

S. rosea are puberulent; the sepals are described as rose by Walter. I am not sure that S. rosea is distinct from S. rivinoides.

I recognize the genus Schindleria principally on the authority of Walter, who first proposed it in 1906 and three years later elaborated it in his monograph of the Phytolaccaceae. The flower of Schindleria is hermaphroditic, has four sepals, irregularly disposed many stamens, a superior unilocular uniovulate ovary, penicillate stigma, and a dry fruit. Rivina has four stamens, capitate stigma, and baccate fruit. Kuntze, in 1898, transferred Villamilla racemosa to Rivina. Villamilla Ruiz & Pav. ex Moq. (= Trichostigma A. Rich.) differs from Schindleria chiefly in its baccate fruit; Ledenbergia Klotzsch ex Moq. (= Flueckigera Kuntze), in the arrangement of its stamens.

NOTES ON NEW AND NOTEWORTHY PLANTS. XIII

Harold N. Moldenke

CALLICARPA BREVIPES f. ANNAMENSIS Moldenke, f. nov.

Haec forma a forma typica recedit laminis foliorum arcte ellipticis usque ad 15 cm. longis et 6 cm. latis minute serrulatis, ad basin attenuato-acutis.

This form differs from the typical form of the species and from the several other described forms in having its leaf-blades decidedly elliptic, the larger ones about 15 cm. long and 6 cm. wide, minutely serrulate from below the middle to below the terminal acumination, attenuate-acute at the base.

The type of this form was collected by Joseph and Mary Knapp Clemens (no. 4499) at Tourane or its vicinity, Annam, French Indochina, between May and July, 1927, and is deposited in the Britton Herbarium at the New York Botanical Garden.

CALLICARPA FORMOSANA var. GLABRESCENS Moldenke, var. nov.

Haec varietas a forma typica speciei foliis subtus glaberrimis vel in venis majoribus sparse stellatis recedit.

This variety differs from the typical form of the species in having the lower leaf-surfaces entirely glabrous or else sparsely stellate only on the midrib and larger veins.

The type of the variety was collected by Maximo Ramos and Gregorio E. Edaño [Herb. Philippine Bureau of Science 29137] on Mount Tulaog, province of Tayabas, Luzon, Philippine Islands, in May, 1917, and is deposited in the Britton Herbarium at the

New York Botanical Garden.

CALLICARPA KINABALUENSIS Bakh., sp. nov.

Frutex vel arbor parva; ramis percrassis obtuse tetragonis permedullosis densissime hirsutis, pilis ferrugineo-fulvis; foliis oppositis magnis; petiolis percrassis densissime patentihirsutis; laminis crassis firme chartaceis vel subcoriaceis ellipticis vel obovatis acutis vel acuminatis dentatis, ad basin cuneatis vel rotundatis, supra densiuscule villosulopubescentibus, subtus densissime tomentosis, pilis ferrugineo-fulvis; inflorescentiis axillaribus, subrecurvatis cymosis ubique densissime ferrugineo-hirsutis furcatis.

Shrub about 3 feet tall or small tree; branches and stems very heavy and coarse, obtusely tetragonal, very medullose, very densely hirsute with ferruginous-fulvous hairs about 5 mm. long standing at right angles to the stem, more matted and finally even glabrescent toward the base of the plant in age; principal internodes 3--8 cm. long; nodes annulate; leaves decussate-opposite, large; petioles very stout, 2.5--3 cm. long, very densely spreading-hirsute like the branches; blades thick-textured, firmly chartaceous or subcoriaceous, elliptic or obovate, 15--30 cm. long, 7.5--11 cm. wide, acute or acuminate at the apex, dentate from near the base to just below the terminal acumination, cuneate or rounded at base, rather densely villosulous-pubescent above, less so in age, very densely matted-tomentose beneath with ferruginous-fulvous hairs; midrib very stout, flat above, very densely tomentose on both surfaces, very prominent beneath; secondaries slender, 10--12 per side, flat or slightly prominulent above, prominent beneath, arcuate-ascending, running to the margins but not anastomosing; veinlet reticulation quite abundant, obscure above, prominulous beneath, normally hidden by the dense tomentum; inflorescence axillary, 2 per node, somewhat recurved, cymose, 5--7 cm. long, much shorter than the subtending leaf, 4--6.5 cm. wide, composed normally of two lateral widely divergent branches and no terminal one, the branches stout, 1--1.5 cm. long, very densely ferruginous-hirsute like the stems, once or twice furcate, bearing 2--4 densely many-flowered subcapitate cymules; peduncles stout, 3--4 cm. long, very densely ferruginous-villous like the stems; bractlets lanceolate-ovate, 8--10 mm. long, attenuate-acute, densely ferruginous-hirsute with more or less appressed hairs; pedicels completely obscured by the dense villous hairs; calyx campanulate, about 5 mm. long, very densely hirsute with ferruginous many-celled erect hairs, its rim deeply apiculate-lobed; corolla white or cream-colored; stamens yellow; pistil white.

The type of this most remarkable species was collected by Joseph and Mary Knapp Clemens (no. 33200) at Marai Parai, Mount Kinabalu, British North Borneo, on May 22, 1933, and is depos-

ited in the Herbarium Bogoriense at Buitenzorg.

CALLICARPA LONGIPETIOLATA var. *GLABRESCENS* Moldenke, var. nov.

Haec varietas a forma typica speciei laminis subtus arcte argentatis sparsissime (in venis majoribus) furfuraceis recedit.

This variety differs from the typical form of the species in having its lower leaf-surfaces decidedly silvery, but only very sparsely furfuraceous on the larger venation when mature.

The type of the variety was collected by Father Morice Van-overbergh (no. 1376) in Bontoc Subprovince, Luzon, Philippine Islands, on June 20, 1914, and is deposited in the herbarium of the Botanisch Museum at Utrecht.

CITHAREXYLUM STANDLEYI var. *MEXICANUM* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit racemis fructiferis 3.5--8 cm. longis et laminis foliorum subtus ubique minute puberulis.

This variety differs from the typical form of the species in having its fruiting-racemes only 3.5--8 cm. long and its leaf-blades minutely puberulous throughout on the lower surface, much more densely so on the larger venation.

The type of the variety was collected by B. L. Turner (no. 2077) in gravelly-clay soil on a dry stream-bank, one mile east of La Placita, 45 air miles south of Colima, Michoacán, Mexico, on July 4, 1950, and is deposited in the herbarium of the University of Michigan.

CLERODENDRUM BAKHUIZENI Moldenke, sp. nov.

Frutex vel arbor; ramis ramulisque gracilibus griseis obtuse tetragonis dense breviterque pubescentibus, in statu senili glabrescentibus; foliis ternatis; petiolis gracillimis dense breviterque pubescentibus; laminis tenuiter chartaceis fragilibus late ellipticis vel elliptico-ovatis rotundatis vel obtusis integris, ad basin late rotundatis, supra plusminusve dense puberulis, subtus plusminusve dense puberulis vel breviter pubescentibus et impresso-punctatis; inflorescentiis terminalibus dense adpresso-puberulis.

Shrub or tree; branches and branchlets rather slender, light-gray, obtusely tetragonal, densely short-pubescent with sordid-canescant subappressed hairs, glabrescent in age; twigs very slender, very densely short-pubescent with antrorsely curved sordid hairs; nodes not ampliate, sometimes annulate; principal internodes 0.5--4.5 cm. long; leaf-scars subcircular, borne on large, very divergent and prominent corky sterigmata; leaves ternate; petioles very slender, 1--2 cm. long, densely short-pubescent like the twigs; blades thin-chartaceous, brittle when dry and rather uniformly gray-green on both surfaces, broadly elliptic or elliptic-ovate, 2.2--6.5 cm. long, 1.5--4.5 cm. wide, rounded or obtuse at the apex, entire, broad-

ly rounded to a shortly acuminate base, more or less densely puberulent above, more or less densely puberulent or short-pubescent and impressed-punctate beneath; midrib slender, flat above, prominulous beneath; secondaries very slender, 4--6 per side, arcuate-ascending, flat above, subprominulous beneath; veinlet reticulation rather sparse, mostly very obscure or indiscernible above, rather obscure or slightly subprominulous beneath; inflorescence terminal, composed of 2--6 whorls of rather few-flowered cymes mostly about 3 cm. long; peduncle much abbreviated, indistinguishable from the twigs; sympodia abbreviated, mostly 5--10 mm. long, densely appressed-puberulent; cyme-branches slender, 1--2 cm. long, densely appressed-puberulent; pedicels filiform, 1--2 mm. long, densely sordid-puberulent; bractlets narrow-elliptic or linear, 2--4 mm. long, densely brownish-puberulent; calyx narrow-campanulate, about 3 mm. long and 2 mm. wide, rather densely puberulent with twisted antrorsely subappressed sordid hairs, its rim very shortly 4-denticulate; corolla hypocrateriform, its tube 8--9 mm. long, nigrescent in drying, very minutely pulverulent on the outside, its limb suberect, the lobes 2--3 mm. long, rounded at the apex, glabrous; stamens and pistil exserted to about 2 cm.; fruiting-calyx shallowly patelliform, 10--13 mm. wide, more or less irregularly puberulent, its rim shallowly and irregularly lobed or merely sinuate; fruit drupaceous, nigrescent in drying and subglobose, 8--10 mm. long and wide, much wrinkled in drying, glabrate.

The type of this puzzling species was collected from material cultivated in the Botanical Garden at Buitenzorg, Java, during or before 1916, and is sheet no. 20766 in the Herbarium Bogoriense. The file number of the cultivated plant is Hort. Bog. XV. L.11. The plants at Buitenzorg were received as and cultivated as "Clerodendron glaucum Wall." and it may well be that this nomen nudum of Wallich (ex Steud., Nomencl. Bot., ed. 2, 1: 383. 1840) is to be reduced to synonymy here. In 1919 the distinguished taxonomist, Reinier Cornelis Bakhuizen van den Brink, Sr., who has done such noteworthy and splendid revisionary work in this family and to whom the species is respectfully dedicated, regarded it as C. emirnense Bojer, native to Madagascar. In 1924 he decided that it was not that species, but was C. tomentosum (Vent.) R. Br., native to tropical Australia and New Guinea.

This plant is not C. emirnense, because that species, even in its var. diffusum (which has somewhat similar inflorescence) has smaller glabrous leaves. It is not C. tomentosum because in that species the calyx and fruiting-calyx are 5-fid and the corolla is smaller. It somewhat resembles C. aculeatum var. gracile Griseb. & Moldenke, which, however, has spinose stems and narrower leaves. Its ternate leaf arrangement reminds one

of C. molle H.B.K., C. margaritense Moldenke, and C. ternifolium var. mexiae Moldenke, but in all those the calyx-rim is deeply lobed and flaring. Similarly, C. hircinum Schau., C. glabrum var. ovale (Klotzsc) H. H. W. Pearson and var. pubescens Thomas, which it resembles in habit, have elongated calyx-lobes. In C. pyrifolium J. G. Baker and C. sakaleonense Moldenke the leaves are glabrous, as they are also in C. heterophyllum (Poir.) R. Br., some forms of which our plant resembles. It bears striking resemblance to C. rehmanni Gürke, but in that species the calyx is decidedly villous. C. perrieri var. laxicymosum Moldenke is similar, but has larger leaves and the pubescence on pedicels and calyx wide-spreading. It comes closest of all to C. premnoides Moldenke, of Madagascar, in which, however, the leaf-blades are thinner in texture, only sparsely strigillose beneath, the calyx and corolla smaller, and the corolla-tube plainly pilose on the outside.

CLERODENDRUM BRACTEATUM var. BÜNNEMEIJERI Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum subtus glabratis vel glabrescentibus, tubis corollae sparse strigilloso-pilosis, et lobis calycis perspicue ellipticis, marginibus recurvatis.

This variety differs from the typical form of the species in having the leaf-blades glabrate or glabrescent beneath, the corolla-tubes sparsely strigilloso-pilose, and the calyx-lobes conspicuously elliptic (instead of ovate) and with recurved margins.

The type of the variety was collected by H. A. B. Bünnemeijer (no. 8869) -- in whose honor it is named -- at G. Koerintji, at an altitude of about 1770 m., on the west coast of Sumatra, on March 15, 1920, and is deposited in the herbarium of the Botanisch Museum at Utrecht.

CLERODENDRUM BUCHANANI f. ALBUM 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 the form was collected by Oene Posthumus (no. 730) near Bangko, at an altitude of 180 m., Sumatra, on August 18, 1925, and is deposited in the Herbarium Bogoriense at Buitenzorg.

CLERODENDRUM BUCHANANI f. BREVIFLORUM Moldenke, f. nov.

Haec forma a forma typica speciei tubis corollae usque ad 1 cm. longis recedit.

This form differs from the typical form of the species in having its corolla-tubes only 1 cm. long or less during anthesis.

The type of this form was collected by Ilse Rensch-Maier (no. 294) at Sembaloen, Lombok, Lesser Sunda Islands, on April 7, 1927, and is deposited in the Herbarium Bogoriense at Buitenzorg.

CLERODENDRUM BUCHANANI var. GLABRUM (H. J. Lam) Moldenke, comb. nov.

Clerodendron blumeinum var. glabrum H. J. Lam, Verbenac. Malay Arch. 302. 1919.

CLERODENDRUM CERAMENSE Moldenke, sp. nov.

Arbor; ramulis densissime flavo-lanuginosis, pilis subadpressis antrorsis; petiolis crassiusculis densissime flavo-lanuginosis; laminis submembranaceis ovatis acuminatis integris, ad basin rotundatis vel subtruncatis, supra densiuscule breviterque pubescentibus, subtus perdensioribus; inflorescentiis paniculatis ad apicem ramulorum aggregatis ubique dense flavo-pubescentibus; calice profunde 5-lobato dense pubescente.

Tree, about 6 m. tall; branchlets medium-stoutish, obtusely tetragonal, very densely yellow-lanuginous with more or less subappressed antrorse hairs; nodes not annulate; principal internodes 4--8 cm. long; leaves decussate-opposite; petioles rather stout, 4--8.5 cm. long, very densely yellow-lanuginous with subappressed antrorse hairs; blades submembranous, dark green on both surfaces, ovate, 12--18 cm. long, 8.5--11 cm. wide, acuminate at the apex, entire, rounded or subtruncate at the base, rather densely short-pubescent above, much more densely so beneath; midrib stoutish, prominent beneath, mostly flat and densely pubescent above; secondaries slender, 5 or 6 per side, ascending, very slightly arcuate, mostly flat above and prominulous beneath; veinlet reticulation abundant, the tertiaries numerous and subparallel; inflorescence aggregated at the ends of the branchlets, paniculate, densely yellow-pubescent throughout; bracts numerous, elliptic, 1.4--2.8 cm. long, 5--10 mm. wide, densely yellowish-puberulent on both surfaces, stipitate, obtuse at the base, acuminate at the apex, not obscuring the flowers in any way; cymes densely many-flowered, several times dichotomous; calyx campanulate, about 1 cm. long or slightly less, very densely short-pubescent throughout with yellowish-brown hairs, its rim deeply 5-lobed, the lobes ovate, 4--6 mm. long, acuminate at the apex; corolla white, its tube very narrow, 2--3 cm. long, very sparsely puberulous-pilosulous on the outside, the limb 5-lobed, the lobes 5--7 mm. long, rounded at the apex, rather densely pilosulous on the outside; stamens and pistil exerted about 1.5 cm. from the corolla-mouth.

The type of this species was collected by Louis Martin Robert Rutten (no. 1865) at Vai-veti, Kawagebied, on western Ceram, on November 10, 1918, and is deposited in the Herbarium

Bogoriense at Buitenzorg. The species was originally identified at Buitenzorg as C. cunninghamii and later as C. macrostegium. C. macrostegium, however, has very large and broad bracts which hide the flowers, and C. cunninghamii has narrower and longer calyxes. C. macrocalyx H. J. Lam differs at once in its much larger calyxes and C. lanuginosum Blume in its shorter corolla-tubes. The new species is perhaps most closely related to C. philippinense Elm., which also seems to have uniformly shorter corollas.

CLERODENDRUM DISCOLOR var. MACROCALYX Moldenke, var. nov.

Haec varietas a forma typica speciei recedit calicibus late campanulatis 7--9 mm. longis latisque, lobis arcte rubro-tinctis pubescentibus et foliis decussato-oppositis.

This variety differs from the typical form of the species in having its calyxes at time of anthesis broadly campanulate, 7--9 mm. long and wide, decidedly red-tinged on the lobes, pubescent, and the leaves decussate-opposite.

The type of the variety was collected by P. Quarré (no. 1872) at Mimanza, Belgian Congo, in August, 1929, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

CLERODENDRUM DISCOLOR var. RUBRICALYX Moldenke, var. nov.

Haec varietas a forma typica speciei calicibus rubris 3--4 mm. longis, 4--6 mm. latis, pubescentibus recedit.

This variety differs from the typical form of the species in having decidedly red calyxes during and after anthesis, 3--4 mm. long, 4--6 mm. wide pubescent; the leaves are ternate.

The type of the variety was collected by Rossignol (no. 218) at Iurala, altitude 2000 m., Belgian Congo, on November 25, 1939, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

CLERODENDRUM FAULKNERI Moldenke, sp. nov.

Frutex; ramis crassiusculis fistulosis griseis striatis glabris; ramulis fistulosis glabris nigrescentibus; petiolis obsoletis vel brevibus et alatis; laminis membranaceis oblanceolatis rotundatis vel subacutis serratis, ad basin longiter attenuatis, utrinque glabris; inflorescentiis terminalibus paniculatis anguste cylindraceis ubique glabris.

A large bush; branches rather stout, hollow, gray, striate, glabrous, the bark with a curious mesh-like texture under a hand-lens; branchlets slender or stout, hollow, often collapsing in drying, nigrescent in drying, glabrous; nodes not annulate; principal internodes 5--10 cm. long; leaves decussate-opposite, usually borne only on the young branchlets at time of anthesis; petioles obsolete or short and winged, usually merg-

ing so gradually into the lamina as to be difficult to distinguish; blades membranous, bright-green, lighter beneath, oblanceolate, 12--14 cm. long, 2.5--4 cm. wide, rounded or subacute at the apex, long-attenuate into the petiole at the base, shallowly serrate from about the middle to the apex with low rounded teeth, glabrous on both surfaces; midrib slender, flat above, prominulous beneath; secondaries very slender, 4--6 per side, arcuate-ascending, indistinctly anastomosing beneath, flat or obscure above, prominulous beneath; veinlet reticulation sparse, mostly obscure above, flat beneath; inflorescence terminal, a narrow-cylindric panicle composed of 5--10 pairs of dense fascicles of flowers; peduncles similar to the adjacent branchlet, mostly hollow, nigrescent in drying, glabrous, often very stout, 7--11 cm. long; sympodia similar to the peduncles in all respects, sometimes elongated to 7 cm. in fruit, glabrous, nigrescent, unbranched; pedicels filiform, about 5 mm. long, compressed, glabrous, issuing directly from the nodes of the inflorescence-axis, in fascicles of about ten; bractlets lanceolate, 7--12 mm. long, acuminate, glabrous; calyx campanulate, 5--6 mm. long, glabrous, deeply 4-lobed to about the middle, the lobes ovate-oblong, acute; corolla rich-purple and pale-green, strongly zygomorphic, about 1.5 cm. long; stamens long-exserted, about 2 cm. long, strongly arched; fruiting-calyx cupuliform or patelliform, only slightly incrassate, often reflexed or variously shriveled, about 1.5 cm. wide, glabrous, deeply triangular-lobed to the middle or beyond; fruit drupaceous, about 7 mm. long and 10 mm. wide, deeply 4-lobed or (by abortion) 2- or 3-lobed, glabrous, wrinkled, consisting of 4 (or by abortion 2 or 3) nutlets.

The type of this species was collected by H. Faulkner (Kew 115; drawing 536), moderately common in open forest and plantation, Namagoa Estate, Lugela to Mocuba, Quelimane district, Portuguese East Africa, in December, 1948, and is deposited in the Britton Herbarium at the New York Botanical Garden.

CLERODENDRUM KIBWESENSE Moldenke, sp. nov.

Frutex; ramulis obscurissime tetragonis pulverulo-puberulis; petiolis gracilibus piloso-pubescentibus; laminis membranaceis ellipticis rotundatis et brevissime apiculatis integris vel subintegris, ad basin acutis, utrinque densiuscule breviterque pubescentibus; inflorescentiis terminalibus paniculatis.

Shrub to 3 m. tall; branchlets slender, very obscurely tetragonal, very lightly pulverulent-puberulous, more densely so on the youngest parts; principal internodes 2--6 cm. long; nodes only faintly annulate or not annulate; leaves decussate-opposite; petioles very slender, 1--1.5 cm. long, pilose-pubescent with brownish hairs; blades membranous, somewhat lighter beneath, brunnescent in drying, elliptic, 4--6 cm. long, 1.5--3 cm. wide, rounded to a very slight apiculation at the apex, a-

cute at the base, entire or subentire, rather densely short-pubescent on both surfaces; midrib slender, prominent beneath; secondaries filiform, few, mostly about 4 per side, distant, arcuate-ascending, flat above, very slightly subprominulous beneath; veinlet reticulation abundant but rather obscure on both surfaces; inflorescence terminal, paniculate, consisting of 1 or 2 pairs of lateral and a terminal cyme; peduncle slender, obscurely tetragonal, very finely puberulous, 2.5--4 cm. long; sympodia and inflorescence-branches very slender, often stramineous, sulcate or compressed, microscopically puberulous or glabrescent; pedicels filiform, about 1 mm. long, microscopically puberulous; calyx campanulate, about 2 mm. long, microscopically puberulous or glabrate, its rim deeply 5-lobed, the lobes about as long as the tube; corolla very small, about 4 mm. long; fruiting-calyx broadly campanulate, about 3 mm. long and 4 mm. wide, minutely puberulous, its lobes ovate, erect-spreading, acute.

The type of this species was collected by Georg Scheffler (no. 62) on a sunny thick bush steppe, on red laterite soil, at Kibwesi, Ukambani, at an altitude of about 1000 m., Tanganyika Territory, on January 28, 1906, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels. The plant has much of the aspect of a Premna, but was placed by Berthold Thomas in "Clerodendrum cfr. Sektio Microcalyx".

CLERODENDRUM LANUGINOSUM var. **ADPRESSIPILUM** Moldenke, var. nov.

Haec varietas a forma typica speciei pilis calicis arcte adpressis recedit.

This variety differs from the typical form of the species only in having the dense pubescence closely appressed to the calyx.

The type of the variety was collected by Adolph Daniel Edward Elmer (no. 13559) at Cabadbaran, Mount Urdaneta, province of Agusan, Mindanao, Philippine Islands, in August, 1912, and is deposited in the Herbarium Bogoriense at Buitenzorg.

CLERODENDRUM LEPARENSE Moldenke, sp. nov.

Arbor alta; petiolis immaturis densissime flavo-tomentoso-pubescentibus; laminis immaturis chartaceis ellipticis longe apiculatis integris, ad basin obtusis, supra parciusculis pilosulis, subtus densiuscule flavo-puberulis; inflorescentiis ut videtur axillaribus vel forsitan terminaliter aggregatis, cymis trifloris; calice tubuloso-campanulato dense puberulo-piloso.

Tall tree; only the very small leaves from directly beneath the inflorescence known, these have their petioles 8--11 mm. long, very densely yellow tomentose-pubescent, the blades chartaceous, elliptic, 1.7--4 cm. long, 7--14 mm. wide, entire, obtuse at the base, long-apiculate at the apex, rather sparsely pilosulous on the upper surface (more densely so on the midrib),

rather densely yellow-puberulous beneath, especially on the midrib, the apiculum densely yellowish-puberulent; inflorescence apparently axillary, surpassing the subtending leaves, possibly aggregated in a dense terminal cluster, each cyme apparently 3-flowered, borne on a stout medullose peduncle which is 3--5 cm. long and densely yellowish-short-pubescent, the 3 branches 1 cm. long, the pedicels about 1 cm. long, exactly similar to the inflorescence-branches in texture, color, and pubescence; calyx tubular-campanulate, 13--15 mm. long, 6--8 mm. wide, nigrescent, densely puberulent-pilose, its rim 5-lobed, the lobes ovate, 4--5 mm. long, gradually attenuate to the apex.

The type was collected by H. A. B. Bunnemeijer (no. 24114) on Lepar, near Banka, Molucca Islands, on December 12, 1917, and is deposited in the Herbarium Bogoriense at Buitenzorg. Bakhuizen van den Brink, in his revision of the group in 1920, annotated this specimen as *C. lanuginosum* Blume, from which it differs widely. In fact, with the material so fragmentary it is difficult to be certain of the taxonomic disposition of the plant. It is to be hoped that a new expedition to this island may bring forth more complete material.

CLERODENDRUM LEPRIEURI Moldenke, sp. nov.

Frutex; ramulis gracilibus obscure tetragonis dense ferrugineo- vel fulvo-villosis; petiolis dense ferrugineo-villosis; laminis tenuiter chartaceis ovato-ellipticis acuminatis integris, ad basin rotundatis vel cordatis, supra parciusculae longae pilosis, subtus densissime ferrugineo-tomentosis.

Shrubby; branchlets slender, very obscurely tetragonal, densely villous with ferruginous or fulvous hairs, more densely so on the younger parts; principal internodes 1.8--3.5 cm. long; nodes not annulate; leaves decussate-opposite; petioles medium-slender, densely ferruginous-villous, 3--10 mm. long, borne on stiff spine-like sterigmata 2--6 mm. long; blades thin-chartaceous, bright-green above, lighter beneath, ovate-elliptic, 3--8 cm. long, 2--4.3 cm. wide, acuminate at the apex, entire, rounded or cordate at the base, rather sparsely long-pilose above, very densely ferruginous-tomentose beneath; midrib slender, flat or subimpressed above, prominulous beneath; secondaries slender, 6--8 per side, arcuate-ascending, flat or subimpressed above, prominulous beneath, anastomosing near the margins; veinlet reticulation rather abundant, obscure above, hidden by the tomentum beneath; inflorescence terminal, capitate or subcapitate, densely many-flowered, about 2 cm. long and 2--3 cm. wide; peduncles and inflorescence-branches abbreviated, densely ferruginous-villous; pedicels 1 mm. long or obsolete, ferruginous-villous; bractlets linear or filiform, 5 mm. long or longer, villous; calyx campanulate, about 3 mm. long, nigrescent, sparsely villous, its rim with 4 elongate-

filiform lobes about 3 mm. long, villous; corolla about 1 cm. long, its limb about 5 mm. wide.

The type of this species was collected by F. R. Leprieur in Gambia in about 1830, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

CLERODENDRUM LONGIFLORUM var. **PUBESCENS** Moldenke, nom. nov.

Clerodendron longituba Valet., Bull. Dep. Agric. Indes Neerl. 10: 52. 1907 [not Clerodendron longitubum De Wild. & Th. Dur., Compt. Rend. Soc. Roy. Bot. Belg. 39: 74. 1900].

CLERODENDRUM MYRICOIDES var. **CHARTACEUM** Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum parvioribus plerumque 1.5--5 cm. longis et 1--2.5 cm. latis, subtus in venis majoribus floccoso-tomentellis, chartaceis et firmioribus, marginibus saepe subrevolutis, cymis paucifloris sed in axillis superioribus numerosissimis.

This variety differs from the typical form of the species in having its leaf-blades smaller, mostly 1.5--5 cm. long and 1--2.5 cm. wide, floccose-tomentellous on the larger venation beneath, chartaceous and in general firmer in texture, with the margins often subrevolute, and the cymes few-flowered but very abundant in the upper axils of numerous twigs and branchlets.

The type of the variety was collected by Edgar Alexander Mearns (no. 1101) in the vicinity of Thika, Uganda, at an altitude of about 1350 m., on September 6 or 7, 1909, and is deposited in the Britton Herbarium at the New York Botanical Garden.

CLERODENDRUM PHYLLOMEGA var. **MYRMECOPHILUM** (Ridl.) Moldenke, comb. nov.

Clerodendron myrmecophila Ridl., Journ. Bot. 33: 42. 1895.

CLERODENDRUM SERRATUM var. **AMPLEXIFOLIUM** Moldenke, var. nov.

Haec varietas a forma typica speciei foliis sessilibus, ad basin plusminusve amplexicaulibus, saepe ternatis recedit.

This variety differs from the typical form of the species in having its leaves sessile, more or less amplexicaul-clasping at the base, and often ternate.

The type of this variety was collected by Augustine Henry (no. 10077a) at Kengtse, Yunnan, China, and is deposited in the herbarium of the New York Botanical Garden. The flowers are described as white by the collector, blooming at the end of August. The bracts at the base of the inflorescence-branches are often much enlarged and the panicle-branches much elongated and large-bracted. The collector records the common name "ma-to-lo"

CLERODENDRUM SPECIOSISSIMUM f. **ALBUM** Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis recedit.

This form differs from the typical form of the species in

having its corollas white.

The type of the form was collected by Reinier Cornelis Bakhuizen van den Brink, Jr. (no. 3608) in the "wildernis" at Buitenzorg, Batavia, Java, at an altitude of 250 m., on March 15, 1925, and is deposited in the Herbarium Bogoriense at Buitenzorg.

CLERODENDRUM SUMATRANUM Moldenke, sp. nov.

Arbor vel frutex; ramis ramulisque gracilibus densiuscule brunneo-pubescentibus glabrescentibus obtuse tetragonis sulcatis; petiolis gracillimis dense brunneo-pubescentibus; laminis tenuissime membranaceis fragilibus elliptico-obovatis vel ellipticis acuminatis integris, ad basin acutis, utrinque dense puberulis; inflorescentiis terminalibus ubique dense breviterque puberulis vel breviter pubescentibus.

Tree or shrub; branches and branchlets slender, rather densely pubescent with brownish hair, glabrescent in age, obtusely tetragonal, mostly sulcate between the angles; nodes not annulate; principal internodes 3--13 cm. long; leaves decussate-opposite; petioles very slender, 1--3 cm. long, densely brown-pubescent; blades very thin-membranous, fragile, often brunnescient in drying, elliptic-obovate or elliptic, 10--23 cm. long, 4.5--7 cm. wide, entire, acuminate at the apex, acute at the base, densely puberulent on both surfaces; midrib rather slender, flat above, prominent beneath; secondaries very slender, 4--6 per side, arcuate-ascending, rather irregular; tertiaries rather conspicuous beneath but not prominent; veinlets sparse, irregular, flat on both surfaces; inflorescence terminal, composed of 7--9 cymes, densely brown-puberulent or short-pubescent throughout; peduncles obtusely tetragonal and sulcate like the branchlets, 3--5 cm. long, densely brown-pubescent; sympodia 1.5--3.5 cm. long, similar in all respects to the peduncle; bracts foliaceous, elliptic, 1.5--10 cm. long, 0.5--2.4 cm. wide, stipitate, resembling the leaves in all respects but smaller, sometimes considerably reduced, a pair beneath each pair of cymes; pedicels filiform, 5--13 mm. long, densely spreading-pubescent or villous with brown many-celled hairs; calyx campanulate, densely brown-pubescent or villosulous with many-celled hairs like the pedicels, 5-fid almost to the base, the segments narrow-lanceolate, 7--8 mm. long, usually less than 1 mm. wide, attenuate at the apex; corolla hypocrateriform, white, the tube very narrowly cylindric, 1.7--2 cm. long, densely spreading-villous on the outside like the calyx, its limb 5-fid, the segments oblanceolate, about 7 mm. long, 1.6--2 mm. wide, obtuse at the apex, densely spreading-villous on the back; stamens usually exserted about 6 mm. from the corolla-mouth, glabrous; anthers elliptic, about 2 mm. long, opening by longitudinal slits; pistil exserted about 1 cm. from the corolla-mouth, glabrous.

The type of this species was collected by Cornelia Nicolaas Abraham de Voogd (no. 595) at Kepahiang, Benkoelen Reservation, Sumatra, on February 26, 1931, and is deposited in the Herbarium Bogoriense at Buitenzorg.

FARADAYA DIMORPHA var. *CAULIFLORA* Moldenke, var. nov.

Haec varietas a forma typica speciei inflorescentiis caulifloris recedit.

This variety differs from the typical form of the species in having its inflorescences cauliflorous rather than terminal and axillary.

The type of the variety was collected by Leonard John Brass (no. 7427) at Oroville Camp, 30 miles above D'Albertis Junction on the Fly River, Papua, in August, 1936, and is deposited in the Rijksherbarium at Leiden. The collector describes the plant as a large canopy liana with white malodorous flowers.

FARADAYA NEO-EBUDICA var. *DEGENERI* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit pedunculis ramisque inflorescentiae pedicellisue calyceque glaberrimis et laminis foliorum regulariter angusto-ellipticis.

This variety differs from the typical form of the species in having its peduncles, inflorescence-branches, pedicels, and calyx completely glabrous and its leaf-blades more regularly narrow-elliptic.

The type of the variety was collected by Otto Degener and Emilio Ordóñez (no. 13762) in the forest at an altitude of 30--30 m. at the Suva Pumping Station, Naitasiri province, Viti Levu, Fiji Islands, on December 15, 1940, and is deposited in the Britton Herbarium at the New York Botanical Garden.

FARADAYA NEO-EBUDICA var. *PUBERULENTA* (Moldenke) Moldenke, comb. nov.

Faradaya vitiensis var. *puberulenta* Moldenke, Phytologia 3: 60--61. 1949.

FARADAYA OVALIFOLIA var. *GLABRA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit pedunculis ramisque inflorescentiae pedicellisue calyceque glaberrimis, tubis corollae crassis ca. 6 cm. longis et 3--4 mm. latis, limbo corollae 2.5 cm. lato, et laminis foliorum angusto-ellipticis firmioribus.

This variety differs from the typical form of the species in having its peduncles, inflorescence-branches, pedicels, and calyx completely glabrous, the corolla-tube heavy-textured, about 6 cm. long and 3--4 mm. wide, the corolla-limb 2.5 cm. wide, and the leaf-blades more narrowly elliptic and firmer in texture.

The type of this variety was collected by John Wynn Gilles-

pie (no. 3513) in the vicinity of Nasinu, at an altitude of 150 m., nine miles from Suva, Naitasiri province, Viti Levu, Fiji Islands, on October 24, 1927, and is deposited in the Britton Herbarium at the New York Botanical Garden.

FARADAYA SALOMONENSIS (Bakh.) Moldenke, comb. nov.

Faradaya amicorum var. *salomonensis* Bakh., Journ. Arnold Arb. 16: 71--72. 1935.

GMELINA MISOOLENSIS Moldenke, sp. nov.

Arbor; ramis ramulisque crassiusculis glabratis; petiolis graciussculis glabris nigrescentibus; foliis coriaceis utrinque pernitidis ellipticis integris rotundatis vel obtusis saepe subrevolutis, ad basin acuminatis, utrinque glaberrimis; inflorescentiis racemoso-paniculatis ubique brunnescentibus vel nigrescentibus glabris.

Tree to 12 m. tall; trunk to 12 cm. in diameter; branches and branchlets rather stout, glabrate, often white- or gray-flecked; principal internodes 1--7 cm. long; nodes not annulate; leaves decussate-opposite; petioles rather slender, nigrescent in drying, 1.5--2.5 cm. long, glabrous, flattened above; blades coriaceous, bright-green and very shiny on both surfaces, elliptic, 5.5--12 cm. long, 3--6 cm. wide, rounded or obtuse at the apex, entire, often somewhat revolute in drying, acuminate at the base, very smooth on both surfaces; midrib rather coarse, flat above, very prominent beneath; secondaries very slender, 4--6 per side, arcuate-ascending, anastomosing in many loops several mm. from the margins beneath, flat above, prominulous beneath; veinlet reticulation sparse, flat above, very slightly subprominulous beneath on the larger parts only; inflorescence racemose-paniculate, terminating short axillary twigs, 9--18 cm. long, 2--3 cm. wide, brunnescent or nigrescent throughout in drying; peduncles slender, 2--3.5 cm. long, glabrous; rachis similar to the peduncle, greatly elongated, composed of 5--10 sympodia, strict, glabrous; pedicels very slender, about 2 mm. long, glabrous; flowers not seen; fruiting-calyx campanulate, about 3 mm. long and 5 mm. wide, nigrescent, glabrous, truncate, split to the base into 2 subequal truncate quadrate lobes when mature; fruit drupaceous, obovate, green when young, red when ripe, about 12 mm. long and 6 mm. wide (when immature).

The type of this very distinct species was collected by Didit Rudolf Pleyte at Fakal, Misool Island, near New Guinea, on September 30, 1948, and is deposited in the Herbarium Bogoriense at Buitenzorg.

GMELINA PALAWENSIS var. *NOVOGUINEENSIS* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum firme coriaceis ellipticis, ad basin rotundatis et glandis

maximis orchidaceis ornatis.

This variety differs from the typical form of the species in having its leaf-blades firmly coriaceous, elliptic, rounded at the base, and marked at the very base with two very large and prominent orchidaceous glands.

The type of this variety was collected at Morobe, Morobe district, Northeastern New Guinea, and is number N.G.F. 2922 of the Herbarium of the Department of Forests, Lae, New Guinea, deposited in the Herbarium Bogoriense at Buitenzorg.

HYACINTHUS ORIENTALIS f. *PLENIFLORUS* Moldenke, f. nov.

Haec forma a forma typica speciei floribus plenis recedit.

This form differs from the typical form of the species in having "doubled" flowers.

The type of the form was collected by H. N. Moldenke (no. 3131) from cultivated material at Watchung, Somerset Co., New Jersey, on March 30, 1927, and is deposited in the Britton Herbarium at the New York Botanical Garden.

CNIDOSCOLUS TEPIQUENSIS (Costantin & Gallaud) Moldenke, comb. nov.

Jatropha tepiquensis Costantin & Gallaud, Rev. Gén. de Bot. 18: 391. 1906.

LANTANA LEPRIEURI Moldenke, sp. nov.

Frutex; ramulis gracilibus obtuse tetragonis apicem versus parce hirsutulis, pilis interdum glanduliferis; foliis parvis; petiolis gracilibus hispidulo-pubescentibus; laminis chartaceis rigidis perfragilibus ovatis acutis vel obtusis regulariter serratis, ad basin acutis vel acuminatis, supra breviter hispidulis (pilis ad basin bulbosis), subtus plusminusve dense puberulo-pilosis.

Shrub; branchlets slender, obtusely tetragonal, sparsely hirsutulous toward the apex, glabrescent in age, the younger portions also with very short gland-tipped hairs interspersed among the longer sharp-pointed ones; principal internodes 1.5--4 cm. long; nodes annulate; leaves decussate-opposite, small; petioles very slender, 2--5 mm. long, hispidulous-pubescent; blades chartaceous, stiff, very brittle, gray-green, ovate, 1.5--2.7 cm. long, 1.2--2 cm. wide, acute or obtuse at the apex, regularly serrate, acute or acuminate at the base, short-hispidulous above with bulbous-based hairs, more or less densely puberulent-pilose beneath; midrib slender, impressed above, prominulous beneath; secondaries very slender, impressed above, prominulous beneath, about 5 per side, arcuate-ascending, not anastomosing, not entering the teeth, usually bifurcate at the end and each branch ending in a sinus; veinlet reticulation very abundant and conspicuous, impressed above, prominent beneath; inflorescence axillary, opposite, solitary in each axil,

shorter than or subequaling the subtending leaf, about 2 cm. long; peduncles slender, 11--12 mm. long when mature, pilose; flowers not seen.

The type of this species was collected by F. R. Leprieur from cultivated material in Senegal in 1830 and is deposited in the Reichenbach filius herbarium (sheet no. 127800) at the Naturhistorisches Museum in Vienna.

LATHYRUS ODORATUS f. *PLENIFLORUS* Moldenke, f. nov.

Haec forma a forma typica speciei corollis plenis recedit.

This form differs from the typical form of the species in having its corollas "doubled".

The type of the form was collected by H. N. Moldenke (no. 14540) in greenhouse cultivation at the Bronx, Bronx Co., New York, on May 1, 1943, and is deposited in the Britton Herbarium at the New York Botanical Garden.

LIPPIA CONTROVERSA var. *BREVIPELUNCULATA* Moldenke, var. nov.

Haec varietas a forma typica speciei pedunculis usque ad 1 cm. longis recedit.

This variety differs from the typical form of the species in having the peduncles under mature heads only 1 cm. long or less.

The type of the variety was collected by Edward Johnston Alexander (no. 192) on a riverbank at Nizanda, Oaxaca, Mexico, and is deposited in the Britton Herbarium at the New York Botanical Garden.

PAEPALANTHUS PUNGENS var. *BREVIFOLIUS* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis 1--4 cm. longis in statu juvenili densissime villosis et pedunculis 6--8 cm. longis.

This variety differs from the typical form of the species in having its leaves only 1--4 cm. long and very densely villous when young and the peduncles only 6--8 cm. long.

The type of the variety was collected by Erik Leonard Ekman (no. 2341, in part) in "charrasco" near Río Piloto, Sierra de Nipe, Oriente, Cuba, on July 30, 1914, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

PHYLA LANCEOLATA f. *AHLESII* Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis et bracteolis viridibus recedit.

This form differs from the typical form of the species in having white (not pink) corollas and green (not purple) bractlets.

The type of the form was collected by Harry E. Ahles (no. 2560) in a pasture four miles south of Beaverville, Iroquois Co., Illinois, on August 5, 1950, and is deposited in the her-

barium of the University of Illinois at Urbana. The collector states that approximately fifty percent of the material of this species at this locality was of this form, but he has not seen it anywhere else in his considerable collecting experience.

TEIJSMANNIODENDRON HOLOPHYLLUM var. *PUBESCENS* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis subtus densiuscule ferrugineo-pubescentibus.

This variety differs from the typical form of the species in having the lower leaf-surfaces rather densely ferruginous-pubescent, especially on the larger venation; the leaf-blades, also, seem to be more conspicuously bullate.

The type of the variety was collected by C. J. van der Zwaan (no. 609) at Berouw, Borneo, on October 25, 1927, and is deposited in the Herbarium Bogoriense at Buitenzorg.

TEIJSMANNIODENDRON SIMPLICIFOLIUM var. *KOSTERMANSI* Moldenke, var. nov.

Haec varietas a forma typica speciei petiolis et apicibus ramulorum dense ferrugineo-hirsutis recedit.

This variety differs from the typical form of the species in having its petioles and the tips of the branchlets densely ferruginous-hirsute, the hairs eventually wearing off.

The type of the variety was collected by C. J. van der Zwaan (no. 1074) at Berouw Betemoean, southeastern Borneo, on May 28, 1934, and is deposited in the Herbarium Bogoriense at Buitenzorg. Dr. Kostermans in *Reinwardtia* 1: 96 (1951) suggested that this plant might represent even a new species related to *T. simplicifolium*.

TEIJSMANNIODENDRON KOSTERMANSI Moldenke, sp. nov.

Arbor; ramulis gracilibus ferrugineo-pubescentibus glabrescentibus; nodis tumidis annulatis valde articulatis; foliis trifoliolatis; petiolis ferrugineo-pubescentibus, supra valde canaliculatis; petiolulis crassis ferrugineo-pubescentibus, ad basin ampliatis, supra canaliculatis; laminis subcoriaceis obovato-oblongis breviter acuminatis integris, ad basin acutis vel cuneatis, supra glabris, subtus dense ferrugineo-pubescentibus.

Tree; branchlets slender, rusty-pubescent when young, glabrescent in age; dead bark smooth, gray, 0.5 mm. thick; living bark 7 mm. thick, yellow in cross-section; sapwood white; heartwood lacking; principal internodes 6--10 cm. long; nodes swollen, annulate, very distinctly articulated; leaves 3-foliolate; petioles medium-stoutish, 3--5.5 cm. long, rusty-pubescent, deeply canaliculate above; petiolules stout, 1--2 cm. long, rusty-pubescent, widened at the base, canaliculate above; leaflets subcoriaceous, light-green on both surfaces, obovate-oblong, 8--20 cm. long, 3--10 cm. wide, short-acuminate at the

apex (the acumination itself obtuse), entire, acute or cuneate at the base, smooth and dull gray above in drying, very densely pubescent beneath with rust-colored hairs; midrib flat above and strongly prominent beneath; secondaries slender, 4--7 per side, flat and obscure above, prominent beneath, arcuate-ascending, not anastomosing; veinlet reticulation indiscernible above, the larger portions prominulous beneath, abundant; flowers and fruit unknown.

The type of this species was collected by Lot Obi (no. 75) near Matara Djaan, at an altitude of 100 m., Puruktjau subdivision, southern Borneo, on October 20, 1926, and is deposited in the Herbarium Bogoriense at Buitenzorg.

TEIJSMANNIODENDRON UNIFOLIOLATUM (Merr.) Moldenke, comb. nov.

Vitex unifoliolata Merr., Philipp. Journ. Sci. 20: 438--439. 1922.

VERBENA CLAVATA var. *CASMENSIS* Moldenke, var. nov.

Haec varietas a forma typica speciei foliis plerumque in siccitate nigrescentibus ca. 3 mm. latis duntaxat leviter revolutis, pilis utrinque brevibus irregulariter patentibus contortis, recedit.

This variety differs from the typical form of the species in having its leaves mostly nigrescent in drying, about 3 mm. wide, with short irregularly spreading and twisted hairs on both surfaces, only very slightly revolute.

The type of the variety was collected by Ramon Ferreyra (no. 8031) on a sandy hillside at Lomas de Casma, province of Santa, Ancash, at an altitude of 250--300 m., Peru, on September 9, 1950, and is deposited in the United States National Herbarium at Washington. It is described by the collector as suffrutescent, with fragrant lilac flowers. Its leaves resemble those of *V. trifida* H.B.K. in width and color, but the spreading, rather than closely appressed, pubescence distinguishes our plant from this species and from the typical form of *V. clavata* at once.

VITEX AGELAEIFOLIA var. *RUFULA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit petiolis petiolulisque pedunculisque rhachideque inflorescentiae pedicellis-que bracteolisque densiuscule rufo-puberulis vel breviter pubescentibus, pilis multicellulosis.

This variety differs from the typical form of the species in having its petioles, petiolules, peduncles, inflorescence-rachis, pedicels, and bractlets rather densely rufous-puberulent or short-pubescent with wide-spreading many-celled hairs.

The type of the variety was collected by Overlaet (no. 1263) in the gallery forest at Kapanga, Belgian Congo, in March, 1934, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

VITEX AGNUS-CASTUS var. *PSEUDO-NEGUNDO* f. *ALBIFLORA* Moldenke, f. nov.

Haec forma a forma typica speciei et varietatis corollis albis recedit.

This form differs from the typical form of the variety and species in having white corollas.

The type of the form was collected by John Edward Dinsmore (no. 172f) near water at Jesr-ul-Ghajir, at an altitude of 160 m., Dead Sea, Israel, on September 24, 1921, and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm.

VITEX ALTMANNI Moldenke, sp. nov.

Arbor vel frutex; ramis crassiusculis griseis obtuse tetragonis minute puberulis deinde glabrescentibus; sarmentis graciusculis puberulis; foliis trifoliolatis; petiolis gracilibus compressis nigrescentibus puberulis; foliolis sessilibus brunnescentibus ellipticis vel obovato-ellipticis supra glabris, subtus parce pilosulis, rotundatis vel breviter acuminatis.

Tree or shrub; branches rather stout, gray, obtusely tetragonal, sometimes sulcate, minutely puberulous on the younger parts and at the nodes, glabrescent in age; twigs much more slender, puberulent; nodes annulate; principal internodes 1.5--13 cm. long; leaves decussate-opposite, trifoliolate; petioles slender, 1.5--5 cm. long, compressed, nigrescent in drying, puberulous; leaflets 3, chartaceous, sessile or practically so, dark-green above, lighter beneath, brunnescent in drying, elliptic or obovate-elliptic, glabrous above, sparsely pilosulous beneath, more densely so along the midrib and larger venation, rounded or abruptly short-acuminate at the apex in cuspidate fashion, the central one 6.5--12.5 cm. long, 3.5--6.5 cm. wide, sometimes with a puberulent petiolule 1--2 mm. long, the lateral ones often very much smaller; midrib slender, flat above, prominulous beneath; secondaries slender, 7--10 per side, rather close and uniform, ascending, arcuate only toward the margins, flat above, prominulous beneath, anastomosing in loops near the margins; veinlet reticulation very abundant, mostly rather conspicuous and slightly subprominulous above (on mature leaves) and beneath; flowers and fruit not seen.

The type of this species was collected by Hendrik Altmann (no. 577) at Cheribon, Java, on December 8, 1940, and is deposited in the Herbarium Bogoriense at Buitenzorg. The leaves remind one somewhat of some forms of *V. pinnata* L.

VITEX BUDDINGII Moldenke, sp. nov.

Arbor; ramulis tetragonis nigrescentibus densiuscule fulvo-tomentellis; foliis 5-foliolatis; petiolis dense cinereo- vel fulvo-puberulis; petiolulis densiuscule puberulis; laminis immaturis membranaceis nigrescentibus anguste ellipticis plus-

minusve crenulatis, ad apicem basinque acutis, utrinque dense lepidotis, supra glabrescentibus, subtus plusminusve puberulis; inflorescentiis terminalibus paniculatis ubique densiuscula fulvo-tomentellis.

Tree, 25--28 m. tall, 16--21 m. to the lowest branch; trunk diameter at breast height 45--50 cm., at first branch 31--35 cm.; branchlets tetragonal, nigrescent in drying, rather densely fulvous-tomentellous; principal internodes apparently abbreviated; nodes annulate; leaves decussate-opposite, 5-foliolate in palmate fashion; petioles slender or stout, often collapsing and flattened in drying, 7.5--13 cm. long (immature), densely puberulent with cinereous or fulvous hair; petiolules slender, 2--7 mm. long (immature), rather densely puberulent; immature blades membranous, nigrescent in drying, somewhat lighter beneath, narrow-elliptic, approximately equal in size, 4.5--7 cm. long, 1.5--2.1 cm. wide, more or less crenulate-margined, acute at the apex and base, densely lepidote on both surfaces, more or less puberulent beneath, especially on the larger venation, glabrescent above; midrib slender, prominent beneath; secondaries very slender, numerous, close together, 15--13 per side, divergent-ascending, not arcuate, not anastomosing, prominent beneath, indiscernible above; veinlet reticulation indiscernible on both surfaces; inflorescence terminal, paniculate, rather densely fulvous-tomentellous throughout, densely many-flowered, apparently to about 15 cm. long and 4 cm. wide; peduncles to about 3 cm. long, puberulent with fulvous hairs, nigrescent; sympodia and inflorescence-branches densely fulvous-tomentellous, often compressed; bractlets lanceolate, 1--3 mm. long, often recurved, glabrate and nigrescent above, densely fulvous-tomentellous beneath, densely ciliate-margined; pedicels slender, about 1 mm. long, densely fulvous-tomentellous; calyx campanulate, about 2 mm. long, densely fulvous-tomentellous, its rim 4-apiculate; corolla and fruit not seen.

The type of this species was collected by L. F. Ch. Budding (no. 227) -- in whose honor it is named -- at Melawi, western Borneo, at an altitude of 180 m., on March 3, 1939, and is deposited in the Herbarium Bogoriense at Buitenzorg. The species is apparently related to V. urceolata C. B. Clarke and V. ericlona H. J. Lam, as is obvious from the type of inflorescence.

VITEX DUBOISII Moldenke, sp. nov.

Frutex; ramis gracillimis medullosis minutissime pilosulis vel glabrescentibus nigrescentibus; petiolis gracillimis glabris; foliolis 5 membranaceis utrinque glabris vel subglabris oblanceolatis longe acuminatis integris, ad basin attenuato-cuneatis; petiolulis subfiliformibus glabris; inflorescentiis supra-axillaribus cymosis; pedunculis filiformibus sparsissime pilosulis vel glabrescentibus compressis nigrescentibus.

Shrub; branches very slender, medullose, very minutely pil-

osulous or glabrescent, nigrescent in drying, compressed at the nodes on young parts; nodes not annulate; principal internodes 4--7.5 cm. long; leaves decussate-opposite, palmately compound; petiole very slender, 4.5--11 cm. long, glabrous; petiolules subfiliform, 1--6 mm. long, glabrous; leaflets 5, membranous, often very thinly so, rather uniformly green on both surfaces or somewhat lighter beneath, glabrous or subglabrous on both surfaces, the 2 basal ones much smaller than the rest, the central one oblanceolate, 7.5--13 cm. long, 2.5--4 cm. wide, long-acuminate at the apex, attenuate-cuneate at the base, entire; midrib very slender, flat above, prominulous beneath; secondaries filiform, 6 or 7 per side, arcuate-ascending, plainly anastomosing 1--1.5 mm. from the margins, flat above, prominulous beneath; veinlet reticulation very irregular and fine, obscure or indiscernible above, flat beneath; inflorescence supra-axillary, very much shorter than the subtending petiole, cymose; peduncles filiform, 10--17 mm. long, very sparsely pilosulous or glabrescent, compressed, nigrescent in drying; cymes rather dense, small, many-flowered, their filiform branches compressed and minutely pilosulous or glabrescent; bractlets filiform, 4--5 mm. long; pedicels very short, to 1 mm. long, strigillose; calyx campanulate, about 2 mm. long and wide, strigillose, its rim subtruncate in bud, during anthesis deeply 5-toothed, the teeth lanceolate, about 1 mm. long; corolla densely pubescent on the outside, less than 1 cm. long.

The type of this species was collected by L. Dubois (no. 608) at Bo. Kutu, Ekota territory, Tshuapa district, Belgian Congo, in September, 1934, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels. A common name for the plant is "liseta".

VITEX GLABRATA var. *POILANEI* Moldenke, var. nov.

Haec varietas a forma typica speciei laminis foliolorum subtus valde strigillosis recedit.

This variety differs from the typical form of the species in having the lower surface of its leaflet-blades decidedly strigillose even when mature.

The type of the variety was collected by Eugène Poilane (no. 40829) near Bien Loa, Cochinchina, French Indochina, on May 25, 1919, and is deposited in the Herbarium Bogoriense at Buitenzorg.

VITEX IRAQUENSIS Moldenke, sp. nov.

Frutex vel arbor; ramis gracilibus fistulosis ubique glabris; petiolis gracilibus glabris canaliculatis; foliolis 3--7 membranaceis utrinque glabris oblanceolatis breviter acuminatis vel cuspidatis integris, ad basin longe attenuatis vel cuneatis; inflorescentiis axillaribus cymosis; pedunculis glabris; cymis laxissime bifurcatis paucifloris ubique glabris.

Shrub or tree; branches slender, fistulose, glabrous or practically so throughout, the younger parts compressed and brunnescent in drying; nodes annulate; principal internodes 3.3--8 cm. long or longer; leaves decussate-opposite, palmately compound, with 3--7 leaflets; petioles slender, 3.5--15.5 cm. long, glabrous, canaliculate, club-shaped at the apex; leaflets membranous, dark-green above, lighter green beneath, varying in size from largest central one to smallest basal ones, glabrous on both surfaces, the central one oblanceolate, 6--14 cm. long, short-acuminate or cuspidate at the apex, entire, long-attenuate or cuneate at the base, borne on a glabrous petiolule 1--2 cm. long; lateral leaflets smaller and borne on shorter petiolules; midrib very slender, often undate in drying, flat above, very prominent beneath; secondaries very slender, 6--10 per side, arcuate-spreading, not anastomosing, flat above, prominent beneath; veinlet reticulation rather sparse and inconspicuous on both surfaces; inflorescence axillary, cymose, much shorter than the subtending mature petioles; peduncles slender, compressed, 4--5 cm. long, nigrescent, glabrous; cymes very loosely bifurcate, rather few-flowered, completely glabrous throughout, nigrescent; bractlets linear, 2--3 mm. long, glabrous; pedicels slender, 1--2 mm. long; calyx campanulate, about 2 mm. long and wide, glabrous, nigrescent, the margin subtruncate, minutely 5-apiculate; corolla zygomorphic, pilosulous outside, its tube sharply curvate or genuflexuous, about 5 mm. long, the lobes small.

The type of this species was collected by Yusuf Lazar near Bagdad, Iraq, in July, 1918, and is deposited in the Britton Herbarium at the New York Botanical Garden.

VITEX LEBRUNI Moldenke, sp. nov.

Frutex; ramis atrobrunneis cinereo-pilosulis; petiolis minute strigillosis glabrescentibus anguste canaliculatis; foliolis 3 vel 5 sessilibus vel subsessilibus utrinque glabris anguste ellipticis acuminatis integris, ad basin acutis vel cuneatis; inflorescentiis axillaribus cymosis paucifloris ubique strigillosis; pedunculis filiformibus; bracteolis filiformibus.

Shrub, about 5 m. tall; branches slender, dark-brown, cinereous-pilosulous on the younger parts; nodes not annulate; principal internodes very variable, 1--7.5 cm. long; leaves palmately compound, decussate-opposite; petioles very slender or medium-stout, 4--8.5 cm. long, minutely strigillose, glabrescent in age, narrowly canaliculate above, somewhat ampliate or club-shaped at the apex; leaflets 3 or 5, sessile or subsessile, glabrous on both surfaces, uniformly dark-green on both surfaces or somewhat lighter beneath, the central one somewhat larger than the rest, narrow-elliptic, 8--13 cm. long, 1.3--3.3 cm. wide, acuminate at the apex, entire, acute or cuneate at the base; midrib slender, flat above, prominent beneath; sec-

ondaries filiform, about 5 per side, distant, arcuate-ascending or spreading, anastomosing near the margins, flat or obscure above, prominulous beneath; veinlet reticulation very sparse, plane or obscure above; inflorescence axillary, shorter than the subtending petiole, cymose, few-flowered, strigillose throughout; peduncle filiform, about 1 cm. long; bractlets filiform, about 3 mm. long; pedicels 1--1.5 mm. long, strigillose; calyx campanulate, about 2 mm. long and wide, strigillose, its rim subtruncate, short-denticulate; corolla rose-ochraceous, very densely strigose-pubescent outside, about 1 cm. long; fruit oblong, yellow-orange, shiny.

The type of this species was collected by Jean Lebrun (no. 5303) -- in whose honor it is named -- in a forest at 1282 m. altitude between Walikole and Koleke, Belgian Congo, in March, 1932, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

VITEX MADIENSIS var. *GLABERRIMA* Moldenke, var. nov.

Haec varietas a forma typica speciei foliis glaberrimis recedit.

This variety differs from the typical form of the species in having its leaves, as well as all other parts, completely glabrous.

The type of the variety was collected by Pittery (no. 819) in the neighborhood of Bambesa, Belgian Congo, in 1936, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

VITEX SCANDENS Moldenke, sp. nov.

Frutex scandens; ramulis graciussculis rotundatis multistriatis glabris; petiolis gracilibus glabrus; foliolis 5 sessilibus membranaceis ellipticis utrinque glabris breviter acuminate integris, ad basin acuminate attenuatis; inflorescentiis subterminalibus paniculatis; pedunculis glabris.

Liana; branchlets rather slender, round in cross-section, many-striate, glabrous; nodes not annulate; principal internodes 2--4 cm. long; leaves decussate-opposite, 5-foliolate; petioles slender, 6--10 cm. long, glabrous; leaflets sessile, membranous, dark-green above, lighter beneath, elliptic, glabrous on both surfaces, short-acuminate at the apex, entire, acuminate at the base, the central ones 11--15 cm. long and 4.3--5.6 cm. wide, the lateral ones slightly smaller; midrib slender, flat above, prominent beneath; secondaries filiform, 11--15 per side, flat above, subprominulous beneath, widely spreading, arcuate only near the margins, not anastomosing; veinlet reticulation mostly indiscernible above, the larger parts somewhat subprominulous beneath in drying; inflorescence apparently subterminal, paniculate, about 15 cm. long and 4 cm. wide; peduncle slender, similar to the branchlets in col-

or and texture, about 5 cm. long; sympodia similar, several, elongate to 4 cm. at base, glabrous, striate, nigrescent; panicle-branches very slender, 1.5--2.7 cm. long, glabrous or very minutely pulverulent, cymosely branched; pedicels filiform, about 2 mm. long, minutely pulverulent-lepidote; bractlets linear, about 1 mm. long, lepidote; calyx campanulate, about 3 mm. long and wide, glabrous or minutely scattered-lepidote, nigrescent in drying, its rim deeply 4-toothed; corolla rose, about 1 cm. long in bud, densely incanous-puberulent on the outside; fruit not seen.

The type of this remarkable species with such a decided bignoniaceous aspect was collected by Willem Marius Docters van Leeuwen-Reijnvaan (no. 10703) at Expedition Bivouac in the Nassau Mountains, Dutch New Guinea, in October, 1926, and is deposited in the Herbarium Bogoriense at Buitenzorg.

VITEX VENULOSA Moldenke, sp. nov.

Arbor; ramis crassis medullosis valde tetragonis dense adpresso-tomentellis, pilis ochraceis; petiolis elongatis crassis densissime adpresso-tomentellis; foliolis 5 firme chartaceis nigrescentibus supra glabrescentibus subtus densissime ochraceo-tomentellis ellipticis vel late ellipticis acutis vel breviter acuminatis integris, ad basin acutis vel rotundatis; inflorescentiis axillaribus cymosis dense ochraceo-puberulis.

Tree; branches heavy, medullose, very decidedly tetragonal, densely appressed-tomentellous with ochraceous hairs, often somewhat ampliate and more compressed at the nodes; nodes annulate; principal internodes 2--6 cm. long; leaves decussate-opposite, palmately compound, composed of 5 leaflets; petioles elongate, stout when mature, 5.5--18 cm. long, very densely appressed-tomentellous or puberulent with ochraceous hairs, club-like at the apex; leaflets rather firmly chartaceous, bright-green above, nigrescent in drying, lighter beneath, microscopically puberulous or glabrescent above, very densely tomentellous with cinereous-ochraceous hairs beneath, elliptic or broad-elliptic, acute or short-acuminate at the apex, entire, acute or rounded at the base, rarely subacuminate, the central one 7--18 cm. long, 3.3--7.5 cm. wide, the basal ones much smaller; petiolules stout, 4--15 mm. long, densely puberulent; midrib rather stout, flat above, very prominent beneath; secondaries very numerous and close, 17--20 per side, spreading-ascending, parallel, not arcuate except at the very margins where they are incompletely anastomosing, flat above, prominent beneath; veinlet reticulation very abundant, flat and obscure above but very conspicuous to the smallest parts beneath and decidedly prominulous there, the tertiaries subparallel, at right angles to and connecting the secondaries; inflorescence axillary, cymose, shorter than the subtending leaves; peduncles stout, about the same diameter as the subtending petiole, 4.5--

11.5 cm. long, densely ochraceous-puberulent; cymes many times bifurcate, the branches wide-spreading, loosely or densely many-flowered, densely ochraceous-puberulent throughout, the branches rather conspicuously flattened and sulcate, conspicuously annulate at the nodes; bractlets linear, 3--15 mm. long, densely puberulent; pedicels very slender, much abbreviated, usually 1 mm. long or less, densely ochraceous- or cinereous-puberulent or short-pubescent; calyx campanulate, about 2.5 mm. long and wide, densely short-pubescent with antrorse ochraceous hairs, its rim subtruncate, subentire or minutely apiculate; corolla violet, about 8 mm. long, its tube about 5 mm. long, densely short-pubescent with cinereous hairs outside; fruiting-calyx cupuliform, about 5 mm. long and 8 mm. wide, densely short-pubescent with cinereous hairs, truncate and subentire or minutely denticulate; fruit drupaceous, subglobose, about 1 cm. long and wide, glabrous, shiny.

The type of this species was collected by Jean Lebrun (no. 5878) in the forest at Lumuna, Belgian Congo, in August, 1932, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

VITEX VESTITA var. SIAMICA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliolis 2.5--8 cm. longis, 1--3.5 cm. latis, plusminusve serratis, subtus in venis breviter pubescentibus.

This variety differs from the typical form of the species in having its leaflets only 2.5--8 cm. long and 1--3.5 cm. wide at time of anthesis, more or less serrate along the margins, and the short pubescence confined to the venation only beneath.

The type of the variety was collected by Kasin (no. 346) on a rock at Tripagodas, about 40 km. north of Wagka, on the Burmese border, Thailand, on May 14, 1946, and is deposited in the Herbarium Bogoriense at Buitenzorg.

THE KNOWN GEOGRAPHIC DISTRIBUTION OF THE MEMBERS OF THE VERBENACEAE, AVICENNIACEAE, STILBACEAE, SYMPHOREMACEAE, AND ERIOCAULACEAE. SUPPLEMENT 8

Harold N. Moldenke

Since the publication of the previous supplement 11,000 additional specimens of these groups have been studied and annotated by me. These specimens are deposited in the United States National Herbarium at Washington, the Britton Herbarium at the New York Botanical Garden, the Herbarium Bogoriense at Buitenzorg.



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Phytologia 4, 41–65.

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