

# NEW PLANTS FROM FIJI—I

BY  
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VOMA MOUNTAIN, NAMOSI PROVINCE, VITI LEVU, ALTITUDE 923 METERS.  
FROM THE SIDES AND SUMMIT OF THIS MOUNTAIN MANY OF SEEMANN'S TYPES  
WERE COLLECTED.

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## INTRODUCTION

In the spring of 1927, while a student in botany at Stanford University, I was fortunate in being awarded a Bishop Museum Fellowship in Yale University, which provided for a year's field work in some area in or bordering the Pacific Ocean. After consultation and advice, Fiji was selected, a group of islands of extraordinary interest because of their strategic position with reference to the eastward and northward distribution of the numerous Indo-Malaysian plants in Polynesia. I left California in June, and after short stops in Hawaii and Samoa, arrived in Suva, Fiji, on July 30, 1927, and began work immediately.

I was preceded in my labors by Mr. Harold E. Parks, now Associate Curator of the Herbarium, University of California, an experienced tropical collector. Working under a cooperative arrangement between the University of California and Bishop Museum, Mr. Parks collected intensively for about ten weeks in the eastern part of Viti Levu. His collections and mine were combined as the Parks-Gillespie collection and are being studied conjointly.

Relatively but a small part of Fiji was covered during the eight months of my travels, and even this was all too poorly explored. On Viti Levu, the fine "bush" within the ten-mile radius of Suva was fairly well examined; trips were made to the interior by way of the Navua River; and among the higher mountains specimens were taken from Naitarandamu, Voma, and Vakarongasiu. About two months were spent in the vicinity of Nandarivatu, Tholo North Province, one of the finest locations for botanical study I have ever seen. A short stay on the eastern side of Ovalau, and a few weeks on Taviuni, near Waiyevo, sums up the time spent and localities from which my material was taken. I left Fiji in April, 1928.

The ferns of the Parks-Gillespie collection have been ably treated by Copeland.<sup>1</sup> Certain other groups have been referred to specialists for examination, and the remainder has been the subject of my attention. In this paper, the first of a proposed series, 57 species are described and figured, 41 of which are new.

I am deeply indebted to the many residents who gave assistance during my stay in Fiji, both in official and unofficial capacities. His Excellency Sir Ayre Hutson, Governor of Fiji, gave his sanction to my visit, Dr. J. G. Tothill,

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<sup>1</sup> Copeland, E. B., Ferns of Fiji: B. P. Bishop Mus., Bull. 59, 1929.

Superintendent of Agriculture, was of assistance in many ways, and Mr. Seymour, Colonial Secretary, furnished me with valuable letters of introduction to the District Commissioners of the areas in which I collected. Of these, I especially thank Mr. C. V. Caldwell and Mr. Harley Nott, each of whom was my kind host for periods of weeks.

Financial assistance I gratefully acknowledge from the donors of the original fellowship, from Bernice P. Bishop Museum for additional grants for field work and study, and from the Committee on Graduate Study for a fellowship at Stanford University during the period of herbarium study. As to personal assistance, Dr. E. D. Merrill, Director-in-Chief of the New York Botanical Garden and Consulting Botanist on the staff of Bernice P. Bishop Museum, made preliminary determinations of nearly all the specimens, and has been my constant consultant, having given aid in innumerable ways; to him and to Dr. LeRoy Abrams, Professor of Botany at Stanford University, I give my sincere thanks.

For photographs of type specimens of plants collected by the Wilkes Exploring Expedition and now in the Gray Herbarium, Harvard University, I am indebted to Mr. Rimo Bacigalupi and Mr. Albert N. Steward.

Most of the drawings used for illustration were made by my sister, Helen Gillespie Sperry, to whom I am grateful. They bear her monogram. Uninitialed drawings and the detail studies for all the figures are my own. They were made, for the most part, from material preserved in alcohol.

The types of the species here described have been deposited in the herbarium of the Bernice P. Bishop Museum, isotypes in the herbarium of the University of California and several other institutions.

## MYRSINACEAE

## MAESA Forskal

**Maesa densiflora** Gillespie, species nova (fig. 1).

Arbor parva; foliis glabris, 7-10 cm. longis, 2-3 cm. latis, minute punctatis, oblongo-ellipticis, apice subacutis, basi acutis ad obtusis; inflorescentiis axillaribus, simpliciter racemosis vel depauperato-paniculatis, haud ultra 2.5 cm. longis; sepalis lineatis; extus furfuraceis acutis, margine leviter crenulato; ovario subsphaerico; stylo brevissimo; stigmatibus bene 3- vel 4-lobato.

A small, glabrous tree 8 to 10 meters high (Parks). Twigs rather stout, brown, terete, with abundant, pale, round lenticels. Leaves 7-10 cm. long, 2-3 cm. broad; blades light-green above, paler beneath, chartaceous, minutely punctate, oblong-elliptic, gradually narrowed upward, apex subacute, base acute to obtuse, lateral nerves 6 to 8 on each side of the midrib, reddish, these and the reticulate veinlets obscure above but evident beneath, margin slightly and irregularly crenate; petioles rather stout, somewhat lepidote, 6-14 mm. long. Inflorescences axillary, racemose or depauperate-paniculate, erect, narrow, sparingly branched, less than 2.5 cm. long, all parts covered with abundant, ferruginous scales; bracts acute; pedicels almost none. Flowers 5- to 7-merous, about 2 mm. long; parts of the prophyllum slightly unequal, the longer about 0.9 mm. long, acute, glabrous within, lepidote without, the margin crenulate and ragged; calyx about 1.2 mm. long, brown, furfuraceous, lobes about 0.6 mm. long, deltoid, acute, lineate, margin slightly crenulate; corolla white, about 1.3 mm. long, obscurely marked with brown or black lines, lobes about 0.7 mm. long, rounded, somewhat scaly within and without, entire; stamens scarcely exerted, about 0.5 mm. long; anthers equal to the broad filaments which are inserted near the base of the corolla-tube; ovary short, flask-shaped; style practically none; stigma deeply 3- or 4-lobed. Fruits unknown.

Fiji, Viti Levu, Tholo North Province, wet canyon in vicinity of Nandari-vatu, altitude 1000 meters, July 2, 1927, H. E. Parks. Type no. 20512.

**Maesa grandis** Gillespie, species nova (fig. 2).

Frutex scandens; foliis chartaceis, glabris, minute punctatis, 13-15 cm. longis, 5.5-7 cm. latis, apice acuminatis, basi rotundatis ad cordatis, margine crenato ad repando-undulato, crenulis obscure mucronatis; inflorescentiis axillaribus, numerosis, 1-2-pinnatis paniculatis, foliis subaequantibus vel brevioribus; sepalis extus lepidotis, acutis, obscure lineatis, margine leviter crenulato; ovario discoideo; stylo crasso.

A glabrous, bushy vine. Twigs attenuate, young parts covered with red-brown scales, verruculose with many small, raised, pale-brown lenticels. Leaves 13-15 cm. long, 5.5-7 cm. broad; blades dark-green above, pale and yellowish beneath, chartaceous, minutely punctate, ovate, apex shortly acuminate, base rounded to cordate, margin crenulate to repand-undulate, the crenulations obscurely mucronate, lateral nerves about 7 on each side of the midrib, conspicuous, arching, tapering, anastomosing near the margin, veinlets reticulate, inconspicuous above, distinct beneath; petioles moderately thick, stout, 2-3 cm. long. Inflorescences very abundant, axillary, somewhat lax, 1- or 2-pinnate-paniculate, up to 9 cm. long, lateral branches often spreading, up to 5 cm. long; bracts acute; pedicels about 1 mm. long. Flowers 5-merous, about 2 mm. long; parts of the prophyllum unequal, the longer about 1 mm. long, the shorter 0.6 mm. long, acute, glabrous within, lepidote without, margin slightly crenulate; calyx glabrous within, lepidote without, 1.3 mm. long, lobes about 0.7 mm. long, deltoid, acute, marked with faint, brown lines, margin slightly crenulate; corolla about 1.5 mm. long, white, marked with conspicuous, brown lines, lobes about 0.8 mm. long, spreading, somewhat scaly within and without, margin entire; stamens

very short, slightly exserted; anthers oblong, almost sessile; pistil very short, flask-shaped; ovary flattened, brown; style stout; stigma slightly capitate, blunt. Fruits unknown.

Fiji, Viti Levu, Namosi Province, slopes of Voma Mountain near the trail from Namosi village, altitude 600 meters, September 3, 1927, John W. Gillespie. Type no. 2503. Native name; *ngée-ngée*, the *g* being given the hard sound.

**Maesa insularis** Gillespie, species nova (fig. 3).

Frutex erectus; foliis glabris, 15-23 cm. longis, 4-5 cm. latis, integris, minute punctatis, apice acuminatis ad acutis, basi acutis; inflorescentiis axillaribus, simpliciter paniculatis, haud ultra 5 cm. longis, ramis paucis, patulis, inferioribus usque ad 3 cm. longis, sepalis extus furfuraceis, acutis, obscure lineatis, margine leviter crenulato; ovario conico; stigmatibus obtuso.

A glabrous shrub, 4 meters high. Twigs slender, terete, lenticels small, pale, inconspicuous. Leaves 15-23 cm. long, 4.5-7 cm. broad; blades dark-green above, pale beneath, thinly chartaceous, minutely punctate, ovate-lanceolate, equally narrowed from the middle to each end, apex acuminate to acute, base acute, entire, lateral nerves 5 or 6 on each side of the midrib, conspicuous above and beneath, veins reticulate, obscure above and rather faint beneath; petioles slender, 2-3 cm. long. Inflorescences axillary, simply paniculate, less than 5 cm. long, lateral branches few, the lower ones up to 2 cm. long; bracts acute; pedicels 1 mm. long. Flowers 5-merous, about 2 mm. long; parts of the prophyllum slightly unequal, the longer about 1 mm. long, acuminate to acute, glabrous within, furfuraceous without, faintly marked with brown lines, margin crenulate and ragged; calyx about 1.3 mm. long, brown, glabrous, rough and scaly on the outside, lobes about 0.7 mm. long, deltoid, acute, obscurely lineate, margin slightly crenulate; corolla about 1.5 mm. long, cream-colored, strongly marked with brown lines, lobes about 0.8 mm. long, reflexed, oval to rounded, broadly obtuse, scaly within and without, margin entire; stamens not exserted, about 0.6 mm. long; anthers small, ovoid, shorter than the slender filaments which are inserted near the base of the corolla-tube; pistil about 0.7 mm. long; ovary ovoid to conical, gradually tapering; stigma obtuse.

Fiji, Viti Levu, Naitasiri Province, in open woods in the vicinity of Nasinu, 9 miles from Suva, altitude 150 meters, October 23, 1927, John W. Gillespie. Type no. 3479.

This species is represented by several other collections. From Gillespie no. 4823, the fruits are described as follows: subglobose or slightly ovoid, dry, hard, brown, longitudinally wrinkled and lineate, calyx-lobes persistent; seeds 12-20, black, shining. Collected on the island of Taviumi, summit ridge on the trail inland from Somosomo.

**Maesa lenticellata** Gillespie, species nova (fig. 4).

Frutex erectus glaber; foliis 8-12 cm. longis, 2-3 cm. latis, minute punctatis, oblongo-ellipticis, apice acuminatis, basi obtusis; inflorescentiis axillaribus, numerosis, racemosis vel depauperato-paniculatis, haud ultra 5 cm. longis; sepalis extus furfuraceis, acutis, obscure lineatis; margine leviter crenulato; ovario discoideo, stylo crasso; stigmatibus obscure lobato.

A small, glabrous, erect bush. Twigs stout, terete, marked with very numerous, pale,



conspicuous, orbicular lenticels. Leaves 8-12 cm. long, 2-3 cm. broad; blades green above, paler beneath, chartaceous, minutely punctate, oblong-elliptic, apex gradually narrowed to acuminate, rounded at the tip, base obtuse, lateral nerves 6 to 8 on each side of the midrib, obscure above but very conspicuous beneath, veins few, reticulate, indistinct above, faint but visible beneath, margin somewhat revolute, slightly crenate; petioles rather stout, grooved, 1.8-2.6 cm. long. Inflorescences axillary, racemose or depauperate-paniculate, less than 4 cm. long, sparingly furfuraceous; bracts acute; pedicels 2-3 mm. long. Flowers 5-merous, about 3 mm. long; parts of the prophyllum slightly unequal, the longer about 1 mm. long, acute, glabrous within, furfuraceous without, obscurely lineate; calyx about 1.4 mm. long, brown, scaly, lobes about 0.7 mm. long, triangular, acute, obscurely lineate, margin slightly crenulate; corolla about 1.7 mm. long, white, marked with brown lines, lobes about 1.2 mm. long, oval or rounded, somewhat scaly within and without, margin entire; stamens included, about 0.5 mm. long; anthers broad, oblong, equal to the filaments; pistil about 1 mm. long, flask-shaped; ovary flattened; style stout; stigma obscurely lobed. Immature fruits 3 mm. long, ovoid, brown, calyx-lobes persistent.

Fiji, Viti Levu, Namosi Province, Naitarandamu Mountain, in dense woods on the summit ridge, altitude 1250 meters, September 28, 1927, John W. Gillespie. Type no. 3149.

***Maesa neriifolia*** Gillespie, species nova (fig. 5).

Frutex erectus; foliis glabris, 7-10 cm. longis, 2-3 latis, ellipticis ad elliptico-lanceolatis, apice acuminatis, basi acutis, nervis primariis utrinque 5 ad 7, distinctis, inter se secundariis nervilliformibus numerosis undulatis praeditis; inflorescentiis axillaribus, paucifloris, depauperato-paniculatis, foliis medio aequantibus; sepalis extus furfuraceis, acutis, manifeste lineatis, margine integro; ovario discoideo; stylo crasso; stigmatibus obtusis.

A dense, erect bush. Twigs stout, terete, wrinkled in dried material, marked with large, scattered, raised lenticels. Leaves chartaceous, paler beneath than above, 7-10 cm. long, 2-3 cm. broad; blades elliptic to elliptic-lanceolate, apex acuminate, base acute, margin entire, revolute, lateral nerves 5 to 7 on each side of the midrib, conspicuous, reddish, sparingly branched, extending to the margin, the area between filled with very numerous, fine, wavy, parallel nervelets, lightly marked above but very evident beneath; petioles fairly stout, 12-16 mm. long. Inflorescences axillary, depauperate-paniculate, sparsely branched, few-flowered, about one-half the length of the leaves; bracts acute; pedicels about 1 mm. long. Flowers 5- or 6-merous, about 1.7 mm. long; parts of the prophyllum slightly unequal, the longer about 0.8 mm. long, acute, apiculate, glabrous within, furfuraceous without, margin ragged; calyx about 1.2 mm. long, dark-colored, somewhat rough and scaly, lobes about 0.4 mm. long, broad, deltoid or ovate, acute, conspicuously marked with brown lines, margin crenulate; corolla about 1.4 mm. long, white, marked with longitudinal, brown lines, lobes about 1 mm. long, oval or rounded, somewhat scaly within and without, margin entire; stamens slightly exerted, about 0.5 mm. long; anthers ovoid, equaling the filaments; pistil about 0.6 mm. long; ovary red, flattened, disc-shaped; style fairly stout, in many specimens curved; stigma obtuse. Fruits unknown.

Fiji, Viti Levu, Rewa Province, near the summit of Korombamba Mountain, on a steep slope, altitude 550 meters, August 24, 1927, John W. Gillespie. Type no. 2390.

This plant seems to resemble *Maesa persicifolia* A. Gray (see revised description by Mez)<sup>2</sup> in having nervulose markings on the leaves, but in Gray's species the sepals are described as being not at all lineate; in this the markings are very evident.

<sup>2</sup> Mez. Carl, Engler's Pflanzenreich, IV, fam. 236, p. 48, 1902.

**Maesa parksii** Gillespie, species nova (fig. 6).

Arbor parva; foliis glabris, minute punctatis, 10-13 cm. longis, 3-4 cm. latis, ellipticis ad oblongo-ellipticis, apice obtusis, basi rotundatis, margine leviter crenato; inflorescentiis laxis, racemosis, plerumque in axillis superioribus, quam foliis paullo brevioribus; sepalis extus furfuraceis, acutis, lineatis, margine crenulati; ovario discoideo; stylo crasso.

A small tree, 6 meters high (Parks), glabrous in all parts. Twigs slender, terete, brown or black with abundant, pale, verruculose lenticels, these most conspicuous near the extremities of the twigs. Leaves 10-13 cm. long, 3-4 cm. broad; blades light-green above, pale beneath, chartaceous, minutely punctate, elliptic to elongate-elliptic, gradually narrowed to the obtuse apex, base rounded or somewhat cordate or truncate, margin slightly crenate, lateral nerves 6 to 8 on each side of the midrib, fairly conspicuous above and beneath, veinlets reticulate, rather obscure; petioles slender, 1.5-2 cm. long. Inflorescences mostly equaling the leaves in length; flowers few, scattered along the axis; bracts acute; pedicels about 1.5 mm. long. Flowers 5-merous, about 1.6 mm. long; parts of the prophyllum slightly unequal, the longer about 0.7 mm. long, acute, glabrous within, brownish furfuraceous without, lineate, margin crenulate; calyx about 1 mm. long, glabrous within, brownish furfuraceous without, lobes about 0.3 mm. long, deltoid, acute, lineate, margin crenulate; corolla about 1.2 mm. long, white, marked with brown lines and spots, lobes spreading, about 0.6 mm. long, oval or rounded, apex somewhat truncate, slightly scaly within and without, margin entire; stamens barely exerted, about 0.6 mm. long; anthers ovoid, equaling the filaments; pistil about 0.8 mm. long; ovary red-brown, disc-shaped; style rather thick; stigma obtuse. Fruits unknown.

Fiji, Viti Levu, Tholo North Province, at the edge of dense forests, vicinity of Nandarivatu, altitude 1100 meters, July, 1927, H. E. Parks. Type no. 20509.

**TAPEINOSPERMA** Hooker f.

The genera of Myrsinaceae have been arranged by Mez<sup>3</sup> according to the number and arrangement of the ovules on the central placenta. *Tapeinosperma* is described as having rather numerous erect ovules (6-12) affixed near the base of the placenta. In examining the representatives of this genus in the Parks-Gillespie collection, two undescribed species were discovered, which are evidently close relatives of the other well-known Fijian members of that genus, but in each of which there are only five ovules on the placenta, arranged in a single cycle. A recent examination of *T. clavatum* shows that in it the placentas are 3-ovulate. Following Mez's key to the genera on this basis, one arrives at *Discocalyx*, a genus also occurring in Fiji, but to which the plants under consideration certainly do not belong. It would seem that a reconsideration of the characters of *Tapeinosperma* is desirable.

**Tapeinosperma cephalophorum** Gillespie, species nova (fig. 7).

Arbor parva glabra; foliis usque ad 35 cm. longis et 14 cm. latis, coriaceis, anguste obovatis ad late oblanceolatis, apice obtusis vel rotundatis, basi acuminatis; petiolis fere nullis; inflorescentiis lateralibus, capitatis, 5-9-floris; floribus sessilibus; pedunculis 3 cm. longis, bracteis ad 16 mm. longis, 18 mm. latis, suborbicularis; calycibus circiter 8 mm.

<sup>3</sup> Mez, Carl, Engler's Pflanzenreich, IV, fam. 236, 1902.

longis, late ellipsoideis, rotundatis; corolla crassa, 12 mm. longa, lobis 8 mm. longis, late ellipticis, retusis; fructibus subglobosis, laevibus, circiter 24 mm. diametro.

A small tree, glabrous throughout; twigs up to 1 cm. thick, blunt at the apex; leaf-scars about 8 mm. broad, triangular to suborbicular, raised, conspicuous. Leaves up to 35 cm. long, 14 cm. broad; blades coriaceous, punctate, yellowish-green when dry, narrowly obovate to broadly oblanceolate, broadest well above the middle and gradually narrowed to the acuminate base, lateral nerves not at all conspicuous, straight, arching and anastomosing towards the margin, about 20 on each side of the midrib, veinlets delicately traced, intricately reticulate above and beneath; petioles almost none, broad, stout, winged. Inflorescences lateral, in the uppermost axils, densely capitate, 5-9-flowered, each flower subtended and partially enclosed by a bract; peduncles downward curved, stout, about 3 cm. long. Flowers dark-red, sessile, subglobose; bracts up to 16 mm. long, 18 mm. broad, suborbicular, deeply cupped, round and curving over the flower, chartaceous, punctate; calyx thickened, about 8 mm. long, lobes about 6 mm. long, broadly elliptic, rounded; corolla much thickened at the base, about 12 mm. long, punctate, lobes about 8 mm. long, broadly elliptic, retuse; anthers about 3 mm. long, 2 mm. broad, thick, practically sessile; pistil about 5 mm. long; ovary ovoid; style stout, thick; stigma flattened, discoid. Fruits (Gillespie no. 4442) subglobose, dark-red, about 24 mm. in diameter, minutely apiculate, soft, fleshy; seed about 18 mm. long and broad, deeply 5-lobed, the lobes angular and toothed, integument chartaceous, endosperm white, horny; calyx persistent.

Fiji, Ovalau, near the summit of the main range west of Levuka, altitude 500 meters, January 26, 1928, John W. Gillespie. Type no. 4441. Fruits from a near-by tree (Gillespie no. 4442).

***Tapeinosperma clavatum* Mez (fig. 8).**

*Tapeinosperma clavatum* Mez, in Engler's Pflanzenreich, IV, fam. 236, p. 164, 1902.

"Ramuli crassi, glabri. Folia petiolis  $\pm$  12 mm. longis stipitata, anguste vel oblongo-elliptica, basi longe apice brevius longiusve acuta vel hic raro obtusiuscula,  $\pm$  150 mm. longa, 50 mm. lata, chartacea, glabra, utrinque tenuiter prominulo-costulata et supra prope marginem laxe minuteque retata, punctis multis atris plerisque brevissime lineoliformi-elongatis aucta. Inflorescentiae axillares, submultiflorae, anguste pyramidatae, paupere tripinnatim panniculatae, minute pubescentes, foliis haud multo breviores, ramulis flores valde abbreviate racemosos gerentibus, pedicellis 2-3 mm. longis, validis, apicem versus sensim clavatum incrassatis; flores non nisi imperfecti cogniti; sepala coriacea, paucipunctata; petala percrassa gomphacea; antherae sessiles; ovarium glabrum, ellipsoideum stylo subaequilongo bene crasseque cylindrico, stigmati conico. Fidji-Insel Ovalau; im Gebirge 700 m. ü. M., ein kleiner Baum (Horne n. 52, 180).—Blüht Dezember, Januar (Herb. A. Gray, Kew)."—Mez.

One specimen, Gillespie no. 4513, from the mountains of Ovalau above Levuka, altitude 500 meters, was collected very close to the type locality, where the plants are fairly common. The following description of the floral parts, imperfect in Horne's specimens, was made from alcoholic material:

Calyx conic, about 4 mm. across, lobes scarcely 1 mm. long, very broadly obtuse, emarginate, ciliate, sparingly black-punctate; corolla about 6 mm. in diameter, 6 mm. long, lobes outwardly convex, thickened, about one-fourth united, asymmetric, ovate, shortly acuminate, minutely punctate towards the margin; stamens sessile, about 1 mm. long, triangular-pyramidal; pistil about 3 mm. long, flask-shaped; stigma discoid; placenta ovoid, 3-ovulate; fruits about 6 mm. in diameter, pyriform, strongly apiculate, punctate.

Also represented by Gillespie nos. 2674, 3699, 4037, 4444, and 4645, in some of which the flowers are somewhat smaller. It is interesting to note that the name *da see a*, given to this plant by the natives of Namosi, is the same as that recorded by D. Yeoward for *T. megaphyllum* (description by Hemsley in Kew Bull., no. 85, p. 6, 1894).

***Tapeinosperma punctatum* Gillespie, species nova (fig. 9).**

Arbor parva glabra; foliis ad 28 cm. longis, 9 cm. latis, chartaceis, dense punctatis, oblongo-ellipticis ad oblongo-obovatis, apice rotundatis; petiolo 15-20 mm. longo; inflorescentiis lateralibus, capitatis, circiter 6-floris; floribus bracteatis, sessilibus; pedunculis 6 cm. longis; calycibus 8 mm. longis, lobis manifeste emarginatis, 5 mm. longis, 3 mm. latis; corolla 7 mm. longa, lobis late ellipticis, rotundatis, crassis.

A small tree, glabrous throughout; twigs up to 1 cm. thick, abruptly tapering or blunt at the apex, leaf-scars about 5 mm. broad, triangular to suborbicular, slightly raised, rather conspicuous. Leaves up to 28 cm. long, 9 cm. broad; blades chartaceous to somewhat coriaceous, densely punctate, yellowish-green when dry, oblong-elliptic to oblong-obovate, apex broadly obtuse to rounded, gradually narrowed from above the middle to the acuminate base, lateral nerves about 15 on each side of the midrib, not at all conspicuous, ascending, many times branched, with the veinlets forming delicate reticulations; petioles broad, stout, 15-20 mm. long. Inflorescences lateral, borne near the extremities of the twigs, capitate, about 6-flowered, each flower apparently subtended by a bract of which only the scar is visible in the specimens examined; peduncles downward curved, moderately stout, about 6 cm. long. Flowers chocolate-brown, sessile; calyx about 8 mm. long, furfuraceous within and without, lobes broadly elliptic, strongly emarginate, about 5 mm. long, 3 mm. broad, somewhat thickened; corolla about 7 mm. long, lobes broadly elliptic, rounded, thickened, about 3 mm. long, marked with black spots and lines which are conspicuous on the inside; stamens about 2.8 mm. long; anthers broad; filaments very short, flattened; pistil about 4 mm. long; style rather thick, about 2 mm. long; stigma discoid. Fruits unknown.

Fiji, Viti Levu, Tholo North Province, Nandarivatu, slopes of Loma Langa Mountain, altitude 1050 meters, November 21, 1927, John W. Gillespie. Type no. 3919. Gillespie no. 3696 represents another collection with somewhat larger flowers.

**DISCOCALYX Mez**

***Discocalyx divaricata* Gillespie, species nova (fig. 10).**

Arbor parva; ramulis gracilibus, basi incrassatis; foliis 9-12 cm. longis, 1.5-2.5 cm. latis, supra glabris, subtus sparsim rufo-hirsutis, oblongis ad oblongo-lanceolatis, apice acutis ad acuminatis, basi truncatis ad paulo cordatis; inflorescentiis divaricatis, ad 3.5 cm. longis, paucifloris; pedunculis 2 cm. longis; calycibus 2 mm. diametro; lobis triangularis, acutis, bene ciliatis, 1 mm. longis; corolla 3 mm. longa, lobis ellipticis, rotundatis, nigro-punctatis.

A small tree, about 4 meters tall (Parks), for the most part glabrous. Twigs slender, smooth, terete, their bases characteristically enlarged. Leaves few, clustered at the extremities of the twigs, 9-12 cm. long, 1.5-2.5 cm. broad; blades green and glabrous above, sparsely pilose with reddish hairs beneath, minutely punctate, entire, chartaceous, oblong to oblong-lanceolate, apex gradually narrowed, sometimes slightly acuminate, base truncate to slightly cordate, lateral nerves ascending, about 7 on each side of the midrib, obscure; petioles slender, 1.3-2 cm. long, slightly pilose. Inflorescences in the uppermost axils, divaricate, up to 3.5 cm. long, few-flowered; peduncles slender, about 2 cm. long,

pilose; pedicels about 2 mm. long, pilose. Flowers chocolate-brown; calyx about 2 mm. in diameter, glabrous within, furfuraceous without, lobes broadly spreading, about as long as the tube, more or less triangular, acute, margin thickly ciliate; corolla about 3 mm. long, 4 mm. in diameter, glabrous, lobes about 2.4 mm. long, 1.3 mm. broad, broadly elliptic, rounded, black-punctate at the margin, anthers about 1 mm. long; pistil about 1.3 mm. long; style slender; stigma discoid; ovules apparently 3. Fruits (Gillespie no. 3843) subglobose, attenuate at each end, about 5 mm. in diameter, decidedly apiculate, hard, glabrous, obscurely 5-ridged, especially at the apex.

Fiji, Viti Levu, Tholo North Province, thick forests in the vicinity of Nandarivatu, altitude 1300 meters, July, 1927, H. E. Parks. Type no. 20592, a flowering specimen. Also represented by Parks no. 20534, Gillespie no. 4069.1, both from the same general area. The fruits are described from Gillespie no. 3843, collected in the vicinity of Nandarivatu, altitude 900 meters. Native name: *mbulumbulu*.

**Discocalyx multiflora** Gillespie, species nova (fig. 11).

Arbor parva, calycis lobis exceptis glabra; ramulis basi incrassatis; foliis 7-10 cm. longis, 2.5-3.5 cm. latis, ellipticis ad obovatis, apice acutis ad obtusis, basi acutis; inflorescentiis plurifloris, ad 18 cm. longis; pedunculis 7-10 cm. longis, crassis; calycibus 2 mm. diametro, lobis subtriangularis, manifeste ciliatis; corolla 3 mm. longa, lobis crassis, late ellipticis, acutis, maculatis.

A small tree, glabrous except the calyx-lobes. Twigs fairly stout, smooth, terete, pale-brown, their bases characteristically enlarged. Leaves 7-10 cm. long, 2.5-3.5 cm. broad; blades green above, dull and yellowish beneath, minutely punctate, entire, rather thick, chartaceous, elliptic to oblong-elliptic or obovate, apex acute, often narrowly rounded or obtuse, base acute, slightly decurrent, lateral nerves somewhat ascending, about 12 on each side of the midrib, these and the veinlets finely marked above and beneath; petioles fairly stout, 5-10 mm. long. Inflorescences ample, many-flowered, borne on special branchlike peduncles, up to 18 cm. long, much surpassing the leaves; pedicels about 2 mm. long, minutely furfuraceous; bracts about 1 mm. long, acute; calyx about 2 mm. in diameter, glabrous within, verruculose and minutely furfuraceous without, lobes about 1 mm. long, subtriangular, broadly spreading, conspicuously ciliate; corolla about 3 mm. long, glabrous, lobes about 2 mm. long, rather thick, broadly elliptic, acute, marked on the outside, and much more conspicuously within, with large, glandular spots; anthers about 1.4 mm. long, more or less truncate, broad, marked with large protuberances on the adaxile surface, practically sessile; pistil about 1.2 mm. long; style rather slender; stigma more or less discoid; ovules usually 3. Fruits unknown.

Fiji, Viti Levu, Namosi Province, near the summit of Naitarandamu Mountain, altitude 1100 meters, September 28, 1927, John W. Gillespie. Type no. 5113.

## SAPOTACEAE

### PLANCHONELLA Pierre

**Planchonella vitiensis** Gillespie, species nova (fig. 12).

Arbor parva, ramulis junioribus puberulentis, mox glabris, gracilibus; foliis 7-10 cm. longis, 2-3 cm. latis, junioribus utrinque hirsutis demum glabris, oblongo-obovatis ad elliptico-obovatis, basi longe acuminatis; petiolis 1 cm. longis; floribus axillaribus, fasciculatis; pedicellis 4-8 mm. longis, hirsutis; corolla 1.2 mm. longa; lobis 8 mm. longis,

subtriangularis, rotundis; calycibus 1.2 mm. longis, breviter connatis, extus dense hirsutis, intus glabris, ad marginem ciliatis; ovario hirsuto; fructibus glabris, oblongo-ovoideis, usque ad 12 mm. longis, apiculatis.

A small tree, young parts and flowers puberulent with burnished-coppery hairs; twigs glabrescent, slender, smooth, terete; leaf-scars roundish, raised. Leaves well distributed along the twigs, 7-10 cm. long, 2-3 cm. broad; blades yellowish-green and hairy on both sides when young, at length glabrous, thickly chartaceous, oblong-obovate to elliptic-obovate, apex acute, not at all rounded, base long-acuminate; lateral nerves inconspicuous, these and the veinlets delicately traced beneath; petioles about 1 cm. long, slender. Flowers axillary, fascicled; pedicels moderately stout, 4-8 mm. long, hairy; corolla glabrous, about 1.2 mm. long, lobes 1 mm. broad, broadly triangular, rounded, entire or obscurely crenulate, glabrous; stamens 10, all apparently rudimentary; calyx about 1.2 mm. long, 2 mm. broad, lobes rather thick, shortly united, densely hairy without, glabrous within, rounded, margin distinctly ciliate; ovary about 2 mm. in diameter, densely hairy; style about 1 mm. long, stout or slender; stigma obtuse. Fruits (immature?) glabrous, green, oblong-ovoid, about 12 mm. long, 6 mm. thick, apiculate.

Fiji, Ovalau, on rocky knobs, mountains 3 miles northwest of Levuka, altitude 150 meters, February 1, 1928, John W. Gillespie. Type no. 4546.

#### BURCKELLA Pierre

**Burckella thurstonii** (Hemsley) H. J. Lam (fig. 13).

*Bassia thurstonii* Hemsley ex Hooker's *Icones plantarum*, vol. 26, pl. 2569, 1899.

*Burckella thurstonii* (Hemsley) H. J. Lam: *Jardin Botanique de Buitenzorg*, Bull., ser. 3, vol. 7, p. 259, 1925.

"*Arbor ramulis floriferis crassissimis. Folia ad apices ramulorum conferta, distincte petiolata, valde coriacea, obovato-lanceolata, 5-10 poll. longa, apice rotunda, basi cuneata, supra glabra vel cito glabrescentia, subtus ferrugineo-tomentosa, venis primariis lateralibus utrinque circiter 15-17 subtus elevatis. Flores numerosi, fasciculati, atque pedunculi circiter pollicares ferrugineo-tomentosi, quam pedunculi paullo breviores. Sepala 4, crassissima, ovato-rotundata. Corolla alte 8-lobata, lobis obovato-spathulatis intus infra medium pilosis. Stamina circiter 40, filamentis valde pilosis. Ovarium glabrum, 4-loculare, stylo breviter exserto. Fructus ignotis.*"—Hemsley.

This species is represented by Gillespie nos. 3430 and 4515, from Viti Levu, Naitasiri Province; and Ovalau, respectively. The fruits, which were lacking in Horne's specimen from which the original description was made, are described from Gillespie no. 3430 as follows: fruiting pedicel about 4 cm. long, very thick, stout; calyx thickened, more or less lignified; fruits obovate, pyriform, soft, up to 7 cm. long, about 3.5 cm. thick, longitudinally grooved, dull-green, with rough, russet markings.

#### LUCUMA Molina

**Lucuma vitiensis** (A. Gray) Gillespie, combinatio nova (fig. 14).

*Sapota* (?) *vitiensis* A. Gray, *Amer. Acad. Arts and Sci., Proc.*, vol. 5, p. 328, 1862.

*Sideroxylon vitiensis* Burkill, Linnean Soc., London, Botany, Jour., vol. 35, p. 44, 1901.

"Glabra, foliis oblongis seu obovato-oblongis obtusis vel retusis subcoriaceis reticulatis (4-6-poll. longis) basi in petiolum longiusculum attenuatis; fructu subsessili globoso 3-4-spermum (pollicem diametro).—Ovalau, Feejee Islands, on the coast."—A. Gray.

Mr. Burkill, in referring this species to the genus *Sideroxylon*, has given an amplified description from specimens in the collection of Mr. Crosby from the islands of Eua and Vavau, Tonga, and in that of Horne from the mountains of Ovalau, Fiji. Apparently he did not see the fruits, which are described from Gillespie no. 4559 as follows: fruits soft, glabrous, green with whitish bloom, globose, about 2.5 cm. in diameter, 3-5-seeded; seeds about 16 mm. long, 7 mm. broad, pale-yellow, shining.

This species is represented in the Parks-Gillespie collection by Gillespie nos. 4487, 4494, and 4559, all from Ovalau. It has not been found elsewhere in Fiji.

## EBENACEAE

### MABA Forster

***Maba nandarivatensis*** Gillespie, species nova (fig. 15).

Arbor parva, subglabra; ramulis gracilibus, nigris, partibus junioribus floribusque adpresse pubescentibus; foliis chartaceis, 5-8 cm. longis, 1.5-3 cm. latis, oblongo-ellipticis ad ovatis, apice acutis, basi obtusis, acriter decurrentibus, margine bene undulato; nervis obscuris; floribus masculis solitariis vel trinis; staminibus 10, 2-seriatis; fructibus rubris vel flavis, subglabris, glaucis, circiter 14 mm. longis, ellipsoideis ad obovoideis, obliquis, apiculatis; pericarpio chartaceo; seminibus 4 ad 6; calycibus fructiferis glabris vel sparse pubescentibus, cupulatis, circiter 6 mm. diametro, lobis obtusissimis.

A small, subglabrous tree, with slender, rough, blackened twigs; young parts and flowers appressed-pubescent. Leaves 5-8 cm. long, 1.5-3 cm. broad; blades chartaceous, often pale or yellowish, oblong-elliptic to more or less ovate, apex narrowed, acute, the tip rounded; base obtuse, sharply decurrent, margin notably undulate, especially when dry, nerves and veins obscure or indistinctly reticulate; petioles about 3 mm. long. Male flowers solitary or in 3's (immature), about 3 mm. long; calyx appressed-puberulent without, lobes acute; corolla the same, but silky-haired without; stamens 10, in 2 series, disc at the base covered with tawny hairs. Female flowers unknown. Fruits dry, solitary, red or yellow, subglabrous, glaucous, about 14 mm. long, ellipsoid to obovoid, oblique, shallowly channeled, apiculate; pericarp chartaceous, fragile; partitions membranaceous; seeds 4 to 6, about 1 cm. long, the axis curved; testa brown, sculptured; fruiting pedicel 1 mm. long, thickened; fruiting calyx glabrous or sparsely pubescent, cupulate, about 6 mm. across, lobes about 3 mm. long, very obtuse.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, valley of the Singatoka River, altitude 900 meters, November 17, 1927, John W. Gillespie. Type no. 3848.

This species is closely related to *Maba sandwicensis* A. DC., which also is found in Fiji, but differs in its thinner, undulate leaves, smaller fruiting

calyx, and in the number of stamens in the male flowers. Other numbers from the same locality are: Parks no. 20602, Gillespie no. 3764. It is characteristic of the upper ridges of the high forest, the small trees, attractive with their bright-colored fruits, forming a part of the "overstocked plantation" of Gibbs\*. The native name is *vau ndrai ni singa*. Isalla of Nandari-vatu, an accomplished Fijian herbalist, says that a decoction of the fruits is good for ailments of the back!

#### DIOSPYROS Linnaeus

##### **Diospyros longisepala** Gillespie, species nova (fig. 16).

*Arbor parva*; foliis glabris, 8-14 cm. longis, 3.5-6 cm. latis, elliptico-lanceolatis, apice et basi acutis; fructibus subglobosis, haud punctatis, 2.5 cm. diametro, crasse pedicellatis; calycibus fructiferis ligneis, 22 mm. diametro, disco 12 mm. diametro, plano, haud concavo, lobis 5, anguste oblongis, obtusis, 11 mm. longis, 3 mm. latis, patulis.

A small tree. Twigs glabrous, terete, dark colored, roughened with round, raised lenticels. Leaves glabrous, 8-14 cm. long, 3.5-6 cm. broad; blades chartaceous, sparingly punctate, elliptic-lanceolate, acute at both ends, lateral nerves about 6 on each side of the midrib, veinlets reticulate, fairly conspicuous above and beneath; petioles rather stout, about 12 mm. long. Inflorescences unknown. Fruits solitary, hard, dull-yellow, glabrous, not punctate, slightly apiculate, globose at maturity, about 2.5 cm. in diameter; pericarp brittle, about 0.4 mm. thick; pedicels thick, 2-3 mm. long; fruiting calyx about 22 mm. in diameter to the extremities of the calyx-lobes, woody at the base, which is plane, not at all concave, disc about 12 mm. in diameter; lobes 5 (in the single fruit seen), narrowly oblong, obtuse, about 11 mm. long, 3 mm. broad, elongate, spreading; seeds 4, about 14 mm. long, 8 mm. broad, black, endosperm white, not ruminant.

Fiji, Viti Levu, Tholo North Province, slopes of Loma Langa Mountain, in open woods, altitude 950 meters, December 20, 1927, John W. Gillespie. Type no. 4360.

##### **Diospyros vitiensis** Gillespie, species nova (fig. 17).

*Arbor parva, subglabra*; foliis 8-14 cm. longis, 4-7 cm. latis, ellipticis, subcoriaceis, apice obtusis, basi acutis; floribus feminis breviter crasseque pedicellatis; calycibus junioribus 12 mm. diametro, lobis reflexis, crassis, 4-5 mm. longis; fructibus globosis, laevibus, 2.5 cm. diametro; calycibus acrescentibus, apud fructu ligneis, crassis, 14 mm. diametro, concavis, depresso-cupuliformibus, lobis triangularis, 6 mm. longis, obtusis ad acutis, crassis, valde reflexis.

A small, nearly glabrous tree, with rough, dark bark. Twigs glabrous or slightly puberulent when young, roughened with conspicuous, dark lenticels; leaf-scars large, raised. Leaves glabrous, 8-14 cm. long, 4-7 cm. broad; blades rather thick, subcoriaceous, black-punctate, elliptic to elliptic-lanceolate, apex obtuse to shortly acute, base acute, lateral nerves about 5 on each side of the midrib, more conspicuous beneath than above, veinlets coarsely reticulate, obscure; petioles stout, rough, 5-10 mm. long. Male inflorescences unknown; female flowers (Gillespie no. 4207) immature, solitary or in pairs, on short, thick pedicels; calyx 12 mm. in diameter, lobes reflexed, thick, 4-5 mm. long; corolla at least 5 mm. long, lobes ovate, twice as long as the tube. Fruits solitary, hard, dull, yellowish-green, glabrous, smooth, apiculate, oblong-globose when young, globose at maturity, about 2.5 cm. in diameter; pericarp brittle, about 0.4 mm. thick; pedicel very

\* Gibbs, L. S., A contribution to the montane flora of Fiji: Linnean Soc. London, Botany, Jour., vol. 39, p. 206, 1909.



thick, 3-4 mm. long; fruiting calyx woody, about 14 mm. in diameter, thickened, border somewhat raised to receive the fruit, lobes usually 4, obtuse to acute, triangular, about 6 mm. long, very thick, strongly reflexed. Seeds 8, closely packed together, 15 mm. long, 6 mm. broad, black, shining, testa irregularly striate, raphe slender, endosperm white, not ruminant.

Fiji, Viti Levu, Namosi Province, Naitarandamu Mountain, at place called Navunitaruilau, on wooded ridge between the water-sheds of the Wainimala and the Wainikoroluva, altitude 900 meters, September 27, 1927, John W. Gillespie. Type no. 3083. Native name: *mbole*.

I have recorded this as a small tree, up to 10 meters high, with dense foliage and spreading crown, not at all common. Other collections of this species are: Gillespie nos. 2950 and 4207, all found along streams at fairly high elevations. I have compared specimens collected by me with those collected by Professor W. A. Setchell on Tutuila Island, Samoa, of *D. samoensis* A. Gray, to which this species is related. The branches and twigs of *D. vitiensis* are much rougher, the leaves are larger and thicker, and the calyx is of smaller diameter, its lobes being thicker and more strongly reflexed.

## SYMPLOCACEAE

### SYMPLOCOS Jacquin

#### *Symplocos leptophylla* (Brand) Turrill (fig. 18).

Turrill<sup>5</sup> describes this plant as follows:

*Arbor* ramis glabris vel junioribus leviter puberulis sicco brunneis vel flavo-brunneis vel junioribus flavo-viridibus. *Folia* oblongo-elliptica, apice acuminata, acumine usque ad 1 cm. longo, basi acuta, usque ad 12 cm. longa (acumine incluso) et 5 cm. lata, integra vel leviter crenata, nervis lateralibus utrinque circiter 7 pagina superiore subprominentibus inferiore prominentibus, costa supra impressa infra valde prominente; petiolus usque ad 1.5 cm. longus, fere glaber. *Inflorescentia* axillaris vel terminalis, usque ad 4 cm. longa, simplex vel ramosa, puberula; bracteae ovatae, 2 mm. longae, 1.5 mm. latae, extra puberulae, intra glabrae; bracteolae ovatae, 1.3 mm. longae, 1 mm. latae, extra puberulae, intra glabrae; pedicelli circiter 1 mm. longi. *Sepala* 5, oblongo-ovata, obtusa, 2.25 mm. longa, 1.25-1.5 mm. lata, extra adpresse puberula, intra glabra, margine ciliate. *Petala* 5, late ovata, obtusa 3 mm. longa, 2.5 mm. lata. *Stamina* [multa], indistincte pentadelphae. *Ovarium* semi-inferum; stylus usque ad 1.5 mm. longus. *Fructus* immaturatus ovoideo-ellipsoideus, superne contractus, calyce persistente coronatus, glaber.—*S. stowellii*, F. Muell., var. *leptophylla*, Brand in Engler, Pflanzenreich, iv., 242, p. 37. *S. spicata*, Seem. in Fl. Vit. p. 153, non Roxb.

Fiji (Kandavu), Seemann, 294.

This elegant little tree is common in the forests of Fiji, from sea level to the summits of the highest mountains. The leaves are generally 12-18 cm. long and about 6 cm. broad. As stated by Turrill, numerous well-marked varieties occur. The form with oblong-elliptic, acuminate leaves which are

<sup>5</sup> Turrill, W. B., A. contribution to the flora of Fiji: Linnean Soc. London, Botany, Jour., vol. 43, p. 30, 1915.

subcoriaceous and turn yellow in drying, is distributed throughout Viti Levu and Ovalau, being represented in our collections by Gillespie no. 2006 (Naitasiri Province), Gillespie no. 3902 (Thol-i-Nandarivatu, Tholo North Province), Gillespie no. 3918 (Loma Langa Mountain, Tholo North Province), and Gillespie no. 4431 (Mountains of Ovalau). In Gillespie no. 5115, from Namosi Province, summit of Naitarandamu Mountain, the leaves are almost as broad as long, conspicuously puberulent beneath, and are subcordate at the base. In the hills around Namosi village were found Gillespie nos. 2699 and 2846, with bright-green, chartaceous leaves which do not turn yellow in drying, and finally may be noted Gillespie no. 4113, from Tholo North Province, summit of Mount Victoria, the leaves of which are glabrous, submembranaceous, and less than 9 cm. long.

The bark is thin and brown and peels easily, exposing the very white wood beneath. Native names: *vula wai*, *ravu levu*, *wai ni*, *mari*, *ai soó soo*.

## OLEACEAE

### JASMINUM (Tournefort) Linnaeus

**Jasminum unifoliolatum** Gillespie, species nova (fig. 19).

Frutex scandens glaber; foliis 4-6 cm. longis, 1-1.8 cm. latis, unifoliolatis, chartaceis, lanceolatis ad oblongo-lanceolatis, apice longe acuminatis, interdum mucronatis, basi rotundatis ad late acutis, trinerviis; nervis marginalis obscuris; petiolo 2-3 mm. longo, articulo petioli obscuro; pedunculis 2-7 mm. longis; bracteis 1.5 mm. longis, acuminatis; calycibus fructiferis 2-2.5 cm. longis; receptaculis 3 mm. longis, 2.5 mm. diametro, lobis vix 1 mm. longis, abrupte acuminatis; loculis divaricatis.

A woody vine (Parks), glabrous throughout; twigs terete, pale-brown, very slender. Leaves opposite to subopposite, 4-6 cm. long, 1-1.8 cm. broad, 1-foliolate; blades thinly chartaceous, lanceolate to oblong-lanceolate, apex long acuminate, sometimes mucronate, base rounded to broadly acute, 3-nerved, the two marginals obscure. Flowers unknown. Fruiting peduncles 2-7 mm. long; bracts 2 to 4 pairs, about 1.5 mm. long, acuminate; fruiting calyx 2-2.5 cm. long, limb tubular, gradually enlarged to the receptacle which is about 3 mm. long, 2.5 mm. in diameter, lobes 4, scarcely 1 mm. long, abruptly acuminate. Fruits 1- or 2-loculed; locules divaricate, about 1 cm. long, pear-shaped, black, shining; seeds solitary in each locule, flattened, ovate, about 5 mm. long, brown, shining.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, altitude 1200 meters, July, 1927, H. E. Parks. Type no. 20667.

## APOCYNACEAE

### ALYXIA R. Brown

After studying the species of *Alyxia* with special reference to Samoan plants, Professor Setchell says, "It is evident that the Polynesian species need much more study and comparison with types." I also have had difficulty

in identifying many of the specimens collected by me with the descriptions of those previously found in Fiji. I have laid aside the doubtful plants for the present, but the two treated below are manifestly undescribed.

***Alyxia erythrosperma* Gillespie, species nova (fig. 20).**

Frutex scandens; ramulis glabris, crassis, valde 4-angulatis canaliculatisque; foliis verticillatis, sessilibus, 9-13 cm. longis, 4-5 cm. latis, ellipticis ad oblongo-obovatis, apice obtusis et plerumque emarginatis; fructibus glabris, ellipsoideis, in siccitate valde 5-angulatis, 2.5-3.5 cm. longis, 1.5-1.8 cm. latis, haud moniliformibus; seminibus oblongo-ellipsoideis, circiter 18 mm. longis, 9 mm. latis; albumine ruminato, corneo, rubro.

A woody vine. Twigs glabrous, thick, stout, strongly 4-angled and deeply channeled, the ultimate ones 3-4 mm. thick, pale-brown, with large, scattered, brown lenticels; internodes 4-6 cm. long. Leaves verticillately whorled, usually 4 at a node, sessile, 9-13 cm. long, 4-5 cm. broad; blades glabrous, moderately thick, coriaceous, glossy above and beneath, elliptic to oblong-obovate, apex obtuse and usually notched, gradually narrowed to the broadly acute base, lateral nerves 20 to 30 on each side of the midrib, finely marked but distinct, spreading almost at right angles, in some specimens forked. Flowers unknown. Infructescences axillary, cymose, usually 5 or 6 fruits borne in a cluster, these often paired; pedicels scaly, thick, 6-7 mm. long; peduncles scaly, thick, 1-4 mm. long; bracts and bracteoles ovate, cuspidate, acute, scalelike, about 1 mm. long. Fruits smooth, glabrous, dull-green, ellipsoid, strongly 5-angled when dry, 2.5-3.5 cm. long, 1.5-1.8 cm. thick; seeds two, oblong-ellipsoid, 18 mm. long, 9 mm. broad; endosperm ruminant, horny, dull-red.

Fiji, Viti Levu, Namosi Province, at the edge of the trail between Nangarawai and Selenindrau villages, on the Wainikoroluva, altitude about 400 meters, October 1, 1927, John W. Gillespie. Type no. 3219.

***Alyxia ovalifolia* Gillespie, species nova (fig. 21).**

Frutex scandens; ramulis glabris teretibus vel obscure angulatis; foliis verticillatis, olivaceis, nitidis, 5-7 cm. longis, 2.5-4 cm. latis, ellipticis ad obovato-ellipticis, apice rotundatis vel abrupte obtuseque acuminatis, basi obtusis ad late acutis, margine revolutis.

A woody vine. Twigs glabrous, moderately stout, pale-brown and with gray, raised lenticels, terete or obscurely angled, the ultimate branchlets about 2 mm. thick. Leaves verticillately whorled, usually 3 at a node, 5-7 cm. long, 2.5-4 cm. broad; blades glabrous, thick, coriaceous, dark-green or olivaceous, glossy above, dull beneath, elliptic to obovate-elliptic or oval, apex rounded and usually abruptly and obtusely acuminate, base obtuse to broadly acute, sometimes slightly decurrent, veins obscure beneath, visible above as very fine striations extending to the revolute margin, frequently forked and anastomosing; petioles rather stout, 9-13 mm. long. Flowers unknown. Infructescences axillary; cymose, usually about 8-fruited, these often paired; pedicels thick, about 3 mm. long; peduncles about 1 mm. long; bracts and bracteoles ovate, acute, scalelike, about 1 mm. long. Fruits (immature) smooth, glabrous, pale-green, ellipsoid to oblong, longitudinally angled when dry, 15-20 mm. long, 6-9 mm. broad, apiculate.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, in mossy woods at the summit of Loma Langa Mountain, altitude 1200 meters, December 19, 1927, John W. Gillespie. Type no. 4340.

## CARRUTHERSIA Seemann

**Carruthersia latifolia** Gillespie, species nova (fig. 22).

Frutex scandens subglaber; foliis junioribus subtus praesertim ad basin pilosis, mox glabris, chartaceis, 10-14 cm. longis, 7-9 cm. latis, late ovatis, apice breviter acuminatis, basi cordatis; petiolis 1.5-3 cm. longis, pilosis; inflorescentiis ad 12 cm. longis, quam foliis paullo longioribus; pedunculis 4-6 cm. longis; pedicellis 3-5 cm. longis; bracteis bracteolisque triangularis, ciliatis; floribus 2-3 cm. longis; calycis lobis ciliatis; corolla 2 cm. longa, tubo 10-12 mm. longo, intus hirsuto, lobis 9 mm. longis, subtriangularis; folliculis immaturis circiter 5 cm. longis, valde divaricatis, deorsum puberulis, teretibus, obtusis.

A stout vine, climbing to the tops of trees, subglabrous; twigs glabrous, smooth, terete, reddish-brown, often hollow. Young leaves lightly pilose beneath at the base and on the petioles, soon glabrous, bright-green, somewhat shining above, chartaceous, 10-14 cm. long, 7-9 cm. broad; blades broadly ovate to orbicular, apex shortly acuminate, base cordate, lateral nerves ascending, nearly straight, 7 to 9 on each side of the midrib, these and the veinlets obscure above but evident beneath; petioles stout, 1.5-3 cm. long. Inflorescences in the uppermost axils, up to 12 cm. long, the branches as much as 4 cm. long, spreading; peduncles 4-6 cm. long, rather stout; pedicels 3-5 mm. long; bracts and bacteoles broadly triangular, ciliate. Flowers fragrant, 2-3 cm. long; calyx about 2.5 mm. long and broad, lobes triangular, about 1 mm. long, ciliate; corolla tube 10-12 mm. long, hairy within and at the throat, lobes about 9 mm. long, asymmetric, subtriangular, conspicuously nerved; stamens about 3 mm. long; anthers elongate-sagittate, about 6 mm. long; filaments slender, lightly ciliate; style slender, about 2 mm. long; stigma clavate. Immature follicles 5 cm. long, 3 mm. thick, strongly divaricate, terete, elongate, gradually tapering to the obtuse apex.

Fiji, Taviuni, vicinity of Wairiki (northwest coast), edge of the woods above the coconut plantations, altitude about 400 meters, February 22, 1928, John W. Gillespie. Type no. 4656.

The fruits are described from Parks no. 20678, from Viti Levu, Tholo North Province, Nandarivatu. That specimens of this species were collected by Sir Everard im Thurn is indicated in a note by Turrill,<sup>6</sup> who considered this a form of *Carruthersia scandens* Seemann. The broader, chartaceous leaves, smaller flowers, and hairiness of the young leaves afford ample reasons for considering this a distinct species.

## ALSTONIA R. Brown

**Alstonia vitiensis** Seemann (fig. 23).

*Alstonia villosa* Seemann: op. cit., p. 161, 1866, non Blume.

*Alstonia vitiensis* Seemann: Flora Vitiensis, p. 430, 1873.

"Foliis oppositis longe petiolatis ovalibus utrinque acutis, supra glabris, subtus villosis; floribus ignotis; folliculis longissimis cylindricis glabris.—Viti Levu (Seemann? no. 318)" Seemann. [As Seemann found the original name, *A. villosa*, to be preoccupied, he changed it to *A. vitiensis*.]

<sup>6</sup> Turrill, W. B., A contribution to the flora of Fiji: Linnean Soc. London, Botany, Jour., vol. 43, p. 33, 1915.

A tree, 12 meters tall; twigs stout, about 5 mm. thick at the extremities, glabrous. Leaves 30-40 cm. long, 15-20 cm. broad, but on young, unbranched shoots as much as 55 cm. long and 25 cm. broad, slightly resinous when young, at maturity coriaceous, bright, glossy-green and glabrous above, densely and velvety villous beneath, broadly elliptic to ovate, apex rounded, in some specimens retuse, base acute to acuminate, lateral nerves almost straight, slightly ascending, about 12 on each side of the midrib, impressed above; veinlets numerous, conspicuous above and beneath; petioles very stout, up to 8 cm. long. Inflorescences (Gillespie no. 3653) many-flowered, erect, open, compound-corymbose, the main axis rather stout, sometimes as much as 15 cm. to the first branches which are spreading, the lower ones up to 14 cm. long; pedicels 2-4 mm. long, slender. Flowers pale-yellow to white; calyx glabrous, about 2 mm. long, 1.8 mm. in diameter, lobes about 1 mm. long, subtriangular, rounded, entire; corolla about 11 mm. long, tube glabrous without, about 5 mm. long, enlarged at the middle, lobes about 6 mm. long, 1.2 mm. broad, broadly spreading, strap-shaped, gradually tapering to the rounded apex, faintly marked with parallel veins, the throat and the base of the lobes covered with coarse, whitish hairs; ovary about 1 mm. long, 0.5 mm. thick, ovoid; style about 0.8 mm. long, slender; stigma about 0.8 mm. long, ciliate, conic, the disc at the base evident; anthers about 1 mm. long, acuminate; filaments very short, slender. Fruits numerous; peduncles thick, tough, fibrous; calyx-lobes persistent; follicles about 30 cm. long, 3 mm. thick, longitudinally striate, gradually tapering to an acute or often truncate apex. Seeds about 15 mm. long, linear, glabrous; body about 4 mm. long, 1 mm. broad, attenuate at each end, margin strongly ciliate.

Represented by Gillespie nos. 2467, 3623, and 3653, all from the vicinity of Suva. The tree is called "wild rubber," on account of the abundant milky sap which becomes gummy on exposure to air. Native name: *sa rou ia*.

#### TABERNAEMONTANA Plumier

*Tabernaemontana thurstoni* Horne ex Baker (fig. 24).

*Tabernaemontana thurstoni* Horne ex Baker: Linnean Soc. London, Botany, Jour., vol. 20, p. 368, 1883; Kew Bull., p. 164, 1898.—Burkill, Linnean Soc. London, Botany, Jour., vol. 25, p. 46, 1901.

"Arborea, glabra, foliis petiolatis oblongis magnis subcoriaceis, cymis axillaribus paucifloris quam folia duplo breviores, pedicellis elongatis, calycis pilosi tubo campanulato, segmentis semiorbicularibus, folliculis patulis glabris inaequilateraliter ovoideis."—*Baker*.

A large, glabrous tree, with grayish bark and wrinkled twigs. Leaves 15-22 cm. long, 4-9 cm. broad, chartaceous, elliptic to oblong-elliptic or obovate, apex obtusely acuminate, rounded, base acute, often slightly decurrent; petioles 4-10 mm. long; stipules broad, rounded, connate, about 3 mm. long, conspicuous on young twigs. Inflorescences terminal, about 9 cm. long, few-flowered; peduncles about 4 cm. long; pedicels about 2 cm. long; calyx about 3 mm. long, lobes rounded; corolla about 5 cm. long, white, fleshy, and gelatinous, tube about 2 cm. long, 3 mm. in diameter at the base, enlarged upwards, lobes oblong, falcate; fruiting peduncles 2-3 cm. long, stout, calyx persistent; pods strongly recurved, the tips of each pair often touching, 3-5 cm. long, 2.5 cm. thick, crescent-shaped, rough and warty, valves gaping when dry; seeds reddish, about 13 mm. long, ellipsoid.

The trees have a spreading crown and dense foliage, and the leaves emit a mouselike odor when drying. Flowers fragrant but seldom seen; I believe

that the corollas fall at night. A species originally described in the absence of flowers and mature fruits, of which even Burkill's redescription fails to give the complete characters of the flowers and the measurements of the mature fruits. Represented by Gillespie nos. 3557, 4128, 4296, 4788, and 4809, from Viti Levu and Taviuni.

## GESNERIACEAE

### CYRTANDRA Forster

Plants of the genus *Cyrtandra* are rather common as undershrubs in the forests of Fiji; yet they are seldom conspicuous. The flowers of most species are few, borne either on the older twigs and trunks or else partially concealed among the leaves; they are of a yellow, greenish, or cream color which renders them difficult to detect. Both leaves and flowers of many species are fleshy or gelatinous in texture, and special care is required to prepare good material. Both Parks and I collected them assiduously in the areas where we worked, and by preserving the flowers and fruits in alcohol, we obtained material fairly satisfactory for study. I have compared specimens in the Parks-Gillespie collection with the revised descriptions of Fijian species given by Clarke<sup>7</sup> in his monograph on *Cyrtandreae* and I find ten species which presumably have not been described previously. There is other material that is inadequate for satisfactory identification or description.

#### *Cyrtandra* (§ *Polynesiaeae*) *alba* Gillespie, species nova (fig. 25).

Arbor parva, glabra; foliis 14-20 cm. longis, 4-7 cm. latis, tenuiter chartaceis, ellipticis ad ovatis, apice breviter acuminatis, basi acutis ad acuminatis; fasciculis 1-3-floris, e caulis ramisque vetustioribus; floribus 4-5 cm. longis; pedicellis circiter 1 cm. longis; calycibus deciduis, circiter 1 cm. longis, lobis brevissimis, triangularis; corolla membranacea, circiter 3 mm. longa.

A small tree, glabrous throughout. Twigs moderately stout, soft and fleshy at the extremities. Leaves 14-20 cm. long, 4-7 cm. broad; blades green above, paler beneath, rather thin, chartaceous, elliptic to ovate, apex shortly acuminate, somewhat cuneate toward the acute or acuminate base, margin subentire or in some leaves decidedly crenate, lateral nerves ascending, about 9 on each side of the midrib, veinlets few but distinct; petioles slender, up to 5 cm. long. Cymes 1-3-flowered, from older wood. Flowers 4-5 cm. long, pendent; pedicels about 1 cm. long; peduncles practically none; calyx deciduous, about 1 cm. long, lobes very short, triangular; corolla white, membranaceous, distinctly nerved, about 3 cm. long or even longer, slightly curved, lobes about 5 mm. long, broadly ovate; style exserted. Fruits immature.

Fiji, Viti Levu, Namosi Province, in dense woods on the upper slopes of Voma Mountain, altitude 800 meters, September 6, 1927, John W. Gillespie. Type no. 2671. Native name: *me ndiri tambua*. Gillespie no. 2924, the same species, is from Voma Mountain at a lower elevation.

<sup>7</sup> Clarke, C. B., *Cyrtandreae*, in DeCandolle's *Monographiae phanerogamarum*, vol. 5, pp. 1-304, 1883.

**Cyrtandra (§ Aureae) cephalophora** Gillespie, species nova (fig. 26).

Frutex subglaber, partibus junioribus adpresso-puberulis; foliis 18-23 cm. longis, 6-8 cm. latis, crassis, carnosis, fragilibus, ellipticis, apice acutis, basi acutis ad obtusis; cymis capitatis; floribus numerosis, confertis; capitulis circiter 2 cm. longis; pedunculis crassis, ad 1.5 cm. longis, bracteis numerosis imbricatis brevibus ferentibus; bracteis floriferis foliaceis, perspicuis, confertis, extus glabris, intus nigro-pilosis; floribus circiter 1 cm. longis; calycibus deciduis.

A glabrous shrub. Twigs thick, stout, brown, 4-angled at the extremities, bark papery, pith large. Leaves 18-23 cm. long, 6-8 cm. broad; blade somewhat thick, fleshy, brittle, elliptic to oblong-elliptic or obovate, apex acute, base acute to obtuse, margin crenate-serrate, teeth in many specimens obscure, lateral nerves strongly ascending, 6 to 9 on each side of the midrib, veinlets few and obscure, evident above and beneath; petioles stout, flattened and grooved, 3-4 cm. long. Cymes axillary, capitate, the numerous flowers in a dense cluster about 2 cm. long; peduncles stout, up to 1.5 cm. long, bearing numerous, imbricated bracts; flower-bracts very conspicuous, thickly crowded on the axis, foliaceous, ovate, acute, blackish-pilose within, glabrous without. Flowers about 10 mm. long; calyx deciduous, about 8 mm. long, glabrous except the base which bears a few black hairs, lobes about 3 mm. long, acuminate; corolla broadly campanulate, 8 mm. long, lobes ovate, membranaceous, about 8 mm. long. Immature fruits ovoid, orange-colored, apiculate, about 7 mm. long.

Fiji, Viti Levu, Namosi Province, in dense woods just below the summit of Naitarandamu Mountain, altitude 1200 meters, September, 1927, John W. Gillespie. Type no. 3121. Gillespie no. 2416, representing the same species, came from Naitasiri Province, woods of Tamavua, seven and one-half miles from Suva.

**Cyrtandra (§ Polynesiae) gracilipes** Gillespie, species nova (fig. 27).

Frutex erectus, glaber; ramulis gracilibus; foliis 18 cm. longis, 2-3.5 cm. latis, tenuiter chartaceis ad membranaceis; apice acutis ad acuminatis, basi acuminatis; margine remote repando-serrato; cymis paucifloris, e caulis ramisque vetustioribus; floribus solitariis vel binis, 2-2.5 cm. longis; pedicellis gracilibus; calycibus deciduis, 8 mm. longis, lobis 5, acuminatis, patulis; corolla 15 mm. longa.

A glabrous shrub. Twigs rather slender, pale-brown. Leaves 8-18 cm. long, 2-3.5 cm. broad; blades green on both sides, thinly chartaceous or even membranaceous, elongate-elliptic, apex for the most part acute to acuminate but in some specimens rounded or even retuse, base acuminate, margin irregularly and distantly repand-serrate, especially toward the apical part, lateral nerves ascending, about 5 on each side of the midrib, obscure above but distinct beneath, veinlets obscure; petioles slender, 1-2 cm. long. Cymes mostly from leafless twigs and older wood. Flowers solitary or in pairs, 2-2.5 cm. long; pedicels slender, about 1 cm. long, each bearing at the base 2 narrow, subulate, deciduous bracts; peduncles about 1 cm. long; calyx about 8 mm. long, deciduous, lobes 5, acuminate, spreading, 2-3 mm. long; corolla white, 15 mm. long, tube cylindric, slightly curved, lobes 4-5 mm. long, broadly ovate, strongly reflexed when fully open; pistil about 8 mm. long. Fruits about 15 mm. long, ovoid, apex flattened or even depressed, base more or less truncate; disc absent.

Fiji, Viti Levu, Rewa Province, in dense woods on the southeast slopes of Korombamba Mountain, altitude 300 meters, August 17, 1927, John W. Gillespie. Type no. 2306.

**Cyrtandra** (§ **Campanulaceae**) **glandulosa** Gillespie, species nova (fig. 28).

Frutex; ramulis foliisque junioribus dense hirsutis, pilis multiseptatis; foliis usque ad 50 cm. longis et 20 cm. latis, utrinque hirsutis, crassis, coriaceis, acutis, basi rotundis, nervis primariis utrinque circiter 12, subtus valde perspicuis; cymis densis, subsessilibus, plurifloris, pedunculis pedicellisque 10 mm. longis, bracteis foliaceis, 20 mm. longis, 12 mm. latis, extus pilis paucis capitato-glandulosis ferentibus; floribus 3 cm. longis; calycibus fructiferis persistentibus, extus glanduloso-hirsutis.

A shrub; young parts covered with a dense, velvety coat of golden to brown or black, multiseptate hairs. Twigs of the main axis stout, those of the lateral branches more slender and curved, almost scandent, obscurely and obtusely 4-angled, ultimate ones about 5 mm. in diameter. Leaves variable in size, the largest 50 cm. long and 20 cm. broad; blades hirsute on both sides, dark-green above, much paler and somewhat golden beneath, thick, coriaceous, broadly ovate, apex acute to shortly acuminate, base rounded, margin distantly and minutely serrate, ciliate, densely hairy beneath, lateral nerves about 12 on each side of the stout midrib, these and the reticulate veins impressed on the upper surface, and both very conspicuous beneath; petioles stout, base somewhat thickened, up to 9 cm. long, densely hirsute. Cymes very dense, many-flowered, subsessile, in the uppermost axils; peduncles stout, about 1 cm. long, equal to the pedicels; bracts numerous, foliaceous, about 20 mm. long, 12 mm. broad, ovate, acute, glabrous within, lightly covered on the outside with glandular-capitate hairs; flowers about 3 cm. long; calyx persistent, about 2.4 cm. long, glandular-hairy on the outside, glabrous within, saccate, completely enclosing the fruit at maturity, lobes 3 mm. long, triangular; corolla pale-yellow, tube narrowly cylindrical, sparsely hairy near and on the lobes which are ovate and 4 mm. long. Fruits ovoid, 18 mm. long, apiculate.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, valley of the Singatoka River, on the side towards Loma Langa Mountain, altitude 875 meters, November 17, 1927, John W. Gillespie. Type no. 3852. An unbranched shrub 2 meters high. The leaves shrank enormously in drying. Native name: *mbeta levu*.

**Cyrtandra** (§ **Polynesiae**) **montana** Gillespie, species nova (fig. 29).

Frutex erectus, corolla intus furfuracea excepta glaber; foliis 9-12 cm. longis, 2-3 cm. latis, oblongo-ellipticis ad oblongo-lanceolatis, apice acuminatis, basi acutis; cymis laxis paucifloris; pedunculis pedicellisque gracillimis, circiter 4 cm. longis; bracteis deciduis, 2-4 mm. longis, subulatis ad oblanceolatis; floribus 16 mm. longis; calycibus deciduis, membranaceis, apertis, 8 mm. longis; corolla circiter 1 cm. longa, late infundibuliforme.

A shrub, glabrous except the inside of the corolla. Twigs stout, wrinkled when dry, bark papery. Leaves 9-12 cm. long, 2-3 cm. broad; blades bright-green above, dull beneath, chartaceous, oblong-elliptic to oblong-lanceolate, apex acuminate, tip obtuse, base acute, margin lightly dentate-crenate, lateral nerves gradually ascending, about 7 on each side of the midrib, veinlets few, obscure above but very distinct beneath; petioles 4-5 mm. long. Cymes lax, few-flowered; peduncles and pedicels very slender, the peduncles about 2 cm. long, the pedicels usually shorter; bracts herbaceous, 2-4 mm. long, subulate to oblanceolate, deciduous. Flowers about 16 mm. long; calyx deciduous, membranaceous, spreading, about 8 mm. long, lobes glabrous, about one-half united, ovate-triangular, apiculate; corolla white, broadly funnel-shaped, about 1 cm. long, inside conspicuously furfuraceous, glabrous without, lobes ovate, somewhat acute or even apiculate, faintly marked with about 7 longitudinal nerves. Fruits ovoid, apiculate, about 8 mm. long; disc annular.

Fiji, Viti Levu, Namosi Province, wooded ridge on Naitarandamu Mountain, altitude 1100 meters, September 28, 1927, John W. Gillespie. Type no. 3144.



**Cyrtandra (§ Polynesieae) monticola** Gillespie, species nova (fig. 30).

Frutex erectus; ramulis ultimis ferrugineo-tomentosis, glabrescentibus; foliis 12-15 cm. longis, 3-4 cm. latis, leviter puberulis, oblongo-ellipticis ad oblongo-lanceolatis, apice acutis ad leviter acuminatis, base rotundatis ad late acutis, haud acuminatis; cymis 1-3-floris; pedicellis ad 10 mm. longis; pedunculis circiter 2.5 cm. longis, bracteis subnavigularibus, 15 mm. latis, basi connatis, foliaceis, persistentibus, acutis, intus in partibus inferioribus hirsutis.

A shrub. Twigs at the extremities ferruginous-tomentose, glabrescent, moderately stout, obscurely and obtusely 4-angled, longitudinally ridged. Leaves 12-15 cm. long, 3-4 cm. broad; blades dark-green and entirely glabrous above, paler beneath, densely tomentose when young, at maturity slightly puberulent, oblong-elliptic to oblong-lanceolate, apex acute to somewhat acuminate, base rounded, in some specimens slightly acute but not at all acuminate, margin minutely serrate, ciliate, lateral nerves 5 or 6 on each side of the midrib, strongly ascending, veinlets obscure; petioles puberulent, fairly stout, up to 2 cm. long. Cymes 1-3-flowered; pedicels about 10 mm. long, exerted from bracts; peduncles 2.5 cm. long, stout; bracts boat-shaped, 15 mm. long, 10 mm. broad, foliaceous, connate below, persistent, acute, hairy within on the lower parts, ciliate, obscurely veined. Flowers incomplete in specimens collected by me; calyx deciduous, about 11 mm. long, outside hairy, glabrous within, lobes equal, about 3 mm. long, spreading. Fruits ovoid, acute, apiculate, disc annular, pubescent, lower portions of the calyx persisting at the base of the fruit.

Fiji, Viti Levu, Namosi Province, wooded ridges near the summit of Naitarandamu Mountain, altitude 1100 meters, September 27, 1927, John W. Gillespie. Type no. 3122. This species has the type of inflorescence of *C. involucrata* Seemann, but differs markedly in the shape of the leaves.

**Cyrtandra (§ Campanulaceae) multiseptata** Gillespie, species nova (fig. 31).

Frutex erectus; ramulis junioribus dense pilosis; pilis multiseptatis, mox glabrescentibus; foliis subtus ad costam nervosque persistente pilosis, 20-30 cm. longis, 7-10 cm. latis, apice obtusis ad leviter acuminatis, basi acutis; petiolo 4-6 cm. longo; cymis dense pilosis, 1-3-floris; pedunculis pedicellisque usque ad 5 mm. longis; calycibus persistentibus fructibus integumentibus, extus dense pilosis, 3.5 cm. longis; fructibus elongatis.

A shrub, 2 meters high (Parks). Twigs pilose at the extremities with castaneous to black, multiseptate hairs, the older parts glabrous, thick, light-brown, obscurely and obtusely 4-angled, pith large. Leaves in unequal pairs, 20-30 cm. long, 7-10 cm. broad; juvenile blades densely pilose with castaneous to black, multiseptate hairs some of which are 3 mm. long, later becoming nearly glabrous above but retaining the hairs on the midrib, nerves, and veins beneath, at maturity dark-green above, paler beneath, chartaceous, elliptic to obovate, apex obtuse to slightly acuminate, base acute and somewhat decurrent, margin lightly and irregularly repand-serrate, ciliate, lateral nerves ascending, 9 to 12 on each side of the midrib, united by anastomosing veinlets forming subrectangular blocks, rather conspicuous beneath; petioles densely pilose with brown hairs, slender, deeply grooved, flattened or even winged, 4-6 cm. long. Cymes densely hairy, 1-3-flowered, peduncles less than 5 mm. long, equal to the pedicels; bracts deciduous, about 3 mm. long. Flowers unknown; fruiting calyx persistent, obscurely 2-lobed, on the outside densely pilose with brown, multiseptate hairs, sparingly hairy within, up to 3 cm. long, elongate, subcylindric, lobes approximately equal, acuminate, about 10 mm. long. Fruits ellipsoid, elongate, dull-black, glabrous, about 25 cm. long, 8 mm. thick, completely enclosed by the calyx.

Fiji, Viti Levu, Namosi Province, in wet canyons in the vicinity of Namosi village, altitude 800 meters, July, 1927, H. E. Parks. Type no. 20327.

In fruit shape this species is like *Cyrtandra utriculosa* C. B. Clarke, but *C. multiseptata* has a shorter calyx and long acuminate lobes, and the hairs on the young parts are multiseptate. From this last character the specific name of the plant is derived.

***Cyrtandra* (§ *Polynesieae*) *prattii* Gillespie, species nova (fig. 32).**

Frutex erectus; foliis 16-22 cm. longis, 5-8 cm. latis; junioribus puberulis mox glabrescentibus, oblongis ad oblongo-ellipticis, apice acuminatis, basi obtusis ad acutis; cymis caulinis, pubescentibus; pedunculis crassis, ramulis similimis, simplicibus vel saepe furcatis, usque ad 40 cm. longis; floribus circiter 2.5 cm. longis, luteis; calycibus deciduis, circiter 1.8 mm. longis, extus pubescentibus.

A shrub, juvenile parts pubescent, soon becoming glabrous. Twigs rather stout, gray or light-brown, obscurely and obtusely 4-angled. Leaves in unequal pairs, 16-22 cm. long, 5-8 cm. broad, shrinking in drying; blades dark-green and glabrous above, yellowish beneath, thick, puberulent when young, soon glabrescent, chartaceous, oblong-elliptic, apex acuminate, base obtuse to acute or even decurrent, margin finely and irregularly serrate, lateral nerves 8 to 10 on each side of the midrib, sharply ascending, nearly straight, these joined by anastomosing veinlets, evident above and beneath; petioles rather stout, flattened, or, in some, slightly winged, 1.5-3 cm. long. Cymes pubescent; flowers single in the axils of bracts, clustered near the extremities of the stout, branch-like peduncles which are borne on the trunk, frequently forked, somewhat pendent, and marked at short intervals by bract-scars; bracts about 8 mm. long, 3 mm. broad, oval, chartaceous, pubescent without, especially on the midvein; pedicels about 4 mm. long. Flowers about 2.5 cm. long, curved; corolla yellow, about 1.8 cm. long, 7 mm. broad at the throat, outside covered thinly with tawny hairs, glabrous within, lobes short, oval; calyx deciduous, about 18 mm. long, lobes acute, the upper ones about 7 mm. long, forming a sort of hood, the lower ones shorter, downward curved, pubescent without, slightly hairy within; stamens included. Fruits glabrous, soft, ovoid, about 14 mm. long, 5 mm. thick, apiculate by the persistent style; disc evident, pubescent, about 3 mm. in diameter.

Fiji, Viti Levu, Tholo North Province, in thick woods near the summit of Mount Victoria (Tama ni ivi), altitude 1250 meters, November 28, 1927, John W. Gillespie. Type no. 4091.

This species is named in honor of John Robert Pratt, of the Fiji Kauri Timber and Land Company, whose keen eye and ready axe were the means of bringing many fine specimens into my hands.

***Cyrtandra* (§ *Polynesieae*) *taviunensis* Gillespie, species nova (fig. 33).**

Frutex erectus, glaberrimus; nodis superioribus leviter incrassatis, internodis circiter 1 cm. longis; foliis 18-23 cm. longis, 3.5-5 cm. latis, oblongis ad oblongo-lanceolatis, utrinque acuminatis; cymis 1-3-floris, ad 13 cm. longis, pedunculis pedicellisque gracillimis, bracteis 3 ad 5 paribus, subpersistentibus, 10-15 mm. longis, 3-4 mm. latis; floribus 20 mm. longis, longe pedicellatis; calycibus deciduis; corolla 15 mm. longa; fructibus subellipsoideis, 17 mm. longis.

A glabrous shrub. Twigs moderately stout, obscurely and obtusely 4-angled, wrinkled when dry, nodes near the extremities somewhat enlarged, internodes about 1 cm. long, leaves 18-23 cm. long, 3.5-5 cm. broad; blades dark-green above, yellowish beneath, chartaceous, oblong to oblong-lanceolate, acuminate at each end, margin slightly repand-crenate, especially toward the apex, lateral nerves curved, ascending, about 6 on each side of the midrib, veinlets few but conspicuous beneath, obscure above; petioles flattened, 1-1.5 cm. long. Cymes 1-3-flowered, up to 13 cm. long; peduncles and pedicels very slender, varying in length but usually about equal to each other; bracts herbaceous, subsistent, 3 to 5 pairs, 10-15 mm. long, about 4 mm. broad, with 1 to 3 longitudinal veins. Flowers 20 mm. long; calyx deciduous, 13 mm. long, usually splitting into 3 lobes which are about 7 mm. long, acuminate, often reflexed; corolla pale, cream-colored, about 15 mm. long, tube cylindrical, lobes broadly spreading, often reflexed, oval, densely papillate within. Fruits abundant, red, subellipsoid, about 17 mm. long, slightly apiculate; disc annular.

Fiji, Taviuni, in moist, steep-sided ravines on mountains inland from Somo-somo village, altitude 850 meters, March 5, 1928, John W. Gillespie. Type no. 4782. This is a very common and beautiful shrub, its dark-green leaves and bright-red fruits forming a most pleasing contrast.

**Cyrtandra** (§ *Campanulaceae*) *victoriae* Gillespie, species nova (fig. 34).

Frutex vel arbor parva, ramulis foliisque junioribus dense hirsutis, pilis aureis, multiseptatis; foliis subtus ad costam nervosque persistente hirsutis, crassis, carnis, ellipticis, utrinque acutis; cymis 1-3-floris; pedunculo circiter 1 cm. longo, quam pedicellis longioribus; calycibus persistentibus coriaceis, 3.5 cm. longis, lobis 3-4, inequalibus, acutis, superioribus circiter 1 cm. longis, ad apicem plus minusve connatis, inferioribus paulo brevioribus; corolla 3 cm. longa; fructibus subglobosis, recurvatis.

A shrub or small tree. Juvenile parts densely hirsute with golden to brown, multi-septate hairs; older twigs glabrous, very thick, obscurely and obtusely 4-angled, pale-brown, wrinkled in drying, bark papery, pith large. Leaves opposite, in unequal pairs, 35-44 cm. long, 10-14 cm. broad; when young densely covered on both sides with golden-velvety hairs, later becoming scurfy-pilose on the upper side, persistently and densely hairy beneath, especially on the lateral nerves and veins; blades thick, heavy, rigid and brittle when fresh, yellowish-green, elliptic to broadly elliptic, apex and base acute, margin finely dentate-serrate, the teeth densely ciliate with tufted hairs, lateral nerves 8 to 10 on each side of the midrib, strongly ascending, these and the narrow anastomosing veinlets obscure above but conspicuous beneath; petioles stout, densely hairy, up to 6 cm. long. Cymes axillary, densely hairy, 1-3-flowered; peduncles about 1 cm. long, thick, longer than the pedicels; bracts caducous. Flowers odorless, about 4 cm. long, curved, fleshy; calyx persistent, coriaceous, curved, hairy on the outside, glabrous within, 3-5 cm. long, splitting into 3 or 4 unequal, acute lobes, the upper two 1 cm. long, their tips often joined, forming a sort of hood, the lower ones shorter, downward curved; corolla 3 cm. long, white, tubular to funnel-shaped, hairy on the outside above the middle, throat glabrous, tube lightly ciliate within, lobes practically equal, 3 mm. long, oval; stamens included, about 12 mm. long; anthers broadly ovoid, united; filaments curved; pistil 18 mm. long; stigma discoid. Fruits glabrescent, ovoid to subglobose, about 15 mm. long, 10 mm. in diameter, apiculate by the persistent style, hard, dry, their tips protruding from the calyces.

Fiji, Viti Levu, Tholo North Province, in dense woods at the summit of Mount Victoria (Tama ni ivi), altitude 1250 meters, November 29, 1927, John W. Gillespie. Type no. 4088. Other collections are represented by Parks no. 20129, on Korombamba Mountain, Rewa Province; Gillespie no.

4349, at the summit of Loma Langa Mountain, Tholo North Province; Gillespie no. 3263, near the summit of Vakarongasiu Mountain, Namosi Province. The leaves shrank enormously in drying.

## RUBIACEAE

### OPHIORRHIZA Linnaeus

**Ophiorrhiza peploides** A. Gray (fig. 35 *a, b, c*).

*Ophiorrhiza peploides* A. Gray: Am. Acad. Arts and Sci., Proc., vol. 4, p. 311, 1860.

"Herbacea, pumila, diffuse ramosa; ramis puberulis foliolosis; foliis parvis saepe 3-5-natis vel pseudo-verticillatis spathulatis seu ovato-spathulatis basi longe attenuatis glabris; floribus subsolitariis glabris; filamentis filiformibus styloque exsertis.—Feejee Islands."—A. Gray.

The leaves rarely exceed 2 cm. in length. The flowers are about 11 mm. long; calyx about 1.5 mm. long, the lobes very short, acute; corolla-tube about 5 mm. long, expanded at the throat, lobes about 4 mm. long, oblong, acute, lepidote within, glabrous without. Fruits about 3 mm. long, strongly compressed, about 6 mm. broad, sparsely puberulent, apex broadly and shallowly retuse.

Represented by Gillespie nos. 2618, 2706, 3589, 4061, 4400.1, 4462, 4577, and 4680. Native names: *le ra*; *ndi-ndi-ndi*.

**Ophiorrhiza leptantha** A. Gray (fig. 35, *d, e, f*).

*Ophiorrhiza leptantha* A. Gray: Am. Acad. Arts and Sci., Proc., vol. 4, p. 312, 1860.

*Ophiorrhiza laxa* A. Gray: op. cit.

"Fruticosa, fere glabra; foliis laetevirentibus oblongoseu elongato-lanceolatis utrinque acuminatis longe petiolatis; stipulis utrinque binis setaceis; cyma multiflora puberula; floribus plerisque secundis subsessilibus; corolla alba gracili pollicari, ore tenuissime barbato; staminibus inclusis; filamentis anthera aequilongis; stylo glabro. Feejee Islands."—A. Gray.

In characterizing the two species *Ophiorrhiza leptantha* and *O. laxa*, Asa Gray remarked that they were perhaps confluent. Seemann lists both species, citing one number in his collection for each. Gibbs (Linnean Soc., London, Botany, Jour., vol. 39, p. 151, 1915) states that one species runs into the other, but Turrill (Linnean Soc. London, Botany, Jour., vol. 43, p. 24, 1909), judging from specimens collected by Sir Everard im Thurn, thinks they are quite different.

On examination of an ample suite of 76 specimens from Viti Levu, Ovalau, and Taviuni, I am unable to distinguish the two supposed species. Some plants are entirely glabrous, and others are markedly puberulent, especially on the young parts. The margin of the leaf is often ciliate, with multiseptate,

bristly hairs. The leaves are usually 7-11 cm. long, 2-4 cm. broad; the petioles are up to 3 cm. long. On one specimen, collected in deep shade near the summit of Naitarandamu Mountain, the leaves are as much as 15 cm. long and 5 cm. broad, but the flowers are almost identical with those of smaller leaved forms from lower elevations. The fruits are strongly compressed, about 7 mm. broad. In the absence of characters of constancy and importance, I regard them all as a single species.

Represented by Parks nos. 20535, 20583, and 20926; Gillespie nos. 2014, 2046, 2159, 2229, 2247, 2439, 2440, 2481, 2684, 2685, 2987, 3122, 3294, 3295, 3690, 4090, 4361, and 4430. Native names: *ndrai ni kau ni mbata*, *ndrai ni kau ni ula*, *mothi-mothi*. The name *mothi-mothi*, which means "go to sleep," is applied to any plant which folds its leaves at night; it would seem to be without significance in this species.

#### DOLICHOLOBIUM A. Gray

**Dolicholobium macgregori** Horne ex Baker (fig. 36).

*Dolicholobium macgregori* Horne ex Baker: Linnean Soc. London, Botany, Jour., vol. 20, p. 360, 1884.

"Arborea, glabra, ramulis validis tetragonis, stipulis magnis oblongis foliaceis persistentibus, foliis breviter petiolatis magnis obovato-oblongis, floribus, 3-4 nis axillaribus racemosis magnis albis suaveolentibus, ovario longissimo cylindrico, calycis limbo magno patellaeformi."—BAKER. Type locality: Banks of the Tamavua river, near Suva, Viti Levu, Horne no. 690.

A medium-sized tree, with very thick rough twigs which are obscurely 4-sided when young; leaf scars prominent. Leaves 23-40 cm. long, 12-20 cm. broad; blades often glabrous, subcoriaceous, bright-green and shining above, paler beneath, the nerves often appressed-pubescent especially when young, broadly obovate to elliptic, apex rounded to very broadly acuminate, base (generally concealed by the stipules) rounded, lateral nerves prominent, 14 to 17 on each side of the midrib, about 17 mm. apart, slightly curved, ascending, extending to the very margin, connecting veins very numerous, subprominent, perpendicular to the laterals; stipules foliaceous, persistent, obovate, apex rounded, longitudinally lineate, verrucose near the base, as much as 8 cm. long and 4 cm. broad; petioles very stout, about 2 cm. long. Inflorescences axillary, generally 3- to 5-flowered; peduncles about 3 cm. long; pedicels short, ascending; flowers white, very fragrant; calyx-tube cylindrical, narrow, pubescent, about 2.5 cm. long, limb patelliform, about 8 mm. long, 10 mm. in diameter, the margin ciliate with tawny hairs; corolla-tube narrowly funnel-shaped, appressed-pubescent with tawny hairs, 3-4 cm. long, lobes spreading, as much as 2.5 cm. long, 1.5 cm. broad, obovate, rounded, lineate. Fruiting peduncles stout, about 5 cm. long; fruits glabrescent, cylindrical, striate, as much as 35 cm. long, 7 mm. thick, apex truncate or crowned by the calyx-limb which may become 2 cm. in diameter; seeds pale-brown, scarcely 1 mm. broad, each end long-caudate, about 10 mm. long.

Represented by Parks nos. 20127, 20284, and 20896; Gillespie nos. 2297, 2368, all from Viti Levu, in the vicinity of Suva. The ovary enlarges very rapidly after fertilization, and the fruits, after hanging for some time, become shreddy, releasing the small seeds in great numbers. Native name: *so so ni oora*. Parks no. 20896 furnished the subject for figure 36.

## BADUSA A. Gray

The characters of the genus *Badusa* are given by Gray (Am. Acad. Arts and Sci., Proc., vol. 4, p. 308, 1860) as follows:

Calyx tubo clavato; limbo brevi cupulato 5-dentato persistente. Corolla hypocraterimorpha, glabra, 5-fida; limbo tubum adaequante, lobis lineari-oblongis aestivatione contorto-imbricatis (uno exteriore), explicatis patenti-recurvis. Stamina 5, exserta: filamenta filiformia, imae basi corollae inserta, inferne villosa; antherae lineares, dorso supra basim affixae, mox versatiles. Stylus filiformis, ramis 2 brevibus cum stigmatibus subcapitatis intus planis in clavellam angulatam conglutinatis. Ovarium biloculare. Ovula in placentis lineari-oblongis crassis plurima, anatropa, sese imbricantia, superiora adscendentia, inferiora pendula. Capsula clavato-oblonga, cartilaginea, bilocularis, polysperma, ab apice ad basim septicida. Semina ovalia, modice lata. Embryo rectus albumine carnoso paullo brevior; radícula tereti cotyledonibus ovatis longiore. Fructices sempervirentes? Oceanici, glabri; stipulis brevibus vaginatis; pedunculis axillaribus apice foliatis cymoso-plurifloris; floribus albis.

*Badusa corymbifera* A. Gray (fig. 37).

*Badusa corymbifera* A. Gray: op. cit.

A slim tree, with short, slender branches, glabrous except the flowers. Leaves as much as 13 cm. long, 4 cm. broad; blades shining, thin-chartaceous or submembranaceous, often yellowish when dry, oblong to elliptic-lanceolate, apex obtuse, rounded, base acute to acuminate, lateral nerves 7 to 9 on each side of the midrib, obscure above, very prominent beneath, veins indistinct; petioles about 1 cm. long. Inflorescences axillary, erect, up to 6 cm. long, about 15-flowered; peduncles stout, often 4 cm. to the first branches; pedicels about 5 mm. long; flowers rather conspicuous; calyx about 6 mm. long; ovary narrow; limb truncate or obscurely toothed, about 2 mm. in diameter, margin ciliate; corolla about 12 mm. long; stamens often 5 mm. long. Fruits 1 cm. long, becoming shreddy.

Represented by Parks no. 20035; Gillespie nos. 4261 and 4611, all from Viti Levu, in the woods near Suva Harbor, in limestone soil.

## NEONAUCLEA Merrill

*Neonauclea vitiensis* Gillespie, species nova (fig. 38).

Arbor, ramulis junioribus pilosis glabrescentibus; foliis 14-20 cm. longis, 9-12 cm. latis, coriaceis, late ellipticis ad obovatis, apice obtusis, basi rotundis, interdum obscure cordatis; stipulis ovatis, obtusis, 15-18 mm. longis, 10 mm. latis, basi pilosis; inflorescentiis solitariis, terminalibus; pedunculis 2-5 cm. longis; calycibus 7-8 mm. longis, pubescentibus, lobis 6 mm. longis, clavatis, deciduis; corolla 10-12 mm. longa, lobis leviter ciliatis exceptis glabra; stylis longe exsertis.

A nearly glabrous tree. Twigs glabrous, thick, stout, rough, young parts grayish pilose, obscurely 4-angled, flattened, brownish, marked with horizontal striations, leaf-scars round. Leaves 14-20 cm. long, 9-12 cm. broad; blades thick, coriaceous, light-green above and beneath, broadly elliptic to obovate, apex broadly obtuse, base rounded or sometimes cordate, often slightly inequilateral, entire, lateral nerves about 5 on each side of the midrib, veinlets obscure above but distinct beneath; petioles stout, 2-4 cm. long; stipules intrapetiolar, caducous, ovate, obtuse, 15-18 mm. long, about 10 mm. broad, pilose near the base. Inflorescences solitary, terminal, forming a compact, globose head,

5 cm. in diameter including the tips of the long styles; peduncles 2-5 cm. long; calyx 7-8 mm. long, grayish pubescent within and without, lobes about 6 mm. long, clavate, deciduous; corolla dark-red, 10-12 mm. long, 2.3 mm. broad at the throat, narrow, tubular, nearly glabrous, lobes about 15 mm. long, lightly ciliate; anthers oblong, about 1.5 mm. long, included; filaments about 0.3 mm. long, flattened, affixed rather high in the corolla-tube; pistil about 17 mm. long; style long exerted; stigma clavate. Receptacle globose, gray-pubescent, about 12 mm. in diameter.

Fiji, Viti Levu, Tholo North Province, steep slopes of the canyon of the Mata ni Wasi, northeast of the Government Station, Nandarivatu, altitude 750 meters, December 4, 1927, John W. Gillespie. Type no. 4188. Several large trees with trunks up to 45 cm. in diameter were found, and the specimens were taken from a tree which overhung the trail. *Geniostoma rupestre*, *Dodonaea viscosa*, *Alphitonia excelsa*, *Scaevola floribunda*, *Metrosideros* sp., and other plants characteristic of the leeward slopes of Viti Levu were growing near by. Native name: *vu toro*.

This genus was first reported for the Pacific islands by Reinecke for Samoa (*Sarcocephalus pacifica*) in 1898, and two more species have since been added for that island group. This seems to be the first record of the genus for Fiji.

#### TIMONIUS Rumph

**Timonius affinis** A. Gray (fig. 39).

*Timonius affinis* A. Gray: Am. Acad. Arts and Sci., Proc., vol. 4, p. 36, 1860.

"Foliis ovalibus obscure penniveniis, venis subreticulatis, retibus venularum varie hinc inde contrariis;—caeterum praecedentis," that is, "pedunculis fructiferis petiolum aequantibus; pyrenis linearibus, putamine tenui. Feejee Islands."—A. Gray.

Leaves 10-14 cm. long, 3.6-4 cm. broad; petioles 2-3 cm. long; stipules as much as 7 cm. long, often pinkish when young, and soon caducous. Male inflorescences few-flowered; peduncles rather thick, up to 2 cm. long; pedicels somewhat shorter, or none; calyx and corolla as in the female; anthers about 7 mm. long, slender, almost linear, slightly exerted; filaments very short, attached slightly below the middle; rudimentary pistil about 6 mm. long. Female flowers solitary in the uppermost axils; pedicels thick, rigid, 1.5-2 cm. long; calyx about 5 mm. long, truncate, subcylindric or more or less barrel-shaped, in some specimens minutely toothed or notched; corolla faintly fragrant, about 17 mm. long; lobes acute, about 4 mm. long, broadly spreading or reflexed; style about 15 mm. long (including the stigma), the branches 4 to 8, the longest slightly protruding from the corolla tube; anthers present but undeveloped. Fruits subglobose to ovoid, about 13 mm. long, black, shining. In drying, the fleshy part contracts, and the ends of the numerous seeds form small wartlike projections which are arranged in longitudinal rows. Figure 39, *f*, represents a cross section of an immature fruit. The corolla has not yet fallen; corolla and style are thickened and much shorter than those of the unfertilized flower (fig. 39, *d*).

Represented by Parks no. 20891 and Gillespie nos. 2620, 2890, 3106, 3552, 3755.5, 3799, 4292, 4342, 4468, 4512, 4613, and 4817, from the islands of

Viti Levu, Ovalau, and Taviuni, over an altitudinal range from sea level, at Lami, to the summits of the highest mountains of Tholo North Province.

*Timonius affinis* grows as high as 8 meters, with a trunk diameter of 10 meters. It is the well known *tiri vanua*, probably so named because its leaves resemble those of the *tiri* (*Rhizophora* sp.). A native of Namosi called it *moka-moka*.

#### IXORA Linnaeus

##### *Ixora amplexicaulis* Gillespie, species nova (fig. 40).

Arbor parva 4 ad 6 m. alta, inflorescentiis exceptis glabra; ramulis gracilibus, teretibus; foliis subsessilibus, 11-15 cm. longis, 4-5.5 cm. latis, oblongis ad oblongo-ellipticis, interdum plus minusve ligulatis, apice acutis ad rotundis, basi cordatis, subamplexicaulibus, nervis primariis utrinque circiter 10, subtus conspicuis; stipulis 5 mm. longis; petiolo 1-2 mm. longo; inflorescentiis plurifloris, valde abbreviatis, confertis, circiter 4 cm. diametro; bracteolis 9 mm. longis, sparse ciliatis; calycibus 8 mm. longis; lobis linearibus, 7 mm. longis, intus et ad marginem leviter ciliatis; corolla glabra, saltem 15 mm. longa; lobis ellipticis, rotundis, 3 mm. longis.

A tree 4-6 meters tall, glabrous throughout except the inflorescences; twigs slender, smooth, terete, or slightly flattened at the extremities. Leaves subsessile, 11-15 cm. long, 4-5.5 cm. broad; blades bright-green and shining above, paler beneath, subcoriaceous, oblong to oblong-elliptic, some more or less strap-shaped, apex acute to rounded, base cordate, subamplexicaul, lateral nerves emerging almost at right angles, about 10 on each side of the midrib, these and the veinlets conspicuous beneath; stipules abruptly acuminate, basal part about 2 mm. long, 3 mm. broad, narrowed part about 3 mm. long; petioles 1-2 mm. long, thick, stout. Inflorescences terminal, many-flowered, greatly abbreviated, crowded, about 4 cm. in diameter. Flowers (Gillespie no. 3753.5) sessile, unexpanded in our specimens; bracteoles about 9 mm. long, linear, sparsely ciliate; calyx about 8 mm. long, lobes linear, about 7 mm. long, 1 mm. broad, lightly ciliate within and at the margins, shortly united at the base; corolla red, glabrous, at least 15 mm. long, lobes elliptic, rounded, about 3 mm. long; stamens about 4 mm. long; filaments slender; stigma-lobes nearly 2 mm. long; style very slender. Fruits glabrous, crimson, subglobose, about 7 mm. in diameter; calyx lobes persistent.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, altitude 1200 meters, July, 1927, H. E. Parks. Type no. 20574. This collection bore fruits only; the immature flowers are described from Gillespie no. 3753.5, collected in the same vicinity. Other collections are: Gillespie nos. 3753 and 3399.9, all from the woods about Nandarivatu. Native names: *lera, sa lera*.

##### *Ixora elegans* Gillespie, species nova (fig. 41).

Frutex ad 4 m. altus, inflorescentiis exceptis glaber; ramulis junioribus compressis, vetustioribus teretibus; foliis 12-16 cm. longis, 4-7 cm. latis, chartaceis, nitidis, ellipticis ad oblongo-ellipticis, utrinque obtusis ad acutis; stipulis 4-6 mm. longis, abrupte acuminatis; petiolo ad 2 cm. longo; inflorescentiis usque ad 12 cm. longis, apertis, ramis primariis paucis, patulis, usque ad 10 cm. longis; pedunculis 5 mm. longis; bracteis foliaceis, ovatis ad ellipticis, petiolatis, acutis, 15-23 mm. longis, 5-10 mm. latis; pedicellis circiter 5 mm. longis, tenuibus; bracteolis 1 mm. longis, acuminatis; calycibus 1.5 mm. longis, hispidulis; lobis circiter 0.5 mm. longis, rotundatis, minute ciliatis, quam tubo brevioribus; corolla



glabra; tubo 6 mm. longo; lobis 4-5 mm. longis, ligulatis, rotundatis; fructibus subglobosis, 9 mm. diametro.

A shrub, about 4 meters tall, glabrous except the inflorescences; twigs slender or stout, flattened when young, later terete. Leaves 12-16 cm. long, 4-7 cm. broad; blades thinly chartaceous, bright-green, shining above and beneath, elliptic to oblong-elliptic, sometimes obovate, obtuse to acute at each end; lateral nerves slightly arched, somewhat ascending, 8 to 12 on each side of the midrib, these and the veinlets rather obscure above, conspicuous beneath; stipules 4-6 mm. long, abruptly acuminate, the narrowed part about 3 mm. long; petioles up to 2 cm. long, stout. Inflorescences terminal, many-flowered, up to 12 cm. long, primary branches spreading, up to 10 cm. long; peduncles about 5 mm. long, stout; bracts foliaceous, ovate to elliptic, petiolate, acute, 15-23 mm. long, 5-10 mm. broad; pedicels about 5 mm. long, slender; bracteoles about 1 mm. long, acuminate, minutely ciliate. Flowers fragrant; calyx about 1.5 mm. long, 1 mm. in diameter, hispidulous, lobes about 0.5 mm. long, rounded, minutely ciliate; corolla crimson, glabrous, tube about 6 mm. long, lobes 4-5 mm. long; 1 mm. broad, elongate, ligulate, rounded, strongly reflexed at maturity; anthers 4-5 mm. long, elongate-acuminate; style filiform, up to 13 mm. long, pilose except the apical part; stigma nearly 3 mm. long, lobes reflexed. Fruits (Gillespie no. 4835) red, hard, subglobose, about 9 mm. in diameter. Seeds flat, about 4 mm. in diameter.

Fiji, Viti Levu, Naitasiri Province, vicinity of Nasinu, about 9 miles from Suva, in open woods, altitude 150 meters, October 24, 1927, John Gillespie. Type no. 3526. Gillespie no. 4835, from which the fruits are described, was collected on the island of Taviuni, on the summit ridge, trail inland from Somo-somo, altitude 1000 meters.

***Ixora* (§ *Phylleilema*) *nandarivatensis* Gillespie, species nova (fig. 42).**

Arbor parva, floribus exceptis glabra, ramulis teretibus; foliis 6-9 cm. longis, 1.5-2.5 cm. latis, anguste ellipticis ad oblongo-ellipticis vel lanceolatis, apice acuminatis, basi acutis, rariter rotundatis; nervis obscuris; stipulis aristatis, ad 8 mm. longis; inflorescentiis 3-floris; bracteis 2, foliaceis, late cordatis, sessilibus, subpersistentibus, circiter 17 mm. longis; floribus subsessilibus; calycibus 3 mm. longis, sparse puberulis, lobis brevibus; corollae tubo 2 cm. longo, lobis 6 mm. longis; fructibus late ellipsoideis, 5 mm. longis, calycibus persistentibus coronatis.

A bush or small tree, glabrous except the flowers, with thin, terete twigs. Leaves 6-9 cm. long, 1.5-2.5 cm. broad; blades thinly chartaceous, green above and beneath, somewhat bullate when dry, narrowly elliptic to oblong-elliptic or lanceolate, apex acuminate, mucronate, base narrowed, acute, rarely rounded; primary nerves obscure; stipules aristate, as much as 8 mm. long; petioles about 5 mm. long. Inflorescences 3-flowered, enclosed by two leaf-like, broadly cordate, sessile, subpersistent bracts which are reddish in many specimens, about 17 mm. long. Flowers fragrant, subsessile; calyx about 3 mm. long, sparsely puberulent, lobes short, acute; corolla deep-red to purple; tube narrow, cylindric, about 2 cm. long, lobes contorted in bud, spreading or reflexed, about 6 mm. long, 2 mm. broad, oblong, acute; anthers 3-4 mm. long, exerted on slender filaments; style slender, exerted; stigma thickened, lobes about 1 mm. long. Fruits red, broadly ellipsoid, about 5 mm. long, crowned by the persistent calyx.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, valley of the Singatoka, altitude 900 meters, December 14, 1927, John W. Gillespie. Type no. 4305. Also represented by Parks nos. 20582 and 20585, both from the same area and not found elsewhere. Resembles *Ixora vitiensis* A. Gray, but the leaves are narrower and acute at the base.

***Ixora somosomaensis* Gillespie, species nova (fig. 43).**

Arbor, partibus junioribus leviter puberulis; foliis 18-25 cm. longis, 9-14 cm. latis, supra glabris, subtus minute puberulis, late ellipticis ad ovatis, apice acutis ad acuminatis, base late acutis ad obtusis; stipulis subulatis, 5-6 mm. longis; inflorescentiis corymbosis breviter pedunculatis; floribus subsessilibus, confertis, pilosis; bracteolis pilosis, linearibus, 5 mm. longis, persistentibus; calycibus pilosis, 5 mm. longis, lobis lineari-lanceolatis, acuminatis, tubo quam longioribus; corolla 15-17 mm. longa, lobis 5 mm. longis; stylis longe exsertis.

A small tree. Twigs stout, rigid, lightly puberulent at the extremities, smooth, terete or slightly flattened. Leaves 18-25 cm. long, 9-14 cm. broad; blades dark-green and glabrous above, paler, minutely and velvety pubescent beneath, moderately thick, broadly elliptic to ovate, apex acute to acuminate, base more or less obtuse and slightly decurrent, lateral nerves tapering, about 9 on each side of the midrib, veinlets more conspicuous beneath than above; petioles stout, 10-15 mm. long; stipules broad at the base, abruptly narrowed, subulate, acuminate, 5-6 mm. long, caducous. Inflorescences many-flowered, axillary or terminal, corymbose, up to 5 cm. in diameter; peduncles about 1 cm. long. Flowers sessile, fascicled, fragrant, the pilose, linear bracteoles about 5 mm. long; calyx grayish pilose within and without, about 5 mm. long, lobes subequal, acuminate, about 3 mm. long; corolla dark-red, glabrous within, pilose without, 15-17 mm. long, tube narrow, cylindric, lobes about 5 mm. long, spreading to strongly reflexed, oblong-ovate; stamens exserted, 4-5 mm. long; anthers oblong-acuminate; filaments about 1 mm. long, attached near the mouth of the tube; pistil up to 2 cm. long; style very slender, long exserted; stigma clavate at first, the lobes later reflexed, up to 2 mm. long. Fruits (Gillespie no. 4828.t) glabrous, red, subglobose, 7 mm. in diameter, the calyx-lobes persistent.

Fiji, Taviuni, slopes of the main range, vicinity of Somo-somo village, altitude 900 meters, March 5, 1928, John W. Gillespie. Type no. 4828. flowering specimen. The fruits are described from another plant, Gillespie no. 4828.1, which grew near by.

***Ixora* (§ *Phylleilema*) *vitiensis* A. Gray (fig. 44).**

*Ixora* (§ *Phylleilema*) *vitiensis* A. Gray: Am. Acad. Arts and Sci., Proc., vol. 4, p. 40, 1860.

"Glaberrima; foliis ovato-oblongis acuminatis basi rotundatis, floralibus seu bracteis late cordatis arcte sessilibus capitulum triflorum fulcrantibus; dentibus calycis brevissimis; corolla glabra; stipulus longissime aristatis. Ovalau, Feejee Islands."—A. Gray.

A small tree, glabrous throughout. Leaves 6-9 cm. long, 3-4.5 cm. broad; blades chartaceous, both sides alike, ovate to oblong-elliptic, apex acuminate, often mucronate, base rounded, nerves inconspicuous; stipules aristate, about 6 mm. long; petioles 1-5 mm. long. Inflorescences 3-flowered, enclosed by 2 leaf-like, cordate, sessile bracts about 15 mm. long. Flowers fragrant; calyx about 2 mm. long, lobes short, acute; corolla red, tube very narrow, cylindric, about 14 mm. long, lobes reflexed, about 5 mm. long, oblong; anthers about 3 mm. long, exserted on slender filaments; stigma-lobes about 1 mm. long. Fruits red, obovoid, about 5 mm. long, crowned by the persistent calyx.

Gillespie no. 4009, collected at the type locality on Ovalau, agrees in every essential with the type, of which a photograph is at hand. Gillespie no. 4610, the same species, is from Viti Levu, Rewa Province, limestone hills near the quarry, 4 miles west of Suva along the coast.

## PSYCHOTRIA Linnaeus

**Psychotria brackenridgii** A. Gray (fig. 45).

*Psychotria brackenridgii* A. Gray: Am. Acad. Arts and Sci., Proc., vol. 4, p. 44, 1860.

"*Stipulis caducis; foliis oblongo-lanceolatis utrinque acutis vel acuminatis basi in petiolum longiusculum angustatis fere glabris chartaceis; pedunculis 1-5 terminalibus elongatis cymam trichotomam multifloram gerentibus cum radiis pedicellis ferrugineo-puberis; fructibus ovalibus 8-costatis truncatis calycis limbo parvo cupuliformi coronatis puberulis; pyrenis tenuiter cartilagineis intus planis dorso convexo carinato-tricostatis.* Feejee Islands (in fruit)."—A. Gray.

A shrub or small tree, with rather stout twigs, up to 6 meters tall, generally found in partly shaded situations; young parts puberulent. Leaves 15-25 cm. long, 5-8 cm. broad; blades oblong-elliptic to oblong-obovate, apex generally shortly acuminate but often acute or rounded, base narrowed, acute, lateral nerves about 13 on each side of the midrib, obscure above but very prominent beneath, remarkably uniform in size and almost equidistant; stipules about 1 cm. long, ovate, caducous; petioles 2-5 cm. long. Inflorescences 3-7 (or 10), terminal, many-flowered, trichotomously cymose, 4-10 cm. long; peduncles about equaling the pedicels, both ferruginous-puberulent or sometimes glabrous, the latter branching almost at right angles to the main axis. Flowers inconspicuous; calyx cup-shaped, glabrous or minutely puberulent without, lobes very obtuse, margin ciliate; corolla funnel-shaped, about 11 mm. long, lightly pilose without, especially towards the base, with whitish hairs, densely pilose on the inside below the middle, lobes about 2 mm. long, oblong, rounded, strongly reflexed; anthers about 1.5 mm. long, exserted; filaments about 3.5 mm. long; style slender, about 4 mm. long; stigma-lobes about 1 mm. long. Fruits greenish or (at maturity) red, smooth or puberulent, soft, fleshy, about 13 mm. long, 9 mm. broad, ellipsoid, apex crowned by the cupuliform calyx-limb; seeds thin, plane within, dorsally convex, 3-ribbed, the middle one stronger than the others, erose. When dry the fruits appear truncate at the apex, and 8-ribbed.

Common in the forests of the southeastern provinces of Viti Levu, in Naitasiri, Rewa, Namosi, and Serua; one specimen from Tholo North Province, slopes of Loma Langa Mountain, altitude 1000 meters. The forms most similar to a photograph of the type are from Rewa Province, slopes of Korombamba Mountain, represented by Parks no. 20111, and Gillespie nos. 2140 and 2249 (the subject of figure 45). Detailed parts were drawn from material preserved in alcohol.

**Psychotria filipes** A. Gray (fig. 46).

*Psychotria filipes* A. Gray: Am. Acad. Arts and Sci., Proc., vol. 4, p. 46, 1860.

"*Glabra; stipulis caducis; foliis lanceolato seu obovato-oblongis acuminatis basi paullo angustata saepius subcordatis longe petiolatis; pedunculis terminalibus 2-5 filiformibus folia subaequantibus cymam effusam plurifloram gerentibus, radiis 3-4 pedicellisque gracilibus; calycis limbo crateriformi 4-dentato ovario brevior; corolla brevi 4-fida fauce fere nuda, fructu immaturo ovato.* Feejee Islands."—A. Gray.

A glabrous shrub, young twigs 2-sided, at length terete. Leaves 10-15 cm. long, 4.5-7 cm. broad; blades chartaceous, ovate-oblong to oblanceolate, apex acuminate, base

narrowed, rounded to shortly cordate or truncate, lateral nerves 11-13 on each side of the midrib, ascending, obscure above, prominent beneath, with indistinct veins; petioles 2-4 cm. long, rather stout. Inflorescences terminal, ascending, many-flowered, as much as 10 cm. long; peduncles 2-6, often branching near the base, very slender, almost filiform; pedicels 4-12 mm. long. Flowers red, many 4-merous, glabrous; calyx about 2 mm. long, limb scarcely as long as the ovary, lightly lineate when dry, lobes obtuse, abruptly acuminate; corolla funnel-shaped, about 4 mm. long, lobes about 2 mm. long, ovate, rounded; anthers about 1 mm. long, thick, exserted on rather stout filaments.

This species is represented by Gillespie nos. 2861 and 2876, from Viti Levu, Namosi Province, on wooded ridges near the village of Namosi. These specimens have been compared with a photograph of the type, and they agree in essentials. Gillespie no. 2861 is the subject of figure 46. Native name: *kau thok i ni vole*.

***Psychotria pickeringii* A. Gray (fig. 47).**

*Psychotria pickeringii* A. Gray: Am. Acad. Arts and Sci., Proc., vol. 4, p. 47, 1860.

"Glabra; stipulus caducis; foliis oblongo-lanceolatis seu obovate-oblongis promissae acuminatis base angustata subacutis obtusisve; capitulo arcte sessile plurifloro bracteae squamaceis caducis involucre; calycis limbo brevissimo truncato; corolla tubulosa 4-6-mera; fructibus obovatis obtusis basi quadrangulatis, pyrenis dorso et inferne marginibus cristatis. Feejee Islands."—A. Gray.

A shrub, glabrous except the flowers. Leaves very variable in size, even on the same twig, generally 7-11 cm. long, 2.5-4 cm. broad; blades chartaceous, green above, paler beneath, obovate to oblong-elliptic, apex acuminate to caudate, base narrow, subacute to obtuse, lateral nerves 8-11 on each side of the midrib, obscure above, rather prominent beneath; stipules caducous; petioles 8-18 mm. long. Inflorescences terminal, many-flowered, capitate, at first enclosed in red, squamaceous, caducous bracts, which are enlarged at the base and as much as 12 mm. long before splitting irregularly. Flowers sessile, faintly fragrant, variable in character; calyx truncate, cup-shaped, about 2.5 mm. long, some glabrous, some reddish pubescent without. Corollas in some plants glabrous, about 10 mm. long, tube cylindrical, lobes about 2 mm. long, acute; anthers about 1.2 mm. long, exserted; filaments very short; other flowers with corollas hairy in the throat, about 6 mm. long, the tube thicker and lobes about 3 mm. long. Fruits obovate, obtuse, 4-angled when dry.

Represented by Parks nos. 20006, 20117, and 20866; Gillespie nos. 2137, 2192, 2278, 2318, 2345, 2984, 3046, 3117, 3250, and 3595. A very common species in the southeastern province of Viti Levu, but extending as far as Naitarandamu Mountain in Namosi Province. Figure 47 was drawn from Gillespie no. 3046.

***Psychotria taviunensis* Gillespie, species nova (fig. 48).**

Arbor parva, partibus junioribus puberulis; foliis tenuiter chartaceis, supra glabris, 16-23 cm. longis, 8-11 cm. latis, ellipticis ad obovatis, apice acuminatis, basi angustatis et truncatis vel breviter cordatis, nervis primariis subtus perspicuis, pubescentibus; petiolis 2-4 cm. longis; inflorescentiis laxis, multifloris, 2.5-6 cm. longis; pedunculis 4-7, griseo-pubescentibus; floribus inconspicuis, vix 5 mm. longis; corollae lobis patulis.

A small tree, with young parts minutely puberulent. Leaves 16-23 cm. long, 8-11 cm. broad, clustered at the extremities of the twigs; blades thinly chartaceous, elliptic to obovate, apex acuminate, base narrowed, truncate or slightly cordate, lateral nerves numerous, obscure above, prominent and brownish pubescent beneath; petioles 2-4 cm. long, rather stout, puberulent. Inflorescences terminal, somewhat lax, many-flowered, 2.5-6 cm. long; peduncles 4-7, brownish or grayish pubescent; pedicels about 3 mm. long. Flowers inconspicuous; calyx cupulate, obscurely lobed, glabrous, about 1.5 mm. long and broad; corolla white, campanulate, glabrous, tube scarcely 1 mm. long; lobes spreading, about 4 mm. across, acute; anthers about 1 mm. long, strongly exerted on slender filaments. Fruits (immature) greenish, ovoid, as much as 7 mm. long.

Fiji, Taviuni, vicinity of Waiyevo (northwest coast), in dense woods above the coconut plantations, altitude 450 meters, February 27, 1928, John W. Gillespie. Type no. 4722.

### READEA Gillespie, genus novum

Calycis tubus obconicus; limbus brevis, lobis 4, patentibus, reflexis, elongatis, ceraceis, corollae similimis, deciduis. Corollae tubo anguste cylindraco, fauce infundibuliformi nuda; lobis 4, elongatis, reflexis, quam calycis segmentis minoribus et cum iliis alternantibus, valvatis. Stamina 4, tubo corollae inserta; filamentis brevibus; antherae, elongato-oblongae, subinclusae, dorso affixae. Discus carnosus, elevatus. Ovarium 2-loculare; stylus brevis; filiformis, glaber, ramis 2 filiformibus; ovula in loculis solitaria e basi erecta cuneata, apice truncata, leviter bilobata, dorso canaliculata. Fructus carnosus, obovoideus ad ellipsoideo-cylindraco, rotundato-truncatus, ad apicem plus-minusve sulcatus. Semina 2, plano-convexa; extus leviter 3-carinata, albumine aquabili, corneo; embryo parvus, rectus, oblongus, in basi albuminis, cotyledonibus ovatis radícula brevioribus. Arbor vel frutex, glabra. Folia opposita, petiolata. Stipulae intrapetiolaris, in vaginam connatae, caducae. Flores in cymas terminales.

This proposed new genus belongs in the tribe Psychotrieae as defined by Bentham and Hooker f.; it is related to *Psychotria* Linnaeus and *Calycosia* A. Gray, but differs from both in the extraordinary development of the calyx, which is waxy when fresh and similar to the corolla in size, texture, and appearance. The calyx-lobes are of equal size, and are strictly alternate with those of the corolla.

The generic name is in honor of John Moore Reade, Ph. D., Professor of Botany in the University of Georgia, my friend and former teacher.

### *Readea membranacea* Gillespie, species nova (fig. 49).

Arbor parva glabra, ramis tenuibus; follis 11-20 cm. longis, 3-8 cm. latis, membranaceis, oblongis ad oblongo vel obovato-ellipticis, apice angustatis, longe acuminatis ad caudatis; stipulis caducis, 2.5 mm. longis; petiolo 2-4 cm. longo; inflorescentiis terminalibus, laxis, 5- ad 9-floris, usque 10 cm. longis latisque; pedunculo 4 cm. longo; floribus 2 cm. longis, calyce infundibuliformi, tubo 6-8 mm. longo, lobis 9 mm. longis, 5 mm. latis; corolla infundibuliformi, tubo 2-4 mm. longo, lobis 7 mm. longis, patulis, reflexis; antheris 3.6 mm. longis; fructibus 2.5 cm. longis, subcylindracois, apice truncatis, ad apicem leviter 8-sulcatis.

A small, glabrous tree, with thin, dark-brown branches. Leaves few, clustered at the extremities of the twigs, 11-20 cm. long, 3-8 cm. broad; blades membranaceous,

flexible in life, bright-green above and beneath, oblong to oblong- or obovate-elliptic, apex narrowed, obtusely to long-acuminate or even caudate, base acute; lateral nerves 9 to 12 on each side of the midrib, moderately conspicuous above and beneath, veinlets indistinct; stipules caducous, oblong-lanceolate to ovate-lanceolate, acuminate, about 2.5 mm. long, the stipule sheath truncate, about 1 mm. long; petioles 2-4 cm. long. Inflorescences lax, terminal, 5-9-flowered, as much as 10 cm. long and wide; peduncles moderately stout, often 4 cm. long, branches generally 1 or 2 pairs, at right angles to the main axis; pedicels about 1 cm. long; bracts 1 to 2 mm. long, acute. Flowers pale-green, waxy when fresh, about 2 cm. long, with a faint odor of peppermint; calyx funnel shaped; ovary about 5 mm. long, cylindrical or slightly conic, about 2 mm. thick; calyx-tube 6-8 mm. long, lobes about 9 mm. long, 5 mm. broad, apex acute to rounded; corolla funnel-shaped, glabrous within, tube 2-4 mm. long, 2.5 mm. thick, lobes about 7 mm. long, spreading, reflexed, about 2 mm. broad, oblong, apex acute; anthers slightly exerted, about 3.6 mm. long, elongate; filaments very short; disc elevated, obconic, about 1.5 mm. high; style filiform; stigma lobes 1 mm. long. Fruits dark-red, about 2.5 cm. long, 1.6 cm. thick, subcylindric, apex truncate, lightly 8-sulcate towards the apex which has a shallow, annular depression about 9 mm. in diameter, base narrowed; seeds hard, about 10 mm. long, 5 mm. broad, 1.5 mm. thick, oblong, narrowed at the base, with 3 dorsal, subprominent ridges; endosperm uniform, horny, oily.

Fiji, Taviuni, vicinity of Waiyevo (northwest coast), banks of streams in the coconut plantations, altitude 200 meters, February 22, 1928, John W. Gillespie. Type no. 4622. Other collections representing this species are: Gillespie nos. 3431, 4056, 4647, 4654, 4711.5, and 4810.5, giving an additional range in Viti Levu (Naitasiri and Tholo North provinces). The Naitasiri plant has much broader leaves than the other specimens.

#### URAGOGA Linnaeus

#### *Uragoga lageniformis* Gillespie, species nova (fig. 50).

Frutex erectus, subglaber ramulis junioribus compressis, demum teretibus; foliis 15-25 cm. longis, 3.5-6 cm. latis, glabris, paullulo bullatis, oblongis ad oblongo-lanceolatis vel ellipticis vel obovatis, apice subacuminatis, basi decurrentibus; petiolo crasso, 1-3 cm. longo; inflorescentiis solitariis, terminalibus, lageniformibus; pedunculo crassissimo, 1.5-4 cm. longo; involucri bractee chartaceae, demum ab apice discissae, 2.5 cm. longa; floribus glabris, in capitulo 5 ad 8, confertis, sessilibus, sub anthesin singuli exsertis, calyce 18 mm. longo, membranaceo, lobis 3 mm. longis, acutis; corolla 3.5 cm. longa, angusta, cylindrica, membranacea, lobis 4 mm. longis, reflexis; antheris inclusis.

A subglabrous shrub; twigs at first flattened, finally terete. Leaves 15-25 cm. long, 3.5-6 cm. broad; blades glabrous, chartaceous, often slightly bullate, dark-green above, paler beneath, blackening when dried, oblong to oblong-lanceolate to elliptic or obovate, apex subacuminate, base somewhat decurrent, lateral nerves arcuate, about 12 on each side of the midrib, moderately conspicuous, veinlets few, obscure; stipules acute, about 4 mm. long, fimbriate, caducous, the scar ciliate with brown hairs; petioles stout, 1-3 cm. long. Inflorescences solitary, terminal; peduncles very stout, 1.5-4 cm. long; involucre bract chartaceous, flask-shaped, finally splitting from the summit, about 2.5 cm. long, 1.6 cm. thick. Flowers glabrous, 5 to 8 in a head, crowded, sessile, exerted singly at anthesis; bracteoles about 2 cm. long, 5 mm. broad, chartaceous, broadly acute, margins thin and some ragged; calyx about 18 mm. long, tubular, somewhat saccate, membranaceous, lobes about 3 mm. long, acute to acuminate; corolla about 3.5 cm. long, narrow, tubular, membranaceous, lobes about 4 mm. long, oblong, rounded, reflexed; anthers about 2.5 mm. long, included; filaments very short, inserted near the summit of the tube; style very slender, slightly exerted; ovary about 3 mm. long, cylindrical. Fruits unknown.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, upper slopes of Loma Langa Mountain, altitude 1100 meters, November 14, 1927, John W. Gillespie. Type no. 3688. Also represented by Gillespie no. 4286, from the same locality. Native name: *kau alewa*, meaning "the woman's tree." The same name is given to certain species of *Cyrtandra*, and to *Saurauia rubicunda*; its significance I do not know.

***Uragoga petiolata*** (A. Gray) Gillespie, combinatio nova (fig. 51).

*Calycosia petiolata* A. Gray, Amer. Acad. Arts and Sci., Proc., vol. 4, p. 48. 1860.

"Foliis obovatis seu obovato-lanceolatis in petiolum attenuatis; calyce breviter 5-lobo, lobis oblongis; pyrenis dorso haud costatis. Feejee Islands."—A. Gray.

A small tree, young parts and flowers hirsute with brownish hairs; twigs at first flattened, finally glabrous, terete, and often very thick. Leaves as much as 40 cm. long and 13 cm. broad; blades glabrous, chartaceous to subcoriaceous, slightly bullate, oblong-elliptic to obovate, apex acute to obtusely acuminate, the tip often rounded, base narrowed, acuminate, lateral nerves arcuate, ascending, about 15 on each side of the midrib, veinlets few, obscure; stipules as much as 4 cm. long, 1.5 cm. broad, very hairy at the base, caducous; petioles stout, as much as 8 cm. long. Inflorescences solitary, lateral and terminal; heads subglobose, 7-12-flowered, about 2.5 cm. long and thick; peduncles fleshy, about 1.5 cm. long, irregularly branched; involucrel-bract chartaceous, lineate, hirsute with brownish hairs, especially near the summit, sparsely papillate-bristly within at the base, and splitting irregularly, leaving a jagged, fimbriate margin; bracteoles about 2 cm. long, as much as 12 mm. broad, chartaceous, dorsally hirsute, especially near the summit, margin ragged. Flowers subsessile; calyx about 14 mm. long, tubular, chartaceous, finely sculptured, outside sparsely pilose with whitish hairs, glabrous within, lobes about 4 mm. long, oblong, apex rounded, margin very pilose; corolla white, about 17 mm. long, tubular, chartaceous, tube nearly glabrous without, pilose within, lobes about 3 mm. long, rounded, the tips thickened, margin pilose; stamens about 4 mm. long; anthers oblong, slightly exerted, longer than the slender filaments; ovary about 4 mm. long, cylindrical; style about 12 mm. long, slender; stigma lobes short. Fruits reddish, glabrous, oblong, obscurely angulate by compression, apex truncate, base narrowed, obtuse to acute or subtruncate, about 10 mm. long, 7 mm. thick, calyx long persistent, deciduous, leaving a shallow annual depression at the summit of the fruit; seeds subcordate, about 6 mm. long, 2.5 mm. broad, 1 mm. thick, plane within, concave without, not at all or very slightly ridged.

A photograph of the type of *Calycosia petiolata* A. Gray (in the Gray Herbarium) reveals the fact that it consists of a twig about 1 cm. long bearing two leaves and about two fruits. This accounts for the inadequacy of the original description. From the description and photograph I confidently identify with this species Parks no. 20432 from Viti Levu, Naitasiri Province, at Viria, and Gillespie nos. 4507 and 4455, from Ovalau, mountains west of Levuka, altitude 400 meters. The botanists of the Wilkes Exploring Expedition ascended these mountains, and this is probably the type locality for the species. Flowers and fruits of Gillespie no. 4507 were preserved in alcohol, from them and the dried material figure 51 was drawn.

## CALYCOSIA A. Gray

**Calycosia fragrans** Gillespie, species nova (fig. 52).

Arbor parva, floribus exceptis glabra, ramis vetustioribus teretibus; foliis 7.5-10 cm. longis, 2-3 cm. latis, chartaceis, oblongo-ellipticis ad obovatis, apice subacuminatis, basi obtusis, petiolo circiter 1 cm. longo; inflorescentiis solitariis, terminalibus, foliis subaequantibus, multifloris; pedunculo 2 cm. longo; calycis tubo campanulato, 8 mm. diametro, perspicue lineato, lobis obtusissimis, ad marginem ciliolatis; corolla 18-25 mm. longa, tubo angustissime cylindrico-infundibuliformi, extus hispidulosa, lobis 3 mm. longis; antheris 3 mm. longis, basi profunde furcatis.

A small tree, glabrous except the flowers; twigs slender, flattened and 2-angled when young, later terete. Leaves 7.5-10 cm. long, 2-3 cm. broad; blades chartaceous, oblong-elliptic to obovate, apex subacuminate, the tip rounded, base generally obtuse, very slightly decurrent, lateral nerves ascending, about 9 on each side of the midrib, obscure above, rather prominent beneath, veinlets indistinct; stipules caducous, the scars ciliate with brown hairs; petioles about 1 cm. long. Inflorescences solitary, terminal, subequaling the leaves, many-flowered; bracts 2, leaf-like, about 15 mm. long, the blade oblong-elliptic; peduncles stout, about 2 cm. long; pedicels rather slender, often 8 mm. long. Flowers conspicuous; calyx pinkish, campanulate, about 8 mm. in diameter, the limb and lobes conspicuously lineate, the latter very obtuse, ciliate at the margins; corolla white, 18-25 mm. long, tube very narrowly cylindric-infundibuliform, often curved, hispidulous without, woolly hirsute within, especially at the middle, lobes oblong, acute, about 3 mm. long, spreading or reflexed, the margins hispid; ovary glabrous, more or less cylindric, about 2 mm. long, disc hemispheric, 1 mm. long; style filiform, about 16 mm. long; stigma-lobes often 1.5 mm. long; anthers versatile, narrowly oblong, about 3 mm. long, deeply forked at the base. Fruits (immature) obovoid, as much as 5 mm. long, calyx limb decurrent.

Fiji, Viti Levu, Namosi Province, slopes of Naitarandamu Mountain, 1000 meters altitude, September 27, 1927, John W. Gillespie. Type no. 3085.

**Calycosia laxiflora** Gillespie, species nova (fig. 53).

Arbor parva glabra, nodis ramulorum incrassatis; foliis 8-11 cm. longis, 2-3.5 cm. latis, submembranaceis, obovatis ad oblongo-ellipticis, apice acuminatis, interdum subcaudatis, basi acutis ad obtusis; petiolo 1-2 cm. longo; inflorescentiis terminalibus, circiter 9 cm. longis; pedunculis 3-7, filiformibus, laxis, 3- ad 5-floris, pedicellis 12 mm. longis; calyce subcampanulato, 6 mm. longo; corolla ceracea, infundibularis, 2 cm. longa, intus leviter pruinosa, lobis 3 mm. longis, triangularis; fructibus obovoideis, in siccitate valde 6-costatis, 1 cm. longis, limbo calycis persistenti.

A small, glabrous tree, with brown, terete twigs which are somewhat thickened at the nodes. Leaves 8-11 cm. long, 2-3.5 cm. broad; blades pale-green, submembranaceous, clustered at the extremities of the twigs, obovate to oblong-elliptic, apex acuminate, sometimes subcaudate, base acute to obtuse, slightly decurrent, lateral nerves about 8 on each side of the midrib, ascending, moderately prominent on both sides, veinlets very indistinct; stipules caducous; petioles slender, 1-2 cm. long. Inflorescences terminal, about half as long as the leaves; peduncles 3 to 7, filiform, lax, about 3 cm. long, 3- to 5-flowered; pedicels about 12 mm. long, filiform; bracts minute. Flowers conspicuous; calyx membranaceous, broadly obconic to campanulate, about 6 mm. long, the lobes 1.5-2.5 mm. long, rounded; corolla white, waxy, funnel-shaped, lightly pruinose within, about 2 cm. long, 5 mm. thick at the throat, lobes often 3 mm. long, broadly triangular, apex rounded; disc hemispheric, often 2 mm. high; style filiform, about 10 mm. long; stigma-lobes broad, about 1 mm. long; anthers oblong, 1 mm. long, equaling the filaments. Fruits obovoid, strongly 6-ribbed when dry, about 1 cm. long, crowned by the persistent calyx-limb; seeds 5 mm. long and broad, 3-ribbed toward the apex.



Fiji, Viti Levu, Tholo North Province, slopes of Mount Victoria (Tamani Ivi), altitude 1100 meters, November 29, 1927, John W. Gillespie. Type no. 4116. Also represented by Parks nos. 20809, 20824, and 20836, all from the slopes and summit of Mount Victoria, where it is common among the small trees and shrubbery.

This species resembles *Calycosia glabra* Turrill, but differs in having smaller, acuminate leaves and smaller flowers.

***Calycosia magnifica* Gillespie, species nova (fig. 54).**

Arbor parva, floribus exceptis glabris; foliis chartaceis, 14-19 cm. longis, 3.5-5.5 cm. latis, oblongo- ad obovato-ellipticis, apice acutis, basi acutis interdum decurrentibus; inflorescentiis terminalibus, diffusis, multifloris, foliis subaequantibus; floribus conspicuis; calycibus albis, campanulatis; ovario 3 mm. longo, pubescenti; limbo maxime expanso, 12 mm. diametro; corolla usque ad 2.5 cm. longa, extus pubescente.

A small tree, glabrous except the flowers. Leaves 14-19 cm. long; 3.5-5.5 cm. broad; blades chartaceous, rather dark green above and beneath, oblong- to obovate-elliptic, apex acute to subacuminate, base acute or decurrent; lateral nerves 8-12 on each side of the midrib, inconspicuous above, subprominent beneath; veins obscure. Inflorescences terminal, many-flowered, diffuse, about equaling the leaves in length; peduncles stout, about 3 cm. long to the first branches which are 3 to 7 in number; pedicels slender, about 1 cm. long. Flowers odorless, conspicuous; calyx campanulate, white, ovary about 3 mm. long, cylindric, pubescent, limb greatly expanded, about 12 mm. across, lobes about 3 mm. long, reflexed, pubescent within; anthers about 4 mm. long, slightly exerted; filaments slender, attached near the throat. Fruits unknown.

Fiji, Viti Levu, Namosi Province, ridges of Naitarandamu Mountain, altitude 1000 meters, September 28, 1927, John W. Gillespie. Type no. 3307.1.

An attractive tree; the white calyces are most showy, as seen against dark foliage in the gloom of the cloud-topped mountain.

***Calycosia monticola* Gillespie, species nova (fig. 55).**

Arbor parva glabra; foliis in siccate flavido-viridibus, ascendentibus, circiter 7 cm. longis, 19 mm. latis, oblongo-obovatis ad ellipticis, utrinque acutis; petiolo 1 cm. longo; inflorescentiis terminalibus foliis subaequantibus, pedunculo 2.5 cm. longo; calyce 6 mm. longo, corolla anguste infundibularis, extus glabra, lobis patulis vel reflexis, 3 mm. longis; stylo tenui, 11 mm. longo, lobis 4 mm. longis; fructibus obovoideis, 7 mm. longis.

A small tree, glabrous throughout, with rather slender, terete or striate, ascending twigs. Leaves yellowish-green when dry, ascending, thickly clustered at the extremities of the twigs, rather uniform in size, about 7 cm. long, 19 mm. broad; blades oblong to oblong-obovate or elliptic, apex obtuse to acute or slightly acuminate, base acute, lateral nerves obscure above, subprominent beneath, about 8 on each side of the very conspicuous midrib; stipules connate; petioles 1 cm. long or less. Inflorescences terminal, partly concealed by the leaves, or, at most, only the flowers surpassing them; peduncles solitary, moderately stout, about 2.5 cm. long, once or several times branched; pedicels often 3 mm. long, calyx about 6 mm. long, ovary conic, about 1.5 mm. long, limb green, chartaceous, sub-cylindric, about 2 mm. thick, lobes obtuse to acute, scarcely 1 mm. long; corolla white, narrowly infundibuliform, glabrous without, farinose to more or less arachnoid within, as much as 2.5 cm. long, lobes triangular, broadly spreading or reflexed, about 1 cm. across; disc erect, about 2 mm. high and thick; style slender, about 11 mm. long; stigma

branches flattened, about 4 mm. long; anthers elongate, often 3 mm. long; filaments about 2 mm. long. Fruits green, obovoid, about 7 mm. long, 6-ribbed when dry.

Fiji, Viti Levu, Namosi Province, trail up Voma Mountain from Namosi village, altitude 600 meters, September 11, 1927, John W. Gillespie. Type no. 2896. Also represented by Gillespie nos. 2677, 2722, 2784, and 2795.

This species is fairly common on Voma Mountain from middle elevations to the summit, but not as yet found elsewhere.

#### MORINDA Linnaeus

##### *Morinda bucidifolia* A. Gray (fig. 56).

*Morinda bucidaefolia* A. Gray: Am. Acad. Arts and Sci., Proc., vol. 4, p. 41, 1860.

"Glabra, scandens; stipulis subdistinctis; foliis obovato-cuneatis obtusis vel retusis coriaceis supra nitidulis subtus venulis inter costas rectas prominulas crebre reticulatis; pedunculis plurimis terminalibus; capitulo globoso 7-10-floro. Feejee Islands."—A. Gray.

A subglabrous vine, with twining, shallowly caniculate stems as much as 8 mm. thick. Leaves 6-10 cm. long, 3.5-5 cm. broad; blades coriaceous, yellowish when dry, characteristically obovate, but variable, sometimes elliptic, oblanceolate, or cuneate, apex obtuse, rounded or retuse, sometimes obtusely cuspidate, lateral nerves about 5 on each side of the midrib, axils nude, veins beneath numerous, prominent, reticulate; stipules membranaceous, indistinct, as much as 4 mm. long; petioles about 1.5 cm. long. Inflorescences terminal; peduncles about 8, 1-2 cm. long, rather slender, sparsely hispidulous; flowering heads globose, often 4 mm. in diameter (not including the corollas); calyx glabrous, about 1.5 mm. in diameter, cupulate, truncate, or obscurely toothed; corolla sparsely pilose without, often 2.5 mm. long, funnel-shaped, lobes ovate, rounded, about 1 mm. long, spreading and often reflexed, villous-barbate within with whitish hairs; anthers about 1.5 mm. long, slightly exserted; syncarpia globose, about 8 mm. in diameter.

Represented by Parks nos. 20311, 20637, and 20899; Gillespie nos. 2194, 2493, 2741, 2743, 2826, 3100.5, 3191, 3370, and 3673. Common in the eastern provinces of Viti Levu. Specimens from the vicinity of Suva agree most closely with a photograph of the type, the leaves of which are about 7 cm. long. The Tholo North Province plants generally have smaller leaves, in one form (Gillespie no. 3191) less than 4 cm. long, in shape, spatulate. Native name: *wa vani* or *wa pani*.

##### *Morinda nandarivatensis* Gillespie, species nova (fig. 57).

Frutex scandens, floribus exceptis glaber; ramulis obscure 4-angulatis, cortice chartaceo; foliis 5-8 cm. longis, 1.8-2 cm. latis, ellipticis, utrinque acutis, base paullo decurrentibus; nervis primariis utrinque 5-7, subprominentibus, axillis glandulosis, haud barbellatis; inflorescentiis terminalibus; pedunculis 4-7, gracilibus, 2-3 cm. longis; floribus circiter 4 mm. longis, extus glabris, intus hirsutis; syncarpio globoso, 1 cm. diametro.

A vine, glabrous except the flowers. Twigs slender, obscurely 4-angled, with papery bark. Leaves 5-8 cm. long, 1.8-2.5 cm. broad, somewhat erect; blades chartaceous, paler

beneath than above, elliptic, both ends acute, base slightly decurrent; lateral nerves 5 to 7 on each side of the midrib, moderately conspicuous above and beneath, axils glandular but not barbellate, veins reticulate, inconspicuous; petioles about 1.5 cm. long, slender; stipules pale-brown, papery, erose, often 2 or even 3 mm. long, conspicuous, especially on young twigs. Inflorescences terminal; peduncles 4-7, slender, erect, 2-3 cm. long; capitula 9- to 12-flowered, subglobose, about 4 mm. in diameter (not including the corollas). Flowers about 4 mm. long, yellow; corolla-tube glabrous without, hirsute within with whitish matted hairs, lobes about two-thirds united, acute, strongly reflexed; anthers 0.7 mm. long, oblong-sagittate, longer than the filaments, slightly exserted; style about 2 mm. long, exserted; stigma-lobes about 1 mm. long, broad, flattened. Syncarps subglobose, about 1 cm. in diameter.

Fiji, Viti Levu, Tholo North Province, vicinity of Nandarivatu, slopes of Loma Langa Mountain, altitude 1200 meters, November 16, 1927, John W. Gillespie. Type no. 3786. Gillespie no. 4123 is another specimen from the same locality.





FIGURE 1.—*Macca densiflora* Gillespie: a, portion of corolla; b, prophyllum; c, pistil and calyx with corolla removed.

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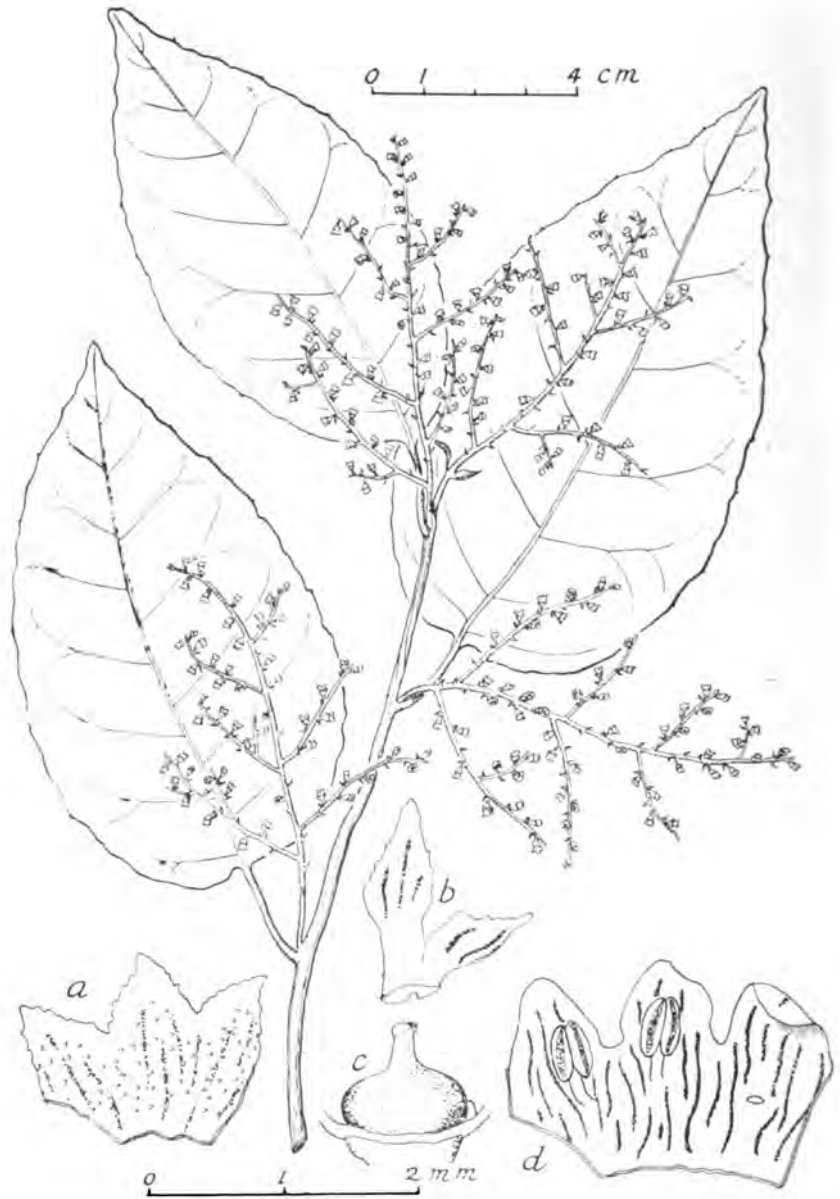


FIGURE 2.—*Macsa grandis* Gillespie: a, portion of calyx; b, prophyllum; c, pistil; d, portion of corolla.

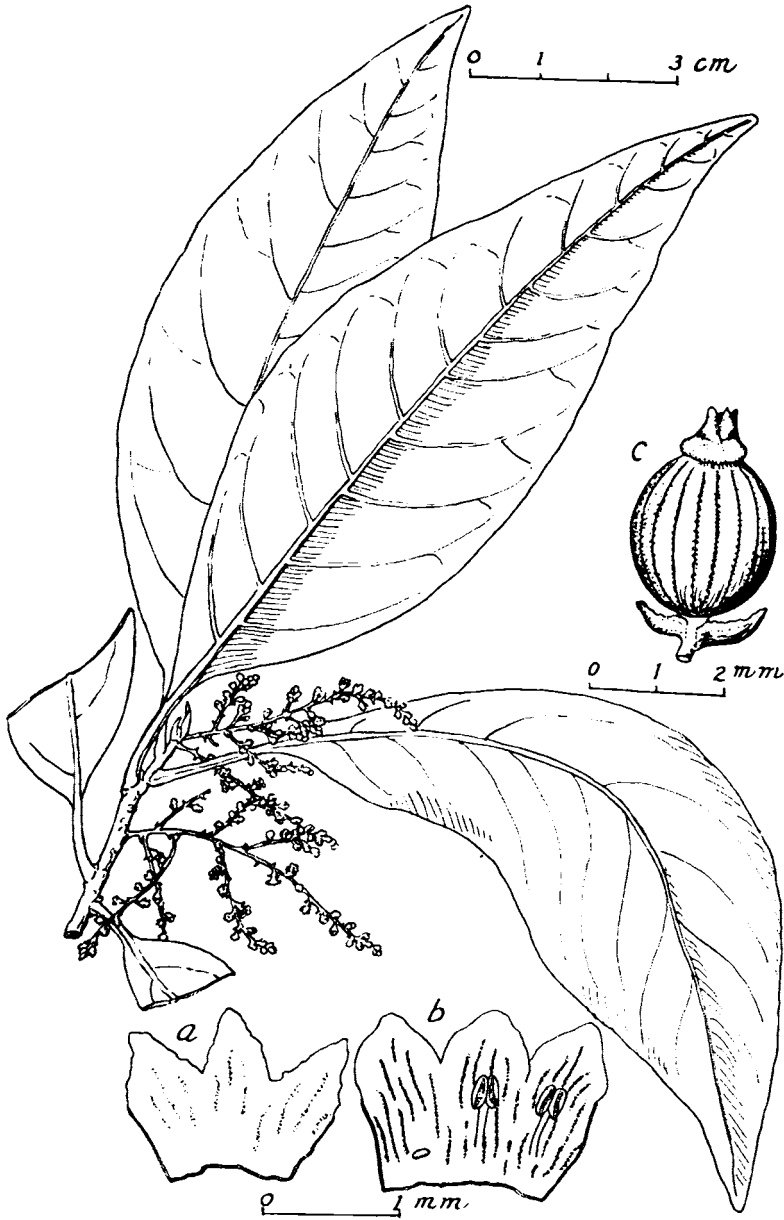


FIGURE 3.—*Macsa insularis* Gillespie: a, portion of calyx; b, portion of corolla; c, fruit.

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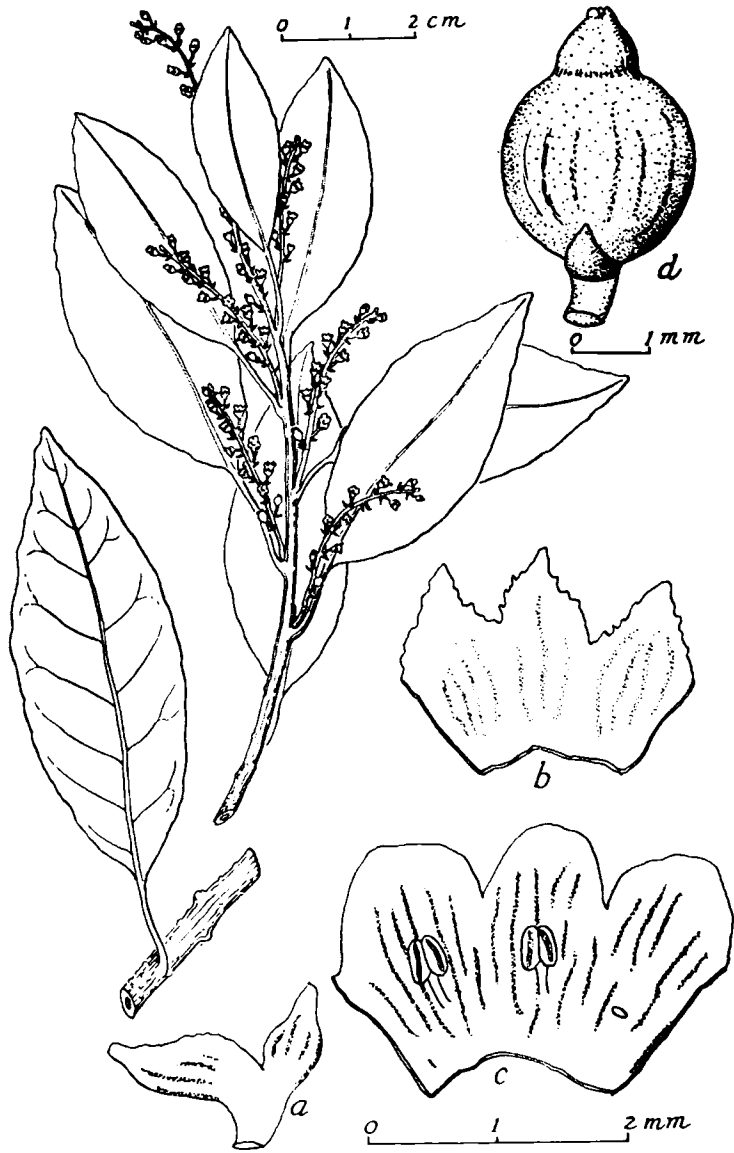


FIGURE 4.—*Maesa lenticellata* Gillespie: a, prophyllum; b, portion of calyx; c, portion of corolla; d, fruit.



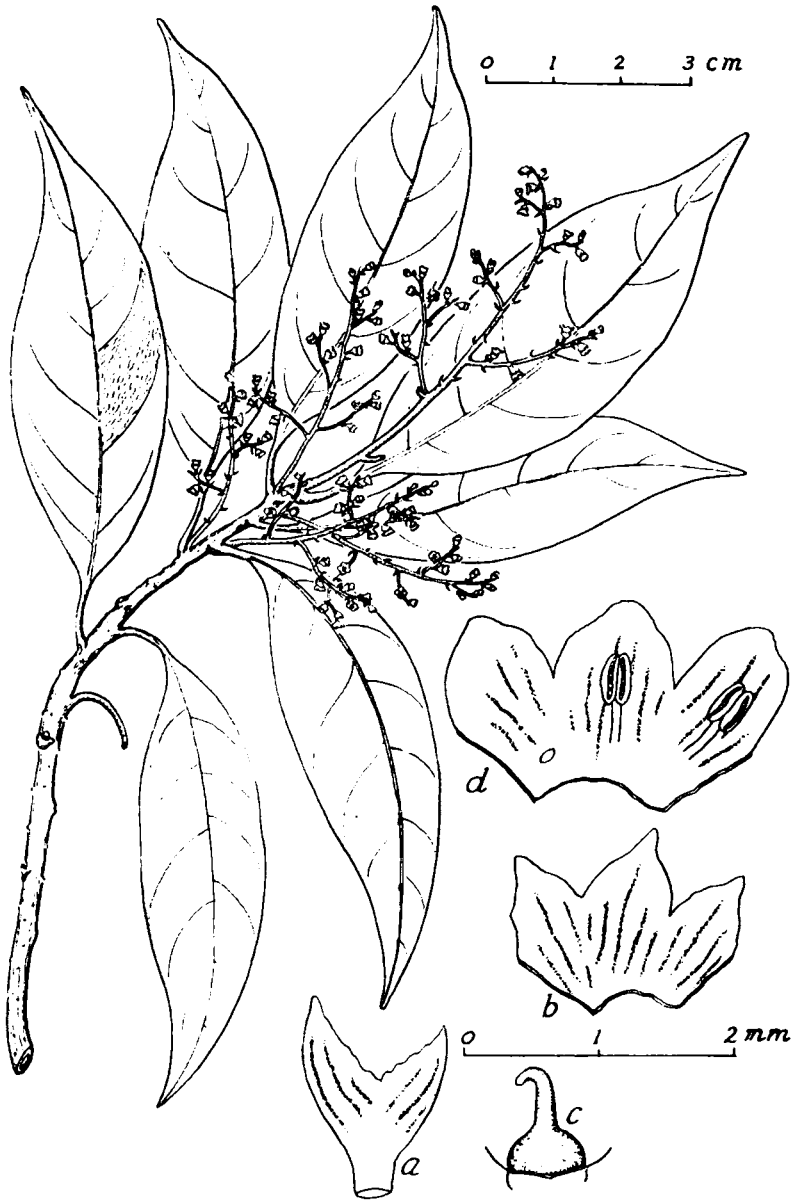


FIGURE 5.—*Maesa neriifolia* Gillespie: a, prophyllum; b, portion of calyx; c, pistil; d, portion of corolla.

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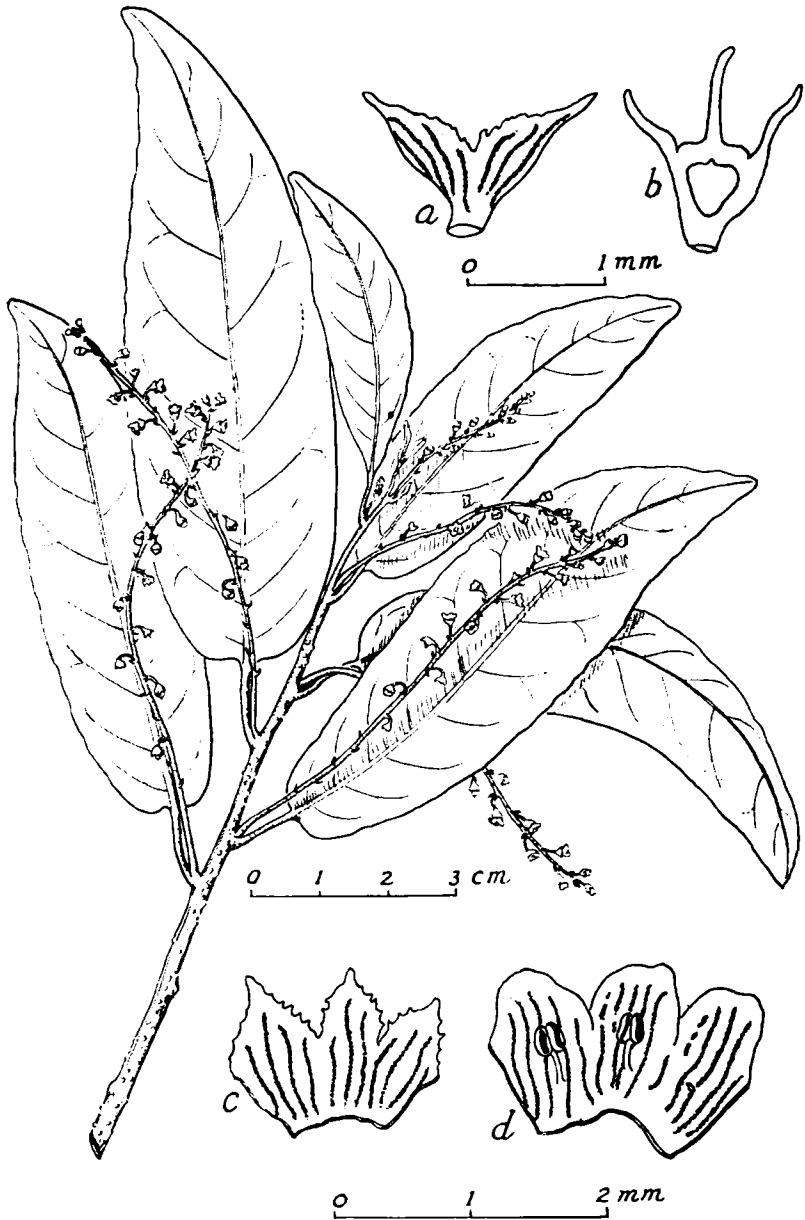


FIGURE 6.—*Maesa parksii* Gillespie: a, prophyllum; b, section through pistil; c, portion of calyx; d, portion of corolla.

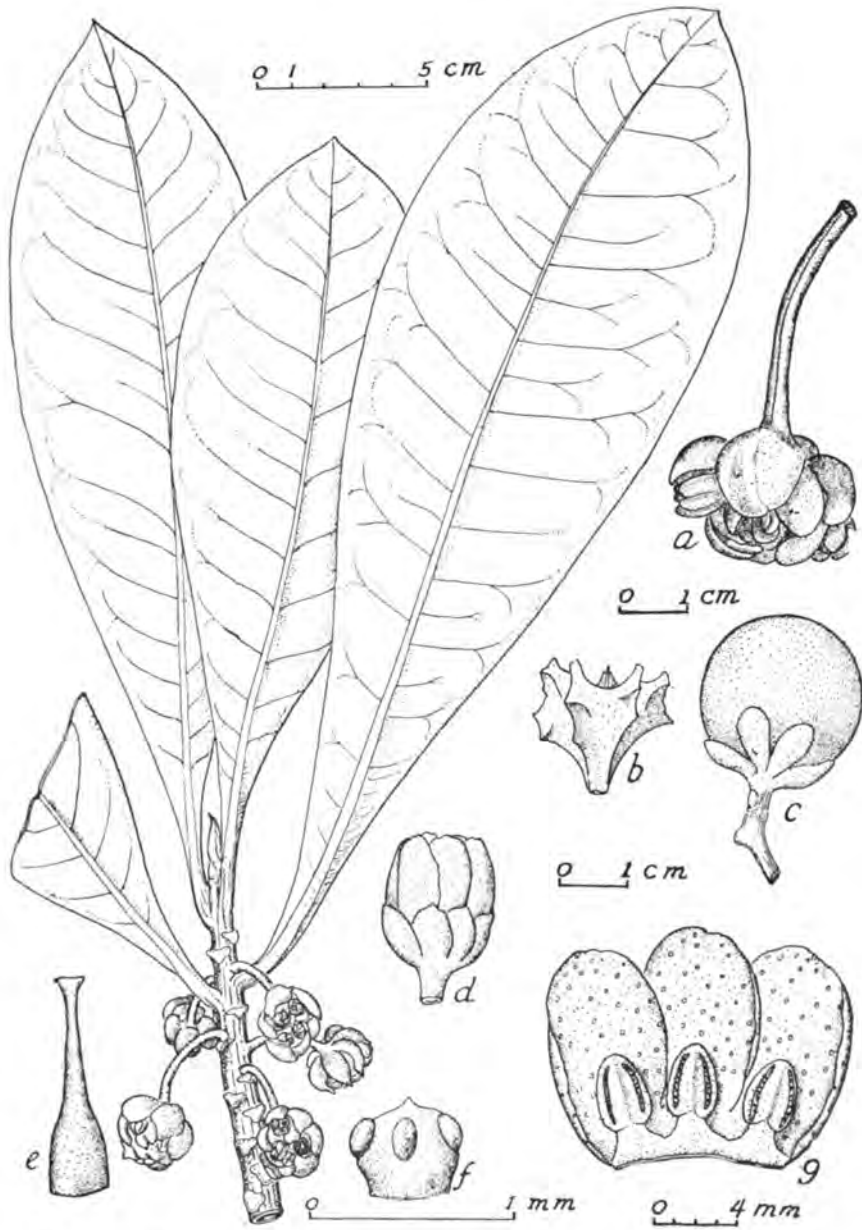


FIGURE 7.—*Tapcinosperma cephalophorum* Gillespie: a, inflorescence; b, seed; c, fruit; d, flower; e, pistil; f, placenta with ovules, greatly enlarged; g, portion of corolla.



FIGURE 8.—*Tapinosperma clavatum* Mez: a, fruit; b, section through flower; c, corolla; d, calyx; e, placenta with ovules, enlarged.

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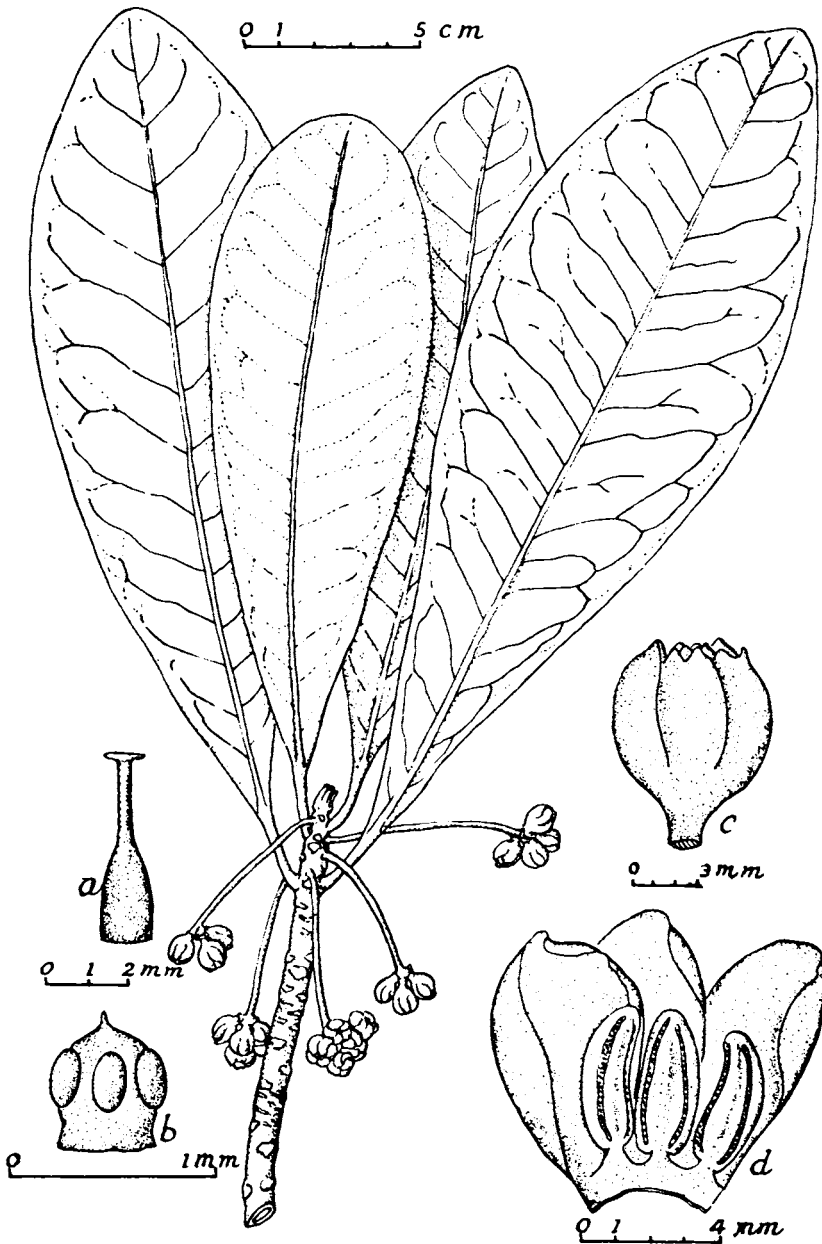


FIGURE 9.—*Tapinosperma punctatum* Gillespie: a, pistil; b, placenta with ovules; c, flower; d, portion of corolla.

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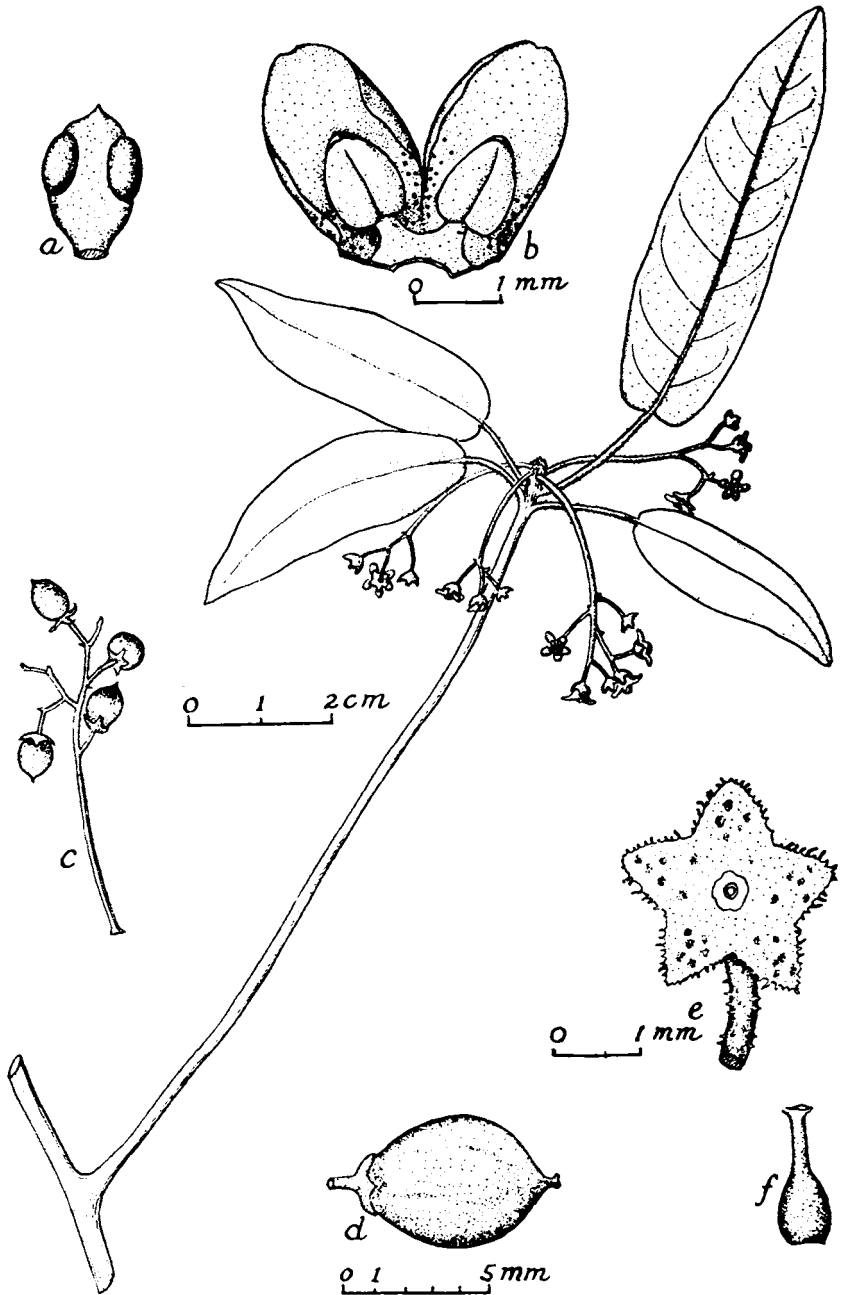


FIGURE 10.—*Discocalyx divaricata* Gillespie: a, placenta with ovules; b, portion of corolla; c, inflorescence; d, fruit; e, calyx; f, pistil.

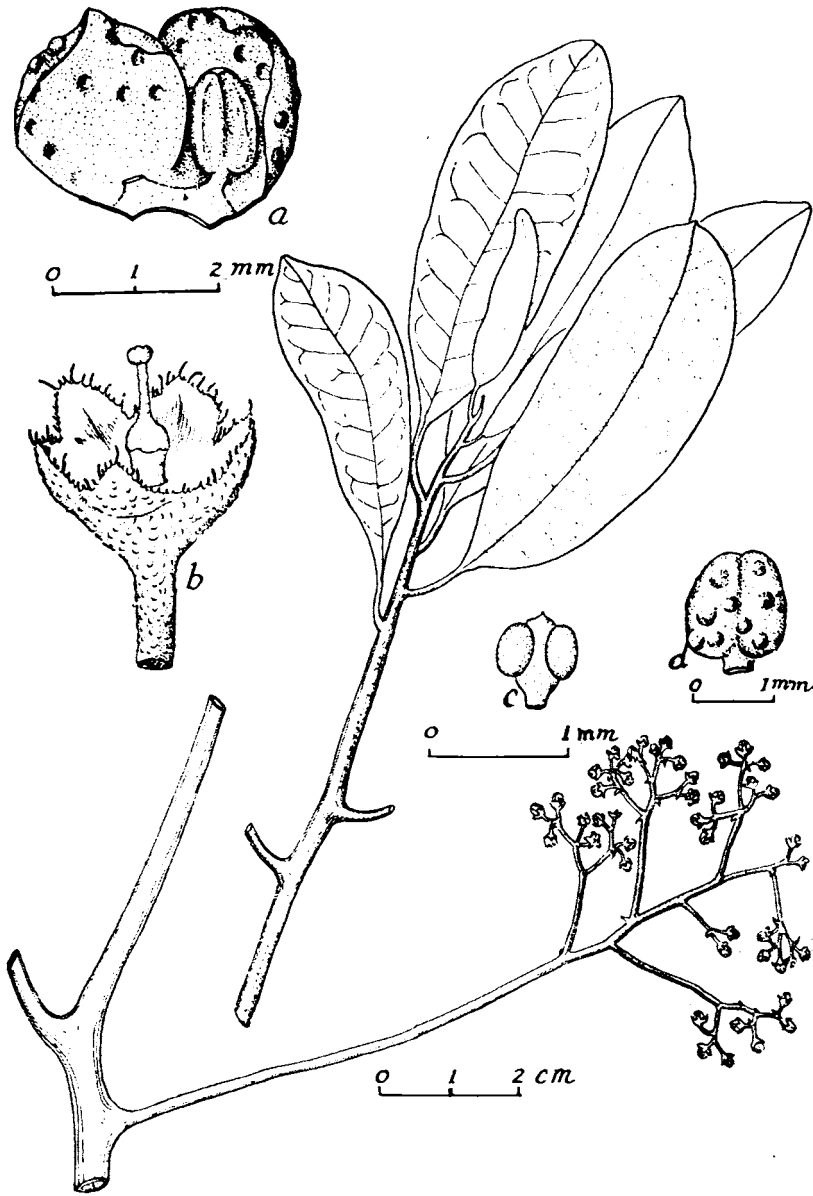


FIGURE 11.—*Discocalyx multiflora* Gillespie: a, portion of corolla; b, calyx with corolla removed; c, placenta with ovules; d, adaxile view of anther.

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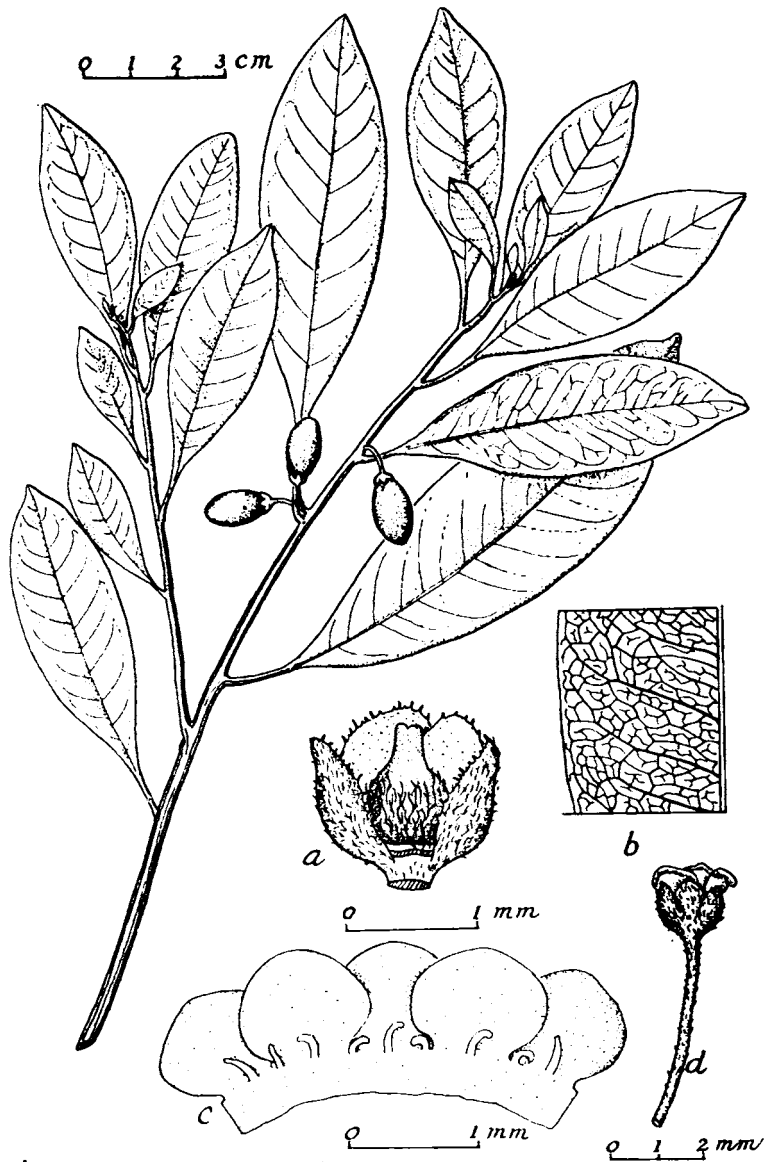


FIGURE 12.—*Planchonella ziliensis* Gillespie: a, flower with corolla and one calyx lobe removed; b, portion of leaf, enlarged; c, corolla; d, flower.



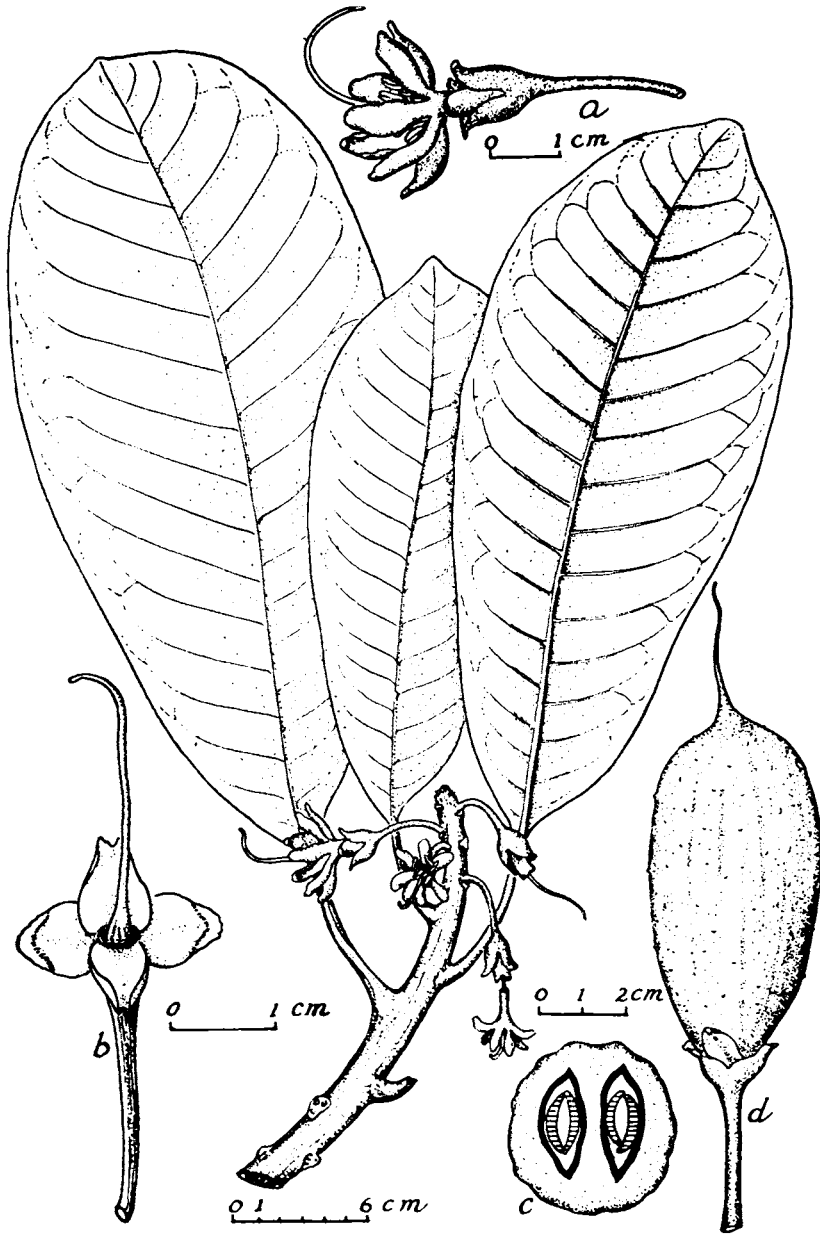


FIGURE 13.—*Burckella thurstonii* (Hemsley) Lam: a, flower; b, flower with corolla removed; c, cross section of fruit; d, fruit.

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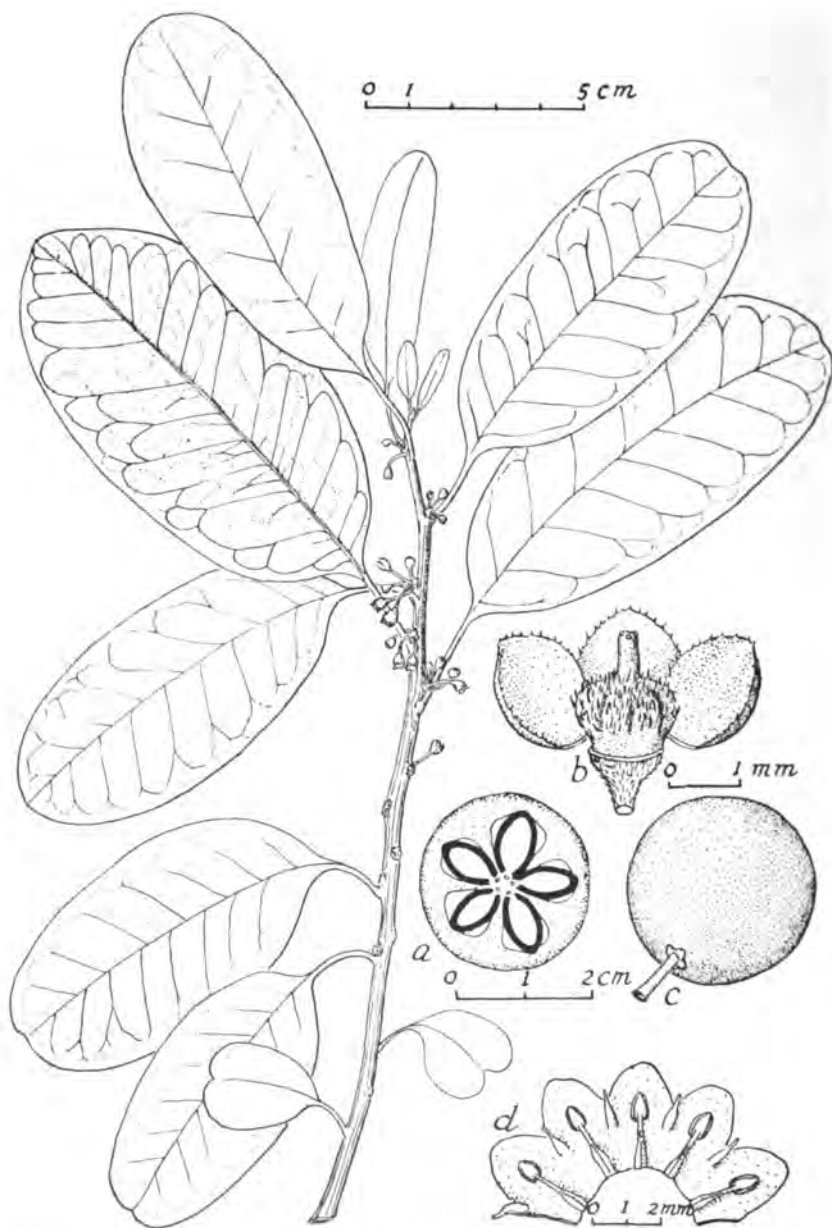


FIGURE 14.—*Lucuma vitiensis* (A. Gray) Gillespie: a, cross section of fruit; b, calyx with corolla removed; c, fruit; d, corolla.

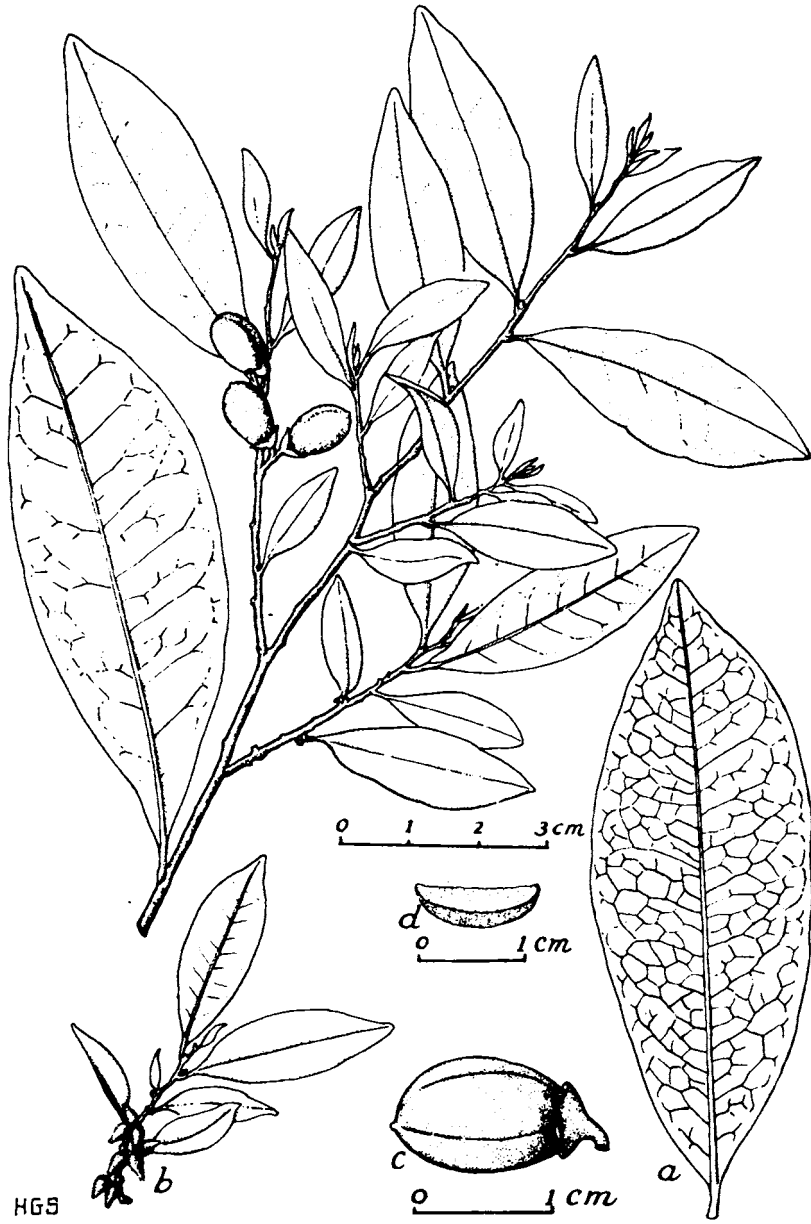
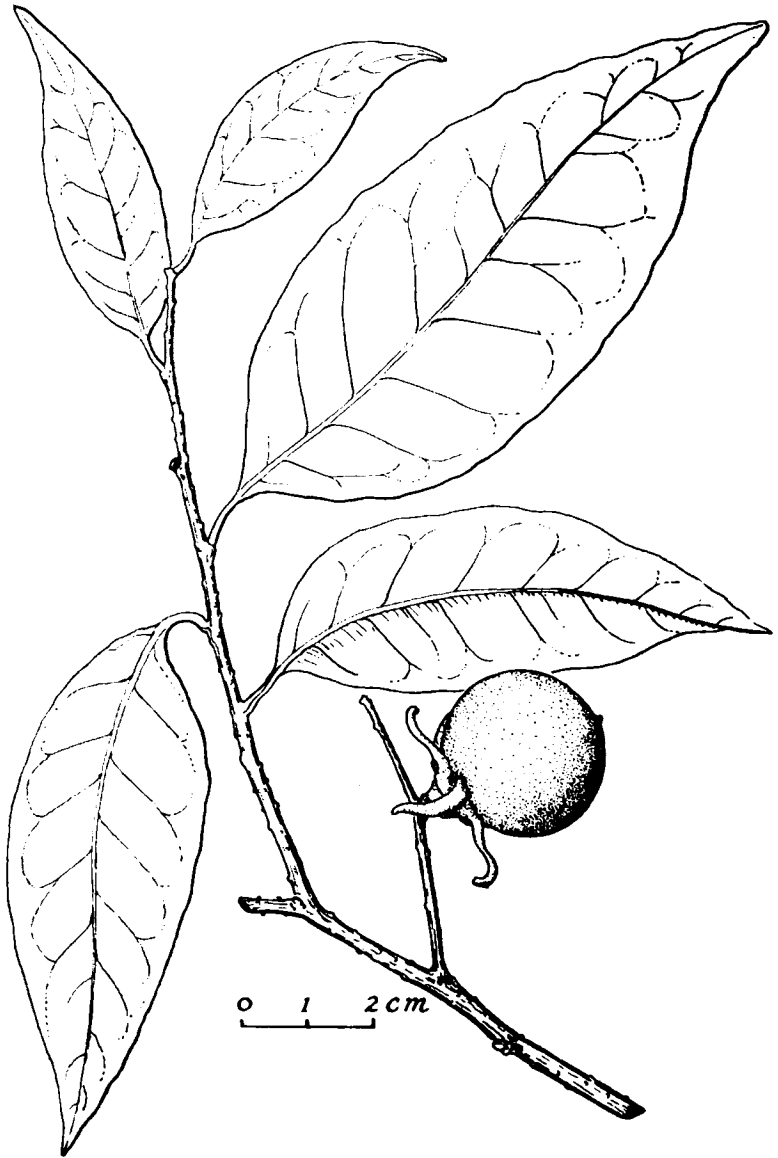


FIGURE 15.—*Maba nandarivatusensis* Gillespie: a, twig with immature flowers; b, seed; c, fruit; d, leaf showing venation.

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FIGURE 16.—*Diospyros longispala* Gillespie.

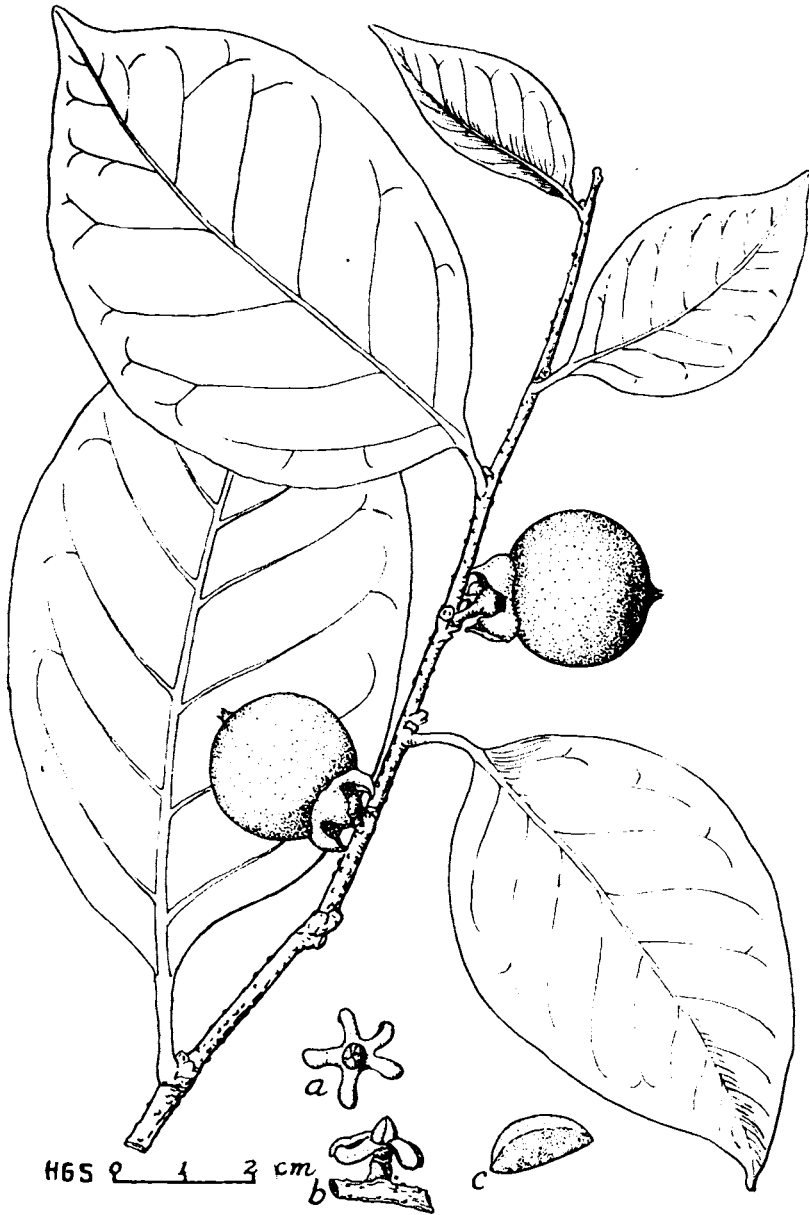


FIGURE 17.—*Diospyros vitiensis* Gillespie: a, b, female flowers; c, seed.

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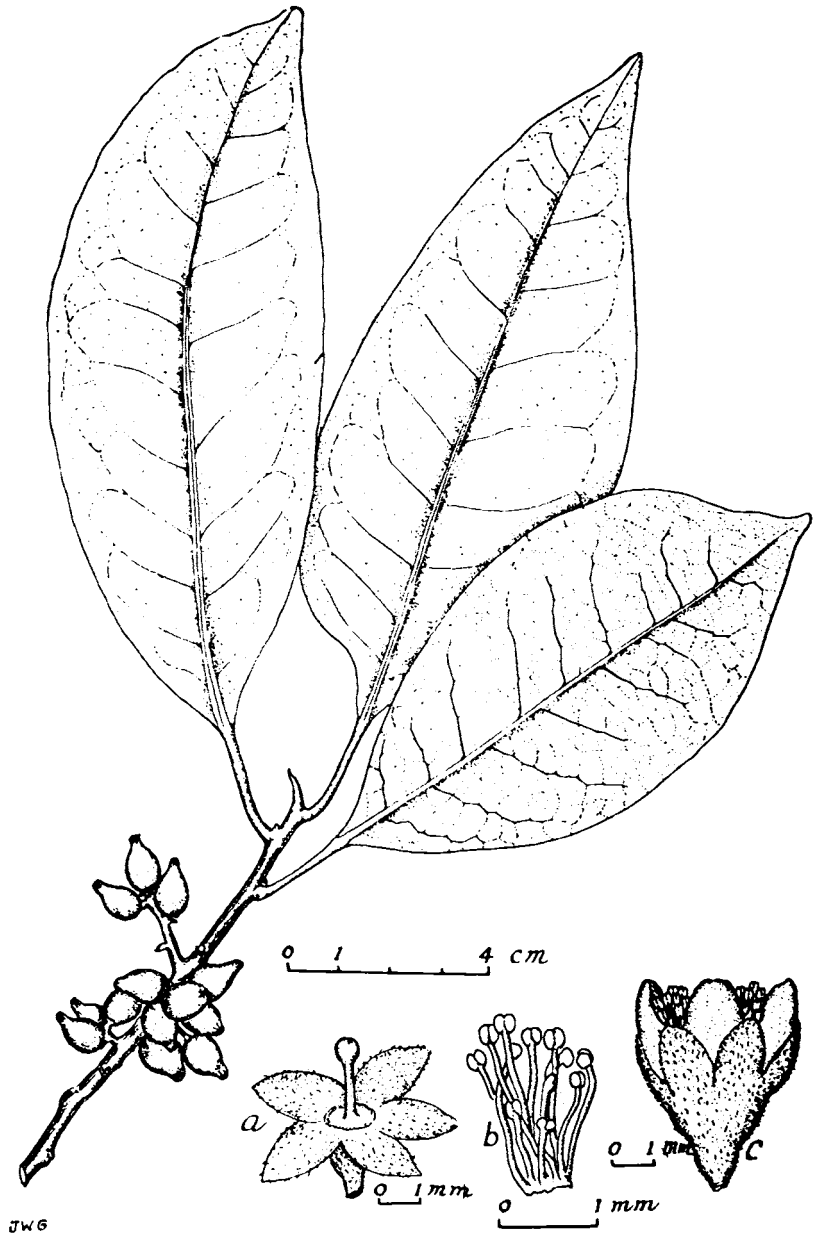


FIGURE 18.—*Symplocos leptophylla* (Brand) Turrill: *a*, flower with corolla removed; *b*, group of stamens; *c*, flower.

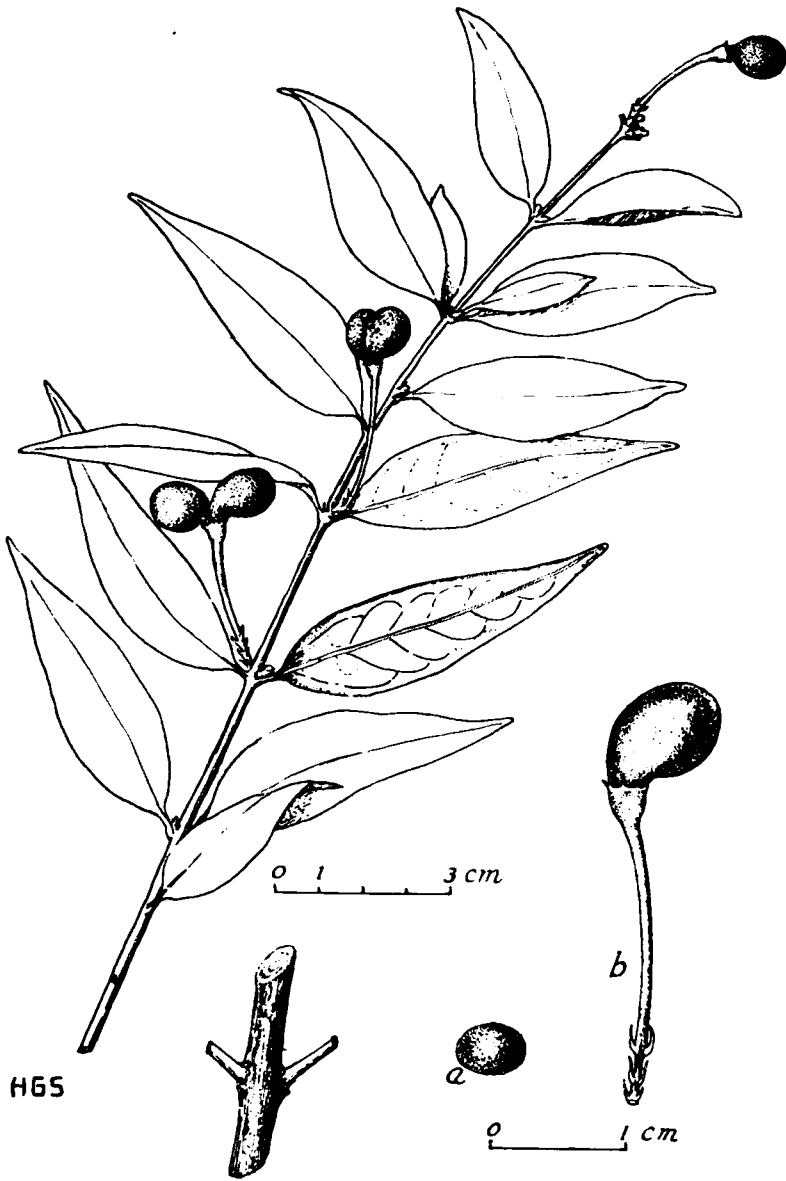


FIGURE 19.—*Jasminum unifoliatum* Gillespie: a, seed; b, infructescence.

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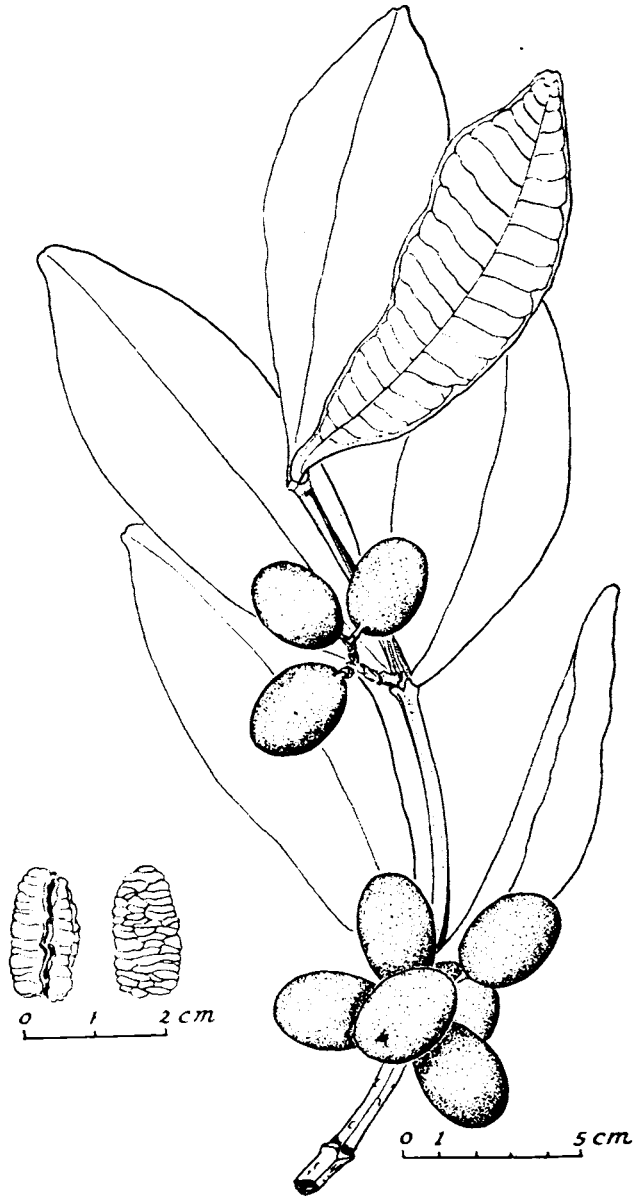


FIGURE 20.—*Hyxia erythrosperma* Gillespie: a, b, seed.

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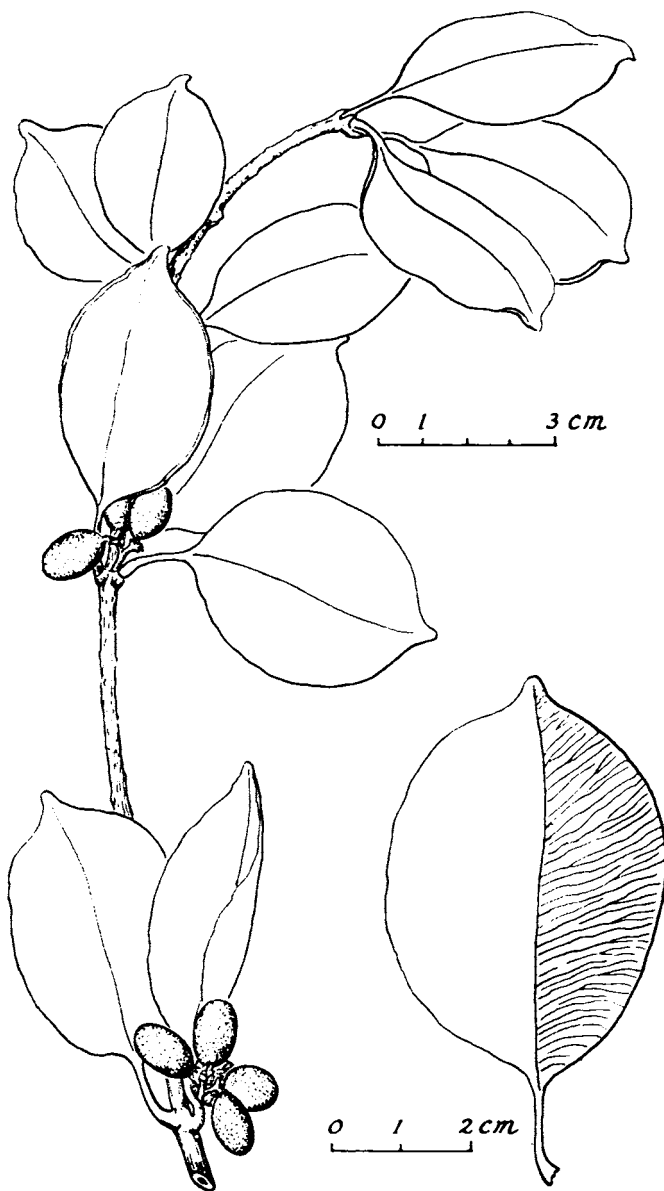


FIGURE 21.—*Alyxia ovalifolia* Gillespie.

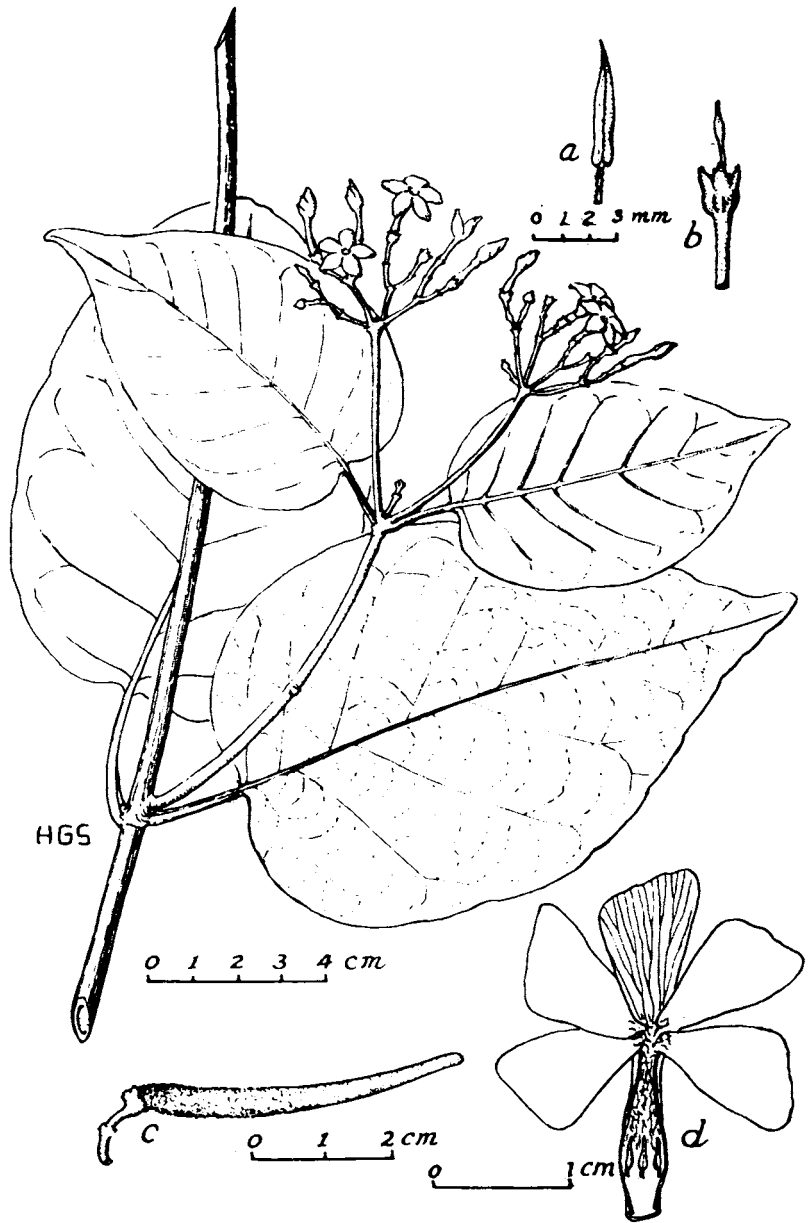


FIGURE 22.—*Carruthersia latifolia* Gillespie: a, anther; b, calyx with corolla removed; c, immature follicle; d, corolla split open.

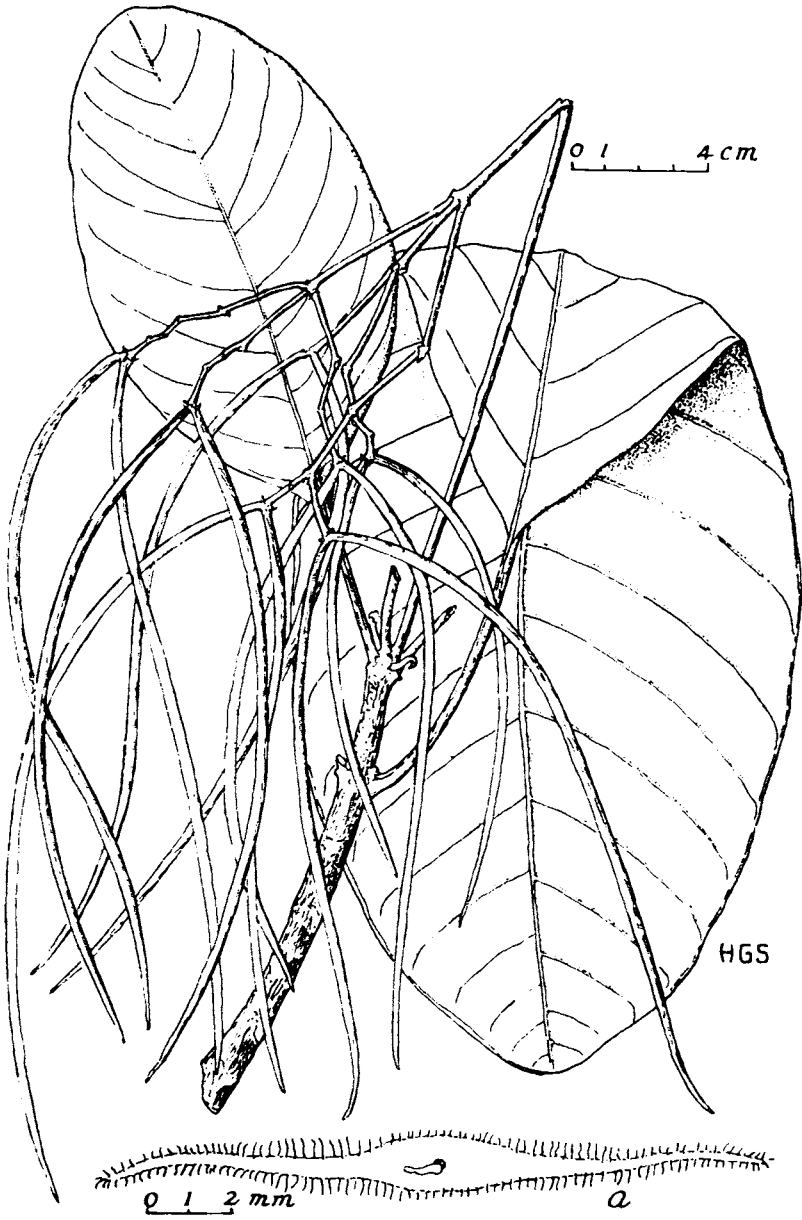


FIGURE 23.—*Alstonia citiensis* Seemann: a, seed.

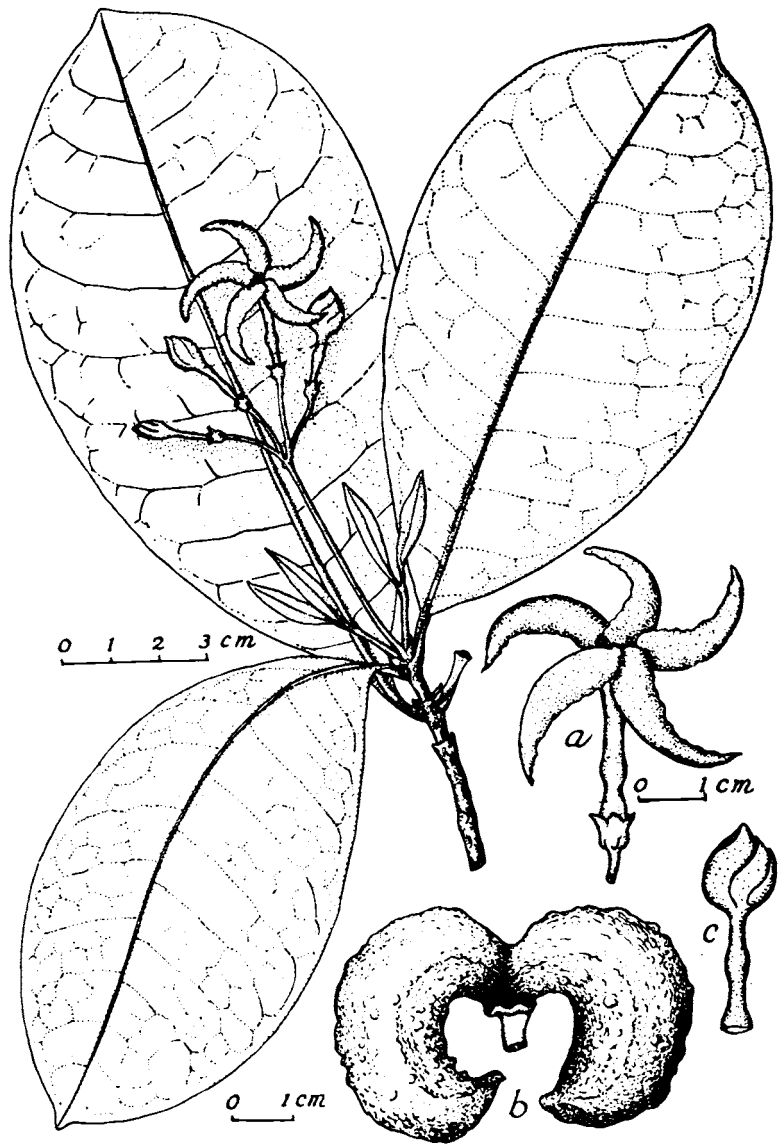


FIGURE 24.—*Tabernaemontana thursioni* Horne: a, flower; b, fruit; c, bud.



FIGURE 25.—*Cyrtandra alba* Gillespie.

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FIGURE 26.—*Cyrtandra cephalophora* Gillespie: a, flowering peduncle; b, flower; c, immature fruit; d, fruit.

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FIGURE 27.—*Cyrtandra gracilipes* Gillespie: a, b, flower; c, flower after corolla has fallen; d, fruit.

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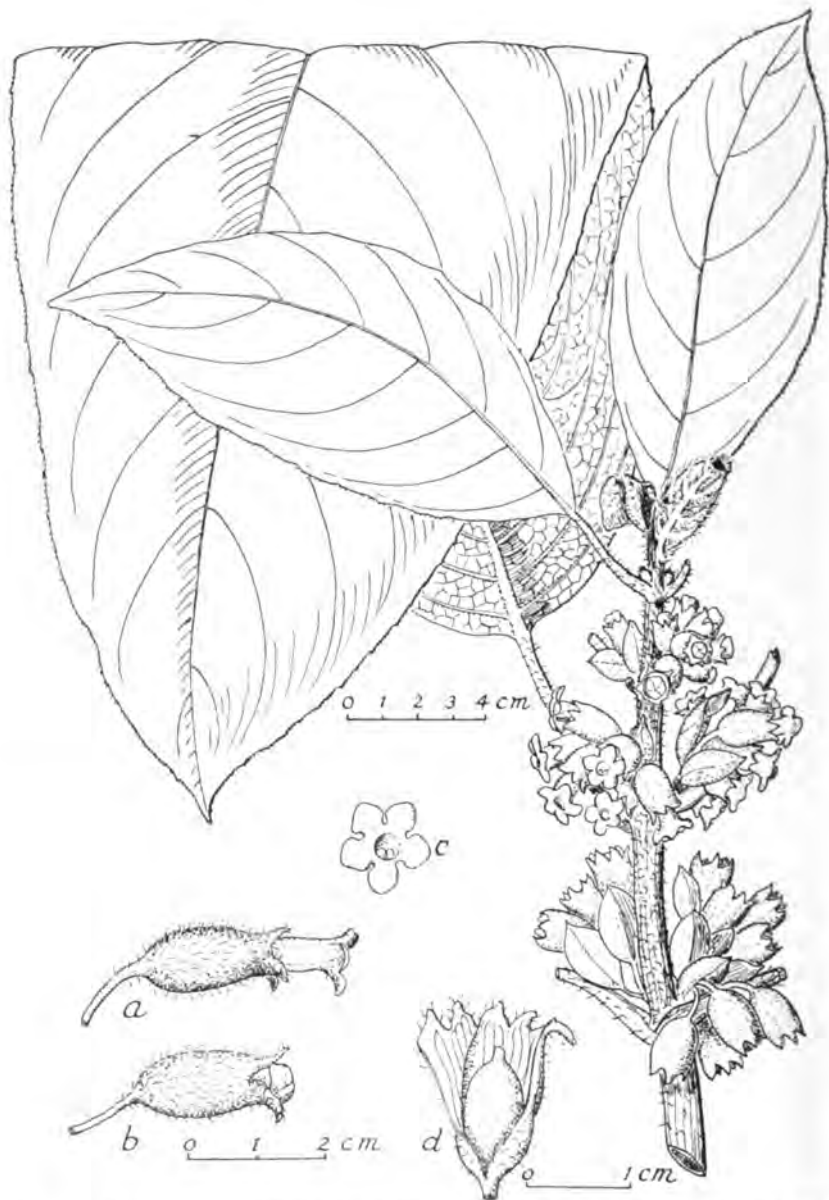


FIGURE 28.—*Cyrtandra glandulosa* Gillespie: a, b, c, flower; d, fruit with calyx split open.



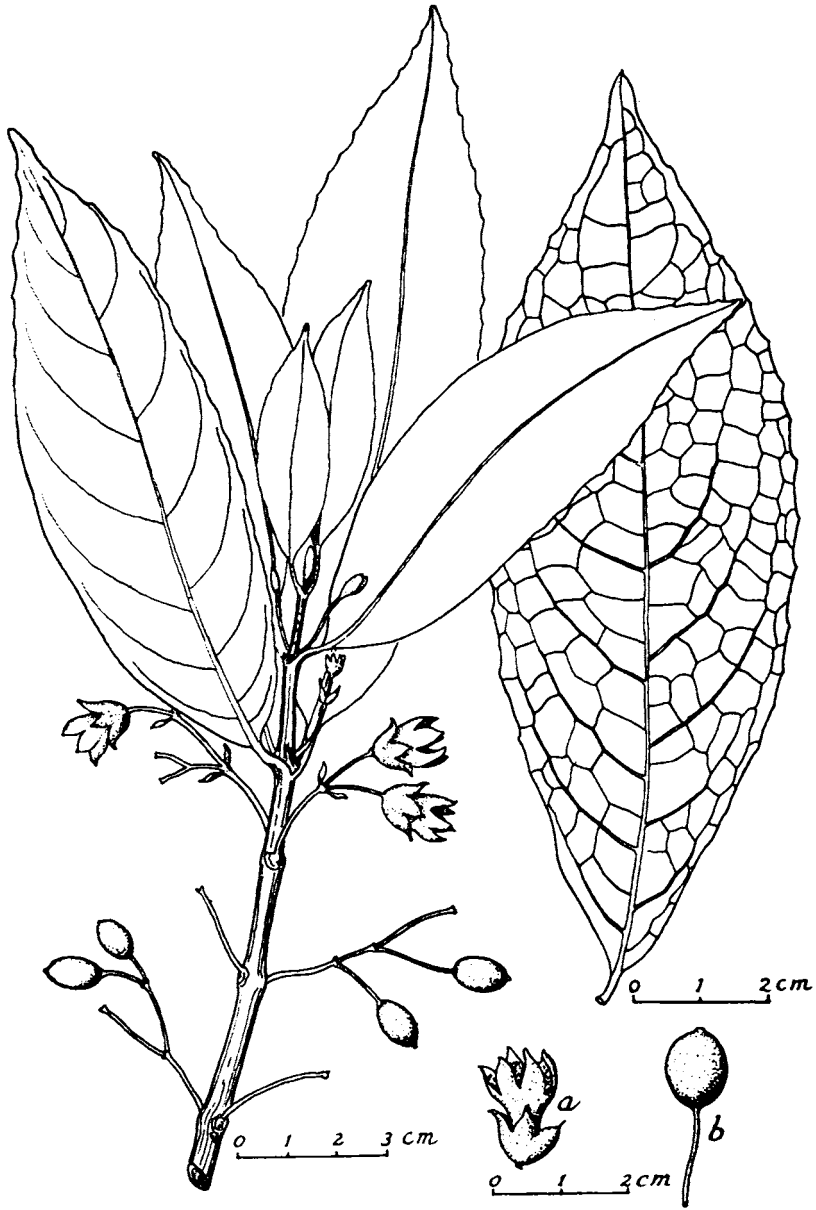


FIGURE 29.—*Cyrtandra montana* Gillespie: a, flower; b, fruit.

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FIGURE 30.—*Cyrtandra monticola* Gillespie: *a*, flower after corolla has fallen; *b*, fruiting peduncle.

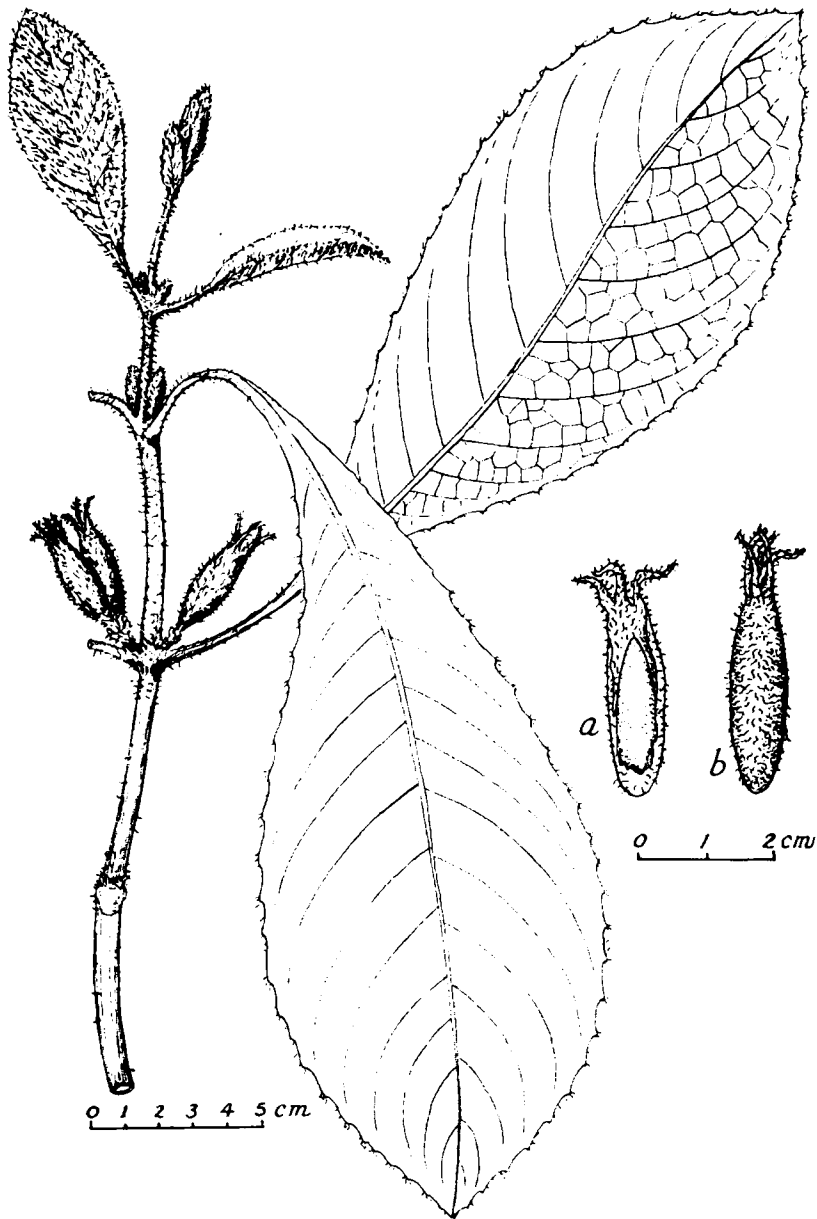


FIGURE 31.—*Cyrtandra multiseptata* Gillespie: a, fruit with portion of calyx removed; b, fruit.

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FIGURE 32.—*Cyrtandra prattii* Gillespie: a, b, fruits; c, flower; d, flower after corolla has fallen.



FIGURE 33.—*Cyrtandra taximensis* Gillespie: a, flower; b, fruit.

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FIGURE 34.—*Cyrtandra victorica* Gillespie: a, fruit; b, flower; c, corolla laid open.

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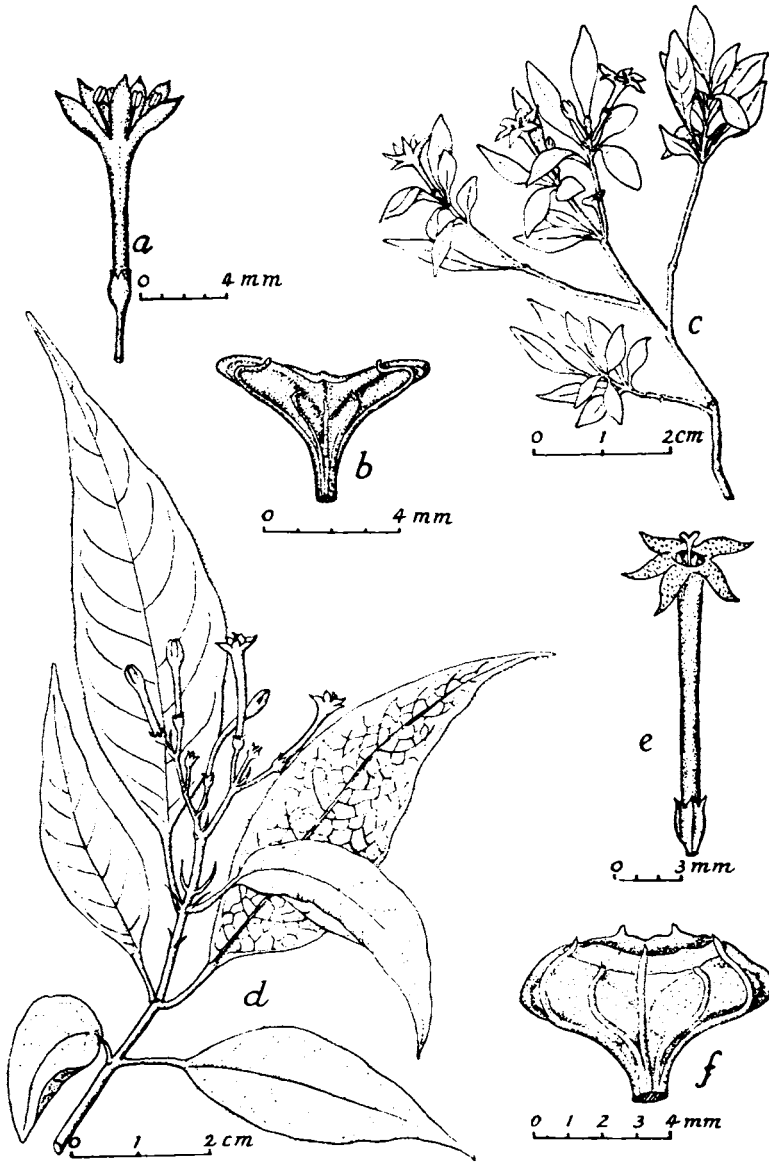


FIGURE 35.—a-c, *Ophiorrhiza peploides* A. Gray; d-f, *Ophiorrhiza leptantha* A. Gray: a, flower; b, fruit; c, flowering branch; d, flowering branch; e, flower; f, fruit.

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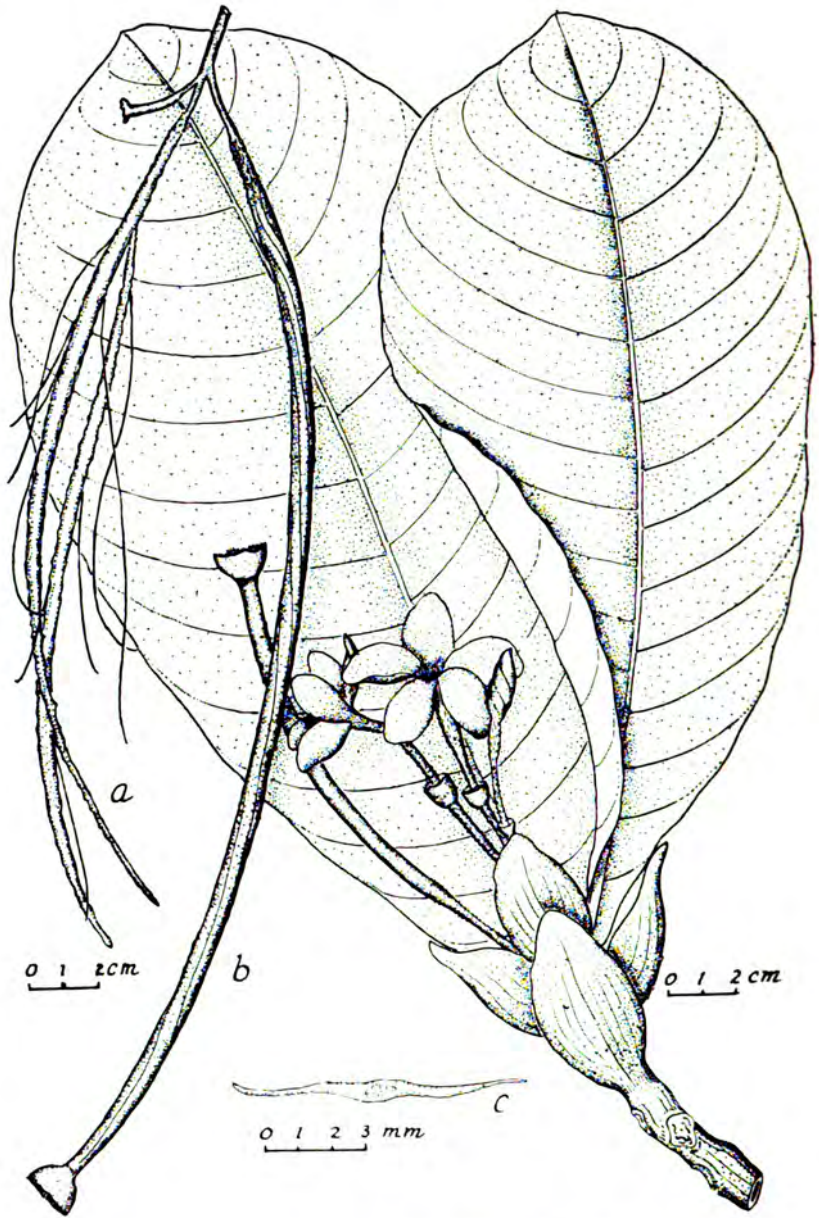


FIGURE 36.—*Dolicholobium macgregori* Horne: *a*, fruit after seeds have fallen; *b*, mature fruit; *c*, seed.



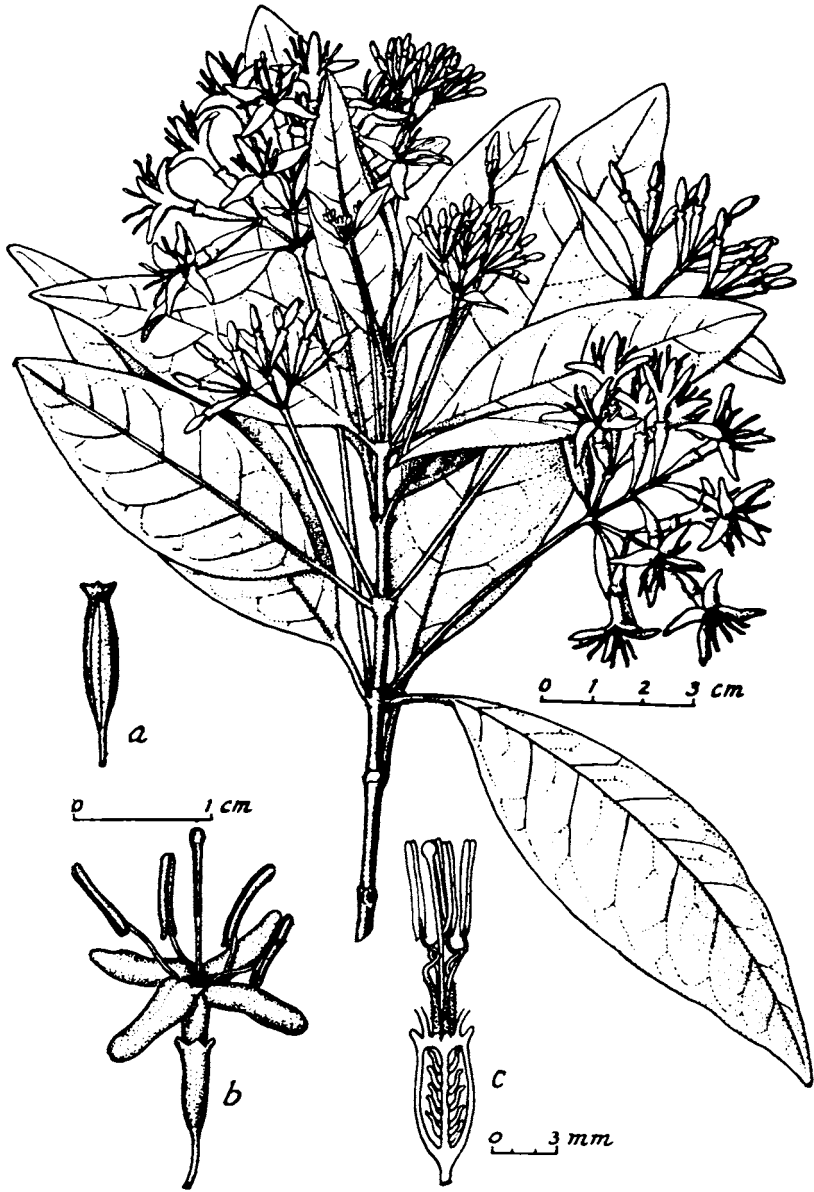


FIGURE 37.—*Badusa corymbifera* A. Gray: a, fruit; b, flower; c, cross section of bud, perianth removed.

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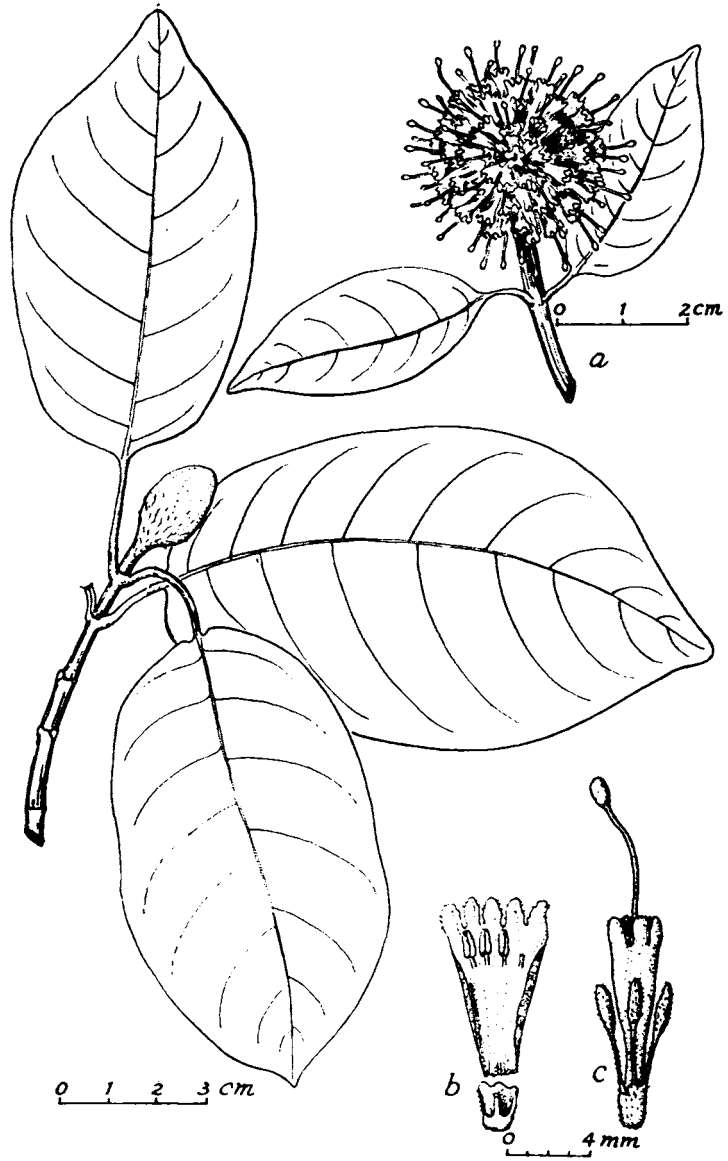


FIGURE 38.—*Neonauclea vitensis* Gillespie: a, cluster of flowers; b, portion of corolla; c, flower.

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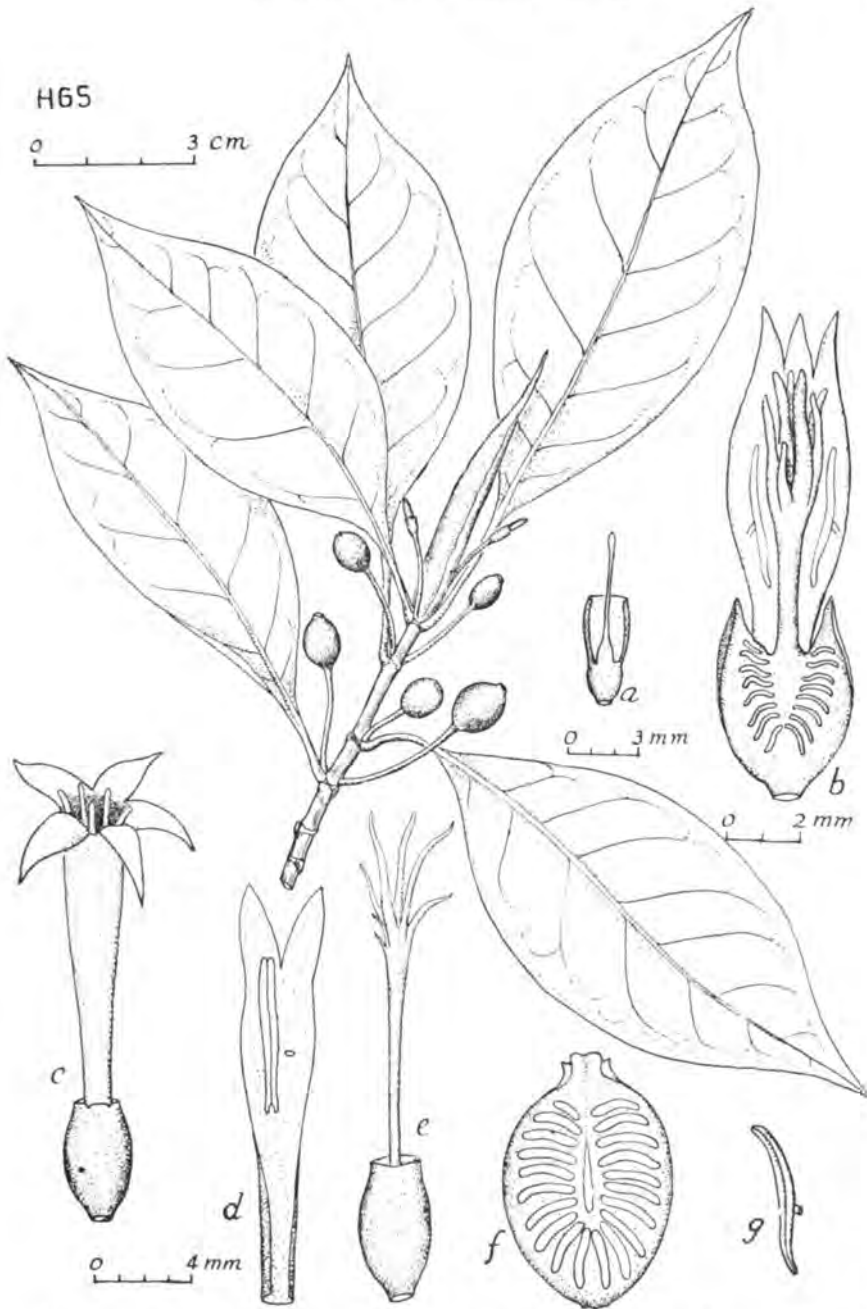


FIGURE 39.—*Timonius affinis* A. Gray: a, section of calyx, male flower; b, section through fertilized flower; c, female flower; d, portion of corolla, male flower; e, calyx with corolla removed, female flower; f, section through fruit; g, anther, male flower.

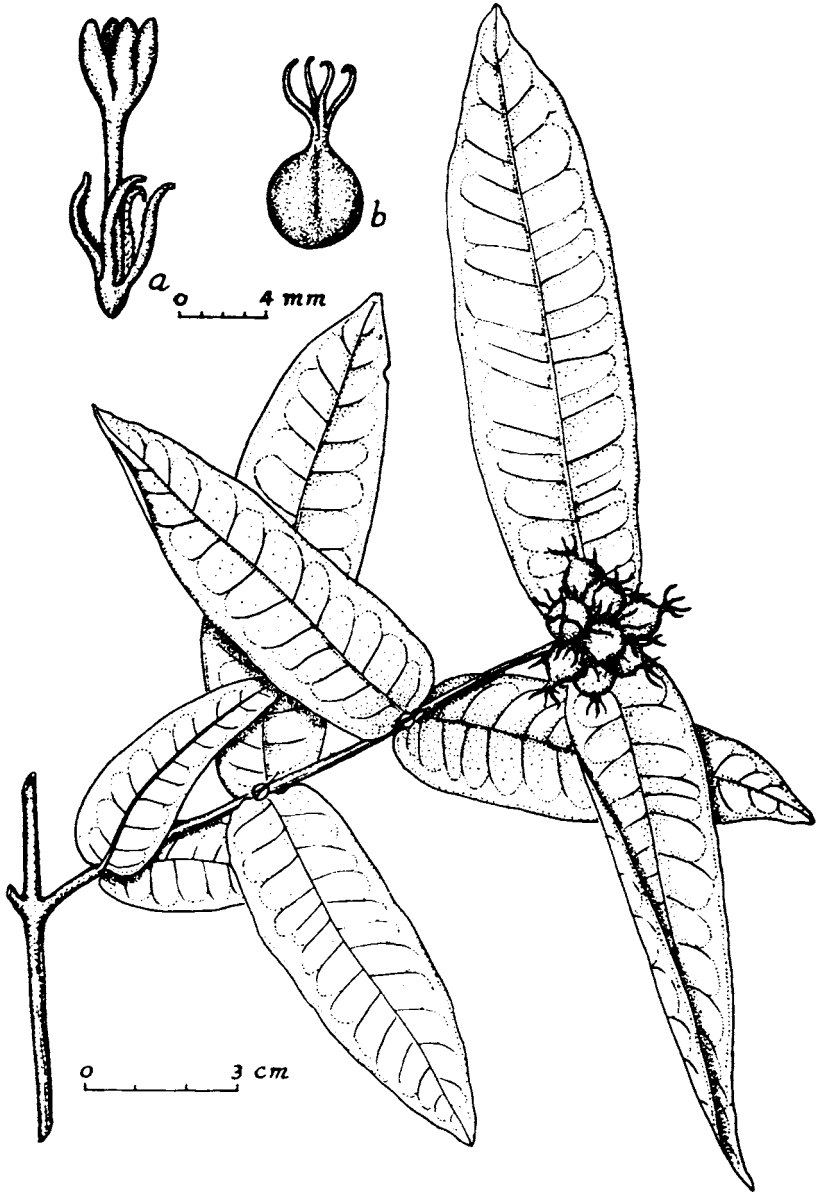


FIGURE 40.—*Ixora amplexicaulis* Gillespie: a, flower; b, fruit.

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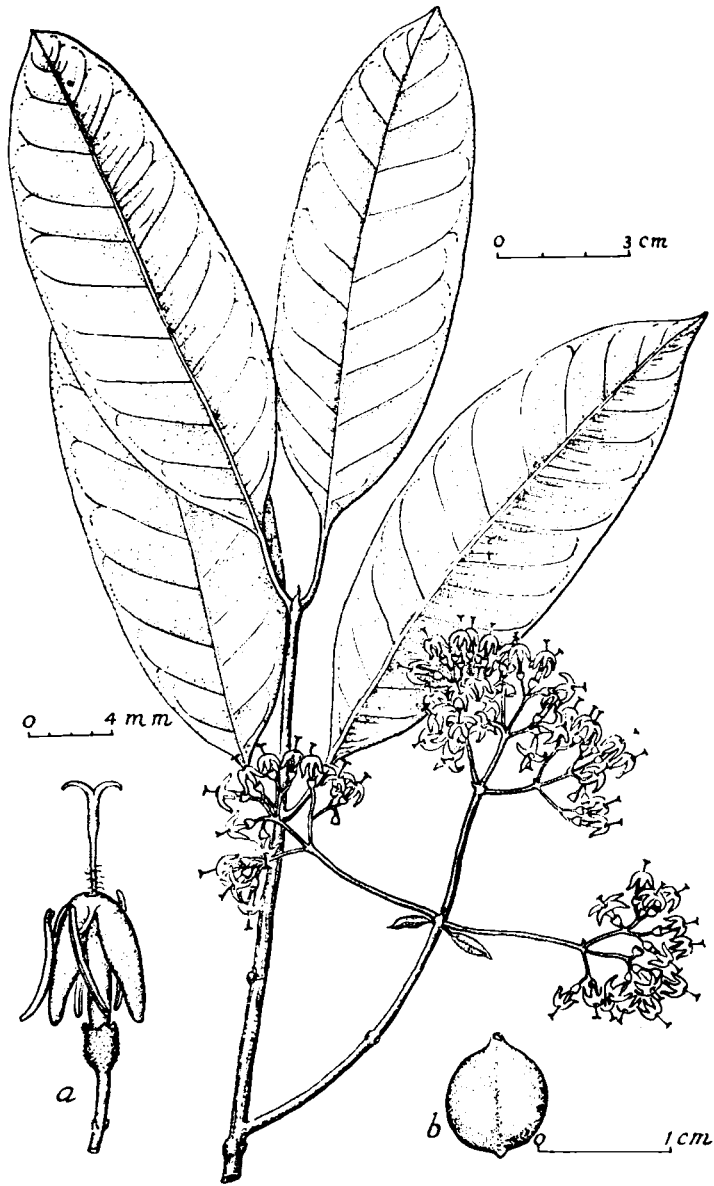


FIGURE 41.—*Ixora elegans* Gillespie: a, flower; b, fruit.

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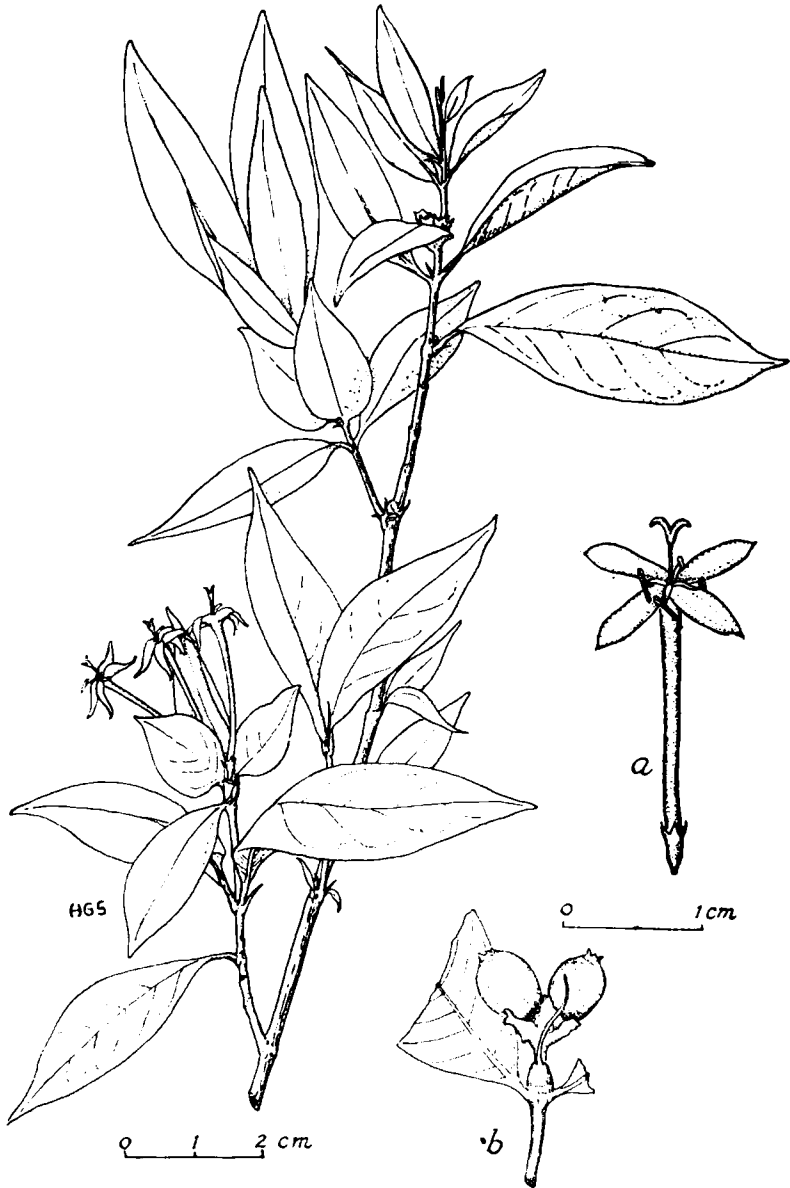


FIGURE 42.—*Ixora nandarivatensis* Gillespie: a, flower; b, cluster of fruits.

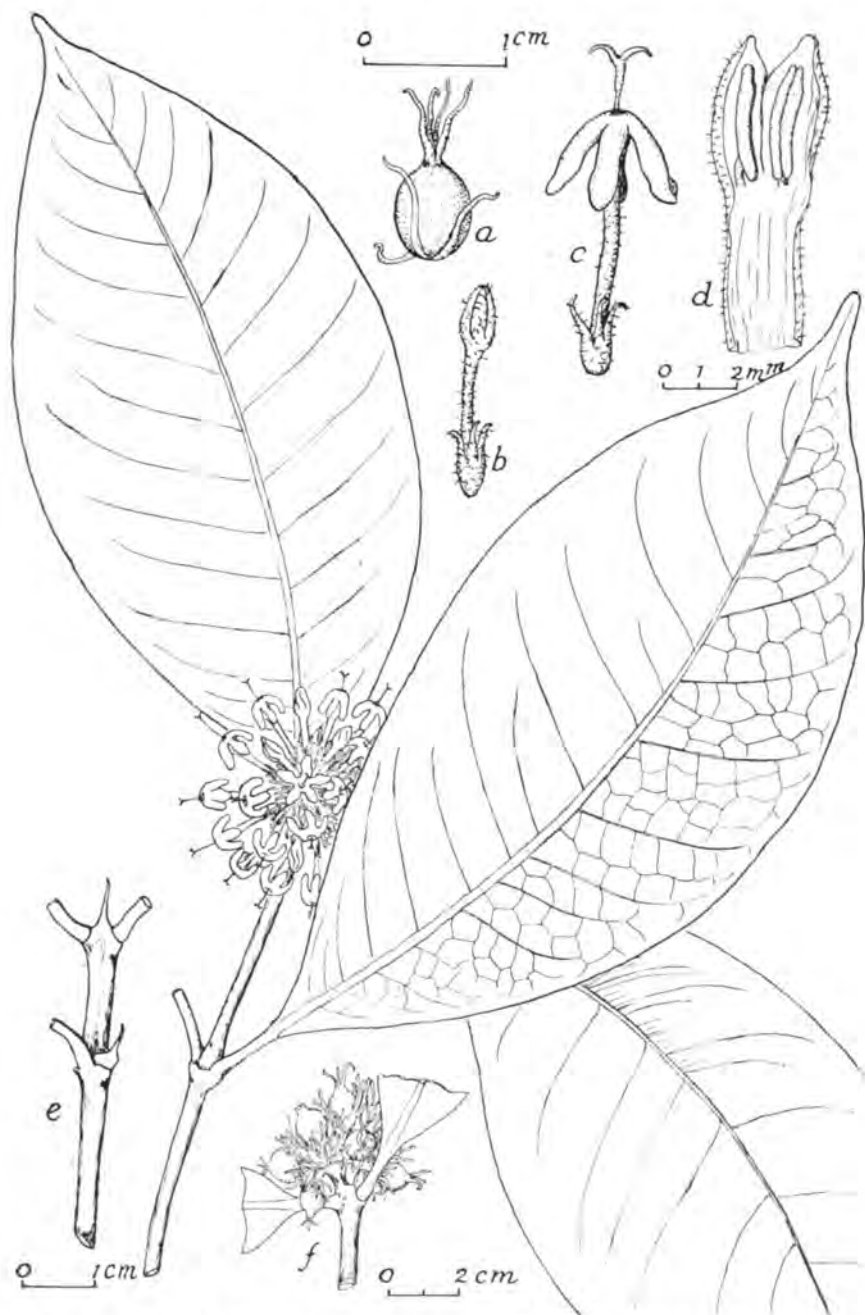


FIGURE 43.—*Ixora somosomacensis* Gillespie: a, fruit; b, flower bud; c, expanded flower; d, portion of corolla; e, portion of stem, showing stipules; f, cluster of fruits.

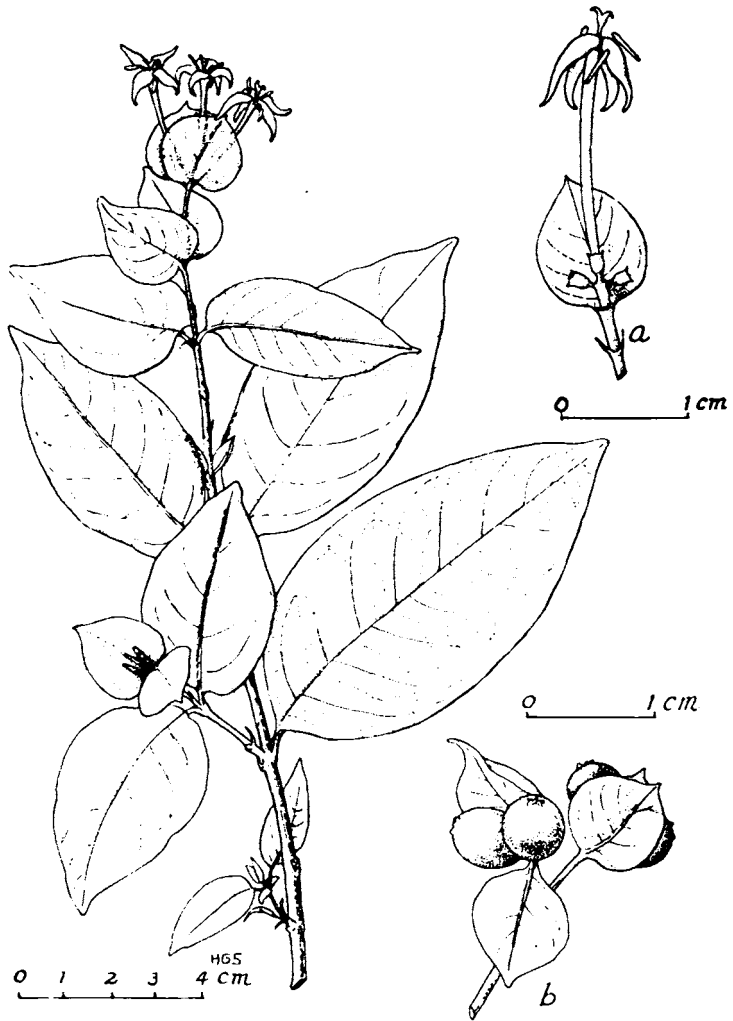


FIGURE 44.—*Ixora tiliensis* A. Gray: a, flower; b, cluster of fruits.



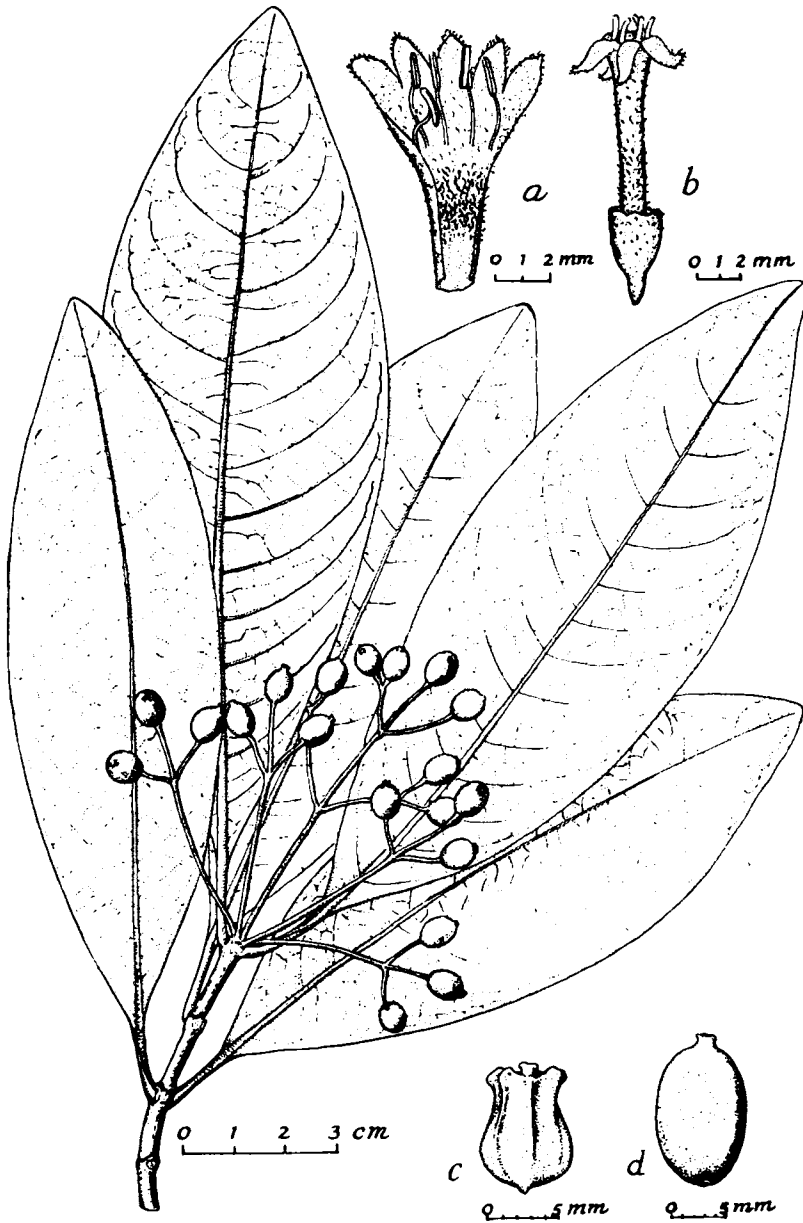


FIGURE 45.—*Psychotria brackenridgii* A. Gray: a, corolla; b, flower; c, seed; d, fruit.

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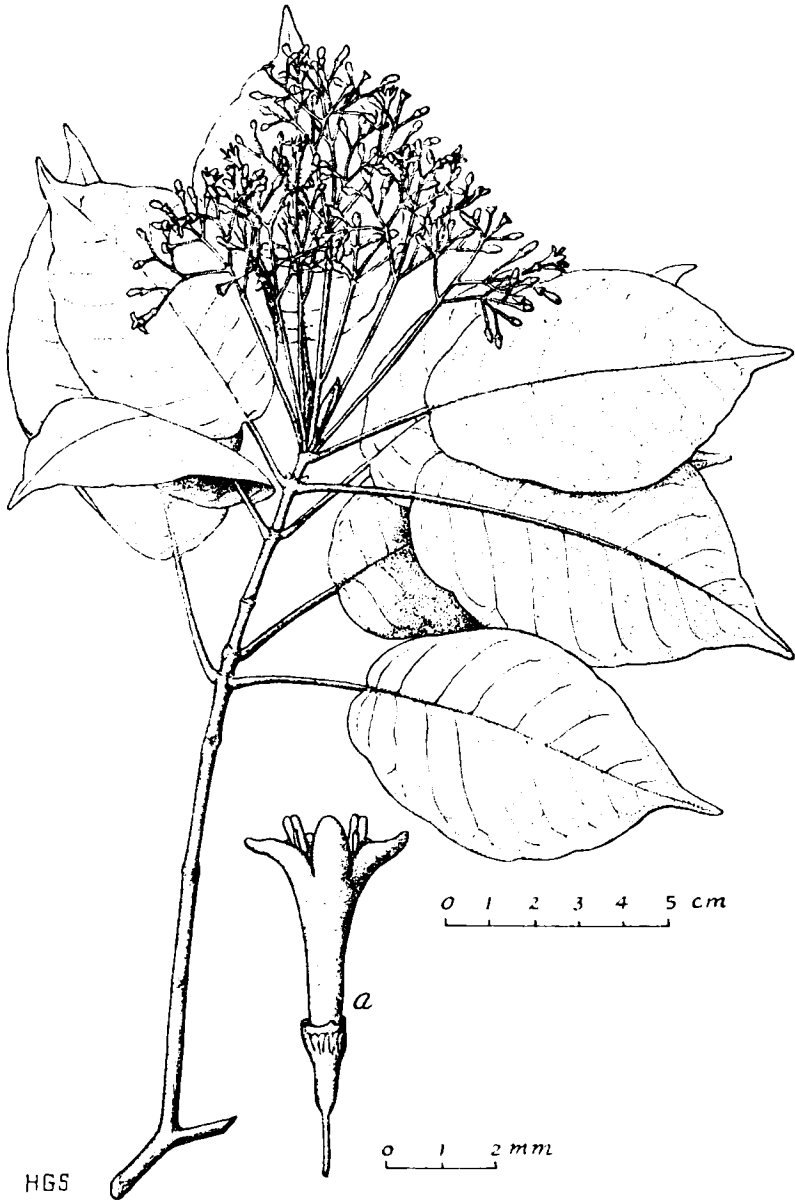


FIGURE 46.—*Psychotria filipes* A. Gray: a, flower.

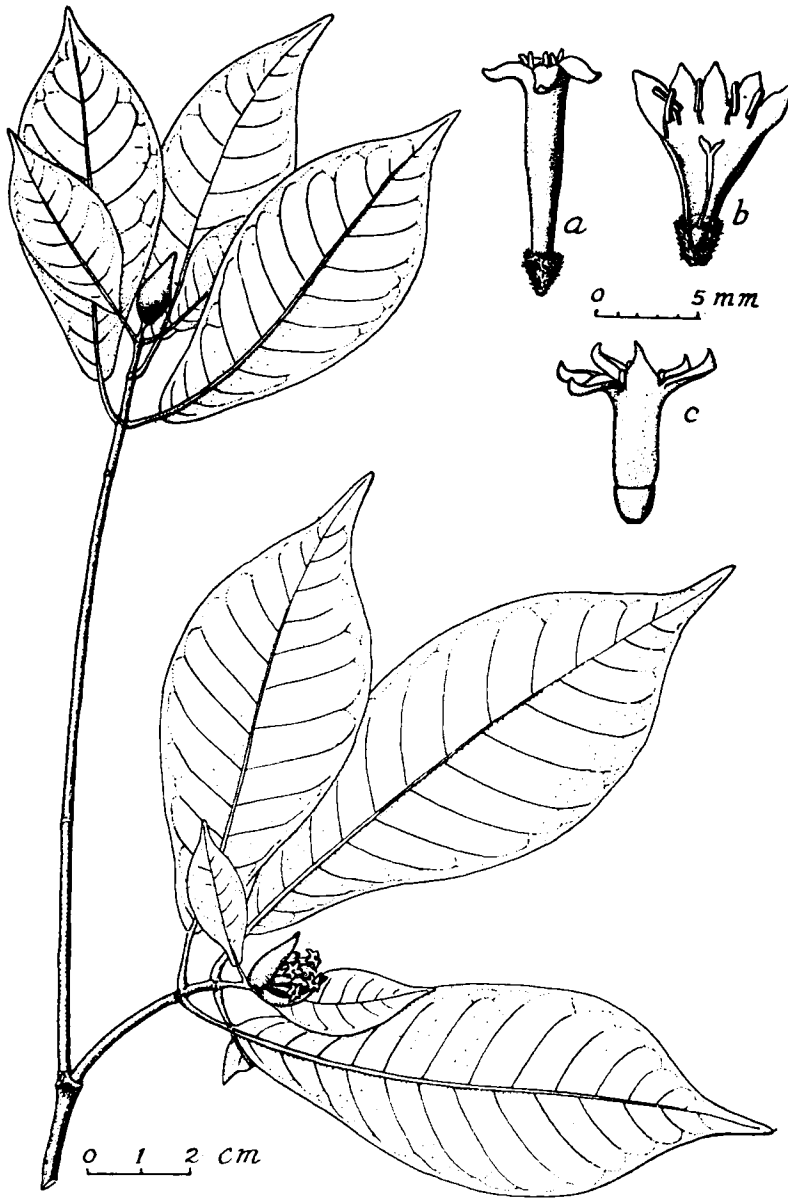


FIGURE 47.—*Psychotria pickerimii* A. Gray: a, b, flower of Gillespie no. 3046; c, flower of Gillespie no. 2318.

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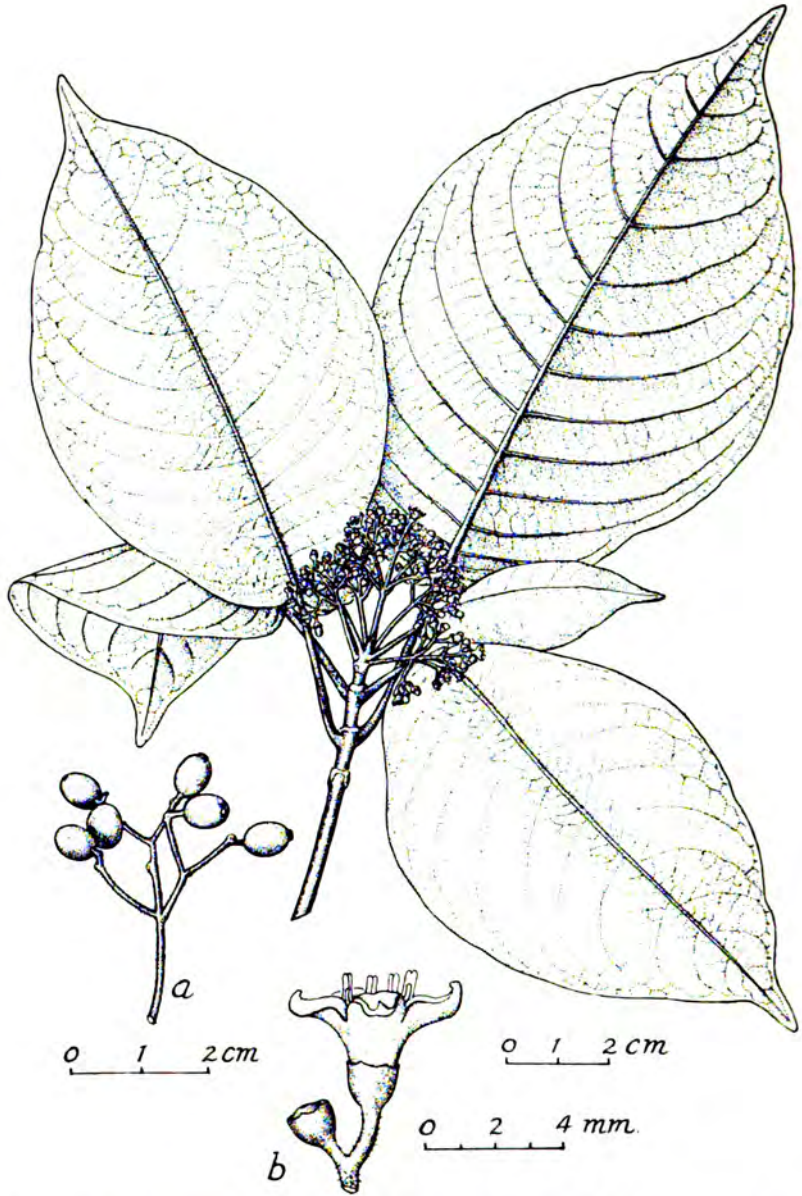


FIGURE 48.—*Psychotria tacuimensis* Gillespie: *a*, portion of infructescence; *b*, flower.

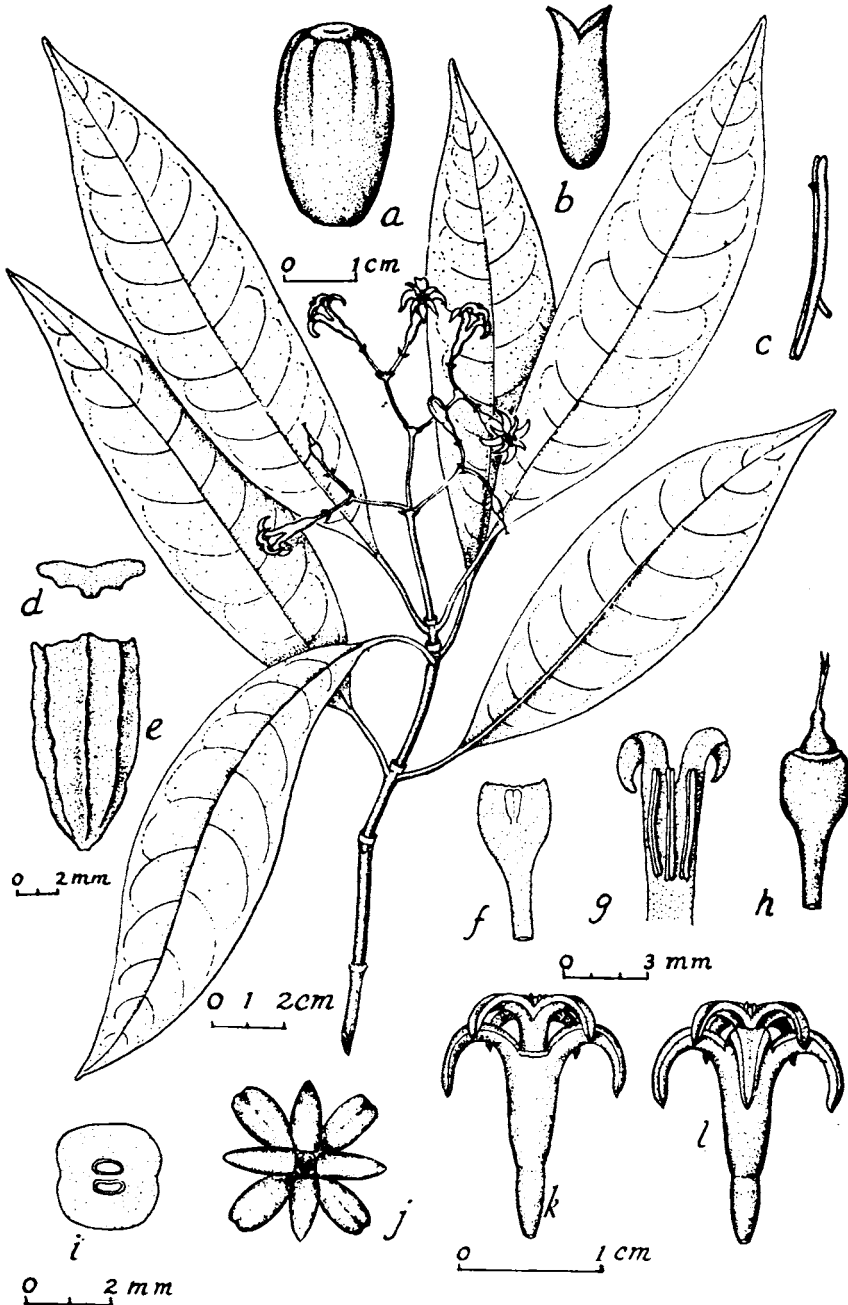


FIGURE 49.—*Readea membranacea* Gillespie: a, fruit; b, embryo, much enlarged; c, stamen, much enlarged; d, cross section of seed; e, seed; f, longitudinal section of ovary, showing one ovule; g, portion of corolla; h, flower with perianth removed; i, cross section of ovary; j, top view of flower; k, flower with calyx lobe removed; l, flower.

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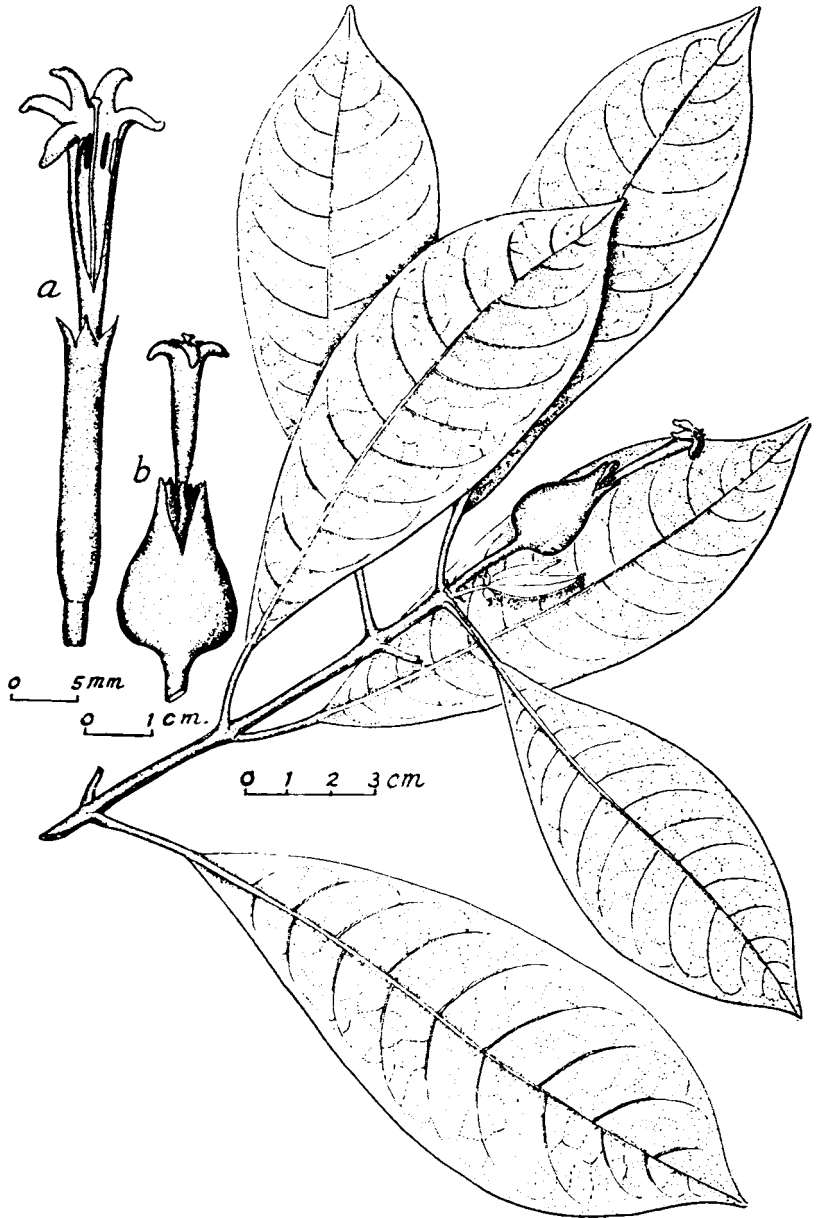


FIGURE 50.—*Uragoga lageniformis* Gillespie: a, flower with corolla opened; b, inflorescence.

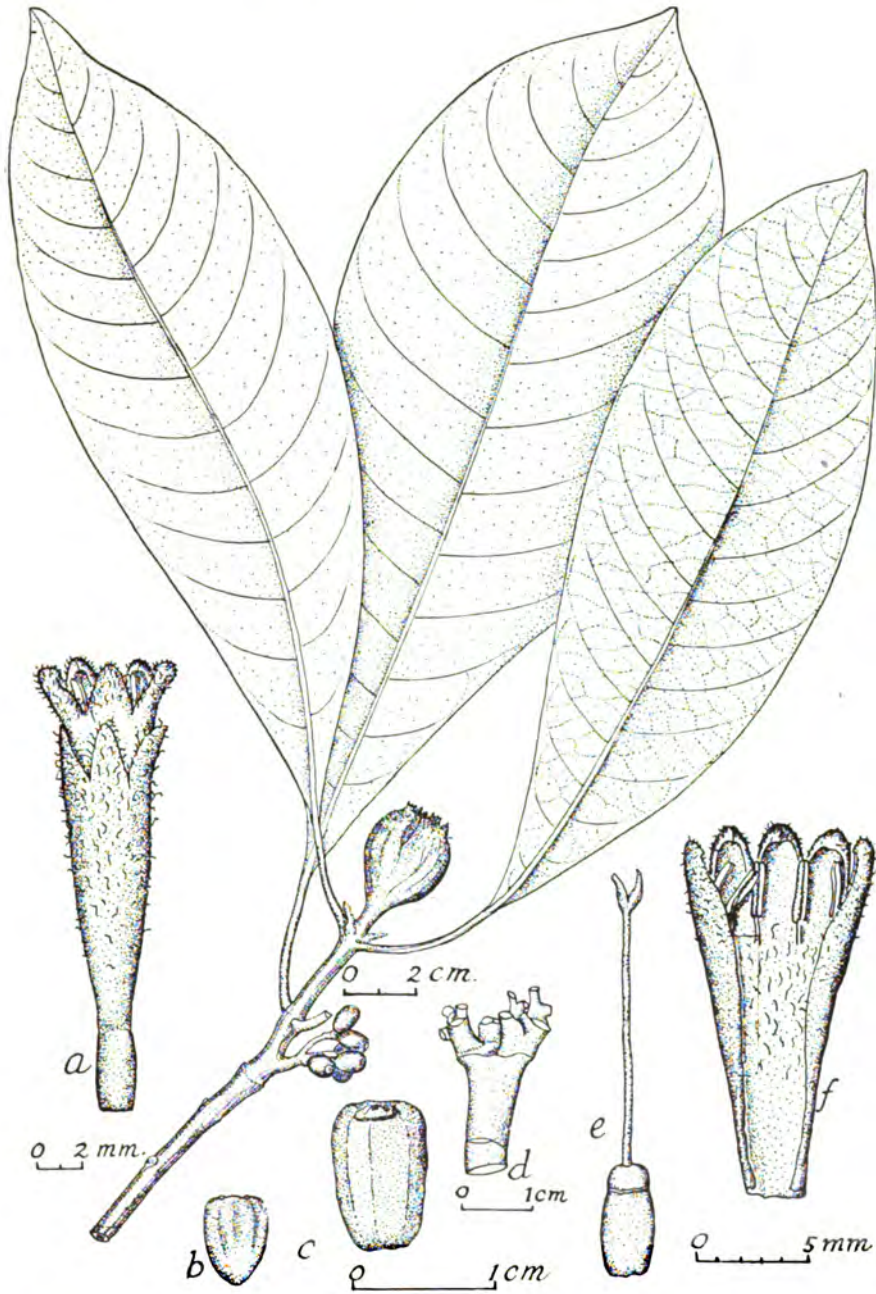


FIGURE 51.—*Uragoga petiolata* (A. Gray) Gillespie: a, flower; b, seed; c, fruit; d, peduncle with fruits removed; e, flower with perianth removed; f, corolla, opened.

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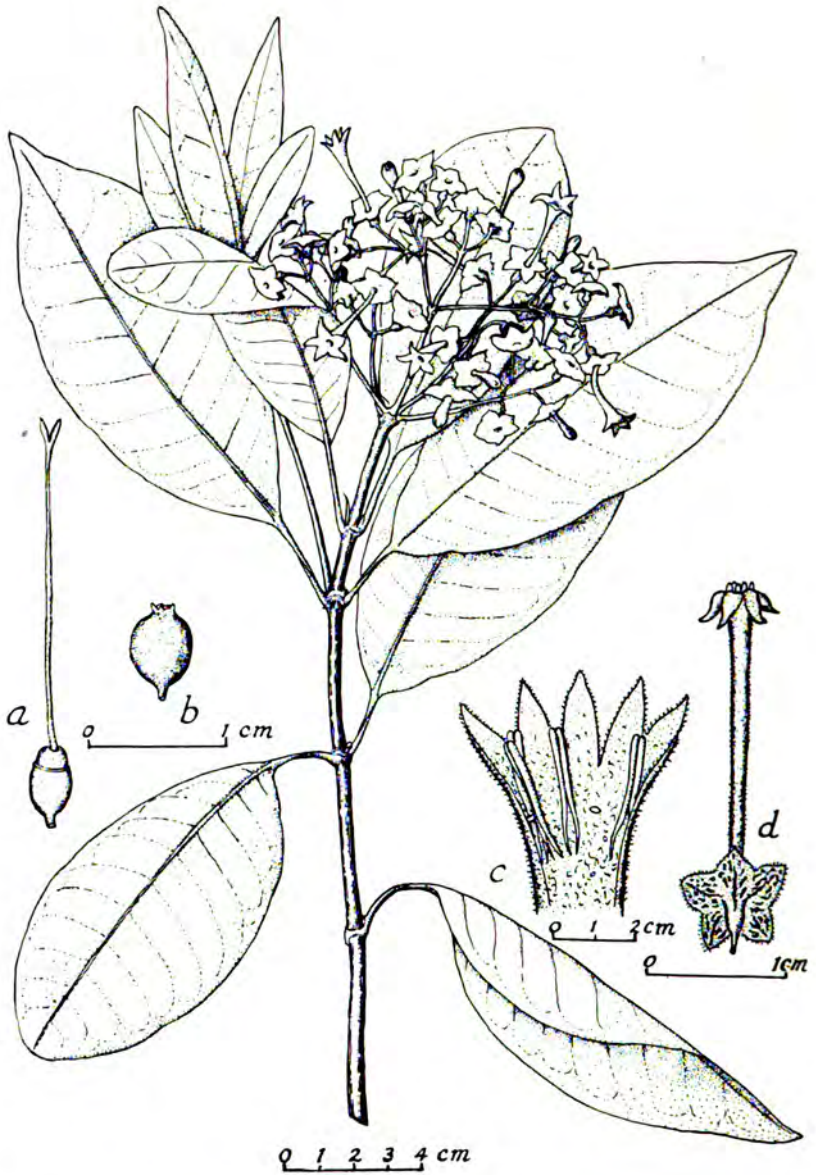


FIGURE 52.—*Calycosia fragrans* Gillespie: a, flower with perianth removed; b, fruit; c, portion of corolla; d, flower.



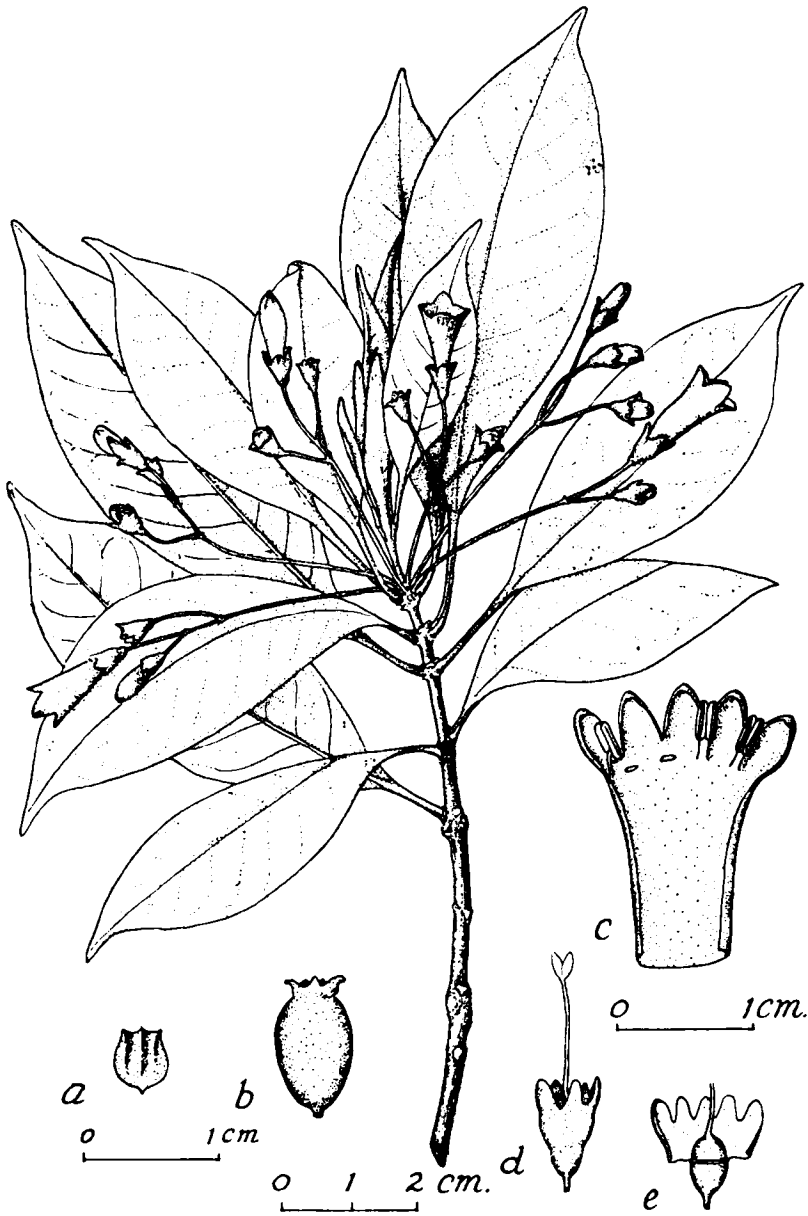


FIGURE 53.—*Calycosia laxiflora* Gillespie: a, seed; b, fruit; c, corolla; d, flower with corolla removed; e, portion of gynoecium, calyx laid open.

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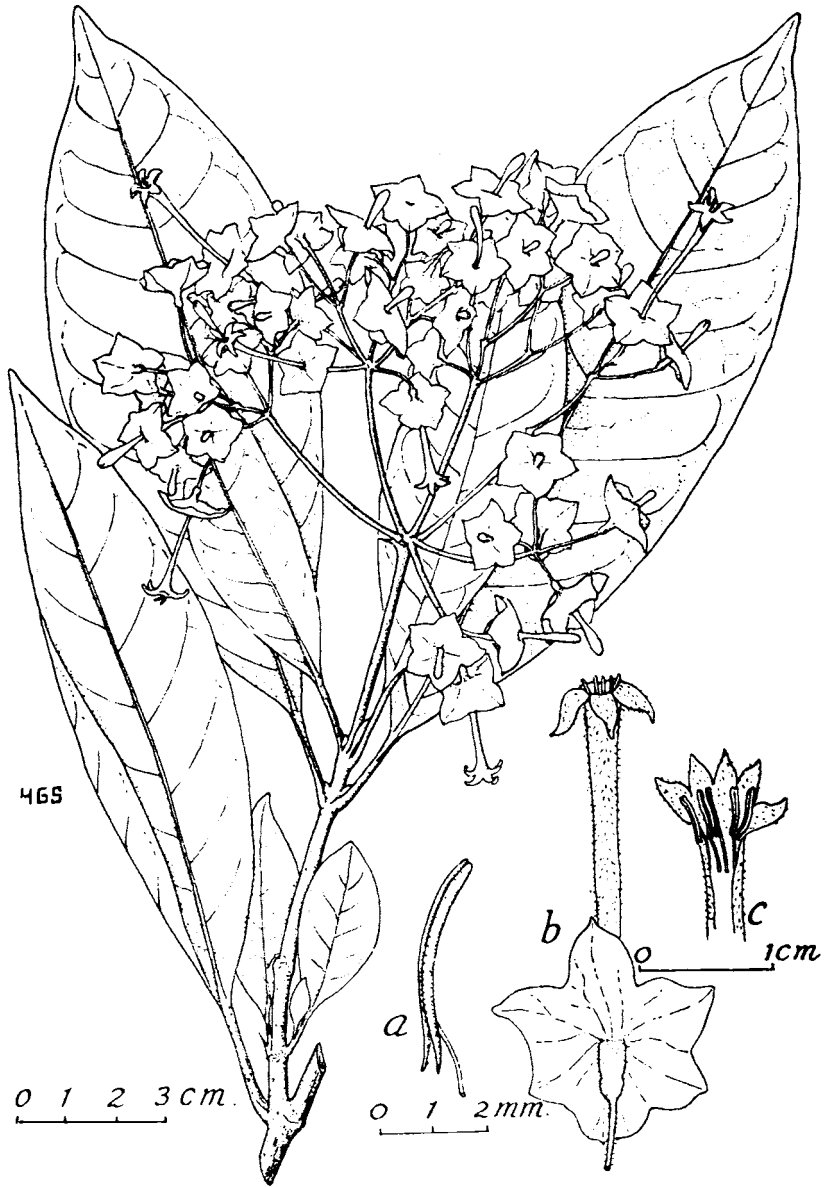


FIGURE 54.—*Calycosia magnifica* Gillespie: a, anther; b, flower; c, corolla opened at the throat.

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FIGURE 55.—*Calycosia monticola* Gillespie: a, fruit; b, flower with corolla removed, calyx opened; c, corolla opened.

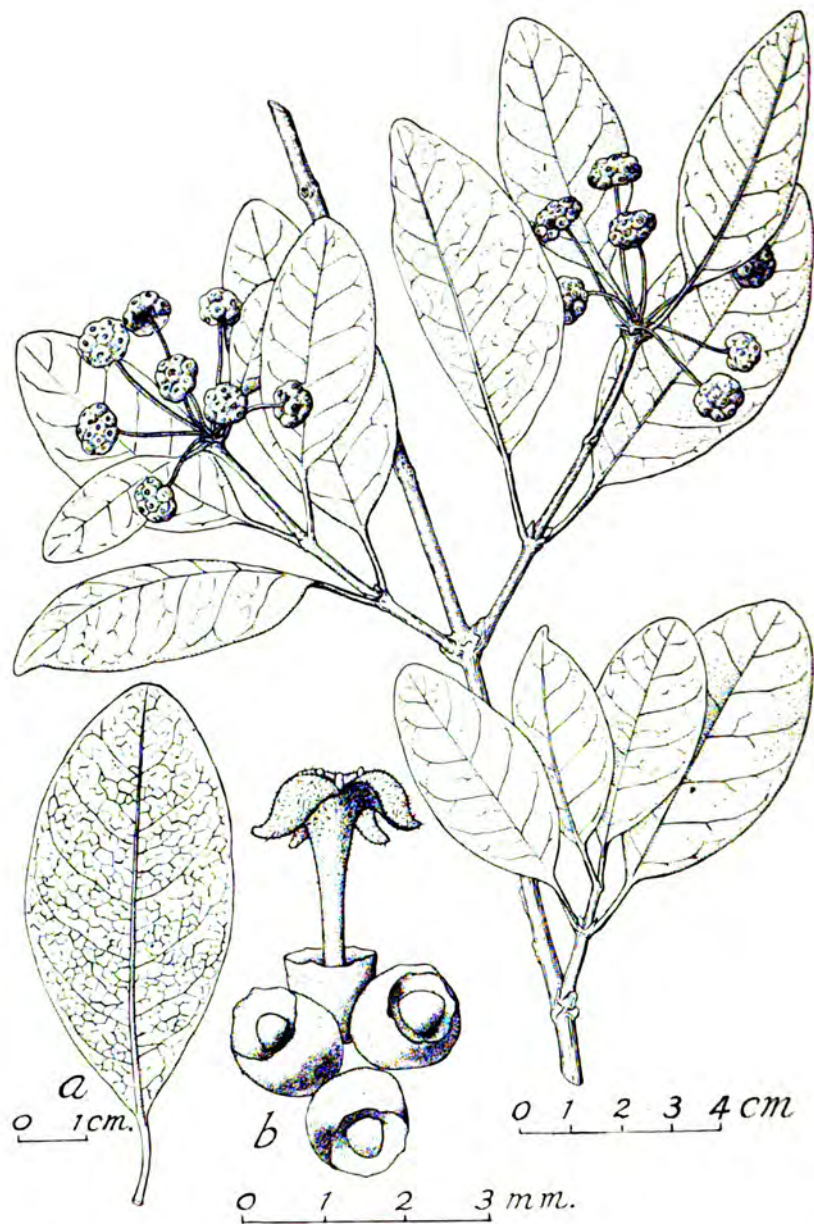


FIGURE 56.—*Morinda bucidifolia* A. Gray: a, leaf showing venation; b, portion of flowering head.

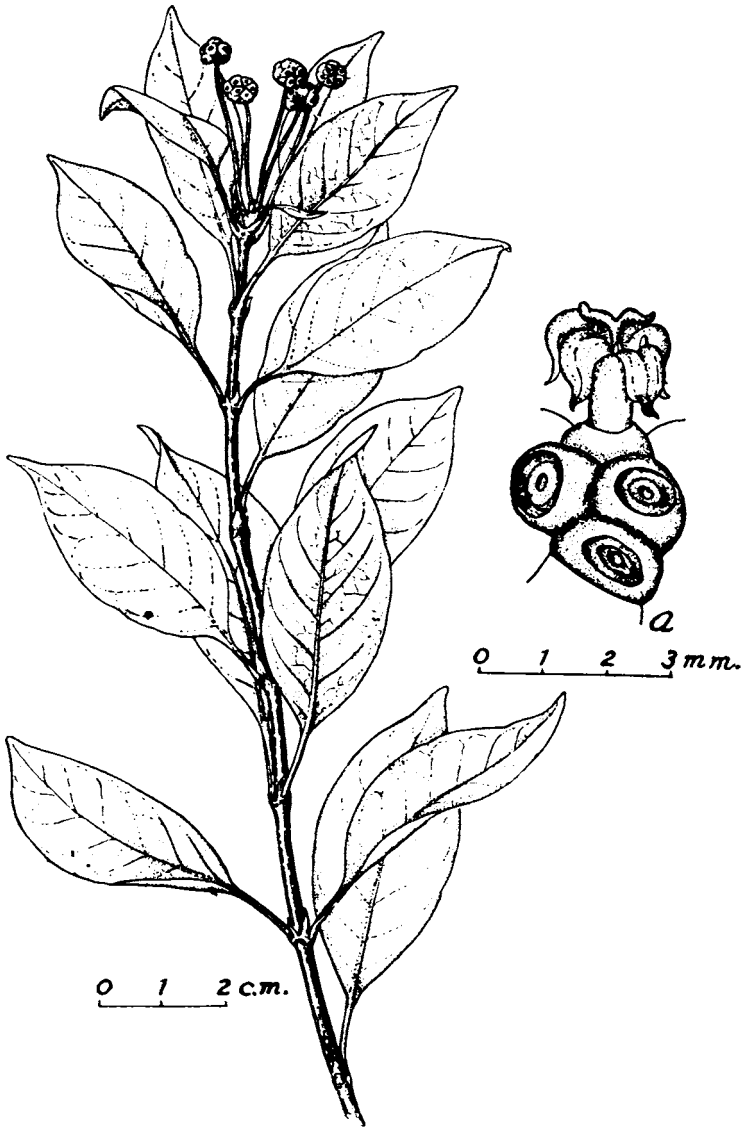


FIGURE 57.—*Morinda nonduricatensis* Gillespie: a, portion of syncarp with flower.

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