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STUDIES OF PACIFIC ISLAND PLANTS, XXV. THE MYRSINACEAE OF THE FIJIAN REGION ¹

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IN ORDER TO OBTAIN an adequate understanding of the Fijian species of many angiosperm families, it is obviously necessary to extend studies into adjacent island-groups. Ideally such studies should be extended westward at least as far as Malesia. It is not feasible in floristic work to revise large families throughout their entire Malesian-Pacific range, but a practicable geographic compromise in the present instance exists in the boundaries of the "Fijian Region." As defined by Takhtajan (1969: 250, *fig.* 32), the Fijian Region includes the Santa Cruz, Banks, and New Hebrides Islands, Fiji, Rotuma, the Horne and Wallis Islands, Samoa, Tonga, and Niue. Earlier phytogeographic analyses have implied the integrity of this area as a "Southwestern Pacific Subprovince" (van Balgooy, 1960) or a "Fijian Province" (Thorne, 1964). Although the outlines and rank of such areas are necessarily somewhat subjective, current studies indicate that a separate Fijian Region merits recognition on the basis of its phyto-geographic cohesion and peripheral discontinuities. It would be a more satisfactory and logical area for a floristic revision than a single archipelago like Fiji, but the present writer cannot hope to cover it. Nevertheless, studies of a limited number of families in the entire Fijian Region are feasible while a new Flora of Fiji is being compiled.

One of the many large angiosperm families that requires a new, world-wide review is the Myrsinaceae, of which the treatment by Mez (1902) remains the only comprehensive revision. For its period, and in view of the material then available, Mez's work seems highly meritorious, even after 70 years. Modern taxonomists who criticize this monograph and many other Pflanzenreich treatments should feel challenged to update them. Certainly different conclusions as to relationships would come to light by the application of modern techniques and the careful examination of perhaps ten times as many collections as were available to Mez. Un-

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fortunately, it is easier to depreciate such works and the meticulous scholarship of their authors than it is to improve upon them.

For the Myrsinaceae there fortunately do exist some supplementary regional revisions that are very useful (e.g. Walker, 1940, 1959; Backer & Bakhuizen van den Brink, 1965; and studies of some American genera). In the Fijian Region, especially in Fiji itself, the family is a frequent component of the forest vegetation, although usually occurring as shrubs and small trees of the undergrowth, or sometimes as lianas. It is represented in our area by six genera and 43 indigenous species, including six here described as new; two new combinations are proposed.

Pertinent herbarium collections in the following institutions are here cited: Arnold Arboretum of Harvard University (A); Bernice P. Bishop Museum (BISH); British Museum (Natural History) (BM); University of California, Davis (DAV); Gray Herbarium of Harvard University (GH); Royal Botanic Gardens, Kew (K); Department of Botany, University of Massachusetts (MASS); New York Botanical Garden (NY); Muséum National d'Histoire Naturelle, Paris (P); Departments of Agriculture and Forestry, Suva, Fiji (SUVA); University of California, Berkeley (UC); and U.S. National Herbarium (US). The collaboration of administrators in making such material available is greatly appreciated.

KEY TO GENERA

Ovary semisuperior, the ovules in our species bi- to several-seriate; pedicels with a pair of persistent distal bracteoles (prophylls); fruit essentially inferior, many-seeded, the seeds angled-obovoid, convex at apex, the style and calyx persistent. 1. *Maesa*.

Ovary superior; pedicels without prophylls; fruit superior and eventually falling from the calyx, one-seeded, the seed more or less subglobose.

Ovules mostly several-seriate but in our species 6–10 and irregularly uniseriate; style elongate, very slender and subulate to a minutely punctiform stigma; inflorescences in our species compact, irregularly fasciculi-form or short-racemose or rarely short-paniculate, the rachis rarely more than 3 mm. long at anthesis. 2. *Ardisia*.

Ovules uniseriate, in our species 2–5; style sometimes cylindric and slender but not subulate, the stigma discoid or subcapitate or peltate or (in no. 6) diverse.

Inflorescences paniculate, usually obviously pedunculate, often freely branched, in our species rarely less than 20 mm. long at anthesis and usually much longer.

Corolla sympetalous, the lobes obviously dextrorsely contorted in bud; flowers in our species hermaphrodite.

Anthers dorsifixed, the filaments distally free and ligulate; pedicels sometimes swollen distally into a clavate or cupuliform calyx-tube, but sometimes as in *Discocalyx*; style as long as or longer than the ovary, in our species 0.6–5 mm. long at anthesis.

. 3. *Tapeinosperma*.
Anthers broadly basifixed, the filament-tube adnate to the corolla-tube for its entire length and not distally divided into free parts; pedicels slenderly terete, the calyx subrotate from base; style often

- shorter than the ovary, in our species (0.1-) 0.2-0.7 mm. long at anthesis. 4. *Discocalyx*.
 Corolla in our species choripetalous, the petals narrowly imbricate in bud; flowers functionally unisexual. 5. *Embelia*.
 Inflorescences glomerulate or verruciform, essentially epedunculate, the axis in our species not exceeding 7 mm. long. 6. *Rapanea*.

1. *Maesa* Forsk. Fl. Aegypt.-Arab. 66. Oct. 1775; Seem. Fl. Vit. 147. 1866; Mez in Pflanzenr. 9(IV. 236): 15. 1902; St. John in Naturaliste Canad. 98: 571, 573. 1971.

Baeobotrys J. R. & G. Forst. Char. Gen. Pl. 11. Nov. or Dec. 1775, ed. 2. 21. 1776.

Mez's statement in his monograph to the effect that *Maesa* is a "Genus vastum, difficillime systematice ordinandum, . . ." is not likely to be disputed. Even in so limited a region as that now under consideration, species as satisfactory morphological groupings appear non-existent. In his key Mez utilized such characters as whether the prophylls are laterally free from one another or whether they are connate to form a cymbiform receptacle under the calyx; the presence or absence of lineolate glands in the calyx-lobes; the margins of the prophylls and calyx-lobes, whether entire, crenulate, or ciliolate; the apical shape of the calyx- and corolla-lobes; and the proportionate lengths of filaments and anthers. Among the Pacific species these characters seem of limited value in demarcating populations. One is, therefore, required to assign exaggerated value to characters of indument (distribution and length of hairs as well as persistence of minute scales), to leaf size and shape, to the abundance or sparseness of secretory canals in the leaf-blades, to inflorescence-type (whether paniculate or merely simply racemose), and to pedicel-length. None of these characters are satisfactory either, but by utilizing them with caution one can delimit populations that have a certain cohesion as well as a reasonable distribution. I have chosen this course rather than the alternative, of which we have recently seen some startling examples in various families, of distending infra-generic groupings in favor of muddled and geographically meaningless comprehensive taxa.

Although Mez indicates that the flowers of *Maesa* are functionally unisexual, the species of our region appear to have hermaphrodite flowers. An ovuliferous ovary and seemingly polliniferous anthers are present; if incipient dioecism occurs, which is likely, it is not obvious. The species of our area are normally 5-merous, although 4- or 6-merous flowers may occasionally be found; all of our taxa have the calyx- and corolla-lobes with quincuncial aestivation; the corolla is submembranous and campanulate; the stamens are affixed near the middle of the corolla-tube; the ovary is about half-inferior at anthesis; the placenta is essentially subglobose or ovoid; the fruits have a thin pericarp 0.2-0.4 mm. thick including a car-nose, glandular-lineolate mesocarp and a spongy or brittle endocarp; the prophylls, sepals, and style persist in fruit; the seeds are numerous (indi-

cating that most ovules develop), angled-obovoid, when mature castaneous or blackish, shining, and approximately 1–1.2 mm. long and 1–1.5 mm. broad on the convex apex. These characters, being essentially uniform, are omitted from the following descriptions of species.

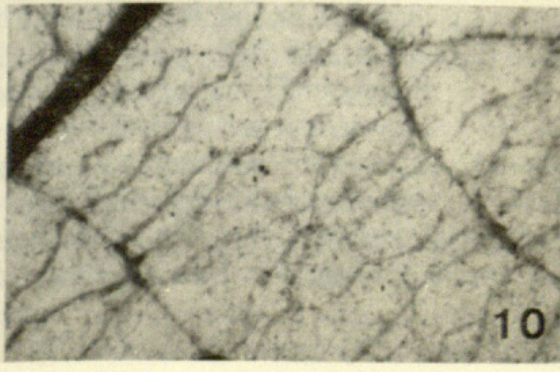
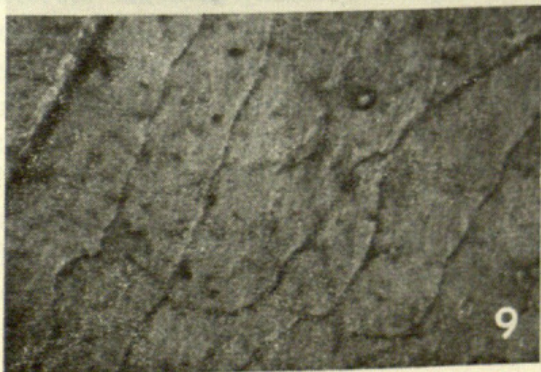
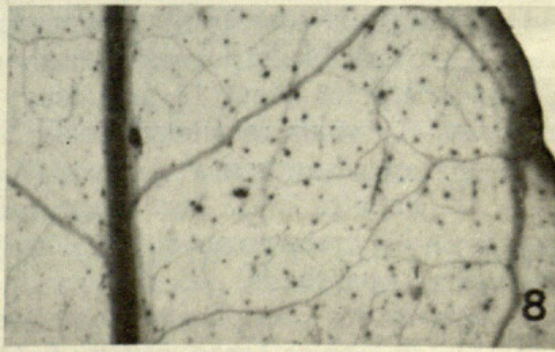
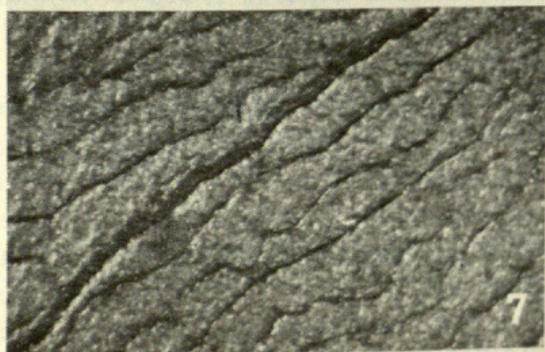
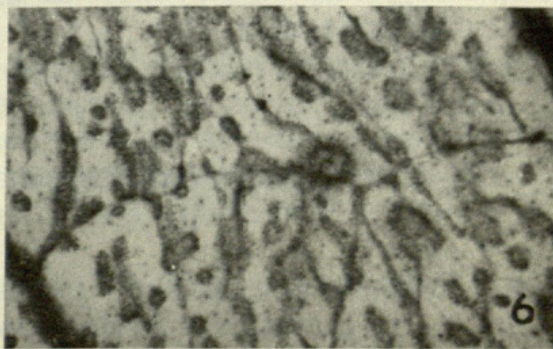
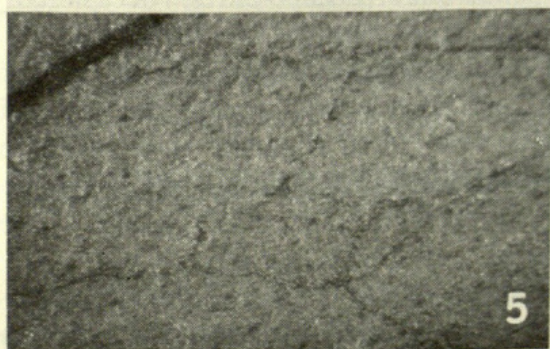
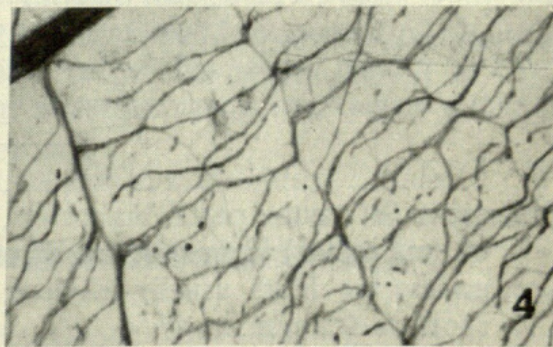
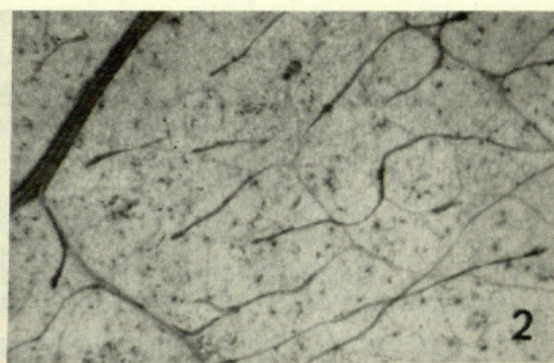
The presence of secretory canals in the leaf-mesophyll of Myrsinaceae (Metcalf & Chalk, 1950: 865) has often been noted in taxonomic discussions. These canals contain tannin and other materials and are frequently described as “resiniferous lines” or “nervilliform lines” (Mez, 1902). In *Maesa*, in particular, their putative presence or absence has been utilized to differentiate species. As a taxonomic character in *Maesa*, the secretory canals are undeniably useful, but considerable caution must accompany statements that they are present or absent.

As examples, in herbarium specimens of *M. tabacifolia* secretory canals are inconspicuous or not apparent, but in cleared leaves² (FIGURE 10) they are seen to be copiously immersed in the mesophyll at right angles to tertiary nerves. Leaf-indument, if present as in this species, shows well in cleared leaves. To separate such paired species as *M. insularis* and *M. samoana* it is convenient to suggest that in dried leaves secretory canals are comparatively inconspicuous in the former (FIGURE 1) and obvious in the latter (FIGURE 3). In fact, canals are present in both species as seen in cleared leaves, but less copiously so in *M. insularis* (FIGURE 2) than in *M. samoana* (FIGURE 4). Another pair of related species consists of *M. persicifolia*, in which dried leaves (FIGURE 5) seem nearly or quite to lack canals, and *M. vitiensis* (FIGURES 7, 9), leaves of which are usually copiously marked on the lower surface by sinuously parallel “resiniferous lines.” In cleared leaves, confluent areas of secretory cells become obvious in *M. persicifolia* (FIGURE 6), while in *M. vitiensis* (FIGURE 8) the canals nearly disappear with clearing.

It is evident, then, that in different species or individuals of *Maesa*, at least as represented by herbarium material, the secretory canals have different degrees of superficiality, abundance, form, and soluble content. A detailed study of these bodies in *Maesa*, and in other genera of Myrsinaceae, would doubtless be taxonomically illuminating. But in the meantime, with these few cautionary examples, I continue to mention the

² Dr. David W. Bierhorst has kindly aided in the technique of preparing leaves from herbarium specimens as follows: leaves are cleared in 3–4% NaOH followed by saturated aq. chloral hydrate, then stained with 1% safranin in absolute ethyl alcohol, and finally cleared in xylene and mounted in synthetic resin.

FIGURES 1–10. Leaf-blades of *Maesa* spp., showing the lower surfaces (left figures) of blades from dried herbarium specimens, and cleared portions (right figures), all $\times 10$. FIGURES 1 and 2. *M. insularis*: 1 from *Fiji Dept. Agr.* 11577, 2 from *Gillespie* 3479. FIGURES 3 and 4. *M. samoana*: 3 from *Christophersen* 384, 4 from *Reinecke* 262. FIGURES 5 and 6. *M. persicifolia*: 5 from *Degener* 15004, 6 from *Fiji Dept. Agr.* 14895. FIGURES 7–9. *M. vitiensis*: 7 and 8 from *Gillespie* 2390, 9 from *Gillespie* 3287. FIGURE 10. *M. tabacifolia*: from *Seemann* 286.



secretory canals in keys and descriptions in such a genus as *Maesa*, where satisfactory taxonomic characters are at a premium.

Maesa is an abundant and complex genus in many parts of its range, which extends from Africa and Madagascar eastward through south-eastern Asia to Japan, Queensland, and Malesia into the Pacific as far as Samoa and Tonga. In the region here covered 23 species have been proposed, but with several reductions I now recognize 15 species.

St. John (1971) has provided a valuable commentary on the overlooked 1775 edition of the Forsters' "Characteres Generum Plantarum," indicating that *Maesa* Forsk. has priority over *Baeobotrys* J. R. & G. Forst., although both were published in 1775.

KEY TO SPECIES

Indument (of young parts, branchlets, petioles, and at least the proximal parts of leaf-costas) composed of spreading simple hairs as well as of minute scales, the hairs usually obvious but sometimes inconspicuous, rarely as short as 0.1 mm.

Spreading hairs usually obvious on some inflorescence-parts, occasionally limited to calyx-lobes.

Leaf-blades prevailingly ovate to suborbicular and about twice as long as broad (or broader), usually $6-13 \times 3.5-9.5$ cm., persistently soft-pilose at least on the lower surface, cordate to rounded at base, infrequently merely broadly obtuse, the secondary nerves usually 5-8 per side; inflorescences prevailingly paniculate, only rarely simply racemose.

Prophylls comparatively inconspicuous, oblong-deltoid, $0.4-0.7 \times 0.2-0.5$ mm.; leaf-blades usually conspicuously crenulate-dentate at margin, without apparent secretory canals; Fiji. . . 1. *M. corylifolia*.

Prophylls comparatively conspicuous, ovate, 1-1.2 mm. long and broad; leaf-blades inconspicuously crenulate at margin; New Hebrides.

Petioles about 15 mm. long; leaf-blades cordate at base, without obvious secretory canals; inflorescences compact, about 2 cm. long at anthesis. 2. *M. bennettii*.

Petioles 25-35 mm. long; leaf-blades rounded at base, with obvious secretory canals near lower surfaces; inflorescences 5-7 cm. long at anthesis. 3. *M. aneiteensis*.

Leaf-blades prevailingly lanceolate or oblong-lanceolate and about 3 times as long as broad, usually $6-13.5 \times 2-4.5$ cm., usually glabrous on both surfaces except for scattered hairs on the principal venation, but sometimes copiously pilose beneath, prevailingly acute to obtuse at base, infrequently narrowly subcordate, usually subentire or undulate at margin but occasionally obviously crenulate, the secondary nerves usually 6-11; inflorescences simply racemose, only rarely paniculate with as many as 10 branches; Fiji. 4. *M. pickeringii*.

Spreading hairs lacking on inflorescence-parts, these merely furfuraceous; leaf-blades glabrous beneath except for sparse indument on proximal parts of costa and secondaries (or occasionally soft-pilose on the lower surface in no. 5).

Leaf-blades prevailingly obovate-elliptic to ovate, usually $8-26 \times 5-15$ cm.,

comparatively broad, usually about twice as long as broad; petioles 15–45 mm. long.

Inflorescence-parts (rachis, bracts, pedicels, and calyx) copiously furfuraceous, the scales at anthesis usually congested, contiguous or overlapping, fimbriate-margined; prophylls inconspicuous, lanceolate- or ovate-deltoid, 0.5–1 mm. long and broad; calyx-lobes deltoid, $0.7-1 \times 0.7-1.2$ mm.; leaf-blades with comparatively inconspicuous secretory canals, these usually not apparent; Fiji to Samoa. 5. *M. tabacifolia*.

Inflorescence-parts (rachis, bracts, pedicels, and calyx) with comparatively few and scattered scales, these not contiguous at anthesis nor obviously fimbriate; prophylls comparatively conspicuous, ovate, usually 1–1.4 mm. long and broad; calyx-lobes ovate, $0.8-1.2 \times 1-1.5$ mm.; leaf-blades with obvious secretory canals near lower surfaces; New Hebrides.

Leaf-blades rounded at base, rounded or broadly obtuse at apex.

..... 6. *M. eramangensis*.

Leaf-blades broadly obtuse at base, obtusely cuspidate at apex.

..... 7. *M. aubertii*.

Leaf-blades prevailingly lanceolate to oblong-elliptic, usually $4-13 \times 1.5-5$ cm., comparatively narrow, usually about 3 times as long as broad; petioles 5–27 mm. long. 14. *M. persicifolia*.

Indument composed of minute scales only, without hairs (or, if hairs rarely present and visible on branchlets, then forming an obscure puberulence and less than 0.1 mm. long).

Leaf-blades usually $5-23 \times 3-13$ cm., comparatively broad, often about twice as long as broad, or if proportionately longer then rarely less than 4 cm. broad; petioles 10–45 mm. long.

Petioles narrowly winged in the distal half; leaf-blades obovate or lanceolate-elliptic, $8-17 \times 4-9$ cm., attenuate to obtuse at base and long-decurrent on the petiole; inflorescences appearing simply racemose and fasciculate but actually short-paniculate, composed of 2–5 elongate branches arising from a short, irregular rachis; Santa Cruz Islands and New Hebrides. 8. *M. banksiana*.

Petioles not conspicuously winged, the leaf-blades usually short-decurrent on the petiole; inflorescences paniculate, with branches spreading from an elongate rachis, or simply racemose.

Inflorescences prevailingly paniculate but infrequently simply racemose; leaf-blades elliptic to ovate, not suborbicular, the marginal crenations often comparatively inconspicuous.

Secretory canals comparatively inconspicuous on lower leaf-surfaces.

Leaf-blades elliptic to ovate- or obovate-elliptic, obtuse at base, obtuse to obtusely short-acuminate at apex; inflorescences soon glabrate; New Hebrides.

Pedicels at anthesis and in fruit not exceeding 1 mm. in length, the prophylls conspicuous, $1-1.5 \times 1-2$ mm.; leaf-blades usually $12-17 \times 8-13$ cm., the basal margin conspicuously thickened. 9. *M. nemoralis*.

Pedicels 1.5–2 mm. long at anthesis, 2–4 mm. long in fruit, the prophylls less conspicuous, $0.7-1 \times 1-1.5$ mm.; leaf-blades usually $6-14 \times 3-8$ cm., the basal margin less obviously thickened. 10. *M. ambrymensis*.

Leaf-blades ovate-oblong to elliptic-lanceolate, usually acute to attenuate at base and gradually acuminate to cuspidate at apex, usually $8-23 \times 3.5-9.5$ cm.; inflorescences often persistently furfuraceous; pedicels to 2 mm. long, the prophylls comparatively inconspicuous, 0.4-1 mm. long and broad; Fiji.

11. *M. insularis*.

Secretory canals sinuously copious and conspicuous near lower leaf-surfaces; leaf-blades ovate-elliptic to ovate-lanceolate, more than twice as long as broad, usually $9-21 \times 4-9$ cm., rounded to attenuate at base, cuspidate or short-acuminate at apex; Samoa. ...

12. *M. samoana*.

Inflorescences often simply racemose but sometimes paniculate, the pedicels 1-4 mm. long; leaf-blades ovate to suborbicular, sometimes broadly elliptic, usually $5-14 \times 4.5-11.5$ cm., rounded to broadly obtuse at base, rounded (less often broadly obtuse or obtusely cuspidate) at apex, conspicuously crenulate at margin, with copious and conspicuous secretory canals near lower surfaces; eastern Fiji, Tonga, and eastern Samoa.

13. *M. tongensis*.

Leaf-blades usually $4-13 \times 1.5-5$ cm., comparatively narrow, usually about 3 times as long as broad; petioles 5-35 mm. long; Fiji.

Indument-scales often subpersistent on inflorescence-parts; petioles narrowly winged distally; leaf-blades usually rounded to obtuse at base and abruptly short-decurrent on the petiole, the secondary nerves spreading, the lower surfaces without visible secretory canals or these immersed and not apparent, rarely faintly discernible; inflorescences usually paniculate, sometimes bipinnately so, with spreading branches, infrequently simply racemose, the pedicels often negligible but sometimes to 2.5 mm. long at anthesis and to 3 mm. long in fruit, the corolla-lobes inconspicuously glandular-lineolate.

14. *M. persicifolia*.

Indument-scales evanescent, rarely persistent to anthesis on inflorescence-parts; petioles narrowly winged or cartilaginous-angled often nearly to base; leaf-blades attenuate to obtuse at base and long-decurrent on the petiole, the secondary nerves curved-ascending, the lower surfaces usually with conspicuous secretory canals but these sometimes immersed and not obvious; inflorescences often simply racemose but frequently paniculate and then usually with comparatively short and ascending branches, the pedicels obvious, usually 1.5-2.5 mm. (but sometimes only 0.5 mm.) long at anthesis and often to 3.5 mm. long in fruit, the corolla-lobes obviously and conspicuously glandular-lineolate.

15. *M. vitiensis*.

1. *Maesa corylifolia* A. Gray in Proc. Amer. Acad. Arts 5: 330. 1862; Seem. Viti, 438. 1862, Fl. Vit. 148. 1866; Horne, A Year in Fiji, 264. 1881; Mez in Pflanzenr. 9(IV. 236): 37. 1902; Gibbs in Jour. Linn. Soc. Bot. 39: 155, p. p. 1909; J. W. Parham, Pl. Fiji Isl. 156. 1964.

FIGURE 11.

Maesa macrophylla sensu Seem. in Bonplandia 9: 257. 1861; non Wall.

Maesa corylifolia var. *n.* Horne, A Year in Fiji, 264. 1881.

Liana or scandent shrub to 5 m. high, with indument of two types: (1)

diaphanous, ferruginous, irregular scales about 0.1 mm. in diameter, and (2) spreading, translucent, ferruginous hairs 0.3–1 mm. long; branchlets slender, furfuraceous and persistently pilose, copiously lenticellate; petioles (7–) 10–30 mm. long, slender, shallowly canaliculate distally, copiously pilose; leaf-blades chartaceous, drying dark brown, ovate, (5–) 6–13 cm. long, (2.5–) 3.5–8.5 cm. broad, cordate at base or infrequently merely rounded and rarely broadly obtuse, cuspidate or short-acuminate and callose-mucronulate at apex, usually conspicuously crenulate-dentate at margin (crenations 2–4 per centimeter, callose-tipped), copiously and persistently soft-pilose on both surfaces or rarely eventually glabrate above except on nerves, the costa prominent beneath, the secondary nerves 5–7 per side, spreading, raised on both surfaces, the veinlet-reticulation immersed or prominulous beneath, the secretory canals not apparent; inflorescences axillary, solitary, broadly paniculate, often bipinnately so, only sporadically simply racemose, usually 4–15 cm. long and broad and with 5–15 spreading lateral branches, the rachis, branches, bracts, pedicels, prophylls, and calyx copiously pilose; peduncle to 2 cm. long, slender like the rachis, the branch-subtending bracts oblong, 1–2 mm. long, obtuse or rounded, glabrous within, the flower-subtending bracts similar, 0.5–1 mm. long; pedicels slender, 0.3–1.5 mm. long, the prophylls inconspicuous, oblong-deltoid, 0.4–0.7 mm. long, 0.2–0.5 mm. broad, obtuse, glabrous within; calyx-lobes deltoid, 0.6–0.8 mm. long and broad, acute, obscurely erosulous at margin, glabrous within; corolla 1.2–1.8 mm. long and 2–3 mm. in apical diameter, the tube shorter than the lobes, the lobes ovate-oblong, 0.8–1.2 mm. long and broad, rounded and strongly reflexed at apex, minutely erosulous at margin, inconspicuously glandular-lineolate; filaments and anthers each to 0.4 mm. long; ovary flattened-conical, the style minute, to 0.3 mm. long, inconspicuously lobed, the ovules usually 15–18, 2-seriate; fruits ovoid or subglobose, 2–3 mm. in diameter at maturity, often copiously furfuraceous, pilose at least distally and on the persistent calyx-lobes.

TYPE LOCALITY: Mathuata Province, Vanua Levu, Fiji; the type is a U.S. Exploring Expedition specimen, cited in the sequence below.

DISTRIBUTION: Endemic to Fiji, but thus far known only from the two large islands, Viti Levu and Vanua Levu, and also from Ovalau and Ngau. It is sometimes locally abundant, occurring at elevations from near sea-level to 1,150 m. in various types of forest and also in grassland thickets or on open hillsides. Individuals are often lianas but sometimes scrambling or scandent shrubs to 5 m. high. Corollas are noted as white to pale greenish yellow, often brown-lineolate; the filaments are pale greenish yellow and the anthers yellow; the ovary is orange-red, with a green stigma; and the fruits at maturity are dull waxy white.

LOCAL NAMES: The only dependable names, often generic in connotation, are *kutumirase* (on Viti Levu) and *kolo ni mbeka* (on Vanua Levu).

Other recorded names are *wa vatu* (Mba), *wa sinu* (Nandronga & Navosa), *ngingi* (Namosi), *vere* (Mathuata), and *kala mbu ndi wawa* (Thakau-ndrove).

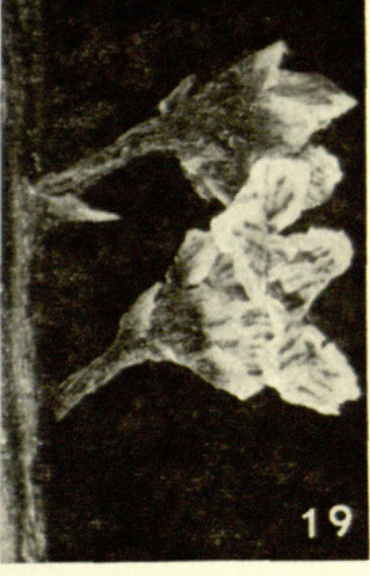
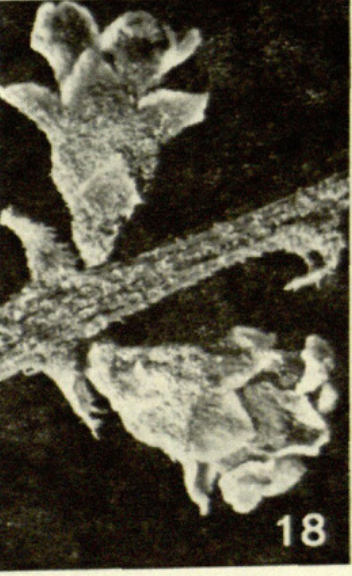
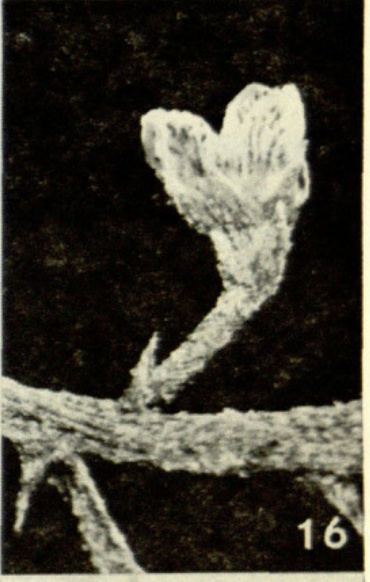
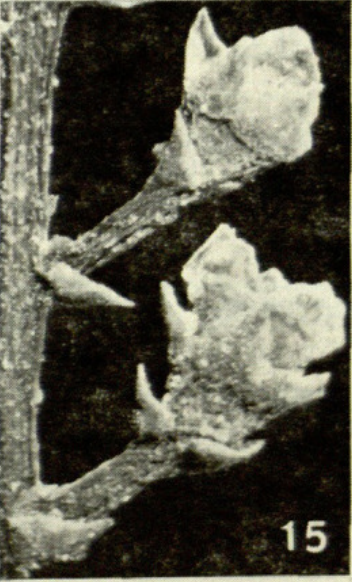
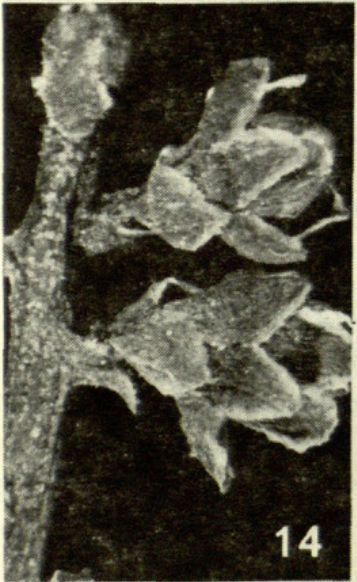
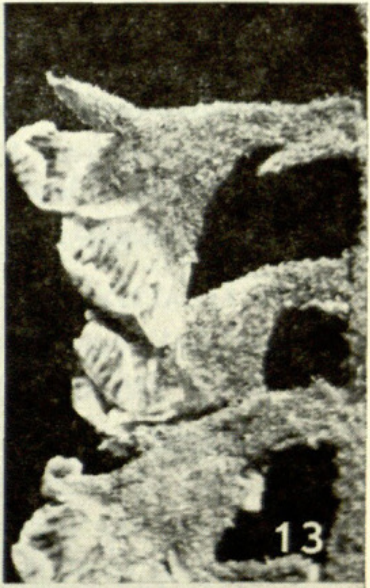
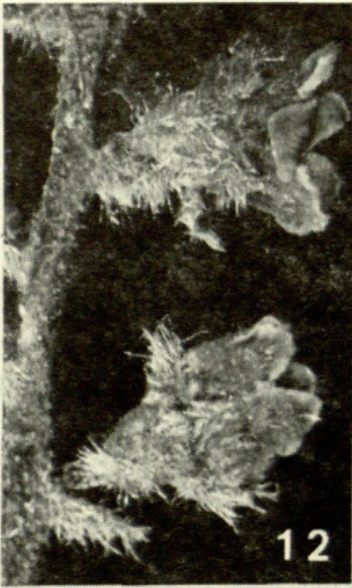
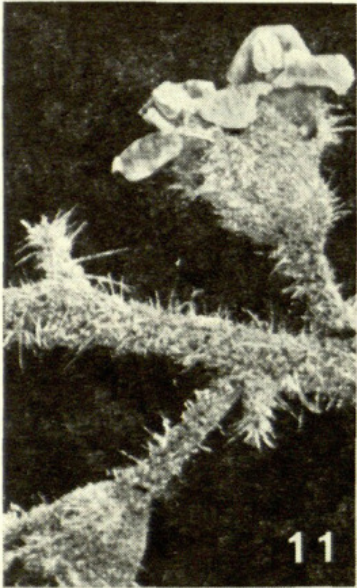
Fiji. VITI LEVU: MBA: Mountains near Lautoka, *Greenwood* 46 (K), 403 (K), 896 (A, K, NY, UC, US); between Nandala and Nukunuku Creeks, west of Nandarivatu, *Smith* 6175 (A, BISH, K, US); Savundamatau Creek, west of Nandarivatu, *Webster & Hildreth* 14252 (DAV, MASS); vicinity of Nandarivatu, *Gibbs* 557 (BM, K), *Gillespie* 3185 (BISH, UC), *Parks* 20722 (BISH, SUVA, UC, US), *Tothill* 344 (K), *Greenwood* 846 (A, K), *Smith* 6031 (A, BISH, K, NY, US); Mt. Nanggara-nambuluta, *Gillespie* 3679 (BISH, K, NY, UC), *Smith* 4893 (A, BISH, K, US), *Fiji Dept. Agr.* 13543 (BISH, SUVA); Mt. Tomanivi, *Smith* 5219 (A, BISH, K, US). NANDRONGA & NAVOSA: Northern portion of Rairaimatuku Plateau, *Smith* 5428 (A, BISH, K, NY, US), 5478 (A, BISH, K, US), 5587 (A, BISH, K, US). NAMOSI: Mt. Voma, *Fiji Dept. Agr.* 945 (A, BISH, K, SUVA); vicinity of Namuamua, *Gillespie* 2959 (BISH). REWA: Suva and vicinity, *Yeoward* 6 (K), *Tothill* 555 (BISH, K), *H. B. R. Parham* 66 (BM). VITI LEVU, without further locality: *Graeffe* 57 (BM). OVALAU: *Milne* 263 (K); Mt. Koronimoko, *Smith* 8073 (BISH, GH, K, SUVA, UC, US); north of Levuka, *Gillespie* 3474 (BISH, UC). NGAU: *Milne* 222 (K). VANUA LEVU: MATHUATA: *U. S. Expl. Exped.* (US 73887 holotype; isotypes at GH, K), *Seemann* 288 (BM, GH, K); Seanggangga Plateau, *Smith* 6638 (A, BISH, K, US), *Fiji Dept. Agr.* 10486 (BISH, SUVA), 15199 (K, MASS, SUVA); vicinity of Lambasa, *Greenwood* 519 (K); Mt. Numbuiloa, *Smith* 6347 (A, BISH, K, US). THAKAU-NDROVE: South of Nakula Valley, *Smith* 349 (BISH, GH, K, NY, UC, US); between Urata and Valethi, *Degener & Ordenez* 13824 (A, BISH, K, NY, UC, US). FIJI, without further locality: *Horne* 167 (GH, K), 822 (GH, K).

Although typically a distinct and unmistakable taxon, *M. corylifolia*, if reasonably interpreted, is seen to vary peripherally and to merge with other taxa. Among species with which it may occasionally be inter-fertile are *M. pickeringii* and *M. tabacifolia*; comments on such relationships are noted under those species.

2. *Maesa bennettii* Mez in *Pflanzenr.* 9(IV. 236): 53. 1902; Guillaumin in *Bull. Soc. Bot. France* 74: 700, as *M. bennetii*. 1927.

Shrub or small tree (?), with indument of simple spreading hairs and doubtless also of minute scales; branchlets thick, short-tomentose, the lenticels small and dense on older parts; petioles about 15 mm. long, the leaf-blades oval, about 9 cm. long and 6 cm. broad, cordate at base, broadly rounded at apex, entire (?) at margin, above eventually subglabrate, beneath shortly soft-tomentose and minutely ferruginous-punctate, without apparent secretory canals, the costa prominent above and prominent beneath; inflorescences axillary, few-flowered, sparsely 2-4-branched, not

FIGURES 11-19. Flowers of *Maesa* spp., showing a portion of a rachis or inflorescence-branch, flower-subtending bracts, pedicels, and prophylls, all $\times 10$. FIGURE 11. *M. corylifolia*: from *Smith* 349. FIGURE 12. *M. pickeringii*: from *Fiji Dept. Agr.* 14763. FIGURE 13. *M. tabacifolia*: from *Smith* 8773. FIGURE 14. *M. nemoralis*: from *Stone* 2212. FIGURE 15. *M. ambrymensis*: from *Aubert de la Rüe*, Aug. 1934. FIGURE 16. *M. insularis*: from *Smith* 9060. FIGURE 17. *M. tongensis*: from *Setchell & Parks* 15630. FIGURE 18. *M. persicifolia*: from *Degener* 15037. FIGURE 19. *M. vitiensis*: from *Webster & Hildreth* 14093.



much longer than the petioles, the branches tomentose; pedicels stout, about 0.5 mm. long, the prophylls large, forming a cymbiform or cupuliform receptacle below the calyx; flowers glabrous, about 3 mm. long, the calyx-lobes broadly ovate, round or subacute, without conspicuous glands, the corolla-tube subequal to lobes, these narrowly rounded, without obvious glandular lines; filaments and anthers subequal in length, the anthers dorsifixed, scarcely emarginate; style short, the stigma obtuse.

TYPE LOCALITY: Eromanga, New Hebrides; the type, collected by Bennett, was deposited in the Berlin herbarium and presumably has been destroyed. No isotypes or other collections were designated by Mez.

No material has been seen that might be referred to *M. bennettii*, which, on the basis of Mez's description and key, seems to be a reasonably distinct species; the above description is modified from the original treatment. Among New Hebridean species it seems closest to *M. aneiteensis*. From the Fijian *M. corylifolia* it would appear amply distinct in its rounded leaf-apex, compact inflorescences, large prophylls, and glabrous flowers.

3. **Maesa aneiteensis** Mez in Pflanzenr. 9(IV. 236): 52. fig. 7, A-F. 1902; Guillaumin in Bull. Soc. Bot. France 74: 700, as *M. aneitensis*. 1927.

Shrub or small tree, the young parts copiously lepidote-furfuraceous and also tomentose with spreading hairs 0.2–0.5 mm. long, the indument persistent on branchlets, leaves, and inflorescence-parts; branchlets slender, obviously lenticellate on older parts; petioles 25–35 mm. long, canaliculate; leaf-blades chartaceous, broadly ovate or suborbicular, 7–12.5 cm. long, 5–9.5 cm. broad, rounded at base and abruptly short-decurrent on the petiole, rounded or broadly obtuse and callose-tipped at apex, subentire or inconspicuously crenulate at margins (crenations 1 or 2 per centimeter, callose-tipped), glabrous or spreading-pilose on principal nerves above, uniformly soft-tomentose beneath or at least on principal nerves and otherwise sparsely pilose, the costa prominent beneath, the secondary nerves 6–8 per side, spreading, prominulous above, strongly elevated beneath, the veinlet-reticulation lax, inconspicuous, the secretory canals obvious on lower surface; inflorescences axillary, paniculate with several branches, 5–7 cm. long, the rachis, bracts, and pedicels copiously or sparsely tomentose; peduncle 4–12 mm. long, the branch-subtending bracts deltoid-lanceolate, 1.5–2 mm. long, acute, dorsally tomentose, the flower-subtending bracts similar, 1–1.5 mm. long; pedicels 1–1.5 mm. long, the prophylls conspicuous, ovate, 1–1.2 mm. long and broad, acute or obtuse, dorsally sparsely pilose; calyx-lobes broadly ovate, about 1 mm. long, slightly narrower, obtuse, obscurely erosulous at margin, dorsally pilose or glabrate, obviously glandular-lineolate; corolla 2–2.6 mm. long and about 2 mm. in apical diameter, the tube slightly shorter than the lobes, these ovate, 1.3–1.5 mm. long, 0.8–1.3 mm. broad, rounded at apex,

subentire or minutely erosulous at margin, glandular-lineolate; filaments 0.3–0.5 mm. long, the anthers 0.5–0.7 mm. long and broad; style short, obscurely lobed, the ovules 20–40, 3- or 4-seriate; fruits ovoid, 2–3 mm. long (immature?), with often pilose calyx-lobes.

TYPE LOCALITY: Aneityum, New Hebrides; the type is *Bennett 15*, the only collection cited by Mez, said to be deposited in the Geneva and Vienna herbaria.

DISTRIBUTION: Endemic to the New Hebrides and perhaps to the island of Aneityum. No adequate field-notes are at hand, but the M'Gillivray specimen is noted as a "small tree."

New Hebrides. ANEITYUM: *M'Gillivray 15* (BM, K).

The M'Gillivray material, with flowers and fruits, permits a slight amplification of Mez's description. The closest relationship of *M. aneiateensis* seems to be with *M. bennettii*, from which it differs in its longer petioles, its leaf-blades being merely rounded rather than cordate at base and with obvious secretory canals, and its more ample inflorescences. Future collections in the New Hebrides may well suggest that the two species do not merit maintenance.

4. *Maesa pickeringii* A. Gray in Proc. Amer. Acad. Arts 5: 329. 1862; Seem. Viti, 438. 1862, Fl. Vit. 148. 1866; Horne, A Year in Fiji, 264. 1881; Mez in Pflanzenr. 9(IV. 236): 37. 1902; J. W. Parham, Pl. Fiji Isl. 158. 1964. FIGURE 12.

Maesa corylifolia sensu Gibbs in Jour. Linn. Soc. Bot. 39: 155, p. p. 1909; non A. Gray.

Shrub or small tree or liana, the indument consisting of minute ferruginous scales and also of spreading hairs 0.2–0.6 mm. long; branchlets furfuraceous or also copiously pilose, often glabrate, abundantly lenticellate; petioles 7–25 mm. long, canaliculate, copiously or sparsely pilose or glabrate; leaf-blades chartaceous, often thick, lanceolate to oblong- or ovate-lanceolate, (5–) 6–13.5 cm. long, 2–4.5 (–5.5) cm. broad, broadly obtuse (rarely very narrowly subcordate) to acute at base and abruptly decurrent on the petiole, obtuse to obtusely acuminate at apex, subentire or undulate or crenulate at margin, glabrous on both surfaces or with a few hairs persisting on principal nerves or occasionally copiously pilose beneath, the costa plane or slightly raised above, prominent beneath, the secondary nerves 6–11 per side, curved-ascending, sharply elevated beneath, the veinlet-reticulation usually immersed, the secretory canals obscure or not apparent; inflorescences axillary, solitary or sometimes paired, 2–8 cm. long, simply racemose or with 2 or 3 lateral branches, infrequently truly paniculate but rarely with as many as 4–10 branches, the peduncle (to 1 cm. long), rachis, bracts, pedicels, and prophylls scattered-furfuraceous and sparsely or copiously pilose, the flower-subtending bracts

oblong-deltoid, subacute, 0.7–1.2 mm. long, glabrous within, the branch-subtending bracts similar but lanceolate and to 2.5 mm. long; pedicels slender, 0.5–2 mm. long, the prophylls inconspicuous, oblong-deltoid, 0.5–1 mm. long, about 0.5 mm. broad, acute; calyx usually spreading-pilose at least on lobes, rarely subglabrate, the lobes deltoid, 0.5–1 mm. long and broad, acute, obscurely erosulous at margin, inconspicuously glandular-lineolate; corolla 1.3–1.5 mm. long and 1.5–2 mm. in apical diameter, the tube subequal to the lobes, these oblong, about 0.7×0.6 mm., obtuse and reflexed at apex, obscurely erosulous at margin, inconspicuously glandular-lineolate; filaments and anthers each to 0.4 mm. long; ovary conical, the style to 0.3 mm. long, obscurely lobed, the ovules 15–20, usually 3-seriate; fruits ellipsoid, to 4.5×4 mm. at maturity, subpersistently furfuraceous and also sparsely pilose at least on the calyx-lobes.

TYPE LOCALITY: Viti Levu, Fiji; the type is a U.S. Exploring Expedition specimen, cited below. The US specimen (no. 49420) is a mixture, of which the left-hand portion precisely matches Gray's description and is to be taken as the holotype. The right-hand portion represents *M. persicifolia* A. Gray but apparently is not a part of the type material of that species.

DISTRIBUTION: Endemic to Fiji, but known only from Viti Levu and some of the smaller islands of the Lomaiviti group. It is recorded from near sea-level to about 850 m., in various types of forest or thickets or on open hillsides, as a shrub or small tree to 10 m. high or as a scrambling liana, with a white corolla.

Fiji. VITI LEVU: MBA: Mountains and hills near Lautoka, *Greenwood* 901 (A, K), 1071 (A, BISH, K, NY, UC); Sambeto Range, *Vaughan* 3208 (BM, K); Navoli, *Fiji Dept. Agr.* 10889 (BISH, SUVA); Naloto Range, *Fiji Dept. Agr.* 14763 (BISH, SUVA); vicinity of Nandarivatu, *Gibbs* 556 (BM, K), *Parks* 20507 (BISH, SUVA, UC, US), 20515 (BISH, UC, US), *Degener & Ordenez* 13558 (A, BISH, K, NY, UC, US), *Fiji Dept. Agr.* 8519 (BISH, MASS, SUVA); Mt. Nanggaranambuluta, *Fiji Dept. Agr.* 2336 (A, SUVA). NANDRONGA & NAVOSA: Rairaimatuku Plateau, between Nandrau and Nanga, *Smith* 5587a (A, US). RA: Yanggara, *Greenwood* 767A (K); Ndombuilevu, *Fiji Dept. Agr.* 1225 (A, BISH, SUVA). VITI LEVU, without further locality: *U. S. Expl. Exped.* (US 49420 p. p. holotype; isotypes at GH, K, NY). MAKONGAI: *Tothill* 363 (K). WAKAYA: *Tothill* 357 (BISH, K). FIJI, without further locality: *Fiji Dept. Agr.* 3929 (BISH, SUVA).

In the sense of its nomenclatural type, *M. pickeringii* clearly differs from *M. corylifolia* in the less copious indument of both vegetative and inflorescence parts, the somewhat shorter petioles, the narrower leaf-blades that are prevailingly lanceolate rather than ovate, obtuse or acute rather than cordate at base, less obviously crenulate at margin, and with more numerous secondary nerves, and in having its inflorescences simply racemose rather than broadly paniculate. However, with the availability of abundant material of this complex from northwestern Viti Levu, where the interior forests give way to grassland and scrub thickets, it becomes

apparent that the two taxa intergrade in many respects. Occasional individuals with the typical leaf-shape and simply racemose inflorescences of *M. pickeringii* are found to have the soft-pilose leaf-blades usually associated with *M. corylifolia*. Populations occur in the vicinity of Nandari-vatu that combine the typical indument and paniculate inflorescences of *M. corylifolia* with the narrower and obtuse based leaf-blades of *M. pickeringii*. I have cited collections as one or the other species; the strictly intermediate forms are comparatively few and need not obscure the generally satisfactory nature of the two taxa recognized by Gray.

5. *Maesa tabacifolia* Mez in Pflanzenr. 9(IV. 236): 51. 1902; Reehinger in Denkschr. Akad. Wiss. Wien 85: 326. 1910; J. W. Parham, Pl. Fiji Isl. 158. 1964. FIGURES 10, 13.

Maesa indica sensu Seem. in Bonplandia 9: 257. 1861; A. Gray in Bonplandia 10: 36. 1862; non auctt.

Maesa nemoralis sensu Seem. Viti, 438, 1862, in Jour. Bot. 2: 72. 1864, Fl. Vit. 148. 1866, 430. 1873; Horne, A Year in Fiji, 264. 1881; non A. DC.

Maesa grandis Gillespie in Bishop Mus. Bull. 74: 5. fig. 2. 1930.

Maesa samoana sensu St. John & A. C. Sm. in Pacific Sci. 25: 336. 1971; non Mez.

Shrub or small tree or liana, the indument composed of copious, ferruginous, minute, fimbriate-margined, irregular scales and also of pale spreading hairs 0.1–0.4 mm. long, the latter persistent but often inconspicuous on young branchlets, petioles, and proximal parts of the costa and secondaries of both surfaces of leaf-blades; branchlets slender, terete, abundantly but not conspicuously lenticellate; petioles 15–45 mm. long, canaliculate, often semiterete proximally; leaf-blades chartaceous, elliptic or ovate to obovate-elliptic, (7–) 8–26 cm. long, (3.5–) 5–15 cm. broad, rounded (or shallowly subcordate) to obtuse at base and abruptly decurrent on the petiole, obtuse to obtusely short-acuminate at apex and callose-apiculate, conspicuously or obscurely crenulate at margin (crenulations 1–3 per centimeter, callose-tipped), persistently (but often inconspicuously) pilose on the proximal parts of the costa and secondaries and infrequently soft-pilose on the lower surface, the costa flattened or slightly elevated above, prominent beneath, the secondary nerves 6–11 per side, spreading or subascending, sharply elevated beneath, the veinlet-reticulation often immersed, sometimes prominulous beneath and sparsely pilose, the secretory canals inconspicuous or not apparent; inflorescences axillary, solitary, usually 4–11 cm. long and paniculate with 3–12 spreading branches, rarely simply racemose, branched from base or with a slender peduncle to 1.5 cm. long, the rachis, bracts, pedicels, prophylls, and calyx copiously furfuraceous with congested scales, the rachis and branches rarely also minutely pilosulous; flower-subtending bracts oblong-deltoid, obtuse or acute, 0.5–1.5 mm. long, the branch-subtending bracts slightly larger or sometimes subfoliaceous; pedicels 0.5–2 mm. long, the prophylls inconspicuous, lanceolate- or ovate-deltoid, 0.5–1 mm. long and broad,

acute; calyx-lobes deltoid, 0.7–1 mm. long and slightly broader, acute, obscurely erosulous at margin, without obvious lineolate glands; corolla 1.5–1.8 mm. long and to 2.5 mm. in apical diameter, the tube subequal to the lobes, these ovate-oblong, 0.7–1.1 mm. long and 1–1.2 mm. broad, rounded and reflexed at apex, minutely erosulous, with usually obscure lineolate glands; filaments scarcely 0.2 mm. long, the anthers oblong-deltoid, about 0.3 mm. long; ovary conical, the style sometimes stout, to 0.4 mm. long, the stigma obscurely lobed, the ovules 10–15, 2- or 3-seriate; fruits ovoid or subglobose, about 4 mm. in diameter at maturity.

TYPE LOCALITY: Mez's citation was: "Viti Lewu und Matuku (Harvey, Horne, Moseley, Seemann n. 286)." He did not mention places of deposit, but all these annotated specimens are available. The Harvey collection is from Viwa Island, Tailevu Province, Viti Levu. The Horne specimens, unnumbered, are from "Rewa," by which Horne probably referred to the village of that name on Viti Levu. Moseley's specimen is from the island of Matuku. *Seemann 286*, the best of the collections, bears labels indicating "Viti Levu, July 1860" and "Somosomo, May 1860, at the waterfall." (As was then customary, Seemann's specimens were collated and numbered after the collection was returned to England, and therefore there are mixed localities and, unfortunately, occasional mixed taxa.) Nevertheless, I designate as the lectotype the two sheets of *Seemann 286* deposited at Kew; the locality must remain uncertain, as southeastern Viti Levu (where Seemann was in July 1860) and/or the vicinity of Somosomo, Taveuni. The K and GH sheets of *Seemann 286* also bear fragmentary portions of *M. persicifolia*, which Gray (in Proc. Amer. Acad. Arts 5: 330. 1862) took to represent *M. nemoralis*.

Maesa grandis is typified by *Gillespie 2503*, from Namosi Province, Viti Levu, Fiji, as cited below.

DISTRIBUTION: Fiji (several islands), the Horne and Wallis Islands, and Samoa (at least Upolu and Apolima, reported from the latter island by Rechinger). It has been reported from altitudes of sea-level to 600 m., and from forest, thickets, or open hillsides. Usually recorded as a shrub or slender tree 1–7 m. high, the species also occurs as a liana; the corolla is noted as white to pale yellow, with faint purplish linear glands; the filaments are white and the anthers yellow; the gynoecium is noted as dull pink, and the mature fruit as dull white.

LOCAL NAMES AND USES: Recorded local names (most of which are perhaps not reliable) are: Fiji: *ngginggi* (Namosi), *ndawandawa i rakalavo* (Naitasiri), *matamerangginggi* (Tailevu), *kolo ni mbeka* (Thakaundrove), *vini* (Taveuni); Horne Islands: *uali*; Samoa (Upolu): *vi vao*, *vine*, *vine vao*, *laufia*, *masame*. It has been noted in Tailevu, Viti Levu, and on Futuna that the leaves are used medicinally.

Fiji. VITI LEVU: NAMOSI: Mt. Voma, trail from Namosi, *Gillespie 2503*, September 3, 1927 (BISH holotype of *M. grandis*; isotypes at BISH, K, NY, UC); Wainambua Creek, south of Mt. Naitarandamu, *Smith 8773* (BISH, GH, K, SUVA, UC, US). NAITASIRI: Waimano Creek, Wainimala Valley, *St. John 18180* (BISH,

K, SUVA, US). TAILEVU: Viwa Island, *Harvey*, Nov. 1855 (BM, GH); Navuloa, *Fiji Dept. Agr.* 2717 (BISH, SUVA). REWA: Rewa Village (?), *Horne* (GH, K). VITI LEVU, without further locality: *Milne* 14 (K). VITI LEVU and/or TAVEUNI: *Seemann* 286, p. p. (K lectotype; isoelectotypes at BM, GH). KANDAVU: *Tothill* 348 (BISH, K), 366 (K); Lutumatavoro, *Fiji Dept. Agr.* 14928 (BISH, MASS, SUVA). NAIRAI: *Milne* 184 (K), *Tothill* 364 (K). VANUA LEVU: MATHUATA: Ndreketi Plantation, *Fiji Dept. Agr.* 16965 (BISH, MASS, SUVA). THAKAUNDROVE: West of Mbutha Bay, Natewa Peninsula, *Smith* 812 (BISH, GH, K, NY, UC, US). TAVEUNI: Vicinity of Waiyevo, *Gillespie* 4632 (BISH, K, NY, UC, US); vicinity of Wairiki, *Gillespie* 4664 (BISH); Mt. Manuka, east of Wairiki, *Smith* 8181 (BISH, GH, K, SUVA, UC, US). MOALA: *Milne* 129 (K). MATUKU: *Moseley* (K), *Bryan* 240 (A, BISH, K, US), 250 (A, BISH, UC, US).

Horne Islands. FUTUNA: Vilo Malia, *Yen* 412 (BISH). ALOFI: *Yen* X20 (BISH).

Wallis Islands: *Védel*, in 1847 (P). UVEA: *Graeffe* 29 (BM); Lac Lanutavake, *McKee* 19899 (BISH, P).

Samoa. UPOLU: Lefaga, Tafagamanu, *Bristol* 1956 (BISH); Lefaga, Savaia, *Bristol* 2106 (BISH, K); Lefaga, Mata'utu, *Bristol* 2399 (BISH); near Safata, *Rechinger* 469 (BM, US). SAMOA, without further locality: *Whitmee* (BM, GH), 7 (K), 11 (K).

In describing *M. grandis*, Gillespie did not contrast it with any other species, and he erroneously indicated it as "glabrous." In fact, however, the type specimen is copiously but minutely pilose on its branchlets, petioles, and leaf-costa precisely as in typical *M. tabacifolia*. Gillespie's specimen has the leaf-blades rounded to shallowly subcordate at base, but it is well within the normal variation of *M. tabacifolia*.

Eastward of Fiji, *M. tabacifolia* has often been confused with the quite different *M. samoana*, which is now seen to be absent from the Horne and Wallis Islands. The occurrence of the former species in Samoa had been noted by Rechinger, but as a rule Samoan herbarium material has been indiscriminately placed with *M. samoana*.

The cited collections from most parts of Fiji, as well as those from Samoa and the Horne and Wallis Islands, are quite typical of *M. tabacifolia* in the sense of the specimens cited by Mez. However, material from Taveuni and the Natewa Peninsula of Vanua Levu represents a form with more abundant indument, the spreading hairs being sometimes copious on the lower surfaces of leaf-blades. These individuals suggest *M. corylifolia* in their indument, which may also extend sparsely to the rachis and branches of the inflorescence, although not to the calyx as characteristically in *M. corylifolia*. Additionally, these copiously pilose specimens of *M. tabacifolia* differ from *M. corylifolia* in having long-petiolate, larger leaf-blades with less obvious marginal crenations and with the base obtuse, or at least not obviously cordate as is characteristic for *M. corylifolia*.

6. *Maesa eramangensis* Mez in *Pflanzenr.* 9(IV. 236): 52. 1902; Guil-laumin in *Bull. Soc. Bot. France* 74: 700, as *M. eromangensis*. 1927.

Shrub or small tree (?), the indument consisting of minute, ferruginous scales and also of pale, spreading hairs 0.2–0.4 mm. long, the latter sub-persistent on young branchlets, petioles, and proximal parts of the costa

and secondaries of both surfaces of leaf-blades; branchlets at first subangular, becoming terete, copiously lenticellate; petioles 22–30 mm. long, shallowly canaliculate; leaf-blades submembranous, elliptic, 9–11 cm. long, 5.5–7.5 cm. broad, rounded at base and abruptly decurrent on the petiole, rounded or broadly obtuse and sometimes inconspicuously emarginate at apex, subentire or obscurely crenulate at margin, the costa slightly elevated above, prominent beneath, the secondary nerves 6–8 per side, spreading, curved, plane or prominulous above, sharply elevated beneath, the veinlet-reticulation plane or immersed above, prominulous beneath, the secretory canals obvious beneath; inflorescences axillary, solitary, paniculate, sometimes bipinnately so, 5–7 cm. long, with 2–4 (or more?) spreading branches, the slender rachis and peduncle (usually 1–1.5 cm. long) with scattered scales, the branch- and flower-subtending bracts oblong-deltoid, 1–1.8 mm. long, acute; pedicels 1–2 mm. long, like the prophylls and calyx dispersed-lepidote, the prophylls ovate, 1–1.3 mm. long, 0.8–1.2 mm. broad, acute, sparsely glandular-lineolate, obscurely ciliolate at margin; calyx-lobes ovate, $0.8\text{--}1.2 \times 1\text{--}1.5$ mm., acute or obtuse, obscurely erosulous at margin, glandular-lineolate; corolla about 2 mm. long and 2–2.5 mm. in apical diameter, the tube subequal to the lobes, these ovate-oblong, 1–1.3 mm. long, rounded (or subacute?), obscurely erosulous at margin, conspicuously glandular-lineolate; filaments about 0.3 mm. long, the anthers oblong, 0.4–0.5 mm. long; style slender, 0.2–0.4 mm. long, the stigma obscurely lobed, the ovules 25–30, 4- or 5-seriate.

TYPE LOCALITY: Eromanga, New Hebrides; the type and only material cited by Mez is an unnumbered Bennett collection, said to be deposited in the Geneva and Vienna herbaria.

DISTRIBUTION: Endemic to the New Hebrides and perhaps to the island of Eromanga. No descriptive field-notes are available; the excellent flowering specimen cited below was collected in May 1896.

New Hebrides. EROMANGA: Dillon Bay, *Morrison* (κ).

The Morrison specimen agrees well with Mez's description and permits a slight broadening of it. From the allied *M. tabacifolia*, *M. eramangensis* differs in having its leaf-blades rounded or very broadly obtuse at apex and with obvious secretory canals near the lower surface, its inflorescence-parts with widely dispersed rather than contiguous scales, its prophylls comparatively conspicuous, its calyx-lobes proportionately broader, its corolla with more conspicuous glandular lines, and, on the basis of the material examined, its ovules more numerous.

7. **Maesa aubertii** Guillaumin in Bull. Soc. Bot. France 82: 350. 1935.

Shrub or small tree (?), the indument consisting of minute, irregular, ferruginous scales about 0.1 mm. in diameter and also of spreading, simple hairs 0.1–0.2 mm. long, the latter profusely persistent on young branchlets, petioles, and proximal parts of leaf-costas; branchlets slender, subterete,

copiously pale-lenticellate; petioles 30–40 mm. long, slender, canaliculate; leaf-blades chartaceous, broadly ovate, 10–13.5 cm. long, 6–9 cm. broad, broadly obtuse and thick-margined at base and abruptly decurrent on the petiole, obtusely cuspidate at apex, inconspicuously crenulate at margin, the costa sharply raised above, prominent beneath, tardily subglabrate, the secondary nerves 5–8 per side, subspreading, slightly prominulous on both sides or plane above, sometimes proximally pilose beneath, the veinlet-reticulation lax, immersed above, prominulous beneath, the secretory canals obvious beneath; inflorescences axillary, solitary, paniculate, 3–8 cm. long, with few, ascending branches and many flowers, the slender rachis, peduncle (1–1.5 cm. long), bracts, pedicels, prophylls, and calyx dispersed-lepidote, the branch- and flower-subtending bracts oblong-deltoid, 0.8–2 mm. long, acute; pedicels 1–1.5 mm. long, the prophylls ovate, 1–1.4 mm. long and broad, acute, minutely erosulous and sparsely glandular at margin; calyx-lobes ovate, 1–1.2 mm. long and broad, obtuse, minutely erosulous at margin, glandular-lineolate; corolla about 1.6 mm. long and 2 mm. in apical diameter, the lobes oblong, about 1×1 mm., rounded and recurved at apex, minutely erosulous at margin, conspicuously glandular-lineolate; filaments about 0.2 mm. long, the anthers deltoid, about 0.4 mm. long; style about 0.5 mm. long, the stigma rounded, the ovules about 30, 4-seriate; fruits subglobose, about 3 mm. in diameter, inconspicuously dispersed-lepidote.

TYPE LOCALITY: From Guillaumin's citation it is not clear that he was aware that two collections of M. & Mme. Aubert de la Rüe were included among the three sheets available at Paris. One of these was obtained on Ambrim in August 1934, the other two on Sakau Island in the Maskelyne Islands, just southeast of Malekula Island, also in August 1934. Although the latter collection is better, the first bears an excellent drawing and, except for the final word "Sakau," is the specimen described in Guillaumin's citation. Therefore I designate as the lectotype the Aubert de la Rüe specimen from Ambrim.

DISTRIBUTION: Endemic to the New Hebrides and thus far known only from the collections mentioned above, from Ambrim and the Maskelyne Islands. The former was obtained on volcanic cinders near an active volcano, at an altitude of 600–700 m.; the latter lacks field data.

New Hebrides. AMBRIM: Near the active volcano, *Aubert de la Rüe*, August 1934 (p lectotype). MASKELYNE ISLANDS: Sakau Island, *Aubert de la Rüe* (p).

Maesa eramangensis and *M. aubertii* are keyed together by Guillaumin (in Bull. Soc. Bot. France 82: 351. 1935), being separated by the former having erect and subacute corolla-lobes, and the latter reflexed and rounded corolla-lobes. Mez also indicates in his key that *M. eramangensis* has "petala acutiuscula," but in my observation the corolla-lobes in *Maesa* in our area are never really acute, and this character would appear undependable. On the basis of the available material I retain *M.*

aubertii as distinct because of its slightly longer petioles, obtuse rather than rounded leaf-base, and conspicuously cuspidate rather than usually rounded leaf-apex. These are certainly very questionable characters, but the two taxa have discrete distributions, and the material of *Maesa* from the New Hebrides is so sparse that I refrain from combining concepts without very positive evidence.

8. *Maesa banksiana* Guillaumin in Jour. Arnold Arb. 14: 58. 1933.

Maesa pentecostes Guillaumin in Bull. Mus. Hist. Nat. Paris II. 9: 293. 1937.

Small tree, to 10 m. high, the young parts copiously furfuraceous with minute, irregular, ferruginous scales about 0.1 mm. in diameter, these subpersistent on some inflorescence parts; branchlets slender, slightly angled distally, soon subterete and glabrate, copiously lenticellate; petioles 10–25 mm. long, semiterete or shallowly canaliculate, narrowly winged in the distal half; leaf-blades chartaceous, obovate or lanceolate-elliptic, 8–17 cm. long, 4–9 cm. broad, attenuate to obtuse at base and long-decurrent on the petiole, obtuse to obtusely short-acuminate at apex, inconspicuously crenulate at margin (crenations 1 or 2 per centimeter, callose-tipped), the costa elevated above, prominent beneath, the secondary nerves 5–7 per side, subascending, raised on both surfaces, the veinlet-reticulation copious, prominulous or immersed on both surfaces, the secretory canals usually obvious; inflorescences axillary or lateral above leaf-scars, short-paniculate, the branches 2–5, slender, spreading or ascending, 2–7 cm. long, congested on a very short, irregular rachis 1–5 mm. long, this copiously furfuraceous, the branch-subtending bracts thick, oblong, to 1.5 mm. long, copiously furfuraceous, rounded at apex, the flower-subtending bracts ovate-deltoid, 0.5–0.7 mm. long, acute, glabrate; pedicels 0.5–1.5 mm. long, the prophylls ovate-deltoid, 0.5–1 mm. long and broad, acute, minutely erosulous and sparsely glandular at margin; calyx dispersed-lepidote, the lobes ovate-deltoid, 0.8–1 mm. long and broad, rounded or obtuse, obscurely erosulous at margin, sparsely or obviously glandular-lineolate; corolla 1.5–2 mm. long at anthesis, the tube subequal to lobes, these ovate, 0.8–1 mm. long, rounded, obscurely erosulous at margin, inconspicuously glandular-punctate or short-lineolate; filaments 0.4–0.5 mm. long, the anthers oblong, subequal to filaments in length; free part of ovary conical, the style stout, 0.2–0.5 mm. long, the stigma obscurely lobed, the ovules 8–12, 2- or 3-seriate.

TYPE LOCALITY: Vanua Lava, Banks Islands, New Hebrides; the type is *Kajewski* 456. The type of *M. pentecostes* was collected by M. and Mme. Aubert de la Rüe on Pentecost Island, New Hebrides, in 1935.

DISTRIBUTION: Endemic to the Santa Cruz Islands and the New Hebrides and thus far known only from three islands between Vanikoro and Pentecost. It has been collected in rain-forest or in secondary forest from near sea-level to 510 m.; *Kajewski* notes it as a common small tree 8–10 m. high on Vanikoro and Vanua Lava, with a white corolla.

LOCAL NAME AND USE: The de la Rüe specimen records the local name *matpuas*, and indicates that flowers are placed on the crowns of coconut trees to insure an abundant harvest.

Santa Cruz Islands. VANIKORO: *Kajewski 552* (A, BISH, K, UC, US)

New Hebrides. VANUA LAVA, Banks Group: *Kajewski 456*, July 12, 1928 (A holotype; isotypes at A, BISH, K, P, US). PENTECOST: Axial zone of island between Taaling and Lalak, December 6, 1935 (P holotype of *M. pentecostes*).

Maesa banksiana is amply distinguished from the other species of our area by having its inflorescences with a very short rachis and elongate branches, suggesting a fasciculate cluster of simple racemes; however, they seem better described as short-paniculate. The leaf-blades are long-decurrent on the petiole, which is narrowly but obviously winged in the distal half. A comparison of the two type collections discloses no consequential differences. That of *M. pentecostes* has the more mature inflorescences, while the type of *M. banksiana* has slightly longer petioles and a more conspicuously attenuate leaf-base.

9. *Maesa nemoralis* (J. R. & G. Forst.) A. DC. in Trans. Linn. Soc. 17: 134. 1834, in DC. Prodr. 8: 79. 1844; Mez in Pflanzenr. 9(IV. 236): 53. 1902; St. John in Naturaliste Canad. 98: 573. 1971.

FIGURE 14.

Baeobotrys nemoralis J. R. & G. Forst. Char. Gen. Pl. 11. t. 11. 1775, ed. 2. 22. t. 11. 1776; Forst. f. Fl. Ins. Austr. Prodr. 16. 1786; Vahl, Symb. Bot. 1: 19, as *Baeobothrys n.* 1790; Spreng. Syst. Veg. 1: 760. 1824.

Maesa baeobotrys R. & S. Syst. Veg. 5: 226, as *Maesa b.* 1819 (1820?).

Maesa efatensis Guillaumin in Bull. Soc. Bot. France 66: 272. 1920, in op. cit. 74: 700. 1927, in Jour. Arnold Arb. 13: 12. 1932.

Maesa tabacifolia sensu Guillaumin in Bull. Soc. Bot. France 74: 700. 1927; non Mez.

Maesa aubertii sensu Guillaumin in Jour. Linn. Soc. Bot. 51: 556. 1938; non sensu typi.

Shrub or tree to 20 m. high, the young parts copiously but minutely furfuraceous with irregular scales less than 0.1 mm. in diameter, the indument persisting for a time on some inflorescence parts but in general fugacious; branchlets slender, soon terete, obviously or inconspicuously lenticellate; petioles 15–45 mm. long, often robust, shallowly canaliculate; leaf-blades chartaceous, becoming thick, elliptic to ovate- or obovate-elliptic, (6–) 12–17 cm. long, (4–) 8–13 cm. broad, obtuse at base and abruptly short-decurrent on the petiole, conspicuously thickened on the basal margin, obtuse or obtusely cuspidate at apex, narrowly recurved and thickened and inconspicuously crenulate at margin (crenations 1–3 per centimeter, callose-thickened), often copiously but minutely glandular beneath and with inconspicuous secretory canals, the costa plane or slightly raised above, prominent beneath, the secondary nerves 6–8 per side, ascending or subspreading, inconspicuous or impressed above, sharply raised

beneath, the veinlet-reticulation irregular, immersed above, plane or prominulous beneath; inflorescences axillary or lateral above leaf-scars, solitary, paniculate, 3–9 cm. long and broad, with (1–) 3–8 ascending lateral branches (very rarely simply racemose), many-flowered, the peduncle (to 1.2 cm. long), rachis, branches, bracts, pedicels, and prophylls copiously or sparsely furfuraceous at anthesis, at length glabrate; rachis slightly flattened or angled, the branch-subtending bracts oblong- or lanceolate-deltoid, 1.5–4 mm. long, acute, the flower-subtending bracts 1–1.5 mm. long; pedicels often stout, 0.3–1 mm. long, the prophylls conspicuous, broadly ovate, 1–1.5 mm. long, 1–2 mm. broad, acute or obtuse, obscurely erosulous at margin, inconspicuously glandular-lineolate or punctate; calyx-lobes ovate-deltoid, 1–1.2 mm. long and broad, obtuse, entire or obscurely erosulous at margin, sparsely glandular-lineolate; corolla about 2 mm. long and 2–3 mm. in apical diameter, the tube short, the lobes ovate or oblong, 1–1.5 mm. long and broad, rounded and recurved, minutely erosulous at margin, obviously glandular-lineolate; filaments 0.3–0.4 mm. long, the anthers oblong, about 0.5 mm. long; free part of ovary ovoid, the style stout, 0.2–0.4 mm. long, the stigma obtuse-rounded, the ovules 25–30, 3–5-seriate; fruits ellipsoid or subglobose, about 4 mm. in diameter at maturity.

TYPE LOCALITY: Tana, New Hebrides. Three Forster specimens are available in the herbarium of the British Museum; the best of these, probably from the Banksian herbarium, bears the inscription "Tanna," and I have indicated this sheet as the lectotype. A second sheet, from G. Forster's herbarium, and a third, from the Pallas herbarium, bear detached leaves and portions of inflorescences. A fourth sheet (BM), indicated as collected by W. Anderson on Tana in 1774, is probably part of the original material. There is also available at Kew a Forster sheet obtained from the Liverpool Botanic Garden. The type of *M. efatensis* is a David Levat specimen collected at Vila, Efate, New Hebrides, in December 1883.

DISTRIBUTION: Endemic to the New Hebrides and now known from several islands. It has been noted at elevations from sea-level to 300 m. in coastal thickets or rain-forest, as a shrub or tree to 20 m. high; the corolla is indicated as yellow and the fruit as pink to cream-colored at maturity.

LOCAL NAMES: The following names have been recorded once each: *nadherak* (on Espiritu Santo); *na damami* (on Nguna, just north of Efate); and *naamam* (on Efate, by Levat).

New Hebrides. **ESPIRITU SANTO:** Hog Harbour, *I. & Z. Baker 333* (BM). **NGUNA:** Near summit of Mt. Mawasi, *Stone 2212* (BISH, US). **EFATE:** Undine Bay, *Morrison*, Aug. 18, 1896 (K); Vila, *Levat*, December 1883 (P holotype of *M. efatensis*). **TANA:** *J. R. & G. Forster* (BM lectotype; isoelectotypes at BM, K), *Anderson*, in 1774 (BM), *Schmid 3260* (P); Lenakel, *Kajewski 9* (A, K, NY, P). **ANEITYUM:** Anelgauhat Bay, *Kajewski 792* (A, BISH, K, NY, P, US).

Maesa nemoralis, the only species of the Forsters' genus *Baeobotrys*, is

well characterized by its lack of a pilose indument, its large leaf-blades conspicuously thickened at the basal margins and short-decurrent on usually long and stout petioles, and its short pedicels with conspicuous prophylls. In his monograph, Mez unaccountably keyed and described *M. nemoralis* as having terminal, bipinnately paniculate inflorescences, although in fact these are always axillary and simply paniculate (even rarely racemose). Probably this treatment led Guillaumin to redescribe as *M. efatensis* what is clearly the same taxon, as suggested by remarks in his original protologue and also by his key in Bull. Soc. Bot. France 82: 351. 1935.

10. **Maesa ambrymensis** Guillaumin in Bull. Soc. Bot. France 82: 350. 1935, in Bull. Mus. Hist. Nat. Paris II. 9: 292. 1937, in Jour. Linn. Soc. Bot. 51: 556. 1938. FIGURE 15.

Shrub or small tree, the young parts copiously furfuraceous with minute, irregular, ferruginous scales, these subsistent on some inflorescence parts but the plant soon glabrate throughout; branchlets subterete, copiously pale-lenticellate; petioles slender, canaliculate, 13–40 mm. long; leaf-blades chartaceous, elliptic-ovate, (4.5–) 6–14 cm. long, (2.5–) 3–8 cm. broad, broadly obtuse to subacute at base and abruptly decurrent on the petiole, obtusely cuspidate or short-acuminate at apex, crenulate at margin, often conspicuously so (crenations 1–3 per centimeter, callose-apiculate), dispersed-glandular beneath and with inconspicuous secretory canals, the costa plane above or proximally slightly elevated, prominent beneath, the secondary nerves 5–8 per side, subascending, plane above, prominulous beneath, the veinlet-reticulation lax, immersed above, plane or prominulous beneath; inflorescences axillary, solitary, 3–11 cm. long and broad, usually paniculate with 2–7 spreading branches, rarely simply racemose, very rarely partially bipinnately paniculate, many-flowered, the peduncle (to 2.5 cm. long) and slender rachis and branches essentially glabrous at anthesis, the branch-subtending bracts oblong-deltoid, 1–2.5 mm. long, acute, sparsely and minutely glandular at margin, the flower-subtending bracts similar but 0.5–1 mm. long; pedicels slender, 1.5–2 mm. long at anthesis and 2–4 mm. long in fruit, the prophylls ovate-deltoid, 0.7–1 mm. long, 0.7–1.5 mm. broad, acute, obscurely erosulous and sparsely or copiously glandular at margin; calyx-lobes ovate-deltoid, 0.8–1 mm. long and broad, subacute, obscurely erosulous and glandular at margin, glandular-lineolate; corolla about 1.5 mm. long and 2.5 mm. in apical diameter, the tube short, the lobes oblong, 0.8–1.2 mm. long and broad, rounded, minutely erosulous at margin, glandular-lineolate; filaments about 0.2 mm. long, the anthers deltoid, about 0.3 mm. long; free part of ovary ovoid, the style slender, about 0.5 mm. long, the stigma obscurely lobed, the ovules about 20, 3- or 4-seriate; fruits ovoid or subglobose, about 4×3.5 mm. at maturity.

TYPE LOCALITY: Ambrim, New Hebrides; the type was obtained by M. & Mme. Aubert de la Rüe in August 1934. There are three sheets of this

collection at Paris, all with the same label data and all annotated by Guillaumin, one with a drawing. None of these is very ample, and I believe that they should be taken collectively as the holotype.

DISTRIBUTION: Endemic to the New Hebrides and known from three of the islands. The species is noted as a shrub or small tree occurring at elevations of 300–1,525 m., in mossy forest (on Espiritu Santo), on volcanic cinders near an active volcano (on Ambrim), or in cliff-thickets (on Tana); the corolla and fruit have been recorded as white.

New Hebrides. ESPIRITU SANTO: Mt. Tabwemasana, I. & Z. Baker 32 (BM). AMBRIM: Near the active volcano, Aubert de la Rüe, August 1934 (P holotype); Mont Toïo, Aubert de la Rüe, Jan. 5, 1936 (P); on a plateau, Aubert de la Rüe, Jan. 8–11, 1936 (P). TANA: Near center, Schmid 3261 (P).

Maesa ambrymensis is a close relative of *M. nemoralis*, differing in having its leaf-blades averaging considerably smaller and lacking conspicuous marginal thickenings at the base; its pedicels are more slender and longer than those of *M. nemoralis* and bear smaller and less conspicuous prophylls. Additionally, on the basis of the available material, the bracts, prophylls, and calyx-lobes of *M. ambrymensis* bear inconspicuous marginal glands, its flowers are smaller, and its ovules are fewer. While none of these differences are very striking, I believe that the two species may be maintained as distinct, even though both occur at least on Espiritu Santo and Tana. Field notes suggest that *M. nemoralis* is a low elevation, often littoral plant, while *M. ambrymensis* occurs only in uplands away from the coasts.

11. *Maesa insularis* Gillespie in Bishop Mus. Bull. 74: 6. fig. 3. 1930.
FIGURES 1, 2, 16.

Maesa samoana sensu A. C. Sm. in Bishop Mus. Bull. 141: 120. 1936; J. W. Parham, Pl. Fiji Isl. 158. 1964; non Mez.

Liana or shrub or slender tree to 10 m. high, then often with scandent branches, the young parts copiously ferruginous-furfuraceous with irregular scales about 0.1 mm. in diameter, these usually long-persistent on inflorescence parts, the vegetative parts usually soon glabrate; branchlets slender, subterete, sparsely or copiously pale-lenticellate; petioles 12–40 mm. long, slender, canaliculate, conspicuously so and narrowly winged distally; leaf-blades chartaceous, often becoming subcoriaceous, elliptic or ovate-lanceolate or ovate-oblong, 8–23 cm. long, 3.5–9.5 (–13) cm. broad, usually acute to attenuate at base, sometimes obtuse, rarely rounded or shallowly subcordate, decurrent on the petiole, gradually acuminate or cuspidate (with an acumen 1–2 cm. long and callose-apiculate) at apex, rarely obtuse, inconspicuously undulate-crenulate at margin, the costa plane above or proximally slightly raised, prominent beneath, the secondary nerves 5–11 per side, curved, spreading or subascending, slightly elevated above and sharply so beneath, the veinlet-reticulation immersed or plane, sometimes prominulous beneath, the secretory canals inconspicuous

or not apparent, only rarely obvious beneath; inflorescences axillary, solitary, paniculate, often copiously and occasionally bipinnately so, 4–13 cm. long, 4–8 cm. broad, with 5–15 (–20) spreading branches, many-flowered, branched near base or with a peduncle to 2.5 cm. long, the rachis, branches, bracts, pedicels, prophylls, and calyx copiously furfuraceous, tardily subglabrate; branch-subtending bracts deltoid or lanceolate, obtuse or acute, 0.6–2 mm. long, the flower-subtending bracts similar but smaller; pedicels 0.3–2 mm. long in flower and fruit, the prophylls inconspicuous, deltoid to lanceolate, 0.4–1 mm. long and broad, acute, minutely erosulous and sparsely glandular at margin; calyx-lobes lanceolate-deltoid, 0.5–1 mm. long and broad, acute, minutely erosulous at margin, often obscurely glandular-lineolate; corolla 1.2–1.5 mm. long, 1.5–2 mm. in apical diameter, the lobes oblong-ovate, 0.6–1.2 mm. long and broad, rounded and reflexed, obscurely erosulous at margin, copiously glandular-lineolate; filaments 0.2–0.3 mm. long, the anthers oblong, to 0.4 mm. long; free part of ovary conical, tapering into a stout obtuse style about 0.2 mm. long, the ovules about 20, 3- or 4-seriate; fruits subglobose and about 3 mm. in diameter at maturity.

TYPE LOCALITY: Vicinity of Nasinu, Naitasiri Province, Viti Levu, Fiji; the type is *Gillespie 3479*, cited in the sequence below.

DISTRIBUTION: Endemic to Fiji but locally abundant on several of the islands, at elevations from near sea-level to 1,000 m. Habitats recorded include forest from lowlands to high ridges, thickets along beaches or in grassland, etc. The species is usually noted as a liana but sometimes as a shrub or slender tree to 10 m. high, and then often with subscandent branches; the corolla is white to greenish yellow, with pink or purple to brownish glandular lines; the filaments are white and the anthers yellow; the ovary is deep red to rich pink; and the fruits become white at maturity.

LOCAL NAMES: *Kutumirase* (in Mba) and *kolo ni mbeka* (in Mathuata) have been noted, but these are apt to be generic in those areas; a name recorded on Kandavu is *vorovorokuro*.

Fiji. VITI LEVU: MBA: Nggaliwana Creek, near Navai, *Smith 5343* (A, BISH, K, NY, US); vicinity of Tumbenasolo, *Smith 4614* (A, BISH, K, US). NAMOSI: Mt. Naitarandamu, *Gillespie 3116* (BISH, UC, US); between Mt. Naitarandamu and Korombasambasanga Range, *Smith 8476* (BISH, GH, K, SUVA, UC, US); vicinity of Namosi, *Gillespie 2832* (BISH); near Namuamua, *Smith 9060* (BISH, GH, K, SUVA, UC, US); Wairoro Creek and vicinity of Mau, *Fiji Dept. Agr. 3827* (BISH, K, MASS, SUVA), *12903* (BISH, MASS, SUVA). SERUA: Between Navua River and Wainiyavu Creek, *Smith 9016* (BISH, GH, K, UC, US); between Ngaloa and Korovou, *Smith 9250* (US). NAITASIRI: Rairaimatuku Plateau, between Mt. Tomanivi and Nasonggo, *Smith 6101* (A, BISH, K, NY, US); Viria, *Meebold 16517* (BISH); Navuso, *Fiji Dept. Agr. 12600* (BISH, SUVA); Tholo-i-suva, *Fiji Dept. Agr. 11577* (BISH, SUVA), *Fiji Dept. For. 439* (*Bola 134*) (K, SUVA); Tamavua-Sawani Road, *Setchell & Parks 15084* (BM, UC); vicinity of Tamavua, *Gillespie 2150* (BISH, UC); Central Road, *MacDaniels 1136* (K); vicinity of Nasinu, Oct. 23, 1927, *Gillespie 3479* (BISH holotype; isotypes at BISH, NY, UC), *3531* (BISH, K, UC).

KANDAVU: Hills above Namalata and Ngaloa Bays, *Smith* 57, 69, 80, 118 (all BISH, GH, K, NY, UC, US); Onoriki, *Fiji Dept. Agr.* 14953 (SUVA, UC). OVALAU: West of Levuka, *Gillespie* 4434 (BISH, UC). VANUA LEVU: MATHUATA: Near Mbatiri, *Fiji Dept. Agr.* 13092, p. p. (BISH, SUVA); Vuniwambua, *Fiji Dept. Agr.* 12929 (BISH, K, SUVA); vicinity of Natua, *Smith* 6688 (A, BISH, K, US); Mathuata coast, *Greenwood* 588 (K), 588A (K); Mt. Numbuiloa, *Smith* 6448, 6556 (both A, BISH, K, US). THAKAUNDOVE: Yanawai River basin, *Degener & Ordenez* 14102 (A, BISH, K, US); Mt. Nasorolevu, *Fiji Dept. Agr.* 17155 (BISH, SUVA); Savundrondro, *Fiji Dept. Agr.* 13166 (BISH, K, SUVA); vicinity of Korotasere, *Fiji Dept. Agr.* 15488 (MASS, SUVA). VANUA LEVU, without further locality: *H. B. R. Parham*, in 1932 (BM). TAVEUNI: Summit ridge east of Somosomo, *Gillespie* 4823 (A, BISH, UC, US). NAITAMBA: *Tothill* 351 (K). FIJI, without further locality: *Horne* 84 (GH, K), 97 (K), *Fiji Dept. Agr.* 3911 (BISH, SUVA).

Upon reconsideration of extensive suites of specimens, I believe that *M. insularis* should not be combined with *M. samoana*, a course I suggested in 1936. The most obvious separating character, the conspicuous secretory canals of the leaf-blades in *M. samoana* and their obscurity in *M. insularis*, is only partially dependable. Additionally, *M. samoana* has its inflorescences somewhat less complex, occasionally simply racemose, and with the furfuraceous indument comparatively evanescent; *M. insularis* has its inflorescences always paniculate, sometimes very conspicuously so, and with the indument usually persistent and often abundant. The prophylls and calyx-lobes of *M. samoana* are comparatively conspicuous, broadly deltoid, broader than long, and obtuse; those of *M. insularis* are often lanceolate-deltoid, longer than broad, and acute. The corollas of *M. samoana* are somewhat the larger, 1.8–2.5 mm. long and with lobes usually 1–1.5 mm. long and broad; those of *M. insularis* are 1.2–1.5 mm. long and with lobes 0.6–1.2 mm. long and broad. To be sure, both taxa are highly variable, but in view of the generally unsatisfactory nature of specific lines in *Maesa*, they are as distinct as many other species pairs.

Some of the variations noted in *M. insularis* suggest *M. tabacifolia* and are separable primarily in the lack of a pilose indument. *Maesa insularis* is also suggestive of the New Hebridean *M. ambrymensis*, differing in its less obviously crenulate leaf-blades, its characteristically shorter pedicels, and its somewhat smaller prophylls. Some of the specimens here referred have unusually narrow leaf-blades, occasionally 3.5 cm. broad or, on depauperate specimens, even less. If sought among the species keyed as having such comparatively narrow leaves, these unusual specimens of *M. insularis* are readily distinguished from *M. persicifolia* in having their leaf-blades attenuate at base and decurrent on the petiole in hard, cartilaginous angles, and in having their leaf-apices comparatively long-acuminate. Such specimens of *M. insularis* can hardly be confused with *M. vitiensis*, a small-leaved species with a similar leaf-base but usually with conspicuous secretory canals, comparatively short leaf-blades, and essentially glabrous inflorescences with usually long pedicels.

12. *Maesa samoana* Mez in *Pflanzenr.* 9(IV. 236): 53. 1902; Lauterb. in *Bot. Jahrb.* 41: 232. 1908; Rechanger in *Denkschr. Akad. Wiss.*

Wien 85: 326. 1910; Christophersen in Bishop Mus. Bull. 128: 166, p. p. 1935.

FIGURES 3, 4.

Maesa nemoralis sensu Reinecke in Bot. Jahrb. 25: 665. 1898; non A. DC.

Shrub or small tree to 5 m. high, the young parts copiously castaneous-furfuraceous with suborbicular scales 0.1–0.2 mm. in diameter, these subpersistent on some vegetative parts, the young branchlets, petioles, and leaf-costa rarely minutely puberulent with pale hairs less than 0.02 mm. long; branchlets flattened in distal internodes, becoming terete, copiously pale-lenticellate; petioles (15–) 20–45 mm. long, canaliculate; leaf-blades chartaceous, ovate-elliptic to ovate-lanceolate, (8–) 9–21 cm. long, (2.5–) 4–9 cm. broad, rounded to attenuate at base and abruptly decurrent on the petiole, obtusely cuspidate or short-acuminate at apex, inconspicuously crenulate at margin, conspicuously marked with sinuous secretory canals beneath and sometimes above, the costa stout, flattened or slightly raised above, prominent beneath, the secondary nerves 6–10 per side, curved, subspreading, slightly raised or plane above, strongly elevated beneath, the veinlet-reticulation lax, immersed or inconspicuously prominulous above, usually obvious beneath; inflorescences axillary, solitary or rarely paired, paniculate with 1–10 spreading branches or occasionally simply racemose, 3–8 cm. long, usually many-flowered, branched near base or with a peduncle to 1 cm. long, the rachis and branches sparsely furfuraceous, soon glabrate; branch-subtending bracts ovate-deltoid, glabrous, 0.7–1.5 mm. long, the flower-subtending bracts similar but smaller; pedicels 0.3–1.3 mm. long in flower and fruit, rarely elongating to 4 mm. in fruit, the prophylls conspicuous, broadly ovate-deltoid, 0.7–1 mm. long, 1–1.5 mm. broad, obtuse, minutely erosulous and sometimes sparsely glandular-ciliolate at margins, sparsely glandular-lineolate; calyx-lobes broadly deltoid, 0.7–1 mm. long, 0.8–1.3 mm. broad, obtuse, similar to prophylls in margin and texture; corolla 1.8–2.5 mm. long and about 2.5 mm. in apical diameter, the tube shorter than lobes, the lobes oblong-ovate, 0.8–1.5 mm. long and broad, rounded, obscurely erosulous at margin, copiously glandular-lineolate; filaments 0.2–0.3 mm. long, the anthers oblong-deltoid, about 0.4 mm. long; free part of ovary broadly conical, the style stout, 0.3–0.6 mm. long, 2- or 3-lobed, the ovules 20–25, 3- or 4-seriate; fruits ellipsoid or subglobose and 3.5–4 mm. in diameter at maturity.

TYPE LOCALITY: In describing *M. samoana*, Mez cited several specimens from Upolu and Savaii ("Graeffe n. 1577, 1597, Reinecke n. 262, 262a, Whitmee") without indicating either a holotype or places of deposit. No lectotypification seems to have been suggested by subsequent students of Samoan plants, most of whom have followed Mez in ascribing to Samoa only one species of *Maesa*. Since it now seems that there are other taxa of the genus in Samoa, it is essential to designate a lectotype for *M. samoana* from among the specimens seen by Mez. Some of these may have been deposited in the Berlin herbarium, in which case they have presumably been destroyed. But fortunately others so annotated by Mez are still available. Of the collections cited, *Graeffe* 1577 (κ) and 1597 (κ), *Rein-*

ecke 262 (K, US), and at least one Whitmee collection (BM, GH) were annotated by Mez and represent the species in the sense of his description and key. Other Whitmee specimens belong to *M. tabacifolia*, and I have seen no material of *Reinecke* 262a. In order unequivocally to establish Mez's species, I here designate the Kew sheet of *Graeffe* 1597 as the lectotype of *M. samoana*; it was collected on Mt. Tofua on Upolu.

DISTRIBUTION: Endemic to Samoa and, as here interpreted, occurring on Savaii and Upolu only, in montane forest at elevations of 400 to about 1,000 m. It has been noted as a shrub or small tree 3–5 m. high, with a white to yellow or sometimes pink-tinged corolla.

LOCAL NAME: The only name recorded seems to be *fie pua*, noted by Christophersen on Upolu.

Samoa. SAVAII: Maliolio, Mangaloa, *Vaupel* 361 (BISH, K, NY, US); above Matavanu, *Christophersen & Hume* 2001 (BISH, K, NY, UC, US), 2052 (BISH, K, NY, UC). SAVAII, without further locality: *Graeffe* 1577 (K). UPOLU: Mt. Tofua, *Graeffe* 1597 (K lectotype); vicinity of Mulifanua, *Reinecke* 262 (K, US); vicinity of Lanutoo, *Rechinger* 734 (BM, K, US); Malololelei-Lanutoo trail, *Christophersen* 384 (A, BISH, K, NY, UC); near Malololelei, *Christophersen* 163 (BISH, K, NY, US); above Utumapu, *Rechinger* 945 (BM, US); "montane region," *Graeffe* 1391 (GH). UPOLU, without further locality: *Graeffe* (NY). SAMOA, without further locality: *Whitmee* (BM, GH), 156 (K), 225 (K).

In describing *M. samoana* and *M. tongensis* in 1902, Mez placed them as adjacent species in his treatment, indicating that the first has its calyx-lobes rounded and its filaments longer than the anthers, the second having its calyx-lobes acuminate and its filaments equal to the anthers. While these particular characters seem undependable, a comparison of the specimens cited by Mez indicates two quite different taxa. *Maesa samoana* has its leaf-blades narrowly elliptic, nearly three times as long as broad and inconspicuously crenulate, its inflorescences prevailingly paniculate, and its flowers and fruits usually short-pedicellate. *Maesa tongensis* has its leaf-blades broadly ovate to suborbicular, nearly as broad as long and conspicuously crenulate, its inflorescences few-branched or simply racemose, and its flowers and fruits long-pedicellate. These contrasting features are reasonably dependable as to the available material from Upolu and Savaii (*M. samoana*) and from Tonga and southern Lau (*M. tongensis*). Christophersen in 1935 pointed out that specimens from Tutuila and the Manua Islands differ from typical *M. samoana* in their relatively broader, almost rounded leaves; in fact these collections from the eastern Samoan islands also have prevailingly simple inflorescences with long pedicels. Although practically every differentiating character between *M. samoana* and *M. tongensis* fails at some point in the population as a whole, the extremes seem worthy of specific recognition, and the collections from the eastern Samoan islands more closely resemble *M. tongensis* in the totality of their characters than *M. samoana*.

13. **Maesa tongensis** Mez in Pflanzenr. 9(IV. 236): 54. 1902; Yuncker in Bishop Mus. Bull. 220: 209. 1959. FIGURE 17.

Maesa nemoralis sensu A. Gray in Proc. Amer. Acad. Arts 5: 329. 1862; Hemsl. in Jour. Linn. Soc. Bot. 30: 183. 1894; Burkill in Jour. Linn. Soc. Bot. 35: 44. 1901; non A. DC.

Maesa vitiensis sensu Hemsl. in Jour. Linn. Soc. Bot. 30: 183. 1894; non Seem.

Maesa samoana sensu Setchelle in Carnegie Inst. Wash. Publ. 341: 60. 1924; Christophersen in Bishop Mus. Bull. 128: 166, p. p. 1935; Yuncker in Bishop Mus. Bull. 184: 56. 1945; non Mez.

Shrub or small tree to 4 m. high, the young parts copiously castaneous-furfuraceous with suborbicular scales 0.1–0.2 mm. in diameter, these usually evanescent; branchlets subterete, sparsely pale-lenticellate; petioles slender, 13–40 (–50, juvenile) mm. long, canaliculate, narrowly winged distally; leaf-blades chartaceous, ovate or suborbicular or broadly elliptic, (3–) 5–14 cm. long, (2–) 4.5–11.5 cm. broad, rounded or broadly obtuse at base and there marginally thickened and abruptly decurrent on the petiole, rounded and sometimes subretuse at apex, less often broadly obtuse or obtusely cuspidate, conspicuously crenulate at margin (crenations 1 or 2 per centimeter, callose-thickened), with scattered minute superficial glands beneath, the costa strongly elevated above, prominent beneath, the secondary nerves 4–7 per side, curved, spreading, slightly elevated on both sides or plane above, the veinlet-reticulation lax, inconspicuously prominent on both sides or immersed above, the secretory canals sinuous and obvious on lower surface; inflorescences axillary, solitary, rarely appearing terminal on lateral branchlets, often simply racemose but sometimes paniculate with 1–4 (very rarely to 15) spreading branches, (1–) 2–11 cm. long, many-flowered, the peduncle (to 1.5 cm. long) and rachis slender, glabrous; branch-subtending bracts oblong-deltoid, obtuse, 0.8–2.5 mm. long, obscurely glandular at margin, the flower-subtending bracts similar, to 1.5 mm. long; pedicels 1–3 mm. long in flower and to 4 mm. in fruit, the prophylls often only subapical, ovate-deltoid, 0.6–1.2 mm. long and broad, obtuse, minutely erosulous at margin, conspicuously glandular-lineolate; calyx-lobes broadly deltoid, 0.7–1.2 mm. long and broad, obtuse or subacute, entire or obscurely erosulous at margin, copiously or sparsely glandular-lineolate; corolla 1.8–2.5 mm. long and about 2.5 mm. in apical diameter, the tube shorter than lobes, the lobes oblong-suborbicular, 0.9–1.8 mm. long and broad, rounded, subentire, copiously glandular-lineolate; filaments 0.2–0.4 mm. long, the anthers oblong, about 0.6 mm. long; free part of ovary broadly conical, the style 0.5–0.6 mm. long, the stigma conspicuously 2- or 3-lobed, the ovules 35–45, 4–6-seriate; fruits ellipsoid or subglobose, 3–4 mm. in diameter at maturity.

TYPE LOCALITY: Mez's type citation is: "Vavau: Crosby n. 228, Harvey, Lister. — Blüht im Juni (Herb. Asa Gray, Kew, Paris)." The three collections are definitely conspecific and all are excellent. Because it is perhaps the best specimen and has an unequivocal locality, I here designate

the Kew sheet of *Crosby* 228 as the lectotype. It was collected on Vava'u in June 1891. The Harvey specimen bears the label "Vavau and Lifuka, Friendly Islands." Of the three Kew sheets of Lister, one bears a field label indicating that it was obtained on 'Eua in December 1889, but another is indicated as "Tutuila, Samoa," a Lister locality to be questioned.

DISTRIBUTION: Tonga; also southern Lau, Fiji, and the eastern Samoan islands. The species has been obtained from sea-level to an elevation of 500 m., in thickets or inland scrub-forest, but most often along beaches or on limestone cliffs. It is noted as a shrub or small tree 1–4 m. high, usually with scandent branches; the corolla is greenish white and perhaps pink-tinged, and the mature fruit is white.

LOCAL NAMES: *Yaro* (Fulanga, Fiji; a very questionable name for this taxon); *langakalialifa* (Vava'u); *valo valo* (Tongatapu); *puataukanave* ('Eua); *lala* (Ofu, Samoa).

Fiji. **FULANGA:** *Tothill* 349 (BISH, K, NY); on limestone formation, *Smith* 1160 (BISH, GH, K, NY, UC, US).

Tonga. **VAVA'U:** *Crosby* 228 (K lectotype). "VAVAU and LIFUKA": *Harvey*, in 1855 (GH, K, NY). **TONGATAPU:** *Kolovai*, *Soakai* 247 (K); *Vahe*, *Setchell & Parks* 15434 (K, UC); terrace trail, *Hufagalupe*, *Setchell & Parks* 15630 (BISH, K, UC, US); below *Fua'amotu*, *Yuncker* 16244 (BISH, BM, US). **'EUA:** *Lister*, Dec. 1889 (K), *Moore* 454 (US); along trail to *Lokupo*, northeastern side of island, *Yuncker* 15527 (BISH, BM, GH, US); summit of eastern ridge, *Yuncker* 15686 (BISH, BM, US). **TONGA**, without further locality: *Anderson & Nelson* (Cook's Third Voyage), April–July 1777 (BM).

Samoa. **TUTUILA:** Between *Pago Pago* and *Nuuuli*, *Yuncker* 9359 (A, BISH); near *Fagatoga*, *Setchell* 581 (BISH, UC); vicinity of *Pago Pago*, *Diefenderfer* 3 (BISH), *Seale*, May 26, 1929 (NY), *Wisner* 154 (BISH); top of *Pioa*, *Christophersen* 3522 (BISH). **OFU:** *Vaoto*, *Garber* 1097 (BISH, NY). **TAU:** *Luma-Faleasao* trail, *Garber* 686 (BISH, NY, UC); south of *Siufaga*, *Yuncker* 9105 (BISH). **SAMOA**, without further locality: *U. S. Expl. Exped.* (GH, NY, US 73886), *Powell* 8 (K).

Although *M. tongensis* has been considered endemic to Tonga, the specimens from Fulanga in Fiji agree excellently with those originally cited by Mez. The above-cited collections from the eastern Samoan islands are not quite so typical of *M. tongensis*, but they appear better placed here than in *M. samoana*, as discussed under that related species.

14. *Maesa persicifolia* A. Gray in *Proc. Amer. Acad. Arts* 5: 330, as *M. persicaefolia*. 1862; Mez in *Pflanzenr.* 9(IV. 236): 48. 1902; J. W. Parham, *Pl. Fiji Isl.* 158. 1964. FIGURES 5, 6, 18.

Maesa nemoralis sensu A. Gray in *Proc. Amer. Acad. Arts* 5: 330. 1862; non A. DC.

Maesa persicaefolia A. Gray ex Seem. *Fl. Vit.* 148. 1866, 430. 1873; Horne, *A Year in Fiji*, 264. 1881.

Maesa densiflora Gillespie in *Bishop Mus. Bull.* 74: 5. fig. 1. 1930; J. W. Parham, *Pl. Fiji Isl.* 156. fig. 59, B. 1964.

Maesa parksii Gillespie in Bishop Mus. Bull. 74: 8. fig. 6. 1930; J. W. Parham, Pl. Fiji Isl. 158. 1964.

Tree or shrub, often becoming scandent, or liana, the young parts copiously ferruginous-furfuraceous with irregular scales about 0.1 mm. in diameter, these often subpersistent, the young branchlets, petioles, and leaf-costas also sometimes obscurely puberulent or minutely pilose with hairs to 0.2 mm. long; branchlets often flattened in distal internodes, becoming terete, with copious, pale, often protuberant lenticels; petioles slender, 5–27 mm. long, canaliculate, often narrowly winged distally; leaf-blades chartaceous, sometimes becoming thick, ovate- or elliptic-lanceolate to narrowly oblong-elliptic, 4–13 cm. long, 1.5–5 (–5.5) cm. broad, rounded to obtuse or shallowly subcordate (rarely subacute) at base and abruptly short-decurrent on the petiole, narrowly rounded to obtuse or obtusely short-acuminate at apex, subentire or inconspicuously crenulate at margin (crenations 1–3 per centimeter), obscurely glandular-thickened, lacking obvious secretory canals or these immersed and inconspicuous on the lower surface, the costa plane or slightly elevated above, prominent beneath, the secondary nerves 6–12 per side, spreading or curved, immersed or slightly raised above, sharply raised or prominulous beneath, the veinlet-reticulation inconspicuous, immersed on both sides or prominulous beneath; inflorescences axillary, solitary, paniculate, sometimes bipinnately so, with 1–15 spreading branches, infrequently simply racemose, 2–11 cm. long, many-flowered, branched from base or with a peduncle to 2 cm. long, the rachis and branches copiously or sparsely furfuraceous at anthesis; branch-subtending bracts deltoid to ovate-lanceolate, acute to obtuse, 0.6–1.5 mm. long, furfuraceous without but often glabrate, minutely erosulous and often glandular-ciliolate at margin, the flower-subtending bracts somewhat smaller; pedicels essentially none or to 1.5 (rarely 2.5) mm. long at anthesis and to 3 mm. long in fruit, like the prophylls eventually glabrate, the prophylls inconspicuous, ovate- to lanceolate-deltoid, 0.5–1 mm. long and broad, acute to obtuse, obscurely erosulous and often ciliolate at margin, inconspicuously glandular-lineolate; calyx-tube copiously or sparsely furfuraceous but glabrate in fruit, the lobes deltoid, 0.4–1 mm. long and broad, acute or subacute, like the prophylls in margin and texture; corolla 1.2–1.8 mm. long, 1.5–2 mm. in apical diameter, the tube subequal to lobes or shorter, the lobes ovate-oblong, 0.7–1 mm. long and broad, rounded and reflexed at anthesis, subentire or minutely erosulous at margin, inconspicuously glandular-lineolate; filaments 0.2–0.5 mm. long, the anthers oblong-deltoid, to 0.5 mm. long; free part of ovary flattened-conical, the style 0.2–0.4 mm. long, the stigma obscurely or obviously 2–4-lobed, the ovules 10–30 (some often aborted), 2–4-seriate; fruits subglobose at maturity and 3–4 mm. in diameter.

TYPE LOCALITY: Mbua Bay, Mbua Province, Vanua Levu, Fiji. Gray's description is based entirely upon the U.S. Exploring Expedition collection listed below, but he also cited *Seemann* 287 as "perhaps a form of this species," pointing out several differences. The latter specimen, which was

subsequently described by Seemann as *M. vitiensis*, does not enter into the typification of *M. persicifolia*. The type of *M. densiflora* is *Parks 20512*, from Nandarivatu, Mba Province, Viti Levu, and that of *M. parksii* is *Parks 20509*, from the same locality. Both of these types are cited and discussed below.

DISTRIBUTION: Endemic to Fiji and probably to be expected from several of the high islands, although it now seems abundant only on Viti Levu. It has been collected from near sea-level to an altitude of 1,200 m., in dense, dry, or open forest, or on open hillsides. It is often noted as a liana, but sometimes as a slender or compact shrub or tree 1–10 m. high, with frequently scandent branches; the corolla is white to cream-colored or pale yellow, with faint purple glandular lines; the filaments and anthers are pale yellow or cream-colored; and the mature fruit is dull or waxy white.

LOCAL NAMES AND USES: The following names seem probably correct: *mbutambuta* (Yasawas); *kutumirase* (Mba); *kutu* (Nandronga & Navosa); *mbumbu marasea* (Ra); *merikula* (Mbua); and *mbumbu* (Thakaundrove). J. W. Parham has also noted for *M. densiflora* the following names: *ndrau mbombosanga*, *ndrau ni makaka*, and *monitona*; but I have not been able to associate them with specific labels. The bark and leaves have been reported as having medicinal uses, mostly unspecified or vague.

Fiji. YASAWAS: YASAWA I.: Tethi, *Fiji Dept. Agr. 13657* (BISH, SUVA). WAYA I.: Ridge back of Yalombi, *St. John 18010* (BISH, SUVA, US); below Yalombi and Natawa, *Fiji Dept. Agr. 13672* (BISH, SUVA). VITI LEVU: MBA: North of Natalau, near Lautoka, *Degener 15004* (A, BISH, NY, UC, US); Mt. Evans Range, *Greenwood 379* (K), *Smith 4093, 4130* (both A, BISH, K, US), *4189* (A, US); Nukunuku Creek, west of Nandarivatu, *Vaughan 3398* (BM, K); vicinity of Nandarivatu, *Parks 20509* (BISH holotype of *M. parksii*; isotypes at SUVA, UC, US), *20512* (BISH holotype of *M. densiflora*; isotypes at SUVA, UC, US); Mt. Nanggaranambuluta (Lomalangi), *Gillespie 3787* (BISH, UC), *Greenwood 874* (A, K), *Smith 4825* (A, BISH, K, US), *Fiji Dept. Agr. 12532* (BISH, SUVA); Sovutawambu, *Degener 14595* (A, BISH, K, NY, UC, US); Nandala, *Degener 14375* (A, BISH, K, NY, UC, US); Mt. Tomanivi (Victoria), *Fiji Dept. Agr. 13029* (BISH, SUVA), *13068* (BISH, K, MASS, SUVA), *O. & I. Degener 32074* (BISH). NANDRONGA & NAVOSA: Nausori Highlands, *Fiji Dept. Agr. 13845* (*Damanu 21*) (K, SUVA); Nausori Village, *Fiji Dept. Agr. 13333* (BISH, K, SUVA); vicinity of Kalavo, *H. B. R. Parham 215* (BM); vicinity of Singatoka, *Greenwood 15* (K), *Fiji Dept. Agr. 5995* (BISH, SUVA); near Sovi Bay, *Degener 15037* (A, BISH, K, NY, UC, US); "Nandronga District," *W. L. Parham 1* (K). SERUA: Hills near coast between Korovou and Wainiyambia, *Smith 9179, 9217, 9321, 9351* (all BISH, GH, K, SUVA, US). RA: Vicinity of Penang, *Greenwood 767* (K); vicinity of Rewasa, near Vaileka, *Degener 15340* (A, BISH, K, NY, UC, US). NAITASIRI: Rairaimatuku Plateau, between Mt. Tomanivi and Nasonggo, *Smith 5786* (A, BISH, K, US). TAILEVU: Matavatathou, *Fiji Dept. Agr. 9234* (*McKee 2799*) (K, SUVA, US). REWA: Vicinity of Suva, *H. B. R. Parham 383* (BM). VITI LEVU or TAVEUNI: *Seemann 286*, p. p. (mounted with type material of *M. tabacifolia*, GH, K). VANUA LEVU: MBUA: Mbua Bay, *U. S. Expl. Exped.* (US 49408 holotype; isotype at GH); Koromba Forest, *Fiji Dept. Agr. 15117* (BISH, SUVA); Mt. Seatura, *Fiji Dept. Agr. 14895* (BISH, SUVA); vicinity of Nandi, *Milne* (K). THAKAUNDROVE: Mt.

Kasi, Yanawai River region, *Smith 1783* (BISH, GH, K, NY, US). FIJI, without further locality: *Harvey*, Nov. 1855 (BM, GH, K), *Tothill 367* (K), *Fiji Dept. Agr. 13002* (BISH, SUVA).

In proposing *M. densiflora* as a new species, Gillespie made no comparisons; his description indicates no points of differentiation from *M. persicifolia* and his type material, although from a dense-foliaged specimen with immature inflorescences, falls well within a normal range of variation. I have not been able to verify Gillespie's mention of the flowers as 5–7-merous. The stigma in his type is more deeply lobed than usual for *M. persicifolia*.

Maesa parksii was similarly described by Gillespie without mention of a related species. His type specimen is certainly not "glabrous in all parts," as described, but bears minute spreading hairs 0.1–0.2 mm. long on the young branches, petioles, and proximal parts of the costa on both leaf-surfaces. However, such hairs are lacking from the inflorescences, which are simply racemose or sparsely paniculate. No other characters seem to separate *M. parksii* from *M. persicifolia*, a logical interpretation of which seems to include a few specimens, among which is the type of *M. parksii*, with a sparse, obscure, short indument of spreading hairs on a few vegetative parts. Through these individuals *M. persicifolia* is seen to approach *M. pickeringii*, the two concepts being very distinct in their typical elements but separable, in borderline individuals, only by the absence of a pilose inflorescence-indument in the former and its presence in the latter.

The closest relative of *M. persicifolia* is *M. vitiensis*, and indeed these taxa were combined by Mez. However, as indicated in my key and in the discussion of the following species, they differ by characters as satisfactory as one can hope for in *Maesa*.

15. *Maesa vitiensis* Seem. Fl. Vit. 148. 1866; Horne, A Year in Fiji, 264. 1881. FIGURES 7–9, 19.

Maesa indica var. sensu Seem. in Bonplandia 9: 257. 1861; A. Gray in Bonplandia 10: 36. 1862; non auctt.

Maesa persicifolia sensu Seem. Viti, 438, 1862; non A. Gray.

Maesa lenticellata Gillespie in Bishop Mus. Bull. 74: 6. fig. 4. 1930; J. W. Parham, Pl. Fiji Isl. 156. 1964.

Maesa neriifolia Gillespie in Bishop Mus. Bull. 74: 7. fig. 5. 1930; J. W. Parham, Pl. Fiji Isl. 158. 1964.

Maesa stenophylla A. C. Sm. in Jour. Arnold Arb. 33: 106. 1952; J. W. Parham, Pl. Fiji Isl. 158. 1964.

Small tree or shrub, or liana, the young parts copiously furfuraceous with ferruginous or dark brown irregular scales 0.1–0.2 mm. in diameter, these evanescent from most parts of the plant; branchlets subterete, with copious, pale, often protuberant lenticels; petioles slender, 5–35 mm. long, canaliculate, narrowly winged distally but conspicuously cartilaginous-angled nearly to base; leaf-blades chartaceous or subcoriaceous, narrowly elliptic to ovate-lanceolate or lanceolate, (4–) 5–13 cm. long, 1.5–5 (–6)

cm. broad, attenuate to acute or sometimes obtuse at base and long-decurrent on the petiole, obtuse to cuspidate or slenderly acuminate at apex and callose-apiculate, subentire or undulate or obscurely crenulate at margin, usually with sinuously parallel secretory canals conspicuous on the lower surface or these sometimes immersed, the costa plane or sharply elevated above, prominent beneath, the secondary nerves 4–8 per side, curved-ascending or sharply ascending, immersed to prominulous above, often sharply prominulous beneath, the veinlet-reticulation usually obscure and immersed on both surfaces; inflorescences axillary or occasionally terminal on short lateral branches, solitary, simply racemose or narrowly paniculate with 1–10 short ascending branches, 1.5–9 cm. long, with few to many flowers, the peduncle short, like the slender rachis, branches, and pedicels sparsely furfuraceous but soon glabrate; branch-subtending bracts lanceolate, 1–2.2 mm. long, acute, the flower-subtending bracts similar but 0.5–1.5 mm. long; pedicels (0.5–) 1.5–2.5 mm. long at anthesis and to 3.5 mm. long in fruit, the prophylls deltoid to lanceolate, 0.5–1 mm. long and usually narrower, acute to obtuse, obscurely erosulous and sometimes glandular-ciliolate at margin, obscurely or obviously glandular-lineolate; calyx-lobes deltoid, 0.4–1 mm. long and broad, subacute or obtuse, like the prophylls in margin and texture; corolla 1.3–1.5 mm. long, 1.5–2.5 mm. in apical diameter, the tube subequal to lobes or shorter, the lobes ovate-oblong, 0.6–1.5 mm. long and broad, rounded, minutely erosulous at margin, obviously and conspicuously glandular-lineolate; filaments 0.1–0.3 mm. long, the anthers deltoid-ovoid, 0.3–0.4 mm. long; free part of ovary broadly conical, the style 0.2–0.5 mm. long, the stigma obscurely 2- or 3-lobed, the ovules 12–20, 2–4-seriate; fruits subglobose at maturity and 3–3.5 mm. in diameter.

TYPE LOCALITY: In describing *M. vitiensis*, Seemann cited his own no. 287 and also a Harvey specimen. As the latter belongs to a different species, *M. persicifolia*, it is desirable to lectotypify *M. vitiensis* by Seemann 287, which obviously was the principal basis of his description; it was collected on Ovalau in October 1860. In combining the two species mentioned in 1902, Mez cited both the Seemann and Harvey specimens, indicating that his reduction was more influenced by the latter than the former; however, he did not lectotypify *M. vitiensis*. The three species now being reduced to *M. vitiensis* are typified as follows: *M. lenticellata* by Gillespie 3149, from Mt. Naitarandamu, Namosi Province, Viti Levu; *M. neriifolia* by Gillespie 2390, from Mt. Korombamba, Rewa Province, Viti Levu; and *M. stenophylla* by Smith 6490, from Mt. Numbuiloa, Mathuata Province, Vanua Levu. All four types involved are cited below in the geographic sequence.

DISTRIBUTION: Endemic to Fiji and known from several high islands. It occurs from near sea-level to an altitude of 1,150 m., in dense or open forest and in thickets of crests and hillsides. It has been noted as a liana or as a slender or compact tree or shrub 2–5 m. high; the corolla is white to

cream-colored or pale yellow, with brownish or salmon-pink glandular lines; the filaments are pale green and the anthers yellow; and presumably the fruit becomes white at maturity.

LOCAL NAMES: *Kolo ni mbeka* has been noted in Mathuata, *rongo* and *tui ni nduna* in Mbua.

Fiji. VITI LEVU: SERUA: Mt. Tikituru (Gordon), *Fiji Dept. Agr.* 14498 (BISH, K, SUVA). NAMOSI: Mt. Naitarandamu, summit ridge, Sept. 28, 1927, *Gillespie* 3149 (BISH holotype of *M. lenticellata*; isotypes at BISH, UC); Korombasambasanga Range, *Fiji Dept. Agr.* 2209 (BISH, SUVA), 14575 (BISH, SUVA); Mt. Vakarongasiu, summit, *Gillespie* 3287 (BISH, K, NY, UC), *Fiji Dept. Agr.* 14600 (BISH, SUVA), 14703 (BISH, SUVA). NAITASIRI: Central Road, *Tothill* 468 (A, K), 486 (BISH, K, NY), 552 (BISH, K), 578 (BISH, K). REWA: Mt. Korombamba, summit, Aug. 23, 1927, *Gillespie* 2390 (BISH holotype of *M. neriifolia*; isotypes at BISH, K, NY, UC), *Meebold* 17056 (BISH, K), *Webster & Hildreth* 14093 (DAV, MASS). OVALAU: *Seemann* 287, October 1860 (K lectotype; isolectotypes at BM, GH). VANUA LEVU: MBUA: Rukuruku Bay, *H. B. R. Parham* 6 (GH); Ndavoka, *H. B. R. Parham* 458 (K). MATHUATA: Vicinity of Lambasa, *Greenwood* 487 (K); northwestern slopes of Mt. Numbuiloa, east of Lambasa, Nov. 6, 1947, *Smith* 6490 (A holotype of *M. stenophylla*; isotypes at BISH, K, US); Undu Point, *Tothill* 350 (K), 356 (BISH, K), 358 (BISH, K). THAKAUNDOVE: Nandongo, inland from Malake, *Horne* 674 (K); Maravu, near Salt Lake, *Degener & Ordenez* 14153 (A, BISH, K, NY, US). TAVEUNI: Main ridge east of Somosomo, *Smith* 8367 (BISH, GH, K, UC, US); Rairai Ndreketi, *Fiji Dept. Agr.* 15890 (BISH, NY, SUVA); Mt. Manuka, east of Wairiki, *Smith* 778 (BISH, GH, K, NY, US), 8223 (BISH, GH, K, US). FIJI, without further locality: *Fiji Dept. Agr.* 1730 (BISH, SUVA).

In describing *M. neriifolia*, Gillespie compared it with *M. persicifolia* as understood by Mez, i.e. including *M. vitiensis*. Later, Gillespie realized that his species could not be separated from *M. vitiensis*; in a 1932 annotation on *Seemann* 287 (K) he noted its distinctiveness from *M. persicifolia* and its identity with his own *M. neriifolia*. Indeed, the latter is precisely similar to the Seemann specimen except for its shorter pedicels, and it cannot be maintained.

Gillespie did not contrast his new species *M. lenticellata* with *M. neriifolia*, but a careful comparison of the two type collections indicates that the only consequential difference is the absence of obvious secretory canals from the leaf-blades of *M. lenticellata* and their copious presence in *M. neriifolia*. Taking *M. vitiensis* as a whole, it seems undesirable to exclude from it the type of *M. lenticellata* and a few other specimens from southern Viti Levu that have the secretory canals somewhat immersed in the leaf-tissue. Examination of cleared leaf-blades shows that canals are copiously present (although disappearing with prolonged clearing) in all material referable to the four taxa under consideration; but in the case of *M. lenticellata* they are sometimes so immersed in the leaf-tissue as to be indistinguishable on surface examination. In most other specimens of this complex, the secretory canals are fairly close to the lower leaf-surface and hence obvious.

In describing *M. stenophylla* I contrasted it with *M. persicifolia* in Mez's sense. Examination of the specimens now available indicates that *M. stenophylla* has all the basic characters associated with *M. vitiensis*: the cartilaginous-margined petioles, the leaf-blades with ascending nerves and gradually tapering base, the copious secretory canals near the lower leaf-surface, and the essentially glabrous inflorescences. The leaf-blades of *M. stenophylla* (with which I would associate *Horne 674* and *Greenwood 487*) are proportionately narrower than those of other available specimens of the complex, being four or five times as long as broad. However, specimens from Undu Point, Mathuata, have leaves approaching this extreme shape, and therefore I now believe *M. stenophylla* not nomenclaturally useful at any level.

As suggested in the preceding paragraphs, *M. vitiensis* is allied to *M. persicifolia* but seems worthy of specific recognition on the basis of its evanescent lepidote indument, its winged or sharply angled petioles, its leaf-blades usually attenuate at base and conspicuously marked beneath with sinuous secretory canals, its frequently simply racemose inflorescences with long pedicels, and the obvious glandular lines of its corollas. The two species have different, although not entirely mutually exclusive, distributions, *M. persicifolia* being frequent in the Yasawas, northern and western Viti Levu, and western Vanua Levu, while *M. vitiensis* generally replaces it in southeastern Viti Levu, eastern Vanua Levu, and Taveuni.

2. *Ardisia* Sw. Prodr. 3, 48. 1788; Seem. Fl. Vit. 149, p. p. 1866; Mez in Pflanzenr. 9(IV. 236): 57. 1902. *Nom. cons.*

The large genus *Ardisia*, as interpreted by Mez, has many species in tropical Asia and tropical America but is lacking in Africa. In the Pacific it extends eastward through Malesia to New Guinea, the Solomons, and Australia, with a single outlying endemic species in Fiji. The genus should have been included in my discussion (Smith, 1955) of genera with ranges terminating in Fiji. No indigenous occurrences of the genus have been noted from the New Hebrides or from elsewhere in the Fijian Region, but two species are here discussed as cultivated or naturalized.

Ardisia is well characterized by its conspicuous, slender, tapering style and its minute, punctiform stigma (FIGURE 22). In most species the ovules are several-seriate on the placenta, but in a few they are essentially uni-seriate, this being the case in the Fijian species.

1. *Ardisia brackenridgei* (A. Gray) Mez in Pflanzenr. 9(IV. 236): 127. 1902; Turrill in Jour. Linn. Soc. Bot. 43: 30. 1915; J. W. Parham, Pl. Fiji Isl. 155. 1964. FIGURES 20-23.

Ardisia sp. Seem. in Bonplandia 9: 257. 1861; A. Gray in op. cit. 10: 37. 1862; Seem. in op. cit. 10: 296. 1862, Viti, 439. 1862.

Myrsine brackenridgei A. Gray in Proc. Amer. Acad. Arts 5: 330. 1862; Seem. Viti, 438. 1862, Fl. Vit. 149. 1866; Horne, A Year in Fiji, 265. 1881.

Ardisia vitiensis Seem. Fl. Vit. 150. 1866; Horne, A Year in Fiji, 257. 1881.

Ardisia storckii Seem. Fl. Vit. 150. 1866; Horne, A Year in Fiji, 257. 1881; Mez in Pflanzenr. 9(IV. 236): 126. 1902; J. W. Parham, Pl. Fiji Isl. 156. 1964.

Myrsine sp. n. Horne, A Year in Fiji, 265. 1881.

Tinus storckii Kuntze, Rev. Gen. Pl. 2: 975. 1891.

Shrub or tree to 5 m. high, the young parts minutely but copiously furfuraceous with irregular scales less than 0.1 mm. in diameter, soon glabrous or the indument subpersistent on the rachis and pedicels; branchlets slender, slightly flattened but soon terete, 1–3 mm. in diameter distally, grayish and inconspicuously lenticellate; leaves alternate, the petioles slender, semiterete or shallowly canaliculate, narrowly winged to base, 3–12 mm. long, the blades chartaceous, drying brownish, black-glandular-punctate, elliptic to elliptic- or oblong-lanceolate, 4–13 cm. long, 1.5–3.5 (–4.7) cm. broad, acute to attenuate at base and long-decurrent on the petiole, obtuse to obtusely acuminate at apex, irregularly and inconspicuously crenate and narrowly recurved at margin, the costa shallowly canaliculate or plane above, sharply raised beneath, the secondary nerves 12–25 per side, interspersed with others less evident, spreading or subascending, sharply prominulous on both sides or at length subimmersed above, irregularly anastomosing toward margin, the veinlet-reticulation copious, prominulous or subimmersed; inflorescences axillary or lateral, irregularly fasciculiform or short-racemose (very rarely short-paniculate), one or several borne on an irregular persistent nodule or rarely from a slender peduncle, the rachis short and slender at anthesis (to 3 mm. long) but sometimes elongate to 15 mm. in fruit, the flowers 1–7, the fruits rarely more than 5 but sometimes the rachis with additional scars, the flower-subtending bracts oblong or lanceolate, to 1.5 mm. long, copiously glandular-punctate, obtuse, sparsely glandular-ciliolate, caducous; pedicels slender, slightly swollen distally, 4–11 mm. long at anthesis, sometimes elongating to 17 mm. or rarely to 25 mm. in fruit; flowers 5-merous, the calyx submembranous, cupuliform at anthesis and 2–3 mm. in apical diameter, becoming rotate and slightly accrescent in fruit, the lobes dextrorsely contorted, broadly ovate, 1–1.3 mm. long and broad at anthesis, sparsely pellucid-glandular-punctate, obtuse or rounded at apex, copiously glandular-ciliolate; corolla submembranous, ovoid and acute in bud, to 4.5 mm. long, the tube about 0.5 mm. long, the lobes dextrorsely contorted, elliptic-lanceolate, at anthesis 2.5–4 mm. long and 1.5–2 mm. broad, acute, sparsely or copiously glandular-punctate; filaments 0.5–1 mm. long at anthesis, connate into a minute tube proximally and adnate to corolla-tube, free and slenderly ligulate distally, the anthers dorsifixed near base, oblong-deltoid, 1.5–2.5 mm. long, subsagittate at base, acute at apex or with a slender mucro to 0.2 mm. long; ovary ovoid, the style slenderly subulate, 1.5–3.5 mm. long, the stigma minutely punctiform, the placenta obovoid, flattened at apex, the ovules 6–10, irregularly uniseriate; mature fruits subglobose or obovoid, obscurely multicostate in drying, up to 8 mm. in diameter or sometimes to 9 × 6 mm., copiously lineolate with immersed glands, the style caducous, leaving a small circu-

lar scar, the pericarp 0.5–1 mm. thick, the mesocarp carnose, the endocarp crustaceous, about 0.2 mm. thick.

TYPE LOCALITY: Three types, all Fijian, are involved in the synonymy; all are cited below in the appropriate sequence. The type of the oldest name, *Myrsine brackenridgei*, is a U.S. Exploring Expedition specimen collected in 1840 in the mountains of Ovalau, in fruit.

The type of *A. vitiensis* is Seemann 291, a fruiting specimen collected on Viti Levu in July 1860. During this month Seemann (1862: 82–133) visited several areas in the present Provinces of Tailevu, Rewa, Namosi, and Serua. The exact location of his no. 291 cannot be stated, other than coastal southeastern Viti Levu.

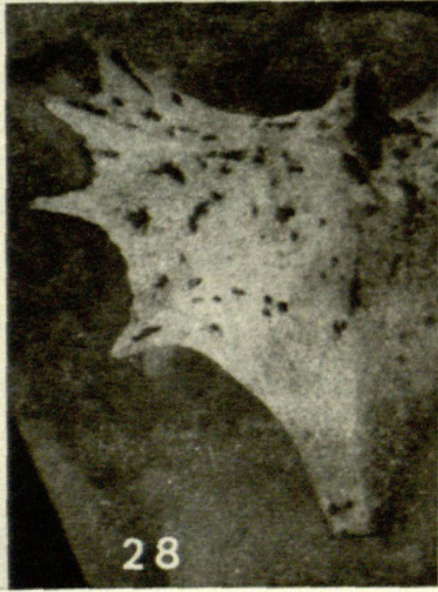
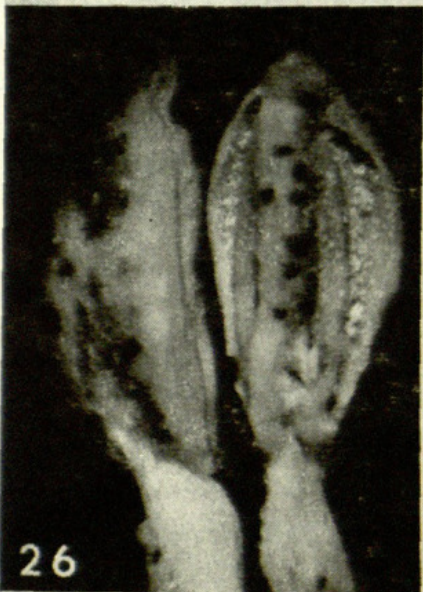
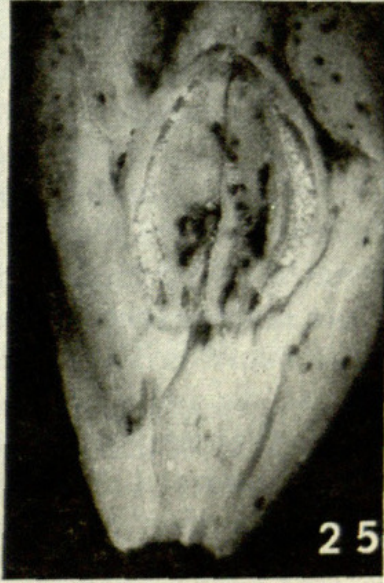
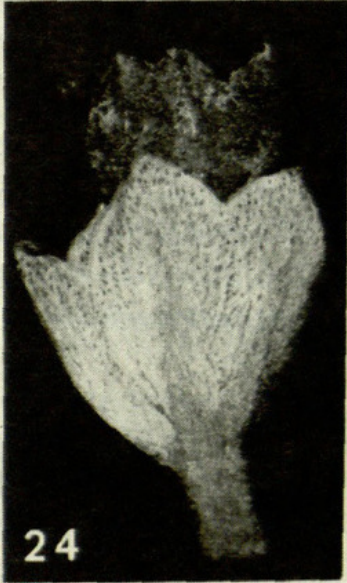
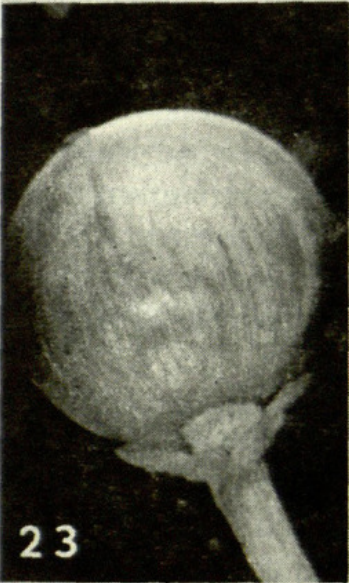
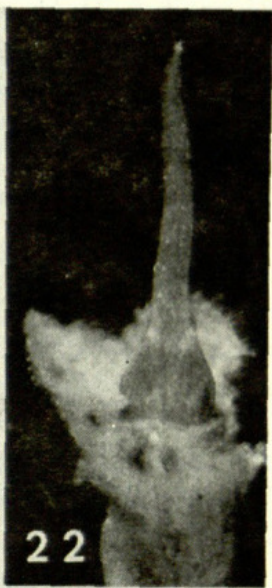
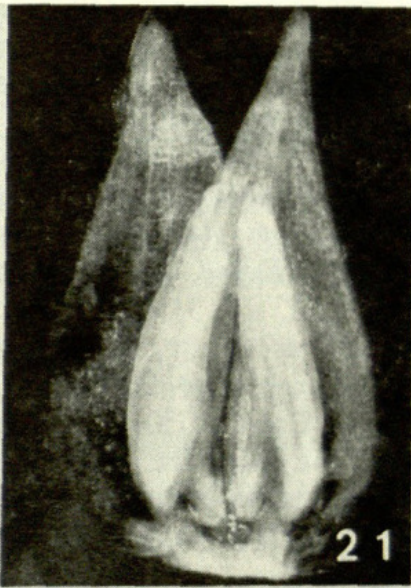
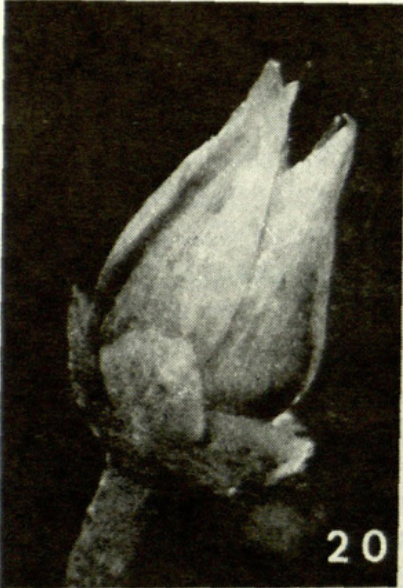
In describing *A. storckii* Seemann cites his no. 292 and Storck 897, the former a robust fruiting specimen and the latter an excellent flowering specimen. Although the name is herewith being reduced to *A. brackenridgei*, it seems desirable to lectotypify it; in view of the specific epithet and the excellence of the material, I designate Storck 897 as the lectotype. The only cited localities are "Viti Levu & Ovalau." Seemann 292 bears two field labels indicating: "Viti Levu, 1860" and "Port Kinnaird, July 1860." It is probable, therefore, that no. 292 contains elements from both localities, as Seemann was on both Viti Levu and Ovalau in July 1860. Storck 897 bears no detailed locality and may have come from either island.

DISTRIBUTION: Endemic to Fiji and known from several islands at elevations between 150 and 915 m., occurring in sometimes dense forest, thickets, and in forest-grassland transitional areas. It has been noted as a shrub or small tree 0.5–5 m. high, with a slender trunk, sometimes simple-stemmed and often dense-foliaged. The petioles are sometimes reddish; the flower-buds are pale pink or red and the mature corolla pink; the fruits are at first dull white or purple-tinged, becoming pink and at length red.

LOCAL NAME: This plant of the undergrowth seems to have been neglected by Fijians, the only recorded name being *thondo*, noted on Smith 551 from Vanua Levu.

Fiji. VITI LEVU: MBA: Mt. Evans Range, Greenwood 447 (K); Mt. Mbati-lamu, Vunda, Fiji Dept. Agr. 14131 (BISH, K, MASS, SUVA); Nandrau Road, south of Nandarivatu, *im Thurn* 282 (K); between Nggaliwana and Tumbeindreketi Creeks, east of Navai, Smith 6017 (A, US). NANDRONGA & NAVOSA: Rairaimatuku Plateau, between Nandrau and Nanga, Smith 5527 (A, BISH, K, US); between

FIGURES 20–23. *Ardisia brackenridgei*: 20 and 21 from Storck 897, 22 from Smith 551, 23 from Smith 7537. 20, flower, $\times 10$; 21, two corolla-lobes and stamens, $\times 15$; 22, gynoecium and two calyx-lobes, $\times 15$; 23, young fruit, showing calyx and stylar scar, $\times 8$. FIGURES 24–28. *Tapeinosperma capitatum*: 24–27 from Smith 749, 28 from Smith 7589. 24, flower, $\times 3$; 25, two corolla-lobes and stamens, $\times 7$; 26, stamens, dorsal (left) and ventral views, $\times 10$; 27, gynoecium, $\times 8$; 28, partial lateral view of putamen, $\times 2.5$.



Koronayalewa and Vonolevu, *Fiji Dept. Agr. 1392* (SUVA). SERUA: Upper Navua River, *Fiji Dept. Agr. 15518* (K, SUVA). VITI LEVU, without further locality: *Seemann 291* (K holotype of *Ardisia vitiensis*; isotypes at BM, GH); *Graeffe 22* (BM). VITI LEVU or OVALAU: *Seemann 292* (BM, GH, K, P); *Storck 897* (K lectotype of *Ardisia storckii*; isolectotypes at BM, GH). OVALAU: Mt. Korotolutolu, west of Thawathi, *Smith 8031* (BISH, GH, K, SUVA, UC, US); south of Mt. Korolevu, west of Lovoni Valley, *Smith 7537* (BISH, GH, K, SUVA, UC, US); Wainisavulevu, Lovoni Valley, *Fiji Dept. Agr. 14507* (BISH, K, SUVA). OVALAU, without further locality: *U. S. Expl. Exped.* (US 63445 holotype; isotypes at GH, NY), *Horne 262* (GH, K), *291* (GH, K), *355* (GH, K). KORO: Eastern slope of main ridge, *Smith 977* (BISH, GH, K, NY, UC, US). VANUA LEVU: MBUA: Navotuvotu, summit of Mt. Seatura, *Smith 1656* (BISH, GH, K, NY, UC, US). MATHUATA-THAKAUNDROVE boundary: Crest of Korotini Range, *Smith 551* (BISH, GH, K, NY, UC, US). TAVEUNI: Mt. Manuka, western slope between Somosomo and Wairiki, *Smith 774* (BISH, GH, K, NY, UC, US). MOALA: Above Maloku, *Smith 1345* (BISH, GH, K, NY, UC, US). FIJI, without further locality: *Yeoward 25* (K).

Of the three basionyms here synonymized, Mez reduced *A. vitiensis* to *A. brackenridgei*, but he maintained *A. storckii* as distinct on the basis of its inflorescence having about 5 (rather than 2 or 3) flowers and its leaf-blades being more obscurely glandular-punctate. Among the cited specimens these differences seem inconsequential. Whether the leaf-punctations are obvious or obscure depends upon age and environmental conditions; and the number of flowers and fruits per inflorescence is highly variable. Even in the type of *A. brackenridgei* the fruits vary from 1 to 5 per inflorescence, while on the lectotype of *A. storckii* the flowers may be as many as 7 per inflorescence.

It should be noted that in the present species the ovules are uniseriate on the placenta, a character which in Mez's key and generic description would remove *A. brackenridgei* from *Ardisia*. However, some of his illustrations show an essentially uniseriate placenta with few ovules, and it is apparent that *Ardisia* must be interpreted to include such species. The Fijian taxa are placed by Mez in his subgenus *Tinus* (Burm.) Mez, among a few species with "placentae ovula subpauca (5-10) saepius spurie quasi 1-seriata gerentes." The closest relative of *A. brackenridgei* is noted in Mez's key as the Australian *A. pachyrhachis* F. v. Muell., but the relationship does not seem very close, that species having coriaceous leaf-blades, comparatively numerous flowers, and eciliolate calyx-lobes.

CULTIVATED OR NATURALIZED SPECIES

Ardisia crispa (Thunb.) A. DC. in *Trans. Linn. Soc.* 17: 124. 1834, in DC. *Prodr.* 8: 134. 1844; Mez in *Pflanzenr.* 9(IV. 236): 144. *fig.* 22. 1902.

Bladhia crispa Thunb. *Fl. Japon.* 97. 1784.

DISTRIBUTION: Eastern Asia, from Sikkim through upper India and China to Hainan, Formosa, and the Ryu Kyus to Japan, the Philippines,

Borneo, and Java; now widely cultivated (cf. Neal, In Gardens of Hawaii, 665. 1965). As introduced into Fiji as an ornamental, the plant is a shrub to 3 m. high occurring from near sea-level to about 200 m.; it seems to be known locally as *Australian holly* and "*crispa*." All the collections cited below are in the Fiji Department of Agriculture series of numbers.

Fiji. VITI LEVU: NAITASIRI: Nanduruloulou, 9811 (BISH, SUVA); Mbatiki (Arboretum), 11745 (BISH, SUVA). REWA: Suva, 16090 (SUVA); Vunikawai, 6065 (SUVA); Lami, 11570 (SUVA).

Ardisia humilis Vahl, Symb. Bot. 3: 40. 1794; Mez in Pflanzenr. 9(IV. 236): 127. fig. 20, A-E. 1902; Christophersen in Bishop Mus. Bull. 128: 166. 1935.

DISTRIBUTION: From the Maldiv Islands and India eastward to southern China and Malesia to the Philippines and Celebes; frequently cultivated and sometimes naturalized. Its occurrence in Samoa is indicated by a single collection from an erect tree 7-8 m. high, doubtless originally cultivated but now naturalized in woods and open country at elevations of 50-150 m.

Samoa. UPOLU: Vicinity of Apia, Wilder 79 (BISH).

[To be concluded]



Smith, A C. 1973. "Studies of Pacific Island Plants, XXV. The Myrsinaceae of the Fijian Region." *Journal of the Arnold Arboretum* 54(1), 1-41.

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