

# NOTES ON RAIATEAN FLOWERING PLANTS

WITH DESCRIPTIONS OF NEW SPECIES  
AND VARIETIES

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## INTRODUCTION

An earlier study of the Raiatean flora yielded two previous papers.<sup>1</sup> A few plants which I collected on Raiatea were represented by specimens without flowers or fruit. Because of the incompleteness of these specimens they were not described. In 1934, a short time before leaving on the Mangarevan Expedition, Harold St. John offered to try to collect additional specimens of these plants. I supplied him with data on localities. When the expedition landed on Raiatea, the botanists collected flowering and fruiting specimens. The plants have been made available to me for study by the Bishop Museum. Some of these collections form the basis of proposed new species and varieties, while others, known for the first time by the collections of Dr. St. John and other members of the expedition, are also proposed as new. One had been known for a long time and required transfer to its proper genus.

I wish to tender my appreciation for the kind aid of Dr. St. John and his associates and to the staff at the Bishop Museum for the cooperation which has made this additional study a reality.

The photographs of type specimens were prepared by Miss Wilma Monserud, artist at the Department of Botany at the University of Minnesota. The photographs of type specimens are provided with a centimeter scale for direct reading of size. The enlarged flowers or fruits have a millimeter scale at the margin. The type specimens are deposited at the Bernice P. Bishop Museum in Honolulu.

## GRAMINEAE

### **Garnotia St.-Johnii**, species nova (Figs. 1 and 2).

Gramen caespitosum perenne, culmi ad 30 cm. alti erecti ad basim valde ramosi glabri, laminae ad 8.5 cm. longae 5-9 mm. latae lineari-lanceolatae acutae planae vel ad apicem subinvolutae in marginibus denticulatae utrinque glabrae, junctura vaginae

<sup>1</sup> Moore, J. W., *New and Critical Plants from Raiatea*, Honolulu, Bernice P. Bishop Museum, Bulletin 102, 1933; "Taxonomic Studies of Raiatean Plants," Honolulu, Bernice P. Bishop Museum, *Occasional Papers*, 10 (19), 1934. (The present study has been designated "Contributions from the Herbarium of the University of Minnesota XVII.")



FIGURE 1.—*Garnotia St.-Johnii* (type). Photograph of type sheet.

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et laminae extrinsecus glabra, vaginae nudae marginibus scariorum supra auriculis obtusis setulosis ad 0.4 mm. longis binis, ligulae circa 0.4 mm. altae rotundatae minute et contra regulam setulosae, panícula stricta 6–15 cm. longa 6–10 mm. lata, spiculae imae in vagina summa inclusae vel supra eam 1–9 cm. exsertatae, spiculae geminae erectae vel subpatentes ad basim cristula pilorum 0.5 mm. vel minus longa instructae, pedicelli angulati scabri clavati, glumae steriles circa 4 mm. longae et in nervis scabrae, gluma sterilis primaria in apice bidentulo arista 0.75–1.5 mm. longa et scabra instructa, gluma sterilis secunda in apice bidentulo arista 0.25–0.4 mm. longa et scabra instructa, lemma glabra subaequalis glumis sterilibus in apice bidentulo arista 0.5–0.6 mm. longa et scabra instructa, palea lemmae subaequalis et in marginibus supra et in apice obtuso pubescens.



FIGURE 2.—*Garnotia St.-Johnii* (type). Spikelets.

Caespitose, perennial grass; culms up to 30 cm. high, erect, much branched from the base, glabrous; leaf blades up to 8.5 cm. long, 5–9 mm. wide, linear-lanceolate, acute, flat or the apex subulate, denticulate on the margins, glabrous, smooth on both surfaces; junction of the sheath and blade glabrous externally; leaf sheaths naked and scarious margined, prolonged above into obtuse setulose appendages up to 0.4 mm. long; ligules about 0.4 mm. high, rounded, minutely and irregularly setose; panicle strict, 6–15 cm. long, 6–10 mm. wide; basal spikelets included in the uppermost leaf sheath or exserted 1–9 cm. above the uppermost leaf sheath; spikelets borne in pairs, erect or somewhat patent, with a tuft of hairs 0.5 mm. or less long at the base; pedicels angled, scabrous, clavate; sterile glumes about 4 mm. long, scabrous on the veins; first sterile glume with a scabrous awn 0.75–1.5 mm. long borne at the bidentate apex;

second sterile glume with a scabrous awn 0.25–0.4 mm. long borne at the bidentate apex; lemma glabrous, about equal in length to the sterile glumes, with a scabrous awn 0.5–0.6 mm. long borne at the bidentate summit; palea nearly equal in length to the lemma, hairy on the margins above and on the obtuse apex.

Raiatea: high moor, Temehani Plateau, altitude 600 meters, October 5, 1934, *H. St. John 17298* (type).

*Garnotia St.-Johnii* differs from *Garnotia stricta* Brogniart in having flat, shorter and broader leaves. The callous hairs of the spikelets are one-half mm. or less long. The lemma and palea are of nearly equal length.

## CYPERACEAE

### *Mariscus raiateensis*, species nova (Figs. 3 and 4).

Perennis, caules ad 120 cm. alti circa 7 mm. crassi caespitosi erecti leves valde compressi, folia maxima caule longiores, vaginae foliorum equitantes valde compressae striatae glabrae leves stramineae vel infra fuscissimae marginibus tenuissimis membranaceis fuscis instructae, laminae foliorum inferiorum valde tabescentes, laminae mediae subbasales ad 18–30 mm. latae erectae lineares acuminatae leves marginibus levibus et integris costaque indistincta instructae, inflorescentia paniculata ad 45 cm. longa fasciculis 6–7 primariis instructa, fasciculi in axillis vaginarum compressarum tubularum lati (fasciculus inus circa 10 mm. latus) laminis valde tabescentibus acuminatis vel subulatis, axes secundarii subaequales arcuati quorum longissimi ad 17 cm. longi sunt, ramuli fasciculati inaequales arcuati angulati in angulis spinosi-setosi, bractee ultimae vaginantes griseo-fuscae compressae ciliolatae subglabrae acumine subulato instructae, spiculae ovato-lanceolatae ad 7–8 mm. longae, prophyllum spiculae circa 2–5 mm. longum ovatum in dorso rotundatum acutum, bractea prima spiculae ad 3–3.5 mm. longa ovato-lanceolata carinata in carina parce serrulata et in marginibus insigniter serrulata summitate brevi extrinsecus curvata acuta vel acuminata instructa, flores perfecti 2 et flores staminiferi 2 in axillis bractearum ad 4–4.5 mm. longarum lanceolarum carinatarum obtusarum apiculatarum in marginibus serrulatarum in lateribus prope apicem spinosarum-setosarum grisearum fuscarum cum striis et straminearum-fuscarum, perianthium nullum, stamina 3, antherae ad 2 mm. longae lineares in summitatem breviter apiculatae productae, filamenta complanata et ad 11–12 mm. elongata postquam floruerunt, ovarium breve-stipitatum triquetrum, styli ad 4–4.5 mm. longi prope ad medium divisi subtiliter papillati, fructus glabrus, corpus fructus ad 1 mm. longum griseum striis et punctis fuscis idem et stipes et basis styli attenuati decurrentisque triquetrum, paginae fructus gibbosae in marginibus incrassatae, basis styli ad basin ad 0.6 mm. latus, stipes ad 0.6 mm. longus.

Perennial; stems up to 120 cm. high, about 7 mm. thick, tufted, erect, smooth, stout, compressed; largest leaves longer than the stem; leaf sheaths equitant, strongly compressed, striate, glabrous, smooth, stramineous or dark brown below, provided with very narrow, membranous brown edges; leaf blades of the lower leaves much reduced; median sub-basal leaf blades smooth, 18–30 mm. wide, erect, linear, acuminate, smooth, with smooth and entire margins and an indistinct midrib; inflorescence a panicle up to 45 cm. long, with 6–7 primary fascicles; fascicles borne in the axils of compressed tubular sheaths (the basal one about 10 mm. wide) with much reduced, acuminate or subulate blades; secondary axes nearly equal, arcuate, the longest up to 17 cm. long; branchlets fascicled, unequal, arcuate, angular, spinose-setose on the



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FIGURE 3.—*Mariscus raiateensis* (type). Photograph of type sheet.

angles; ultimate sheathing bracts grayish brown, flat, with a subulate tip, ciliate, nearly glabrous; spikelets ovate-lanceolate, 7–8 mm. long; prophyll of the spikelet about 2 mm. long, ovate, rounded on the back, acute; first bract of the spikelet 3–3.5 mm. long, ovate-lanceolate, keeled, sparsely serrulate on the keel and notably so on the margins, provided with a short outwardly curved, acute or acuminate tip; bracts subtending the two perfect and two staminate flowers 4–4.5 mm. long, lanceolate, keeled throughout their length, obtuse, apiculate, serrulate on the margins, spinose-setose on the sides near the apex, grayish brown and stramineous brown lineate; perianth absent; stamens 3; anthers 2 mm. long, linear, shortly apiculate; filaments flattened, elongated after flowering to a length of 11–12 mm.; ovary short-stipitate, triquetrous; styles 4–4.5 mm. long, cleft in the upper 2 mm., finely papillate; achene glabrous; body of the achene 1 mm. long, gray, brown lineate and punctate, as also the stipe and tapered decurrent style base, triquetrous, the faces gibbous with a thick, peripheral annular area on each; style base 0.6 mm. wide below; stipe 0.6 mm. long.

Raiatea: on steep head wall of valley, Ereeo Valley, altitude 200 meters, October 9, 1934, *H. St. John 17324* (type).

This species differs from *Mariscus Bidwellii* (Stapf) J. W. Moore in the narrower scarious margin toward the base of the leaves, broader leaf blades, more ample inflorescences, lighter colored bracts, much longer filaments, and distinctive achenes.



FIGURE 4.—*Mariscus raiatensis* (type). Achenes.



## LEGUMINOSAE

**Leucaena insularum** (Guillemin). Däniker: Vierteljahrsschr. Nat. Ges. Zürich, vol. 77, Beibl. 19, p. 176, 1932.

*Mimosa glandulosa* Solander ex Forster: Prod., p. 92, no. 565, 1786, nomen nudum.

*Acacia insularum* Guillemin: Annales des Sciences Naturelles, ser. 2, vol. 7, p. 360, no. 320, 1837.

*Leucaena Forsteri* Bentham: In Hooker's London Journ. Bot., vol. 5, p. 94, 1846.

Solander's name was mentioned by Forster in his Prodrum in 1786. As there was no description, this is a nomen nudum. Guillemin described the plant and gave it the name *Acacia insularum* in 1837. Bentham described the same species a second time and called it *Leucaena Forsteri* in 1846. Flowering and fruiting specimens collected by St. John in Raiatea made it possible to determine the generic affinity. The flower structure and fruit show that the plant belongs to the genus *Leucaena*. There are ten stamens. The valves are not fused between the seeds. The anthers are provided with a clavate gland. The oldest specific name must replace that proposed by Bentham. The proper name for this strand tree is *Leucaena insularum*. The transfer to *Leucaena* was made by Däniker in 1932.

Collections from Raiatea which have been examined are: at waters edge, Uturoa, altitude 0.25 meter, September 23, 1926, *John W. Moore 117*; in sandy soil near the beach south of Fatuna, altitude 1 meter, January 25, 1927, *John W. Moore 567*; in thicket on coral sands, Tetaro Islet, October 4, 1934, *H. St. John and S. G. Wight 17224*.

## RUTACEAE

**Fagara Nadeaudi** (Drake), combinatio nova.

*Blackburnia pinnata* Forster var. *tahitensis* Nadeaud: Enum. Pl. Tahiti, no. 471, p. 75, 1873.

*Zanthoxylum Nadeaudi* Drake: Ill. Florae Insul. Maris Pacif., p. 130, 1890.

*Blackburnia pinnata* of Forster was a plant from Norfolk Island and quite distinct from that of the Society Islands. Drake redescribed the plant of Nadeaud but chose to rename it in honor of the collector rather than elevate the varietal name given by Nadeaud. The plant of the Society Islands is a *Fagara* and should be known as *Fagara Nadeaudi*.

Collections from Raiatea which have been examined are: in gully among pandanus, on red Temehani, altitude 600 meters, April 16, 1927, *John W. Moore 747*; woods along stream, Temehani Plateau, altitude 500 meters, October 5, 1934, *H. St. John 17245*.



FIGURE 5.—*Glochidion longipedicellatum* (type). Photograph of type sheet.

## EUPHORBIACEAE

***Glochidion longipedicellatum***, species nova (Figs. 5 and 6).

Arbor vel frutex ad 2-2.5 mm. alta, rami glabrescentes griseo-fusci, ramuli angulares arcuati setulosi pilis fuscis instructi, petioli ad 2.5-4 mm. longi setulosi, laminae ad 9-19 cm. longae ad 3-9.5 cm. latae ovato-ellipticae ad basem obtusae vel acutae acuminatae glabrae nervis secundariis 14-16 in utroque latere costae instructae, acumen ad 1-2.5 cm. longum, stipulae ad 2 mm. longae ad 1.5 mm. latae ovato-triangulares

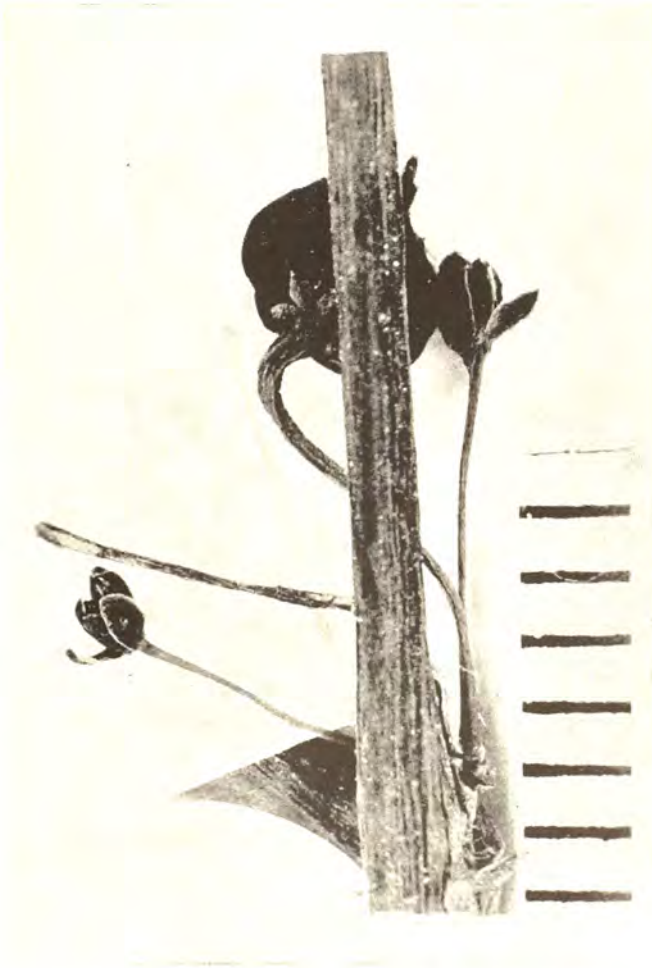


FIGURE 6.—*Glochidion longipedicellatum* (type). Staminate and pistillate flowers.

persistentes glabrae in apicem subulatae (inflorescentiae fasciculatae pedunculis brevibus instructi), flores monoici flavo-viridi 2-3 in fasciculis singulis bracteatis, flores staminiferi, crateriformes, pedicelli ad 6-7 mm. longi clavati, sepala ad 2 mm. longa ad 1 mm. lata elliptico-oblonga obtusa ad basem paulum connata glabra, flores pistilliferi in pedicellis gracilibus fixi, pedicelli ad 1.5-2 mm. longi post quam floruerunt ad 12-17 mm. elongati, sepala ad 1.25 mm. longa 0.5 mm. lata ovato-triangularia acuta ad basem plus minusve connata glabra ea in serie interiore interdum paulo reducta, ovarium 4-5-loculare parce hispidulum glabrescente, styli 4-5-ramosi, capsula ad 5-6 mm. longa ad 10-12 mm. diametro depresso-globosa 4-5-lobata, semina ad 4.5-5 mm. longa ad 3.5-4 mm. lata in dorso rotundata angularia rubra nitida unicum vel bina in loculo singulo.

Tree or shrub 2-2.5 m. high; branches glabrescent, with grayish brown bark; branchlets angular, arcuate, setulose with brownish hairs; petioles 2.5-4 mm. long, setulose; leaf blades 9-19 cm. long, 3-9.5 cm. wide, ovate-elliptical, obtuse or acute at the base, acuminate, glabrous, with 14-16 secondary nerves on each side of the midrib; the acumen 1-2.5 cm. long; stipules 2 mm. long, 1.5 mm. wide, ovate-triangular, glabrous, with a subulate tip, persistent; inflorescence fasciculate, with a short peduncle; flowers monoecious, yellowish green, 2-3 in each bracteate fascicle; staminate flowers crateriform; pedicels 6-7 mm. long, gradually thickened upward; sepals 2 mm. long, 1 mm. wide, elliptic-oblong, obtuse, somewhat united below, glabrous; pistillate flowers borne on slender pedicels; pedicels 1.5-2 mm. long, accrescent in fruit to a length of 12-17 mm.; sepals up to 1.25 mm. long, 0.5 mm. wide, ovate-triangular, acute, more or less united below, glabrous, the inner sometimes somewhat smaller; ovary 4-5-celled, sparsely hispidulous, glabrescent; style 4-5-branched; capsule 5-6 mm. long, 10-12 mm. in diameter, depressed-globose, 4-5-lobed; seeds 4.5-5 mm. long, 3.5-4 mm. wide, rounded on the back, angular, 1 or 2 in each cell, red, glossy.

Raiatea: moist woods, valley east of Mt. Orotaio, altitude 150 meters, October 5, 1934, *H. St. John and C. M. Cooke, Jr., 17240*; moist woods, base of cliffs, south side of Toahiva Valley, altitude 200 meters, October 7, 1934, *H. St. John 17305* (type).

*Glochidion longipedicellatum* differs from *Glochidion manono* J. Müller in having larger, long-acuminate, glossy leaves, shorter setulose petioles, longer pedicels, fewer lobes of the style column, and much elongated fruiting pedicels.

***Glochidion myrtifolium*, species nova (Figs. 7 and 8).**

Frutex glaber ad 5 m. altus, rami patentes, ramuli glauci, petioli ad 3-5 mm. longi tenuiter alati, laminae ad 3-6 cm. longae ad 1-2.5 cm. latae elliptico-lanceolatae inaequilaterales subfalcatae ad basem cuneatae abrupte acuminatae nervis secundariis 12-14 utroque latere costae instructae, stipulae ad 1.75-2 mm. longae ad 1-1.25 mm. latae ovato-deltaeidae persistentes, inflorescentiae fasciculatae in pedunculis brevibus fixae, flores monoici albidii 1-2 in fasciculis singulis bracteatis, flores staminiferi ad 2 mm. lati crateriformes, pedicelli ad 5 mm. longi et graciles, sepala ad 1.75-2 mm. longa ad 0.75 mm. lata ad basem connata ea in serie exteriori ovato-oblonga in apice rotundata ea in serie interiore ovato-lanceolata obtusa apiculata paulo exteriori serie breviora, columna staminifera ad 1.75 mm. longa, antherae sex, connectivi (0.6 mm.) antheras superantes, flores pistilliferi ad 3.5-4 mm. longi ad 1 mm. lati, pedicelli ad 3-5 mm. longi robusti (in fructu ad 10-12 mm. elongati), sepala 1-1.25 mm. longa ad 0.4-0.5 mm. lata ovato-triangularia acuta ad basem plus minusve connata, ovarium 0.75 mm. longum subglobosum 3-5-loculare tubo styli 2-2.5 mm. longum coronatum, stylus





FIGURE 7.—*Glochidion myrtifolium* (type). Photograph of type sheet.

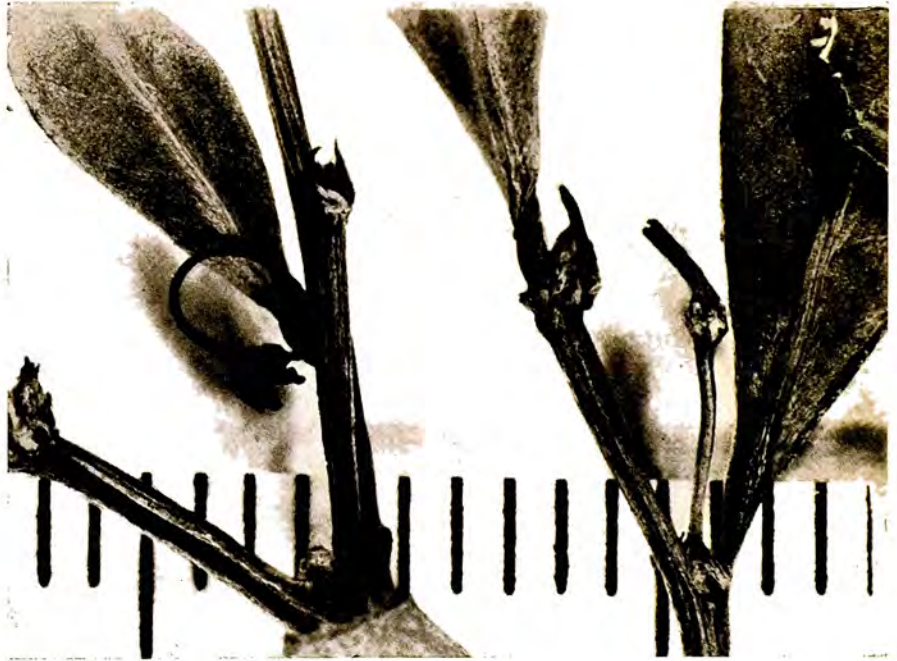


FIGURE 8.—*Glochidion myrtifolium* (type). Staminate and pistillate flowers.

ramis 3-5 integris instructus, capsula ad 4-4.5 mm. longa ad 7-8 mm. crassa turbinata 6-10 sulcata, semina ad 4 mm. longa ad 2.75 mm. lata in dorso rotundata angularia rubra nitida 1 vel 2 in loculo singulo.

A glabrous shrub up to 5 meters high; branches patent; branchlets glaucous; petioles 3-5 mm. long, narrowly winged; leaf blades 3-6 cm. long, 1-2.5 cm. wide, elliptic-lanceolate, inequilateral, somewhat falcate, cuneate at the base, abruptly short acuminate, with 12-14 secondary nerves on each side of the midrib; stipules 1.75-2 mm. long, 1-1.25 mm. wide, ovate-deltoid, persistent; inflorescence fasciculate, with a short peduncle; flowers monoecious, whitish, 1-2 in each bracteate fascicle; staminate flowers 2 mm. wide, crateriform, borne on slender pedicels up to 5 mm. long; sepals 1.75-2 mm. long, 0.75 mm. wide, somewhat united below, those of the outer series ovate-oblong, rounded at the apex, those of the inner series ovate-lanceolate, obtuse, apiculate, slightly shorter than those of the outer series; staminal column 1.75 mm. long; anthers 6, connectives surpassing the anthers 0.6 mm.; pistillate flowers 3.5-4 mm. long, 1 mm. wide, borne on stout pedicels 3-5 mm. long, accrescent in fruit to a length of 10-12 mm.; sepals 1-1.25 mm. long, 0.4-0.5 mm. wide, ovate-triangular, acute, more or less united below; ovary 0.75 mm. long, subglobose, 3-5-celled, crowned by the 2-2.5 mm. long style column; style with 3-5 non-emarginate style-branches; capsule 4-4.5 mm. long, 7-8 mm. in diameter, turbinate, 6-10 sulcate; seeds 4 mm. long, 2.75 mm. wide, rounded on the back, angular, 1-2 in each cell, reddish, glossy.

Raiatea: open ridge, south ridge of Ereeo Valley, altitude 220 meters, Oc-

tober 9, 1934, *H. St. John 17329*; open ridge, south ridge of Ereeo Valley, altitude 220 meters, October 9, 1934, *H. St. John 17328* (type).

*Glochidion myrtifolium* differs from *H. St. John's* field number 17250 (an analysis of which is given under the following species) in having glossy leaves, longer petioles, and pistillate flowers with shorter pedicels, smaller sepals, and shorter style columns.

***Glochidion salicifolium*, species nova** (Figs. 9 and 10).

Frutex glabrer ad 1 m. altus, rami patentes, ramuli graciles flexuosi, petioli ad 1–2 mm. longi, laminae ad 3–6.5 cm. longae ad 14–22 mm. latae lanceolatae vel ovato-lanceolatae inaequilaterales ad basem cuneatae acuminatae in superficie griseo-albae (cum siccae) in superficie inferiore fuscae nervis secundariis 11–16 in utro latere costae instructae, stipulae ad 2–3 mm. longae ad 1–1.25 mm. latae rhomboidales acutae, inflorescentia fasciculata brevi pedunculo instructa, flores monoici flavi 2–4 in fasciculis singulis bracteatis, flores staminiferi in pedicellis gracilibus 5–7 mm. longis fixi, calyx ad 2.25–2.5 mm. latus sufflavus, sepala ad apicem obtusa vel rotundata ad basem carinata, ea in serie exteriori ad 1.8–2 mm. longa ad 1.25–1.33 mm. lata ovata concava patentia ea in serie interiori 1.8–2 mm. longa 0.8–1 mm. lata ovato-lanceolata, columna staminifera ad 1.25 mm. longa, antherae sex anguste oblongae ad 1 mm. longae, connectivus saccos antherarum (0.4 mm.) superans, flores pistilliferi in pedicellis 5–9 mm. longis fixi, calyx ad 1.25 mm. latus, sepala 1.25–1.4 mm. longa, ea in serie exteriori ad 1.25 mm. lata ovata acuta, ea in serie interiori 0.75–1 mm. lata ovato-lanceolata acuta, styli ad 3–4 mm. longi, ramuli ad 0.4–0.5 mm. longi erecti vel subpatenti, ovarium 1 mm. diametro fere globosum glabrum plerumque 4-loculare 4-sulcatumque, capsula ad 8 mm. diametro (immatura) depresso-globosa 8-sulcata et 4-lobata.

A glabrous shrub 1 meter high; branches patent, branchlets slender, flexuose; petioles 1–2 mm. long; leaf blades 3–6.5 cm. long, 14–22 mm. wide, lanceolate or ovate-lanceolate, inequilateral, cuneate at the base, acuminate, grayish white above when dry, dark brown on lower surface, with 11–16 secondary nerves on each side of the midrib; stipules 2–3 mm. long, 1–1.25 mm. wide, rhomboidal, acute; inflorescence fasciculate, with a short peduncle; flowers monoecious, yellowish, 2–4 in each bracteate fascicle; staminate flowers borne on slender pedicels 5–7 mm. long; calyx 2.25–2.5 mm. wide, yellowish; sepals obtuse or rounded at the apex, carinate below; the outer sepals 1.8–2 mm. long, 1.25–1.33 mm. wide, ovate, concave, patent; the inner sepals 1.8–2 mm. long, 0.8–1 mm. wide, ovate-lanceolate; staminal column 1.25 mm. long; anthers 6, 1 mm. long, narrowly oblong; connective surpassing the anther sacs 0.4 mm.; pistillate flowers borne on pedicels 5–9 mm. long; calyx 1.25 mm. wide; sepals 1.25–1.4 mm. long; the three outer sepals 1.25 mm. wide, ovate, acute; the inner sepals 0.75–1 mm. wide, ovate-lanceolate, acute; styles 3–4 mm. long; style branches 0.4–0.5 mm. long, erect or slightly patent; ovary 1 mm. in diameter, nearly globose, glabrous, usually 4-celled and 4-sulcate; capsule 8 mm. in diameter (immature), depressed-globose, 8-sulcate and 4-lobed.

Raiatea: high moor, Temehani Plateau, altitude 450 meters, October 5, 1934, *H. St. John 17250* (type).

*Glochidion salicifolium* differs from *Glochidion myrtifolium* John W. Moore in having dull leaves which develop a grayish white color when dry, very short petioles, longer, more pointed stipules, and pistillate flowers with longer style columns and longer stigmatic lobes.



FIGURE 9.—*Glochidion salicifolium* (type). Photograph of type sheet.





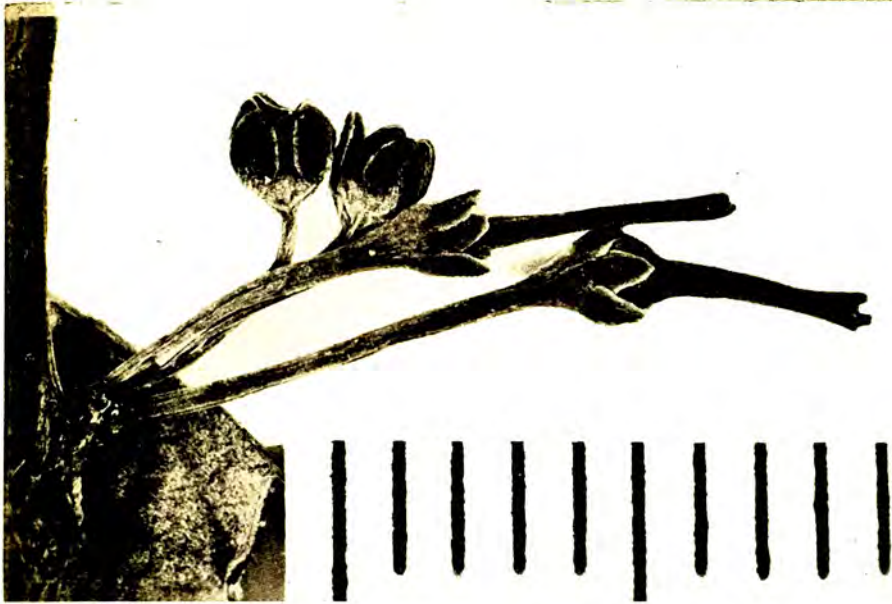


FIGURE 10.—*Glochidion salicifolium* (type). Staminate and pistillate flowers.

***Glochidion temehaniense*, species nova (Figs. 11 and 12).**

Frutex 1 m. altus, rami glabrescentes patentes, ramuli angulares setulosi pilis fuscis, petioli ad 3–4 mm. longi setulosi, laminae ad 4–9 cm. longae ad 2–4 cm. latae lanceolatae inaequilaterales subfalcatae ad basem latera rotundatae et acutae acuminatae glabratae nervis secundariis 12–16 in utroque latere costae instructae, folia ad basem ramulorum laminis ovato-ellipticis vel ovato-oblongis subaequilateralibus ad basem rotundatis vel obtusis utroque latere instructa, stipulae ad 1.5–2.5 mm. longae 1.5–2 mm. latae ovato-triangulares acuminatae glabrae vel parce setulosae persistentes, inflorescentia fasciculata brevi pedunculo instructa, flores monoici flavi 2–3 in fasciculis singulis bracteatis, flores staminiferi ad 2.5 mm. lati crateriformes in pedicellis gracilibus ad 7 mm. longis fixi, pedicelli clavati, sepala ad 2 mm. longa ad 1.25 mm. lata infra paulum connata glabra, ea in serie exteriori elliptico-ovata in apice rotundata, ea in serie interiori ovato-oblonga obtusa apiculata, columna staminifera ad 1.5 mm. alta, antherae 5 connectiva (0.4 mm.) antherae superantia, flores pistilliferi circa 7 mm. longi circa 1.2 mm. lati in pedicellis robustis hispidis ad 3–3.5 mm. longis fixi, sepala ad 1 mm. longa 0.75 mm. lata ovato-triangulata acuta plus minusve ad basem connata extra setulosa ea in serie interiori interdum paulo reducta, ovarium ad 0.75–1 mm. longum subglobosum 4–5 loculare hispidulum tubo styli 5–6 mm. longo coronatum, tubus styli in base hispidus ad 0.66–0.8 partem, stylus ramis 4–5 emarginatis instructus, fructus 7 mm. longus ad 10 mm. diametro depresso-globosus 8–10-sulcatus, semina ad 4.5–5 mm. longa ad 3–3.5 mm. lata in dorso rotundata angularia rubra nitida plerumque in loculo singulo solitaria.



FIGURE 11.—*Glochidion temehaniense* (type). Photograph of type sheet.

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A shrub 1 m. high; branches patent, glabrescent; branchlets angular, setulose with brownish hairs; petioles 3-4 mm. long, setulose; leaf blades 4-9 cm. long, 2-4 cm. wide, lanceolate inequilateral, somewhat falcate, with one side rounded, the other acute at the base, acuminate, glabrous, with 12-16 secondary nerves on each side of the midrib; leaves at the base of the branches with ovate-elliptical or ovate-oblong blades, nearly equilateral, rounded or obtuse at the base on each side; stipules 1.5-2.5 mm. long, 1.5-2 mm. wide, ovate-triangular, acuminate, glabrous or sparsely setulose, persistent; inflorescence fasciculate, with a short peduncle; flowers monoecious, yellowish, 2-3 in each bracteate fascicle; staminate flowers 2.5 mm. wide, crateriform, borne on slender pedicels, up to 7 mm. long; pedicels gradually thickened upward; sepals 2 mm. long, 1.25 mm. wide, somewhat united below, glabrous, those of the outer series elliptic-ovate, rounded at the apex, those of the inner series ovate-oblong, obtuse, apiculate;

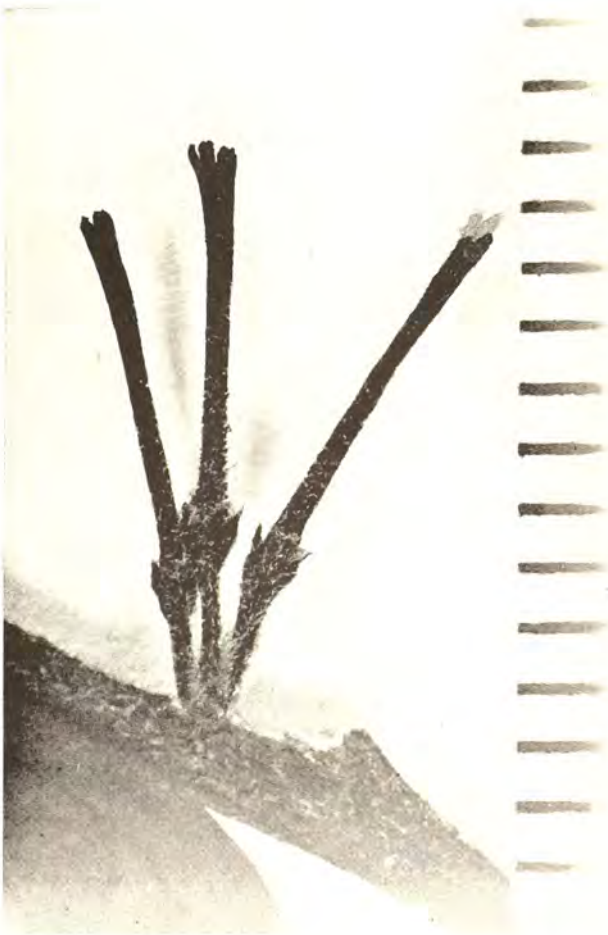


FIGURE 12.—*Glochidion temehanicense* (type). Pistillate flowers.

staminal column 1.5 mm. long; anthers 5; connectives surpassing the anthers 0.4 mm.; pistillate flowers 7 mm. long, 1.4 mm. wide, borne on stout, hispidulous pedicels 3–3.5 mm. long; sepals up to 1 mm. long, 0.25 mm. wide, ovate-triangular, acute, more or less united below, setulose exteriorly, the inner sometimes somewhat smaller; ovary 0.75–1 mm. long, subglobose, 4–5-celled; hispidulous, crowned by the 5–6 mm. long style column; style column hispidulous in the basal 0.66–0.8 part; style with 4–5 emarginate style branches; fruit 7 mm. long, 10 mm. in diameter, depressed globose, 8–10-sulcate; seeds 4.5–5 mm. long, 3–3.5 mm. wide, rounded on the back, angular, usually solitary in each cell, reddish, glossy.

Raiatea: high moor, Temehani Plateau, altitude 600 meters, October 5, 1934, *H. St. John 17279* (type).

*Glochidion temehaniense* differs from *Glochidion tahitense* H. Baillon ex Müller in having longer stipules and the pistillate flowers with longer pedicels, smaller calyx lobes, and much longer, slender style columns.

**Macaranga venosa**, species nova (Figs. 13 and 14).

Arbor ad 5–7 m. alta, truncus ad 5–10 cm. diametro fuscus, rami glabrescentes griseo-fusci, ramuli hispiduli pilis flavescensibus simplicissimis et stellatis instructi, petioli ad 4–12 cm. longi graciles hispiduli, laminae ad 8–20 cm. longae ad 6–13 cm. latae orbiculato-ovatae abrupte acuminatae peltatae ad basim rotundatae vel truncatae in margine undulatae glabrae in superficie inferiore subtiliter glanduloso-punctatae nervis secundariis 16–28 ascendentibus instructae, acumen ad 1–3 cm. longum, stipulae ad 18–20 mm. longae ovato-lanceolatae longae-acuminatae fuscae caducae, folia ramulorum efflorentorum petiolis ad 8–15 cm. longis et laminibus ad 16–25 cm. longis ad 12–18 cm. latis stipulisque ad 4 cm. longis instructa, inflorescentiae staminiferae ad 8–9 cm. longae paniculatae multi-florae prope basim distanter triramosae, bractee ad 1.75 mm. longae ovato-cordatae apiculatae, ramuli floriferi in axillis bractearum ovato-lanceolarum acutarum 3–3.5 mm. longarum, flores in capitula densa aggregati, calyx ad 1.25–1.4 mm. longus urceolatus 3–5-lobatus glaber flavus, lobi ad 0.6–0.75 mm. lati ovato-elliptici vel obovati obtusi acuti vel breviter acuminati, stamina 4–11, filamenta ad 1–1.5 mm. longa, antherae ad 0.33 mm. longae ad 0.4 mm. latae 4-loculares, inflorescentia pistillifera 8–11 florifera, rachis hispidulus, bractee ad 2–4 mm. longae et eis inflorescentiae staminiferae similes, calyx ad 3–4 mm. longus ad 2.5 mm. latus ovoideus supra angustatus bifidus demum valvis binis divisus infra attenuatus hispidissimus supra parce pilis simplicissimis vel stellatis vestitus, ovarium ad 2–3 mm. altum obovoideum, complanatum in marginibus parce hispidulum glanduloso-granulorum biloculare, rami styli 5–6 mm. longi ligulati longi acuminati, intra ad acumen valde irregulariter et distanter papilloso erecti vel subpatentes, fructus ad 8–9 mm. longus ad 10–12 mm. latus obovoideus complanatus in pagina conspicue glanduloso-punctatus, semen ad 4–4.75 mm. longum ad 4.75–5 mm. latum paulo a latere complanatum, contra regulam rugosum, testa spumescens flava-alba et nitida.

Tree up to 7 meters high; trunk 5–10 cm. in diameter, with brown bark; branches glabrescent, grayish-brown; branchlets hispidulous with yellowish simple and stellate hairs; petioles 4–12 cm. long, slender, hispidulous; leaf blades 8–20 cm. long, 6–13 cm. wide, orbicular-ovate, peltate, rounded or truncate at the base, abruptly acuminate, undulate on the margin, glabrous, minutely glandular-punctate on the lower surface, with 16–28 ascending secondary nerves; the acumen 1–3 cm. long; stipules 18–20 mm. long, ovate-lanceolate, long acuminate, brown, caducous; leaves of vegetative shoots with petioles 8–15 cm. long; leaf blades 16–25 cm. long, 12–18 cm. wide; stipules 4 cm.





FIGURE 13.—*Macaranga venosa* (type). Photograph of type sheet, pistillate plant.



FIGURE 14.—*Macaranga venosa*. Staminate plant, St. John No. 17317.

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long; staminate inflorescences 8-9 cm. long, paniculate, many-flowered, distantly 3-branched below; bracts up to 1.75 mm. long, ovate-cordate, apiculate; branches borne in the axils of ovate-lanceolate, acute bracts 3-3.5 mm. long; flowers aggregated into dense capitula; calyx 1.25-1.4 mm. long, urceolate, 3-5-lobed, glabrous, yellowish; lobes 0.6-0.75 mm. wide, ovate-elliptical or obovate, obtuse, acute, or shortly acuminate; stamens 4-11; filaments 1-1.5 mm. long; anthers 0.33 mm. long, 0.4 mm. wide, 4-celled; pistillate inflorescence 8-11-flowered; rachis hispidulous; bracts 2-4 mm. long, similar to those of the staminate inflorescence; calyx 3-4 mm. long, 2.5 mm. wide, cupular at length splitting into two valves; ovary 2-3 mm. long, ovoid, sparsely hispidulous, 2-celled; style branches 5-6 mm. long, ligulate, long acuminate, strongly papillate within up to the acumen, erect or somewhat spreading; fruit 8-9 mm. long, 10-12 mm. wide, obovoid, compressed, conspicuously glandular punctate over the surface; seed 4-4.75 mm. long, 4.5-5 mm. wide, somewhat laterally compressed, irregularly rugose; outer seed coat spumescens, yellowish-white, glossy.

Raiatea: on ridge south end of Opoa Mountain, altitude 350 meters, March 5, 1927, *John W. Moore 662*; wooded hillside, south ridge Paaio Valley, altitude 350 meters, October 8, 1934, *II. St. John 17317*, staminate; wooded hillside, south ridge of Paaio Valley, altitude 250 meters, *II. St. John 17318*, pistillate (type).

*Macaranga venosa* differs from *Macaranga attenuata* J. W. Moore in the presence of pubescence on branchlets and petioles, from *Macaranga taitensis* J. Müller in having petioles longer than the glabrous blades, longer acuminate stipules, and longer staminate flowers.

## RHIZOPHORACEAE

### *Crossostylis raiateensis*, species nova (Figs. 15 and 16).

Arbor 1-3 m. alta, rami nodosi, ramuli hispiduli vel glabrati 4-angulis obtusis instructi, petioli 4-10 mm. longi semiteretes hispiduli vel glabrati, laminae 3-9 cm. longae, 1.5-5.5 cm. latae obovatae vel ellipticae ad basim acutae vel obtusae ad apicem rotundatae vel obtusae submarginatae obscure crenatae tenue coriaceae in superficie inferiore palidiores venulis secundariis 9-11 in utroque latere costae instructae, stipulae 7-14 mm. longae 4-5 mm. latae lanceolatae carinatae, inflorescentiae floris unicus vel cymulis 2-4-floriferis latae, pedunculi 0.5-5 mm. longi, bractee pedunculorum 1.5-2 mm. longae 2 mm. latae ovatae caducae, ramuli inflorescentiae 4-7 mm. longae ad apicem abrupte ampliati cito ad apicem anulo incrassato et in utroque latere retrocurvato instructi, bractee ramulorum caducae 1.5-2.25 mm. longae 2.25-3 mm. latae ovatae acutae, flores cernui, pedicelli 4-6 mm. longi clavati quadrangulati, calyx 4-lobatus tubo 3.25-4.25 mm. longo turbinato quadrato instructus, sepala 5-8 mm. longa 5-7 mm. lata ovato-triangularia acuta patentia viridia, petala 4.5 mm. lata naviculata alba in dorso superficie breviter pubescentes intus glabra caduca, stamina 14-18, filamenta 5 mm. longa subulata ad basim in urceolo 0.5 mm. longo connata, antherae 0.66 mm. longae 0.6 mm. latae flavae, staminodia nulla vel tabescentia et glabra, stylus 5.5-6.5 mm. longus cylindricus ad basim anguste conicus, stigma 1.25-1.5 mm. lata 4-lobata, lobi patentibus et obscure lobatis, fructus 7-8 mm. longus 8-9 mm. latus 11-15-sulcatus albus carnosus, semina 2 mm. longa late ovoidea, testa crasse foveolata rubra-fusca nitida.



FIGURE 15.—*Crossostylis raiateensis* (type). Photograph of type sheet.



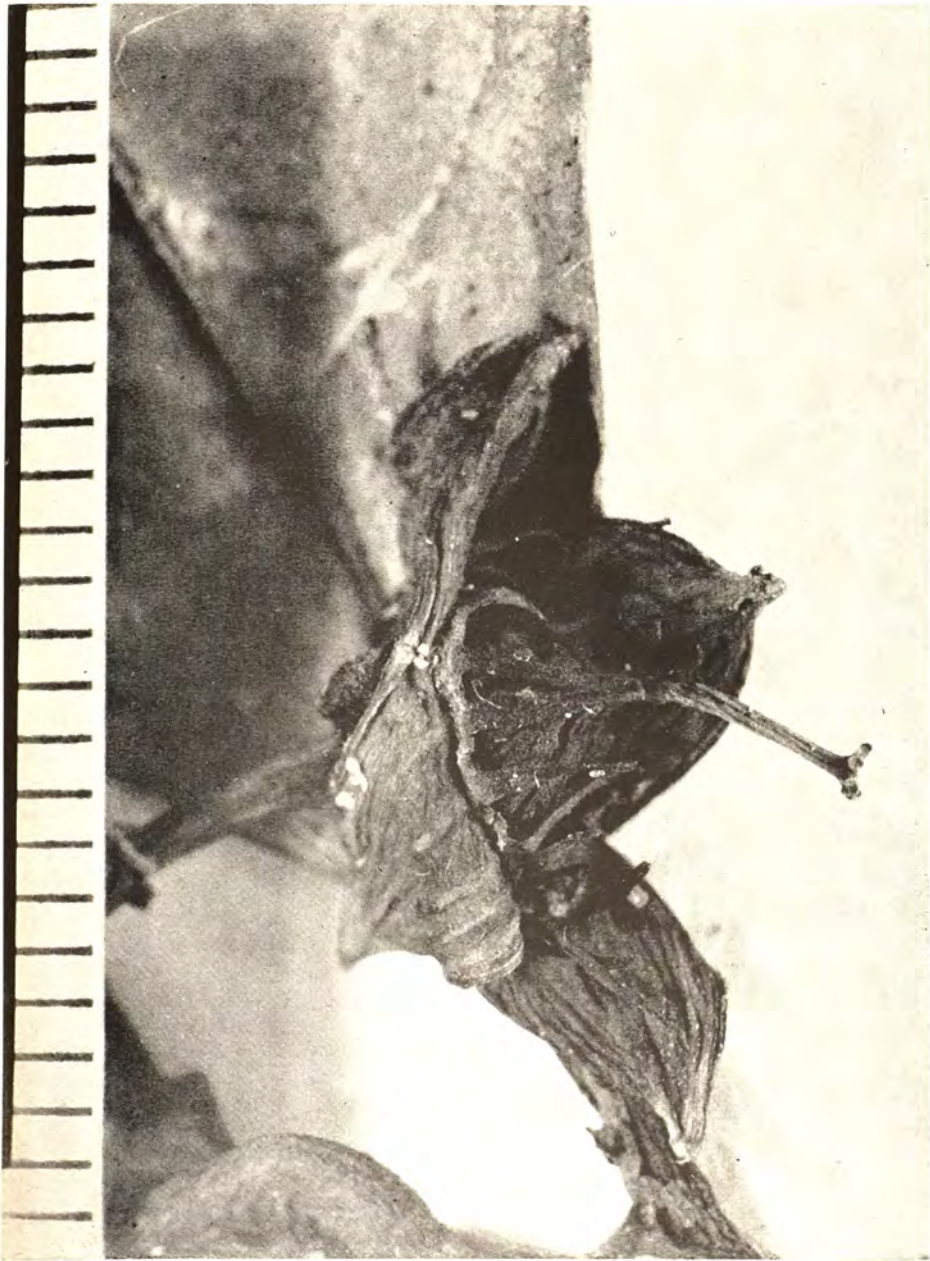


FIGURE 16.—*Crossostylis raiateensis* (type). Lateral view of flower.

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Tree 1–3 m. high; branches nodose; branchlets obtusely 4-angled, hispidulous or glabrate; petioles 4–10 mm. long, semiterete, hispidulous or glabrate; leaf blades 3–9 cm. long, 1.5–5.5 cm. wide, obovate or elliptical, acute or obtuse at the base, rounded or obtuse at the apex, slightly emarginate, obscurely crenate, thinly coriaceous, green on the upper surface and shallowly canaliculate toward the apex, paler on the lower surface, with 9–11 secondary veins on each side of the midrib; stipules 7–14 mm. long, 4–5 mm. wide, lanceolate, carinate; inflorescences with solitary flowers or 2–4-flowered cymes; peduncles 0.5–5 mm. long; bracts of the peduncles 1.5–2 mm. long, 2 mm. wide, ovate, caducous; branches 4–7 mm. long, abruptly enlarged above, soon provided at the apex with a thickened ridge bent downward on either side; bracts of the branches 1.5–2.25 mm. long, 2.25–3 mm. wide, ovate, acute, caducous; flowers cernuous; pedicels 4–6 mm. long, gradually thickened upward, 4-angled; calyx 4-lobed; calyx tube 3.25–4.25 mm. long, turbinate, 4-angled; sepals 5–8 mm. long, 5–7 mm. wide, ovate-triangular, acute, patent, green; petals 4.5 mm. wide, naviculate, white, shortly pubescent dorsally, glabrous on the inner face, caducous; stamens 14–18; filaments 5 mm. long, subulate, connate at the base into an urceolate cup 0.5 mm. long; anthers 0.66 mm. long, 0.6 mm. wide, yellow; staminodia absent or if present minute and glabrous; style 5.5–6.5 mm. long, cylindrical, with a narrow conical base; stigma 1.25–1.5 mm. wide, 4-lobed; the lobes patent, again shallowly lobed; fruit 7–8 mm. long, 8–9 mm. wide, 11–15-sulcate, white, fleshy; seeds 2 mm. long, broadly ovoid; testa coarsely foveolate, reddish brown, glossy.

Raiatea: in wet clay soil, Mt. Temehani, altitude 460 meters, January 1, 1927, *John W. Moore 478*; ridge scrub, Temehani, altitude 502 meters, January 29, 1931, *M. L. Grant 5204*; thicket by stream, Temehani Plateau, altitude 500 meters, October 5, 1934, *H. St. John 17249* (type).

*Crossostylis raiateensis* differs from *Crossostylis biflora* J. R. and G. Forster in having a style with a narrow conical base and staminodia minute and glabrous or absent.

## MYRTACEAE

***Metrosideros collina* (Forster) A. Gray var. *fruticosa*, varietas nova (Figs. 17 and 18).**

Frutex 1.5 m. altus multi-ramosus, truncus ad 20 cm. crassus cortice argenteo-griseo et squamoso, rami teretes, ramuli subcano-pubescentes immaturitate glabrescentes, petioli 3–8 mm. longi, laminae 3–6.5 cm. longae 10–29 mm. latae lanceolatae ellipticae vel tenuiter obovatae ad basim cuneatae vel rotundatae acutae vel breviter acuminatae integerrimae coriaceae immaturitate in superficie inferiore et superiore parce pubescentes glabrescentes in superficie superiore virides et nitidae, inflorescentiae cymosae terminales axillaresque, axes immaturitate parce cano-pubescentes glabrescentes maturitate etiam pedicelli et tubi calycis, axes primarii 1–1.5 cm. longi singuli aut gemini, axes secundarii 3–10 mm. longi tenues, pedicelli 1–2 mm. longi in fructu ad 2–3 mm. longi accrescentes, bractee caducae, tubus calycis 2–2.5 mm. longus turbinate in fructu ad 2.75–3 mm. longus accrescens, sepala 1 mm. longa deltoidea ciliolata in fructu inflexa supra in superficie exteriori mox glabrescentia ad apicem rotundata, petala 3.25–3.5 mm. longa 3–3.4 mm. lata suborbiculata concava rubra, filamenta 10–16 mm. longa rubra, antherae 0.5–0.6 mm. longae 0.4 mm. latae, styli 10–17 mm. longi, stigmata 0.4–0.5 mm. lata, supera pars libera capsulae 2.5–3 mm. lata,





FIGURE 17.—*Metrosideros collina* (Forster) A. Gray var. *fruticosa* (type). Photograph of type sheet.

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valvae capsularum longiores quam tubus calycis, semina 1.5–2.25 mm. longa anguste fusiformia arcuata fusca nitida.

Much branched shrub 1.5 m. high; trunk up to 20 cm. in diameter, with silvery gray scaly bark; branches terete; branchlets sparsely canus-pubescent, early glabrescent; petioles 3–8 mm. long; leaf blades 3–6.5 cm. long, 10–29 mm. wide, lanceolate, elliptical, or narrowly obovate, cuneate or rounded at the base, acute or shortly acuminate, entire, coriaceous, sparsely pubescent on both surfaces when young, glabrescent, green and glossy on the upper surface; inflorescences cymose, terminal and axillary; axes when young sparsely canus-pubescent, glabrescent in age as are also the pedicels and calyx tubes; primary axes 1–1.5 cm. long, solitary or geminate; secondary axes 3–10 mm. long, slender; pedicels 1–2 mm. long, accrescent in fruit to a length of 2–3 mm.; bracts caducous; calyx tube 2–2.5 mm. long, turbinate, accrescent in fruit to a length of 2.75–3 mm.; sepals 1 mm. long, deltoid, soon glabrescent above exteriorly, ciliolate, inflexed in fruit; the tips rounded; petals 3.25–3.5 mm. long, 3–3.4 mm. wide, nearly orbicular, concave, red; filaments 10–16 mm. long, red; anthers 0.5–0.6 mm. long, 0.4 mm. wide; styles 10–17 mm. long; stigmas 0.4–0.5 mm. wide; upper free portion of the capsule 2.5–3 mm. wide; the valves longer than the calyx tube; seeds 1.5–2.25 mm. long, narrowly fusiform, arcuate, brown, glossy.

Raiatea: in red clay soil, north facing slope, Uturoa, altitude 30 meters, September 5, 1926, *John W. Moore 5*; ridge scrub, Temehani, altitude 418 meters, January 29, 1931, *M. L. Grant 5196*; ridge scrub, Temehani, altitude 549 meters, January 29, 1931, *M. L. Grant 5212*; high moor, Temehani Plateau.



FIGURE 18.—*Metrosideros collina* (Forster) A. Gray var. *fruticosa* (type). Flowers.

altitude 400 meters, October 5, 1934, *H. St. John 17267* (type); high moor, Temehani Plateau, altitude 600 meters, October 5, 1934, *H. St. John 17274*.

This shrub is similar to the species but all parts are glabrescent, the leaves are lanceolate, elliptical, or narrowly obovate, the stamens have shorter filaments, and the free parts of the capsules are narrower.

***Metrosideros collina* (Forster) A. Gray var. *temehaniensis*, varietas nova** (Figs. 19 and 20).

Arbor vel frutex 0.25–2 m. altus multi-ramosus, truncus ad 20 cm. crassus, cortex griseus squamosus, rami teretes, glabrescentes, ramuli sericeo-tomentosi, folia decussata, petioli 0.5–3 mm. longi, laminae immaturitate in utraque superficie sericeo-tomentosae maturitate coriaceae glabrescentes ad 1.5–5 cm. longae 1–3.5 cm. latae ovatae-oblongae vel ellipticae ad basim cordatae aut truncatae ad apicem obtusae vel acutae in superficie superiore virides et subnitidae in superficie inferiore pallidiores, inflorescentiae cymosae terminales et axillares, axes et pedicelli et tubi calycis immaturitate sericeo-tomentosi, axes primarii 1–3 cm. longi singuli gemini vel ternati, axes secundarii 4–12 mm. longi robusti, pedicelli 1.5–2 mm. longi in fructu ad 2.5–5 mm. longi accrescentes, bracteae in dorso sericeo-tomentosae intus glabrae, bracteae imae axillarum primiarum 2–4 mm. longae late ovatae vel suborbiculatae obtusae, bracteae floriferae 3–4 mm. longae 1.5–2 mm. latae oblongae acutae, tubus calycis ad 3 mm. longus turbinatus ad 4–5 mm. in fructu accrescens, sepala 1.5–2.25 mm. longa deltoidea vel late ovata ad apicem obtusa vel rotundata supra mox glabrescentes in superficie exteriori ciliolata tandem inflexa, petala 4–4.5 mm. longa 3.5–4 mm. lata elliptica vel obovata rubra-aurantiaca, filamenta 10–22 mm. longa rubra, antherae 0.66–0.75 mm. longae 0.4–0.5 mm. latae, styli 1.5–2.5 cm. longi, stigmata 0.6–0.75 mm. lata, pars libera supera capsulae 3–4 mm. lata, valvae capsulae et tubus calycis subaequantes, semina 1.5–2.25 mm. longa anguste fusiformia arcuata fusca nitida.

Much branched shrub or tree 0.25–2 m. high; trunk up to 20 cm. in diameter, with grayish, scaly bark; branches terete, glabrescent; branchlets silky tomentose as are also both surfaces of the young leaves; leaves decussate; petioles 0.5–3 mm. long; leaf blades 1.5–5 cm. long, 1–3.5 cm. wide, ovate, ovate-oblong, elliptical, cordate or truncate at the base, obtuse or acute at the apex, coriaceous, glabrescent, green and somewhat glossy on the upper surface, paler on the lower surface; inflorescences cymose, terminal and axillary; axes when young silky tomentose as are also the pedicels and calyx tubes; primary axes 1–3 cm. long, solitary, geminate, or borne in threes; secondary axes 4–12 mm. long, stout; pedicels 1.5–2 mm. long, accrescent in fruit to a length of 2.5–5 mm.; bracts dorsally silky tomentose, glabrous on the inner face; bracts at the base of the primary axes 2–4 mm. long, broadly ovate or nearly orbicular, obtuse; bracts subtending the flowers 3–4 mm. long, 1.5–2 mm. wide, oblong, acute; calyx tube 3 mm. long, turbinate, accrescent in fruit to a length of 4–5 mm.; sepals 1.5–2.25 mm. long, deltoid or broadly ovate, obtuse or rounded at the apex, soon glabrescent above exteriorly, ciliolate, inflexed in fruit; petals 4–4.25 mm. long, 3.5–4 mm. wide, elliptical or obovate, reddish orange; filaments 10–22 mm. long, red; anthers 0.66–0.75 mm. long, 0.4–0.5 mm. wide; styles 1.5–2.25 cm. long; stigmas 0.6–0.75 mm. wide; upper free portion of the capsule 3–4 mm. wide; the valves attaining the height of the calyx tube; seeds 1.5–2.25 mm. long, narrowly fusiform, arcuate, brown, glossy.

Raiatea: on sharp ridges, Temehani Plain, altitude 400 meters, October 7, 1926, *John W. Moore 174*; Temehani, altitude 436 meters, January 29, 1931,

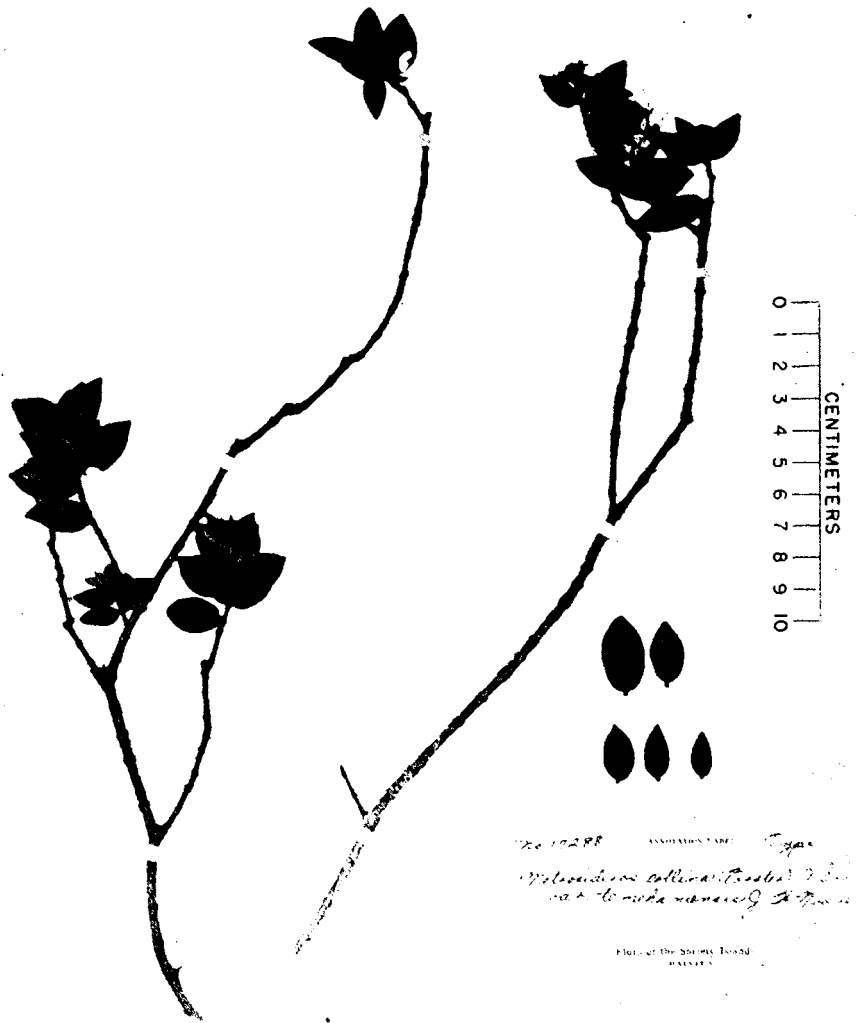


FIGURE 19.—*Metrosideros collina* (Forster) A. Gray var. *temehaniensis* (type). Photograph of type sheet.



FIGURE 20.—*Metrosideros collina* (Forster) A. Gray var. *temehaniensis* (type).  
Flowers.

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*M. L. Grant 5201*; ridge scrub, Temehani, altitude 582 meters, January 29, 1931, *M. L. Grant 5215*; high moor, Temehani Plateau, altitude 700 meters, October 5, 1934, *H. St. John 17288* (type).

This tree or shrub is similar to the species but the leaves are subcordate or truncate at the base, narrower, and the petioles are shorter.

## ARALIACEAE

### *Meryta raiateensis*, species nova (Fig. 21).

Arbor vel frutex 2.5–6 m. altus, caules ad 7 cm. crassi glabri fusci, petioli 3–7 cm. longi, laminae 12–32 cm. longae 5–12 cm. latae lanceolatae ad basim acutae vel cuneatae acutae vel abrupte breviter acuminatae acumine 5–10 mm. longo integerrimae vel ad apicem subundulatae coriaceae in superficie superiore nitidae venulis secundariis 18–22 in utroque latere costae instructae, inflorescentiae terminales, flores dioici, flores pistilliferi ad medium inflorescentiarum 7–11 fasciculi singulo flore in axilla carnosae obtusae bractee lato, petala 1.5 mm. longa 5 deltoidea, rudimenta staminum minuta vel filamentis ad 2 mm. longis filiformibus instructa, ovarium 4–6-loculare, 4–6 styli (1.5 mm. longi) ad basim 0.25–0.5 mm. connati crassi acuti, fructus 1.5–2 cm. longus obovoideus angularis ad medium et supra cum membris proximis fasciculi connatus stylis persistentibus coronatus.

A tree or shrub 2.5–6 m. high; stems up to 7 cm. in diameter, glabrous, brown; petioles 3–7 cm. long; leaf blades 12–32 cm. long, 5–12 cm. wide, lanceolate, acute or cuneate at the base, acute or abruptly short acuminate, entire or somewhat undulate toward the apex, coriaceous; glossy on the upper surface, with 18–22 secondary nerves on each side of the midrib; the acumen 5–10 mm. long; inflorescences terminal; flowers dioecious; pistillate flowers toward the middle of the inflorescences borne in clusters of 7–11 with each flower borne in the axil of a fleshy, obtuse bract; petals 1.5 mm. long, 5, deltoid; rudimentary stamens minute or with filiform filaments up to 2 mm. long; ovary 4–6-celled; styles 1.5 mm. long, united in the basal 0.25–0.5 mm., stout, acute, 4–6; fruit 1.5–2 cm. long, obovoid, angular, connate to above the middle with adjacent members of the cluster, capped by the persistent styles.

Raiatea: on ridge, south end of Opoa Mountain, altitude 200 meters, March 5, 1927, *John W. Moore 658*; open woods on ridge, north ridge, Paoio Valley, altitude 480 meters, October 8, 1934, *H. St. John and D. Anderson 17311* (type).

*Meryta raiateensis* differs from *Meryta macrophylla* Seeman in having smaller leaves, shorter petioles and shorter fruit clusters.

## MYRSINACEAE

### *Rapanea raiateensis*, species nova (Figs. 22 and 23).

Arbor parva 2–8 m. alta, truncus ad 10 cm. crassus, rami graciles glabri fusci, ramuli graciles glabri, laminae foliorum 4.5–15 cm. longae 2.5–6.5 cm. latae obovato-oblongae vel ellipticae ad basim cuneatae ad apicem obtusae vel abrupte attenuatae in apiculum emarginatum integerrimae chartaceae glabrae glanduloso-punctatae linea-





FIGURE 21.—*Meryta raiateensis* (type). Photograph of type sheet.



FIGURE 22.—*Rapanca raiatensis* (type). Photograph of type sheet.



FIGURE 23.—*Rapanca raiatecensis* (type). Fruits.

taeque in superficie superiore atro-virides et nitidae venulis secundariis 21–26 in utroque latere costae instructae, petioli 3–13 mm. longi parce pubescentes, flores in 4–10 fasciculis bracteatis lati in ramulis verruciformibus sub foliis vel in axillis foliorum imorum, bracteae 1.25–1.5 mm. longae 0.75–1 mm. latae ovatae-triangulares, pedicelli 1.5–2 mm. longi, calyx 1 mm. longus crateriformis lobis 0.75 mm. longis ovatis-triangularibus vel deltoideis in marginibus glandulosis instructus, corolla 2.5–2.75 mm. longa 4-lobata, petala 1.5–1.75 mm. longa 1–1.25 mm. lata ovata-oblonga acuta fortiter reflexa in margine glandulosa, filamenta 0.25 mm. longa basi petalorum adnata, antherae 1.25 mm. longae fortiter arcuatae sagittatae ad apicem glandulosae, ovarium subglobosum, stylus 0.75 mm. longus scalpriformis, drupae 4.5 mm. longae 4 mm. crassae late obovoideae ad apicem late conicae punctis glandulosis atque lineis ad 0.5 mm. longis signatae, pyrena 4.5 mm. longa striis circa 25 longitudinalibus instructa.

A small tree 2–8 meters high, trunk up to 10 cm. in diameter; branches slender, glabrous, brown; branchlets slender, glabrous; leaf blades 4.5–15 cm. long, 2.5–6.5 cm. wide, obovate-oblong or elliptical, cuneate at the base, obtuse or abruptly narrowed into the emarginate tip, entire, chartaceous, glabrous, glandular punctate and lineate, dark green and glossy on the upper surface, with 21–26 secondary nerves on each side of the midrib; petioles 3–13 mm. long, sparsely puberulent; flowers in bracteate fascicles of 4–10 on verruciform branchlets below the leaves or in the axils of the lowermost leaves. bracts 1.25–1.5 mm. long, 0.75–1 mm. wide, ovate-triangular; pedicels 1.5–2 mm. long, calyx 1 mm. long, crateriform; lobes 0.75 mm. long, ovate-triangular or deltoid, glandular margined; corolla 2.5–2.75 mm. long, 4-lobed; petals 1.5–1.75 mm. long, 1–1.25 mm. wide, ovate-oblong, acute, strongly reflexed, glandular margined; filaments 0.25 mm. long, adnate with the base of the petals; anthers 1.25 mm. long, strongly curved, sagittate, glandular at the top; ovary subglobose; style 0.75 mm. long, scalpriform; drupes 4.5 mm. long, 4 mm. in diameter, broadly obovoid, with a broad, conical apex, marked with glandular punctae and lines up to 0.5 mm. long; stone 4.5 mm. long, with about 25 longitudinal ribs.

Raiatea: on high ridge between Vairohi and Avera Rahi Valleys, altitude 300 meters, December 3, 1926, *John W. Moore 397*; on ridge, Faaroa Valley, altitude 150 meters, January 7, 1927, *John W. Moore 500*; woods along stream, Mt. Temehani, altitude 450 meters, October 5, 1934, *H. St. John 17263* (type).

*Rapanca raiatensis* differs from *Rapanca ovalis* (Nadeaud) Mez in having more numerous flowers in the clusters, shorter pedicels, and smaller fruits.

## RUBIACEAE

### *Psychotria Cookei*, species nova (Fig. 24).

Frutex 3 m. altus, caules 7 cm. crassi, rami subfusci, ramuli robusti subvirides ad basim circulo pilorum ferruginosorum instructi, petioli 5–12 mm. longi 1.5–4 mm. lati robusti glabri, laminae 3.5–18 cm. longae 2.7 cm. latae ellipticae-oblongae vel obovatae-oblongae ad basim rotundatae vel obtusae acutae vel acuminatae glabrae coriaceae venulis secundariis 8–20 in utroque latere costae et pilis fuscis costae contiguas instructae, acumen 4–15 mm. longum, stipulae 4.5 mm. longae in marginibus dentatae deciduae, inflorescentiae ad 3 cm. longae 6 cm. latae terminales corymbiformes, axes ad basim pilis ferrugineis instructi, alabastris 4 mm. longi, pedicelli 1 mm. longi, calyx 3 mm. longus campanulatus subvillosus prope truncatus in marginibus dentibus quinque minu-





No. 7248 *Psychotria Cookei* D. C. Moore

Specimen of the Society Islands  
*Psychotria Cookei* D. C. Moore  
 in the collection of the  
 University of California  
 Herbarium

FIGURE 24.—*Psychotria Cookei* (type). Photograph of type sheet.

tissimis apiculatisque instructus, limbus calycis 1.5 mm. longus, corolla 5.75–6 mm. longa alba 4–5-partita, tubus corollae 2–2.25 mm. longus intus supra pubescens lobi 3.5–3.75 mm. longi 1.5–1.75 mm. lati ovati-elliptici acuti glabri, pars libera filamentorum 0.5 mm. longa, antherae 1.25 mm. longae ovatae-oblongae obtusae, ovarium 0.75 mm. longum, stylus 3 mm. longus hispidulus, stigma bilobatum, lobi 0.5–0.75 mm. longi, fructus ignotus.

A shrub 3 m. high; stems 7 cm. in diameter, with brownish bark; branchlets stout, greenish, with a ring of ferrugineous hairs at the base; petioles 5–12 mm. long, 1.5–4 mm. wide, stout, glabrous; leaf blades 3.5–18 cm. long, 2–7 cm. wide, elliptic-oblong or obovate-oblong, rounded or obtuse at the base, acute or acuminate, glabrous, coriaceous, with 8–20 secondary nerves on each side of the midrib, provided on each side of the midrib with a line of brownish hairs; the acumen 4–15 mm. long; stipules 4.5 mm. long, with a dentate margin, deciduous; inflorescences up to 3 cm. long, 6 cm. wide, terminal, corymbiform; axes with ferrugineous hairs at the base; the flower buds 4 mm. long; pedicels 1 mm. long; calyx 3 mm. long, campanulate, sparsely villous, nearly truncate and provided on the margin with 5 minute, apiculate teeth; limb of the calyx 1.5 mm. long; corolla 5.75–6 mm. long, white, 4–5-parted; corolla tube 2–2.25 mm. long, hairy above internally; lobes 3.5–3.75 mm. long, 1.5–1.75 mm. wide, ovate-elliptical, acute, glabrous; free portion of the filaments 0.5 mm. long; anthers 1.25 mm. long, ovate-oblong, obtuse; ovary 0.75 mm. long; style 3 mm. long, hispidulous; stigma 2-lobed; lobes 0.5–0.75 mm. long; fruit not known.

Raiatea: valley east of Mt. Orotaio, altitude 150 meters, October 5, 1934, *H. St. John and C. M. Cooke, Jr.*, 17238 (type).

*Psychotria Cooki* differs from *Psychotria tahitensis* Drake in having the leaf blades rounded or obtuse at the base and a shorter corolla tube.

