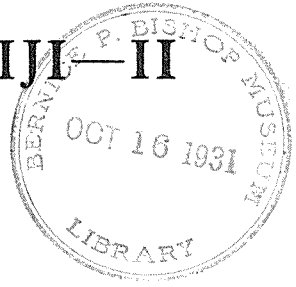


NEW PLANTS FROM FIJI—II



BY
JOHN WYNN GILLESPIE

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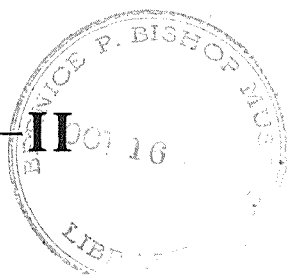
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SEACOAST NORTH OF LEVUKA, ISLAND OF OVALAU, FIJI

New Plants From Fiji—II

By JOHN WYNN GILLESPIE



INTRODUCTION

In this paper are embodied the results of studies on the flora of Fiji, continued during the year 1930, first at Stanford University, California, later at the Gray Herbarium of Harvard University, Cambridge, Massachusetts. The material for study was largely collected by the writer while a Bishop Museum Fellow in Yale University during parts of the years 1927-8. Part I of this series was published as Bulletin 74 of the Bernice P. Bishop Museum of Honolulu, Hawaii, in July, 1930.

In addition to those mentioned in the introduction to Part I who have given aid, I mention again my gratitude to the Director and Trustees of the Bishop Museum for support during part of the period of preparation of this paper, and to the National Research Council, who awarded me the fellowship during tenure of which it was completed. Dr. B. L. Robinson, Curator of Gray Herbarium, Harvard University, and Dr. W. A. Setchell, Professor of Botany at the University of California, have given me valuable advice of a general nature; Dr. Ira L. Wiggins, Assistant Professor at Stanford University, prepared several photographs of type specimens. To them I give my best thanks.

ANONACEAE

POLYALTHIA Blume

Polyalthia amygdalina (A. Gray) Gillespie, combinatio nova.

Uvaria amygdalina A. Gray: U. S. Expl. Exped., Botany, Phanerogamia, vol. 1, p. 282, 1854.

Polyalthia vitiensis Seemann: Bonplandia, vol. 9, p. 254, 1861; Flora Vitiensis, p. 4, Pl. 3, 1865.

A small, glabrous tree, with slender, grayish, terete branchlets. Leaves 11-16 cm. long, 3.5-5 cm. broad; blades dull-green, shining, alike on both surfaces, chartaceous, oblong-lanceolate, apex acuminate, base subcordate with a small sinus, lateral nerves slender, about 13 on each side of the midrib, veinlets subprominent; petioles 2-3 mm. long. Peduncles pubescent, about 13 mm. long, 1-flowered; flowers white; calyx small, pubescent, the lobes acute; petals elliptic, puberulent without; stigmas pubescent; fruiting peduncles very stout; fruits about 7-carpellate, carpels ovoid-globose, about 15 mm. in diameter, stipe almost none.

In the absence of flowering material, Gray failed to refer his plant to the correct genus. Seemann correctly placed his material in *Polyalthia*, but did not know that it represented the same species as that of Gray. A comparison of Gray's type and Seemann's plate clearly indicates the identity of the two supposedly distinct species.

Represented by Gillespie no. 4532, from the Mountains of Ovalau, the type locality. Not known elsewhere.

Polyalthia loriformis Gillespie, species nova (fig. 1).

Arbor parva, ramulis gracilibus, omnibus partibus, inflorescentiis exceptis, dense et persistente hirsutis; foliis 10-17 cm. longis. 4-6.5 cm. latis, chartaceis, oblongis ad ovato-vel obovato-oblongis, apice acuminatis, basi truncatis vel subcordatis, nervis lateralibus perspicuis; petiolis 2-3 mm. longis; floribus axillaribus; calyce extus hirsuto, lobis acuminatis; petalis loriformibus, usque ad 17 mm. longis; carpellis 4 cm. longis, 1 cm. crassis, teretibus, stipitatis.

A small tree with slender branchlets, all parts save the inflorescence densely and persistently hirsute with yellowish velvety hairs. Leaves variable in size, generally 10-17 cm. long, 4-6.5 cm. broad; blades chartaceous, light green, and somewhat glabrescent above but always more or less hirsute, yellowish beneath, oblong to ovate- or obovate-oblong, apex acuminate, base truncate or subcordate with a small sinus, lateral nerves rather prominent, about 9 on each side of the midrib, straight, the loops anastomosing several mm. from the ciliate margin, veinlets distinct; petioles stout, 2-3 mm. long. Flowers few, axillary; pedicels hairy, about 1.5 cm. long; calyx spreading, densely bristly-hirsute without, glabrous within, the lobes acuminate, about 4 mm. long; corolla coriaceous; lobes elongate, loriform, the outer whorl about 17 mm. long, the inner about 10 mm. long; stamens subglabrous, cuneate, about 1.5 mm. long, the connective appendage disciform, minutely hispid; pistils clavate, about 1.6 mm. long, densely hairy, especially in the distal half; ovules 1 in each carpel. Infructescences about 7-carpellate; carpels greatly divergent, smooth, yellowish-red (black when dry) elongate, terete, apex obtuse, generally rounded or bluntly apiculate, about 4 cm. long, 1 cm. thick, the axis curved, narrowed at the base to a thick stipe about 5 mm. long; seed conforming to the mature carpel; albumen yellow, with numerous lamellae.

Viti Levu, Naitasiri Province, vicinity of Nasinu, altitude 150 meters, October 29, 1927, John W. Gillespie. Type no. 3639. Also represented by Gillespie nos. 2055, 2445, 3437, 3441, 3448, from Naitasiri and Rewa provinces.

If I am correct in considering this a new species, it is difficult to understand why it has not been discovered before. The small trees are abundant in the dense forest, and the pimento-colored fruits, produced in fair abundance, are not inconspicuous. In shape of leaf and in floral parts it resembles *Polyalthia amygdalina* (A. Gray) Gillespie (*Polyalthia vitiensis* Seemann), but that species is described and figured with glabrous twigs and leaves, while in this the yellowish persistent hair is a most conspicuous character.

MYRISTICACEAE

MYRISTICA Linnaeus

Myristica chartacea Gillespie, species nova (fig. 2).

Arbor parva subglabra, partibus junioribus dense tomentulosis, ramulis gracillimis; foliis glabris, 6-13 cm. longis, 2-5.5 cm. latis, utrinque viridibus subtus haud albidis, chartaceis, oblongo-ellipticis, acutis ad rotundatis, nervis obscuris, utrinque circiter 18; petiolo gracili, 1-2 cm. longo; floribus masculinis (immaturis) confertis, pubescentibus; fructibus subsessilibus, oblongis, obliquis, tomentulosis, 5 cm. longis, 3 cm. crassis; arillo sparso, ad basin fere laciniato, areolis latis; semine 3.5 cm. longo, 1.6 cm. crasso; testa 0.5 mm. crasso.

A small, subglabrous tree, young parts densely tomentulose; branchlets terete, very slender. Leaves glabrous, 6-13 cm. long, 2-5.5 cm. broad; blades pale green on both sides, not at all whitish beneath, chartaceous, oblong-elliptic, both ends acute to rounded, lateral nerves about 18 on each side of the midrib, very lightly impressed above and obscure above and beneath; petioles slender, 1-2 cm. long. Male flowers (immature) in small, crowded, pubescent, lateral clusters. Female flowers unknown. Fruits lateral, in clusters of 1 to 3, subsessile on very short, thick peduncles, oblong, about 5 cm. long, 3 cm. thick, with a small oblique apiculation and more or less marked depression down which it splits, covered without with very close, fine tomentum; pericarp 1-2 mm. thick; aril red, rather scant, split almost to the base into long lobes, areoles large; seed about 3.5 cm. long, oblong, slightly oblique, testa brown, about 0.5 mm. thick, irregularly marked with broad, shallow furrows.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, altitude 900 meters, December 6, 1927, John W. Gillespie. Type no. 4206.

Also represented by Parks no. 20457; Gillespie nos. 2871 and 4264, giving an additional range in Naitasiri and Namosi provinces. This species is less common than *Myristica castaneaefolia* A. Gray, and is easily distinguished from it (and from other Polynesian species) by the much smaller, chartaceous leaves and obscure venation. Native name: *wa le* (never called *ma le*, the name applied to *M. castaneaefolia*).

LAURACEAE

LITSEA Lamarck

***Litsea magnifolia* Gillespie, species nova (fig. 3).**

Arbor mediocris subglabra, partibus junioribus pubescentibus; foliis 11-20 cm. longis, 7-12 cm. latis, utrinque concoloribus, chartaceis, ovatis ad obovatis, apice obtuse acuminatis vel obtusis, basi acutis vel obtusis; petiolis crassis, 1-2 cm. longis; floribus masculinis capitatis, umbellatis; umbellis 1-3-fasciculatis; pedunculo glabro 12 mm. longo; bracteis ovatis, 7 mm. longis, ad marginem ciliolatis; perianthii tubo leviter pubescenti; staminibus circiter 12, filamentis leviter pubescentibus.

A medium-sized subglabrous tree, the young parts pubescent; branchlets stout, nodose, verrucose toward the extremities. Leaves 11-20 cm. long, 7-12 cm. broad; blades generally pale green, scarcely shining, alike on both sides or occasionally glaucous beneath, thickly chartaceous, ovate to obovate, apex very obtusely acuminate to obtuse, base acute to obtuse, lateral nerves thick, rather conspicuous, about 6 on each side of the midrib, veinlets densely reticulate, the areolae minute; petioles stout, 1-2 cm. long. Male flowers (Gillespie no. 4783) capitate, umbellate; umbels fascicled, 1-3 in the leaf-axils, the peduncles glabrous, about 12 mm. long; bracts 5, concave, ovate, about 7 mm. broad, the margin ciliolate; perianth-tube about 2 mm. long, slightly pubescent; stamens about 12, the filaments of varying length, slightly pubescent. Fruiting peduncles (type) very stout, as much as 2 cm. long, 1- or 2-fruited; perianth-tube greatly thickened, about 16 mm. long, the border expanded, cupulate, about 1 cm. in diameter; fruits green to black, shining, oblong-ellipsoid, about 4 cm. long, 1.6 cm. thick.

Fiji, Viti Levu, Namosi Province, ridges in vicinity of Namosi village, altitude 450 meters, September 8, 1927, John W. Gillespie. Type no. 2823.

Also represented by Gillespie nos. 2596, 2921, 3313, 3361, 4783. It is rather common in Viti Levu and Taviuni. Native names: *wa koro vundi*, *moo ndari*.

CRYPTOCARYA R. Brown

***Cryptocarya hornei* Gillespie, species nova (fig. 4).**

Arbor parva glabra, ramulis gracilibus teretibus nigrescentibus; foliis 7-13 cm. longis, 2.8-6 cm. latis, nitidis, nigrescentibus, coriaceis, lanceolatis ad ovatis vel oblongo-ellipticis, apice long acuminatis subcaudatis, basi acutis, 3-plinerviis; areolis minutis; petiolis 3-7 mm. longis; paniculis 15-50-floris, usque ad 7 cm. longis, aureo-tomentosis; perianthii tubo campanulato, 2 mm. longo, segmentis 2 mm. longis; staminibus 1.7 mm. longis, filamentis hirsutis; fructibus globosis, nitidis, obscure costatis, stipitatis, 1 cm. diametro.

A small glabrous tree, with very slender, smooth, terete, black branchlets. Leaves 7-13 cm. long, 2.8-6 cm. broad; blades dark-green, shining above, paler or yellowish beneath, blackening in drying, coriaceous, lanceolate to ovate or oblong-elliptic, apex long-acuminate or even caudate, the very tip rounded, base acute, sharply decurrent, 3-plinerved, the main nerves extending nearly to the tip, with 1 or more pairs pinnately arranged somewhat above the middle of the blade, veinlets obscure, areolae minute; petioles slender, 3-7 mm. long. Panicles axillary and terminal, 15-50-flowered, as much as 7 cm. long, golden-tomentose throughout; peduncles stout, as much as 3 cm. long; pedicels scarcely any. Perianth-tube campanulate to urceolate-cylindric, about 2 mm. long; segments subequal in size, ovoid, rounded at the apex, pubescent within in the proximal half, about 2 mm. long; fertile stamens about 1.7 mm. long; filaments hairy; ovary ellipsoid; style slender. Fruits (Gillespie no. 2893) globose, shining, obscurely ribbed,

about 1 cm. in diameter, slightly produced at the apex, more so at the base to form a short stipe; seeds globose.

Fiji, without exact locality, 1877, J. Horne no. 171. Type in Gray Herbarium. Also represented by Gillespie nos. 4529 (with parasitized flowers) from Ovalau, and 2893 (in fruit) from Viti Levu, Namosi Province, cliffs of Voma Mountain, altitude 600 meters.

***Cryptocarya turbinata* Gillespie, species nova (fig. 5).**

Arbor parva subglabra, ramulis inflorescentiisque persistente puberulis; foliis 5-8 cm. longis, 2.5-3 cm. latis, chartaceis, ovatis ad lanceolatis, apice acuminatis, saepe curvatis, basi acutis, nervis perspicuis, utrinque circiter 5; petiolis 3-7 mm. longis; inflorescentiis axillaribus, depauperato-paniculatis, 5-10-floris, usque ad 6 cm. longis; pedunculo puberulo, 1 cm. longo; pedicellis 1 mm. longis; floribus inconspicuis, perianthii tubo turbinato, sparse puberulo, 2 mm. longo, segmentis 1.2 mm. longis, ad marginem tenuibus, saepe crenulatis; pistillo 2.5 mm. longo, staminibus ad basin hirsutis; fructibus subglobois, 6 mm. diametro.

A small subglabrous tree, the inflorescences and branchlets persistently brownish-puberulent, the latter very dark or black, slender, terete. Leaves 5-8 cm. long, 2.5-3 cm. broad; blades yellowish-green, shining above, dull beneath, thickly chartaceous, ovate to lanceolate, apex acuminate, generally curved, base acute, lateral nerves conspicuous, about 5 on each side of the midrib, reticulations obscure, very numerous, the areolae minute; petioles 3-7 mm. long. Inflorescences axillary, depauperate-paniculate, 5-10-flowered, as much as 6 cm. long; peduncles puberulent, about 1 cm. long; pedicels about 1 mm. long. Flowers whitish, inconspicuous; perianth-tube turbinate, sparsely puberulent, about 2 mm. long, segments about 1.2 mm. long, the margin thinnish and often crenulate; pistil about 2.5 mm. long, ovary slenderly ellipsoid, style slender; fertile stamens about 1.3 mm. long; filaments hairy; sterile stamens of various shapes, all hairy at the base. Fruits shining, subglobose, about 6 mm. in diameter, somewhat produced at each end.

Fiji, Viti Levu, Tholo North Province, slopes of Loma Langa Mountain, altitude 1050 meters, November 21, 1927, John W. Gillespie. Type no. 3915.

Also represented by Horne nos. 1068 and 1117 (specimens in the Gray Herbarium).

ENDIANDRA R. Brown

***Endiandra elaeocarpa* (A. Gray) Gillespie, combinatio nova (fig. 6).**

Tetranthera elaeocarpa A. Gray in Gray Herbarium.

Arbor mediocris subglabra, ramulis puberulis glabrescentibus, compressis haud angulatis, internodis circiter 2 cm. longis; foliis oppositis, 15-30 cm. longis, 6-14 cm. latis, glabris vel subtus paullo pubescentibus, supra nitidis in siccitate rubescentibus, coriaceis, ovatis ad obovatis, apice rotundatis ad obtusis vel obtuse acuminatis, basi acutis; petiolis crassis, saepe puberulis, 1-1.5 cm. longis; inflorescentiis sublaxis, depauperato-paniculatis, 5-15-floris, 5 cm. longis; pedunculis pubescentibus, vix 1 cm. longis; perianthii tubo extus subglabro, intus hirsuto, campanulato, segmentis rotundatis; staminibus ad basin hirsutis; pedunculis fructigeris crassis, 1.5-7 cm. longis; fructibus cylindraceis, utrinque rotundatis, 6 cm. longis, 2 cm. crassis.

A medium-sized subglabrous tree, the branchlets brownish, puberulent, glabrescent, compressed but not angular, nodose, the internodes about 2 cm. long. Leaves opposite, 15-30 cm. long, 6-14 cm. broad; blades glabrous or slightly pubescent beneath, yellowish-green, shining above, reddish-brown when dry, coriaceous, ovate to obovate, apex rounded to obtuse or obtusely acuminate, base acute, lateral nerves very prominent, about 6 on each side of the midrib, anastomosing near the margin, veinlets very numerous, the areolae very small; petioles stout, often puberulent, 1-1.5 cm. long. Inflorescences subax, depauperate-paniculate, 5-15-flowered, about 5 cm. long; peduncles pubescent, scarcely 1 cm. long; pedicels 1-3 mm. long. Flowers chocolate-colored (in dried material); perianth-tube subglabrous without, hairy within, campanulate; segments rounded, the outer 3 slightly larger; stamens hairy at the base. Fruiting peduncles stout, 1.5-7 cm. long; fruits cylindric, rounded at each end, about 6 cm. long, 2 cm. thick, green to black, often curved.

Fiji, Ovalau, without exact locality, 1840, United States Exploring Expedition. Type in the Gray Herbarium.

Also represented by Horne no. 199 (specimen in the Gray Herbarium), Gillespie nos. 2091 and 3073, from Viti Levu, Naitasiri and Namosi Provinces. In vegetative characters resembling *Endiandra rubescens* Miquel of the Malay Archipelago, but differing from that species in the rounded, pubescent branchlets and glabrous flowers. Another specimen in the collection of the United States Exploring Expedition is from Samoa. The floral parts for figure 6 are drawn from Horne no. 199.

Endiandra reticulata Gillespie, species nova (fig. 7).

Arbor parva glabra; foliis saepe subfalcatis, 10-15 cm. longis, 2.8-4 cm. latis, utrinque concoloribus, coriaceis, oblongo-ellipticis ad oblongo-lanceolatis, apice acutis ad obtuse acuminatis, minute retusis; petiolo crassissimo 1 cm. longo; inflorescentiis axillaribus, depauperato-paniculatis, pubescentibus, 2 cm. longis, circiter 12-floris; perianthi tubo ellipsoideo vel subgloboideo, tomentoso, segmentis glabris, verrucosis, vix 1 mm. latis; pistillo 2 mm. longo, glabro.

A small glabrous tree, with rather stout brown branchlets. Leaves often slightly falcate, 10-15 cm. long, 2.8-4 cm. broad; blades pale-green, alike on both sides, often blackening in drying, coriaceous, oblong-elliptic to oblong-lanceolate, apex acute to obtusely acuminate, the tip often minutely retuse, base acute, the midrib very thick, lateral nerves rather prominent, straightish, curving and branching toward the margin, reticulations subprominent, the areolae very small; petioles very stout, about 1 cm. long. Inflorescences axillary, depauperate-paniculate, pubescent, about 2 cm. long, about 12-flowered; peduncles rather stout, less than 1 cm. long; pedicels about 1 mm. long; perianth-tube ellipsoid to subgloboid, tomentose without, about 2.5 mm. long; segments glabrous, verrucose, their tips slightly reflexed, the outer 3 obtuse, less than 1 mm. broad, the inner 3 smaller and narrower; stamens thick, broad; staminodes clavate; pistil flask-shaped, reddish, about 2 mm. long, ovary glabrous, style very slender and short, stigma 3-lobed.

Viti Levu, Tholo North Province, Thol-i-Nandarivatu Mountain, altitude 1150 meters, November 19, 1927, John W. Gillespie. Type no. 3905.

Also represented by Gillespie no. 4341, summit of Loma Langa Mountain, altitude 1200 meters, in the same vicinity. The floral parts are mucilaginous on dissection.

PITTOSPORACEAE

PITTOSPORUM Banks

Pittosporum oligodontum Gillespie, species nova (fig. 8).

Frutex erectus, ramulis teretibus; foliis 6-12 cm. longis, 2-3 cm. latis, chartaceis, elongato-obovatis ad elongato-ellipticis vel oblanceolatis, obscure undulatis ad irregulariter serratis, apice acutis ad obtuse acuminatis, basi acuminatis, nervis primariis et secundariis subtus obscuris, supra perspicue impressis; petiolis 1.5-2 cm. longis; cymis terminalibus, 3-4 cm. longis, 3-7-floris; pedunculis pedicellisque hirsutis, glabrescentibus; calyce subglabro, lobis ad marginem ciliolatis, quinquinerviis; ovario hirsuto; fructibus ellipsoideis, dense tomentosis, leviter tuberculatis.

A small glabrous shrub with slender, gray, terete branchlets. Leaves numerous, in more or less distinct whorls, 6-12 cm. long, 2-3 cm. broad; blades pale-green, thickly chartaceous, elongate-obovate to elongate-elliptic or oblanceolate, obscurely undulate to irregularly serrate, especially toward the apex, with large and uneven teeth, apex acute to obtusely acuminate, base acuminate, lateral nerves and veinlets very indistinct beneath, conspicuously impressed above, the former about 7 on each side of the midrib, the latter rather few; petioles stout, 1.5-2 cm. long, flattened or even margined. Cymes terminal, 3-4 cm. long, 3-7-flowered; peduncles 1-1.5 cm. long, pedicels slender, about 1 cm. long, both sparsely hairy, glabrescent. Flowers inconspicuous; calyx thin, the lobes distinct nearly to the base, acuminate, about 2.7 mm. long, distinctly 5-nerved, the margin ciliolate; corolla white, about 13 mm. long; pistil about 1 cm. long; ovary sessile, narrowly ovoid, silky-haired, about as long as the cylindrical glabrous style; stamens 1 cm. long, slender; anthers sagittate, about 2.5 mm. long. Fruits (immature) ellipsoid, thickly reddish-tomentose, somewhat verrucose, at least 14 mm. long, crowned by the persistent style.

Fiji, Viti Levu, Rewa Province, summit of Korombamba Mountain, altitude 450 meters, August 23, 1927, John W. Gillespie. Type no. 2329.

A species easily distinguished by the narrow, occasionally remotely serrate leaves, the veins of which are notably impressed above. The flowers in the specimens at hand have not expanded.

CUNONIACEAE

GEISSOIS Labillardière

Geissois superba Gillespie, species nova (fig. 9).

Arbor magna, partibus junioribus pubescentibus, ramulis compressis crassis; foliis 3-foliolatis; petiolis crassis, 2 cm. longis; stipulis perspicuis, tomentosis, usque ad 5 cm. longis, ad basin connatis; foliolis circiter 30 cm. longis, 13 cm. latis, integris, supra nitidis, glabris, subtus flavidis, sparse pubescentibus, ellipticis ad obovatis, apice obtusis ad rotundatis, basi acutis; petiolulis usque ad 3 cm. longis; racemis axillaribus lateralibusque, simplicibus vel 3-ramosis, usque ad 40 cm. longis; floribus numerosis, conspicuis; sepalis 6 mm. longis, pubescentibus; staminibus 17 mm. longis; fructibus ligneis, 16 mm. longis.

A large tree, with thick, compressed, often hollow branchlets, young parts pubescent. Leaves 3-foliolate; petioles very stout, generally about 2 cm. long; stipules conspicuous, pubescent without, densely tomentose within, ovate, rounded, as much as 5 cm. long, 3 cm. broad, somewhat united at the base to form an upwardly flared sheath; leaflets generally about 30 cm. long, 13 cm. broad, but often as much as 50 cm. long and 19 cm. broad;

blades entire, chartaceous to coriaceous, green, shining and glabrous above, yellowish or brown, dull and thinly pubescent beneath, especially on the nerves, elliptic to obovate, apex very obtuse to rounded, base acute, lateral nerves very prominent, about 13 on each side of the midrib, connecting nerves rather few, subprominent, reticulations very numerous; petiolules stout, about 3 cm. long. Racemes axillary and lateral, as much as 40 cm. long, simple or 3-branched near the base, the peduncles glabrous, channeled, about 2 mm. thick, downwardly curved so that the inflorescences are pendent; pedicels pubescent, about 3 mm. long; flowers very numerous, crowded, the calyx borne on a stipe about 4 mm. long; sepals ovate-lanceolate, about 6 mm. long, thinly pubescent without, more densely so within, especially at the margins; petals 0; stamens 14-24, about 17 mm. long, the filaments slender, flattened, tapering toward the summit; anthers about 0.5 mm. long; ovary ovoid, silky-pubescent; styles about 10 mm. long, very slender; ovules very numerous. Capsules woody, curved, thinly pubescent, at least 16 mm. long, slightly compressed and with 2 shallow grooves, the apex rounded, slightly apiculate; seeds flattened, about 3 mm. long.

Fiji, Viti Levu, Tholo North Province, trail between Nandarivatu and Vatuthere, altitude 900 meters, December 10, 1927, John W. Gillespie. Type no. 4274. Also represented by Gillespie no. 3178, from the same locality.

The calyx and filaments are crimson; the anthers are yellow. The numerous foot-long spikes seen against the large glossy leaves give this tree a most spectacular appearance. Native name: *vu re*.

SPIRAEANTHEMUM A. Gray

Spiraeanthemum parksii Gillespie, species nova (fig. 10).

Frutex erectus subglaber, partibus junioribus puberulis; ramulis nodosis, teretibus, persistente cinereo-pulverulentis; foliis 8-11 cm. longis, 3.2-4.2 cm. latis, nitidis, glabris, chartaceis ad subcoriaceis, ellipticis ad ovatis vel late lanceolatis, integris vel obscure et remote sinuato-denticulatis, apice acuminatis, basi rotundatis, nervis lateralibus in axillis glandulosis; paniculis axillaribus terminalibusque, usque ad 10 cm. longis, multifloris; inflorescentiis carpellisque puberulis.

A subglabrous shrub, with terete, nodose, persistently and minutely grayish-pulverulent branchlets, only the young parts puberulent. Leaves 8-11 cm. long, 3.2-4.2 cm. broad; blades dark-green, shining, glabrous above, paler and dull beneath, chartaceous to subcoriaceous, elliptic to ovate or broadly lanceolate, entire or obscurely and remotely sinuate-denticulate, apex acuminate, the tip rounded, base rounded, lateral nerves very prominent beneath, about 9 on each side of the midrib, conspicuously glandular, occasionally barbate-glandular, in the axils, veinlets rather obscure beneath, slightly raised above; stipules ovate, deciduous, about 11 mm. long; petioles about 12 mm. long. Panicles axillary and terminal, up to 10 cm. long, many-flowered; peduncles (2-5 cm. long) and the branches sparsely puberulent. Flowers thickly clustered; calyx cupulate, thinly puberulent without, fairly thick, about 1.4 mm. long, the tube equaling the acute lobes; stamens (in male flowers) slender, exserted; anthers broadly ovate; carpels (in female flowers) puberulent, especially near the base, about 2 mm. long; disc-scales oblong-ovate, slightly lobed and ciliate at the apex. Fruits unknown.

Fiji, Viti Levu, Tholo North Province, Nandarivatu, edge of bush along a high ridge, altitude 1250 meters, July, 1927, H. E. Parks. Type no. 20725.

Also represented by Horne no. 1007 (specimen in the Gray Herbarium); Parks no. 20676; Gillespie no. 4021, all (unless the Horne collection?) from

the same vicinity. This species differs from *Spiraeanthemum katakata* Seemann mainly in its thicker, smaller, and more coriaceous leaves. Native name: *ta ndalo*.

***Spiraeanthemum serratum* Gillespie, species nova (fig. 11).**

Arbor parva glabra, ramulis nodosis gracillimis; foliis 6-8 cm. longis, 2-2.5 cm. latis, coriaceis, oblongo-ellipticis, perspicue glanduloso-serratis, utrinque acuminatis, nervis lateralibus perspicuis, utrinque circiter 9; petiolis 10-15 mm. longis, interdum marginatis; paniculis axillaribus terminalibusque, amplis, multifloris, ramosissimis, usque ad 12 cm. longis; pedicellis gracilibus, 2 cm. longis; calyce campanulato, 2 mm. longo; staminibus exsertis.

A small, glabrous tree, with very slender, nodose, subterete branchlets. Leaves 6-8 cm. long, 2-2.5 cm. broad; blades green, somewhat shining above, yellowish beneath, coriaceous, oblong-elliptic, the margin (except near the very base) conspicuously glandular-serrate, base and apex acuminate, lateral nerves rather prominent, about 9 on each side of the midrib, reticulations rather obscure; petioles 10-15 mm. long, occasionally, in part, margined. Panicles axillary and terminal, ample, many-flowered, much branched, up to 12 cm. long. Flowers not at all crowded, on slender pedicels about 2 mm. long; bracts acuminate, about 1.5 mm. long; calyx (in male flowers) bell-shaped, about 2 mm. long; stamens about 10, slightly exserted, unequal; filaments tapering upwardly; anthers broadly ovate; disc-scales crowded at the base of the stamens, about 0.3 mm. long, oblong, 2-3-lobed. Female flowers and fruits unknown.

Fiji, Viti Levu, Tholo North Province, summit of Mount Victoria, altitude about 1300 meters, November 29, 1927, John W. Gillespie. Type no. 4107.

Although female flowers and fruits are as yet unknown, the conspicuously serrate leaves offer sufficient characterization for this species, which adds another to the considerable list of plants known only from the summit of the highest Fijian mountain.

MELIACEAE

AGLAIA Loureiro

***Aglaia* (§ *Euaglaia*) *elegans* Gillespie, species nova (fig. 12).**

Arbor parva, ramulis tenuibus teretibus; foliis decidue stellato-pubescentibus, 11-13 cm. longis, circiter 7-foliolatis; petiolo 3-7 cm. longo; foliolis oppositis, chartaceis, opacis, 4-9 cm. longis, 2-4 cm. latis, oblongo-ellipticis, utrinque obtusissimis vel rotundatis, nervis lateralibus vix perspicuis utrinque circiter 13, secundariis obscurissimis; petiolulis 6 mm. longis; floribus ut videtur paucis, sessilibus; pedunculis 1-4 cm. longis, calycibus maturis lepidotis, haud hirsutis; fructibus obovoideis, 2 cm. longis, minute pubescentibus, saepe 2-locellatis; seminibus 1 vel 2.

A small tree with slender, terete, grayish branchlets. Leaves alternate, 11-23 cm. long; brownish-scurfy when young, with dense, cupreous, very early and completely deciduous stellate hairs; petioles brown, 3-7 cm. long; leaflets generally about 7, the laterals in opposite pairs, the terminal one rather longer petiolulate than the laterals but similar to them; blades chartaceous, opaque, dull coppery-green, 4-9 cm. long, 2-4 cm. broad, very uniform, oblong-elliptic, very obtuse or rounded at each end, lateral nerves scarcely prominent, about 13 on each side of the midrib, veinlets very obscure; petiolules about 6 mm. long. Flowers unknown but apparently few in spikelike racemes, the in-

fructescences racemose or spike-like, 1-4 cm. long, with few fruits; fruiting calyx brownish-lepidote but not hirsute, about 3 mm. long, lobes very short, ciliate at the margin, deciduous; fruits obovoid, about 2 cm. long, minutely velvety-pubescent, often 2-celled, 1- or 2-seeded; seeds hard, with a transversely oblique groove on the ventral side, the fleshy integument thin.

Fiji, Viti Levu, Naitasiri Province, Tamavua woods, 11.3 kilometers (7 miles) from Suva, altitude 150 meters, August 6, 1927, John W. Gillespie. Type no. 2005.

Also represented by Horne no. 858; Gillespie nos. 2138, 2784, 3348, 3564, 4437, from Viti Levu, in Naitasiri, Rewa, and Namosi Provinces, and Ovalau. In no. 4437, from Ovalau, the leaflets are much smaller and more lanceolate than those described above. A species close to *Aglaia basiphylla* A. Gray, with which I have compared it, but distinguished by the very fugaceous stellate pubescence (in *A. basiphylla* the indumentum is persistent on the nerves and veinlets beneath), by the leaflets which are chartaceous and rather uniform in size and shape, by the rather long petioles (often less than 1 cm. long in *A. basiphylla*), and by the fruiting calyx which is lepidote but not hirsute. Native name: *kau toa*.

DYSOXYLUM Blume

Dysoxylum (§ *Didymocheton*) *hornei* Gillespie, species nova (fig. 13).

Arbor subglabra, partibus junioribus tomentosis; ramulis cicatricibus magnis conspicuis instructis; foliis 20-30 cm. longis; petiolo crasso, 5-8 cm. longo; foliolis 5 vel 7, lateralibus subsessilibus, pallidis, viridibus, glabrescentibus, membranaceis ad subchartaceis, 9-15 cm. longis, 2.5-5 cm. latis, oblongo-ellipticis ad lanceolatis, apice acuminatis, basi acutis ad acuminatis, interdum inaequilateralibus, nervis lateralibus utrinque circiter 9, obscuris; inflorescentiis amplis, terminalibus, erectis, usque ad 25 cm. longis, multifloris; sepalis lepidotis; corolla extus hirsuta; fructigero pedunculo crasso, ligneo; fructibus paucis, saepe glomeratis, globosis, apiculatis, 2.5 cm. diametro, extus dense villosis, 3-valvatis, 3-locellatis, loculis 1-spermis.

A subglabrous tree with crooked branchlets about 4 mm. thick at the extremities, the growing parts tawny-tomentose, leaf-scars large and conspicuous. Leaves 20-30 cm. long; petioles stout, 5-8 cm. long; leaflets 5 or 7, the laterals subsessile in opposite pairs, the terminal one similar to, or shorter than, the laterals, and generally petiolulate; blades pale-green when dry, glabrous or minutely villous on the midribs, dull, both surfaces roughened with innumerable minute papillae, membranaceous to subchartaceous, 9-15 cm. long, 2.5-5 cm. broad, oblong-elliptic to lanceolate, apex acuminate, the tip rounded, base acute to acuminate, sometimes inequilateral, lateral nerves about 9 on each side of the midrib, rather obscure. Inflorescences numerous, terminal, erect, as much as 25 cm. long, sparingly branched, with clusters of very numerous subsessile flowers. Flowers (Horne no. 375) immature; bracteoles about 5; sepals 5, suborbicular, the apex obtuse, thickly lepidote without, margins ciliate; corollas apparently 3-merous, densely hairy without; anthers 6; staminal tube crenulate at the summit, pubescent without near the base, glabrous within; ovary hirsute; style glabrous; disc cylindrical, the summit crenulate. Fruiting peduncles thickened, woody; fruits rather few, but often glomerate, brownish-red to green, globose, slightly apiculate, about 2.5 cm. in diameter, densely and closely villous without, 3-valved, 3-celled, the cells 1-seeded; seeds black, about 11 mm. long, 3-angled, the back rounded to conform to the shape of the cell, hilum elongate, large.

Viti Levu, Namosi Province, hills in vicinity of Namosi village, altitude 600 meters, September 8, 1927, John W. Gillespie. Type no. 2863.

Also represented by Horne nos. 141, 233, 375 (specimens in the Gray Herbarium); Gillespie nos. 3318, 3587, 4212, 4420, all from Viti Levu. The species is easily recognized by the rather small, sessile leaflets which are acuminate at each end. The fruits are very attractive, resembling small, bright-colored peaches. An unusual feature in *Dysoxylum* is the presence of six stamens in a flower. Native name: *kau toa*.

***Dysoxylum* (§ *Didymocheton*) *lenticellare* Gillespie, species nova (fig. 14).**

Arbor mediocris, inflorescentiis exceptis glabra; ramulis crassiusculis, rigidis, cicatricibus magnis conspicuis instructis; foliis maximis 60 cm. longis; petiolis rachibusque crassissimis lignosis; foliolis 5, 7, vel 9, glaberrimis, chartaceis, utrinque pallide viridibus, usque ad 21 cm. longis, saepissimis 8-13 cm. longis, 3-5 cm. latis, oblongo-ellipticis, apice subacutis, basi rotundatis, saepe inaequaliter angustatis decurrentibusque, nervis lateralibus utrinque circiter 9, rectis, subtus subperspicuis; petiolulis crassis, 1-2 cm. longis; fructibus subglobosis, mollibus, 5-locellatis, 2 cm. diametro, brunneis, dense lenticellatis, basi longe attenuatis.

A medium-sized tree, glabrous except the inflorescences, the branchlets rather thick, rigid, abruptly tapering, almost clublike, channeled and irregular in transverse section toward the extremities, leaf-scars large, prominent. Leaves as much as 60 cm. long; petioles (as much as 20 cm. long) and the rachis very stout and woody; leaflets generally 5, 7, or 9, very glabrous, chartaceous, pale green on both sides, at most 21 cm. long, 7 cm. broad, generally 8-13 cm. long, 3-5 cm. broad, oblong-elliptic, apex subacute, base rounded, often inequilateral and sharply decurrent, lateral nerves about 9 on each side of the midrib, nearly straight, rather prominent beneath, veinlets obscure; petiolules stout, 1-2 cm. long. Fruiting peduncles and branches much thickened, woody; fruits numerous, erect, glabrous, soft, brown, covered with numerous large, pale-tan lenticels, subglobose, sometimes apiculate, about 2 cm. in diameter, long-attenuate at the base, generally 5-celled, the pericarp hard when dry, 1 mm. thick, the dissepiment thin.

Fiji, Viti Levu, Tholo North Province, Nandarivatu, summit ridge of Loma Langa Mountain, altitude 1200 meters, November 21, 1927, John W. Gillespie. Type no. 3927.

Also represented by Horne no. 316 (specimen in the Gray Herbarium); Parks no. 20711; Gillespie nos. 2472, 2598, 2822, 3035, 3064, 3314, 3722, 3754, 3781, 4127, very common in Viti Levu and Ovalau. In Parks no. 20711 the leaflets are only 7 cm. long, the entire leaves 17 cm. long, but the fruits exactly resemble those of the larger leaved specimens. It may prove to be a distinct species. Native names: *mbau so ro*, *kau toa*.

***Dysoxylum* (§ *Didymocheton*) *obliquum* Gillespie, species nova (fig. 15).**

Arbor parva, ramulis tenuibus teretibus sparse lepidotis; foliis alternis, paucis, 15-50 cm. longis; petiolo 4-15 cm. longo; foliolis 5, 7, vel 9, lateralibus oppositis vel suboppositis, chartaceis, glabris, 9-20 cm. longis, 3-6 cm. latis, oblongo-ellipticis ad oblongo-ovatis, apice obtusissimis ad rotundatis, basi acutis ad obtusis, interdum inaequalateralibus, nervis lateralibus utrinque circiter 11; petiolulo 3-20 mm. longo; inflorescentiis amplis, 6-15 cm. longis, ramulis paucis; bracteis bracteolisque numerosis, persistentibus; floribus parvis;

sepalis puberulis, 1 mm. longis; petalis 3 mm. longis, liberis; tubo 3.5 mm. longo; antheris 8 vel 10; ovario hirsuto; infructescentiis lignosis, 3-12 cm. longis; pedicellis brevissimis; fructibus lepidotis, ellipsoideis, saepe obliquis, 4 cm. longis, 1-spermis.

A small tree with slender terete branchlets, the young parts sparingly lepidote. Leaves alternate, few, 15-50 cm. long; petioles 4-15 cm. long; leaflets generally 5, 7, or 9, the laterals opposite or subopposite; blades chartaceous, rather dark green, glabrous (occasionally a few hairs persistent on the midrib beneath), 9-20 cm. long, 3-6 cm. broad, oblong-elliptic to oblong-obovate, apex very obtuse to rounded, base acute to obtuse, sometimes inequilateral, lateral nerves slender, fairly prominent beneath, about 11 on each side of the midrib, veinlets obscure; petiolules 3-20 mm. long. Inflorescences (Horne no. 316) ample, terminal, 6-15 cm. long, with few rather long branches and clustered subsessile flowers, the ultimate branchlets puberulent; bracts and bracteoles numerous, rather persistent, at first pubescent with ciliate margins, glabrescent, ovate, about 1 mm. long; flowers (Horne no. 316) 4- or 5-merous; corolla salverform, petals pubescent, free or slightly united at the base, about 3 mm. long, elliptic, apex obtuse; calyx cupulate; sepals minutely puberulent, glabrescent, rounded, about 1 mm. long, persistent even at maturity of the fruit, the margin ciliolate; staminal tube cylindric, about 3.5 mm. long, crenulate at the summit; stamens 8 or 10, very small, included, oblong, sessile; ovary ellipsoid, contracted upwardly, hairy, particularly near the base, with pale yellow, ascending hairs; style cylindric, about 3 mm. long; stigma discoid, capitate; disc between cylindric and urceolate, about 2 mm. long, slightly hairy and longitudinally grooved on the outside, the margin crenulate. Infructescences thickened, woody, 3-12 cm. long; pedicels very short and expanded upwardly into the calyx; fruits tan, minutely lepidote, ellipsoid to obovoid, often oblique or curved, about 4 cm. long, 1.5 cm. broad, apex acutish; seeds 1, conforming to the shape of the fruit.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, altitude 900 meters, December 14, 1927, John W. Gillespie. Type no. 4316.

Also represented by Gillespie nos. 3757, 3951, 4161, 4316, 4451, 4682, from Viti Levu, in Namosi and Tholo North provinces, and Taviuni. Included here are a group of plants all of which (except no. 3951) have leaves much larger than the type, but differing from it in no other characters that I can find. The main axis of the infructescence may be as much as 12 cm. long at first; successive breaking at the nodes leaves clean round scars, and attached portions may be discovered apparently intact but only half as long as the original. Again, a fruit may appear as if subsessile on the twig. This breaking at the nodes is reminiscent of leaf-fragmentation in the well-known *Melia azedarach*. Native name: *mbau so me*.

Dysoxylum (§ *Didymocheton*) *seemanni* Gillespie, nomen novum (fig. 16).

Aglaiia multijuga Seemann: Flora Vitiensis, p. 37, 1865, non *Dysoxylum multijugum* Arnott.

Seemann's brief original description of this plant, drawn up without mature flowers, is as follows:

"Foliis amplis glabris 15-17-foliolatis, foliolis subfalcato-oblongis obtusis v. obtuse acuminatis in petiolum attenuatis; paniculis amplis (3-4 ped. long.); floribus glomeratis sessilibus; petalis rotundatis ciliatis imbricatis."

A small tree, glabrous except the young parts and flowers, branchlets often 1 cm. thick at the summit, pale-brown, very thickly lenticellate, compressed and angular in

transverse section, the leaf-scars very prominent, about 1 cm. in diameter. Leaves ample, as much as 1 meter in length; petioles (as much as 1 cm. in diameter at the base) and the entire rachis thickly lenticellate, the bark brown and papery; leaflets up to 15 or 17, generally about 11, as much as 30 cm. long, 11 cm. broad, the laterals in subopposite pairs; blades pale-green when dry, chartaceous, oblong to oblong-obovate, apex obtuse to obtusely acuminate, base subtruncate, inequilateral, sometimes sharply acute or somewhat attenuate, lateral nerves about 9 on each side of the midrib, conspicuous beneath, veinlets obscure; petiolules stout, 2-4 cm. long. Inflorescences ample, numerous, terminal, equaling the leaves in length; peduncles stout, woody, resembling the petioles in appearance, branchlets few, the lowermost as much as 20 cm. long, with few, short, spurlike, tertiary branchlets, all bearing numerous glomerate sessile flowers. Flowers (Gillespie no. 4301) white, waxy in texture; bracteoles about 5, similar to but smaller than the sepals; sepals (5) chartaceous, about 1.5 mm. long, 2 mm. broad, rounded, the margins ciliolate; corollas densely tawny-pubescent without, glabrous within, urceolate, about 1 cm. long (excluding the staminal tube); corolla-tube subglobose, 6 mm. in diameter (appearing subcylindric and much narrower in dried material), the lobes (5) about 6 mm. long, recurved, acute, 3 mm. wide at the base; staminal tube cylindric, glabrous, slightly expanded upwardly, about 6 mm. exerted, the margin crenate; stamens 10, very small, oblong, inserted 1 mm. within the summit of the tube; disc cylindric, 4-5 mm. long, the summit slightly flared and crenulate; ovary densely hairy, 5-celled, each cell 2-ovulate; style about 11 mm. long, hairy almost to the capitate stigma with appressed ascending hairs. Fruits (Gillespie no. 2408) globose, somewhat flattened at the summit, brown, minutely villous or glabrescent, 5-valved, 5-celled, the cells 2-seeded; seeds brown, 3-angled, about 6 mm. long.

Described from Gillespie nos. 2408, 2855, 4301, 4805, from Viti Levu and Taviuni. These specimens agree with the brief, but salient characters given by Seemann. Furthermore, they represent the same species as Horne no. 410, in the Gray Herbarium, labeled *Aglaiia multijuga* Seemann, which was probably identified by comparison with the type. The specific name originally used by Seemann is invalid in *Dysoxylum* because of the older *Dysoxylum multijugum* Arnott (= *Chisocheton paniculatus* Hiern), so that a new name is required. This species is not accounted for by DeCandolle in his monograph of the family.¹

VAVAEA A. Gray

Vavaea megaphylla Wright (fig. 17).

Vavaea megaphylla Wright: Kew Bull., p. 102, 1895. The original description follows:

"Arbor procera, foliis obovato-lanceolatis petiolatis glabris penninerviis, nerviis secundariis subtu prominentibus, floribus paniculam prope apices ramorum formantibus, bracteis oblongis, calyce cupulari irregulariter 5-7 lobato, petalis 5-7 oblongis contortis carinatis albis utrinque hirsutis, staminibus 12-16, filamentis latis connatis antice prope apices villosis, antheris liberis oblongis, ovario globoso, apice hirsuto triloculari, stylo brevi, stigmatibus trilobato, ovulis in loculo quoque 2 collateralibus."

Branchlets stout, about 8 mm. thick; bracts of the terminal bud persistent, densely tawny-pubescent, very numerous, stout, about 1 cm. long. Leaves dull-green, glabrescent, membranaceous to subcoriaceous, 20-35 cm. long, 8-13 cm. broad, obovate-oblancheolate,

¹ DeCandolle, C., Meliaceae, in DeCandolle's Monographiae Phanerogamarum, vol. 1, pp. 399-752, plates 6-10, 1878.

apex acuminate, base narrowed, attenuate, lateral nerves prominent, about 11 on each side of the midrib, veinlets obscure; petioles about 4 cm. long. Panicles in the uppermost axils, erect, about 15-flowered, 5-14 cm. long; peduncles flattened. Flowers 4- to 7-merous; calyx-tube thinnish, puberulent, about 4 mm. long, the lobes acuminate, about 4 mm. long; petals thick, pale-yellow, canescent when dry, about 8 mm. long. Fruits glabrous, globose, about 12 mm. in diameter.

Represented by Gillespie no. 3487, from near the type locality (Viti Levu, Naitasiri Province, Tamavua), also Storck no. 6, and Horne no. 477 (specimens in the Gray Herbarium). The simple leaves, tawny hairs, and stout branchlets simulate similar characters of the Sapotaceae, as, indeed, one of the specimens examined had been so labeled, but the flowers are those of *Vavaea*. They have a fine odor, reminiscent of honeysuckle. The figure was drawn from the Gillespie material.

SAPINDACEAE

ALLOPHYLUS Linnaeus

Allophylus sublaxus Gillespie, species nova (fig. 18).

Arbor parva subglabra, ramulis gracilibus, partibus junioribus minute puberulis; foliis 3-foliolatis, 20 cm. longis, petiolo crasso, 5-8 cm. longo; foliolis chartaceis, glabris, in axillis nervorum lateralium barbatis, 9-13 cm. longis, 3.2-5 cm. latis, obovatis, integris vel ad marginem remote et minute serrulatis.

A small, subglabrous tree, with slender, smooth brown branchlets, the young parts minutely puberulent. Leaves about 20 cm. long; petioles stout, terete or obscurely canaliculate above, 5-8 cm. long; leaflets 3; blades chartaceous, pale-green above, brownish or yellowish beneath, glabrous except the tufts of white hairs in the axils of the lateral nerves, 9-13 cm. long, 3.2-5 cm. broad, obovate, occasionally ovate, entire or slightly notched along the margin, apex acute to obtusely acuminate, shallowly retuse, base narrowed, acute, lateral nerves about 11 on each side of the midrib, prominent beneath, reticulations prominent; petiolules about 4 mm. long, the terminal one as much as 12 mm. long. Racemes axillary, about 8 cm. long, ascending; peduncles short, the branches rather numerous, sublax, some equaling the main axis; pedicels about 2 mm. long, thinly bristly-haired; bracts acuminate. Flowers numerous, thickly crowded along the branches, about 2.5 mm. across in anthesis; calyx-lobes 4, strongly concave, the margin crenulate, ciliate; petals 4, about 0.8 mm. long, cuneate, the apex crenate, narrowed at the base to a short claw, densely bearded along the lateral margins, the scales not seen; fertile anthers apparently 2, about 2 mm. long, exserted, the filaments curved, not at all hairy; anthers oblong; disc small, hairy at the base; pistil small. Fruits ovoid, about 14 mm. long, slightly apiculate, the base slightly angled by about 10 raised lines extending upwardly from the short stipe; pericarp bony, pale yellow within, seeds brown, subglobose; seed-coat thin, papery; embryo large, dull-green, the cotyledons folded together.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, altitude 900 meters, December 6, 1927, John W. Gillespie. Type no. 4202.

Also represented by Gillespie nos. 4524 and 4524.5, fruiting specimens from the mountains of Ovalau, from which figure 18 was drawn. The flowers were drawn from the type. The species differs from *Allophylus vitiensis* Radlkofler in having obovate leaflets instead of lanceolate, and from *A. ternata*

(Forster) Radlkofer in having compound paniculate inflorescences instead of simple racemes.

GUIOA Cavanilles

Guioa concolor Gillespie, species nova (fig. 19).

Arbor parva, floribus exceptis glabra; foliis 20-30 cm. longis, petiolo 10 cm. longo; foliolis saepissime 2-jugis, viridibus utrinque concoloribus, chartaceis, 12-18 cm. longis, 4-8 cm. latis, obovatis ad oblongo-ellipticis, apice subacuminatis, basi acuminatis; petiolulis 5 mm. longis, vix marginatis; paniculis amplis, 15 cm. longis, ramulis paucis; pedicellis tenuibus, 3 mm. longis; floribus confertis; calyce campanulato, 5 mm. diametro; petalis membranaceis, 1.5 mm. longis, crenatis; staminibus 3 mm. longis; pistillis 4 mm. longis, 3-lobatis; fructibus obovoideis, 3-angulatis, 3-locellatis.

A shrub or medium-sized tree, glabrous except the flowers, with terete or shallowly channeled, or wrinkled branchlets. Leaves 20-30 cm. long; petioles (about 10 cm. long) and the rachis often very shallowly canaliculate; leaflets generally two pairs; blades pale-green, alike on both sides, chartaceous, 12-18 cm. long, 4-8 cm. broad, obovate to oblong-elliptic, apex subacuminate, often slightly curved, base acuminate, lateral nerves about 13 on each side of the midrib, raised and subprominent above and beneath, reticulations numerous, crowded; petiolules about 5 mm. long, scarcely margined, each with a conspicuous brown callus at the base. Panicles axillary and lateral, ample, about 15 cm. long; peduncles 1-3 cm. long, branches few, racemose, sublax; pedicels slender, about 3 mm. long. Flowers numerous, crowded, unisexual; calyx campanulate, glabrous, about 5 mm. in diameter, lobes uneven, the longer membranaceous at the margins; petals 5, membranaceous, orbicular, about 1.5 mm. long, crenulate, bearing at the base 2 very thickly bristly-haired scales; disc complete; stamens (staminate flowers) about 3 mm. long, the filaments tapering upwardly, hairy at the base; anthers ovate, pistil minute; stamens (pistillate flowers) very small, short; pistil about 4 mm. long, conic or flask-shaped; stigma 3-parted, the ovary clearly 3-lobed. Fruits (immature) ovoid, 3-sided, 3-celled, the partitions thin.

Fiji, Taviuni, vicinity of Waiyevo (northwest coast), along streams in the coconut belt, altitude 200 meters, March 3, 1928, John W. Gillespie. Type no. 4794.

Clearly of *Guioa*, by the shape of the calyx and the presence of two comb-bearing scales on the petals, but having leaves so similar to *Arytera brackenridgei* (A. Gray) Radlkofer, as to be scarcely distinguishable from it by vegetative characters alone. All the flowers on each plant are of the same sex.

Also represented by Gillespie nos. 3780, 4763, 4765, 4793, 4794, 4795. The first number cited is from Viti Levu, in Tholo North Province; the others are from the type locality, where it is very common. The staminate flowers figured are drawn from the type; the pistillate from Gillespie no. 4795.

RHAMNACEAE

GOUANIA Jacquin

Gouania richii A. Gray (fig. 20).

Gouania richii A. Gray: U. S. Expl. Exped. Botany, Phanerogamia, vol. 1, p. 282, 1854.

To the original description of this species, drawn up in the absence of flowering material, the following characters may be added:

Inflorescences in the uppermost axils, very numerous, ample, about 15 cm. long, racemose, or branching from the base, the branches yellowish- or tawny-tomentose, ascending; pedicels about 2 mm. long; flowers thickly clustered, about 3 mm. in diameter; calyx tomentose, the lobes acute; petals oblong-spatulate, enclosing the stamens; style cylindrical, 3-parted. Fruits 2-3-carpellate, ellipsoid, the apical disc hairy, wings of the carpels rather thick, coriaceous, reniform, veiny, about 5 mm. long; seeds ovate, brown, about 2 mm. long.

Represented by Parks no. 20375 and Gillespie nos. 3664 and 3394.1, from Viti Levu, in Naitasiri and Tholo North provinces.

VENTILAGO Gaertner

Ventilago vitiensis A. Gray (fig. 21).

Ventilago (?) *vitiensis* A. Gray: U. S. Expl. Exped., Botany, Phanerogamia, vol. 1, p. 274, 1854.

A glabrous shrub, climbing by the cirrhose branchlets. Leaves 5-10 cm. long, 3-4 cm. broad; blades chartaceous, shining, entire or obscurely undulate-repand, apex obtusely acuminate, base rounded, lateral nerves arcuate-ascending, about 6 on each side of the midrib, veinlets reticulated in narrow meshes; petioles 4-7 mm. long; stipules minute, subulate. Inflorescences axillary, racemose or depauperate-paniculate, about 6 cm. long; flowers fascicled, on slender pedicels about 4 mm. long; calyx thin, about 3 mm. in diameter, the lobes acute; petals and stamens slightly shorter than the calyx; samaras about 4.5 cm. long, the seed globose, about 4 mm. in diameter, the wing oblong, veiny, 8 mm. broad, the style persistent to form a minute bifid apiculation.

The collection of the United States Exploring Expedition contained flowering material only, so that the genus remained uncertain. The single specimen in the Gillespie collection (no. 2894, Viti Levu, Namosi Province, stony ledge on the slopes of Voma Mountain) is fortunately in fruit, so that the generic determination is confirmed.

ELAEOCARPACEAE

ELAEOCARPUS Linnaeus

Elaeocarpus (§ **Monocera**) **chelonimorphus** Gillespie, species nova (fig. 22).

Arbor magna subglabra, ramulis crassiusculis; foliis utrinque viridibus, nitidis, chartaceis ad subcoriaceis, 14-22 cm. longis, 4-6 cm. latis, subintegris vel minute denticulatis, ellipticis ad oblongo-obovatis, utrinque acuminatis, nervis lateralibus utrinque 7 conspicuis; petiolo crasso, 1-4 cm. longo; racemis lateralibus, deorsum curvatis, circiter 7-floris; pedunculis pedicellisque gracilibus, circiter 3 cm. longis; floribus magnis; sepalis tenuibus, oblongo-lanceolatis longe acuminatis, extus glabris, 26 mm. longis, 5 mm. latis; petalis albidis, membranaceis, 28 mm. longis, 10 mm. latis, ellipticis, apice fimbriatis, lobis 5 mm. longis, acuminatis; staminibus circiter 40, 2 cm. longis, filamentis hirsutis, antheris breviter caudatis; pistillis 15 mm. longis, ovario glabro; pedunculis pedicellisque

fructigeris crassis ligneis, fructibus usque ad 6.5 cm. longis, 3.5 cm. diametro, putamine cheloniformi.

A tall tree, glabrous except the juvenile parts and flowers, the twigs rather stout, terete. Leaves thickly clustered, 14-22 cm. long, 4-6 cm. broad; blades bright-green on both surfaces, somewhat shining, chartaceous to subcoriaceous, subentire or minutely denticulate almost to the base, elliptic to oblong-obovate, apex and base acute to acuminate, lateral nerves (about 7 on each side of the midrib) and the rather numerous veinlets prominent above and beneath, the glands on the midrib conspicuous; petioles stout, 1-4 cm. long. Racemes lateral, downwardly curved, about 7-flowered; peduncles slender, 1-4 cm. long, somewhat exceeded by the slender pedicels; flowers conspicuous; sepals thin, about 26 mm. long, 5 mm. broad, oblong-lanceolate, long-acuminate, the base rounded, glabrous without, thinly arachnose on the inside, the hairs much thicker toward the thickened margins; petals white, glabrous, membranaceous with conspicuous nervation, 26-30 mm. long, 8-11 mm. broad, elliptic, the apex fimbriate, the lobes few, acuminate, about 5 mm. long; stamens about 40, often 2 cm. long, filaments covered with brown, bristly hairs, anthers slender, hispidulose, about 1 cm. long, 2-lobed, the dorsal part forming a tail 1 mm. long, the ventral part about a third as long; pistil about 15 mm. long; ovary ellipsoid, glabrous; style subulate, about 7 mm. long. Fruiting peduncles greatly thickened, woody; fruits (Gillespie no. 4834) ellipsoid, apiculate, 6.5 cm. long, 3.5 cm. in diameter, the pericarp thin, fragile, the mesocarp pithy when dry, the stone bony, turtle-shaped, more or less diamond-shaped in transverse section, the lateral margins shallowly lobed, the lobes thin and pointing somewhat toward the apex.

Fiji, Viti Levu, Rewa Province, slopes of Korombamba Mountain, altitude 300 meters, August 15, 1927, John W. Gillespie. Type no. 2293.

Also represented by Gillespie nos. 2844, 3118, 3141, 3229, 4834, from Viti Levu and Tavuni. In nos. 3118 and 3141, from the summit of Naitarandamu Mountain, in Namosi Province, the leaves have much shorter petioles and more distinctly toothed margins than the other specimens, but they probably represent the same species.

Elaeocarpus (§ **Monocera**) **subcapitatus** Gillespie, species nova (fig. 23).

Arbor magna, subglabra, ramulis crassiusculis; foliis supra viridibus, subtus canescentibus, coriaceis, 11-19 cm. longis, 4-6 cm. latis, subintegris, minute denticulatis, ellipticis ad ovatis, apice acuminatis, basi obtusis, interdum decurrentibus, nervis laterilibus 7 utrinque perspicuis; petiolo crasso, 2-4 cm. longo, racemis axillaribus laterilibusque, adscendentibus, circiter 4-floris; pedunculis pedicellisque crassiusculis circiter 1.5 cm. longis; floribus magnis; sepalis oblongo-acuminatis, 15 mm. longis, 4 mm. latis, extus puberulis; petalis albidis, membranaceis, multifimbriatis; staminibus circiter 50, 15 mm. longis, filamentis hirsutis, antheris breviter caudatis; pistillis 11 mm. longis, ovario hirsuto; fructibus 6 cm. longis, 4 cm. diametro, ovoideis, putamine cheloniformi.

A large tree, glabrous except the young parts and inflorescences, branchlets rather stout, terete. Leaves thickly clustered at the extremities of the branchlets, 11-19 cm. long, 4-6 cm. broad; blades dull-green, somewhat shining above, distinctly grayish beneath, thick, very coriaceous, almost entire, with very minute teeth at the ends of the main nerves, elliptic to ovate, apex acuminate, base obtuse, sometimes sharply decurrent, lateral nerves about 7 on each side of the midrib, the axillary glands often prominent beneath, reticulations distinct on both surfaces; petioles stout, 2-4 cm. long. Racemes axillary and lateral, somewhat ascending, about 4-flowered; peduncles fairly stout, about 2 cm. long; pedicels about 1.5 cm. long; flowers conspicuous, pale-tan and subcapitate in bud, with ovate pubescent caducous bracts about 3 mm. long; sepals thick, especially at the margin, oblong-acuminate, often apiculate, about 15 mm. long, 4 mm. broad, minutely but thickly grayish-puberulent without, pilose within with brown hairs, the midrib raised and

prominent; petals white, membranaceous, conspicuously nerved, oblong-obovoid, somewhat longer than the sepals, with numerous fimbriate lobes 2-4 mm. long; stamens about 50, often 15 mm. long, filaments hairy, the anthers very slender, about 8 mm. long, the pollen-sacs slightly produced at their summits to form a notched appendage, the dorsal portion forming a tail 1 mm. long; pistil about 11 mm. long; ovary ellipsoid, covered with long silky hairs; style subulate, glabrous, about 7 mm. long. Fruiting peduncles greatly thickened, woody, apiculate; fruits (Gillespie no. 4169) ovoid, apiculate, about 6 cm. long, 4 cm. in diameter, the stones turtle-shaped, 4-sided in transverse section, the lateral margins produced to form a thin lamina, the margin slightly undulate.

Fiji, Viti Levu, Namosi Province, September 28, 1927, John W. Gillespie. Type no. 3235.

Also represented by Gillespie nos. 2723, 3150, 5117, from the higher elevations of Voma and Naitarandamu Mountains.

Elaeocarpus (§ **Monocera**) *vitiensis* Gillespie, species nova (fig. 24).

Arbor magna floribus exceptis glabra; foliis 11-16 cm. longis, 3.5-5.5 cm. latis, chartaceis, oblongo-lanceolatis ad ovatis, subintegris, apice acuminatis, basi obtusissimis ad rotundatis, nervis lateralibus 8 utrinque; petiolo tenui, 3-4 cm. longo; racemis lateralibus, circiter 4-floris; floribus conspicuis; sepalis oblongis acuminatis, 20 mm. longis, 4 mm. latis, extus glabris; petalis albidis, membranaceis, 23 mm. longis, 7 mm. latis, oblongo-ovatis, ad apicem breviter circiter 6-lobatis; filamentis sericeo-hirsutis, antheris breviter caudatis; stylo 11 mm. longo; pedunculo fructigero crasso; fructibus ellipsoideis, 3.5 cm. longis; pericarpio tenui, fragili; putamine osseo, subrotundato, marginis productis undulatis.

A tall forest tree, glabrous except the flowers, trunk 50 cm. in diameter, the branchlets smooth, slender, terete. Leaves 11-16 cm. long, 3.5-5.5 cm. broad; blades chartaceous, dull-green, decidedly yellowish beneath, oblong-lanceolate to ovate, subentire, apex acuminate, base very obtuse to rounded, lateral nerves distinct, about 8 on each side of the midrib, glands in the axils obscure; petioles slender, 3-4 cm. long. Racemes lateral, about 4-flowered; flowers conspicuous, faintly fragrant; sepals oblong-acuminate, somewhat apiculate, about 20 mm. long, 4 mm. broad, glabrous without, very densely silky-haired within, the midnerve and margins thickened; petals white, membranaceous, about 23 mm. long, 7 mm. broad, oblong-obovate, apex split into about 6 short rounded lobes, the nervation apparent; stamens 40-50, about 12 mm. long; filaments silky-haired; anthers about 7 mm. long, slender, thinly pilose, glabrescent, 2-lobed, the dorsal part produced to form a slender tail about 2 mm. long, the ventral lobe much shorter; ovary globoid, sparsely hairy, 2 mm. in diameter; style subulate, very slender, about 11 mm. long. Fruiting peduncle thickened; fruits dark olive-green, ellipsoid, about 3.5 cm. long, 2.3 cm. in diameter; pericarp thin, fragile when dry; stone bony, pale-brown, subrotund in transverse section, the margins produced and slightly undulate.

Fiji, Viti Levu, Tholo North Province, valley of the Singatoka near Nandarivatu, altitude 900 meters, November 22, 1927, John W. Gillespie. Type no. 3973.

MYRTACEAE

ACICALYPTUS A. Gray

Acicalyptus myrtoides A. Gray (fig. 25).

Acicalyptus myrtoides A. Gray: U. S. Exped., Botany, Phanerogamia, vol. 1, p. 551, pl. 67, 1854.

A genus and species characterized by A. Gray in the absence of fruits, on account of which the relationship within the family has been uncertain. In the collections at hand, fruiting specimens are found, so that a redescription and illustration has been considered desirable.

A tall, glabrous tree with a trunk 4 dm. thick, branchlets corymbose, terete, and rather slender. Leaves subcoriaceous, green and shining above, dull beneath, not at all punctate, 3-5 cm. long, 1.3-2 cm. broad, ovate-elliptic, apex acuminate, the very tip obtuse, base acuminate, lateral nerves numerous, marginal nerve undulate and prominent; petioles slender, about 1 cm. long. Inflorescences terminal, trichotomous, compound, corymbose, exceeding the leaves, branches thickened and somewhat angled. Fruits erect, slightly fleshy in life, when dry about 2 cm. long, 0.8 cm. thick, subcylindric, apex crowned by the persistent, truncate, crateriform calyx-tube, from which the persistent style scarcely emerges, somewhat constricted at the middle, conspicuously marked by 4 longitudinal raised lines, thus making the fruit 4-angled; pericarp thinnish, somewhat fragile, the inner layer pale yellow and chartaceous. Seeds 1, chocolate brown, about 13 mm. long, 6 mm. thick, conforming to the shape of the fruit; endosperm leathery, abundant; embryo transverse, straight, about 2.5 mm. long, radicle exceeding in length the cotyledons which are folded together after the manner of many of the family.

Represented by Gillespie no. 3971, from Viti Levu, Tholo North Province, vicinity of Nandarivatu, altitude 900 meters, from which figure 25 was drawn.

The embryo lies in the median part of the seed, and near it a separation layer is formed so that the seed (in dried material) is often found in two parts, the basal part bearing the embryo, while the apical part shows a shallow depression wherein it lay (fig. 25, a). Native name: *ndoi nda*.

EUGENIA Micheli

Eugenia (§ *Syzygium*) *curvistyla* Gillespie, species nova (fig. 26).

Arbor parva glabra, ramulis crassis teretibus; foliis coriaceis, supra nitidis, subtus pallidis, opacis, 9-14 cm. longis, 3.5-6 cm. latis, ellipticis ad elliptico-ovatis, utrinque acuminatis, nervis lateralibus numerosis, tenuibus, perspicuis, 1-2 mm. a margine in venam intramarginalem confluentibus; petiolo crasso, 2-6 mm. longo; inflorescentiis terminalibus lateralibusque 4 cm. longis, multifloris; pedunculis 1 ad 7, divaricatis, ramulis paucis, suboppositis; pedicellis brevissimis; floribus parvis; calyce 5 mm. longo, lobis obtusis, rotundatis; corolla cupulata; staminibus 4 mm. longis; stylo 3 mm. longo.

A small glabrous tree with gray bark and rather stout, terete branchlets. Leaves opposite, 9-14 cm. long, 3.5-6 cm. broad; blades moderately thick, coriaceous, shining above, dull beneath, opaque, elliptic to elliptic-ovate, each end acuminate, lateral nerves very numerous, prominent on both sides, confluent with a prominent undulate marginal nerve 1-2 mm. within the revolute margin; petioles stout, 2-6 mm. long. Inflorescences terminal and lateral, about 4 cm. long, many-flowered; peduncles 1 to 7, divaricate, with few subopposite branches, the latter compressed or somewhat 4-sided; pedicels very short or none; bracts and bracteoles not seen. Flowers about 6 mm. long; calyx turbinate, about 5 mm. long, 4 mm. thick, lobes 4, broadly obtuse, the apices rounded; petals 4, orbicular, membranaceous, forming a lid and falling together; stamens numerous, about 4 mm. long, anthers oblong; style subulate-cylindric, about 3 mm. long, the tip curved; ovary 2-celled, ovules about 12 in each cell. Fruits unknown.

Fiji, Viti Levu, Tholo North Province, trail near Vatuthere, altitude 700 meters, November 29, 1927, John W. Gillespie. Type no. 4269.

Also represented by Gillespie no. 4028 (Viti Levu, Tholo North Province, Nandarivatu, altitude 900 meters) and Seemann no. 152 (specimen in the Gray Herbarium), labeled "*Eugenia amicornum* Bentham," from Fiji, without exact locality. This species resembles *Eugenia rubescens* A. Gray in the texture of the leaves and form of inflorescence, but in *E. curvistyla* both leaves and flowers are considerably larger.

***Eugenia* (§ *Jambosa*) *nandarivatensis* Gillespie, species nova (fig. 27).**

Arbor parva glabra, ramulis gracilibus, teretibus; foliis oppositis, chartaceis, supra nitidis, subtus pallidioribus, pellucido-punctatis, 5-10 cm. longis, 1.8-3 cm. latis, oblongo-ovatis ad ovato-lanceolatis, apice obtusis, rariter retusis, basi obtusis ad rotundatis, nervis lateralibus utrinque circiter 12, supra obscuris, subtus subperspicuis, vena marginali obscurissima, nervulis transversalibus paucis; petiolo 4 mm. longo, crasso; inflorescentiis terminalibus, circiter 15-floris, 12 cm. longis et latis; pedunculis 2-4 cm. longis, trichotome ramosis, ramulis teretibus vel compressis, crassis, ad apicem 3-floris; calycis tubo obconico, 16 mm. longo, lobis 3-4 mm. longis, latissimis, erectis; petalis 12 mm. longis, 8 mm. latis; staminibus 2.5 cm. longis; stylo 3.6 cm. longo; fructibus subglobosis, 1.6 cm. diametro, lobis calycinis coronatis.

A small leaning tree with trunk 10 cm. thick, and slender, terete branchlets, glabrous throughout. Leaves opposite; blades chartaceous, shining above, dull beneath, pellucid-punctate, 5-10 cm. long, 1.8-3 cm. broad, oblong-ovate to ovate-lanceolate, apex obtuse, rarely retuse, base obtuse to rounded, lateral nerves about 12 on each side of the midrib, obscure above, subprominent beneath, sharply arcuate-ascending toward the margin, marginal nerves very obscure, veinlets few; petioles about 4 mm. long, rather stout. Inflorescences terminal, about 15-flowered, 12 cm. long and thick; peduncles 2-4 cm. long, trichotomously branched, the branches terete or compressed, rather stout, the ultimate ones bearing 3 sessile or short-petiolate flowers; bracts and bracteoles not seen. Flowers articulate at the base; calyx obconic to funnel-shaped, woody, punctate, the tube about 16 mm. long, broadly flared upward to a diameter of about 12 mm., produced beyond the ovary, 4-lobed, the lobes 3-4 mm. long, very broad, erect; corolla pink, petals expanded in anthesis, about 12 mm. long, 8 mm. broad, membranaceous toward the margins, the limb suborbicular, narrowed somewhat at the base to form a claw; stamens very numerous, about 2.5 cm. long; anthers oblong, very small; style subulate, about 3.6 cm. long; ovary 2-celled, walls greatly thickened; ovules about 15 in each cell. Fruits woody, red, subglobose, as much as 1.6 cm. in diameter, calyx-lobes persistent and erect.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, escarpment north of the Government Station, altitude 400 meters, November 22, 1927, John W. Gillespie. Type no. 3972. Native name: *kau ni thi vatu*.

***Eugenia* (§ *Syzygium*) *wolfii* Gillespie, species nova (fig. 28).**

Arbor parva glabra, ramulis teretibus, crassis, bracteis lanceolatis rigidis perspicue costatis usque ad 3 cm. longis et 1 cm. latis tectis, cicatricibus perspicuis; foliis trinis, circiter 25 cm. longis, 9 cm. latis, coriaceis, nitidis, subtus fuscis, opacis, obovatis, apice obtusis ad obtuse acuminatis, basi angustatis petiolo, crassissimo, alato, nervis lateralibus numerosis confertis, obscuris, nervo intramarginali subperspicuo, a margine 2 mm. distant; inflorescentiis terminalibus, corymbosis, circiter 35-floris, 4 cm. longis, bracteatis; bracteolis persistentibus, ovatis, acuminatis, 4-5 mm. longis; floribus sessilibus, 9 mm. longis; petalis cohaerentibus; staminibus 1.5 mm. longis; stylo 7 mm. longo.

A small, glabrous tree, with terete branchlets which are 5 mm. thick at the extremities and conspicuously covered with rigid, lanceolate bracts as much as 3 cm. long and 1 cm. broad at the base, the midrib strongly thickened, leaf- and bract-scars conspicuous.

Leaves few, in threes, about 25 cm. long, 9 cm. broad; blades thick, coriaceous, brittle, bright green and shining above, dull beneath, obovate, apex obtuse to obtusely acuminate, base narrowed to form wings on the very stout petioles, lateral nerves very numerous, crowded, straightish, obscure above and beneath, marginal nerve fairly prominent, crenulate, about 2 mm. within the revolute margin. Inflorescences terminal, corymbose, about 35-flowered, 4 cm. long and thick, partially enclosed at the base by the cauline bracts which extend half the length of the inflorescences; peduncles scarcely any, branchlets very thick, decidedly compressed and short; bracts and bracteoles of the inflorescence persistent, rigid, ovate, acuminate to subspinescent, 4-5 mm. long and broad. Flowers sessile, about 9 mm. long; calyx more or less cylindrical, 4 mm. thick, tube scarcely produced beyond the ovary, lobes 4, erect, about 1 mm. long, very broad, the margin thin and crenulate; corolla about 3 mm. long, the petals forming a hemispheric lid and falling together; stamens about 1.5 mm. long, anthers very short; style thickened, subulate, 7 mm. long; ovary 2-celled, ovules about 12 in each cell. Fruits unknown, probably (by the shape of the enlarged ovaries present in specimens) cylindrical or spindle-shaped.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, summit of Loma Langa Mountain, altitude 1150 meters, December 13, 1927, John W. Gillespie. Type no. 4290.

Easily distinguished from other Polynesian species I have seen by the large, glossy leaves, the compact inflorescence of large flowers, and the large rigid bracts clothing the extremities of the twigs. Named in honor of Carl Brandt Wolf, Ph. D.²

PAREUGENIA Turrill

Pareugenia oblongifolia Gillespie, species nova (fig. 29).

Arbor parva glabra, ramulis ultimis 3 mm. crassis; foliis 15-25 cm. longis, 4.5-6 cm. latis, flavide viridibus haud nitidis, opacis, crasse chartaceis, oblongo-ellipticis ad oblongo-ovatis, apice angustatis, acutis ad breviter acuminatis, basi acuminatis, nervis primariis subperspicuis, rectis, 20-30 utrinque; petiolo 14 mm. longo; inflorescentiis terminalibus, sessilibus, 5-9 cm. longis latisque, multifloris, trichotomis; ramulis compressis vel 4-angulatis, radiatis vel adscendentibus; pedicellis crassis, 2-3 mm. longis; bracteis bracteolisque persistentibus; calyce campanulato, 4 mm. longo et crasso, limbo leviter producto, lobis rotundatis; petalis orbicularibus, 17 mm. diametro, caducis; staminibus numerosis, ad basin in phalangibus connatis, 10 mm. longis (parta connata inclusa); ovario lignoso, 2-locellato, disco leviter cupulato.

A small, glabrous tree, the twigs about 3 mm. thick at the extremities, more or less 4-sided, with pale-brown, papery bark. Leaves opposite, 15-25 cm. long, 4.5-6 cm. broad; blades yellowish-green, dull on both surfaces when dry, opaque, thickly chartaceous, oblong-elliptic to oblong-ovate, apex narrowed, acute to shortly acuminate, base acuminate, decurrent, midrib prominent, canaliculate above, lateral nerves subprominent on both surfaces, rather straight, 20-30 on each side of the midrib, confluent with an indistinct inframarginal nerve about 2 mm. within the margin; petioles stout, about 14 mm. long. Inflorescences terminal, sessile, 5-9 cm. long and thick, rather many-flowered; branches trichotomous, stout, compressed or 4-angled, radiate or somewhat ascending; pedicels stout, 2-3 mm. long; bracts and bracteoles persistent, triangular, acute, thickened, about 2 mm. long. Calyx campanulate, about 4 mm. long and thick, the limb slightly produced,

² Author of "A systematic and distributional study of the New World species of *Rhamnus*": Diss. Doct., Stanford University, California, 1930.

with 4 repand, very short, rounded lobes; petals (4) orbicular, pink, about 7 mm. in diameter, forming a subglobose lid and falling together; stamens numerous, about 10 mm. long; anthers very small; filaments united for about half their length into phalanges, each consisting of about 5 stamens, the united part flattened and ribbonlike; ovary thickened, woody, 2-celled, the disc very shallowly cupulate; ovules numerous in each cell; style stout, cylindrical-subulate, about 2 mm. long. Fruits unknown.

Fiji, Viti Levu, Namosi Province, near summit of Vakarongasiu Mountain, altitude 850 meters, October 2, 1927, John W. Gillespie. Type no. 3268.

A species of peculiar interest in the degree to which the filaments are united into phalanges, in this being near the *Pareugenia imthurnii* of Turrill, although differing in the size of the leaves. Seemann no. 155 (specimen in the Gray Herbarium, labeled *Eugenia brackenridgei*) also represents this species, although the inflorescence is more ample than that of the type. Unfortunately mature flowers of *E. brackenridgei* have never been collected, so that a direct comparison with that species is not possible, but the flowers of *Pareugenia oblongifolia* seem to be larger than those of *E. brackenridgei* could become, to judge by the buds, and the leaves are oblong-elliptic rather than obovate, and not at all shining when dry.

MELASTOMATACEAE

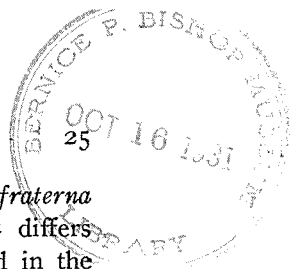
ASTRONIA Blume

Astronia floribunda Gillespie, species nova (fig. 30).

Arbor parva glabra, ramulis teretibus gracilibus; foliis in siccitate flavidis, 5-8 cm. longis, 2.5-3.5 cm. latis, chartaceis, punctulatis, obovatis, apice late obtusis ad rotundatis vel retusis, basi angustatis, acutis, perspicue 3-plinerviis, nervis transversis circiter 7, reticulis numerosis, obscuris; petiolo 15 mm. longo; inflorescentiis terminalibus, amplis, multifloris, 9 cm. longis, e basi ramosis; pedicellis 4 mm. longis; calyce cupulato, 4 mm. longo, lobis 5 vel 6, latissime obtusis; petalis 5, obovatis, 5 mm. longis; staminibus 10, aequalibus; ovario saepe 3-loculato; stylo crasso 6 mm. longo.

A small glabrous tree with slender, terete, ascending branchlets, the nodes about 12 mm. apart. Leaves very uniform in shape, yellowish when dry, 5-8 cm. long, 2.5-3.5 cm. broad; blades chartaceous, punctulate, obovate, apex very broadly obtuse to rounded or very slightly retuse, base narrowed, acute, slightly decurrent, prominently 3-plinerved, besides a pair of very faint marginals, margin revolute, cross-veins about 7, with very numerous obscure reticulations; petioles moderately stout, about 15 mm. long. Inflorescences terminal, ample, many-flowered, much exceeding the leaves, about 9 cm. long, trichotomously branched from the very base, the lowest branches equaling the main axis in length; peduncles compressed; pedicels about 4 mm. long; bracts leaflike. Flowers conspicuous; calyx punctate with reddish spots, cupulate, about 4 mm. long, 5 mm. broad, splitting rather regularly into 5 or 6 short, very broadly obtuse, often apiculate lobes; petals 5, yellow, obovate, about 5 mm. long, 3 mm. broad; stamens 10, alike, filaments about 5 mm. long, greatly dilated, especially at the middle, anthers 3.6 mm. long; ovary often 3-celled, the outer walls thin, partitions membranaceous, and placentas rising from the very base; style stout, cylindrical, about 6 mm. long, stigma somewhat enlarged. Fruits unknown.

Fiji, Viti Levu, Rewa Province, southeast slopes of Korombamba Mountain, altitude 400 meters, August 15, 1927, John W. Gillespie. Type no. 2246.



Of the Polynesian species this most nearly resembles *Astronia fraterna* A. Gray, described from Tahiti, from which *Astronia floribunda* differs markedly in having obovate leaves instead of oblong-acuminate, and in the much more extended inflorescences.

***Astronia robusta* Seemann (fig. 31).**

Astronia robusta Seemann: Flora Vitiensis, p. 86, 1865.

Seemann's original description of this plant, drawn up in the absence of flowers, is as follows:

"Fruticosa, erecta, robusta, glabra; ramis crassis fistulosis; foliis obovato-oblongis v. ovalibus acutis in petiolo attenuatis integerrimis 3-5-plinerviis, supra atro-viridibus, subtus pallidioribus; cymis paniculatis terminalibus, rachi pedunculis pedicellisque subcompressis; pedunculis ultimis 3-floris; floribus ignotis; capsula subglobosa infera 7-8-loculari calycis limbo irregulariter fisso coronata; placentis e fundo loculorum ortis; seminibus subdolabriformibus; raphe laterali nigro." Type locality: Banks of the Rewa River, near Namosi.

A tree as much as 8 m. tall, glabrous, young parts somewhat scurfy; trunk often 12 cm. in diameter; twigs terete, stout, wrinkled when dry, the nodes somewhat enlarged. Leaves few but very conspicuous, up to 24 cm. long, 12 cm. broad, rather uniform in size and shape; blades thinly coriaceous, bright green on both sides, somewhat shining above, broadly elliptic to ovate or obovate, apex obtusely acuminate, often abruptly so, thus obscurely cuspidate, base acute, attenuate, 3- or 5-plinerved, venation obscure above, the three main nerves very prominent beneath, the marginal pair less so but yet distinct, the latter wavy, about 3 mm. from the slightly revolute margin, transverse nerves 17-22, the area between completely filled with minute reticulations; petioles stout, 3.5-6 cm. long. Inflorescences large, about 25-flowered, conspicuous, about 8 cm. long; peduncles very stout, 2-3 cm. long, 2 or 3 times branched with stout spreading branches, ultimately trichotomous, the pedicels about 5 mm. long. Calyx between hemispheric and subglobose, brown, hard, about 9 mm. in diameter, generally splitting irregularly into about 4 triangular lobes about 3 mm. long which often split again; petals 8, contorted in bud, about 10 mm. long, 2-3 mm. broad, oblong, the apex rounded, somewhat narrowed toward the base; style stout, about 16 mm. long, capitate; stamens about 12, equal, filaments about 8 mm. long, the anthers often 5 mm. long; ovary most often 7-celled. Fruits compressed-globose, about 12 mm. in diameter, 7 mm. high, becoming shreddy in dehiscence; seeds dolabriform, about 2 mm. long.

Represented by Parks nos. 20396, 20456, and Gillespie 2869, 2974, and 3403. It is common in the southeastern forests of Viti Levu, having been found in Rewa, Naitasiri, and Namosi provinces. Native name: *thava*. Gillespie 2974 is the subject of figure 31.

***Astronia victoriae* Gillespie, species nova (fig. 32).**

Arbor parva, partibus junioribus dense ferrugineo-lepidotis; foliis glabrescentibus flavidis, circiter 9 cm. longis, 2.5 cm. latis, ellipticis ad ovatis, apice acutis, basi rotundis vel subcordatis, 3-vel 5-plinerviis; petiolo 1.5-3 cm. longo, lepidoto; inflorescentiis multifloris, 7 cm. longis, pedunculis e basi ramosis, ramulis rigidis; pedicellis 2 mm. longis; floribus 6 mm. longis, calycibus hemisphaericis vel subcampanulatis, 4 mm. diametro, lobis, 8, brevissimis, obtusissimis; corollae lobis 5, 3 mm. longis; staminibus 8, antheris 2 mm. longis.

A small tree, young parts densely ferruginous-lepidote, twigs stout, the nodes en-

larged. Leaves yellowish when dry, about 9 cm. long, 2.5 cm. broad, rather uniform in size; blades thick, coriaceous, at maturity rough and densely punctulate but entirely glabrous, elliptic to ovate, apex acute to shortly acuminate, base narrowed, rounded or very shortly cordate, 3- or 5-plinerved; nerves obscure above, the 3 main nerves very prominent beneath, the laterals emerging 2-4 mm. from the base, the marginal pair distinct but scarcely prominent, cross-veins about 15; petioles 1.5-3 cm. long, lepidote. Inflorescences many-flowered, about 7 cm. long and thick, several times trichotomously branched, the first ones emerging from the very base, branchlets stiff, flattened and angular; pedicels slender, about 2 mm. long. Flowers glabrous, about 6 mm. long; calyx hemispheric to subcampanulate, hard, about 4 mm. in diameter, the limb as long as the tube, lobes generally 8, very short, very obtuse, the tips spreading or inrolled; corolla yellowish, petals generally 5, contorted in bud, about 3 mm. long, 2 mm. broad, irregularly crenulate and notched at the apex, the claw somewhat narrowed; stamens 8, equal, anthers often 2 mm. long, the pollen-sacs white; style stout, about 5 mm. long; ovary 5-celled, included within the walls of the strongly thickened calyx, partitions very thin; placentas rising from the base of the cell. Seeds very small.

Fiji, Viti Levu, Tholo North Province, summit of Mount Victoria (Tama ni ivi), altitude 1200 meters, November 29, 1927, John W. Gillespie. Type no. 4101.

Also represented by Gillespie nos. 2495, 3240, and 3936, from Voma, Naitarandamu, and Loma Langa mountains, respectively. A species distinguished from *Astronia parviflora* Triana (*Astronidium parviflorum* A. Gray) by the larger flowers and fruits, and from *Astronia pickeringii* A. Gray by the marked lepidote-pubescent, by the flowers which are not at all lax, and by the calyx which, in this species, splits regularly into 8 parts.

MEDINILLA Gaudichaud

Medinilla parvifolia Seemann (fig. 33).

Medinilla parvifolia Seemann: Flora Vitiensis, p. 89, 1865.

Seemann's description of this species is as follows:

"Ramulis obtuse tetragonis, foliis bracteisque junioribus furfuraceo-puberulis, demum glabris; foliis oppositis cujusque jugis homomorphis aequalibus obovatis obtusis v. retusis basi cuneatis integerrimis 3-plinerviis; racemis axillaribus; bracteis oppositis spatulatis v. obovatis; caet. ign."

Subscandent; young parts furfuraceous-puberulent, glabrescent; twigs slender with enlarged nodes, obtusely 4-angled at the extremities. Leaves of each pair approximately equal, 5-8 cm. long, 1.5-3 cm. broad; blades green above, paler or even grayish beneath, slightly fleshy in life but thinnish when dry, elliptic to ovate or obovate, apex subacute to obtuse, the very tip rounded or retuse, base cuneate and decurrent, 3- or 5-plinerved, venation obscure above, the 3 main nerves subprominent beneath, marginal pair and cross-veins obscure; petioles about 1 cm. long. Inflorescences lateral and axillary, numerous, few-flowered, 3-4 cm. long; peduncles erect, very slender, about 2 cm. long, 2 or 3 times branched, the branches often in threes, diverging; pedicels about 2 mm. long; bracts opposite, membranaceous, spatulate to obovate, about 2 mm. long, one pair at the middle of the peduncle, and others at the base of the branchlets; calyx hemispheric to subcampanulate, about 4 mm. long and thick, entire; petals 4, purple, suborbicular, about 3 mm. long and broad, the apex truncate or notched; style slender, about 3 mm. long, acute; stamens 8, equal, anthers about 1 mm. long, equaling the filaments. Fruits blue or purple, subglobose, about 6 mm. in diameter, many-seeded; seeds pale brown, somewhat cuneate, about 0.7 mm. long.

Represented by Gillespie nos. 2875, 2895, 4486, and 4551, from Viti Levu (Namosi Province, Voma Mountain) and Ovalau. The fruiting branch drawn for the plate is no. 4551 from Ovalau, hills above Levuka, while the floral parts were drawn from no. 2895, collected near the summit of Voma Mountain, the type locality of the species.

FLACOURTIACEAE

FLACOURTIA (Commerson) L'Héritier

Flacourtia ovata Gillespie, species nova (fig. 34).

Arbor parva inflorescentiis exceptis glabra, ramulis teretibus lenticellatis; foliis 6-22 cm. longis, 3.5-10 cm. latis, viridibus, supra nitidis, chartaceis vel coriaceis, subintegris, ovatis ad oblongo-ellipticis, apice acuminatis, basi rotundatis ad subcordatis; petiolo crasso, 8-10 mm. longo; floribus axillaribus confertis; pedunculo brevissimo, pedicellis puberulis 2-7 mm. longis; calycibus (masculinis) 2.5 mm. crassis, lobis obtuse acuminatis ad marginem ciliatis, extus glabris, intus pubescentibus; staminibus circiter 20; calycibus (foemineis) pubescentibus ut in masculinis; stylis (6) crassis, stigmatibus lobatis vel paullo excavatis; fructibus ellipsoideis, 1 cm. longis, persistentibus, stylis coronatis.

A small unarmed tree, glabrous except the inflorescences, the branchlets moderately stout, terete, brown, more or less thickly lenticellate. Leaves very variable in size but uniform in shape, 6-22 cm. long, 3.5-10 cm. broad; blades bright green, shining above, thickly chartaceous to coriaceous, entire to very obscurely crenate-serrate, ovate to oblong-elliptic, apex acuminate, base rounded or subcordate, sharply decurrent, midrib broad, nervation subpalmate with 3 or 5 laterals from near the base, and 3 or 4 pinnately arranged on each side of the midrib, all sharply ascending near the margin of the blade, reticulations few, scarcely prominent; petioles moderately or very stout, 8-10 mm. long. Flowers axillary in fascicle-like racemes; peduncles very short; the acute bracts and slender pedicels puberulent, the latter 2-7 mm. long; calyx (in male flowers, Horne no. 301) about 2.5 mm. thick; lobes broadly ovate, obtusely acuminate, glabrous without, pubescent within, the margin ciliate; stamens about 20, filaments about 1.5 mm. long, anthers short, broad; calyx (female flowers, Gillespie no. 2175) less broadly spreading than the male; lobes united for about half their length, pubescent as in the male; ovary rising from a flat disc; styles (6) thick, somewhat diverging, the stigmas lobed or somewhat excavated. Fruits (Gillespie no. 2446) ellipsoid, soft, red, about 1 cm. long, crowned at the apex by the persistent styles. Seeds about 4 mm. long.

Fiji, Viti Levu, Naitasiri Province, Tamavua woods, altitude 150 meters, August 27, 1927, John W. Gillespie. Type no. 2446.

Also represented by Horne no. 301; Gillespie nos. 2175, and 3963, the last from Tholo North Province, altitude 900 meters. The leaves of Horne's specimen approach the minimum measurements given in the diagnosis above, and are thinner than those of the type, but probably a single species is represented. The fruits become obovate on drying, with a constriction about the middle.

LOGANIACEAE

COUTHOVIA A. Gray

The genus *Couthovia* was based on two Fijian species, *C. corynocarpa* and *C. seemannii*, both of which were described by A. Gray, the former from material collected by the Wilkes United States Exploring Expedition of 1838-42, and the latter from *Seemann* no. 305, provisionally named by its collector *Gaertnera barbata*. A photograph of the type of *Couthovia corynocarpa* from the Gray Herbarium at Harvard, shows that it is the plant represented in figure 35, while the photograph of *Seemann* 305, reproduced herein as figure 36A, can not be other than the subject of Plate 32 of *Seemann's* "Flora Vitiensis," erroneously labeled *Couthovia corynocarpa*.

As represented in our large collections, the two species seem to be very distinct, mainly on account of the difference in size and texture of the leaves, and in the method of branching. In *C. corynocarpa* the flowers are also somewhat smaller, and in general it has a more elegant appearance than *C. seemannii*, the thick large leaves of which have a decidedly cabbage-like appearance.

L. S. Gibbs (*Linnean Soc. London, Botany, Jour.*, vol. 39, p. 157, 1909) reports specimens in the Kew Herbarium which seem to be intermediates.

***Couthovia corynocarpa* A. Gray (fig. 35).**

Couthovia corynocarpa A. Gray: *Amer. Acad. Arts and Sci., Proc.*, vol. 4, p. 324, 1860, and vol. 5, p. 320, 1862.

Gray's very short original description is as follows:

"Calycis segmentis ciliolatis; antheris oblongis utrinque emarginatis." Collected in Fiji by the United States Exploring Expedition.

A shrub, 2-6 m. high, glabrous except the flowers, with smooth, terete twigs often branched in a pseudodichotomous manner, the nodes conspicuously enlarged. Leaves 7-11 cm. long, 3-5 cm. broad; blades shining above, subcoriaceous, bright green above and beneath, often blackening in drying, elliptic to obovate-elliptic or more or less oblong, apex obtuse to rounded, base acute or, if rounded, then sharply decurrent, lateral nerves inconspicuous above, prominent beneath, 6 to 9 on each side of the midrib, veinlets obscure; stipules connate, about 2 mm. long; petioles stout, flattened, about 1 cm. long. Inflorescences terminal, 3-5 cm. long; peduncles moderately stout, 1 to 5, ascending, 2.5-4 cm. long, branching like a candelabrum, about 12-flowered; pedicels about 5 mm. long. Flowers white to yellowish, about 4 mm. long; calyx subglobose, brownish, fleshy, 2.5 mm. long, lobes rounded, about 2 mm. long, margin ciliolate; corolla 3-4 mm. long, fleshy, lobes often 2 mm. long, acute, densely hirsute at the throat with white, matted hairs; pistil flask-shaped, about 2 mm. long; stigma subglobose, obscurely cleft; stamens about 1.7 mm. long; anthers sagittate, slightly longer than the filaments. Fruits white, clavate, about 15 mm. long.

Represented by Parks no. 20740; Gillespie nos. 2908, 3100, 3913, 3929, 3969, from Viti Levu (Namosi and Tholo North Provinces?) and Ovalau. Native names: *nduva*, *kan to*.

The photograph of the type shows that the leaves of the Gray specimen are about 11 cm. long and 5 cm. broad, somewhat larger than those of our collections. However, the shape is identical, and the drawings of the floral parts agree in essentials with the drawings in figure 35. The flowers are frequently parasitized by insects, forming globose structures of a Morinda-like appearance. Figure 35 is based on Gillespie no. 3969.

Couthovia seemannii A. Gray (fig. 36).

Couthovia seemannii A. Gray: Amer. Acad. Arts and Sci., Proc., vol. 5, p. 320, 1861.—Seemann: Flora Vitiensis, Plate 32, labeled *Couthovia corynocarpa*.

The original description, inadequate for proper recognition of the species, is as follows:

"Calycis segmentis margine glaberrimis; antheris subsagittatis; corolla fauce eximie albo-lanata, an semper? An forma praecedentis?"

A tree, glabrous except the flowers, 12-15 mm. tall, with large trunk and smooth, terete twigs. Leaves dark green, paler beneath, often bluish when dry, 15-30 cm. long, 8-16 cm. broad; blades chartaceous to thickly coriaceous, suborbicular or broadly elliptic to obovate, apex very obtuse or more commonly rounded, base obtuse, shortly decurrent, lateral nerves prominent, 5-8 on each side of the midrib, veinlets rather few, indistinct; stipules connate, leathery, conspicuous and often 1 cm. long; petioles stout, 12-30 mm. long. Inflorescences ample, many-flowered, 7-13 cm. long, often with three main branches arising near the base, these erect, stout, as much as 8 cm. long to the secondary branches which are radiately disposed; pedicels 1 mm. long or less. Flowers inconspicuous, about 6 mm. long, 5-6 mm. in diameter; calyx cupulate, 2 mm. long and broad, rather thick, lobes 1 mm. long, rounded, margin conspicuously ciliate; corolla pale yellow, glabrous except the throat which is entirely filled with white, many-celled hairs which are exserted, meeting in the middle and thus covering the anthers, tube cylindric, about 4.5 mm. long, lobes about 2 mm. long, broadly spreading, acute; ovary flask-shaped; style stout; stigma somewhat capitate, the whole pistil being about 3.5 mm. long; stamens oblong to subsagittate, about 1.5 mm. long, equaling the slender filaments. Fruits white, clavate, apiculate, about 2 cm. long and 0.8 cm. thick.

Represented by Parks nos. 20030, and 20869; Gillespie nos. 2095, 2195, 2433, 2590, 3344, 3521, 3534, 4426, and 4537, from Viti Levu (Rewa, Naitasiri, Namosi, Tholo North provinces) and Ovalau. "They constitute a peculiar feature in the Namosi valley. . . they grow quite in the open country"—Seemann. Native names: *mboloa*, *mbo*, *mbawl wa*.

VERBENACEAE

FARADAYA Seemann

Faradaya ovalifolia (A. Gray) Seemann (fig. 37).

Clerodendron ovalifolium A. Gray: Amer. Acad. Arts and Sci., Proc., vol. 6, p. 50, 1862.

Faradaya ovalifolia Seemann: Journal of Botany, vol. 3, p. 528, 1865; Flora Vitiensis, p. 189, 1866.

The brief original description of this species follows:

"Foliis ovalibus obtuse acuminulatis integerrimis basi subangustatis (cum petiolo ramisque teretibus) glabris; cymis plurifloris corymboso-paniculatis canescenti-puberulis; corolla hypocramerimorpha, tubo (ultra-pollicari) calycem obtuse 4-lobum pluries excedentibus, lobis 4, rotundatis inter se aequalibus stamina adaequantibus."

A robust, scandent shrub, climbing to the tops of the highest trees, stems 3 cm. thick, young parts thickly furfuraceous, glabrescent, branchlets terete. Leaves glabrous when mature, 9-22 cm. long, 6-10 cm. broad; blades green above, yellowish or somewhat coppery beneath, thickly chartaceous, broadly elliptic to obovate, apex obtusely acuminate, base narrowed, acute but not decurrent, lateral nerves subprominent above, very prominent beneath, arcuate, 5 to 8 on each side of the midrib, reticulations prominent, numerous, the veinlets forming straight-sided islets; petioles stout, 12-25 mm. long. Inflorescences lateral and (more often) terminal, about 20-flowered or more, as much as 15 cm. long, with about 8 main branches; pedicels 6-20 mm. long, furfuraceous; bracts and bracteoles foliaceous, furfuraceous, punctate, 6-11 mm. long, lobes 3 or 4, about equal, 4 mm. long and broad, acute, slightly apiculate and spreading; corolla white, salver-shaped, glabrous without, minutely puberulent within, as much as 8 cm. long, tube about 2 mm. thick at the base, slightly enlarged upward, lobes about 1 cm. long and broad, subrotund; anthers oblong, about 3 mm. long, filaments slender, 3-4 cm. long, inserted about 2 cm. below the throat, pubescent at the base; style very slender, about 1 cm. exerted; stigma shortly 2-lobed. Fruits 4-parted at maturity, 1 or 2 often failing to develop; drupes ellipsoid, oblique, 4-6 cm. long, 2 cm. thick, red or orange-red with white dots, shining, soft, exocarp shriveled when dry, endocarp very hard, 1-furrowed, about 1 mm. thick, 1-seeded. Seeds coriaceous when dry, oblong, about 3.2 cm. long, cotyledons filling the entire seed, plano-convex, truncate, conspicuously pinnate-veined within, the veins deeply and acutely canaliculate.

Represented by Setchell and Parks no. 15063; Parks nos. 20036, 20386, 20702; Gillespie nos. 2181, 2182, 3166, 3513, 4530, all from Viti Levu, in Rewa, Naitasiri, Namosi, Tholo North provinces. A species difficult to distinguish by the leaves from *Faradaya vitiensis* (A. Gray) Seemann, in which they are thicker, coriaceous, and more inclined to be attenuate at the base, but easily recognized by the shape of the corollas, in *F. ovalifolia* being salver-shaped, and in *F. vitiensis* infundibuliform, the tube rather broad. Fig. 37 is drawn from Parks no. 20386. Native names: *wa koro vundi*, *wa vundi*.

RUBIACEAE

RANDIA Linnaeus

Randia odorata (Seemann) Bentham et Hooker f. (fig. 38).

Randia odorata (Seemann) Bentham et Hooker f. ex Drake: Illus. Fl. Ins. Mar. Pac., p. 191, 1890.

Canthiopsis odorata Seemann: Flora Vitiensis, p. 166, Pl. 46, 1866.

The genus *Canthiopsis*, with the one species *odorata*, was described by Seemann as follows:

"Canthiopsis, (gen. nov. Gaertnearum) Seem. Calyx cupuliformis, irregulariter 5-dentatis. Corolla tubo abbreviato, limbo patente, 5-fido lobis obovatis obtusis, aestivatione contortis. Stamina 5, corollae tubo inserta; filamentis brevissimis; antheris linearibus longitudinaliter dehiscentibus, introrsis exsectis. Ovarium 2-loculare, loculis 1-ovulatis, ovulis pendulis. Stylus elongatus; stigma bilobum. Drupa 2-locularis. Semina . . . — Frutex erectus, glaber; foliis oppositis petiolatis ellipticis v. ovato-oblongis acuminatis,

basi attenuatis; integerrimis, penninerviis; stipulis intra-axillaribus ovatis acuminatis; cymis axillaribus terminalibusque paucifloris folio brevioribus, floribus pallide flavidis odoratis.

"1. *C. odorata*, (sp. nov.) Seem. (Plate XLVI.)—Korovono, Vanua Levu (Seemann! n. 260).

"A shrub 6 feet high. Petioles about 1 inch long. Blade of leaf 4-5 inches long, 1½-2 inches broad. Corolla occasionally 6-merous, pale yellow. Tube villous inside."

Judging by the plate in the "Flora Vitiensis," this species is amply represented by Setchell and Parks no. 15126; Parks nos. 20329, 20880; Gillespie nos. 2019, 2220, 2283, all from Viti Levu, Rewa, and Naitasiri provinces, from which the following amplified description was made:

A subglabrous tree, often 12-15 m. tall; twigs slender, terete, the nodes somewhat enlarged. Leaves very glabrous, black when dry, 10-16 cm. long, 4-6 cm. broad; blades submembranaceous, shining above, paler beneath, elliptic to oblong-elliptic, apex acute to shortly acuminate, base acute, lateral nerves fairly prominent, about 11 on each side of the midrib, veinlets obscure; stipules broad, acute; petioles 1-2 cm. long. Inflorescences terminal, glabrous or very thinly puberulent, about 5 cm. long, 6-20-flowered; peduncles branching from the very base; pedicels slender, 1-2 cm. long; calyx conic, glabrous without, obscurely lined and spotted, 4 mm. long and thick, apex subtruncate or irregularly 5-lobed, the lobes very obtuse, rounded and ciliate at the margin; corolla-tube cylindrical, glabrous without, tawny-pilose within, especially in the upper part and near the base of the lobes, about 3 mm. long, lobes glabrous, greatly reflexed, about 7 mm. long, 3-4 mm. broad, oblong-elliptic, apex rounded; ovary flattened, 2 mm. across, 1 mm. high; style stout, about 5 mm. long; fruits globose, about 1 cm. in diameter, soft, wrinkled when dry, pericarp thin, fragile, almost chartaceous, partitions membranaceous; seeds black, angular by compression, about 14 in the whole fruit.

Fruits were lacking in former collections, so a fruiting branch (Gillespie no. 2220) was chosen for the habit study of the figure, while the floral parts were drawn from Setchell and Parks no. 15126.

IXORA Linnaeus

Ixora pelagica Seemann (fig. 39).

Ixora pelagica Seemann: Flora Vitiensis, p. 134, 1866.

The short original description of this plant follows:

"Ramulis villosiusculis; foliis brevipetiolatis obovato-oblongis, basi subcordatis, supra glabris, subtus villosopuberulis; stipulis longe setaceis petiolum 4-duplo superantibus; floribus capitatis, capitulis plurifloris, pluribracteatis, bracteis linearibus acutis pubescentibus; calycis 5 linearibus pilosis; corolla ignota; drupa subglobosa pisi maj. magnitudine."

A shrub or small tree; twigs flattened and villous when young, finally glabrous and terete, slender, with pale brown bark. Leaves as much as 21 cm. long and 6 cm. broad, generally smaller; blades bright green, glabrous and shining above, paler and pubescent beneath, chartaceous or rarely subcoriaceous, thin and flexible when young, oblong, sometimes oblong-elliptic or oblong-obovate, apex narrowed, acute, base subcordate, lateral nerves 8 to 12 on each side of the midrib, rather straight, ascending, sharply bending and anastomosing near the margin, lightly impressed or canaliculate above, veinlets subdistinct; stipules about 9 mm. long, hairy; petioles stout, generally about 6 mm. long. Inflorescences terminal, solitary; peduncles stout, 3-10 mm. long; bracts as much as 2 cm. long, 5 mm. broad, villous; bracteoles linear, puberulent, 7-8 mm. long. Flowers sessile, crowded; calyx chartaceous, reddish, about 7 mm. long, lobes 3-4 mm. long, nar-

rowly triangular and sparsely pilose within and without; ovary covered on the outside with yellowish hairs; corolla deep red, glabrous, tube narrowly cylindrical, about 13 mm. long, lobes about 4 mm. long, 1 mm. broad, obtuse to rounded, strongly reflexed; disc often 1 mm. high; style filiform, about 17 mm. long; stigma greatly thickened, the lobes about 1 mm. long; anthers about 2 mm. long. Fruits ellipsoid to subglobose, about 8 mm. long, crowned by the persistent calyx.

Represented in our collections by Parks no. 20116, 20128, 20351, 20373; and Gillespie nos. 2228, 2243, 3065, 3470, 4593. A species common in the forests of the southeastern provinces of Viti Levu, between the Rewa and Navua rivers, but not found elsewhere. The wood is so very hard that sharpened sticks are used by the natives in digging yams, husking coconuts, and in similar tasks.

COPROSMA Forster

Coprosma persicaefolia A. Gray (fig. 40).

Coprosma persicaefolia A. Gray: Proc. Amer. Acad., vol. 4, p. 50, 1858.

The original description follows:

"Fructifera, glabra, stipulis connatis late triangulatis cuspidatis; foliis membranaceis lanceolatis sensim acuminatis, petioli brevi; pedunculis brevissimis paucifloris; calycis limbo vix dentato; corolla profunde quadrifida; drupa oblonga—Feejee Islands."

A shrub 1-3 m. tall, with long, pale, curved, ascending branches; young parts pubescent; twigs often shallowly sulcate or angled. Leaves thickly crowded at the tips of the branchlets, 9-12 cm. long, 2-3 cm. broad, very uniform in shape; blades dull green, decidedly pale or grayish beneath, membranaceous, at maturity glabrous above, often sparsely adpressed-pubescent beneath on the midrib and nerves, lanceolate to oblong-lanceolate, apex acuminate, often mucronate, base acuminate, lateral nerves about 7 on each side of the midrib, curved, ascending toward the margin, extending for some distance almost parallel to it, the area between more or less prominently and finely reticulate; stipules connate; petioles 4-10 mm. long. Male inflorescences numerous, axillary, inconspicuous, about 5 mm. long, 5-9-flowered; peduncles about 2 mm. long, pubescent; lowermost pair of bracts lanceolate, about 2.5 mm. long, densely pilose with tawny hairs; flowers in opposite pairs, practically sessile; calyx cupulate, pilose without with whitish hairs, about 0.5 mm. long, limb obscurely toothed, the teeth very obtuse; corolla glabrous, white, about 1.5 mm. long, lobes 4, 0.8 mm. long, subtriangular, apex slightly acuminate; anthers sagittate, about 1.5 mm. long; filaments very short, attached at the base of the corolla. Female "inflorescences in the axils not exceeding the petiole. Peduncles from one to three in each axil, very short, each bearing three, or perhaps more, very small sessile flowers. Ovary bibracteolate. Limb of the calyx truncate and very obscurely about 4-toothed. Corolla not more than a line long, deeply 4-cleft. The slender papillose styles much exerted. Young fruit narrowly oblong."

The narrow, lanceolate leaves and gray branches give this low shrub a very characteristic appearance, but it is seldom found in flower or fruit. It is represented in our collection by Parks no. 20690, and Gillespie nos. 2500 and 3206, all from Viti Levu, in Namosi and Tholo North provinces. They have been compared with the specimen in the Gray Herbarium, collected by the United States Exploring Expedition. The description of the female inflorescence is quoted from the unpublished part of the Exploring Expedition manuscript, by A. Gray; the drawing is from Parks no. 20690.

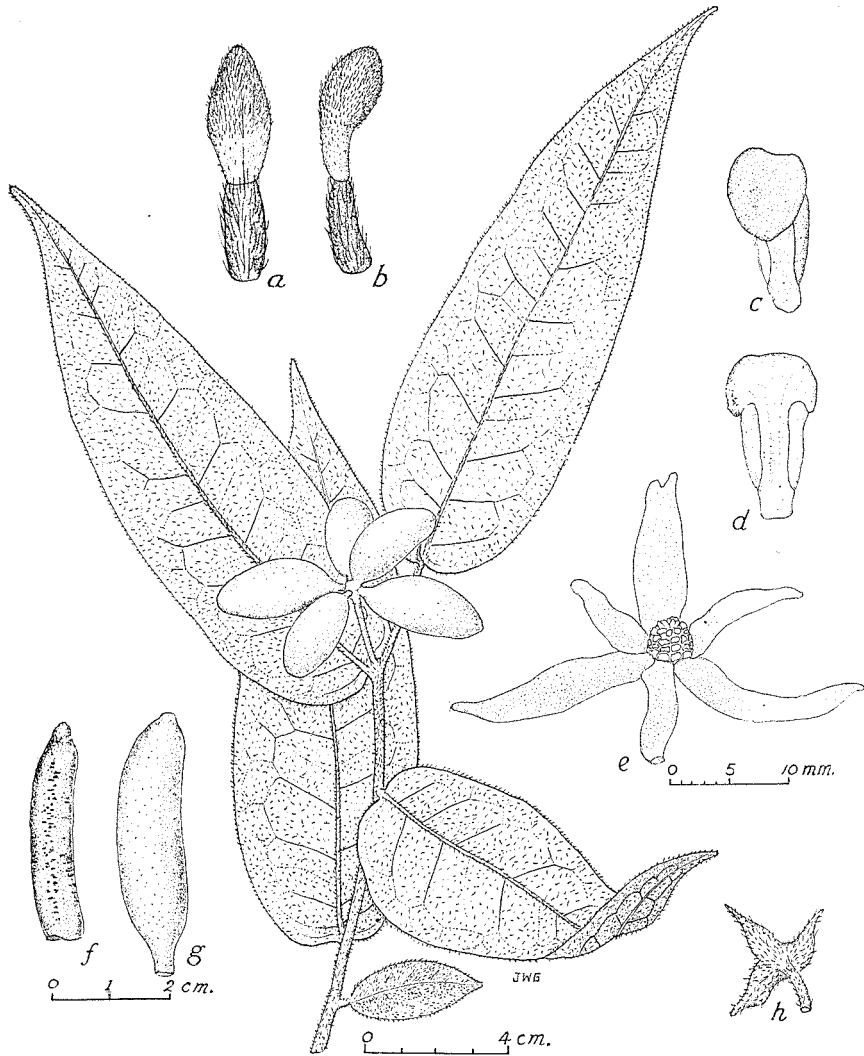


FIGURE 1.—*Polyalthia loriformis* Gillespie: a, b, pistil, enlarged; c, d, stamen, enlarged; e, flower; f, seed; g, mature carpel; h, calyx.

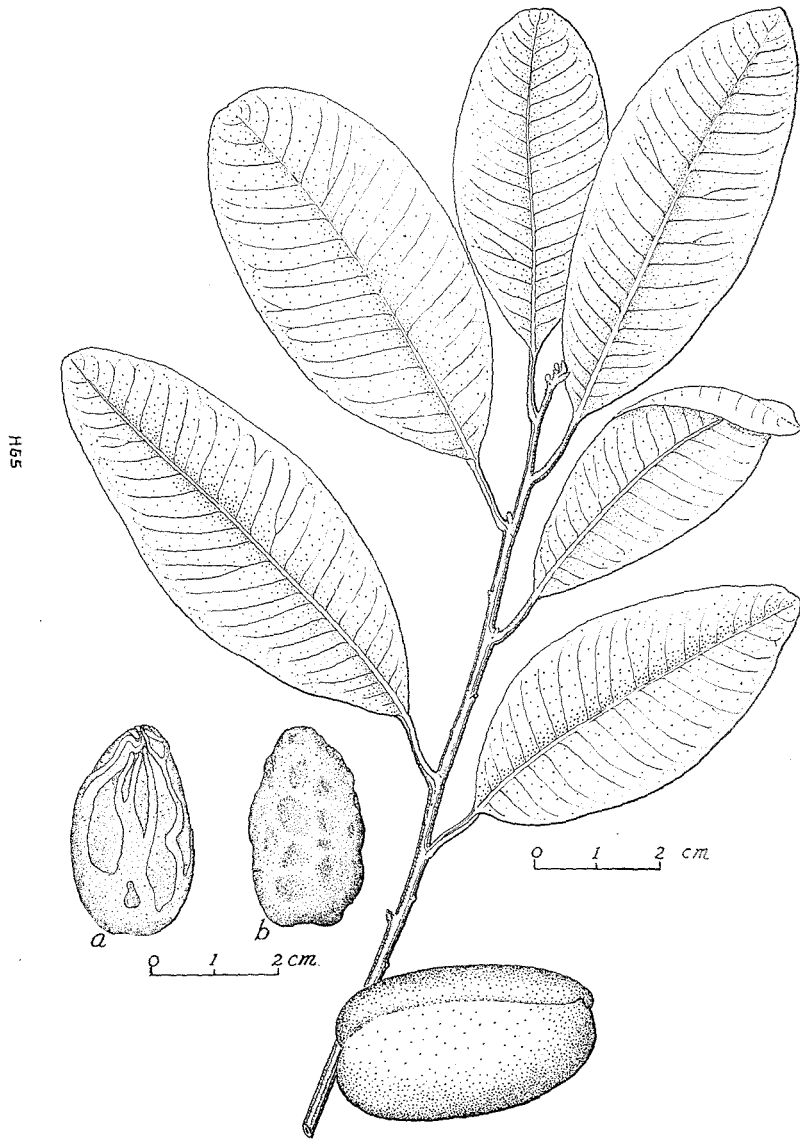


FIGURE 2.—*Myristica chartacea* Gillespie: a, seed, showing aril; b, seed with aril removed.

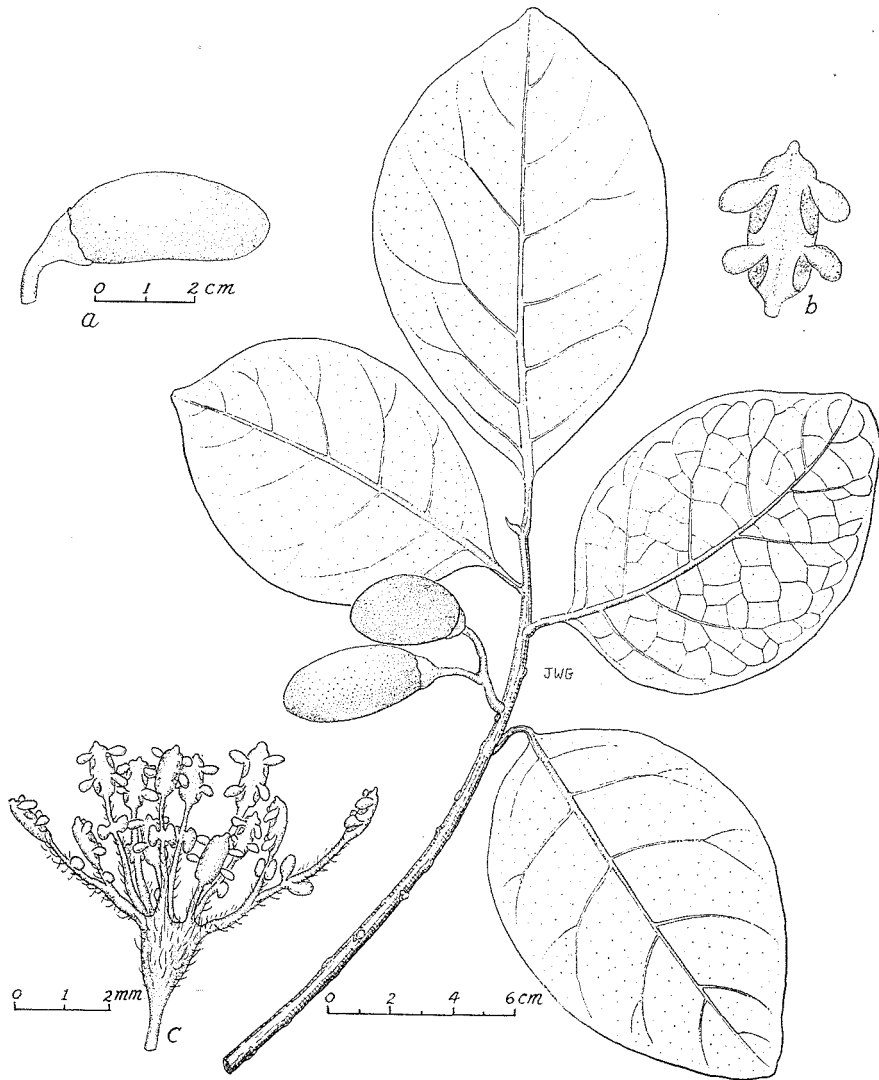


FIGURE 3.—*Litsea magnifolia* Gillespie: a, fruit; b, anther, enlarged; c, flower.

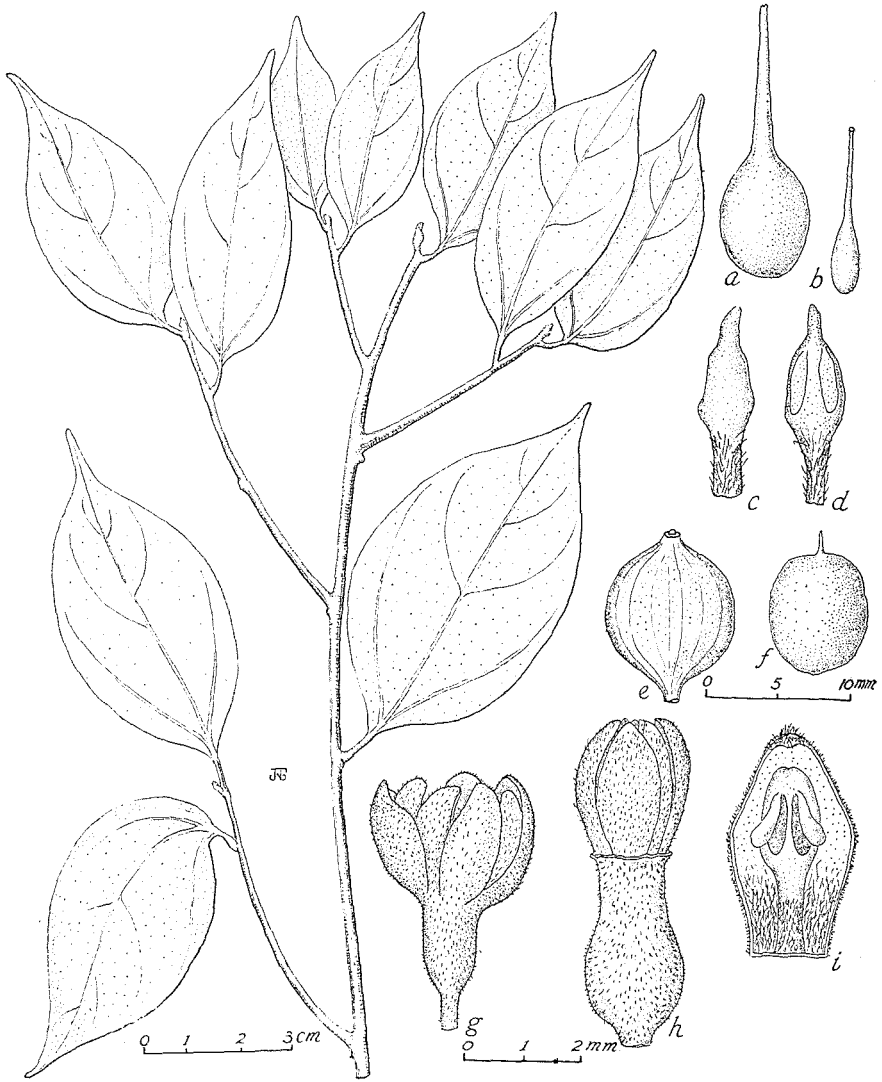


FIGURE 4.—*Cryptocarya hornei* Gillespie: *a*, *b*, pistil, after and before fertilization; *c*, stamen, ventral view, enlarged; *d*, stamen, dorsal view, enlarged; *e*, fruit; *f*, seed; *g*, flower; *h*, flower shortly after anthesis; *i*, perianth-segment from within, showing stamen.

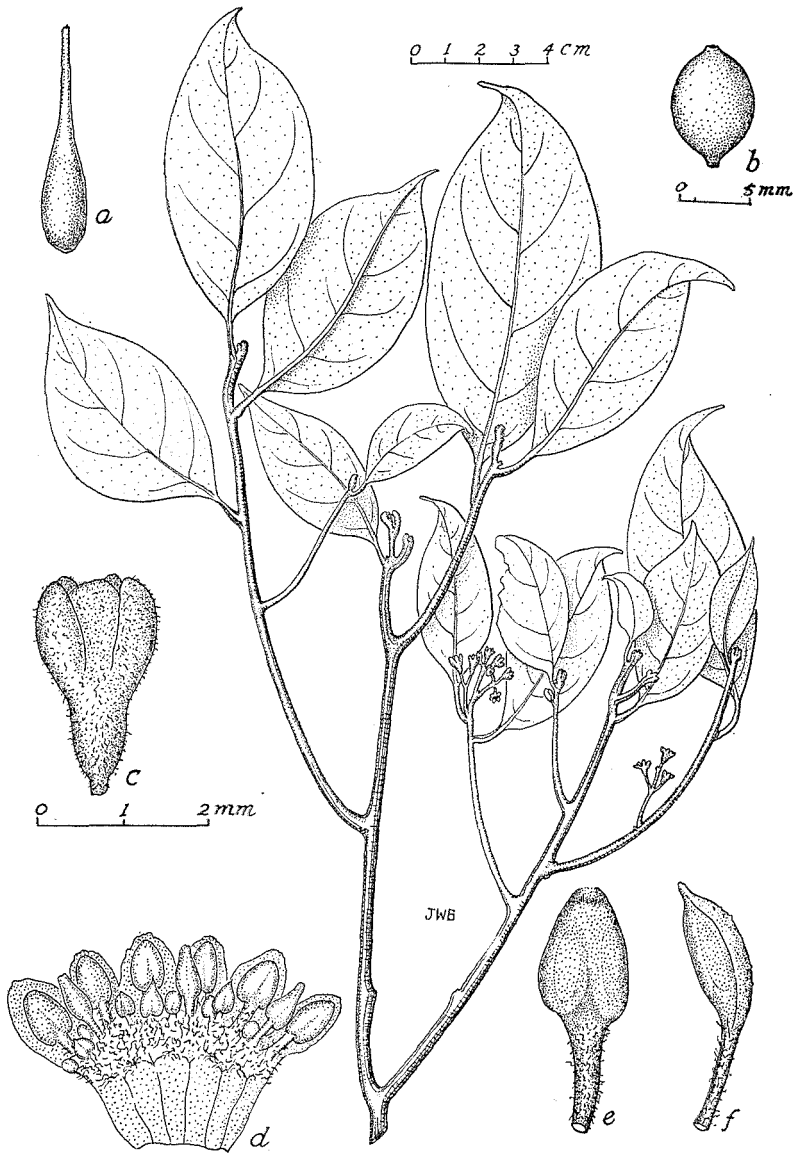


FIGURE 5.—*Cryptocarya turbinata* Gillespie: a, pistil, enlarged; b, fruit; c, flower; d, flower laid open; e, f, stamen, enlarged.

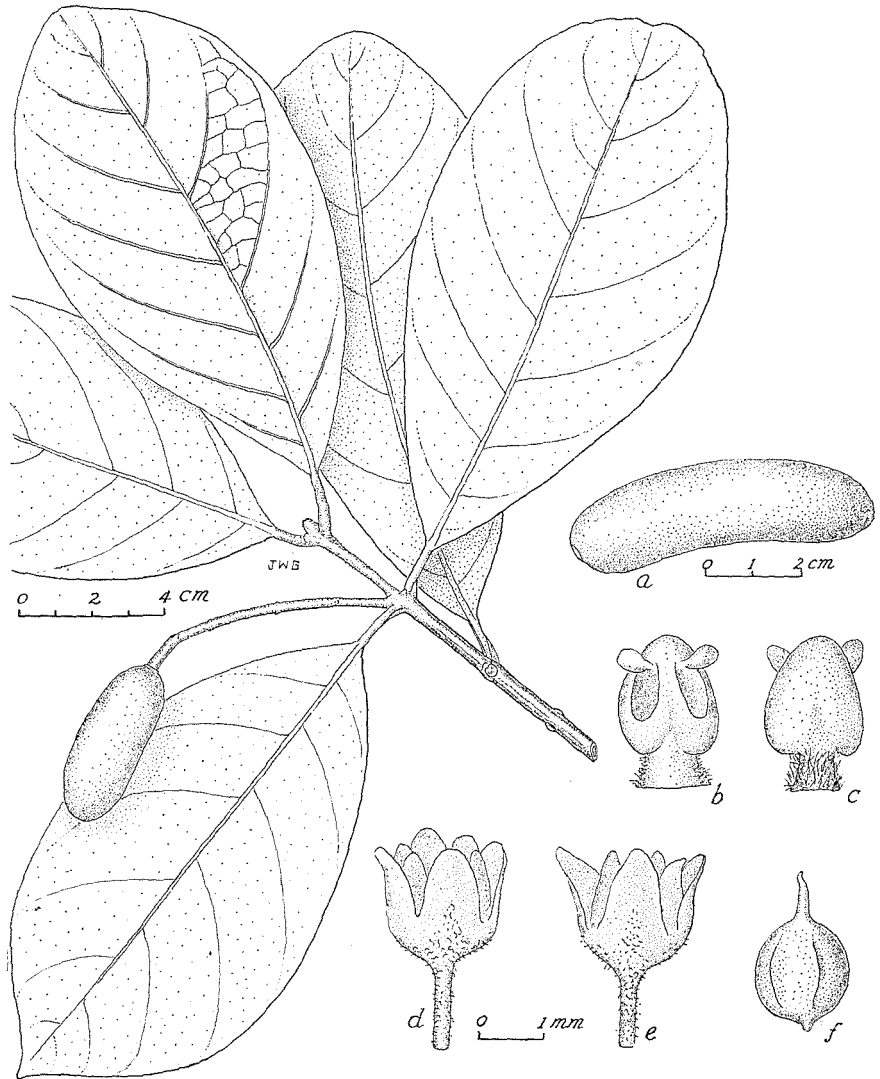


FIGURE 6.—*Endiandra elaeocarpa* (A. Gray) Gillespie: *a*, fruit; *b*, stamen, dorsal view, enlarged; *c*, stamen, ventral view, enlarged; *d*, 4-merous flower; *e*, 3-merous flower; *f*, pistil after fertilization.

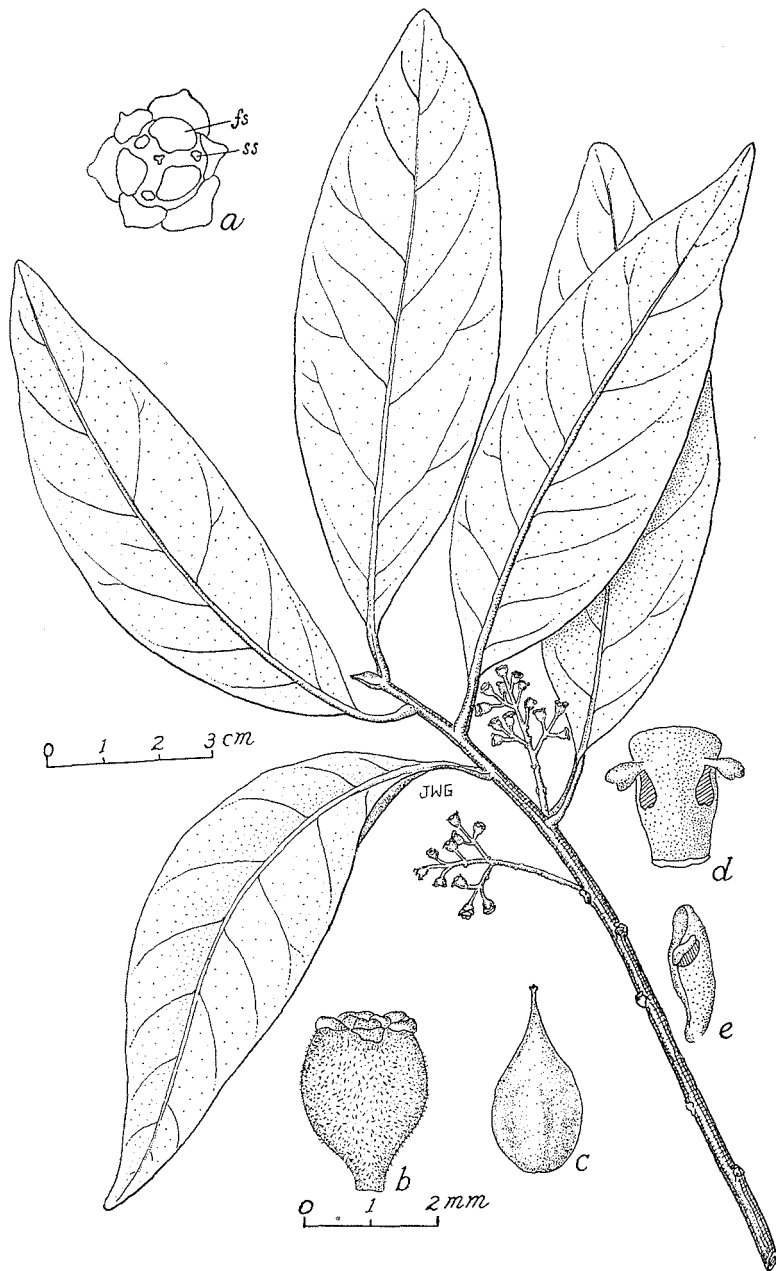


FIGURE 7.—*Endiandra reticulata* Gillespie: *a*, diagram of flower from above: *fs*, stamen; *ss*, staminode; *b*, flower; *c*, pistil, enlarged; *d*, *e*, stamen enlarged.



FIGURE 8.—*Pittosporum oligodontum* Gillespie: a, calyx; b, corolla laid open, showing stamens and pistil.

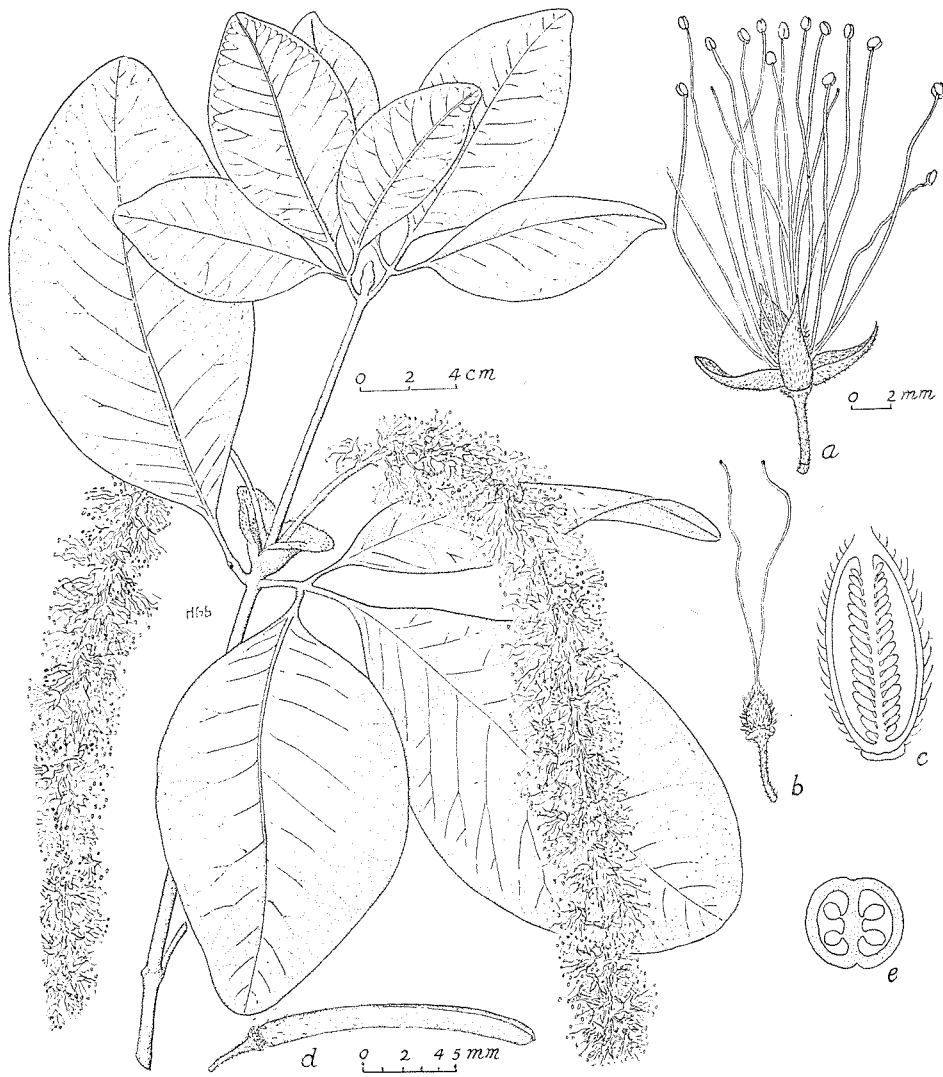


FIGURE 9.—*Geissois superba* Gillespie: *a*, flower; *b*, flower with stamens and sepals removed; *c*, longitudinal section of ovary; *d*, fruit; *e*, transverse section of ovary.

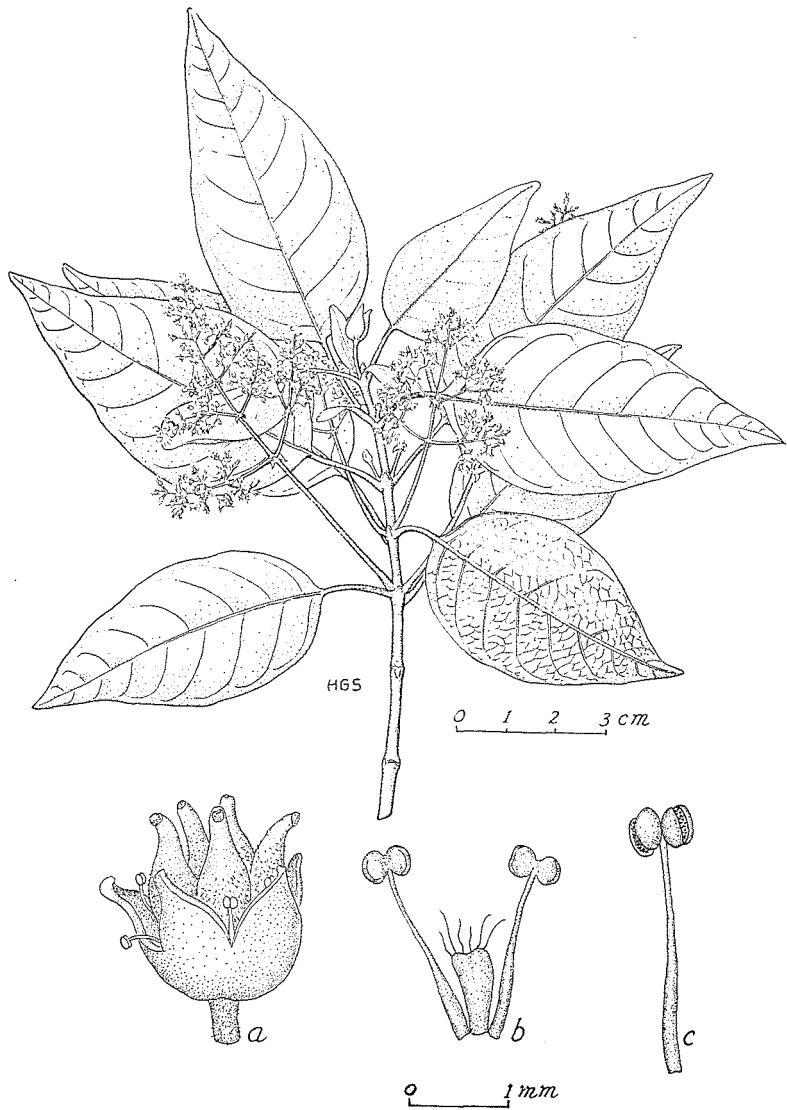


FIGURE 10.—*Spiracanthemum parksii* Gillespie: *a*, pistillate flower; *b*, stamens with disc-scale; *c*, stamen.

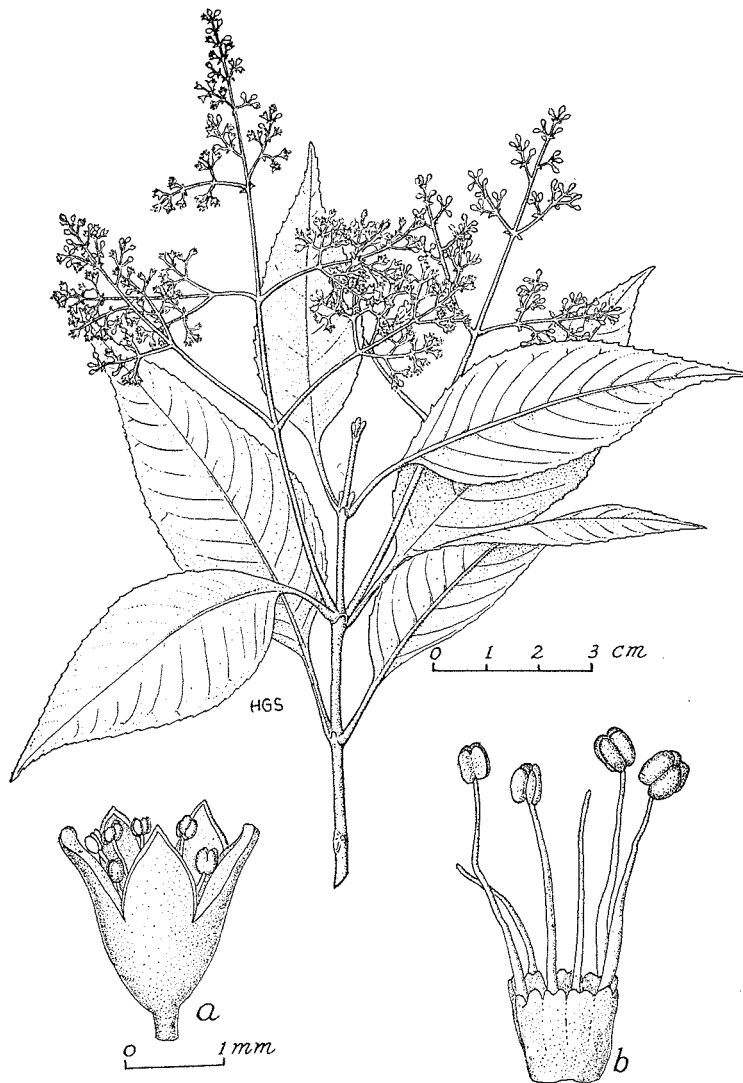


FIGURE 11.—*Spiracanthemum serratum* Gillespie: a, staminate flower; b, group of stamens, showing disc-scales.



FIGURE 12.—*Aglaia elegans* Gillespie: a, seed.

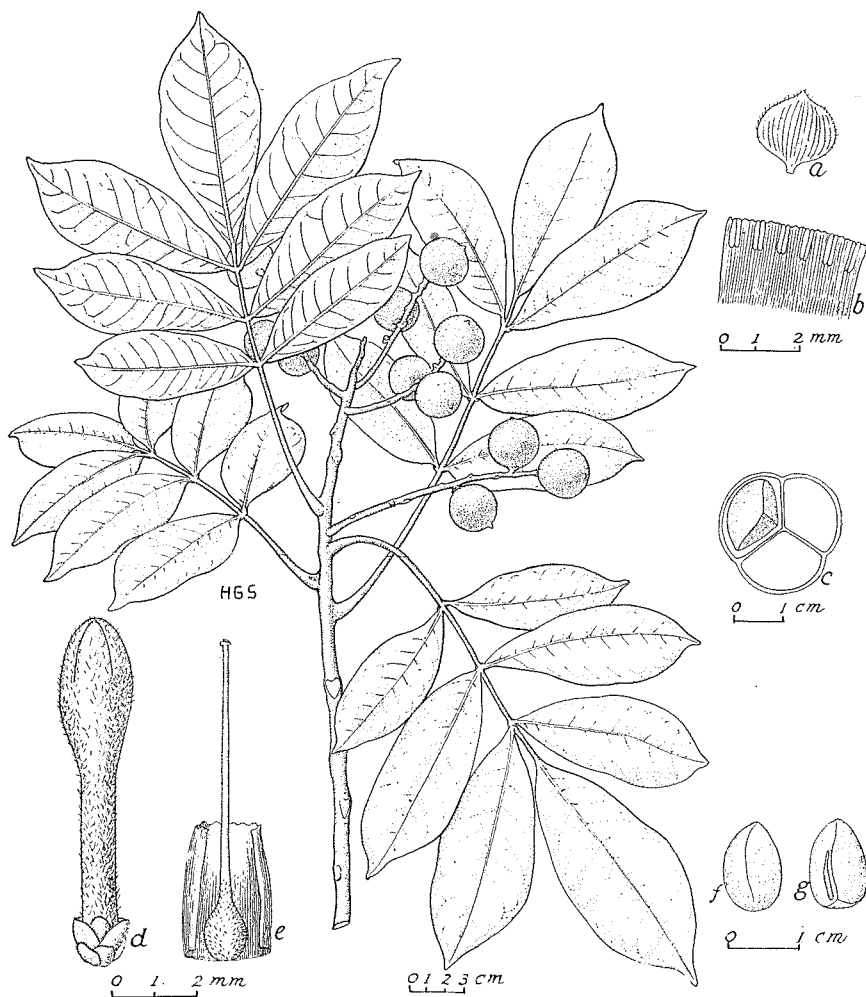


FIGURE 13.—*Dysoroxylum hornei* Gillespie: a, sepal; b, upper portion of staminal tube from within; c, transverse section of fruit; d, immature flower; e, disc and pistil; f, g, seed.

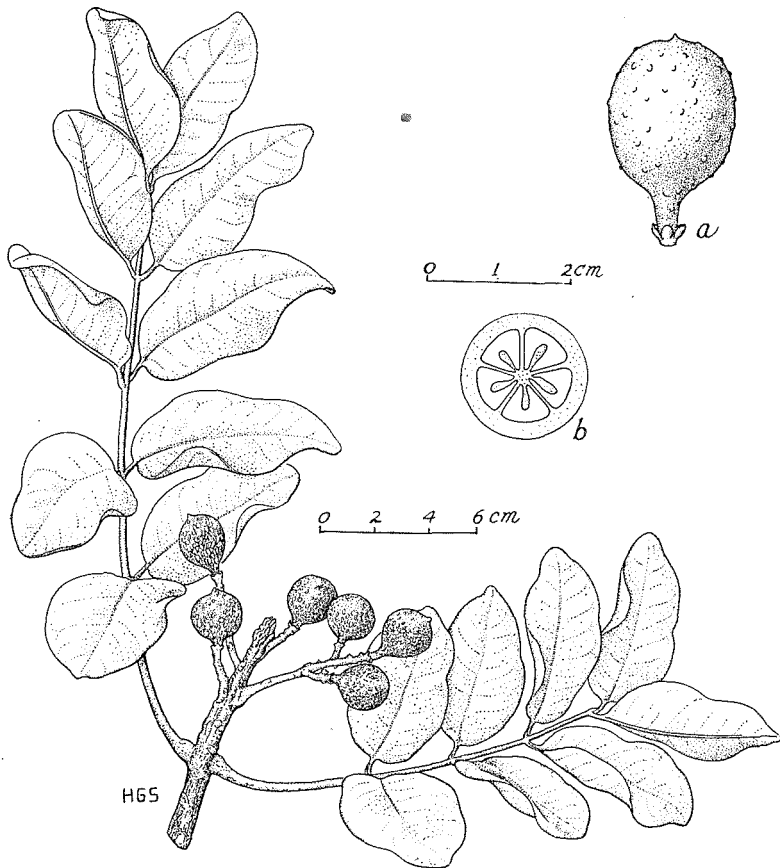


FIGURE 14.—*Dysoxylum lenticellare* Gillespie: a, fruit; b, transverse section of fruit.

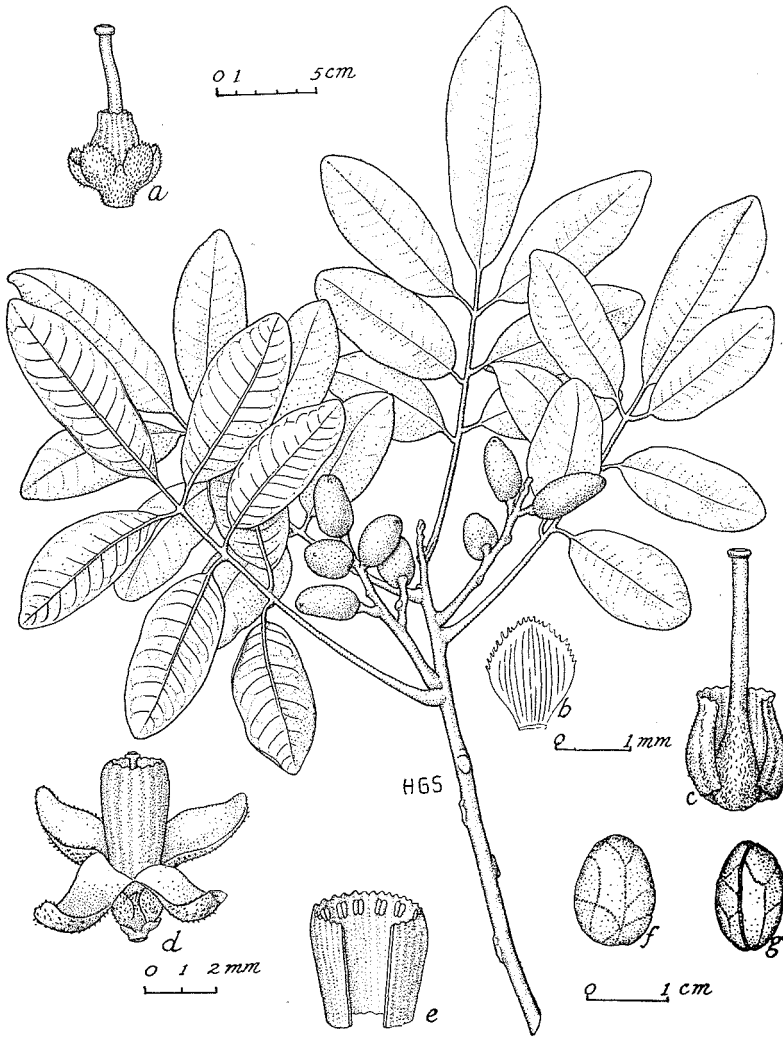


FIGURE 15.—*Dysoxylum obliquum* Gillespie: a, flower with corolla and staminal tube removed; b, sepal; c, pistil and disc; d, flower; e, staminal tube; f, g, seed.

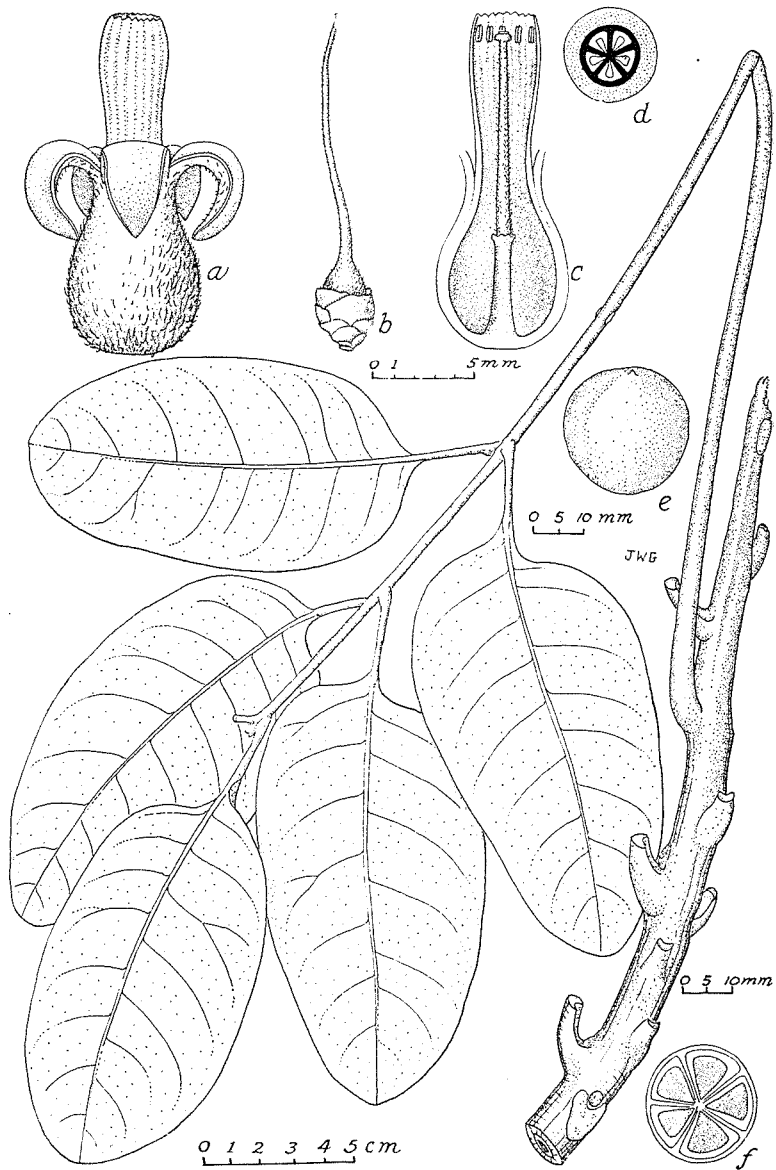


FIGURE 16.—*Dysoxylum seemanni* Gillespie: *a*, flower; *b*, calyx and pistil; *c*, longitudinal section of flower; *d*, transverse section of ovary; *e*, fruit; *f*, transverse section of fruit.

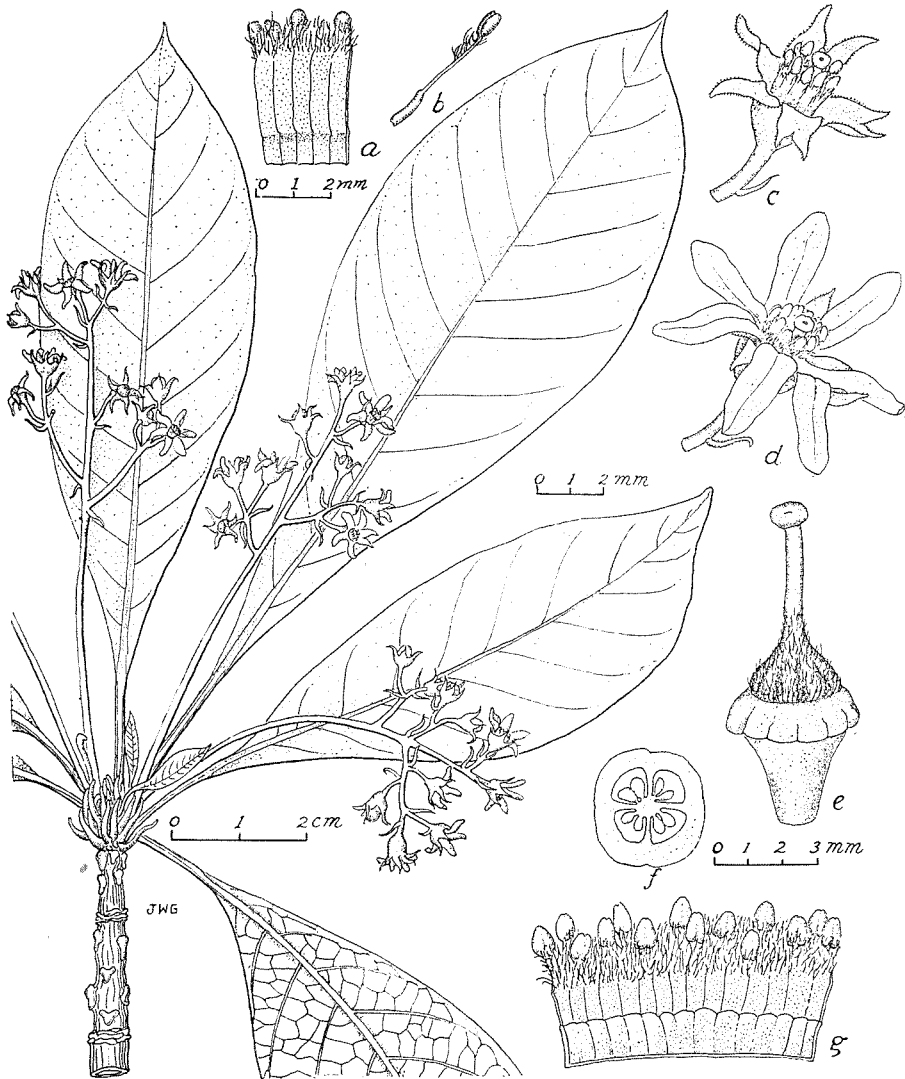


FIGURE 17.—*Vavaea megaphylla* Wright: *a*, portion of staminal tube, from without; *b*, lateral view of stamen; *c*, flower with corolla removed; *d*, flower; *e*, pistil; *f*, transverse section of ovary, enlarged; *g*, staminal tube, laid open.

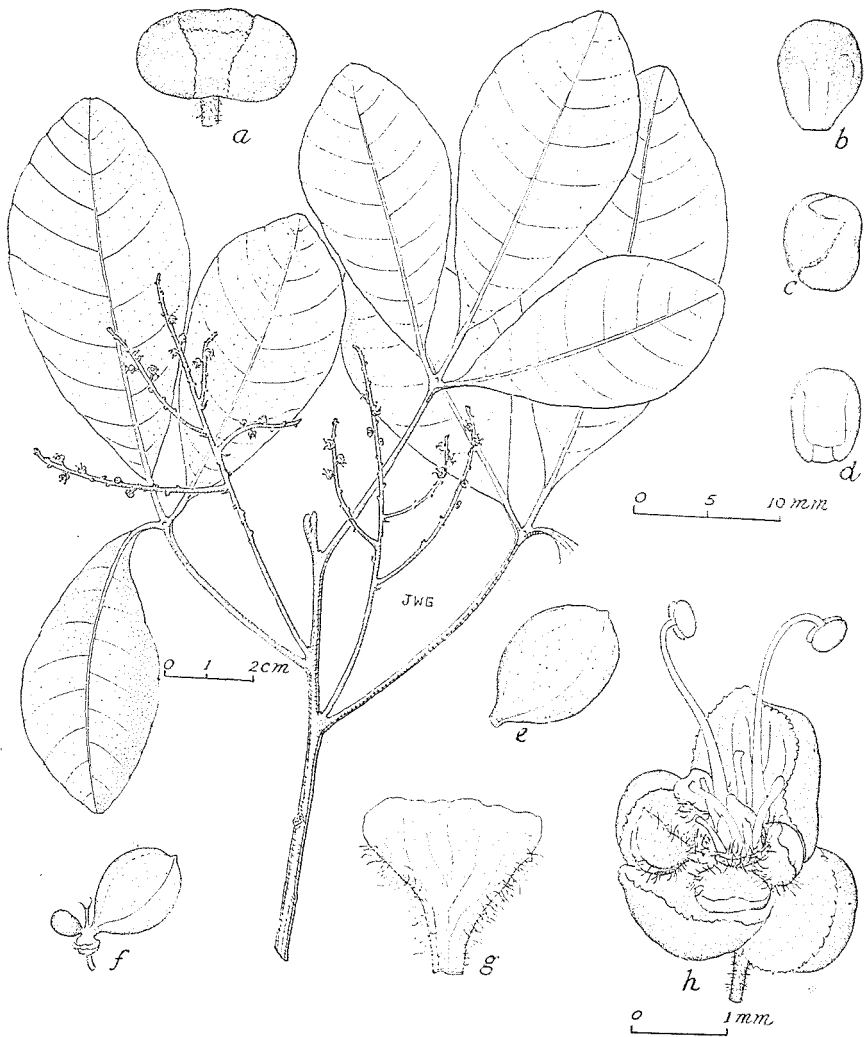


FIGURE 18.—*Allophylus sublavus* Gillespie: a, flower-bud; b, c, d, seed; e, fruit; f, young fruit, showing aborted carpel; g, petal, enlarged; h, flower.

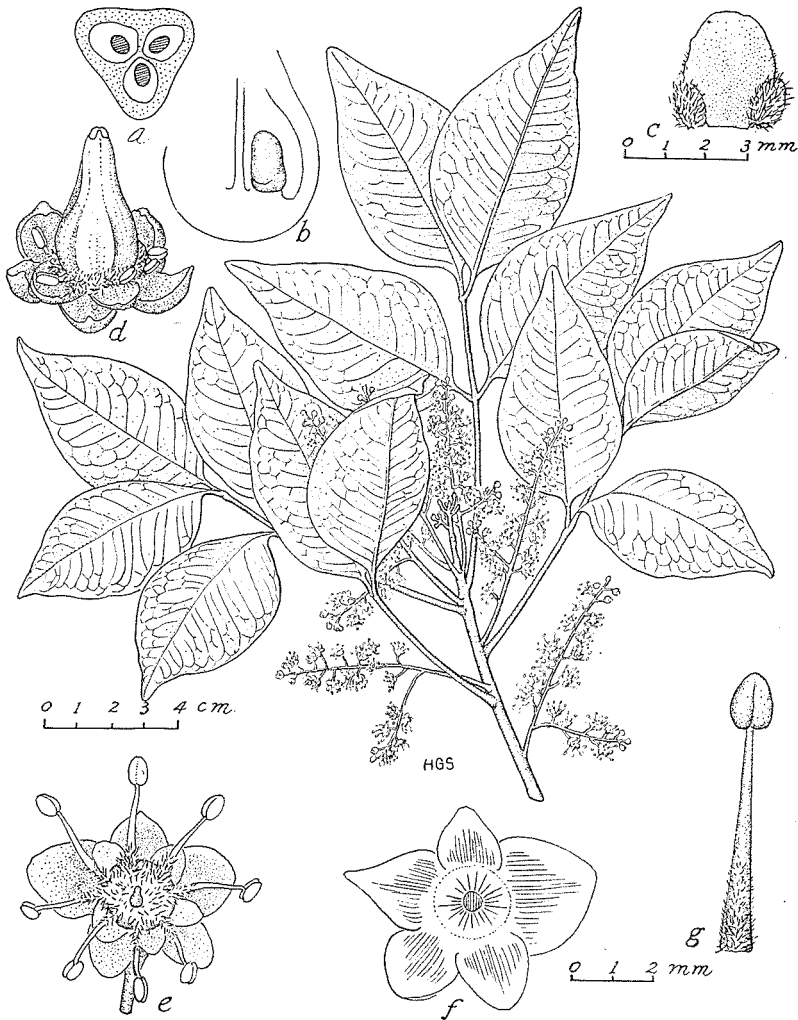


FIGURE 19.—*Guioa concolor* Gillespie: *a*, transverse section of ovary, (female flower), enlarged; *b*, longitudinal section of ovary (female flower), enlarged; *c*, petal (female flower), enlarged; *d*, female flower; *e*, male flower; *f*, calyx (male flower) from beneath; *g*, stamen (male flower), enlarged.

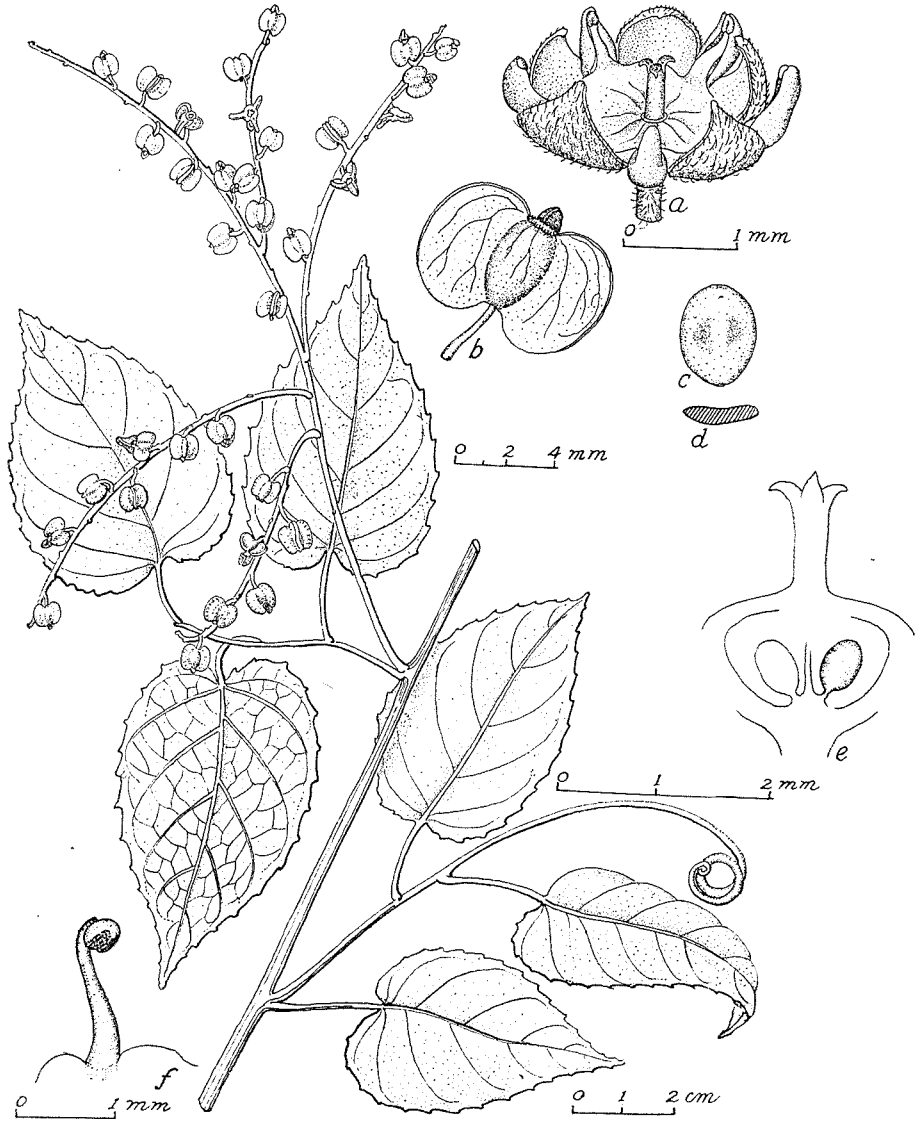


FIGURE 20.—*Gouania richii* A. Gray: a, flower; b, fruit; c, seed; d, transverse section of seed; e, longitudinal section of ovary, enlarged; f, stamen, enlarged.

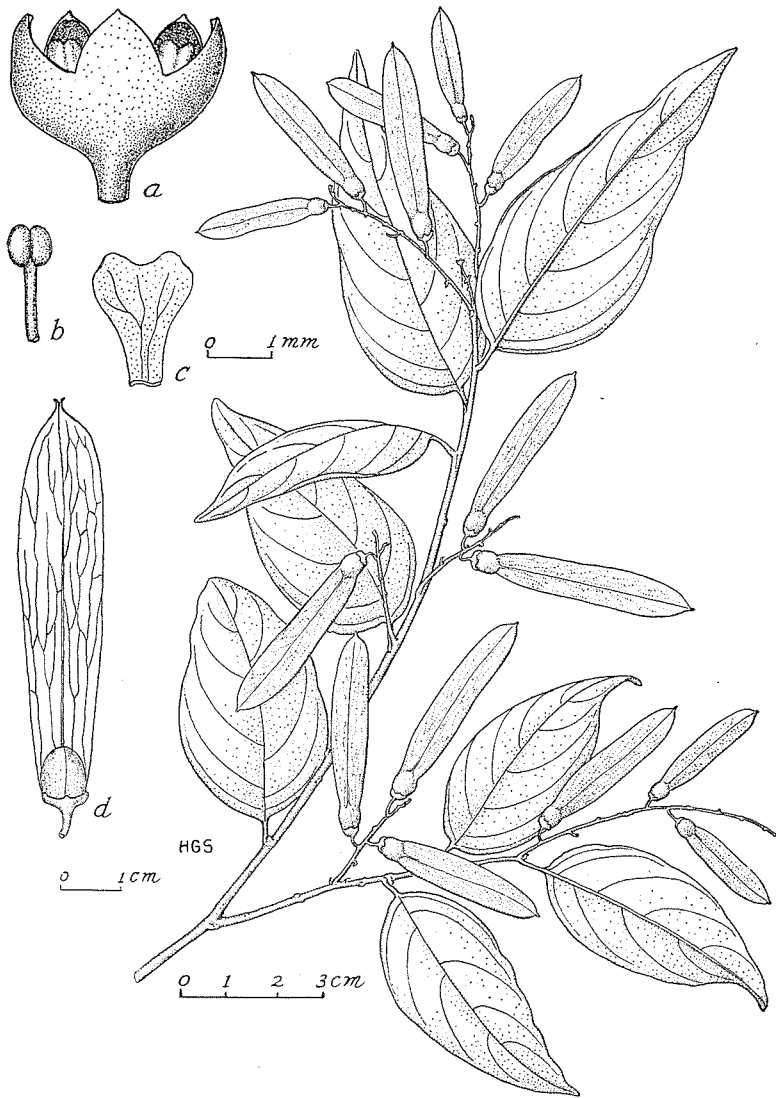


FIGURE 21.—*Ventilago vitiensis* A. Gray: a, flower; b, stamen; c, petal; d, fruit.

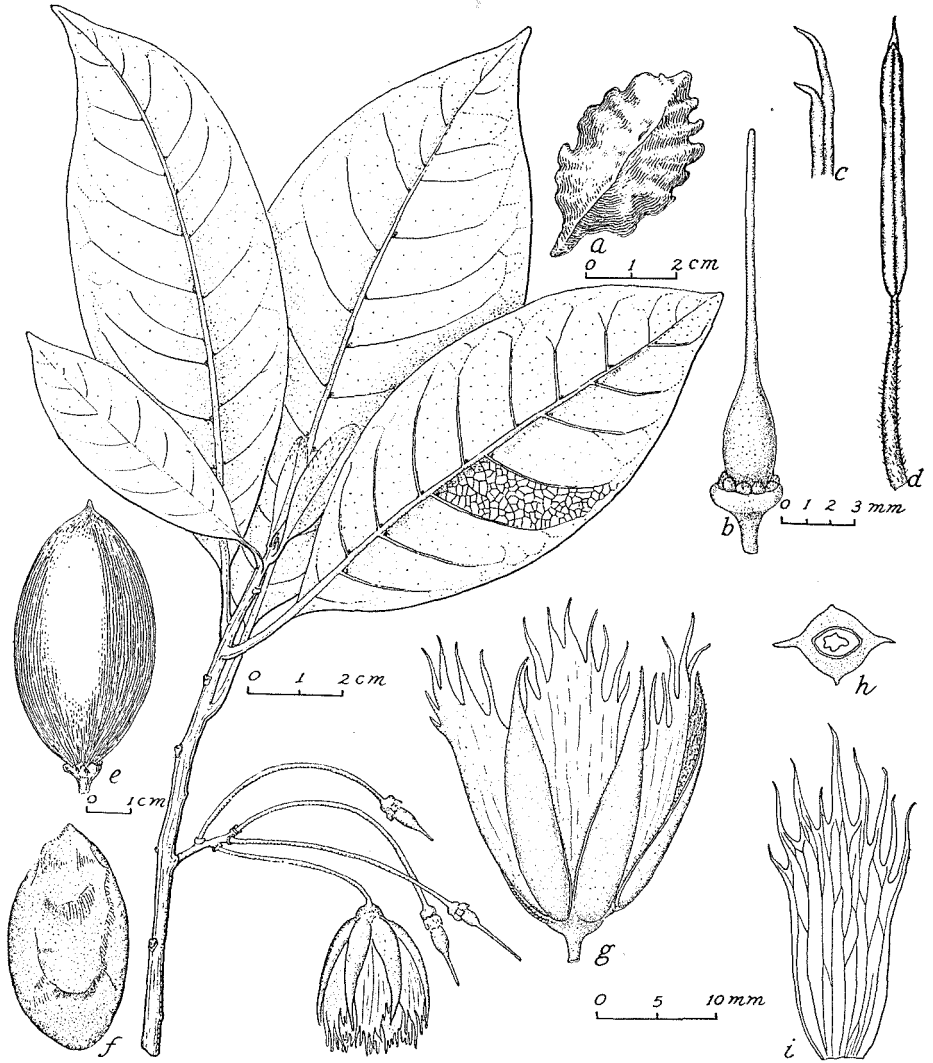


FIGURE 22.—*Elaeocarpus chelonimorphus* Gillespie: a, stone; b, pistil; c, upper portion of anther, enlarged; d, stamen; e, fruit; f, fruit with putamen removed; g, flower; h, transverse section of stone; i, petal.

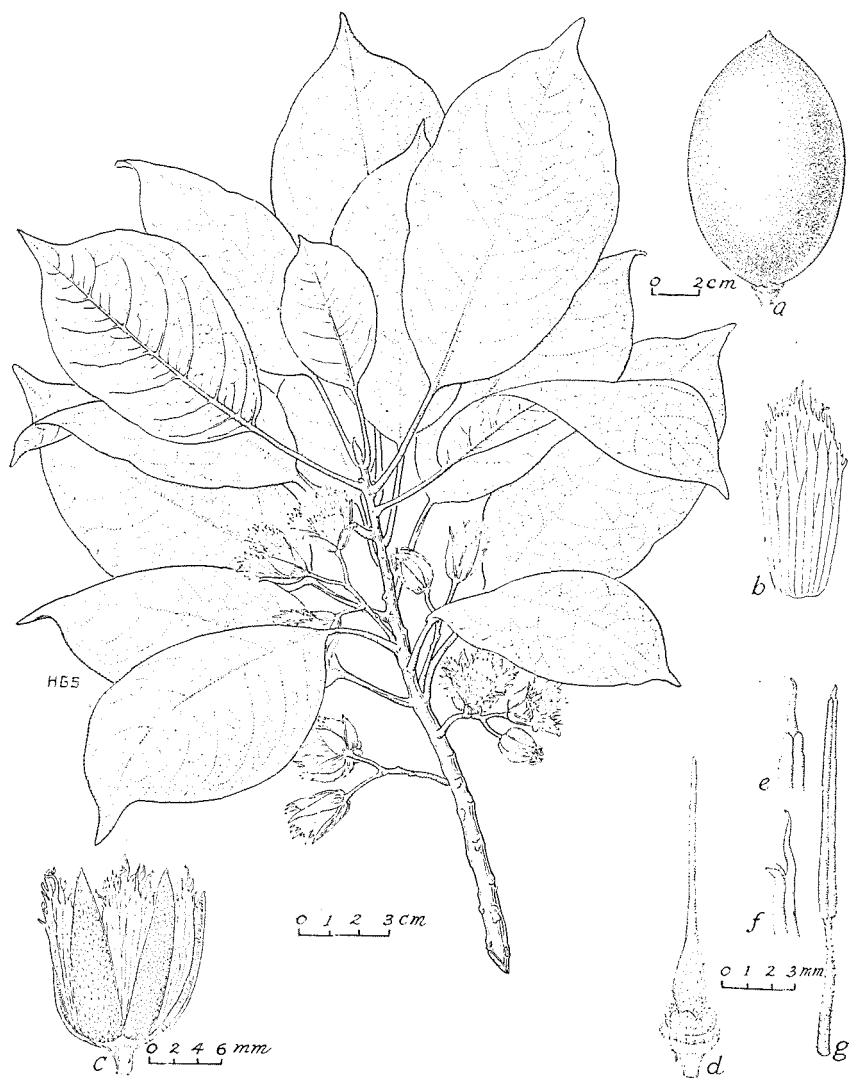


FIGURE 23.—*Elaeocarpus subcapitatus* Gillespie: a, fruit; b, petal; c, flower; d, pistil; e, f, upper portion of stamen, enlarged; g, stamen.

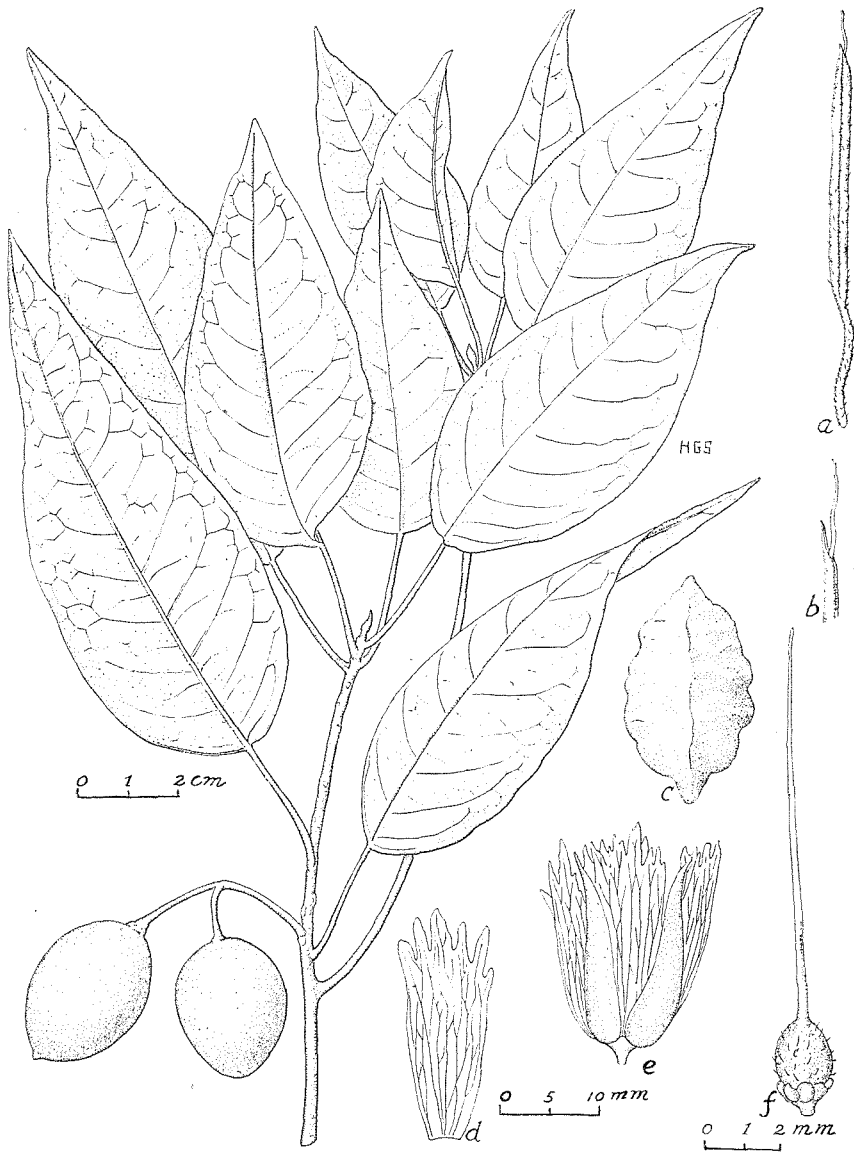


FIGURE 24.—*Elaeocarpus vitiensis* Gillespie: a, stamen; b, upper portion of stamen; c, stone; d, petal; e, flower; f, pistil.

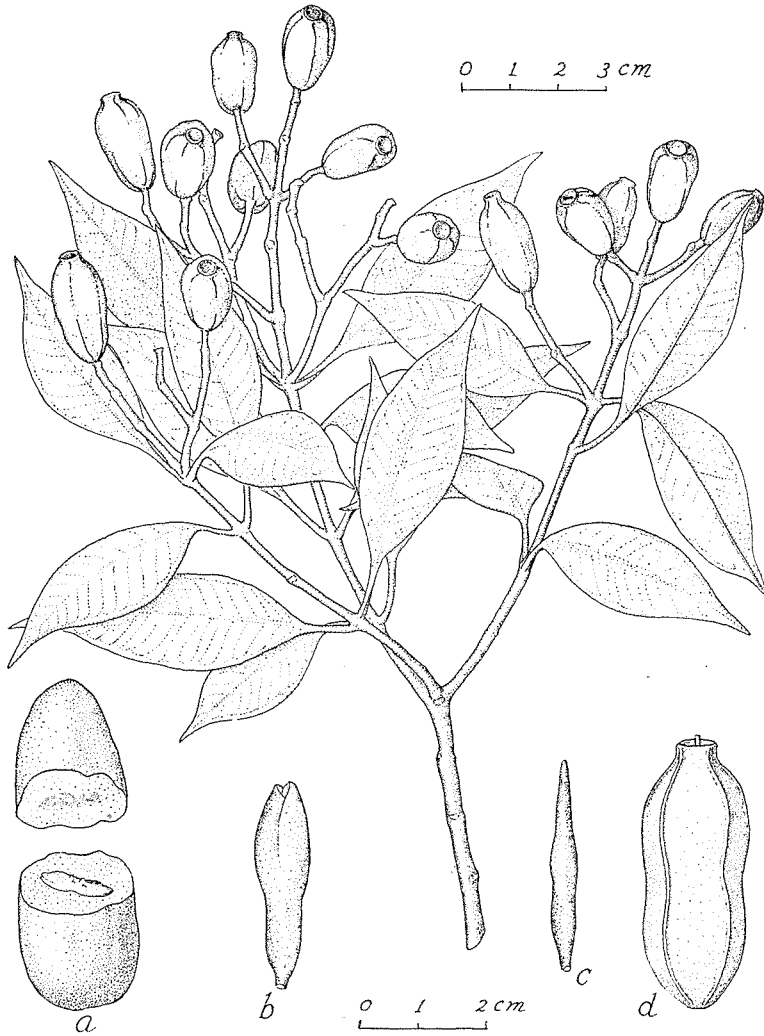


FIGURE 25.—*Acicalyptus myrtilloides* A. Gray: a, enlarged seed showing embryo; b, c, embryo, much enlarged; d, fruit.

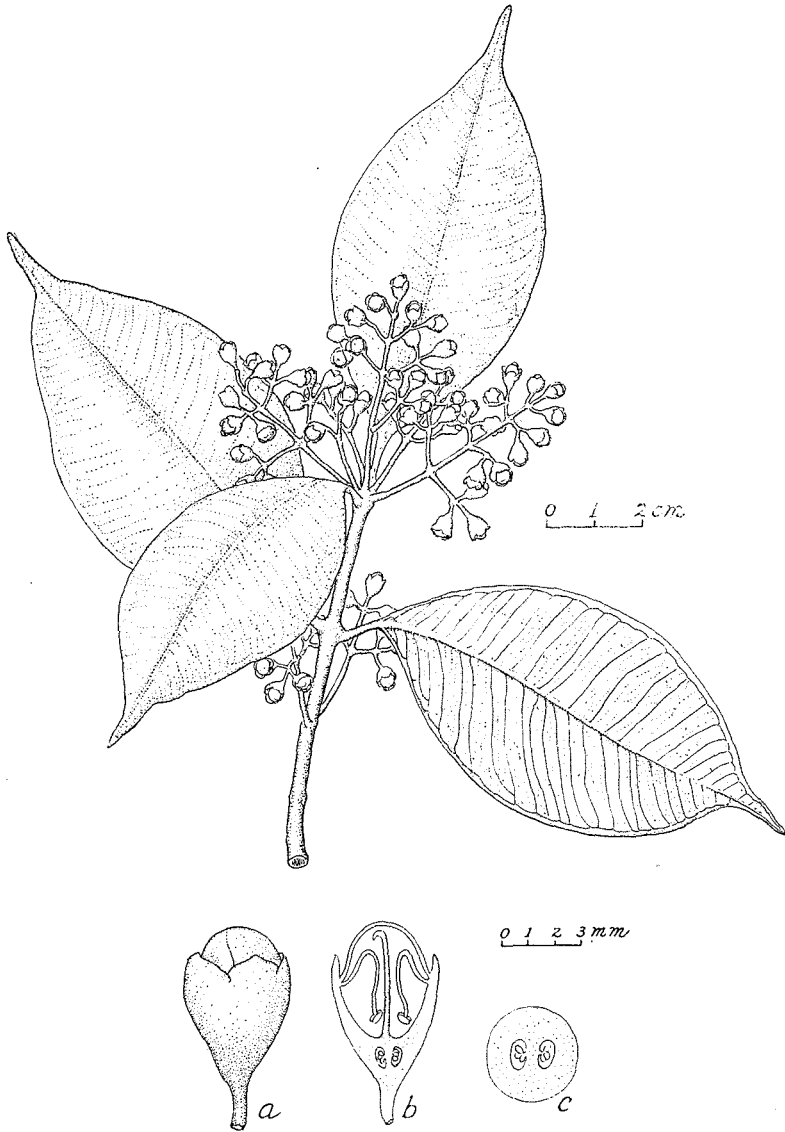


FIGURE 26.—*Eugenia curvistyla* Gillespie: a, flower; b, longitudinal section through a flower; c, cross section of ovary.

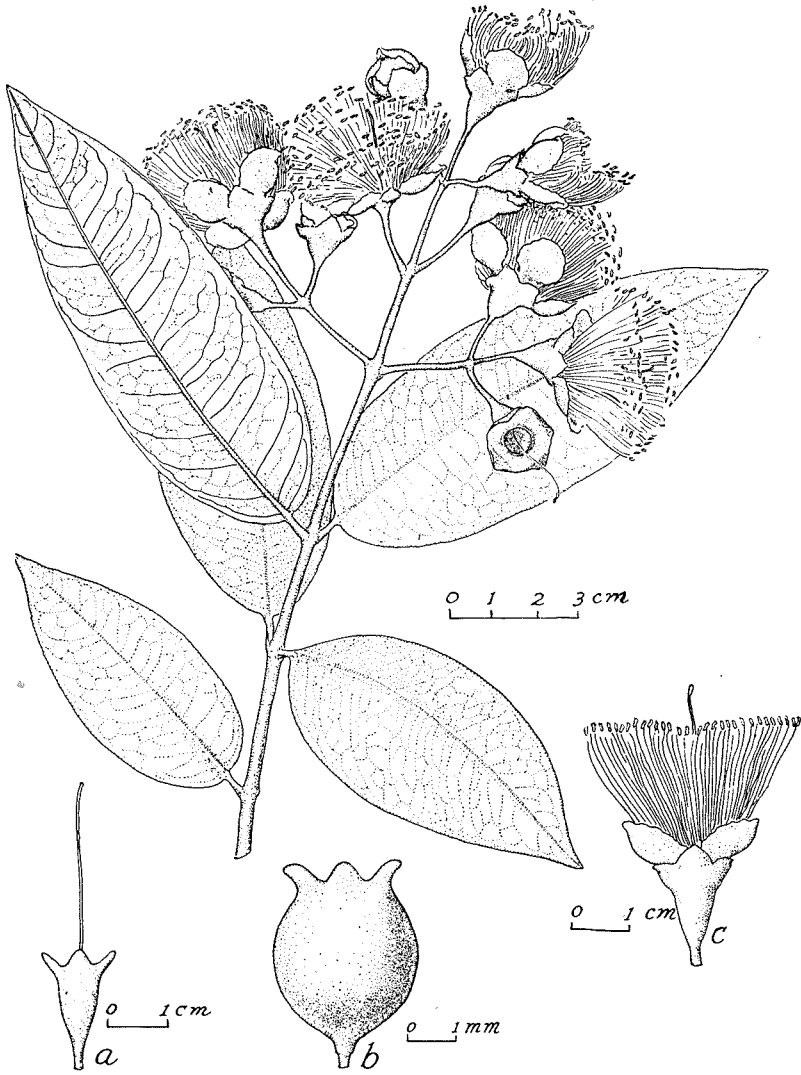


FIGURE 27.—*Eugenia nandarivatensis* Gillespie: a, calyx; b, fruit; c, flower.

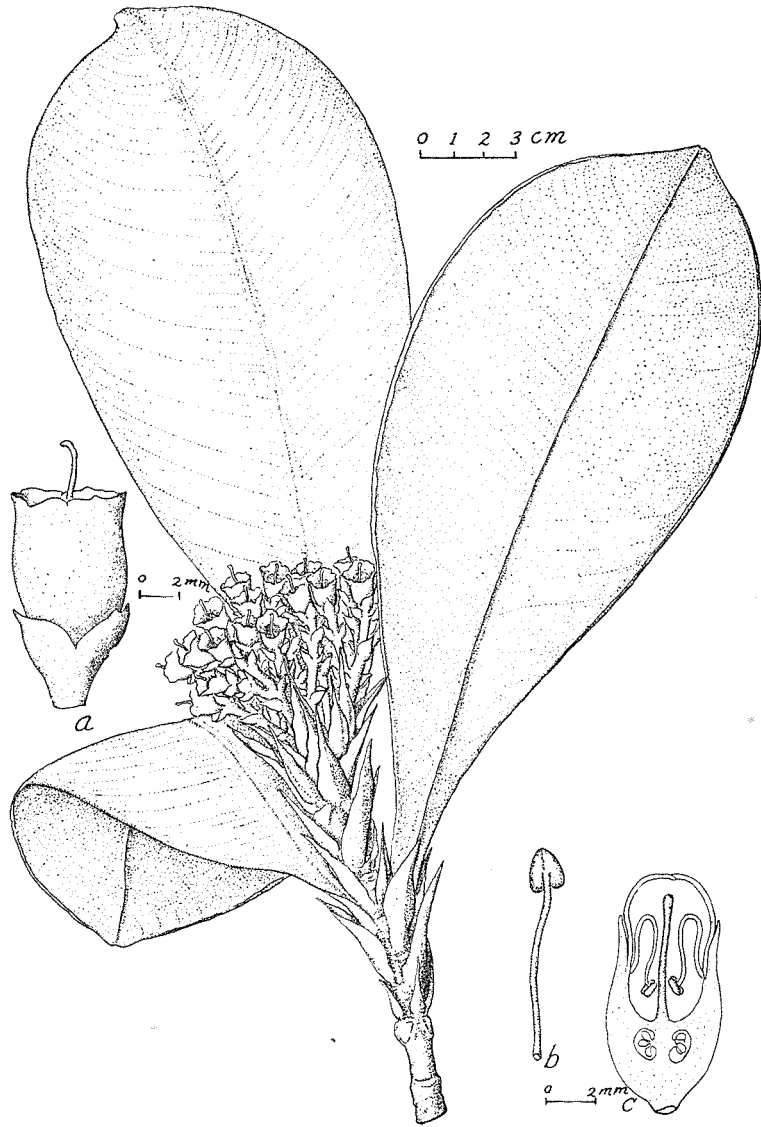


FIGURE 28.—*Eugenia wolfii* Gillespie: *a*, flower after corolla has fallen; *b*, stamen enlarged; *c*, longitudinal section through flower bud.

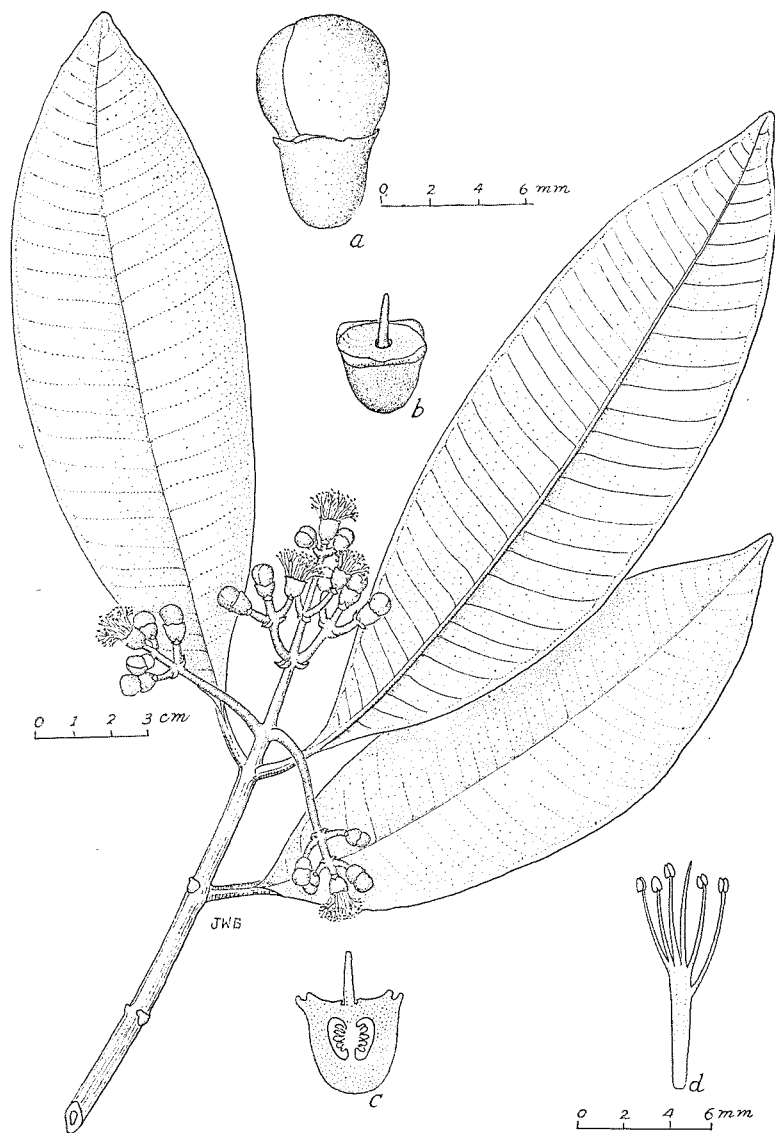


FIGURE 29.—*Pareugenia oblongifolia* Gillespie: a, flower; b, flower after corolla has fallen; c, longitudinal section of same; d, a phalange of stamens.

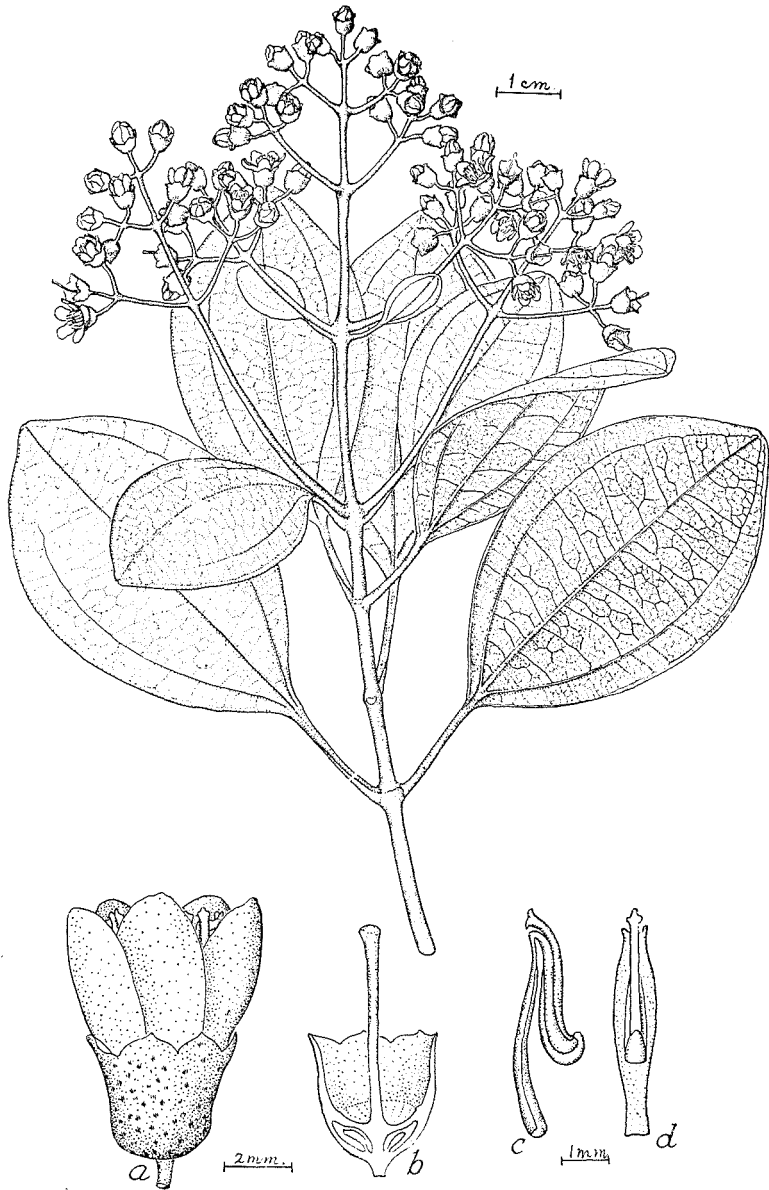


FIGURE 30.—*Astronia floribunda* Gillespie: *a*, flower; *b*, section through flower, corolla and stamens removed; *c*, stamen, side view; *d*, stamen, front view.

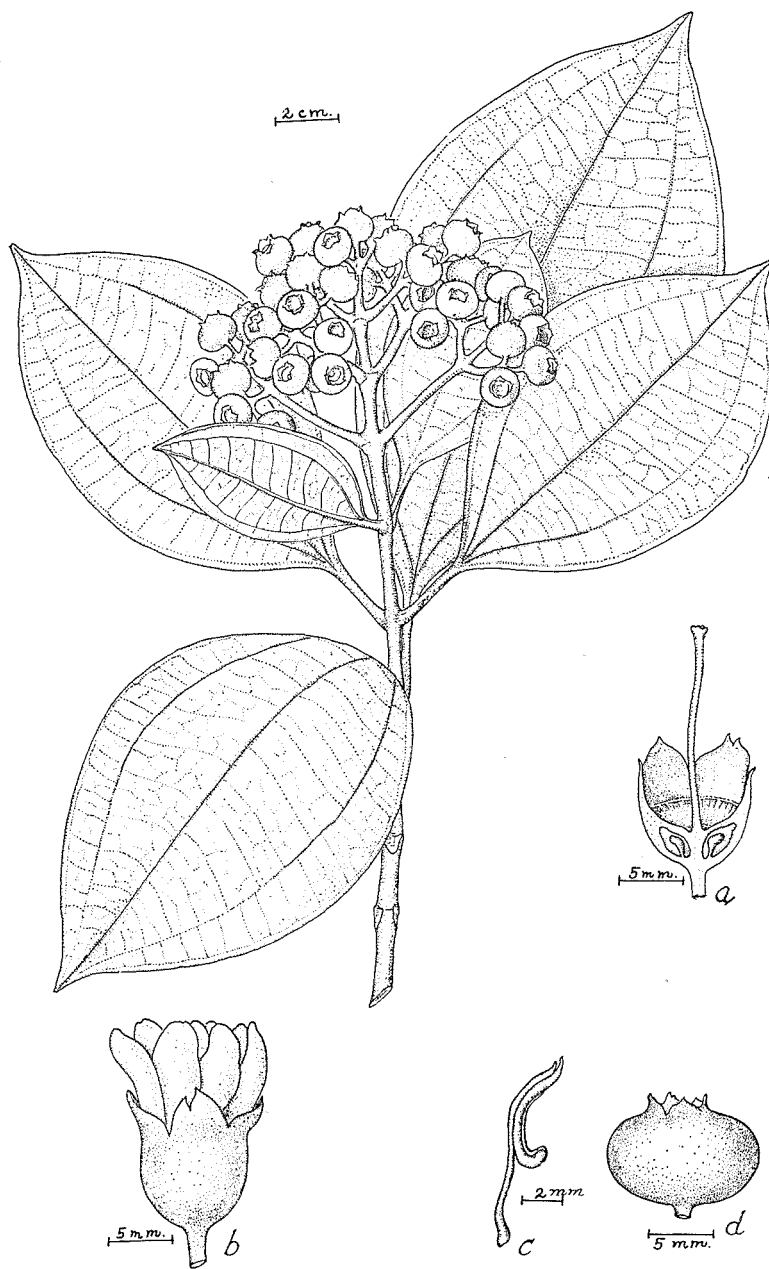


FIGURE 31.—*Astronia robusta* Seemann: a, longitudinal section through flower, with corolla removed; b, flower; c, stamen; d, fruit.

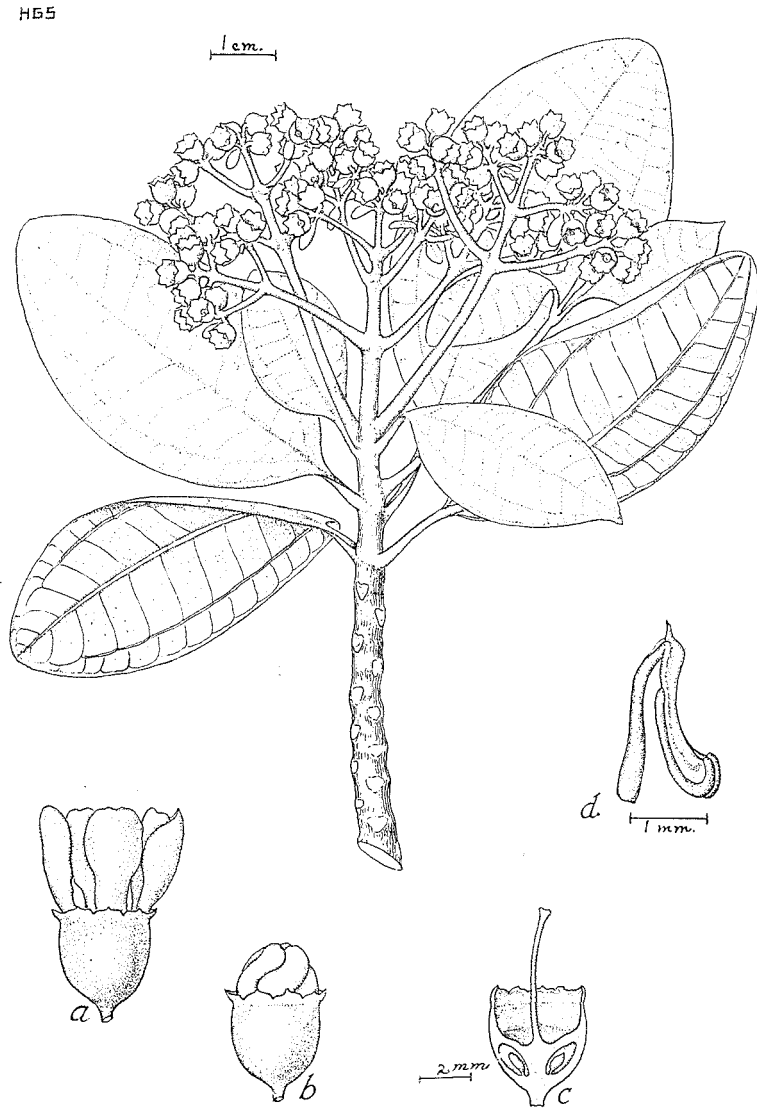


FIGURE 32.—*Astronia victoriae* Gillespie: a, flower; b, flower bud; c, longitudinal section through flower, corolla removed; d, stamen.

H65

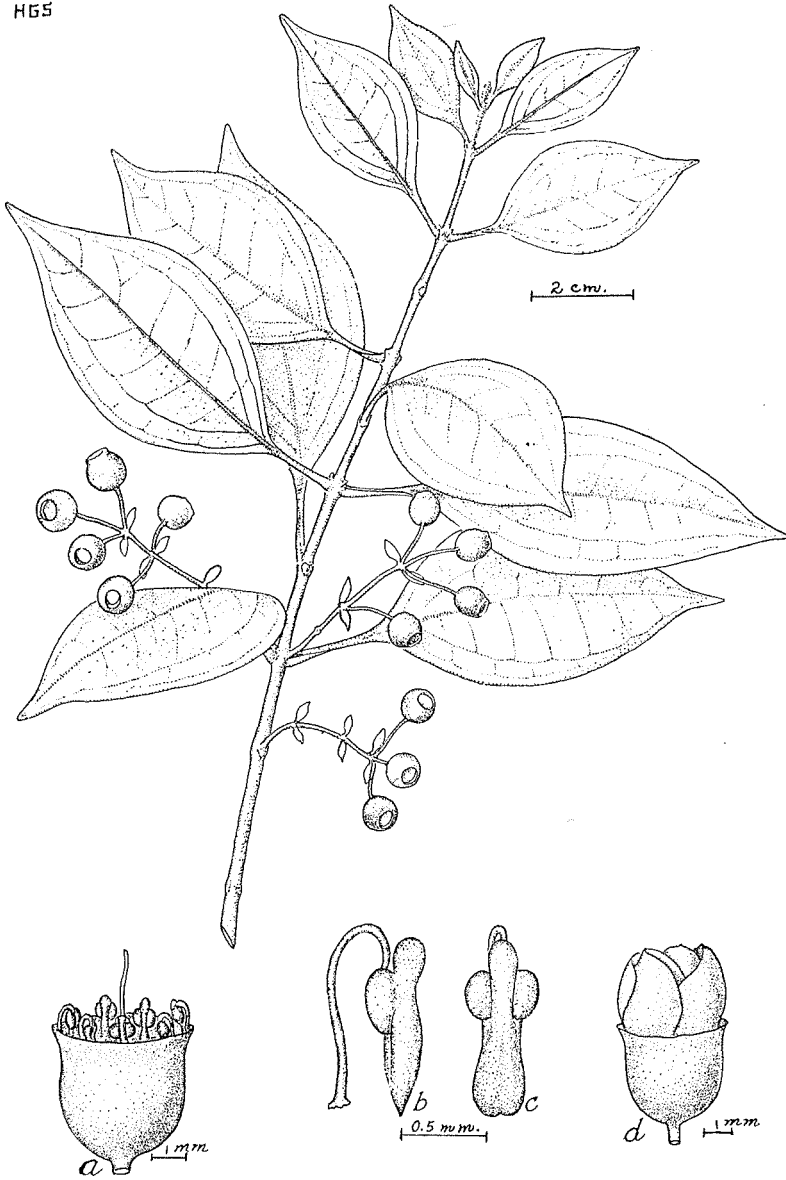


FIGURE 33.—*Medinilla parvifolia* Seemann; a, flower with corolla removed; b, c, stamens; d, flower.

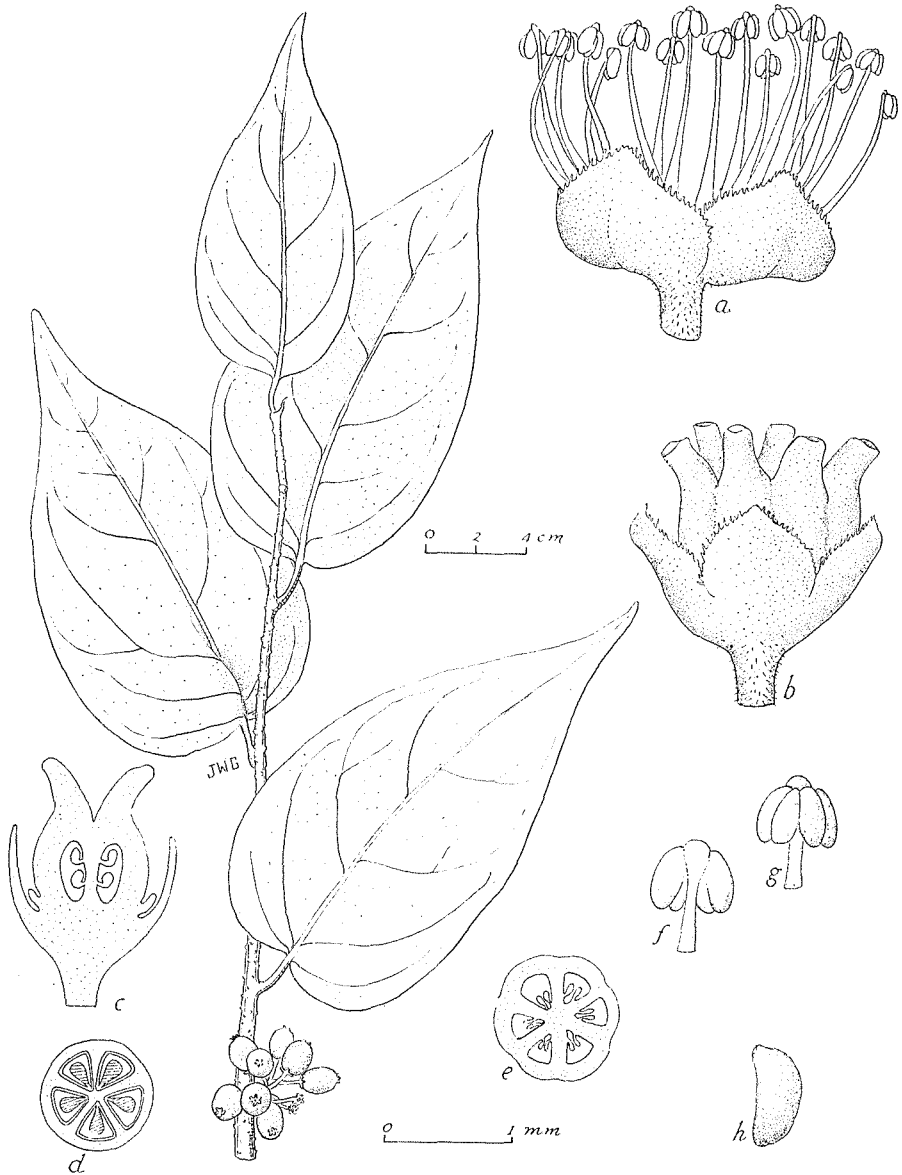


FIGURE 34.—*Flacourtia ovata* Gillespie: *a*, male flower; *b*, female flower; *c*, longitudinal section of a female flower; *d*, transverse section of fruit; *e*, transverse section of ovary, showing position of ovules; *f*, stamen, dorsal view, enlarged; *g*, stamen, ventral view, enlarged; *h*, seed, enlarged.

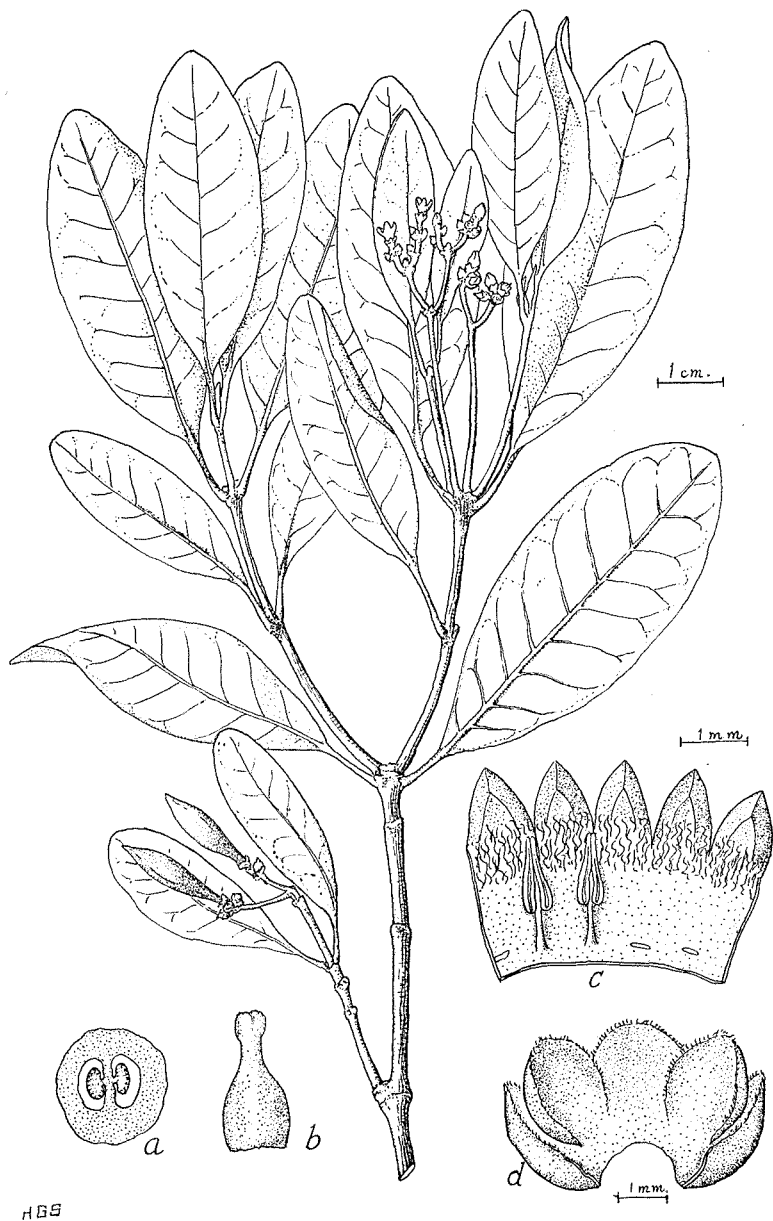
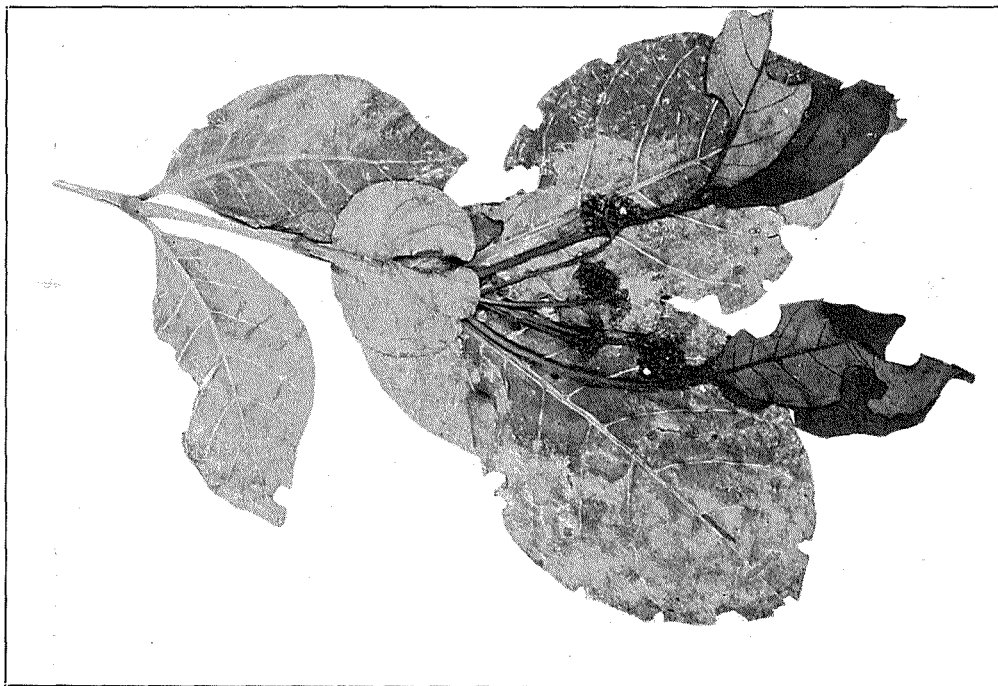
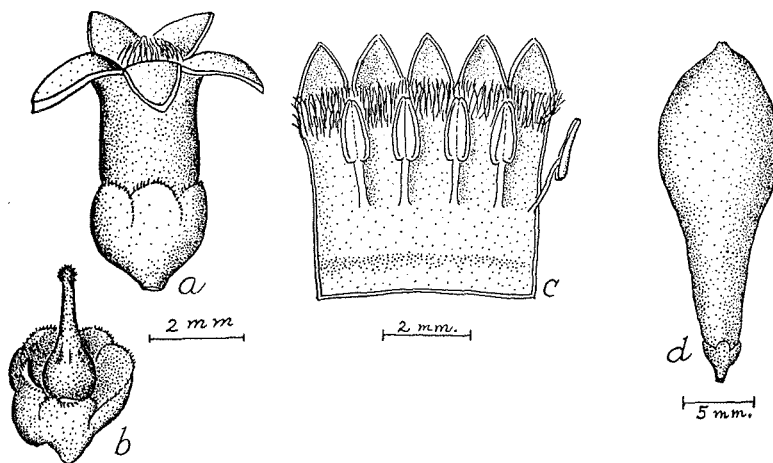


FIGURE 35.—*Couthovia corynocarpa* A. Gray: a, section through ovary; b, pistil, enlarged; c, corolla; d, calyx.



A



B

FIGURE 36.—*Couthovia seemanni* A. Gray: A, photograph of the type; B, details: a, flower; b, flower with corolla removed; c, corolla laid open; d, fruit.

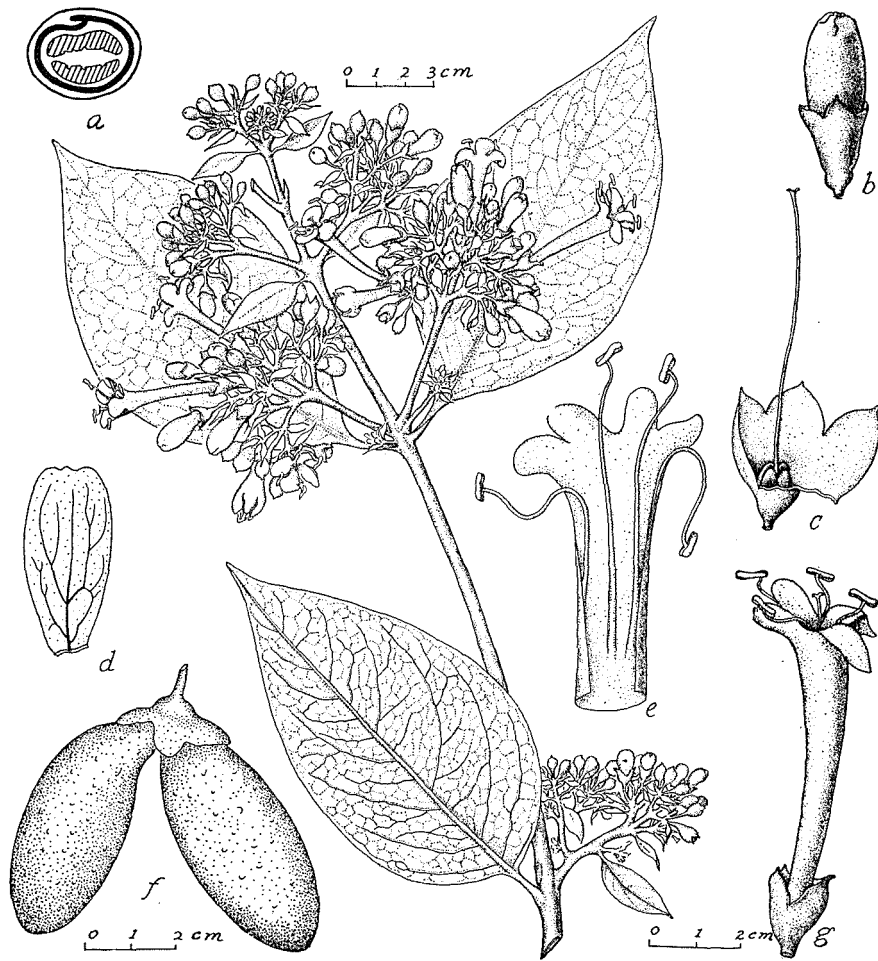


FIGURE 37.—*Faradaya ovalifolia* (A. Gray) Seemann: *a*, cross section of drupe; *b*, flower bud; *c*, flower with corolla removed, calyx laid open; *d*, cotyledon of the embryo; *e*, corolla laid open; *f*, fruit; *g*, flower.



FIGURE 38.—*Randia odorata* (Seemann) Bentham et Hooker, f.: *a*, stamen; *b*, fruit; *c*, calyx, enlarged; *d*, flower with perianth removed, enlarged; *e*, flower.

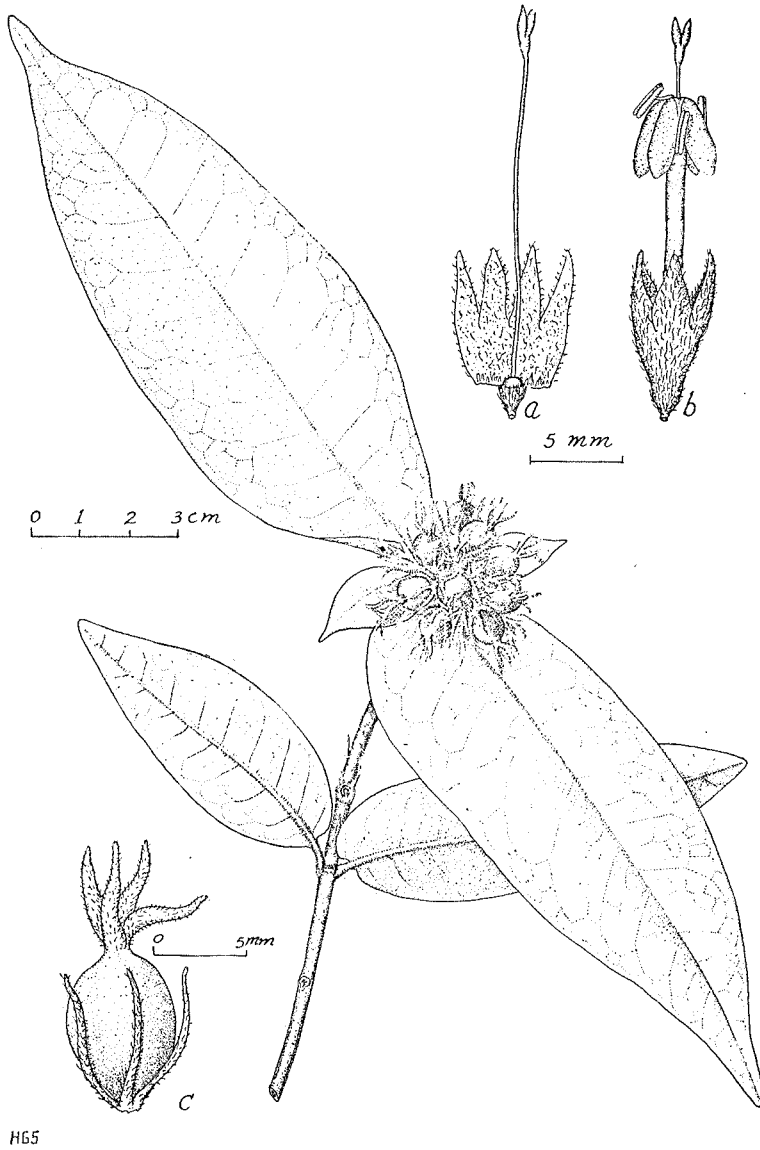


FIGURE 39.—*Ixora pelagica* Seemann: a, flower with corolla removed, calyx laid open; b, flower; c, fruit with bracteoles.



FIGURE 40.—*Coprosma persicaefolia* A Gray: a, male inflorescence; b, male corolla opened, enlarged; c, stamen, enlarged.