

STUDIES OF PACIFIC ISLAND PLANTS, XVIII<sup>1</sup>  
NEW AND NOTEWORTHY  
FLOWERING PLANTS FROM FIJI

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Most of the plants discussed or described in this paper were obtained during the writer's third collecting trip to Fiji in 1953-54.<sup>2</sup> The first set of this material is deposited in the U.S. National Herbarium; a duplicate study set is in the herbarium of the Bernice P. Bishop Museum; and eight remaining sets will shortly be distributed to world herbaria. However, earlier collections in herbaria have also been consulted and are here cited when pertinent. In this paper 18 species are described as new, and range extensions and emendations are noted for a few others. The place of deposit of specimens is indicated as follows: Arnold Arboretum (A); Bernice P. Bishop Museum (Bish); Gray Herbarium (GH); University of California, Berkeley (UC); U.S. National Herbarium (US). I am indebted to the staffs of these institutions for the privilege of studying such material, and especially to the Director of the Bishop Museum for providing permanent working space.

Musaceae

*Heliconia paka* A. C. Sm., sp. nov.

*Heliconia bihai* sensu A. C. Sm. Sargentia 1:7. 1942; sensu J. W. Parham, Pl. Fiji Isl. 259. 1964; non L.

Herba valida 2-6 m. alta; foliis saepe 3 m. longis vel longioribus glabris, petiolis crassis ad 1 m. longis, laminis lanceolatis 2-3 m. longis medium versus 30-50 cm. latis, basi rotundatis et in petiolum decurrentibus, apice obtusis, costa valida, nervis primariis inter se 0.8-1.5 cm. marginem versus abrupte curvatis; inflorescentia erecta ad 60-70 cm. longa, pedunculo et rhachide crassis 10-15 mm. diametro glabris,

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<sup>2</sup> Smith, A. C., Botanical studies in Fiji. Ann. Rep. Smithsonian Inst. for 1954: 305-315, 12 pls. 1955. For itineraries of the two earlier trips, see Journ. New York Bot. Gard. 35:261-280. 1934; Journ. Arnold Arb. 31:138-141. 1950.

pedunculo 5-10 cm. longo, rhachide inconspicue flexuosa; bracteis primariis inter se 2-6 cm. plerumque 12-15, vagina subcoriacea saepe lenticellata marginem versus pilis brunneis 0.3-0.7 mm. longis inconspicue hispidula, lamina subcarnosa late ovato-lanceolata, 30 (inferiore)-13 (superiore) cm. longa, ad 5 cm. lata, ad apicem obtusum gradatim angustata, crasse carinata, margine scariosa, conspicue nervata, praeter margines versus proxime ut vagina pilosa ubique glabra; floribus glabris plerumque 5-8 in axillis bractearum; bracteis sub floribus e basi lata lanceolatis 6-7 cm. longis 1.5-2 cm. latis acutis multinerviis inconspicue carinatis, praeter pilos rigidos brunneos adpressos circiter 1 mm. longos ad carinam glabris; pedicellis teretibus 2-4 mm. diametro 15-25 mm. longis sub anthesi et fructu superne paullo incrassatis; tepalis liberis in vivo subcarnosis in sicco chartaceis conspicue nervatis 55-60 mm. longis, posteriore 7-9 mm. anterioribus 4-5 mm. interioribus 5-6 mm. latis; staminodio petaloideo tepalum posterius basim versus affixo, parte libera subcarnosa ovato-cucullata acuta ca. 5×5 mm.; staminibus et stylo sub anthesi quam tepalis paullo brevioribus, antheris 12-13 mm. longis obtusis, stigmate 3-lobato lobis obscure bifidis; ovario elongato-turbinato sub anthesi 10-13 mm. longo et 4-5 mm. diametro; fructu in vivo carnoso in sicco coriaceo ellipsoideo-triquetro ad 25 mm. longo et 20 mm. lato, basi obtuso, apice anguste truncato; seminibus 3 coriaceis triquetris ca. 18 mm. longis, 6-8 mm. latis, utroque subapiculatis, intus basim versus operculatis, conspicue ruguloso-tuberculatis praecipue faciebus exterioribus et carina dorsali, tuberculis obtusis vel interdum carina complanatis et 1-2 mm. eminentibus.

Type in the U.S. National Herbarium, Nos. 2191516-2191519 (4 sheets), collected in dense forest in the hills east of the Wainikoroiluva River, near Namuamua, Namosi Province, Viti Levu, Fiji, alt. 50-200 m., October 15, 1953, by A. C. Smith (No. 8900). Duplicates at Bish, etc.

ADDITIONAL SPECIMENS EXAMINED:

FIJI: VITI LEVU: Mba: Mountains near Lautoka, *Greenwood* 1303 (A, US); Mt. Evans Range, *Greenwood* 1156 (A); vicinity of Nandarivatu, *Degener* 14352 (Bish, GH, UC, US). Naitasiri: Raradawai, Wainamo-Wainisavulevu Divide, *St. John* 18263 (Bish, US); Suva Pumping Station, *Degener & Ordonez* 13988 (Bish, GH, UC, US); Central Road 8 miles from Suva, *MacDaniels* 1152 (Bish). KANDAVU: Hills above Namalata and Ngaloa Bays, *Smith* 193 (Bish). VANUA LEVU: Thakaundrove: Vatunivumonde Mt., Savu Savu Bay region, *Degener & Ordonez* 14011 (Bish, GH, UC, US).

The local name "paka" is commonly applied to this indigenous *Heliconia*, and St. John also records it as "vava ni Viti." The plant is a fairly common component of rain forests and wet thickets at elevations from near sea level up to at least 750 m.; it is more abundant than indicated by the number of collections, as evidently collectors choose not to prepare material of what they take to be a common

coarse herb. The leaves are suitable for thatching temporary shelters and the plant is thus well known to local hunters and forest travelers. There is no indication that this species is an introduction, and no justification for referring it to the American *H. bihai* L. Degener (No. 14352) indicates that the seeds are edible when cooked, and St. John's label suggests that the flowers may be eaten raw or boiled. The collection selected as the type bears good flowers, and several of the other specimens have flowers as well as fruits. Field notes indicate that the outer bracts are red, the inner bracts dull yellow, and the fruit yellow, becoming orange when ripe.

Schumann (Pflanzenr. 1 (IV. 45):36. 1900) implies that his concept of *H. bihai* L. includes not only American plants from the West Indies and Mexico to southern Brazil, but also specimens from Samoa westward to the Moluccas or perhaps to Sumatra. The Fijian material, indeed, keys to *H. bihai* in his system. Subsequent students of *Heliconia* have realized that *H. bihai* could not logically be so inclusive. Griggs (Bull. Torrey Club 30:656. 1903) more narrowly defined *H. bihai* and suggested that it is limited to the West Indies or Guiana. According to Griggs it has an elongate peduncle and bracts mostly concealing the rachis. Thus far most of the Old World taxa lack acceptable specific epithets, but an informative discussion by Ridley (Agric. Bull. Straits Settlements 7:129–132. 1908) provides descriptions and notes for several of them. As far as can be ascertained at present, none of the names there discussed seem to apply to the species in Fiji. Specimens are now at hand from the island groups from Samoa westward; the available material from the New Hebrides, Solomons, and New Guinea includes several undescribed species, but none of it requires comparison with *H. paka*.

The Samoan collections cited as *H. bihai* by Christophersen (Bishop Mus. Bull. 128:54. 1935) are superficially similar to my new species, but their seeds are even more coarsely and irregularly rugulose. The indument of at least some of the Samoan specimens is more abundant (on the sheaths and surfaces of the primary bracts), being present also sometimes on the pedicel and ovary. The inner perianth segments, insofar as observed, appear to have somewhat thicker and more obviously raised nerves. In view of these points, I hesitate to combine the Samoan material with *H. paka*, although subsequent study may indicate this as the correct disposition.

### Cunoniaceae

***Pullea perryana*** A. C. Sm. Journ. Arnold Arb. 33:148. 1952.

OVALAU: Summit of Mt. Ndelaiovalau and adjacent ridge, alt. 575–628 m., in dense bush and thickets of crest, *Smith* 7613 (Bish, US, etc.) (tree 12 m. high; perianth white; disk lobes rich pink; filaments and styles white).

The third collection of this species, previously known only from southeastern Viti Levu, is of interest. In inflorescence and floral characters the Ovalau material is essentially identical with the earlier collections, but its leaf blades are consistently smaller, being only  $4-7 \times 2-3.5$  cm., and correspondingly less coarsely crenate. These foliage differences may be merely the result of the exposed habitat on the eastern ridge of Ovalau.

### Meliaceae

***Aglaia gracilis*** A. C. Sm. Contr. U.S. Nat. Herb. 30:489. 1952.

VITI LEVU: Serua: Hills east of Navua River, near Nukusere, in dense forest, alt. 100-200 m., *Smith* 9126 (Bish, US, etc.) (simple-stemmed shrub or small tree to 5 m. high; inflorescence borne on main stem; petals dull yellow; anthers yellowish white); hills between Wainiggere and Waisese Creeks, between Ngaloa and Wainiyambia, in dry forest, alt. 50-100 m., *Smith* 9551 (US) (slender tree 2 m. high; petals and filaments yellow; anthers nearly white).

This infrequently collected species has not otherwise been recorded below 750 m. The Serua collections provide the only flowering material known other than the type, with which they agree excellently in the very distinctive floral characters. However, they permit a slight amplification of the original description as follows:

Leaves up to 70 cm. long, the petiole up to 22 cm. long; leaflet blades up to  $28 \times 7$  cm.; inflorescences up to 2 cm. long, the lateral branches several but inconspicuous, up to 6 mm. long.

***Dysoxylum gillespieanum*** A. C. Sm. Contr. U.S. Nat. Herb. 30:516. 1952.

VITI LEVU: Serua: Hills east of Navua River, near Nukusere, alt. 100-200 m., in dense forest, *Smith* 9105 (Bish, US, etc.) (tree 20 m. high; young inflorescence brownish green; fruit green, ellipsoid, up to  $5 \times 3.5$  cm.); hills between Wainiggere and Waisese Creeks, between Ngaloa and Wainiyambia, alt. 50-100 m., in dry forest, *Smith* 9381 (Bish, US, etc.) (tree 15 m. high; flower buds dull green); Namboutini, roadside near Nambukelevu, *Qoro & Kuruvoli* 13717 (Fiji Dept. Agriculture, Bish) (slender tree 8 m. high; fruit brown, oval).

The cited collections, obtained at lower elevations than the two specimens thus far known, are interesting in that they verify the position assigned to *D. gillespieanum* in my original treatment. The flowers now available indicate that the species belongs in § *Dysoxylum* and is indeed a fairly close relative of *D. lenticellare* Gillespie. No. 9381 has nearly mature inflorescences, while No. 9105 has young inflorescences and also mature fruits, somewhat larger than those originally described. Further differentiating characters based on the inflorescence may now be indicated. *Dysoxylum gillespieanum* differs from *D. lenticellare* in its compact, simply racemose (rather than branched) inflorescence, its basically 4-merous (rather than 5-merous) flowers, its disk sericeous-puberulent within (rather than glabrous),

and its solitary (rather than paired) ovules. Probably the flowers are also smaller than those described for *D. lenticellare* (Contr. U.S. Nat. Herb. 30:508. 1952), but this cannot be stressed in the absence of fully mature flowers. The new collections permit amplification of my earlier description as to foliage dimensions as well as to inflorescence:

Leaves up to 40 cm. long, the petiole to 9 cm. long, the petiolules to 25 mm. long; leaflet blades occasionally oblong-oblongeolate and up to  $22 \times 8$  cm., the secondary nerves up to 16 per side; inflorescence arising from branchlets below leaves, simply racemose, in advanced bud 1.5–2 cm. long, the peduncle 2–3 mm. long; peduncle, rachis, bracts, pedicels, and calyx copiously but minutely sericeous with yellowish hairs scarcely 0.1 mm. long; flowers 10–15 per inflorescence, solitary in the axils of broadly deltoid, rounded bracts about  $1 \times 2$  mm.; pedicels stout, 1–2 mm. long; calyx gamosepalous, cupuliform, slightly before anthesis about  $2 \times 3$  mm., the tube minute, the limb subcarnose, irregularly 4-lobed, the lobes valvate, broadly ovate, up to  $1 \times 2$  mm., rounded or obtuse at apex, the sinuses acute; petals 4, carnose, in advanced bud about 2.5 mm. long and 1.5–2 mm. broad, subacute, sericeous-puberulent without like the calyx; staminal tube short-cylindric, subcarnose, about 2 mm. long, glabrous, crenulate at apex; stamens 7 or 8, the anthers sessile, oblong, obtuse, about 0.9 mm. long; disk carnose, about 1 mm. long and 1.5 mm. in diameter, crenulate at apex, glabrous without, sparsely sericeous-puberulent within and with a few marginal setae up to 0.5 mm. long; ovary copiously yellowish sericeous with hairs about 0.2 mm. long, the locules 3, each with one ovule affixed near the middle, the style stout, terete, about 1 mm. long, glabrous, the stigma peltate, about 0.8 mm. in diameter, crenulate at margin.

### Euphorbiaceae

*Macaranga* (§ *Adenoceras*) *caesariata* A. C. Sm., sp. nov.

Arbor gracilis ad 8 m. alta; ramulis teretibus crassis apicem versus 1–1.5 cm. diametro, pilis stramineis 1.5–2.5 mm. longis copiosissime et pervicaciter villosis; stipulis subcoriaceis elliptico-oblongis ca. 1.5 cm. longis et 1 cm. latis, apice obtusis, extus copiose villosis, intus glabris; petiolis validis 12–23 cm. longis ut ramulis villosis; foliorum laminis amplis late ovatis 25–45 cm. longis 20–35 cm. latis, basi rotundatis et late (5–9 cm.) peltatis, apice in acuminem gracilem 1–2 cm. longum angustatis, margine inconspicue crenulatis, supra glabris vel nervis et interdum venulis notabiliter setulosis, subtus nervis omnibus ut petiolo copiose setuloso-villosis ac etiam conspicue miniato-glandulosis, nervis primariis 6–8 supra leviter elevatis subtus prominentibus,

rete venularum intricato subtus prominulo; inflorescentiis ♂ copiose ramulosis ad 20 cm. longis latisque, ramulis ad nodos pilis pallidis 0.5–1 mm. longis saepe hispidulis ac etiam puberulis (pilis 0.1–0.2 mm. longis) subglabratis, bracteis majoribus lanceolato-obovatis ad 8 mm. longis et 1.5 mm. latis irregulariter patelliformi-glandulosis saepe dorso parce hispidulis; floribus sessilibus 3–8 in glomerulis, calyce sub anthesi ca. 1.2 mm. longo et 1.5 mm. diametro eglanduloso 3-lobato, lobis deltoideo-ovatis acutis, staminibus 7–11 (saepe 9), filamentis ca. 1 mm. longis, antheris transverse ellipsoideis 0.5–0.6 mm. latis; inflorescentiis ♀ minoribus sub fructu 5–7 cm. longis latisque, ramulis copiose et persistenter setuloso-puberulis (pilis 0.1–0.3 mm. longis), bracteis saepe deltoideo-lanceolatis ad 4×2 mm. stipite brevi minute brunneo-sericeis; pedicellis sub fructu 2–3 mm. longis puberulis, calyce rotato ca. 3 mm. diametro inaequaliter fisso parce sericeo; fructibus levibus copiosissime sessili-glandulosis, coccis 3.5–4 mm. diametro, stylis 2 divaricatis 1–1.5 mm. longis.

Type in the U.S. National Herbarium, Nos. 2191715 and 2191716, collected in dense forest in the hills west of Waivunu Creek, between Ngaloa and Korovou, Serua Province, Viti Levu, Fiji, alt. 50–150 m., November 23, 1953, by A. C. Smith (No. 9218). Duplicates at Bish, etc.

ADDITIONAL SPECIMENS EXAMINED:

FIJI: VITI LEVU: Serua: Hills between Wainingere and Waisese Creeks, between Ngaloa and Wainiyambia, alt. 50–100 m., in dry forest, *Smith* 9657 (Bish, US, etc.). Rewa: Mt. Korombamba, *Meebold* 16473 (Bish).

The collection selected as the type bears staminate inflorescences; I recorded the local names of "ndavo" or "mavo." No. 9657 is from a fruiting specimen, and the Meebold collection consists of a single leaf. My notes indicate the tree as slender and freely branched, 6–8 m. high, with copious thin, red latex; the staminate perianth is brick red and the anthers pale yellow.

The new species is closely related only to *M. magna* Turrill, from which it is readily distinguished by the copious and persistent indument of its branchlets, petioles, and lower surfaces of leaf blades. The corresponding indument of *M. magna* is not only sparser and fugacious, but the individual hairs are only 0.2–0.5 mm. long, whereas the hairs of the vegetative parts of *M. caesariata* are 1.5–2.5 mm. long and form a striking covering. The indument on the inflorescence branches is also more obvious in the new species, but there appear to be no very obvious floral differences. The stamens of the new species are fewer (7–11 as far as observed), as compared with 12–14 in *M. magna*.

*Glochidion atalotrichum* A. C. Sm., sp. nov.

Arbor monoica multiramosa 4–8 m. alta, ramulis cinereis gracilibus (apices versus 0.5–1 mm. diametro subflexuosis) juventute copiose

stramineo-hirtellis (pilis 0.5–1 mm. longis manifeste septatis 5–8-cellularibus) ac etiam copiose albo-puberulis (pilis haud 0.1 mm. longis), indumento longiore mox caduco, brevioris subpersistente; stipulis deltoideo-lanceolatis glabratis 1–1.5 mm. longis mox caducis; petiolis gracilibus 2–4 mm. longis primo ut ramulis saepe pilosis mox glabratis; foliorum laminis chartaceis glabris in sicco supra fuscis subtus pallidioribus, ovato-lanceolatis, 4–7.5 cm. longis 1.5–2.5 cm. latis vel interdum minoribus, basi obtusis et in petiolum decurrentibus, apice in acuminem gracilem 1–1.5 cm. longum gradatim angustatis, margine integris vel haud undulatis, costa supra acute elevata subtus prominente, nervis secundariis utrinsecus 5–8 curvatis anastomosantibus supra subplanis subtus prominulis, rete venularum supra obscuro subtus subprominulo; inflorescentiis ♂ axillaribus breviter racemosis saepe 2-floris, rhachide 0.5–1 mm. longa, bracteis imbricatis ad 10 deltoideis subacutis glabris haud 0.5 mm. longis, pedicellis gracilibus glabris sub anthesi 3–6 mm. longis; perianthio ovoideo, segmentis 6 similibus oblongis 1.8–2 mm. longis 0.8–1 mm. latis subacutis, extus ut ramulis juvenilibus hirtellis sed interdum subglabratis; columna staminali ca. 1.2 mm. longa, antheris 3 loculis connatis ca. 0.7 mm. longis, connectivis in apices oblongos subacutos ca. 0.3 mm. longos productis; floribus ♀ forsan solitariis, pedicello, perianthii segmentis, et gynoecio ut ramulis juvenilibus hirtellis, ovario triquetro-ovoideo, columna stylari post anthesin subulata ca. 2 mm. longa, stylis 3 apicem versus liberis; capsulis depresso-globosis maturitate ad 12 mm. diametro, stylis longe persistentibus et manifeste hirtellis, valvis 3 sulcatis demum bilobatis, seminibus rubris ovoideis 3.5–5 mm. longis 2.5–4 mm. latis.

Type in the U.S. National Herbarium, No. 2191397, collected in dense forest on the northern slopes of the Korombasambasanga Range, in drainage of Wainavindrau Creek, Namosi Province, Viti Levu, Fiji, alt. 450–600 m., September 28, 1953, by A. C. Smith (No. 8747). Duplicates at Bish, etc.

ADDITIONAL SPECIMENS EXAMINED:

FIJI: VITI LEVU: Namosi: Hills north of Wainavindrau Creek, between Korombasambasanga Range and Mt. Naitarandamu, alt. 250–450 m., in dense forest, *Smith* 8463 (Bish, US, etc.). Namosi-Naitasiri boundary: Mt. Naitarandamu, alt. 800 m., *Gillespie* 3103 (A, Bish, US).

Field notes indicate the plant as a freely branched, spreading tree 4–8 m. high, with yellowish-green perianth segments. My two collections are clearly monoecious, bearing staminate flowers as well as pistillate, although the latter are scarce; No. 8463 also bears a few fruits. The Gillespie specimen bears detached fruits that appear to be fully mature.

Among the species of our area, *G. atalotrichum* is recognized by the characteristic multiseptate hairs of the young vegetative parts, which

are also often present on the perianth segments and on the gynoecium, persisting on the styles in fruit. From *G. seemannii* Muell. Arg., which it resembles superficially, the new species differs not only in its indument, but also in its long-acuminate leaf blades and its three styles.

### Anacardiaceae

#### *Pleiogynium hapalum* A. C. Sm., sp. nov.

Arbor dioica gracilis 5-20 m. alta, ramulis subteretibus apicem versus 5-10 mm. diametro, partibus novellis pilis fusco-stramineis mollis patentibus simplicibus 0.2-0.5 mm. longis copiose indutis; foliis imparipinnatis (20-) 30-50 cm. longis, petiolis (3-) 4-12 cm. longis et rhachide subteretibus et copiose contumaciter pilosis; foliolis (9-) 11 vel 13, petiolulis gracilibus leviter canaliculatis 5-10 mm. longis (terminali ad 30 mm. longo) ut rhachide pilosis; foliolorum laminis chartaceis in sicco supra fuscis subtus viridescens inaequaliter ovatis, (6-) 8-13 cm. longis, (2.5-) 4.5-6 cm. latis (inferioribus saepe minoribus), basi inaequaliter subacutis vel obtusis et in petiolulum decurrentibus, apice acutis vel in acuminem ad 1 cm. longum cuspidatis, margine integris vel obscure undulatis, supra praeter costam et nervorum secundariorum bases pilosas glabris, subtus conspicue et persistenter pilosis (pilis ad 0.5 mm. longis praesertim costa et nervis permansis), costa supra elevata subtus prominente, nervis secundariis utrinsecus 6-10 patentibus supra planis vel prominulis subtus elevatis, rete venularum intricato supra immerso subtus haud prominulo; inflorescentiis ♂ axillaribus late paniculatis multifloris 10-30 cm. longis 4-12 cm. latis, pedunculo 2-10 cm. longo, ramulis numerosis gracilibus inferioribus 2-7 cm. longis, axibus omnibus ut foliolorum rhachide copiose pilosis, bracteis ad nodos deltoideo-oblongis obtusis 0.5-1 mm. longis subacutis extus pilosis; floribus ♂ subsessilibus laxè aggregatis vel apice ramulorum ultimorum brevium solitariis, pedicello super articulationem ad 1 mm. longo bracteas obscuras 1-3 oblongas 0.2-0.5 mm. longas inconspicue glanduloso-ciliolatas gerente; floribus glabris, calyce subrotato 1.7-3 mm. diametro, lobis submembranaceis semiorbiculari-oblongis 0.5-0.8 mm. longis 0.7-1.2 mm. latis margine glanduloso-ciliolatis, petalis plerumque 5 (raro 4 vel 6) anguste imbricatis submembranaceis oblongis 1.8-2.2 mm. longis 1.3-1.5 mm. latis apice obtusis 3-5-nervatis; disco annulari-pulvinateo 1.5-2 mm. diametro manifeste crenulato; staminibus plerumque 10 (interdum 9-12), filamentis filiformi-subulatis 0.6-1.5 mm. longis, antheris ovatis versatilibus 0.5-0.7 mm. longis apice obtusis, thecis basi divergentibus; gynaecio in floribus ♂ abortivo in disco immerso, stylis rudimentariis cono inconspicuo 5-7-sulcato adnatis vel raro minute liberis; inflorescentiis ♀ quam ♂ simplicioribus similiter pilosis 3-6 cm. longis

paucifloris; perianthio ut ♂ sed calyce post anthesin incrassato, petalis ad  $3 \times 2.5$  mm.; staminodiis saepe 14, filamentis 0.7–1 mm. longis reflexis, antheris minutis sterilibus; disco conspicue pulvinato carnosio incrassato; ovario oblato-sphaeroideo apice rotundato basim versus angustato, stylis crassis 7 vel 8 ca. 0.5 mm. longis e ovarii margine distali patentibus, loculis 7 vel 8, ovulis solitariis pendulis; inflorescentia sub fructu ramulis pedunculisque persistenter pilosis; drupa late turbinata 12–14 mm. alta paullo supra medium 18–20 mm. lata et ibi manifeste 7- vel 8-angulata, basi et apice rotundata.

Type in the U.S. National Herbarium, No. 2191567, collected in dense forest in the hills east of the Wainikoroiluva River, near Namuamua, Namosi Province, Viti Levu, Fiji, alt. 50–200 m., October 15, 1953, by A. C. Smith (No. 8958). Duplicates at Bish, etc.

ADDITIONAL SPECIMENS EXAMINED:

FIJI: VITI LEVU: Mba: Vicinity of Nandarivatu, *Gillespie* 3189 (Bish, GH, UC, US). Namosi: Northern slopes of Korombasambasanga Range, in drainage of Wainavindrau Creek, *Smith* 8699 (Bish, US, etc.); hills bordering Wainavindrau Creek, in vicinity of Wainimakutu, *Smith* 8531 (Bish, US, etc.); vicinity of Nanggarawai, *Gillespie* 3227 (Bish, GH, UC, US); vicinity of Namuamua, *Gillespie* 2977 (Bish, GH, UC), 3058 (Bish, GH, UC). Tailevu: Hills east of Wainimbuka River, in vicinity of Ndakuivuna, *Smith* 7164 (Bish, US, etc.). VANUA LEVU: Thakaundrove: Natewa Bay region, hills west of Korotasere, *Smith* 1940 (Bish, GH, UC, US).

Field notes indicate the plant as a slender tree 5–20 m. high, occurring in forested areas at elevations of 50–750 m.; the petals are yellow or greenish yellow, the filaments white or greenish yellow, and the anthers yellow. Pistillate inflorescences are found only on *Gillespie* 3189, fruits on *Smith* 7164, and staminate inflorescences on the other collections.

As Leenhouts has pointed out (*Blumea* 7:159. 1952), the correct name for the widespread tree that has long been passing as *Pleiogygium solandri* (Benth.) Engl. is *P. timoriense* (DC.) Leenh. This occurs from at least Timor through Queensland and into the Pacific as far as Tonga and the Cook Islands, being frequent in Fiji. It is characteristically glabrous, but some individuals in Fiji and Tonga (and perhaps also in Australia to judge from Engler's description in DC. Monogr. Phan. 4:255. 1883) are puberulent on the young parts of the branchlets, petiole, and leaf rachis. However, these parts bear hairs scarcely exceeding 0.1 mm. in length and they are soon glabrate. The species here described has no consequential inflorescence or fruit differences from the glabrous individuals, but the copious and persistent indument of its vegetative parts and inflorescence axes seems too striking to permit its inclusion in the widespread species.

Another species of this relationship, *P. papuanum* C. T. White (Proc. Roy. Soc. Queensl. 45:27. 1934), differs from *P. hapalum* in its smaller, glabrous leaves with fewer leaflets, its smaller ♂ flowers, and the furfuraceous gray scurfy indument of its branchlets and rachis.

Gillespie inscribed some of his collections which are cited above with a binomial apparently based on *Dracontomelum pilosum* Seem. and accredited to Engler; however, no such binomial appears to have been published. At any rate *Dracontomelum pilosum* is quite a different plant, recently referred to the synonymy of *Dysoxylum quercifolium* (Seem.) A. C. Sm. (Brittonia 14:245. 1962).

### Celastraceae

*Cassine vitiensis* (A. C. Sm.) A. C. Sm., comb. nov.

*Elaeodendron vitiense* A. C. Sm. Journ. Arnold Arb. 31:289. 1950.

VITI LEVU: Serua: Hills between Waininggere and Waisese Creeks, between Ngaloa and Wainiyambia, alt. 50-100 m., in dry forest, *Smith* 9385 (Bish, US, etc.). OVALAU: Hills southeast of valley of Mbureta River, alt. 100-300 m., in dense forest, *Smith* 7450 (Bish, US, etc.).

Ding Hou (Fl. Males. I. 6:284. 1963) gives cogent reasons for combining *Elaeodendron* and *Cassine*, in which conclusions it seems advisable to follow him. The second and third collections of the apparently uncommon Fijian species show differences from the type, but these do not appear very significant. No. 9385 bears flowers that are substantially smaller than those originally described, and have the ovary only 2 (rather than 3- or 4-) locular. Fruits are present in both the newer collections. My original description may be amplified as follows:

Tree up to 20 m. high, the leaf blades up to 13 cm. long and 8.5 cm. broad; pedicels in flower often only 1.5-2 mm. long and the flowers only 5-6 mm. in diameter, the petals as small as 2.5×2 mm., the filaments as short as 0.5 mm., the anthers only 0.4 mm. broad, the ovary-locules sometimes only 2; pedicels in fruit up to 7 mm. long, the disk, stamens, and stigma subpersistent; fruits ellipsoid, up to 22 mm. long and 15 mm. broad, obtuse at base, acute or cuspidate at apex, the epicarp thin but coriaceous, smooth, the mesocarp fibrous, hard in dried fruits, 1.5-2 mm. thick, the endocarp hard and bony, 1-2 mm. thick, inconspicuously rugulose without, forming 2 separable putamens, these laterally flattened, up to 15×7×5 mm.; seed solitary, ellipsoid-lanceolate, about 12×6 mm., strongly flattened, obtuse or subacute at both ends.

## Elaeocarpaceae

**Elaeocarpus** (§ *Blepharoceras*) **milnei** Seem. Fl. Vit. 28. 1865; A. C. Sm. Contr. U.S. Nat. Herb. 30:556. 1953.

VITI LEVU: Namosi: Northern slopes of Korombasambasanga Range, in drainage of Wainavindrau Creek, alt. 450–600 m., in dense forest, *Smith* 8731 (Bish, US, etc.).

It is a satisfaction to have available a second collection of a species otherwise known only from the type specimen, the more so as the new material agrees almost precisely with the type (*Milne* 81) and has adequate color notes. In my observation flower color provides a dependable character in *Elaeocarpus*, but it is too frequently ignored. No. 8731 has the sepals dull pink, and the petals rich pink with pale yellow apical laciniae. The new material permits the following slight amplification of my 1953 description:

Tree up to 15 m. high, the branchlets up to 17 mm. in diameter near apex; leaf blades up to 38 cm. long and 17 cm. broad, the marginal teeth often 1 cm. apart; sepals up to 11.5 mm. long and 3.5 mm. broad; petals up to 14 mm. long and 8 mm. broad, the apical lobes up to 12 in number; disk about 1 mm. high, with hairs about 0.3 mm. long; anthers with dorsal awns sometimes 0.8 mm. long; hairs of the ovary up to 0.3 mm. long, the ovules 8 per locule.

Except for the above trivia, my specimen appears identical with the type in such important characters as leaf shape, inflorescence dimensions, and indument. These details are recorded at this time primarily for discussion in reference to the following new species.

**Elaeocarpus** (§ *Blepharoceras*) **chionanthus** A. C. Sm., sp. nov.

Arbor gracilis ad 8 m. alta, partibus novellis pilis ferrugineis 0.4–0.6 mm. longis copiosissime hispidulo-hirtellis, ramulis subteretibus crassis apicem versus 7–10 mm. diametro demum glabratis; foliis apices ramulorum versus congestis, petiolis crassis 3–4 mm. diametro leviter canaliculatis 2–6 cm. longis persistenter hirtellis (pilis 0.2–0.3 mm. longis); foliorum laminis subcoriaceis in sicco fusco-viridibus oblongo-ellipticis, magnitudine diversis sed maturitate 25–30 cm. longis et 13–17 cm. latis, basi plerumque rotundatis (obtusis vel subcordatis), apice rotundatis vel late obtusis vel obtuse cuspidatis, margine anguste recurvatis et dentibus plerumque 1–1.5 cm. distantibus obscure calloso-apiculatis inconspicue crenatis, supra glabris vel costa obscure strigillosis, subtus copiose et pervicaciter pilosis (pilis ferrugineis vel stramineis mollibus 0.3–0.6 mm. longis costa secundariisque densissimis sed etiam lamina manifestis), costa supra valde elevata subtus prominente, nervis secundariis utrinsecus 9–13 patenti-curvatis et marginem versus anastomosantibus supra paullo elevatis subtus prominentibus, rete venularum intricato utrinque prominulo;

inflorescentiis racemosis e ramulis infra folia enatis 25-35-floris, pedunculo subnullo (ad 3 mm. longo), rachide gracili 12-16 cm. longa et pedicellis pilis 0.2-0.4 mm. longis copiose ferrugineo-setuloso-hirtellis, bracteis sub floribus lanceolatis ca. 1.5 mm. longis dense pilosis caducis, pedicellis sub anthesi crassis ca. 5 mm. longis; sepalis 5 subcarnosis lanceolatis 10-11 mm. longis ca. 3 mm. latis subacutis, extus copiose puberulis (pilis 0.1-0.2 mm. longis), intus carinatis et parce sericeis; petalis 5 basim versus incrassatis superne papyraceis, oblongo-obovatis, 11-13 mm. longis, 5-7 mm. latis, utrinque glabris vel intus basim versus obscure pilosis, apice lobis 8-10 fimbriatis, laciniis subaequalibus 1.5-2 mm. longis subacutis 1-4-nervatis; disco pulvinato ca. 1 mm. alto 5-lobato, lobis sulcatis pilis 0.2-0.4 mm. longis hispidulis; staminibus 23-25 uniseriatis 6-7 mm. longis, filamentis gracilibus 2-3 mm. longis obscure puberulis, antheris 3.8-4.2 mm. longis copiose et minute tuberculato-hispidulis, arista dorsali 0.2-0.3 mm. longa, apice ventrali rotundato; ovario lanceolato-ovoideo ut disco copiose sericeo-hispidulo, stylo subulato ca. 5 mm. longo superne glabro, ovarii pariete incrassato, loculis 2, ovulis in quoque loculo 8 biseriatis.

Type in the U.S. National Herbarium, Nos. 2191946 and 2191947, collected in dense forest in hills west of Waivunu Creek, between Ngaloa and Korovou, Serua Province, Viti Levu, Fiji, alt. 50-150 m., December 7, 1953, by A. C. Smith (No. 9495). Duplicates at Bish, etc.

Field notes indicate the plant to be a slender tree to 8 m. high, with petals and filaments pale green, becoming pure white, the anthers yellow, the gynoecium pale green, and the largest observed leaf blades up to 30×17 cm. Small leaf blades are often mixed with the larger ones on the same shoot. The new species is closely related only to *E. milnei* Seem., from which it differs in several characters best summarized as follows:

Indument comparatively sparse and short (hairs of various parts usually less than 0.2 mm. long, the leaf blades essentially glabrous beneath); leaf blades obovate, gradually narrowed toward base; petals rich pink, with pale yellow lacinae; anthers with dorsal awns 0.5-0.8 mm. long . . . . .	<b><i>E. milnei</i></b>
Indument comparatively copious and long (hairs of various parts 0.2-0.6 mm. long, the leaf blades densely and persistently pilose beneath); leaf blades oblong-elliptic, usually rounded at base; petals pure white at anthesis; anthers with dorsal awns 0.2-0.3 mm. long . . . . .	<b><i>E. chionanthus</i></b>

### Melastomataceae

***Astronidium pallidiflorum*** A. C. Sm., sp. nov.

Arbor ad 15 m. alta, partibus novellis, ramulis petiolisque pilis capitato-glandulosis graciliter stipitatis 0.1-0.3 mm. longis copiose ferrugineo-pubescentibus; ramulis apicem versus 3-7 mm. crassis et ibi complanato-quadrangularibus; petiolis gracilibus 1.5-2 mm.

diametro subteretibus 3–5 cm. longis, laminis crasso-chartaceis oblongo-lanceolatis 13–23 cm. longis 4–7.5 cm. latis, supra olivaceis et nervis principalibus ut petiolis pubescentibus demum glabratis, subtus praecipue nervis copiose pilosis (pilis clavatis ad 0.5 mm. longis vel superficie interdum ad 0.8 mm. longis), basi obtusis, apice in acuminem 1.5–2 cm. longum calloso-subacutum gradatim angustatis, margine dentibus calloso-acutis manifestis 0.5–1.5 cm. distantibus crenulatis, 5-nerviis, nervis e basi adscendentibus, exterioribus 2 comparate inconspicuis et 1–2 mm. intra marginem, costa et nervis 2 interioribus supra subplanis subtus prominentibus, venulis transversis et rete venularum laxo supra planis subtus prominulis; inflorescentia terminali trichotome cymosa sessili e basi 3-divisa ad 13 cm. longa et 20 cm. lata, ramulis crassis conspicue complanatis et pedicellis et calyce ut partibus novellis copiose pubescentibus, bracteis bracteolisque mox caducis non visis, floribus apices ramulorum ultimorum versus 2–5 aggregatis, pedicellis crassis 1–1.5 mm. longis; calyce submaturo cupuliformi 4–4.5 mm. longo et diametro apice lobis plerumque 10 subdeltoideis obtusis ca. 0.5 mm. longis inaequabiliter fisso; petalis glabris in floribus submaturis 5 oblongis ad  $4 \times 2.5$  mm. apice rotundatis, staminibus 10 valde inflexis, filamentis ligulatis ca. 3 mm. longis, antheris oblongis ca. 3 mm. longis apice conspicue recurvatis, calcari basilari conspicuo ca. 0.8 mm. longo; stylo tereti petalis subaequali, ovarii loculis 5, placentis clavatis, ovulis numerosissimis.

Type in the U.S. National Herbarium, No. 2191790, collected in dense forest in the hills west of Waivunu Creek, between Ngaloa and Korovou, Serua Province, Viti Levu, Fiji, alt. 50–150 m., November 26, 1953, by A. C. Smith (No. 9313). Duplicates at Bish, etc.

Field notes indicate the plant as a tree 15 m. high, with pale greenish white petals, filaments, anthers, and style. The new species is closely related only to *A. kasiense* A. C. Sm., with which it has in common a copious indument of clavate hairs, these being very different from the much longer, subulate hairs of *A. storckii* Seem., the only other Fijian species of this general affinity. The principal points of difference between the new species and *A. kasiense* are summarized as follows:

Indument of young parts, petioles, inflorescence branches, etc., composed of hairs usually 0.2–0.5 mm. long; leaf blades ovate-elliptic, 7–12 cm. broad, rounded to obscurely subcordate at base, the fourth and fifth nerves 4–5 mm. within the margin and conspicuously connected by transverse veinlets to an obvious submarginal nerve; flowers (as far as known) 4-merous . **A. kasiense**

Indument of young parts, petioles, inflorescence branches, etc., comparatively close, composed of hairs usually 0.1–0.3 mm. long; leaf blades oblong-lanceolate, 4–7.5 cm. broad, obtuse at base, the fourth and fifth nerves submarginal, 1–2 mm. within the margin and lacking exterior veinlets; flowers (as far as known) 5-merous . . . . . **A. pallidiflorum**

**Medinilla subviridis** A. C. Sm. Journ. Arnold Arb. 33:101. 1952.

VITI LEVU: Namosi: Hills north of Wainavindrau Creek, between the Korombasambasanga Range and Mt. Naitarandamu, *Smith* 8487 (Bish, US, etc.); northern slopes of Korombasambasanga Range, in drainage of Wainavindrau Creek, *Smith* 8748 (Bish, US, etc.). Serua: Hills between Waininggere and Waisese Creeks, between Ngaloa and Wainiyambia, *Smith* 9541 (Bish, US, etc.).

The three cited collections of this supposedly rare plant, formerly known from a single locality near Mt. Tomanivi, extend the known range southward in Viti Levu, and downward to the low elevation of 50–100 m. recorded for No. 9541. Color notes are remarkably consistent with those recorded in the original description. However, it may be noted that the petioles of the larger leaves are sometimes inconspicuous and only 2 mm. long, the blades themselves may be as large as 17×8 cm., and the inflorescence may be up to 10 cm. long.

**Medinilla spectabilis** A. C. Sm., sp. nov.

Frutex alte scandens ubique mox glaber sed partibus novellis parce furfuraceo-puberulis (pilis stramineo-ferrugineis 0.1–0.3 mm. longis multicellularibus lateraliter brevi-calcaratis vel obscure plumulosis), ramulis gracilibus subteretibus, internodiis plerumque 2–4 cm. longis; foliis similibus vel disparibus; foliis majoribus: petiolis gracilibus leviter canaliculatis 13–25 mm. longis, laminis maturis chartaceis vel papyraceis in sicco fusco-olivaceis ellipticis, 6–12 cm. longis, 3.5–6.5 cm. latis, basi obtusis et in petiolum breviter decurrentibus, apice obtusis vel in acuminem ad 5 mm. longum obtuse cuspidatis, plerumque e basi 7-nerviis, nervis superioribus et costa e basi liberis vel ad 5 mm. conjunctis supra subplanis subtus elevatis, nervis aliis debilioribus, marginalibus interdum inconspicuis, venulis supra immersis subtus prominulis vel planis; foliis minoribus: petiolis saepe haud 3 mm. longis, laminis interdum 2.5×2 cm., in forma et textura majoribus similibus; inflorescentiis axillaribus vel e ramulis infra folia orientibus pauciramosis, racemosis vel divaricato-cymosis, 5–25 cm. longis latisque, ramulis gracilibus in vivo molliter carnosus in sicco saepe complanatis, internodiis 10–17 mm. longis; bracteis e nodis 2 vel 3 membranaceis vel papyraceis elliptico-oblongis, 12–20 mm. longis, 5–12 mm. latis, basi et apice rotundatis, sessilibus; floribus e nodis 1–3, pedicellis gracilibus sub anthesi 5–10 mm. longis; bracteolis apice pedicellorum 2 florem plus minusve obtegentibus late vel manifeste imbricatis, textura et colore bracteis similibus, elliptico-suborbicularibus, 18–22 mm. longis, 13–15 mm. latis, basi obtusis, apice rotundatis, 7–9-nervatis, rete venularum teneri; calyce in vivo subcarnoso, hypanthio cupuliformi 5–7 mm. longo et diametro, basi obtuso et minute stipitato, ut pedicello obscure disperse-glanduloso (glandulis haud 0.05 mm. longis minute stipitatis), limbo erecto membranaceo 2–3 mm. longo integro, dentibus 4 obsoletis submar-

ginalibus; petalis 4 membranaceis late obovatis, 17–20 mm. longis, 14–17 mm. latis, apice rotundatis vel obscure retusis, basi late obtusis, multinerviis; staminibus 8, filamentis gracilibus ligulatis 6–7 mm. longis basi haud 0.5 mm. latis, antheris oblongis 4.5–5 mm. longis basi manifeste trilobulatis (lobis anterioribus ca. 0.5 mm. longis, posteriore minore), apice in tubulum 0.5–1 mm. longum poro introrso-terminali dehiscentem angustatis; stylo tereti subcarnoso 10–12 mm. longo, stigmatе minuto.

Type in the U.S. National Herbarium, Nos. 2191067 and 2191068, collected in dense forest in the hills east of Somosomo, west of the old crater occupied by a small swamp and lake, Taveuni, Fiji, alt. 660–900 m., August 18, 1953, by A. C. Smith (No. 8362). Duplicates at Bish, etc.

The specimens were collected from a high-climbing liana and were noted as follows: Inflorescence arising from stem near base, or sometimes associated with leaves; inflorescence branches, bracts, and bracteoles magenta; calyx white, suffused with pink; petals pale pink; filaments and style white; anthers rich blue, the basal lobes yellow.

The *tangimauthia* of Fijian legend (*M. waterhousei* Seem.) is often considered the most beautiful indigenous plant of the archipelago; it appears limited to the summit ridge of Taveuni and to Mount Seatura on Vanua Levu. (A color photograph was recently published as the frontispiece of J. W. Parham's *Plants of the Fiji Islands*, 1964.) To find another spectacular *Medinilla* near the "lake" of Taveuni was a delightful surprise, the more so as the second species is nearly, if not quite, as exquisite as the *tangimauthia*. However, it is instantly distinguished, although not reasonably allied to any other species. Our new plant most strikingly differs from *M. waterhousei* in the color of its inflorescence parts and petals, and particularly in having its flowers clasped by two imbricate bracteoles, rather than by the strictly opposed and often obcordate bracteoles so characteristic of *M. waterhousei*. Differences between the two species may be summarized as follows:

Leaves of mature plants isomorphic; leaf blades 4–8×2.5–4 cm., attenuate to acute at base, 3- or 5-nerved; inflorescence branches, bracts, bracteoles, and pedicels brilliant red or scarlet; pedicels 15–25 mm. long at anthesis; flower-subtending bracteoles strictly opposed, ovate, 23–35×15–30 mm., rounded or subcordate at base; flowers comparatively large, the petals white, 23–26×20–25 mm.; filaments broadly ligulate, 1.2–1.5 mm. broad, 8–10 mm. long; anthers 7–8 mm. long, with only the posterior basal lobe obvious; style 20–22 mm. long . . . . .	<b><i>M. waterhousei</i></b>
Leaves of mature plants isomorphic or dimorphic; leaf blades of larger leaves 6–12×3.5–6.5 cm., obtuse at base, usually 7-nerved; inflorescence branches, bracts, bracteoles, and pedicels magenta or pink; pedicels 5–10 mm. long at anthesis; flower-subtending bracteoles obviously imbricate, elliptic-orbicular, 18–22×13–15 mm., obtuse at base; flowers smaller, the petals pale pink,	

17-20×14-17 mm.; filaments about 0.5 mm. broad, 6-7 mm. long; anthers 4.5-5 mm. long, obviously 3-lobulate at base; style 10-12 mm. long.

*M. spectabilis*

*Medinilla decora* A. C. Sm., sp. nov.

Frutex scandens, partibus novellis, ramulis, petiolis inflorescentiae ramulisque ferrugineo-furfuraceis (pilis 0.1-0.4 mm. longis multicellularibus lateraliter brevi-calcaratis interdum ad nodos 0.8 mm. longis), ramulis subteretibus gracilibus, internodiis 3-4 cm. longis; foliis subsimilibus, petiolis gracilibus leviter canaliculatis 2-4 cm. longis, laminis chartaceis in sicco fusco-olivaceis subtus viridescentibus, elliptico-lanceolatis, (6-) 8-14 cm. longis, (2.5-) 4-6 cm. latis, basi longe attenuatis et in petiolum gradatim decurrentibus, apice obtusis vel obtuse cuspidatis, margine anguste recurvatis subintegris vel obscure crenulatis, 5-nerviis, nervis superioribus cum costa 1-3 cm. conjunctis supra leviter elevatis subtus prominentibus, nervis inferioribus intra marginem 2-3 mm. paullo debilioribus, venulis transversis subtus prominulis, rete venularum immerso; inflorescentia axillari solitaria laxa pauciflora 3-8 cm. longa, pedunculo 3-20 mm. longo et rhachide gracilibus; bracteis 2-4 e nodis papyraceis oblongo-lanceolatis, 3-5 mm. longis, 0.6-1.5 mm. latis, apice obtusis, furfuraceis vel puberulis; floribus 2-4 e nodis, pedicellis gracilibus 3-6 mm. longis; bracteolis apice pedicellorum binis membranaceis calycem obtegentibus ellipticis, 6-7 mm. longis, ca. 4 mm. latis, 5-7-nervatis, apice rotundatis, utrinque parce puberulis subglabris; calyce 4-5 mm. longo et apice diametro, hypanthio cupuliformi, limbo suberecto submembranaceo 1-1.5 mm. longo margine integro, dentibus 4 minutis submarginalibus; petalis 4 membranaceis glabris obovatis sub anthesi 7-8 mm. longis et 6-7 mm. latis, apice rotundatis vel subretusis et obscure mucronulatis, 5-nerviis; staminibus 8 glabris, filamentis gracilibus ligulatis 3-3.5 mm. longis, antheris oblongis 1.7-2 mm. longis, basi trilobulatis (lobis 2 anterioribus ca. 0.5 mm. diametro, posteriore paullo minore), apice obtusis poro unico terminali dehiscentibus; stylo filiformi 6-7 mm. longo, stigmate minuto.

Type in the U.S. National Herbarium, No. 2191868, collected in dry forest in the hills between Wainiggere and Waisese Creeks, between Ngaloa and Wainiyambia, Serua Province, Viti Levu, Fiji, alt. 50-100 m., November 30, 1953, by A. C. Smith (No. 9398). Duplicates at Bish, etc.

The specimens were collected from a high-climbing liana; the bracts and pedicels are green, the bracteoles dull pink, the calyx pale pink, the petals rich pink, the filaments and style pink-tinged, and the anthers purple, yellow at base. Color of inflorescence parts in *Medinilla*, although perhaps not basically very significant, often provides dependable differentiating characters and clues to morphological differences.

The new species is closely related only to *M. kandavuensis* A. C. Sm.,

which it resembles in foliage and pubescence, although the indument of the Serua plant is somewhat more obvious and persistent. *Medinilla decora* differs in its smaller flower-subtending bracteoles and especially in its smaller flowers; the calyx of *M. kandavuensis* is 8–9 mm. long; the petals are 12–13×10–11 mm.; the anthers are 4–5 mm. long with the posterior basal lobe slightly larger than the anterior ones; and the style is 12–13 mm. long.

From *M. rhodochlaena* A. Gray, which more nearly suggests the new species in its floral dimensions, *M. decora* differs in its consistently isomorphic leaves, the blades of which are thinner in texture and longer attenuate at base. In inflorescence characters, *M. rhodochlaena* as compared with the new species has broader bracts, flower-subtending bracteoles that are comparatively thick in texture and orbicular or reniform rather than elliptic, and a slightly smaller calyx at anthesis. Gray's species, now known from abundant material, has richly colored inflorescences, the inflorescence bracts and bracteoles being rich pink to purple red (rather than green and dull pink respectively in the new species); its calyx is also a deeper pink.

***Medinilla ovalifolia*** (A. Gray) A. C. Sm., comb. nov.

*Anplectrum ovalifolium* A. Gray, Bot. U.S. Expl. Exped. 1:597. 1854.

*Medinilla amoena* Seem. Fl. Vit. 88. 1865.

*Medinilla parvifolia* Seem. Fl. Vit. 89. 1865.

*Allomorpha ovalifolia* Triana, Trans. Linn. Soc. 28:74. 1871.

The type specimen of *Anplectrum ovalifolium* (US 47676) was collected by the U.S. Exploring Expedition in the vicinity of Mbua Bay, Province of Mbua, Vanua Levu, Fiji. The available material was taken from a plant in bud, and apparently from a branch exposed to sun. In foliage this specimen is very similar to *Smith* 1671, also from Mbua (summit of Mt. Seatura). The form represented by these two specimens is a fairly atypical form of the species usually referred to *M. amoena* Seem., in that its leaf blades are nearly rounded at base. But in all other respects the form must be placed with *M. amoena*, and it fits my description of that species in *Sargentia* 1:85. 1942. As the specific epithet is available in *Medinilla*, I see no way to avoid a new combination based on *Anplectrum ovalifolium* to replace the frequently collected and well known *M. amoena*. More complete synonymy, a description, and citations of specimens are found in my 1942 publication.

### Araliaceae

***Polyscias culminicola*** A. C. Sm., sp. nov.

Arbor ad 8 m. alta, ramulis crassis et petiolorum basibus parce stramineo-puberulis mox glabratis; foliis ad apices ramulorum congestis imparipinnatis multijugis 30–40 cm. longis, petiolo 5–9 cm.

longo supra complanato basi incrassato sed haud alato, rhachide subtereti; foliolis 19–23, petiolulis gracilibus canaliculatis 4–6 (terminali ad 15) mm. longis, laminis in sicco chartaceis fusco-olivaceis, ovato-ellipticis lateralibus manifeste falcatis, 5–7 cm. longis (inferioribus minoribus), 2.5–3 cm. latis, basi inaequilateraliter obtusis vel rotundatis, apice subacutis, margine integris paullo incrassatis, costa supra paullo elevata subtus prominente, nervis secundariis utrinsecus plerumque 6–11 patentibus margines versus curvatis et anastomosantibus utrinque planis vel subtus prominulis, rete venularum immerso; inflorescentiis terminalibus racemoso-paniculatis, ad 23 cm. longis et 18 cm. latis, inflorescentiae pedunculo brevi, rhachide, ramulis, umbellarum pedunculis pedicellisque stramineo-puberulis (pilis patentibus pluricellularibus glandulosis 0.1–0.2 mm. longis); umbellarum pedunculis gracilibus 1–2.5 cm. longis interdum infra medium minute bibracteatis, bracteis sub floribus oblongis obtusis 0.5–0.7 mm. longis puberulis caducis; floribus in umbellulis 11–32 dense aggregatis, pedicellis sub anthesi gracilibus 3–4 mm. longis infra flores paullo incrassatis et articulatis; calyce obconico sub anthesi 1.5–2 mm. longo et apice 2–2.5 mm. diametro, limbo minuto obscure 5-denticulato, disco subcupuliformi carnosio; petalis 5 oblongo-deltaideis sub anthesi 2.5–3 mm. longis ca. 1.5 mm. latis, apice acutis et cucullatis, intus obscure carinatis; staminibus 5, filamentis subcarnosis teretibus 1–1.5 mm. longis, antheris oblongis 2–2.3 mm. longis apice rotundatis, thecis basi liberis; stylis 2 fere ad basim liberis carnosius subacutis ca. 1.5 mm. longis.

Type in the U.S. National Herbarium, No. 1965344, collected in crest forest on a wind-swept ridge, northern slopes of Mt. Namendre, east of Mt. Koromba (Pickering Peak), Mba Province, Viti Levu, Fiji, alt. 750–900 m., May 27, 1947, by A. C. Smith (No. 4514). Duplicates at A, Bish, etc.

Although the new species bears a superficial resemblance to *P. joskei* Gibbs, it clearly differs in its umbellate flowers, those of *P. joskei* being individually scattered on the ultimate inflorescence branches. *Poyscias joskei* further differs from *P. culminicola* in lacking the minute glandular indument described above, in having its leaflets only 7–15 and with blades that are not strongly falcate, only slightly inequilateral at base, and obviously undulate-serrulate, and in its 4-merous flowers that are borne on pedicels less than 2 mm. long. A local name recorded for the new species is "sawira."

*Schefflera* (§ *Heptapleurum*) *euthytricha* A. C. Sm., sp. nov.

Arbor gracilis 5–6 m. alta, ramulis teretibus crassis apices versus 1–1.5 cm. diametro, partibus novellis crasse et conspicue hirsutis (pilis saepe 5–10 mm. longis, partibus vegetativis demum caducis sed nodis, petiolis, et foliolorum costa illic persistentibus, inflorescentia

pervicacibus); foliis digitatis mox glabratis, petiolis crassis subteretibus 21–30 cm. longis, basi in vaginam coriaceam 2–3 cm. latam incrassatis, ligula obtusa ad 1 cm. longa; foliolis 7–9, petiolulis in sicco rugulosis 2–6.5 cm. longis, laminis subcoriaceis in sicco fusco-olivaceis subtus pallidioribus, elliptico- vel oblongo-oblancoelatis, 18–27 cm. longis, 7–10 cm. latis, basi inaequilateraliter obtusis vel subacutis, apice in acuminem calloso-obtusum 5–10 mm. longum cuspidatis, margine irregulariter et inconspicue crenato-serrulatis (dentibus saepe 2 vel 3 per cm. antrorse calloso-apiculatis), costa valida supra elevata subtus prominente, nervis secundariis utrinsecus 12–15 erecto-patentibus marginem versus copiose anastomosantibus supra subplanis subtus valde elevatis, rete venularum subimmerso vel interdum subtus prominulo; inflorescentia apices ramulorum versus laterali paniculato-racemosa ad 80 cm. longa et lata, pedunculo, rhachide, et ramulis copiose et conspicue hirsutis (pilis brunneis e basi crassa 0.1–0.15 mm. diametro tereti-filiformibus multicellularibus superne obtortis, pedunculo ad 9 mm. rhachide 3–6 mm. ramulisque 2–3 mm. longis), pedunculo 4–16 cm. longo bracteas 1 vel 2 subcoriaceas ad 4 cm. longas saepe gerente, rhachide tereti 2–3 mm. diametro, ramulis secundariis 12–25 gracilibus sub anthesi 17–40 cm. longis; bracteis sub ramulis papyraceis lanceolatis 25–35 mm. longis basi 4–6 mm. latis apice subulatis multinerviis, extus copiose hirsutulis, intus glabris vel parce tomentellis; umbellulis numerosis 2–15 mm. distantibus, bracteis sub umbellis 5–10 × 2–2.5 mm. eis majoribus subsimilibus; umbellularum pedunculis gracilibus 3–10 mm. longis parce hirtellis vel glabratis infra medium 1- vel 2-bracteolatis et apice pluribracteolatis (bracteolis lanceolatis 0.5–3 mm. longis acutis parce hispidulo-tomentellis); floribus 5–10 per umbellulam glabris vel interdum calycis lobis et petalis inconspicue setulosis, pedicellis sub anthesi 1–4 mm. longis; calyce cupuliformi ca. 1 mm. longo et 2 mm. diametro 5-dentato, dentibus deltoideis acutis 0.3–0.4 mm. longis; petalis 5 deltoideo-ovatis 1.4–1.6 mm. longis 1–1.2 mm. latis, apice acutis et cucullatis, intus obscure carinatis; staminibus 5, filamentis gracilibus 0.5–0.7 mm. longis, antheris ellipsoideis 0.6–0.8 mm. longis apice rotundatis, thecis basi liberis; ovario apice subplano, stylis 5 liberis minutis sub anthesi 0.1–0.2 mm. longis, ovulis solitariis pendulis.

Type in the U.S. National Herbarium, Nos. 2191526 and 2191527, collected in dense forest in the hills east of the Wainikoroiluva River, near Namuamua, Namosi Province, Viti Levu, Fiji, alt. 50–200 m., October 15, 1953, by A. C. Smith (No. 8908). Duplicates at Bish, etc.

ADDITIONAL SPECIMENS EXAMINED:

FIJI: VITI LEVU: Serua: Hills between Navua River and Wainiyavu Creek, near Namuamua, in dense forest, alt. 100–200 m., *Smith* 8983 (Bish, US).

Field notes indicate that the plant is a slender tree to 5 or 6 m. high; the inflorescence is lateral near the apices of branchlets; the tomentum of the inflorescence is dull brown; the calyx, petals, and filaments are greenish white, and the anthers white. A local name referred to No. 8908 was "sole tangane."

Among Fijian species, *Schefflera euthytricha* is closely allied only to the abundant *S. vitiensis* (A. Gray) Seem., but that species lacks the extraordinary, large, spreading, many-celled hairs that cover the younger vegetative parts of the new species and persist so conspicuously on its inflorescence. The rachis and branches of the inflorescence of *S. vitiensis*, if not entirely glabrous, are merely furfuraceous-tomentellous with inconspicuous, irregular hairs scarcely 0.1 mm. long. Furthermore, the primary bracts of its inflorescence are subcoriaceous and comparatively small (3-15 mm. long), while its umbel-subtending bracts are usually only 1-3 (rarely 6) mm. long.

In respect to its remarkable indument, the new species is more suggestive of *S. samoensis* (A. Gray) Harms, which has similar vegetative hairs, these sometimes also occurring on the inflorescence; however, such hairs are comparatively sparse and do not exceed 2-3 mm. in length. In size of inflorescence bracts, *S. samoensis* resembles *S. vitiensis* rather than *S. euthytricha*. In having its leaflet blades conspicuously and closely apiculate-serrate, and in having 6 or 7 styles, *S. samoensis* differs from both the Fijian species of this alliance.

### Myrsinaceae

*Tapeinosperma ampliflorum* A. C. Sm., sp. nov.

Arbor gracilis 4-10 m. alta inflorescentiis exceptis glabra (sed partibus novellis parce et obscure glanduloso-puberulis), ramulis cinereis subteretibus apices versus 4-8 mm. diametro; petiolis crassis semiteretibus 7-12 mm. longis fere ad basim angulatis, laminis subcoriaceis in sicco fuscis immerso-glandulosis obovato-ellipticis, (10-) 12-20 cm. longis, (3.5-) 5-8 cm. latis, basi attenuatis et in petiolum longe decurrentibus, apice obtusis vel rotundatis, margine integris et anguste recurvatis, costa valida supra subplana subtus prominente, nervis lateralibus primariis utrinsecus (12-) 15-20 patentibus margines versus anastomosantibus utrinque inconspicue prominulis, rete venularum subimmerso; inflorescentiis apices ramulorum versus lateralibus compacte paniculatis sub anthesi ad 6 cm. longis et 4 cm. latis (sub fructu ad 9×6 cm.), pedunculo (1-3 cm. longo), rhachide ramulisque lateralibus crassis angulatis ut pedicellis pilosis sed demum glabratis; floribus 3-6 apices ramulorum brevium (2-10 mm.) lateralium versus laxe aggregatis, bracteis oblongis obtusis 2-3 mm. longis margine ut calycis lobis ciliolatis mox caducis, pedicellis crassis

(ad 1.5 mm. diametro) subteretibus sub anthesi 1-2 mm. longis puberulis (pilis fusco-brunneis glandulosis patentibus 0.05-0.1 mm. longis); calyce cupuliformi sub anthesi 3.5-4 mm. longo 4.5-5 mm. diametro alte 5-lobato ut pedicellis glanduloso-piloso, lobis late imbricatis ovatis 2-3 mm. longis 2.5-4 mm. latis apice cuspidatis margine conspicue ciliolatis (pilis multicellularibus 0.2-0.3 mm. longis saepe obscure glandulosis); corolla carnosae immerso-nigro-glandulosa subrotata fere ad basim 5-lobata, lobis late imbricatis ovatis 3-4 mm. longis latisque obtusis; staminibus corollae faucibus insertis, filamentis brevibus, antheris deltoideo-ovoideis 1.5-1.8 mm. longis obtusis, connectivo crasso immerso-glanduloso; ovario sub anthesi conico ca. 1 mm. longo conspicue immerso-glanduloso in stylum aequilongum attenuato, stigmate truncato, placenta ovoidea apice acuta, ovulis 4; pedicellis sub fructu ad 5 mm. elongatis, calyce demum rotato 5-7 mm. diametro persistente, fructibus subgloboso-obovoideis 7-9 mm. diametro apice conico-subacutis basi obtusis, pericarpio in sicco coriaceo 1-1.5 mm. crasso, semine 1.

Type in the U.S. National Herbarium, No. 2192113, collected in dense forest in the hills east of the Navua River, near Nukusere, Serua Province, Viti Levu, Fiji, alt. 100-200 m., October 29, 1953, by A. C. Smith (No. 9102). Duplicates at Bish, etc.

ADDITIONAL SPECIMENS EXAMINED:

FIJI: VITI LEVU: Namosi: Northern slopes of Korombasambasanga Range, in drainage of Wainavindrau Creek, in dense forest, alt. 450-600 m., *Smith* 8743 (Bish, US, etc.). Serua: Vatutavathe, vicinity of Ngaloa, in forest, alt. 0-150 m., *Degener* 15176 (A, Bish, UC, US, etc.).

The cited specimens are from often slender trees 4-10 m. high; the bracts and flower buds are dull pink and the fruits dull brown.

Gillespie (Bishop Mus. Bull. 74:8. 1930) has noted that the differentiation between *Tapeinosperma* and *Discocalyx* based on the number and arrangement of ovules is not satisfactory in the Fijian species referred to these genera. Maintenance of the two genera should be based on other characters, but a decision whether to retain *Discocalyx* (the later name) requires monographic reconsideration.

Although it has a reduced number of ovules, *T. ampliflorum* is allied to species that have been placed in *Tapeinosperma*. From *T. clavatum* Mez it differs in its compact inflorescence, much larger flowers, deeply lobed calyx, and closer but basically similar inflorescence indument. In flower size, *T. chloranthum* A. C. Sm. more closely approximates the new species, but its inflorescence rachis, branches, pedicels, and calyx have a comparatively thick and tangled tomentum (of many-celled hairs 0.2-0.4 mm. long). Another species of this general relationship, *T. greenwoodii* A. C. Sm., differs from the new species in its ample inflorescence with much smaller flowers. The four species here mentioned have the ovules either 2, 3, or 4.

## Rubiaceae

*Squamellaria major* A. C. Sm., sp. nov.

Frutex epiphyticus partibus novellis et corolla exceptis glaber, basi incrassato-tuberosus, tubere ellipsoideo ad 40 cm. longo intus cuniculis a formicis inhabitato, partibus novellis et stipularum cicatricibus pilis brunneo-stramineis debilibus ad 1 mm. longis pluricellularibus parce hirtellis, ramulis rugulosis crassis superne 4–8 mm. diametro, stipulis intrapetiolaribus mox caducis; foliis pro genere magnis subsessilibus, petiolis crassis complanatis (ad 4 mm. lato) subnullis vel ad 5 mm. longis, laminis crasso-chartaceis in sicco fusco-olivaceis oblongo-ob lanceolatis, (8–) 12–17 cm. longis, (3–) 4–6.5 cm. latis, basi obtusis et subito in petiolum decurrentibus, apice rotundatis vel eroso-cuspidatis, margine scariosis integris vel undulatis, costa valida utrinque prominente, nervis secundariis utrinsecus 5–7 valde adscendentibus margines versus anastomosantibus utrinque conspicue elevatis, rete venularum laxo irregulari utrinque subprominulo; inflorescentiis axillaribus cylindrico-tuberculiformibus, rhachide ad 10 mm. longa et 4 mm. diametro videtur apice 6–10-flora, bracteis sub floribus scariosis late deltoideis obtusis ad 1×2 mm. mox caducis; floribus subsessilibus, pedicello subnullo vel sub anthesi 1–2 mm. longo; calyce subcarnoso cupuliformi sub anthesi 3–4 mm. longo, basi in pedicellum obscurum angustato, limbo erecto apice 4–5 mm. diametro integro vel obscure 4-denticulato; corolla tenuiter carnosae elongato-tubuloso-clavata maturitate 35–45 mm. longa, basim versus 3.5–4 mm. diametro, superne incrassata, extus tubo obscure puberula sed superne et lobis pilis albidis debilibus 0.1–0.3 mm. longis manifestius hirtella, intus glabra; corollae tubo 2–4 mm. supra basim squamulis 4 aucto, eis membranaceis antrorse semiorbicularibus ca. 0.5 mm. longis et 1–1.5 mm. latis, margine pilis patentibus albidis 0.5–1 mm. longis copiose barbatis; corollae lobis 4 oblongis sub anthesi 7–8 mm. longis 2–2.5 mm. latis subacutis demum reflexis; staminibus 4 corollae faucibus affixis, filamentis subteretibus 3–5 mm. longis, antheris oblongis versatilibus 5.5–6 mm. longis et ca. 1.5 mm. latis utrinque obtusis filamentis medium versus affixis, thecis inferne liberis; disco annulari-pulvinato carnosae ad 0.5 mm. alto et 2 mm. diametro; stylo filiformi sub anthesi quam corolla paullo longiore, stigmatibus subpeltatis vel discoideo-cupulari 1.2–1.4 mm. diametro apice depresso margine membranaceo reflexo, ovario 4-loculari, ovulis solitariis e basi erectis; fructibus juvenilibus ellipsoideis calycis limbo persistente suberecto coronatis.

Type in the U.S. National Herbarium, No. 2191043, collected in dense forest on the slopes of Mt. Manuka, east of Wairiki, Taveuni, Fiji, alt. 300–600 m., August 14, 1953, by A. C. Smith (No. 8323). Duplicates at Bish, etc.

Field notes indicate the plant as an epiphytic shrub, with an ellipsoid tuber up to 40 cm. long and with ant-inhabited canals; the calyx tube is white, pink-tinged, with the limb green at margin; the corolla is white, faintly pink-tinged distally within; the filaments are white and the anthers pinkish; and the style is pale pink.

As noted by Beccari in his remarkable study of myrmecophilous plants (Malesia 2:1-284. pls. 1-65. 1884-86), the two Fijian species that comprise his genus *Squamellaria* (op. cit., 228. 1886) are amply distinct from *Hydnophytum* and *Myrmecodia* in the barbate scales within the corolla tube and in the entire and very different stigma. Although Beccari implied that the species of *Squamellaria* are not associated with ants, this was due only to the inadequately noted specimens available to him. In my observation, all three species of the genus now known have tubers with ant-inhabited canals, similar to those of *Hydnophytum*; this is borne out by J. W. Parham (Plants of the Fiji Islands, 209. 1964).

The new species is at once distinguished from its two congeners by its much larger leaf blades, with conspicuous ascending secondary nerves, and by its large flowers. The largest leaf blades noted for the earlier species do not exceed 12 by 3 cm., nor the largest corollas 3 cm. in length. Both *S. imberbis* (A. Gray) Becc. and *S. wilsonii* (Horne ex Baker) Becc. have leaf blades that are obviously acute at apex and attenuate at base, and in the latter species the petioles are slender, obvious, and often more than 3 cm. long.

***Ixora calcicola*** A. C. Sm. Bishop Mus. Bull. 220:251, fig. 13. 1959.

FULANGA: In thickets on limestone formation, *Smith* 1145 (Bish, GH, UC, US); on lagoon cliff, *Smith* 1219 (Bish, GH, UC, US). ONGEA NDRITI: Rocky sea coast, *Bryan* 387 (A, Bish).

These Lau specimens were taken from shrubs or small trees 1-4 m. high, growing near sea level; the corolla is white, the anthers yellow, and the fruit brown.

Previously I had referred these three specimens to *I. samoensis* A. Gray, which they resemble only superficially; that species has the inflorescence-subtending bracts acute or obtuse to a short-stipitate base, and the calyx obviously pilose. In comparison with the type specimen of *I. calcicola*, from Vava'u, Tonga, the Lau material shows normal variability, having the petioles sometimes up to 1 cm. long, the leaf blades up to  $12.5 \times 7$  cm., and the corolla with a tube 18-25 mm. long and with lobes perhaps as small as  $8 \times 4$  mm., somewhat smaller than those described. A more recent collection from Vava'u, *Hotta* 4936 (Bish), differs from the type collection (*Yuncker* 16091) to about the same degree as the Fijian material.

***Ixora arestantha* A. C. Sm., sp. nov.**

Frutex vel arbor 5-12 m. alta, ramulis subteretibus apices versus 2-3 mm. diametro superne pilis pallidis haud 0.1 mm. longis minute puberulis; stipulis subcoriaceis distinctis dorso puberulis 5-7 mm. longis basi late deltoideis in aristam subulatam 3-5 mm. longam angustatis; petiolis saepe inconspicuis interdum manifestis 1-10 mm. longis canaliculatis mox glabratis; foliorum laminis chartaceis in sicco fuscis oblongo-lanceolatis, 9-21 cm. longis, 2.5-7.5 cm. latis, basi anguste rotundatis vel late obtusis, in apicem acutum vel mucronulatum angustatis, supra glabris, subtus (interdum obscure saepe manifeste) pilis 0.05-0.2 mm. longis puberulis, costa supra paullo elevata subtus prominente, nervis secundariis utrinsecus 10-15 patentibus inconspicue anastomosantibus utrinque prominulis vel supra planis, rete venularum inconspicuo laxo utrinque prominulo vel subimmerso; inflorescentiis terminalibus trichotome corymbosis e basi divisis sub anthesi 3-6.5 cm. longis et ad 13 cm. latis, ramulis gracilibus et pedicellis et calyce pilis 0.05-0.2 (-0.3) mm. longis copiose puberulis, bracteis bracteolisque lanceolato-subulatis 0.8-3 mm. longis puberulis; pedicellis gracilibus sub anthesi plerumque 1-3 (-6) mm. longis saepe superne pluribracteolatis; calyce oblongo-cupuliformi sub anthesi 1.7-3 mm. longo et apice 1.2-2 mm. diametro, limbo suberecto hypanthium subaequante conspicue 4-lobato intus obscure strigilloso, lobis oblongo-deltoideis subacutis 0.6-1.5 mm. longis; disco annulari-pulvinato ca. 0.5 mm. diametro; corolla extus obscure puberula vel glabra hypocrateriformi, tubo gracili (0.8-1 mm. diametro) sub anthesi 5-7 mm. longo, lobis 4 patentibus anguste oblongis obtusis 5.5-6 mm. longis 1.5-1.7 mm. latis; staminibus exsertis, filamentis filiformibus 1.5-2 mm. longis, antheris lineari-oblongis 3.5-4 mm. longis utroque acutis ca. 1 mm. supra basim affixis, thecis inferne liberis; stylo gracili 8-9 mm. longo pilis patentibus ca. 0.1 mm. longis setuloso-puberulo superne incrassato, stigmatibus divaricatis 1.3-1.8 mm. longis; fructibus subglobosis 6-7 mm. diametro parce puberulis vel glabris calycis limbo puberulo coronatis.

Type in the U.S. National Herbarium, No. 2191555, collected in dense forest in the hills east of the Wainikoroiluva River, near Namuamua, Namosi Province, Viti Levu, Fiji, alt. 50-200 m., October 15, 1953, by A. C. Smith (No. 8941). Duplicates at Bish, etc.

## ADDITIONAL SPECIMENS EXAMINED:

FIJI: VITI LEVU: Serua: Vatutavathe, vicinity of Ngaloa, *Degener* 15199 (A); hills between Waininggere and Waisese Creeks, between Ngaloa and Wainiyambia, *Smith* 9552 (Bish, US, etc.). Namosi: Hills east of Navua River, *Greenwood* 988 (A). Namosi or Serua: Along stream above waterfall near Namuamua, *Gillespie* 3253 (Bish). Naitasiri: Vicinity of Nasinu, *Gillespie* 3508 (A, Bish, UC, US), 3592 (A, Bish). OVALAU: Hills southeast of Mbureta River, *Smith* 7461 (Bish, US, etc.).

Field notes indicate the plant as a shrub or slender tree 5-12 m. high, occurring at elevations of 50-400 m. in dense forest or dry forest. Color notes of some of the specimens are contradictory, but usually the inflorescence branches and calyx are noted as deep pink to bright red, the corolla tube as greenish to pale pink, and the lobes as deeper pink or dull red (although for No. 9552 I noted the corolla limb as white); the fruit is indicated as red.

In the close indument of the lower surfaces of its leaf blades and of its inflorescence branches and calyx, the new species (of § *Pavettopsis*) suggests *I. pubifolia* A. C. Sm. and *I. greenwoodiana* A. C. Sm., obviously differing from both of these in the rounded or broadly obtuse bases of its leaf blades and its very short petioles. The corollas of *I. arestantha* are substantially smaller than those of *I. pubifolia*, and its calyx lobes are longer than those of either of these species.

A closer relative of the new species may be *I. myrtifolia* A. C. Sm., which has subsessile leaves with the blades rounded or subcordate at base, but that species has the leaves completely glabrous. *Ixora arestantha* further differs from *I. myrtifolia* in the indument (short but obvious) of its inflorescence branches and calyx, in its long-aristate stipules (the awns in *I. myrtifolia* seldom exceeding 2 mm. in length), in the filiform bracts and bracteoles of its inflorescence, and in the obvious and comparatively elongate calyx lobes. The corolla tube of the new species is short and slender for species of this alliance, but comparably mature corollas are not yet known for *I. myrtifolia*.

***Ixora prolixa* A. C. Sm., sp. nov.**

Frutex vel arbor 4-10 m. alta, partibus vegetativis glabris, ramulis subteretibus apices versus 2-4 mm. diametro, internodiis distalibus interdum subcomplanatis et ibi raro obscure puberulis; stipulis subcoriaceis 2-4 mm. longis basi late deltoideis in aristam lanceolatam 1-1.5 mm. longam angustatis; petiolis crassis canaliculatis 11-27 mm. longis; foliorum laminis chartaceis in sicco fusco-olivaceis oblongo-ellipticis, (9-) 12-20 cm. longis, (4-) 5-11 cm. latis, basi rotundatis vel obtusis et in petiolum abrupte decurrentibus, apice obtusis vel subacutis et minute calloso-apiculatis, costa supra leviter depressa vel plana subtus prominente, nervis secundariis utrinsecus 9-12 patentibus marginem versus anastomosantibus utrinque prominulis vel supra planis, rete venularum copioso utrinque plerumque prominulo; inflorescentiis terminalibus trichotome corymbosis amplis e basi divisis sub anthesi 8-23 cm. longis et 11-30 cm. latis, ramulis gracilibus et pedicellis et calyce pilis 0.05-0.2 mm. longis obscure vel manifeste puberulis, bracteis bracteolisque inconspicuis deltoideis

vel lanceolatis acutis 0.5-1 mm. longis mox caducis; pedicellis gracilibus plerumque 3-12 mm. longis (interdum brevioribus) apicem versus obscure bracteolatis; calyce cupuliformi 1.5-2 mm. longo apice 1.2-1.8 mm. diametro, limbo quam hypanthio brevioris intus inconspicue strigilloso, lobis 4 late ovato-deltaideis 0.2-0.4 mm. longis rotundatis vel obtusis; disco minuto annulari; corolla glabra vel extus parcissime puberula hypocrateriformi, tubo gracili (0.7-1.3 mm. diametro) sub anthesi 12-20 mm. longo, lobis 4 oblongis obtusis 7-10 mm. longis 2-3 mm. latis; staminibus exsertis, filamentis filiformibus 2-4 mm. longis, antheris lineari-oblongis 7-8 mm. longis 2-2.5 mm. supra basim affixis utroque conspicue angustatis, basi et apice mucronulatis, thecis inferne liberis; stylo gracili exserto breviter setuloso vel subglabro superne incrassato, stigmatibus divaricatis 2-4 mm. longis; fructibus subglobosis 7-10 mm. diametro calycis limbo inconspicuo persistente coronatis.

Type in the herbarium of the Bernice P. Bishop Museum, collected in the central forest of the island of Tuvutha, Fiji, alt. about 100 m., September 11, 1924, by F. H. Bryan, Jr. (No. 548).

ADDITIONAL SPECIMENS EXAMINED:

FIJI: VANUA MBALAVU: Southern limestone section, on the islet Malatta, alt. 0-100 m., *Smith* 1435 (Bish, GH, UC, US). KORO: Eastern slope of main ridge, alt. 300-500 m., *Smith* 969 (Bish, GH, UC, US). NGAU: Slopes of Mt. Ndelaitho, on northern spur, toward Navukailangi, alt. 350-500 m., *Smith* 7879 (Bish, US, etc.).

Field notes indicate the plant as a shrub or tree 5-10 m. high, growing in forest at elevations of near sea level to 500 m. The inflorescence branches and calyx are pink, the corolla white, pinkish at base, the filaments white, and the fruit red or at length brown. The specimens from Koro and Ngau, in fruit, are referred here with reservations, as corollas are required definitely to separate this new species from *I. elegans*; however, in general facies these collections from Lomai-Viti very closely suggest the two Lauan specimens, each of which bears ample flowering and fruiting inflorescences.

In its strictly glabrous leaves, puberulent inflorescence branches and calyx, and very short calyx limb and lobes, the new species (of § *Pavettopsis*) suggests *I. elegans* Gillespie and *I. decora* A. C. Sm. From *I. elegans*, *I. proluxa* differs in its wide-spreading, larger, more open inflorescence, and especially in its larger flowers, of which the corolla tube is very slender and 12-20 mm. long (rather than 5-6 mm. as in *I. elegans*). In foliage the two species are very similar, but the leaf blades of *I. elegans* are more gradually narrowed to a predominantly acute apex. The related *I. decora* differs from *I. proluxa* in its proportionately narrower leaf blades, more compact inflorescences, and very obscure inflorescence indument.

In the size of its inflorescence and corolla, the new species resembles *I. tubiflora* A. C. Sm. (thus far known only from Taveuni), but that species has obvious, oblong-deltoid calyx lobes, glabrous inflorescence branches, and stipules with a conspicuous (2–5 mm. long) awn.

***Psychotria brevicalyx*** Fosberg, *Sargentia* 1:132. 1942.

*Psychotria gibbsiae* var. *velutina* Fosberg, *Sargentia* 1:127. 1942.

In describing this species, Fosberg cited only fruiting material; he mistook a calycine fragment for an "exceedingly short 5-denticulate calyx-ring" and consequently applied to his concept an inappropriate epithet. Additional material now available indicates that the calyx limb greatly exceeds the hypanthium at anthesis. The relationship of the species is not with *P. turbinata* A. Gray as stated by Fosberg, but rather with *P. pubiflora* (A. Gray) Fosberg and its allies. In this alliance, *P. pubiflora* (which may include *P. crassiflora* Fosberg), *P. gibbsiae* S. Moore, and *P. magnifica* Gillespie all have the lower surface of the leaf blades glabrous. The closest ally of *P. brevicalyx* is *P. nandarivatensis* A. C. Sm., from which it may be distinguished as follows:

Leaf blades 12–24×4–12 cm., copiously hirtellous beneath with pale or reddish hairs usually 0.2–0.5 mm. long, these uniformly distributed and persistent; indument of inflorescence similarly copious and persistent, the hairs 0.5–1.2 mm. long . . . . .	<b><i>P. brevicalyx</i></b>
Leaf blades usually smaller, (5–) 7–16×(2–) 3–6 cm., sporadically hirtellous beneath with reddish hairs 0.5–1 mm. long, these denser on costa and nerves than on surface, rarely essentially lacking; indument of inflorescence similar, often sporadic and rarely essentially lacking . . . . .	<b><i>P. nandarivatensis</i></b>

While the extremes of these two concepts are quite distinct, some specimens are confusingly intermediate. Both species are here retained pending a detailed review of the genus in Fiji. *Psychotria nandarivatensis* is now known from many upland specimens in northern and northwestern Viti Levu.

The type of *P. gibbsiae* var. *velutina* in foliage and indument precisely agrees with material here referred to *P. brevicalyx*, including its type. The inflorescence of the varietal type is comparatively compact, but its calyx is typical for *P. brevicalyx*.

The calyx limb of the concept here accepted as *P. brevicalyx* is quite variable, but is characterized as composed of a cylindrical lower portion 5–10 mm. long and a more or less flaring apical portion. The apex in some specimens is subrotate and 12–15 mm. in diameter, with broad lobes as large as 6×8 mm. Other flowering specimens have the apex only 6–10 mm. in diameter, with oblong lobes 1–5×1.5–2.5 mm. Since foliage and corolla characters are not correlated with these differences, and since the calyx limb itself varies substantially on single plants, I believe this concept of *P. brevicalyx* to be reasonable

for *Psychotria*, in which intraspecific crossing must be locally commonplace. A supplementary description of the inflorescence follows:

Inflorescence branches, pedicels, and calyx copiously hirtellous, the indument composed of pale, many-celled spreading hairs 0.5–1.2 mm. long; calyx 10–15 (rarely to 20) mm. long, the hypanthium cupuliform, about 2 mm. long, the calyx limb ascending in a cylindrical tube 5–10 mm. long and 3.5–4 mm. in diameter, broadening or flaring into an apical portion 6–15 mm. in diameter, this conspicuously or obscurely reticulate-veined, pilose without and less obviously so or glabrous within, the lobes 5, variable, broadly deltoid to oblong, 1–6 mm. long, 1.5–8 mm. broad, obtuse at apex, the sinuses obtuse or subacute; corolla cylindric, gradually broadened distally, 18–20 mm. long, copiously hirtellous without with pale few- or several-celled hairs 0.2–1 mm. long, the tube puberulent or tomentellous within distally, the lobes oblong, 4–5 mm. long, about 1.5 mm. broad, subacute, obscurely puberulent within; filaments slender, 2–4 mm. long, appressed to corolla throat and similarly pilose, the anthers oblong, 2–3 mm. long, obtuse at both ends; style filiform, about as long as the corolla, the stigmas recurved, about 1 mm. long.

The species is known from the two large islands of Fiji, at elevations of near sea level to 600 m. (the Gillespie specimen is said to be from Mt. Naitarandamu at about 1,150 m.). Following are the specimens referable to it, cited without details except for the island and province:

VITI LEVU: Nandronga & Navosa: *Degener* 15256, 15292 (type US; Yawo, vicinity of Mbelo, near Vatukarasa, alt. 120–300 m.), *Tabualewa* 15620. Serua: *Tabualewa* 15605 (US, type of *P. gibbsiae* var. *velutina*; Mbuyombuyo, near Namboutini), *Degener* 15154, *Smith* 8997, 9206, 9656. Namosi: *Gillespie* 3131, *Smith* 8726, 8893, 8898. VANUA LEVU: Thakaundrove: *Smith* 1856.

***Psychotria stenantha* A. C. Sm., sp. nov.**

Frutex vel arbor parva 4–5 m. alta ubique praeter pilos obscuros inter stipulas et inflorescentiae bracteolis et calycis margine glabra; stipulis 6–12 mm. longis inferne connatis superne liberis et late bifidis; petiolis gracilibus 7–15 mm. longis, foliorum laminis subcoriaceis in sicco fuscis et copiose immerso-glandulosis, elliptico-oblongis, 7–10 cm. longis, 2.5–5 cm. latis, basi acutis, apice obtusis vel obtuse cuspidatis, margine anguste recurvatis, costa utrinque prominente, nervis secundariis utrinsecus 10–12 patentibus supra subplanis subtus elevatis, rete venularum subimmerso; inflorescentia compacta ad 2 cm. diametro e basi 3- vel 4-divisa, ramulis 2- vel 3-plo divisis, floribus plerumque trinis, bracteolis sub floribus minutis saepe crispato-pilosis (pilis 0.2–0.5 mm. longis), pedicellis teretibus 1–2 mm. longis; calyce cylindrico 3–3.5 mm. longo (hypanthio obconico ad 1 mm. longo incluso), limbo ca. 1.5 mm. diametro apice abrupte sed

inconspicue ad 2 mm. patente et ibi pilis brunneis pluricellularibus 0.1–0.2 mm. longis inconspicue ciliolato 4- vel 5-denticulato, dentibus deltoideis acutis haud 0.3 mm. longis, sinibus rotundatis; corolla carnea in alabastro ad 5 mm. longa intus faucibus pilosa, lobis 4 vel 5 obtusis; staminibus 4 vel 5, filamentis in alabastro brevibus, antheris oblongis 1.7–2 mm. longis utroque obtusis; disco minuto glabro; stylo gracili apice bifido.

Type in the herbarium of the Arnold Arboretum, collected in thick forest on the Mt. Evans Range, Mba Province, Viti Levu, Fiji, alt. about 1,050 m., September 24, 1944, by William Greenwood (No. 1062A). Duplicate at Bish.

In its narrow, erect calyx limb obviously exceeding the hypanthium in length, and in its glabrous habit, *P. stenantha* is closely related only to *P. vitiensis* Fosberg (*Calycosia monticola* Gillespie) and *P. mundula* A. C. Sm. From the former it differs obviously in its comparatively short calyx limb (2–2.5 mm. long instead of 4.5–7 mm.), and also in its somewhat larger leaves with more numerous, spreading secondaries. The corolla of the type collection is too young to permit comparison. From *P. mundula* the new species differs in its comparatively open habit, larger leaves, more open inflorescence, and short calyx lobes.

***Psychotria hemisphaerica*** Gillespie, Bishop Mus. Bull. 91:32, fig. 35. 1932.

In discussing *P. carnea* (Forst. f.) A. C. Sm. (Bishop Mus. Bull. 141:151. 1936), based on *Petesia carnea* Forst. f., I placed *P. hemisphaerica* in its synonymy. Upon further examination of the Fijian material now available, I believe Gillespie's concept to merit specific recognition. It is readily distinguished from *P. carnea* by having the distal branches of its inflorescence, its pedicels, bracts, and calyx puberulent (with pale hairs that are minute but apparent, 0.05–0.1 mm. long). The indument extends to both surfaces of the calyx limb and is usually, but not always, persistent in fruit. The corresponding parts of *P. carnea* are glabrous.

Gillespie did not cite a type, and this becomes a matter of consequence because the 17 specimens cited by him are, in my opinion, referable to four species. The following collections represent *P. carnea*: Gillespie 2975.1, 3300, Parks 20226, 20265, 20465. Gillespie 3793 represents *P. incompta* A. C. Sm., and Gillespie 2353 *P. pitosporifolia* Fosberg.

An exchange of correspondence between Gillespie and Miss Marie C. Neal (then in charge of the Bishop Museum herbarium) is pertinent in the designation of a lectotype for *P. hemisphaerica*. In this, Gillespie asked Miss Neal to select a specimen most resembling his figure 35; she has indicated Gillespie 2208, which indeed seems to be the basis for the habit drawing and the fruit (figs. b, c). I believe that Gillespie 4592 must have served as the basis for the flower

drawings (figs. *a, d, e*). As the lectotype for this concept, *Gillespie* 2208 in the Bishop Museum herbarium may be accepted.

*Psychotria hemisphaerica* is known only from the islands of Viti Levu and Vanua Levu, with a single specimen from Ongea Levu in Lau, at elevations from near sea level to about 600 m. Following are the specimens referable to it, cited without details except for the island and province:

VITI LEVU: Nandronga & Navosa: *Smith* 4713. Serua: *Degener & Ordonez* 13622, *Tabualewa* 15581, *Smith* 9236, 9363. Namosi: *Greenwood* 1041. Naitasiri: *Gillespie* 2457, 3425, 3467, 3519, *Setchell & Parks* 15098, 15167, *Parks* 20069, *MacDaniels* 1146, *B. E. Parham* 974, *Degener & Ordonez* 13763. Rewa: *Gillespie* 2208 (lectotype Bish; southeastern slopes of Mt. Korombamba, alt. 400 m.), 2260, 4592, *Parks* 20121, 20315, *Meebold* 16876, 17043. VANUA LEVU: Mathuata: *Smith* 6420. Thakaundrove: *Smith* 588. ONGEA LEVU: *Bryan* 422. Fiji, without locality: *Horne* 705.

*Psychotria hemisphaerica* is one of a group of five interrelated Fijian species, the others being *P. carnea* (which also occurs in Samoa and Tonga), *P. hunteri* (*Horne ex Baker*) A. C. Sm., *P. archboldiana* Fosberg, and *P. incompta*. This group, which scarcely merits my previous designation as *Psychotria* sect. *Eumachia* (DC.) A. C. Sm. (*Bishop Mus. Bull.* 141:151. 1936), is characterized as follows: Calyx limb suberect or erecto-patent, 2–5 mm. long, often thin and obviously nerved, and fairly persistent in fruit; corolla limb sharply enlarged and 4-angled or 4-winged just prior to anthesis, the corolla lobes broad and obviously veined, appressed at their inner margins to form the angles or wings; stipular and pyrene characters are also reasonably constant but are duplicated in other species groups, and a consideration of their value must await revision of all the Fijian *Psychotriaceae*. The species of this alliance are not always sharply demarcated, and *P. hemisphaerica* may be expected to intergrade with *P. carnea* and *P. archboldiana*. Students of *Psychotria* (among innumerable other insular genera) must be reconciled to the plastic nature of their concepts, which cannot be discarded merely because occasional individuals demonstrate intermediate characteristics.

***Psychotria scitula* A. C. Sm., sp. nov.**

Arbor parva ut videtur; ramulis gracilibus cinereis glabris internodiis ultimis paullo complanatis; stipulis in vaginam subcoriaceam gracilem valde connatis, vagina cylindrica superne gradatim contracta 6–12 mm. longa pilis rubiginosis multicellularibus 0.5–1 mm. longis hirtella demum glabrata, stipularum apicibus liberis lanceolato-subulatis inconspicuis 1–2 mm. longis; petiolis gracilibus 10–25 mm. longis, laminis foliorum praeter costam subtus ut stipulis rubiginoso-hirtellam glabris papyraceis in sicco fuscis, obovato-lanceolatis, 9–16 cm. longis, 3–6 cm. latis, basi acutis et in petiolum longe decurrentibus,

in acuminem conspicuum gracilem 1–2 cm. longum gradatim angustatis, supra cystolithis linearibus inconspicue ornatis, costa supra elevata subtus prominente, nervis secundariis utrinsecus 11–16 arcuato-ascendentibus marginem versus manifeste anastomosantibus supra subplanis subtus elevatis, rete venularum laxo supra immerso subtus prominulo; inflorescentia laxa e basi 5-ramulosa, ramulis 3.5–6 cm. longis gracilibus debilibus glabris superne trichotome divisis, bracteolis sub floribus oblongo-linearibus 1–3 mm. longis 0.2–1 mm. latis extus copiose vel sparse strigillosis (pilis ut eis calycis), floribus plerumque trinis sessilibus; calyce anguste cupuliformi sub anthesi 3–3.5 mm. longo et apice 2–2.5 mm. diametro extus basi excepta pilis rubiginosis 0.4–1 mm. longis plerumque 5–7-cellularibus copiose hirtello, hypanthio parvo obconico, limbo erecto submembranaceo inconspicue glanduloso-ornato intus glabro 2–2.5 mm. longo subtruncato, dentibus 5 minutis; corolla cylindrica ad 5 mm. longa (immatura) utrinque glabra vel pilis paucis apicalibus inconspicue ornata, lobis 5 oblongis 1.5–2 mm. longis obtusis; staminibus 5, filamentis brevibus glabris, antheris oblongis ca. 2 mm. longis utroque obtusis; disco annulari-pulvinato glabro; stylo in alabastro corollam subaequante apice bifido.

Type in the herbarium of the B. P. Bishop Museum, collected on Mt. Voma, Namosi Province, Viti Levu, Fiji, alt. 900 m., September 6, 1927, by John W. Gillespie (No. 2789). Duplicates at GH, UC. Another collection from the same locality, alt. 800 m., is *Gillespie* 2672 (A, Bish, GH, UC).

*Psychotria scitula* is closely allied only to *P. filipes* A. Gray and *P. diffusiflora* A. C. Sm., differing from both in its sessile flowers, the striking indument of its calyx, and its comparatively elongate calyx limb. Both of the older species have pedicellate flowers with the calyx limb glabrous and 0.5–1 mm. long. *Psychotria diffusiflora* further has the corolla copiously barbellate within, while that of *P. filipes* is essentially glabrous within. Now that more adequate material is at hand, the difference in leaf shape between *P. filipes* and *P. diffusiflora* is less significant than I previously thought, but in this respect the new species more closely resembles typical *P. diffusiflora*. Another species of this relationship, *P. pelagica* Seem., is in my opinion questionably separable from *P. filipes*.

In connection with the new species, *P. vomensis* Gillespie should be mentioned; as the name implies, this also occurs on Mt. Voma. Both species have the flowers in sessile triads and the calyx copiously pilose. However, *P. vomensis* has the inflorescence comparatively compact, each inflorescence ray being usually unbranched and obviously pilose; the calyx indument is composed of usually unicellular pale hairs scarcely 0.1 mm. long; the calyx limb is subspreading and with obvious lobes; the leaf blades are proportionately broader and obtuse to obtusely short-cuspidate at apex, and lack the costal indument;

and the stipules are of quite a different type, being free and deeply bifid in the distal half.

***Psychotria consobrina* A. C. Sm., sp. nov.**

Arbor gracilis vel frutex 3-5 m. altus, ramulis gracilibus internodiis distalibus copiose sed minute papilloso-puberulis (pilis unicellularibus); stipulis 8-10 mm. longis extus copiose puberulis inferne connatis superne in lobos 3-5 mm. longos et 0.8-1.5 mm. latos apice acutos vel attenuatos bifidis; petiolis gracilibus semiteretibus 1.2-5 cm. longis primo puberulis demum glabratis, laminis foliorum chartaceis in sicco fuscis ellipticis vel lanceolato-ellipticis, (9-) 10-20 cm. longis, (2-) 4-7.5 cm. latis, basi acutis et in petiolum decurrentibus, apice acuminatis (acumine ad 1 cm. longo) vel obtuse cuspidatis, obscure immerso-glandulosis, utrinque glabris, costa supra subplana subtus prominente, nervis secundariis utrinsecus 12-18 patentibus curvatis marginem versus anastomosantibus supra subplanis subtus elevatis, rete venularum intricato utrinque subimmerso vel subtus prominulo; inflorescentia ampla cymosa 5-12 cm. longa 4-10 cm. lata manifeste pedunculata 3- vel 4-plo divisa, axibus pedicellisque gracilibus copiose puberulis (pilis pallidis 1-3-cellularibus 0.05-0.1 mm. longis), pedunculo 2-7 cm. longo valde reflexo, bracteis lanceolato-subulatis 1.5-3.5 mm. longis utrinque puberulis plerumque trifidis, lobo centrali longissimo, bracteolis sub floribus similibus sed 1-2 mm. longis; floribus plerumque trinis, pedicellis sub anthesi 1-5 mm. longis, calyce et corolla minute sed copiose puberulis (pilis plerumque unicellularibus); hypanthio cupuliformi sub anthesi haud 1 mm. longo, calycis limbo erecto-patente 1.5-2 mm. longo et apice 2.5-3.5 mm. diametro copiose immerso-glanduloso intus puberulo, lobis 5 semiorbicularibus 0.5-1 mm. longis et 1.5 mm. latis; corolla cylindrica sub anthesi 9-10 (-13) mm. longa superne paullo ampliata intus medium versus pilis pallidis multicellularibus 0.5-0.8 mm. longis copiose tomentello-barbata, lobis 5 oblongis 2-3 mm. longis obtusis intus cucullatis; staminibus 5, filamentis glabris 1.5-2 mm. longis, antheris oblongis ca. 2 mm. longis utroque obtusis; disco annulari-pulvinato ad 0.8 mm. alto et 1.3 mm. diametro; stylo corollam subaequante superne papilloso apice bifido; fructibus obovoideo-ellipsoideis demum glabratis in vivo carnosus in sicco inconspicue angulatis, 8-9 mm. longis, 5-7 mm. latis, calycis limbo manifeste puberulo coronatis, pyrenis semi-obovoideis 6-7×4-6×2-3 mm., ventre complanatis, dorso obtuse et inconspicue 3- vel 5-carinatis.

Type in the herbarium of the B. P. Bishop Museum, collected in limestone hills near quarry beyond Lami village, Rewa Province, Viti Levu, Fiji, alt. 50 m., February 6, 1928, by John W. Gillespie (No. 4596). Duplicates at GII, UC.

## ADDITIONAL SPECIMENS EXAMINED:

FIJI: VITI LEVU: Nandronga & Navosa: Vicinity of Mbelo, near Vatukarasa, *Degener* 15292a (A), *Tabualewa* 15623 (A, Bish, UC, US). Serua: North of Korovou, *St. John* 18933 (Bish, GH); hills west of Waivunu Creek, between Ngaloa and Korovou, *Smith* 9300 (Bish, US, etc.); hills north of Ngaloa, in drainage of Waininggere Creek, *Smith* 9157 (Bish, US, etc.); hills between Waininggere and Waisese Creeks, between Ngaloa and Wainiyambia, *Smith* 9383 (Bish, US, etc.). Namosi or Serua: Vicinity of Namuamua, *Gillespie* 2996 (A, Bish, UC, US). Ra: Vicinity of Rewasa, near Vaileka, *Degener* 15335 (A, Bish, UC, US), 15380 (A), 15449 (A, US), 15525 (A, US). These specimens occur from near sea level to about 300 m., in dense wet or dry forest; the corolla is reported as white and the fruit as red.

The complex of forms related to *P. furcans* Fosberg is difficult to understand on the basis of available material, but I believe that my discussion in *Journ. Arnold Arb.* 34:105 (1953) requires amending. The closest relative of *P. furcans* appears to be *P. pritchardii* Seem., with which it has in common a spreading, obviously pedunculate, and usually reflexed inflorescence. From *P. pritchardii*, *P. furcans* and the new species here discussed differ in having the stipules comparatively small, not auriculate, with the free portion bifid into acute lobes, and the inflorescence peduncle comparatively short, 2–7 cm. long. *Psychotria pritchardii* has extraordinary, auriculate stipules, interconnected by a flange of tissue proximal of each petiole, the free portion being bifid into broad, rounded lobes, and the peduncle greatly elongated, 7–35 cm. long. On the basis of available specimens, *P. pritchardii* seems limited to Taveuni and Vanua Levu.

The new species, as represented by the specimens cited above, differs from typical *P. furcans* in the copious but minute indument of its young parts, stipules, inflorescence peduncle and branchlets, pedicels, calyx, and corolla; further its calyx limb is longer and more spreading, with larger, rounded lobes, its pyrenes are obtusely 3- or 5-carinate rather than with a prominent, thin, median dorsal keel, and its leaf blades are prevailingly elliptic rather than oblong-lanceolate. In addition to typical *P. furcans*, from upland Viti Levu, and typical *P. consobrina*, from lowland Viti Levu, there is available a series of confusing specimens, mostly from upland Viti Levu, that show relationships to both concepts. Because these specimens have the puberulent inflorescence parts (including calyx and corolla) and the comparatively large calyx limb of *P. consobrina*, I believe this to be their better position. But they have, in general, the oblong leaf-blades, glabrous young parts, and glabrous stipules of typical *P. furcans*. The calyx tube, in some of these specimens, is as much as 3 mm. long and in shape suggestive of that of *P. chrysophylla* Fosberg, a species with a more pronounced inflorescence indument of several-

celled, longer, reddish hairs. These questionable specimens, now referred to *P. consobrina* with reservations, are:

VITI LEVU: Mba: Gillespie 3695, Parks 20537, 20680, Degener 14369, 14525, 14625, 14637, 14658, 14746, Greenwood 889, 889A, 1163, 1246, 1250, Smith 4091, 4277, 4354, 4372, 5980, 6038, 6270. NANDRONGA & NAVOSA: Smith 5411, 5477, 5608. MOTURIKI: Seemann 244. VANUA LEVU: Mathuata: Smith 6671, 6824.

While a complex of morphological intermediates among these three species—*P. furcans*, *P. consobrina*, and *P. chrysophylla*—may be expected to occur, the extremes seem to have a degree of individuality that makes their recognition as species desirable.

In connection with the above citation of *Seemann 244*, it should be noted that this was one of the two collections originally cited by Seemann as representing his *P. broweri* (Seem. Fl. Vit. 135. 1866). These two collections are not conspecific, although both came from the island of Moturiki. The second, *Seemann 254*, was informally chosen as the lectotype by Gillespie, as I indicated in Journ. Arnold Arb. 34:104. 1953. Such a choice is herewith formalized, since it has been followed in herbaria, where *P. broweri* is now well represented by material from several islands of Fiji. It is an essentially glabrous plant, characterized by having its inflorescence epedunculate, with 3-6 branches from the base; its relationship is with *P. platycocca* A. Gray and *P. filipes* A. Gray.

***Psychotria salticola* A. C. Sm., sp. nov.**

Arbor vel frutex 4-8 m. altus inflorescentia excepta glaber, ramulis subteretibus internodiis distalibus subcomplanatis; stipulis conspicuis papyraceis ellipticis, eis inflorescentiam juvenilem obtegentibus ad 3 cm. longis et 1.5 cm. latis in vaginam latam inferne connatis, superne liberis manifeste nervatis conspicue bifidis, lobis oblongo-deltaoideis 4-8 mm. longis latisque apice obtusis; petiolis gracilibus semiteretibus 2-4 cm. longis, laminis foliorum chartaceis in sicco fusco-viridibus copiose glanduloso-punctatis, anguste ellipticis, (12-) 15-24 cm. longis, (3.5-) 5.5-10 cm. latis, basi acutis et in petiolum longe decurrentibus, apice in acuminem brevem ad 1 cm. longum obtuse cuspidatis, costa supra elevata subtus prominente, nervis secundariis utrinsecus 11-14 erecto-patentibus arcuatis supra subplanis subtus valde elevatis, rete venularum subimmerso vel subtus subprominulo; inflorescentia terminali compacta multiflora e basi 3-5-divisa sub anthesi ad 4 cm. longa, ramulis gracilibus 2- vel 3-plo divisis et pedicellis hirtellis (pilis pallidis vel rubiginosis patentibus 0.1-0.2 mm. longis 2-4-cellularibus), bracteis bracteolisque inconspicuis oblongo-lanceolatis 0.5-1 mm. longis superne fimbriatis; floribus plerumque trinis, pedicellis gracilibus sub anthesi 2-4 mm. longis interdum glabris; calyce anguste cupuliformi vel subfusiformi sub anthesi 3.5-5 mm. longo,

hypanthio obconico 1–1.5 mm. longo parce hirtello vel glabro, limbo erecto subcarnoso 2.5–3.5 mm. longo apice 2.5–3 mm. diametro utrinque glabro margine pilis ut eis pedicelli conspicue fimbriato, 4–6-denticulato vel lobato, lobis minutis vel interdum semiorbicularibus ad 0.5 mm. longis; corolla subcarnosa cylindrico-infundibuliformi sub anthesi ad 12 mm. longa, extus copiose (vel tantum apice) pilis 0.1–0.3 mm. longis 2–5-cellularibus hirtella, intus medium versus pilis brevioribus saepe unicellularibus barbellata, lobis 4–6 oblongis 2–2.5 mm. longis obtusis; staminibus 4–6, filamentis minutis, antheris oblongis 1.6–1.8 mm. longis utroque obtusis; disco annulari-pulvinato glabro ad 0.8 mm. alto; stylo gracili corollam subaequante apice bifido; inflorescentiae ramulis sub fructu ad 6 cm. longis et pedicellis ad 12 mm. longis, fructibus juvenilibus ellipsoideis calycis limbo erecto coronatis.

Type in the U.S. National Herbarium, Nos. 2191239 and 2191240, collected in dense forest in the hills bordering Wainavindrau Creek, in the vicinity of Wainimakutu, Namosi Province, Viti Levu, Fiji, alt. 150–250 m., September 17, 1953, by A. C. Smith (No. 8550). Duplicates at Bish, etc.

ADDITIONAL SPECIMENS EXAMINED:

FIJI: VITI LEVU: Namosi: Hills north of Wainavindrau Creek, between Korombasambasanga Range and Mt. Naitarandamu, alt. 250–450 m., *Smith* 8491 (Bish, US, etc.).

Field notes indicate the plant as a tree or shrub 4–8 m. high, with the inflorescence branches, pedicels, and calyx pink or dull pink and the corolla white. The two collections here referred are not identical, but they agree so closely that they must be considered conspecific; the above description is inclusive. The type has the inflorescence parts obviously pilose, whereas No. 8491 has the inflorescence branches and pedicels only sparingly so and the corolla (in young bud) glabrous except at apex; the latter collection also has the calyx limb with obvious lobes, whereas that of the type is only minutely denticulate.

The new species is most closely allied to *P. brackenridgei* A. Gray, a fairly variable species that is known from many collections and several islands, with which it has in common large, glabrous, prevalingly elliptic leaf blades, bifid stipules with broad, obtuse lobes, an inflorescence branching from the base, and a fairly obvious inflorescence indument composed of several-celled, often reddish hairs. *Psychotria brackenridgei*, however, has the calyx limb erecto-patent, comparatively short (seldom exceeding 1 mm. in length), and copiously pilose on both sides, whereas in *P. salticola* the calyx limb is erect, longer (2.5–3.5 mm. long), and glabrous except for the fimbriate margin. In general aspect *P. salticola* also suggests *P. broweri* Seem., but that species has a strictly glabrous inflorescence and a short calyx limb (0.5–0.8 mm. long).

## Compositae

**Crassocephalum crepidioides** (Benth.) S. Moore, Journ. Bot. 50:211. 1912.

VITI LEVU: Namosi: Northern base of Korombasambasanga Range, in drainage of Wainavindrau Creek, *Smith* 8669 (Bish, US, etc.); hills east of Wainikoroiluva River, near Namuamua, *Smith* 9069 (Bish, US, etc.). OVALAU: Valley of Mbureta and Lovoni Rivers, *Smith* 7393 (Bish, US, etc.).

The cited specimens are from coarse or succulent herbs up to 1 m. high, naturalized along streams and on open gravel banks and rocky shores of rivers at altitudes of 20–400 m.; the florets and stigmas are dull yellow, distally tinged with bright or reddish orange.

*Crassocephalum crepidioides* is now widely distributed from Africa to southern Asia and the Philippines; it extends in the Pacific eastward at least to New Guinea and Ponape, but apparently it has not been previously recorded from Fiji. Belcher (Ann. Mo. Bot. Gard. 43:13. 1956) has commented on the fact that in herbaria this weed is often confused with *Erechtites hieracifolia* (L.) Raf. ex DC.

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