herbarium of the Chicago Natural History Museum, the United States National Herbarium at Washington, the University of Massachusetts at Amherst, the United States Field Station at Sacaton, Arizona, the Britton Herbarium of the New York Botanical Garden, the Jardin Botanique de l'Etat at Brussels, the Botanisk Museum of the University of Lund at Lund, Sweden, the Naturhistoriska Riksmuseum at Stockholm, and the Herbario Ruiz Leal at Godoz Cruz, Mendoza, Argentina. This excellent material has brought to light 74 new country or island

records, 125 new state, province, or department records, and 17 new county records, as well as the necessity for making certain emendations in previous records and certain nomenclatural changes hereinafter noted.

UNITED STATES OF AMERICA:

Massachusetts:

Verbena hastata f. albiflora Moldenke (Worcester County)

Verbena urticifolia L. (Franklin & Hampshire Counties)

Connecticut:

Verbena officinalis L. (New Haven County)

New York:

Verbena simplex Lehm. (New York County)

Florida:

Lantana Camara var. mista (L.) L. H. Bailey (Charlotte County)

Illinois:

xVerbena Perriana Moldenke (Menard County)

Iowa:

Verbena bracteata Lag. & Rodr. (Linn County)

Missouri:

xVerbena moechina Moldenke (Jefferson County)

Texas:

Change "Aloysia ligustrina (Lag.) Small" to read Aloysia lycioides Cham. and add Webb County

Change "Aloysia ligustrina var. Schulzii (Standl.) Moldenke" to read Aloysia lycioides var. Schulzii (Standl.)

Moldenke and add Nueces County

Phyla nodiflora (L.) Greene (Jefferson County)

New Mexico:

Change "Aloysia ligustrina (Lag.) Small" to read Aloysia lycioides Cham.

Arizona:

Change "Aloysia ligustrina var. Schulzii (Standl.) Moldenke" to read Aloysia lycioides var. Schulzii (Standl.) Moldenke

Lantana horrida H.B.K. (Pima County)

Verbena ciliata var. pubera (Greene) Perry (Apache County)

Verbena Wrightii A. Gray (Mohave County)

Oregon:

Verbena lasiostachys var. septentrionalis Moldenke (Linn County)

California:

Phyla nodiflora var. rosea (D. Don) Moldenke (Marin County)

MEXICO:

Change "Aloysia ligustrina (Lag.) Small" to read Aloysia lycioides Cham.

Change "Aloysia ligustrina var. Schulzii (Standl.) Moldenke" to read Aloysia lycioides var. Schulzii (Standl.) Moldenke

- Avicennia bicolor Standl. (Chiapas)  
Lantana Camara var. aculeata (L.) Moldenke (Veracruz)  
Lantana Camara f. parvifolia Moldenke (Oaxaca)\*  
Lantana hispida H.B.K. (Puebla)  
Phyla nodiflora (L.) Greene (Tamaulipas)  
Verbena teuoriifolia var. corollulata Perry (México)

## BERMUDA:

- Avicennia nitida Jacq. (Main)  
Callicarpa americana L. (Main)  
Citharexylum spinosum L. (Main)  
Clerodendrum aculeatum (L.) Schlecht. (Main)  
Clerodendrum fragrans var. pleniflorum Schau. (Main)  
Clerodendrum glabrum E. Mey. (Main)  
Duranta repens L. (Main)  
Lantana Camara L. (Main)  
Lantana Camara var. aculeata (L.) Moldenke (Main)  
Lantana Camara var. mista (L.) L. H. Bailey (Main)  
Phyla nodiflora (L.) Greene (Main)  
Phyla nodiflora var. reptans (H.B.K.) Moldenke (Main)  
Stachytarpheta jamaicensis (L.) Vahl (Main)  
Verbena officinalis L. (Main)  
Verbena rigida Spreng. (Main)

## DOMINICA:

- Clerodendrum umbellatum var. speciosum (Dombrain) Moldenke

## COLOMBIA:

- Aegiphila longifolia Turcz. (Méta)  
Duranta Sprucei var. columbiensis Moldenke is the correct  
 orthography of this name  
Lantana Camara L. -- delete "Antioquia"

## VENEZUELA:

- Phyla nodiflora var. reptans (H.B.K.) Moldenke (Anzoategui)  
Priva lappulacea (L.) Pers. (Anzoategui)

## SURINAM:

- Lantana cujabensis Schau.

## ECUADOR:

- Clerodendrum fragrans var. pleniflorum Schau. (Los Ríos)  
Cormutia odorata (Poepp. & Endl.) Poepp. (Los Ríos)  
Lippia alba (Mill.) N. E. Br. (Los Ríos)  
Stachytarpheta cayennensis (L. C. Rich.) Vahl (Los Ríos)  
Verbena litoralis H.B.K. (Santiago-Zamora)

## PERU:

- Verbena peruviana (L.) Britton

## BRAZIL:

- Aegiphila Hassleri Briq. (Rio Grande do Sul)  
Aloysia ligustrina (Lag.) Small should be changed to read  
Aloysia lycioides Cham.  
Aloysia ligustrina var. paraguariensis (Briq.) Moldenke  
 should be changed to read Aloysia lycioides var. para-



guariensis (Briq.) Moldenke

Aloysia Sellowii (Briq.) Moldenke (Rio Grande do Sul)

Bouchea fluminensis var. pilosa Moldenke (Minas Geraes)

Duranta parvifolia Moldenke (Minas Geraes)\*

Lantana canescens var. integrifolia Moldenke (Minas Geraes)

Lippia violacea Moldenke (Minas Geraes)\*

Stachytarpheta australis Moldenke (Santa Catharina)

Verbena Malmi Moldenke (Rio Grande do Sul)\*

Verbena pulchra Moldenke (Rio Grande do Sul)\*

Vitex amazonica Moldenke is to be deleted

Vitex brasiliensis Steud. is to be deleted

Vitex Perriana Moldenke is to be deleted

Vitex Perriana var. abludens Moldenke is to be deleted

Vitex rufescens A. L. Juss. (Bahia, Parahyba, Pernambuco, & Piauy)

Vitex rufescens var. abludens (Moldenke) Moldenke (Bahia & Pernambuco)\*

Vitex spongiocarpa Ducke is to be deleted

Vitex spongiocarpa var. longidentata Moldenke is to be deleted

Vitex Sprucei var. longidentata (Moldenke) Moldenke (Amazonas)

#### BOLIVIA:

Aloysia ligustrina (Lag.) Small is to be changed to read

Aloysia lycioides Cham.

Aloysia ligustrina var. paraguariensis (Briq.) Moldenke is to be changed to read Aloysia lycioides var. paraguariensis (Briq.) Moldenke

Lantana Fiebrigii Hayek (Santa Cruz)

Lantana glutinosa Poepp. (Santa Cruz)

Lantana micrantha Briq. -- delete "Cochabamba" and add Santa Cruz

Lantana micrantha var. armata Moldenke (Cochabamba)\*

Lantana micrantha f. violacea Moldenke (Santa Cruz)

#### PARAGUAY:

Aloysia ligustrina (Lag.) Small should be changed to read

Aloysia lycioides Cham.

Aloysia ligustrina var. paraguariensis (Briq.) Moldenke is to be changed to read Aloysia lycioides var. paraguariensis (Briq.) Moldenke

Lantana micrantha f. violacea Moldenke

Stachytarpheta paraguariensis Moldenke\*

#### URUGUAY:

Aloysia ligustrina (Lag.) Small should be changed to read

Aloysia lycioides Cham.

Aloysia ligustrina var. paraguariensis (Briq.) Moldenke is to be changed to read Aloysia lycioides var. paraguariensis (Briq.) Moldenke

Lantana hypoleuca Briq.

Verbena bonariensis var. conglomerata Briq.

ARGENTINA:

Aloysia chacoënsis Moldenke (Catamarca)

Aloysia ligustrina (Lag.) Small should be changed to read  
Aloysia lycioides Cham. and add Corrientes

Aloysia ligustrina var. paraguariensis (Briq.) Moldenke is to  
be changed to read Aloysia lycioides var. paraguariensis  
(Briq.) Moldenke and add Córdoba & Tucumán

Aloysia Sellowii (Briq.) Moldenke (Corrientes & Mendoza)

Junellia chubutensis Moldenke (Chubut)\*

Junellia Echegarayi var. cordifolia Moldenke (Mendoza)\*

Junellia Echegarayi var. puberulenta Moldenke (Mendoza)\*

Junellia erinacea (Gill. & Hook.) Moldenke (Chubut)

Junellia Lorentzii (Niederlein) Moldenke should be changed to  
read Junellia ligustrina (Lag.) Moldenke

Junellia O'Donelli Moldenke (Santa Cruz)\*

Junellia succulentifolia (Kuntze) Moldenke (Neuquen & Río  
Negro)

Lantana aristata var. angustifolia (Kuntze) Moldenke (Chaco)

Lantana Balansae Briq. (Formosa)

Lantana Camara var. aculeata (L.) Moldenke (Tucumán)

Lantana Fiebrigii Hayek (Formosa)

Lantana fucata Lindl. (Córdoba & Corrientes)

Lantana fucata f. albiflora Moldenke (Córdoba)\*

Lantana glutinosa Poepp. (Corrientes & Entre Ríos)

Lantana Grisebachii Stuck. (Catamarca, Entre Ríos, La Rioja,  
& Salta)

Lantana hypoleuca Briq. (Entre Ríos & Misiones)

Lantana Junelliana Moldenke (San Luis)

Lantana micrantha Briq. (Formosa)

Lantana micrantha f. violacea Moldenke (Chaco, Corrientes, &  
Salta)

Lantana montevidensis (Spreng.) Briq. (Entre Ríos)

Lantana tiliaefolia Cham. (Misiones & Tucumán)

Lantana xenica Moldenke (Córdoba & Mendoza)

Lippia alba (Mill.) N. E. Br. (Formosa & San Juan)

Lippia angustifolia Cham. (Corrientes)

Lippia asperrima Cham. (Corrientes & Formosa)

Lippia tegulifera Briq. (Corrientes)

Lippia turbinata Griseb. (San Juan)

Lippia turbinata f. angustifolia Osten (Santa Fé & Santiago  
del Estero)

Phyla nodiflora (L.) Greene (Catamarca, Chaco, Córdoba, Entre  
Ríos, Jujuy, San Juan, San Luis, Mendoza, Santa Fé, &  
Santiago del Estero)

Phyla nodiflora var. canescens (H.B.K.) Moldenke (Río Negro)

Phyla nodiflora var. reptans (H.B.K.) Moldenke (Formosa, San

Juan, & Santiago del Estero)

Phylla nodiflora var. rosea (D. Don) Moldenke (Entre Ríos & Formosa)

Stachytarpheta cayennensis (L. C. Rich.) Vahl (Corrientes)

Verbena carollata Briq. (Córdoba)

Verbena moricolor Moldenke (Catamarca)

Verbena Parodii (Covas & Schnack) Moldenke (Tucumán)

Verbena peruviana (L.) Britton (Catamarca & Tucumán)

Verbena scrobiculata Griseb. (Santiago del Estero)

Verbena tenuisecta Briq. (Catamarca)

WALES:

Verbena officinalis L.

ANGLO-EGYPTIAN SUDAN:

Clerodendrum Wallii Moldenke (Nuer)

ERITREA:

Lantana viburnoides (Forsk.) Vahl is the correct accreditation of this name

ABYSSINIA:

Lantana viburnoides (Forsk.) Vahl is the correct accreditation of this name

Lippia Radula J. G. Baker

CAMEROONS:

Clerodendrum singwanum Thomas is the correct orthography of this name

Lippia rugosa A. Chev.

FRENCH EQUATORIAL AFRICA:

Lippia rugosa A. Chev. (Middle Congo)

BELGIAN CONGO:

Clerodendrum discolor (Klotzsch) Vatke

Clerodendrum myricoides (Hochst.) R. Br.

Clerodendrum myricoides var. savanorum (DeWild.) Thomas

UGANDA:

Clerodendrum Wallii Moldenke -- delete the "\*"

Lippia africana var. villosa Moldenke\*

TANGANYIKA TERRITORY:

Lantana viburnoides (Forsk.) Vahl is the correct accreditation of this name

KENYA:

Lantana viburnoides (Forsk.) Vahl is the correct accreditation of this name

Lippia Radula J. G. Baker -- delete the "\*"

ANGOLA:

Clerodendrum myricoides var. savanorum (DeWild.) Thomas

SOUTHWEST AFRICA:

Lippia Dinteri Moldenke\*

BECHUANALAND PROTECTORATE:

Lantana viburnoides (Forsk.) Vahl

Lippia javanica (Burm. f.) Spreng.

UNION OF SOUTH AFRICA:

Clerodendrum glabrum var. ovale (Klotzsch) H. H. W. Pearson  
(Transvaal)\*

Lippia africana Moldenke (Cape of Good Hope & Transvaal)\*

Lippia lupuliformis Moldenke (Natal)\*

Stilbe mucronata N. E. Br. is to be deleted

Stilbe verticillata (Ecklon & Zeyher) Moldenke (Cape of Good Hope)\*

Stilbe verticillata var. cuspidata (H. H. W. Pearson) Moldenke (Cape of Good Hope)\*

Stilbe Zeyheri Gandoger is to be deleted

Xeroplana Zeyheri Briq. (Cape of Good Hope)

#### ARABIA:

Lantana viburnoides (Forsk.) Vahl is the correct accreditation of this name

#### LEBANON:

Vitex Agnus-castus L.

#### INDIA:

Duranta repens L. (Bombay)

Gmelina arborea Roxb. (Bombay)

Lippia alba (Mill.) N. E. Br. (Assam)

Stachytarpheta urticaefolia (Salisb.) Sims (Bombay)

#### CHINA:

Caryopteris ningpoensis Hemsl.\*

Caryopteris parvifolia Batalin\*

#### FORMOSA:

Clerodendrum Ohwii Kanehira & Hatusima\*

#### JAPAN:

Callicarpa dichotoma (Lour.) K. Koch (Honshiu)

Callicarpa japonica var. luxurians Rehd. (Honshiu)

Callicarpa mollis Sieb. & Zucc. (Honshiu)

Caryopteris divaricata (Sieb. & Zucc.) Maxim. -- delete "Mushashi"

Clerodendrum trichotomum Thunb. -- delete "Ise", add Hokkaido

Vitex Negundo var. cannabifolia (Sieb. & Zucc.) Hand.-Mazz. (Honshiu)

Vitex trifolia var. simplicifolia Cham. -- delete "Ise"

Vitex trifolia var. simplicifolia f. albiflora (Y. Matsumura) Moldenke (Honshiu)\*

#### RYUKYO ISLANDS:

Premna microphylla Turcz. (Okinawa)

#### PHILIPPINE ISLANDS:

Callicarpa subcandida Elm. (Luzon)\*

#### HAWAIIAN ISLANDS:

Clerodendrum fragrans (Vent.) R. Br. (Oahu)

Vitex trifolia var. simplicifolia Cham. (MauI)

#### CULTIVATED:

Aloysia lycioides var. paraguariensis (Briq.) Moldenke (Brazil)



CAPPARIS BREVIS SPRENGEL IS A GLYPHAEA

Joseph V. Monachino

I have examined an apparently authentic flowering specimen of Capparis brevis Sprengel, deposited in the De Candolle Herbarium at Geneva. The plant is identical with the widely distributed tropical African tiliaceous species excellently illustrated and described as Glyphaea grewioides Hook. f. (Ic. Pl. t. 760. 1848).

The Geneva specimen was annotated in 1852 by A. De Candolle who noted that it seemed to be a Clematis, but that, in any event, it was not a member of the Capparidaceae. In 1853 Benthham identified it as "Carpotroche?" Sprengel himself in Lim. Syst. Veg. 2: 576 (1825) refers C. brevis to Capparis eustachiana Jacq., but his original description in 1807, which agrees very closely with the Geneva specimen, obviously precludes any such disposition. C. eustachiana has entire, not trinerved, leaves, and is glabrous, while C. brevis has subserrate trinerved leaves, pubescent petioles, and scabridulous stellate-pubescent branchlets.

On the Geneva sheet De Candolle suggested that the specimen probably was sent to Sprengel from the Antilles, a notion in harmony with the belief that C. brevis is referable to the West Indian C. eustachiana. The type, however, was obtained from the Razoumoffsky garden, and Sprengel's species is listed in F. E. L. von Fischer's Catalogue du Jardin des Plantes à Gorenki (ed. 2, p. 52. 1812; ed. 1, p. 85. 1808, fide A. DC. Prodr. 1: 253). C. brevis is placed in the synonymy of C. eustachiana by the Index Kewensis; otherwise it has been given little attention.

Hooker in his Flora Nigritiana (p. 238. 1849) cited the prior Grewia lateriflora Don as a synonym of Glyphaea grewioides. This synonymy is accepted by Oliver (Fl. Trop. Afr. 1: 267. 1868), who treats likewise Glyphaea Monteiroi Hook. f. The latter species was noted to be only doubtfully distinct by J. D. Hooker in the original publication. With my discovery of the identity of Capparis brevis and Glyphaea grewioides, and accepting the findings of previous workers, the complete synonymy of the species is as follows:

GLYPHAEA BREVIS (Sprengel) Monachino, comb. nov.

Capparis brevis Spreng., Fl. Hal. Mant. Prima 43. 1807.

Grewia lateriflora G. Don, Gen. Syst. 1: 549. 1831.

Glyphaea grewioides Hook. f., Ic. Pl. t. 760. 1848.

G. Monteiroi Hook. f. in Curtis, Bot. Mag. t. 5610. 1866.

G. lateriflora Hutch. & J. M. Dalz., Fl. West Trop. Afr. 1: 239. 1927.

Only one other species of Glyphaea is known, G. tomentosa Mast. ex Oliver. G. Boivini Baill. and G. chalybaea Baill., attributed to the genus Glyphaea in the Index Kewensis, were actually published in Grewia by Baillon (Bull. Soc. Linn. Paris 1: 550. 1886).

## DAVID DOUGLAS' NEW SPECIES OF CONIFERS

Elbert L. Little, Jr.

A list of the new species of conifers collected by David Douglas in Northwestern America and California between the years 1824 and 1832 has been assembled from the original published sources. This compilation was made in connection with a study of Aylmer Bourke Lambert's "A Description of the Genus Pinus," which contained several of Douglas' discoveries. Previously, Suringar (4) had published most of these names in a list with some other species of Douglas. The recently published biography, "Douglas of the Fir," by Harvey (2), which contains much information hitherto unpublished, doubtless will arouse interest in his work. A summary of Douglas' discoveries of conifers, therefore, may be appropriate.

David Douglas (1798-1834) (1, 2, 3), a native of Scotland, was a botanical explorer for the Horticultural Society of London (now the Royal Horticultural Society). His first trip, in 1823, was to northeastern United States to obtain propagating material of cultivated fruits. The following year, on his next expedition he went by ship around the Horn to the northwestern coast of North America, then returned to England in 1827 by crossing Canada overland to Hudson Bay. He left England for the last time in 1829 on another ocean voyage to the Columbia River region. In 1831 and 1832 he collected in California. Then in the latter year he made a brief trip to Hawaii before returning to the Columbia River. He was killed in Hawaii in 1834 on his second journey there. Several important species of forest and ornamental trees are included among the many plants introduced by him to horticulture.

Douglas gave herbarium names to 12 species of conifers and collected specimens of 5 more which later were named as new by others. However, of these Douglas published before his death the descriptions of only 2 species of Pinus: Pinus lambertiana Dougl. (Linn. Soc. London Trans. 15: 500. 1827), the sugar pine, the largest pine in the world, and P. sabiniana Dougl. (Linn. Soc. London Trans. 16: 749. 1833).

Several of Douglas' discoveries were described in his manuscript, "Some American Pines," written evidently after he left England the last time and published eighty years after his death as an appendix of his journal (1, p. 338-348). After this journal was prepared for the press, two slightly different copies of this manuscript in Douglas' handwriting, containing

17 species of conifers (northern as well as western), with descriptive and geographic notes, were found. One species without author or citation, Pinus monticola, was described here by Douglas apparently as new. Six species then unpublished, P. douglasii, P. menziesii, P. nobilis, P. amabilis, P. ponderosa, and P. contorta, had brief Latin diagnoses followed by the incomplete citation "Sabine in Trans. Hort. Soc. Vol." However, Joseph Sabine, secretary of the Horticultural Society of London and Douglas' friend and patron, did not publish these new species in the Transactions (1, p. 338). The upheaval in the Society in 1830, followed by Sabine's resignation and in 1832 also by Douglas' resignation upon getting the news, and Douglas' absence from England together may account for the failure of these names to be published (2, p. 149-150, 190-192).

Five names of Douglas were published with descriptions by David Don in the third edition of Lambert's monographic work, "A Description of the Genus Pinus" (octavo, 2 v., illus. 1832) among the extra pages inserted as an appendix between pages 144 and 145 in most copies of volume 2. These names published "in order to secure to Mr. Douglas the credit of these interesting discoveries" were: Pinus sabiniana, P. monticola, P. nobilis, P. grandis, and P. menziesii. Here appeared also P. douglasii Sabine as a new name for P. taxifolia Lamb., the valuable timber tree introduced to horticulture by Douglas and appropriately given the English common name Douglas-fir from the specific epithet.

Two nomina nuda of Douglas, Pinus amabilis and P. insignis, appeared in 1835 in a list of plants raised from seed he sent to the Horticultural Society of London, published in the report of the new secretary, George Bentham (Hort. Soc. London Trans., ser. 2, 1: 404. 1835). Douglas' names were merely mentioned, because the living plants were too young for description.

In the extracts from Douglas' journal and letters to his teacher, W. J. Hooker (3), published by the latter in 1836 as a sort of biography were Pinus venusta Dougl. (Comp. Bot. Mag. 2: 152. 1836), described from memory in a letter, and two nomina nuda, P. amabilis Dougl. (p. 93) and P. ponderosa (p. 111, 141).

Douglas' authorship of another very important lumber tree, ponderosa pine, was lost, though both the Latin and common names still retain Douglas' descriptive epithet for the heavy wood. As early as 1830 there was published almost as a nomen nudum, Pinus ponderosa Dougl. ex Loud. (Hort. Brit. 387. 1830). The name is cited P. ponderosa Laws. (Agr. Man. 354. 1836), though Lawson's nontechnical English description was based upon young trees without cones and was far inferior to Douglas' own tech-



nical description in his manuscript. The mere mention by Lawson that Douglas introduced the species is not sufficient to credit him as author of his epithet. Two years later a botanical description was published as P. ponderosa Dougl. ex Loud. (Arb. Frut. Brit. 4: 2292, fig. 2210-2211. 1838).

Loudon published in the same volume descriptions and illustrations of two additional species of pines named by Douglas: P. contorta Dougl. ex Loud. (Arb. Frut. Brit. 4: 2292, fig. 2210-2211. 1838) and P. insignis Dougl. ex Loud. (4: 2265, fig. 2170-2172. 1838). Here also was Ficea amabilis Dougl. ex Loud. (4: 2342, fig. 2247-2248. 1838), based upon Pinus amabilis Dougl. The next year the name now in use, Abies amabilis (Dougl.) Forb. (Pinet. Woburn. 125, pl. 44. 1839) was published, perhaps irregular as a new combination, since Douglas' manuscript name, a nomen nudum, was cited but Loudon's description was not mentioned.

David Don published different names for two of Douglas' new coniferous species in an article describing five species of Pinus collected by Dr. Thomas Coulter in California (Linn. Soc. London Trans. 17: 439-444. 1836). As Dr. Coulter and Douglas both were in California in 1831 and 1832, they may have collected together or exchanged specimens. Pinus bracteata D. Don (Linn. Soc. London Trans. 17: 442. 1836) competes with P. venusta Dougl. (1836) for the bristlecone fir. Though exact priority has not been determined, Abies venusta (Dougl.) K. Koch generally is adopted by custom (Little, Amer. Jour. Bot. 31: 592. 1944). Pinus radiata D. Don (Linn. Soc. London Trans. 17: 442. 1836) has priority over P. insignis Dougl. (1838) for the Monterey pine. Douglas proposed no name for P. coulteri D. Don (Linn. Soc. London Trans. 17: 440. 1836), regarding it merely as a variety of his P. sabiniana when he sent specimens and seeds back to England.

Douglas' conifers and other collections from the Northwest were cited in 1839 in the "Flora Boreali-Americana" by W. J. Hooker (2: 161-167), who received a set of specimens from his former student. Here were published two more new species based upon Douglas' plants: Pinus lasiocarpa Hook. (Fl. Bor.-Amer. 2: 163. 1839) now Abies lasiocarpa (Hook.) Nutt., and Juniperus occidentalis Hook. (p. 166), previously named as J. excelsa Pursh, not Bieb. Thuja menziesii Dougl. (p. 165) was published in synonymy under T. gigantea Nutt., now T. plicata Donn. However, in his journal Douglas used T. plicata. The manuscript name Pinus distorta Dougl. (p. 161) was cited by Hooker as a synonym of P. inops, though P. contorta Dougl., the name now in use, had been published by Loudon the year before. Hooker placed P. monticola Dougl. as a synonym of P. strobus L.



Douglas' specimen of the species afterwards segregated as Taxus brevifolia Nutt. (No. Amer. Sylva 3: 86, pl. 108. 1849) was combined by Hooker with T. baccata L., of the Old World.

The 12 species of conifers to which Douglas gave manuscript names are summarized here under the names now accepted, with his names, where different, added in synonymy. Douglas still is cited as author of 7 of the specific epithets now in use. Only 3 names lack priority, 1 was given the same name by the publishing author, and 1 is invalid under present rules as a later homonym.

- Abies amabilis (Dougl.) Forbes PACIFIC SILVER FIR  
Pinus amabilis Dougl., nomen nudum  
Picea amabilis Dougl. ex Loud.
- Abies grandis (Dougl.) Lindl. GRAND FIR  
Pinus grandis Dougl. ex D. Don in Lamb.
- Abies procera Rehd. NOBLE FIR  
Pinus nobilis Dougl. ex D. Don in Lamb.  
Abies nobilis (Dougl.) Lindl., non A. Dietr.
- Abies venusta (Dougl.) K. Koch BRISTLECONE FIR  
Pinus venusta Dougl. (Dec. 1, 1836)  
Pinus bracteata D. Don (1836)
- Picea sitchensis (Bong.) Carr. SITKA SPRUCE  
Pinus menziesii Dougl. ex D. Don in Lamb. (1832)  
Pinus sitchensis Bong. (Aug. 1832)
- Pinus contorta Dougl. ex Loud. SHORE PINE  
Pinus distorta Dougl. ex Hook., pro syn.
- Pinus lambertiana Dougl. SUGAR PINE
- Pinus monticola Dougl. ex D. Don in Lamb. WESTERN WHITE PINE
- Pinus ponderosa Laws. PONDEROSA PINE  
Pinus ponderosa Dougl. ex Loud., nomen nudum
- Pinus radiata D. Don MONTEREY PINE  
Pinus insignis Dougl. ex Loud.
- Pinus sabiniana Dougl. DIGGER PINE
- Thuja plicata Donn ex D. Don in Lamb. WESTERN REDCEDAR  
Thuja menziesii Dougl., pro syn.

The 5 species of Douglas' conifers which he did not name but which were named by others are:

Abies lasiocarpa (Hook.) Nutt. ALPINE FIR  
Pinus lasiocarpa Hook.

Juniperus occidentalis Hook. SIERRA JUNIPER

Pinus coulteri D. Don COULTER PINE  
Pinus sabiniana Dougl. var., Dougl.  
Pinus macrocarpa Lindl.

Taxus brevifolia Nutt. PACIFIC YEW  
Taxus baccata Hook. partim, non L.

Pseudotsuga taxifolia (Poir.) Britton DOUGLAS-FIR  
Pinus douglasii Sabine ex D. Don in Lamb.  
Pseudotsuga douglasii (Sabine) Carr.

Even today many Europeans retain the name Pseudotsuga douglasii for the Douglas-fir with some justification, as the nomenclature is involved and allows more than one interpretation.

Of the 17 species of conifers listed above, Douglas is credited with the introduction to horticulture of 11 (1, p. 334; 2, p. 254-26C): Abies amabilis, A. grandis, A. procera, Picea sitchensis, Pinus coulteri, P. lambertiana, P. monticola, P. ponderosa, P. radiata, P. sabiniana, and Pseudotsuga taxifolia. His specimens of the 6 remaining species, introduced afterwards, probably did not contain viable seeds. Of course, he collected specimens of other conifers which were not new. Among these was the redwood, Sequoia sempervirens (D. Don) Endl. (3, p. 150; Howell, John Thomas. Leaflets West. Bot. 2: 96. 1938), which was discovered earlier and introduced later.

It is unfortunate that Douglas did not properly publish descriptions of all the new conifers he named and introduced and that publication of these new species was spread among the works of several authors. His manuscript names were retained by the authors who supplied descriptions. The association of his name with the English name Douglas-fir honors his memory far more effectively than scientific names could.

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United States Department of Agriculture,  
Washington, D. C.

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4. Suringar, J. Valckenier. Plantenverzamelaars. I. David Douglas de plantenverzamelaar in het verre westen ten tijde der Indianen- en buffelheerschappij. Nederland. Dendrol. Ver. Jaarb. 2 (1926): 69-97, illus. 1926 [1927].

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THE KNOWN GEOGRAPHIC DISTRIBUTION OF THE MEMBERS OF THE  
ERIOCAULACEAE. SUPPLEMENT 3

Harold N. Moldenke

Since the publication of the previous Supplement to this list several thousand additional specimens of this group have been examined and annotated from the herbaria of the University of Colorado at Boulder, the Facultad Nacional de Agronomia at Medellin, Colombia, the University of Massachusetts at Amherst, the Chicago Natural History Museum, the California Academy of Sciences at San Francisco, the Instituto Miguel Lillo at Tucumán, Argentina, Oregon State College at Corvallis, the State College of Washington at Pullman, Rancho Santa Ana Botanic Garden at Anaheim, California, the University of Washington at Seattle, the Instituto Darwinion at San Isidro, Argentina, the Southern Methodist University at Dallas, Texas, Oklahoma Agricultural and Mechanical College at Stillwater, the United States National Herbarium at Washington, and the Britton Herbarium at the New York Botanical Garden. These specimens have brought to light 47 new country or island records, 48 new state, province, or department records, and 30 new county or parish records. Also, 151 new binomials or trinomials, or corrections of previous entries, must be added to the alphabetic list of scientific names proposed in this group.

## ISLE ST. IGNACE:

Eriocaulon septangulare With.

## UNITED STATES OF AMERICA:

## New York:

Eriocaulon septangulare With. (Clinton County)

## New Jersey:

Eriocaulon septangulare With. (Middlesex County)

## Pennsylvania:

Eriocaulon septangulare With. (Carbon & Sullivan Counties)

## Maryland:

Eriocaulon Parkeri B. L. Robinson (Caroline, Cecil, Dorchester, & Harford Counties)

## Virginia:

Eriocaulon Parkeri B. L. Robinson (Fairfax County)

## North Carolina:

Eriocaulon decangulare L. (Craven County)

## South Carolina:

Eriocaulon decangulare L. (Clarendon County)

## Georgia:

Eriocaulon compressum Lam. (Baldwin County)Lachnocaulon anceps (Walt.) Morong (Charlton County)Syngonanthus flavidulus (Michx.) Ruhl. (Ware County)

## Florida:

Eriocaulon compressum Lam. (Alachua & Pinellas Counties)Eriocaulon lineare Small (Putnam County)Eriocaulon Ravenelii Chapm. (Okeechobee County)Lachnocaulon anceps (Walt.) Morong (Franklin County)Lachnocaulon Engleri Ruhl. (Polk County)Lachnocaulon glabrum Körn. (Collier, Duval, Manatee, & Okeechobee Counties)Lachnocaulon minus (Chapm.) Small (Hillsborough County)

## Alabama:

Eriocaulon compressum Lam. (Coffee County)Lachnocaulon digynum Körn. (Mobile County)

## Mississippi:

Eriocaulon decangulare L. (Hancock County)Lachnocaulon digynum Körn. (Harrison County)

## Wisconsin:

Eriocaulon septangulare With. (Oconto County)

## MEXICO:

Eriocaulon microcephalum H.B.K. (Tamaulipas)

## VENEZUELA:

Eriocaulon Steyermarkii Moldenke -- delete the \*\*\*Paepalanthus dichotomus Klotzsch (Amazonas)Syngonanthus Steyermarkii Moldenke (Táchira)\*

## COLOMBIA:

Paepalanthus andicola var. villosus Moldenke (Cundinamarca)\*

## BRITISH GUIANA:

Comanthera Linderi L. B. Sm.\*



## SURINAM:

Eriocaulon Steyermarkii Moldenke

## PERU:

Paepalanthus Karstenii Ruhl. (Cuzco)

## BRAZIL:

Eriocaulon Glaziovii Ruhl. (Goyaz)

Eriocaulon tenuifolium Klotzsch (Bahia)

Leiostrix curvifolia var. microphylla Alv. Silv. (Minas Geraes)\*

Leiostrix Dielsii Ruhl. (São Paulo)

Leiostrix hirsuta var. Magalhãesii Alv. Silv. -- to be deleted

Leiostrix polystemma var. robusta Alv. Silv. (Paraná)

Paepalanthus amoenus var. curralensis Alv. Silv. (Minas Geraes)\*

Paepalanthus armeria Mart. (Minas Geraes)

Paepalanthus batocephalus Ruhl. (Minas Geraes)

Paepalanthus Benedicti Alv. Silv. (Minas Geraes) -- this is the preferred orthography of this binomial

Paepalanthus caracensis Alv. Silv. (Minas Geraes)\*

Paepalanthus cearaensis Ruhl. (Minas Geraes)

Paepalanthus decipiens Ruhl. (Minas Geraes)

Paepalanthus dupatya Mart. (Minas Geraes)

Paepalanthus elongatus var. ciliatus Körn. (Minas Geraes)\*

Paepalanthus glabrifolius Ruhl. (Minas Geraes)

Paepalanthus grão-mogolensis Alv. Silv. -- this is the preferred orthography of this binomial.

Paepalanthus Hilarei var. piauhyensis Ruhl. (Minas Geraes)

Paepalanthus itatiaiensis Ruhl. (Minas Geraes)

Paepalanthus jordanensis Alv. Silv. (São Paulo)

Paepalanthus Lundii Körn. (Minas Geraes)

Paepalanthus multicoctatus Ruhl. (São Paulo)

Paepalanthus myocephalus var. minor Körn. (Bahia)

Paepalanthus myriophyllus Alv. Silv. (Minas Geraes)

Paepalanthus parvus Ruhl. (Pernambuco)

Paepalanthus planifolius var. alpestris Körn. (Minas Geraes)

Paepalanthus rigidulus Mart. (Minas Geraes)

Paepalanthus Sellowianus Körn. (Minas Geraes)

Paepalanthus Standleyi Moldenke (Minas Geraes)\*

Paepalanthus stellaris (Guill.) Kunth (Minas Geraes)\*

Paepalanthus suffruticans var. angustifolius Alv. Silv. (Minas Geraes)\*

Paepalanthus Warmingianus (Körn.) Körn. -- this is the correct orthography of this binomial.

Syngonanthus aquaticus Alv. Silv. (Minas Geraes)

Syngonanthus compactus Ruhl. (Amazonas)

Syngonanthus densus (Körn.) Ruhl. (Piahy)

Syngonanthus gracilis (Körn.) Ruhl. (Minas Geraes)

Syngonanthus gracilis var. setaceus Ruhl. (Bahia)

Syngonanthus grão-mogolensis Alv. Silv. -- this is the correct orthography of this binomial

Syngonanthus habrophyus Ruhl. (Minas Geraes)

Syngonanthus nitens (Bong.) Ruhl. (Minas Geraes)

Syngonanthus oblongus (Körn.) Ruhl. (Goyaz)

Syngonanthus oblongus var. aequinoctialis Ruhl. (Bahia)

Syngonanthus Schwackei Ruhl. (Bahia)

Syngonanthus umbellatus var. Liebmannianus (Körn.) Ruhl.  
(Mattogrosso)

MARACÁ ISLAND:

Paepalanthus polytrichoides Kunth

Syngonanthus bulbifer (Huber) Ruhl.

MARAJÓ ISLAND:

Paepalanthus Lamarckii Kunth

Philodice Hoffmannseggii Mart.

Syngonanthus gracilis var. amazonicus Ruhl.

Syngonanthus Huberi Ruhl.

Syngonanthus umbellatus (Lam.) Ruhl.

NEPAL:

Eriocaulon oryzetorum Mart.

INDIA:

Eriocaulon nepalense Prescott (Bombay)

MANCHUKUO:

Eriocaulon robustius (Maxim.) Mak.

CHINA:

Eriocaulon formosanum Hayata (Kwangtung)

KOREA:

Eriocaulon robustius (Maxim.) Mak.

FORMOSA:

Eriocaulon cinereum R. Br.

Eriocaulon formosanum Hayata -- delete the " " "

Eriocaulon petrospermum Hayata -- to be deleted

Eriocaulon pterospermum Hayata\*

JAPAN:

Eriocaulon alpestre Hook. f. & Thoms. (Hokkaido)

Eriocaulon cinereum R. Br. (Honshiu) -- delete "Musashi"

Eriocaulon hondoense Satake (Hokkaido, Honshiu, Kiushiu, & Yezo)\*

Eriocaulon hondoense var. pilosum Satake (Honshiu)\*

Eriocaulon hondoense var. stellatum Satake (Honshiu)\*

Eriocaulon perplexum Satake & Hara (Hokkaido)\*

Eriocaulon piliphorum Satake (Honshiu)\*

Eriocaulon robustius (Maxim.) Mak. (Honshiu, Kiushiu, Shikoku, & Yezo)

Eriocaulon sikokianum Maxim. (Hokkaido)

Eriocaulon truncatum Hamilt. (Kiushiu)

Eriocaulon Zytanii Satake (Honshiu)\*

AUSTRALIA:

Eriocaulon scariosum J. Sm. -- delete the " " "

## BRIBIE ISLAND:

Eriocaulon australe R. Br.Eriocaulon scariosum J. Sm.

## DOUBLE ISLAND:

Eriocaulon australe R. Br.Eriocaulon scariosum J. Sm.

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Addenda and errata to the alphabetic list of scientific names proposed in the Eriocaulaceae, including mis-spellings and mis-accreditations

- Actinocephalus polyanthus Kunth = Paepalanthus polyanthus (Bong.) Kunth
- Blastocaulon rupestris (Gard.) Ruhl. = Blastocaulon rupestre (Gard.) Ruhl.
- Blastocaulum Ruhl. = Blastocaulon Ruhl.
- Carphocephalus caulescens Kunth = Syngonanthus caulescens (Poir.) Ruhl.
- Eriocaulon decangulare Lightf. = Eriocaulon septangulare With.
- Eriocaulon eleocharoides Chapm. = Lachnocaulon Engleri Ruhl.
- Eriocaulon floridanum Chapm. = Eriocaulon decangulare L.
- Eriocaulon hondoense Satake
- Eriocaulon hondoense var. pilosum Satake
- Eriocaulon hondoense var. stellatum Satake
- Eriocaulon iaponicum Körn.
- Eriocaulon japonicum Körn. = Eriocaulon iaponicum Körn.
- Eriocaulon Kunthii var. j Körn. = Eriocaulon Kunthii Körn.
- Eriocaulon longifolium var. Wallichianum Burbidge = Eriocaulon longifolium Nees
- Eriocaulon longirostrum Alv. Silv. = Eriocaulon longirostrum Alv. Silv. & Ruhl.
- Eriocaulon Miquelianum Auct. Jap. = Eriocaulon hondoense Satake
- Eriocaulon Miquelianum Koeck. = Eriocaulon Miquelianum Körn.
- Eriocaulon nipponicum Tatew. = Eriocaulon perplexum Satake & Hara
- Eriocaulon perplexum Satake & Hara
- Eriocaulon petrospermum Hayata = Eriocaulon pterospermum Hayata
- Eriocaulon pterospermum Hayata
- Eriocaulon piliphorum Satake
- Eriocaulon pumilum Chapm. = Lachnocaulon Engleri Ruhl.
- Eriocaulon Ravenelli Chapm. = Eriocaulon Ravenelli Chapm.
- Eriocaulon Ravenellii Chapm. = Eriocaulon Ravenelli Chapm.
- Eriocaulon Sellovianum Kunth = Eriocaulon Sellowianum Kunth
- Eriocaulon spongiosum Alv. Silv. = Eriocaulon spongiosifolium Alv. Silv.
- Eriocaulon stellare Guill. = Paepalanthus stellaris (Guill.) Kunth
- Eriocaulon truncatum Buch.-Ham. = Eriocaulon truncatum Hamilt.



Eriocaulon Zyotanii Satake

Eupaepalanthus Freyreissii Körn. = Paepalanthus Freyreissii  
(Thumb.) Körn.

Eupaepalanthus minutulus Mart. = Paepalanthus minutulus Mart.

Eupaepalanthus Oerstedianus Körn. = Paepalanthus Oerstedianus  
Körn.

Eupaepalanthus plantagineus Körn. = Paepalanthus plantagineus  
(Bong.) Körn.

Eupaepalanthus Schenckii V. A. Pouls. = Paepalanthus Schenckii  
V. A. Pouls.

Eupaepalanthus Schraderi Körn. = Paepalanthus bifidus (Schrad.)  
Kunth

Eupaepalanthus tortilis Körn. = Paepalanthus tortilis (Bong.)  
Mart.

Eupaepalanthus Warmingianus Körn. = Paepalanthus Warmingianus  
(Körn.) Körn.

Leiothrix affinis Alv. Silv. = Leiothrix affinis Alv. Silv.

Leiothrix araxaensis Alv. Silv. = Leiothrix araxaensis Alv.  
Silv.

Leiothrix curvifolia var. microphylla Alv. Silv.

Leiothrix flavescens (Körn.) Ruhl. = Leiothrix flavescens  
(Bong.) Ruhl.

Leiothrix hirsuta var. Blanchetiana Ruhl. = Leiothrix hirsuta  
var. Blanchetiana (Körn.) Ruhl.

Leiothrix hirsuta var. Magalhãesii Alv. Silv. = Leiothrix Go-  
mesii Alv. Silv.

Leiothrix lanuginosa Bong. = Leiothrix curvifolia var. lanugin-  
osa (Bong.) Ruhl.

Leiothrix Michaelii Alv. Silv. = Leiothrix Michaelii Alv. Silv.

Leiothrix trichophyllus Alv. Silv. = Leiothrix trichopus Alv.  
Silv.

Leiothrix vivipara (Mart.) Ruhl. = Leiothrix vivipara (Bong.)  
Ruhl.

Leptocephali Ruhl. -- a group of Paepalanthus Mart.

Lophophyllum Itatiaiae Körn. = Leiothrix Beckii (Syzsz.) Ruhl.

Nasmythia angustifolia Chapm. = Eriocaulon compressum Lam.

Paepalanthus amoenus Körn. = Paepalanthus amoenus (Bong.) Körn.

Paepalanthus amoenus var. curralensis Alv. Silv.

Paepalanthus andicola var. villosus Moldenke

Paepalanthus Arnisei Ruhl. = Paepalanthus stellaris (Guill.)  
Kunth

Paepalanthus Benedicti Alv. Silv.

Paepalanthus bryoides Kunth = Paepalanthus bryoides (Bong.)  
Kunth

Paepalanthus canescens (Bong.) Ruhl. = Paepalanthus canescens  
(Bong.) Körn.

Paepalanthus canescens var. angustifolia Ruhl. = Paepalanthus  
canescens f. angustifolius Ruhl.

Paepalanthus caparoensis Ruhl. = Paepalanthus caparoensis Ruhl.



- Paepalanthus caracensis Alv. Silv.  
Paepalanthus cearensis Ruhl. = Paepalanthus cearaensis Ruhl.  
Paepalanthus chloronema Ruhl. = Paepalanthus chloronema Alv. Silv.  
Paepalanthus ciliatus (Bong.) Ruhl. = Paepalanthus ciliatus (Bong.) Kunth  
Paepalanthus cillicatus Ruhl. = Paepalanthus ciliolatus Ruhl.  
Paepalanthus Clausenianus Körn. = Paepalanthus Claussenianus Körn.  
Paepalanthus corymbosus (Bong.) Ruhl. = Paepalanthus corymbosus (Bong.) Kunth  
Paepalanthus diplobator Ruhl.  
Paepalanthus diplobector Ruhl. = Paepalanthus diplobator Ruhl.  
Paepalanthus diplobetor Ruhl. = Paepalanthus diplobator Ruhl.  
Paepalanthus diuaticatus (Bong.) Ruhl. = Paepalanthus divaricatus (Bong.) Kunth  
Paepalanthus dominguensis Ruhl. = Paepalanthus domingensis Ruhl.  
Paepalanthus Edwallii Alv. Silv. = Leiothrix Edwallii Alv. Silv.  
Paepalanthus elongatus Körn. = Paepalanthus elongatus (Bong.) Körn.  
Paepalanthus elongatus var. ciliata Körn. = Paepalanthus elongatus var. ciliatus Körn.  
Paepalanthus elongatus var. ciliatus Körn.  
Paepalanthus erectifolius var. grandifolia Alv. Silv. = Paepalanthus erectifolius var. grandifolius Alv. Silv.  
Paepalanthus exiguus Körn. = Paepalanthus exiguus (Bong.) Körn.  
Paepalanthus falcifolius Ruhl. = Paepalanthus falcifolius Körn.  
Paepalanthus flacidus Kunth = Paepalanthus flaccidus (Bong.) Kunth  
Paepalanthus flavidulis Kunth = Syngonanthus flavidulus (Michx.) Ruhl.  
Paepalanthus Freyreissi Körn. = Paepalanthus Freyreissii (Thumb.) Körn.  
Paepalanthus grac-mogolensis Alv. Silv. = Paepalanthus grac-mogolensis Alv. Silv.  
Paepalanthus grac-mogolensis Alv. Silv.  
Paepalanthus Hilairei var. pihauhyensis Ruhl. = Paepalanthus Hilairei var. pihauhyensis Ruhl.  
Paepalanthus incanus Kunth = Paepalanthus incanus (Bong.) Körn.  
Paepalanthus Langsdorffii Körn. = Paepalanthus Langsdorffii (Bong.) Körn.  
Paepalanthus Leiseringii Ruhl. = Paepalanthus Leiseringii Ruhl.  
Paepalanthus lepidus Alv. Silv.  
Paepalanthus lycopodiifolius Alv. Silv. = Paepalanthus lycopodioides Alv. Silv.  
Paepalanthus macrorrhizus Kunth = Paepalanthus macrorrhizus (Bong.) Kunth  
Paepalanthus microphyllus (Guill.) Ruhl. = Paepalanthus microphyllus (Guill.) Kunth

- Paepalanthus myocephalus var. major Körn. = Paepalanthus myocephalus (Mart.) Körn.
- Paepalanthus myocephalus var. minor Körn.
- Paepalanthus nacrothrichus Alv. Silv. = Paepalanthus macrotrichus Alv. Silv.
- Paepalanthus negregens Alv. Silv. = Paepalanthus nigrescens Alv. Silv.
- Paepalanthus planifolius Körn. = Paepalanthus planifolius (Bong.) Körn.
- Paepalanthus plantagineus Körn. = Paepalanthus plantagineus (Bong.) Körn.
- Paepalanthus plumosus Körn. = Paepalanthus plumosus (Bong.) Körn.
- Paepalanthus polyandros Alv. Silv. = Paepalanthus polyandrus Alv. Silv.
- Paepalanthus polyanthus Kunth = Paepalanthus polyanthus (Bong.) Kunth
- Paepalanthus polyanthus var. Körn. = Paepalanthus polyanthus (Bong.) Kunth
- Paepalanthus preadensatus Alv. Silv. = Paepalanthus praedensatus Alv. Silv.
- Paepalanthus pubescens var. chapadensis Alv. Silv. = Paepalanthus pubescens var. chapadensis Ruhl.
- Paepalanthus pullus var. longepilosa Alv. Silv. = Paepalanthus pullus var. longepilosus Alv. Silv.
- Paepalanthus ramosus Kunth = Paepalanthus ramosus (Wikstr.) Kunth
- Paepalanthus Riedelianus var. macrocephala Alv. Silv. = Paepalanthus Riedelianus (Bong.) Körn.
- Paepalanthus saxatilis Körn. = Paepalanthus saxatilis (Bong.) Körn.
- Paepalanthus Schlechteri (Ruhl.) Macbr. = Syngonanthus Schlechteri Ruhl.
- Paepalanthus Schwackeanus var. glabrecens Alv. Silv. = Paepalanthus Schwackeanus var. glabrescens Alv. Silv.
- Paepalanthus sellovianus Körn. = Paepalanthus Sellowianus Körn.
- Paepalanthus spirophorus Alv. Silv. = Paepalanthus spirophorus Alv. Silv.
- Paepalanthus stellaris (Guill.) Kunth
- Paepalanthus stellaris Kunth = Paepalanthus stellaris (Guill.) Kunth
- Paepalanthus suffruticans var. angustifolia Alv. Silv. = Paepalanthus suffruticans var. angustifolius Alv. Silv.
- Paepalanthus suffruticans var. angustifolius Alv. Silv.
- Paepalanthus trichopetalus Alv. Silv. = Paepalanthus trichopetalus Körn.
- Paepalanthus trichophyllus Körn. = Paepalanthus trichophyllus (Bong.) Körn.
- Paepalanthus vellosioides Körn. = Paepalanthus vellozioides

Körn.

- Paepalanthus virides Körn. = Paepalanthus viridis Körn.  
Paepalanthus Warmingianus Körn. = Paepalanthus Warmingianus  
 (Körn.) Körn.  
Paepalanthus Warmingianus (Körn.) Körn.  
Paepalanthus Warmingii Körn. = Paepalanthus Warmingianus (Körn.)  
 Körn.  
Philodice Hoffmannegii Mart. = Philodice Hoffmannegii Mart.  
Platycaulon consanguineum Körn. = Paepalanthus planifolius var.  
consanguineus (Körn.) Ruhl.  
Psilocephalus nitens Kunth = Syngonanthus nitens (Bong.) Ruhl.  
Syngonanthus aciphyllus (Körn.) Ruhl. = Syngonanthus aciphyllus  
 (Bong.) Ruhl.  
Syngonanthus anthemidiflorus var.  $\beta$  Körn. = Syngonanthus anth-  
emiflorus (Bong.) Ruhl.  
Syngonanthus caracensis var. glabrescens Alv. Silv. = Syngonan-  
thus caracensis var. glabrescens Alv. Silv.  
Syngonanthus caulescens (Kunth) Ruhl. = Syngonanthus caulescens  
 (Poir.) Ruhl.  
Syngonanthus caulescens var. bello-horizontina Alv. Silv. =  
Syngonanthus caulescens var. bellohorizontinus Alv. Silv.  
Syngonanthus cipoensis Alv. Silv. = Syngonanthus cipoënsis Alv.  
 Silv.  
Syngonanthus goyazensis (Bong.) Ruhl. = Syngonanthus goyazensis  
 (Körn.) Ruhl.  
Syngonanthus gracilis (Kunth) Ruhl. = Syngonanthus gracilis  
 (Körn.) Ruhl.  
Syngonanthus gracilis var.  $\alpha$  (Kunth) Ruhl. = Syngonanthus grac-  
ilis (Körn.) Ruhl.  
Syngonanthus gracilis var. microphylla Alv. Silv. = Syngonanth-  
us gracilis (Körn.) Ruhl.  
Syngonanthus grac-mogolensis Alv. Silv. = Syngonanthus grão-  
mogolensis Alv. Silv.  
Syngonanthus grão-mogolensis Alv. Silv.  
Syngonanthus helminthorrhizus (Mart.) Ruhl. = Syngonanthus hel-  
minthorrhizus (Mart.) Ruhl.  
Syngonanthus lanceolatus Alv. Silv. = Syngonanthus lanceolatus  
 Alv. Silv.  
Syngonanthus nigrescens Alv. Silv. = Syngonanthus niger Alv.  
 Silv.  
Syngonanthus nitens var. Koernickeana Ruhl. = Syngonanthus  
nitens var. Koernickei Ruhl.  
Syngonanthus niveus (Kunth) Ruhl. = Syngonanthus niveus (Bong.)  
 Ruhl.  
Syngonanthus oblongus var. aequinoxialis Ruhl. = Syngonanthus  
oblongus var. aequinoctialis Ruhl.  
Syngonanthus pallens Alv. Silv.  
Syngonanthus pallidus Alv. Silv. = Syngonanthus pallens Alv.  
 Silv.



Syngonanthus Steyermarkii Moldenke

Syngonanthus umbellatus var. Liebmanniana Ruhl. = Syngonanthus umbellatus var. Liebmannianus (Körn.) Ruhl.

Trichocalyx rufulus Kunth = Leiothrix rufula (A. St. Hil.) Ruhl.

Addenda

Paepalanthus Hilairei var. paiuhyensis Ruhl. = Paepalanthus Hilairei var. paiuhyensis Ruhl.

Syngonanthus atro-virens Ruhl. = Syngonanthus atrovirens (Körn.) Ruhl.

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ADDITIONAL NOTES ON THE GENUS PETREA. IV

Harold N. Moldenke

PETREA Houst.

References: Irmão Augusto, Flora do Rio Grande do Sul 227 [as "Petraeae L."]. 1946; E. H. Walker, Contrib. U. S. Nat. Herb. 30 (1): 402. 1947.

According to Dr. L. H. Bailey's list of nurserymen handling various species of cultivated plants, the Everglades and the Royal Palm nurseries in Florida handle P. volubilis.

The Glaziou 16320 [Macbride photos 24636] distributed as "Petrea Glaziovii Briq." is solanaceous.

PETREA ANDREI Moldenke

Additional citations: ECUADOR: Loja: R. Espinosa 1171 (N).

PETREA ASPERA Turcz.

Additional citations: VENEZUELA: Yaracuy: Killip 37068 (S).

PETREA BRAÇTEATA Steud.

Additional citations: BRITISH GUIANA: A. C. Smith 2626 (S).

PETREA MACROSTACHYA Benth.

The species is called "sandpaper vine" in British Guiana and is described as a tough gray "rope" with stems about 1 cm. in diameter, not reaching to the crown of trees, leaves stiffly leathery and scabrous, flowers in long terminal drooping spikes, the calyx-lobes enlarged, membranous, purple, and the "flowers" tubular and deep-purple.

Additional citations: BRITISH GUIANA: Fanshawe 4854 [F.2118] (N); Forest Dept. British Guiana 4854 [F.2118] (N); A. C. Smith 3401 (S).



## PETREA MAYNENSIS Huber

The species has been collected on high shores of streams, in anthesis in February.

Additional citations: BRAZIL: Amazonas: Ducke s.n. [Herb. Rio de Janeiro 35657] (S).

## PETREA PERUVIANA var. ACUMINATA Moldenke

Seibert describes this plant as a beautiful liana which could well be used as an ornamental, the flowers very sweetly odorous, the corolla lavender. He collected it at an altitude of 150 m., blooming in November.

Additional citations: PERU: Loreto: Seibert 1880 (W--1909049); Mexia 6498 (Gg--288808).

## PETREA PUBESCENS Turcz.

Seibert describes this species as a beautiful tree to 12 m. tall, worthy of cultivation, with bluish-lavender flowers in September, growing at an altitude of 330 m.

Additional citations: PERU: Madre de Dios: Seibert 2164 (W--1909065).

## PETREA RACEMOSA Nees

The species is described as a "weeping" shrub, growing at an altitude of 1100 m., blooming in September and October.

Additional citations: BRAZIL: Minas Geraes: Williams & Assis 7602 (G, N). São Paulo: Heiner 206 (S).

## PETREA RUGOSA H.B.K.

Additional citations: COLOMBIA: Caldas: Haught 2103 (S).

## PETREA VOLUBILIS L.

References: Seymour, Host. Ind. Fungi N. Am. 588--589. 1929; E. A. Menninger, Introductory Offer Flow. Trees Coll. [2]. 1946; E. A. Menninger, 1947 Cat. Flow. Trees 43. 1946; Irmão Augusto, Flora do Rio Grande do Sul 227 [as "Petraeae volubilis L."]. 1946.

Menninger calls this plant "Queen's wreath" and "purplewreath petrea" and offers plants for sale at \$2 each. He describes it thus: "This woody vine to 35 feet from northern South America, with its rough leaves and lovely blue flowers three times a year, is one of our finest climbers [in Florida]. The profuse flower sprays are two-colored for the corolla is dark blue, the sepal is light blue. When the corolla drops, the sepal persists, changing to a dull gray and finally serving as a wing for the single seed embedded in its axis." Irmão Augusto records the common name "touca de viuva", Eastwood records "sandpaper vine", and Mexia records "veracruzua". Matuda states that the species grows also in Chiapas, Mexico. The Kelly 248 and Eastwood s.n. from Honolulu do not state on their labels that the plants were

in cultivation, but I assume that they were. Dr. L. H. Bailey, in his list of nurseries handling material of various cultivated genera, says that the Everglades and the Royal Palm nurseries in Florida handle this species.

Additional citations: MEXICO: Guerrero: Née 33 (Q). Oaxaca: Schultes & Reko 569 (Oa--8289). Sinaloa: Mexia 1933a (Gg--157102). Tamaulipas: Edw. Palmer 317 (Gg--31222). Veracruz: Matuda 1478 (Mh). Yucatán: G. F. Gaumer 379 (Gg--160326). BRITISH HONDURAS: Gentle 2366 (Mh). COSTA RICA: Guanacaste: Brenes s.n. [Frontera Norte, 1910] (N). CULTIVATED: Florida: Simmonds s.n. [U. S. P. I. 36024] (Oa--9144). Hawaiian Islands: Eastwood s.n. [Honolulu, August 1--16, 1924] (Gg--34502); Kelly 248 (Gg--31221). Mexico: C. Conzatti 5305 (Mh). Peru: Soukup 2903 (N). LOCALITY OF COLLECTION UNDESIGNATED: Née 34 (Q), 35 (Q), 37 (Q).

PETREA VOLUBILIS var. PUBESCENS Moldenke

Additional citations: MEXICO: Oaxaca: Seler & Seler 2777 (Gg--245875). Tamaulipas: F. A. Barkley 17M174 (N). COSTA RICA: Alajuela: Brenes 13620 [13; 279; 14191] (N, SI), 14290 [5; 144110] (N), s.n. [San Gerardo de San Ramon, 1903] (N, SI, SI).

PETREA Houst.

The Baker and Baker s.n. from Cambodia, distributed as "Petraea" is actually something in the Nyctaginaceae. It is represented by sheet no. 31220 in the California Academy of Sciences herbarium. The Thorp 29895, sheet 299022 in the same herbarium, distributed as Petraea zaquebarica J. Gay, is actually Dicerocaryum zaquebarium (Lour.) Merr. in the Pedaliaceae.

PETREA KOHAUTIANA Presl

Additional citations: MARTINIQUE: Sieber Fl. Mart. 374 [Herb. Prager 18663] (Gg--31219).

PETREA MACROSTACHYA Benth.

References: A. R. McIntyre, Curare 31. 1947 [quoting Robert Schomburgk].

Additional citations: BRITISH GUIANA: Herb. Forest Dept. Br. Guiana 4854 [F.2118] (K).

PETREA MAYNENSIS Huber

Sandeman describes this plant as "a small tree growing in semi-shade, with very beautiful flowers, making the effect of Parma violet petals surrounded by pointed periwinkle blue bracts. Ovate scabrous opposite leaves. The inflorescence has rather the appearance of a Triplex [=Triplaris]". He found it blooming in November at an altitude of 700 feet.

Additional citations: PERU: Loreto: Sandeman 3474 (K).

## PETREA PUBESCENS Turcz.

Hanbury-Tracy describes this species as a "tree 20 to 40 feet tall; flowers dull purple", collected at an altitude of 5000 feet.

Additional citations: VENEZUELA: Mérida: Hanbury-Tracy 136 (K, K).

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ADDITIONAL NOTES ON THE GENUS AMASONIA. III

Harold N. Moldenke

## AMASONIA ANGUSTIFOLIA Mart. &amp; Schau.

Additional citations: BRAZIL: Goyaz: G. Gardner 3411 [Herb. Monac. 924; Macbride photos 20345 & 28390] (N--photo of type, N--photo of isotype).

## AMASONIA CAMPESTRIS (Aubl.) Moldenke

References: Pynaert & Gentil, Rev. Hort. Belg. 22: 211 [as A. punicea]. 1896.

Additional citations: TRINIDAD: Ryan s.n. [Macbride photos 22773] (N--photo). BRITISH GUIANA: A. C. Smith 2441 (S). FRENCH GUIANA: Aublet s.n. [Herb. MontinU] (F--photo of isotype, N--photo of isotype, S--isotype, Si--photo of isotype, Z--photo of isotype). BRAZIL: Bahia: Blanchet 3156 [Macbride photos 7887 & 30184] (N--photo, N--photo). Maranhão: Fróes 11779 (S).

## AMASONIA HIRTA Benth.

Additional citations: BRAZIL: Mattogrosso: Martius 583 [Herb. De Candolle 827; Herb. Monac. 929; Macbride photos 7886 & 20346] (N--photo, N--photo). São Paulo: L. Riedel 814 (N).

## AMASONIA SPRUCEANA Moldenke

Additional citations: VENEZUELA: Amazonas: Spruce 3288 [Macbride photos 28391] (N--photo of isotype).

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## SPECIFIC NAMES IN GRATIOLA

H. A. Gleason

Of the six species of Gratiola which enter the Manual Range, only three are at all common or well distributed; a fourth occurs only from Delaware southward and again in Ohio and Kentucky, and a fifth is known from a single collection only. A sixth species is attributed to the genus by Gray's Manual and various recent authors, but has been assigned to a segregate genus by Pennell and appears under two other generic names in current Manuals. Of the six, only one, and that one the rarest in our area, has been able to continue with its traditional name unchanged through the recent epidemic of name-changing, which impresses me as a lamentable condition completely foreign to the explicitly stated basis of the International Code: "The essential points in nomenclature are: (1) to aim at fixity of names; (2) to avoid or to reject the use of forms and names which may cause error or ambiguity or throw science into confusion."

Gratiola pilosa Michx. appears under that name in Gray, seventh edition, as Sophranathe pilosa (Michx.) Small in Britton & Brown, as Tragiola pilosa (Michx.) Small & Pennell in Small's Manual and in Pennell's recent monograph. There is no competition with the specific epithet pilosa. Generic segregation or aggregation is a matter of studied scientific opinion (we hope) and the International Code neither encourages nor discourages it.

Gratiola ramosa Walter is unchallenged.

An abundant plant of the Manual Range was long known as Gratiola sphaerocarpa Ell. Since 1918 it has been generally known to American botanists that the Linnaean name G. virginiana belongs to this plant; this name has been used in the recent manuals of Small and Rydberg and in various local floras, such as those of Kentucky, Indiana, and Illinois. There is no doubt that the use of one name for two plants "tends to throw science into confusion": each of these three local floras finds it necessary to quote synonyms to make their meaning intelligible, and Fernald in a discussion of Gratiola-problems also had to use both names to insure that his meaning would be understood. Nevertheless, rules are rules, and there seems to be no way to avoid this regrettable change.

Gratiola viscosa Schw. of Gray's Manual and the Illustrated Flora is a homonym of G. viscosa Hornem. Again nothing can be done about it and the plant has been re-named G. viscidula Pennell.

Now we come to the really important cases. The most abundant and widely distributed species of the genus was long known as G. virginiana L. When that name was transferred to another species, as recounted above, this common plant was left without a name in usage. Pennell resurrected G. neglecta Torr.



(1819) and this name has since come into general usage in most recent literature. Gratiola aurea, usually accredited to Muhlberg but actually published by Pursh in 1814, is the most conspicuous local member of the genus and abundant along the Atlantic seaboard. Both of these names are antedated by G. lutea Raf. (1811). Fernald says G. lutea applies to G. "virginiana"; Pennell says it applies to G. aurea. Both have examined the type; each insists that his identification of it is correct, but Pennell bolsters his position by stating that Rafinesque himself, in a later publication, announced that Pursh's G. aurea had already been named G. lutea.

No matter which man is correct, the results are unfortunate. If Pennell is right, the well known G. aurea gets a new name. If Fernald is right, the equally well known "G. virginiana", just getting accustomed to one new name, must start out anew under a third name.

There is only one thing that can be done in this dilemma, and that is to exclude G. lutea from all consideration. That can be done under the rules. The use of G. lutea for two different species by two competent botanists, each of whom insists on the validity of his opinion and will presumably continue to use the name indefinitely into the future, will certainly be a "permanent source of confusion or error" (International Code, Art. 62). "A name of a taxonomic group must be rejected when its application is uncertain" (Article 63), which is surely the case when competent men disagree on the identification of the type.

Our species of Gratiola will then be (1) G. aurea Pursh, 1814, not G. lutea Raf. 1811, nomen dubium; (2) G. ramosa Walt.; (3) G. viscidula Pennell, 1919, not G. viscida Schw. 1824, homonym; (4) G. neglecta Torr. 1819, not G. virginiana of recent literature or G. lutea Raf. 1811, nomen dubium; (5) G. virginiana L. 1753, not G. sphaerocarpa Ell. 1816; (6) G. pilosa Michx.

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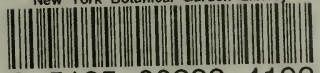








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