STUDIES OF PACIFIC ISLAND PLANTS, VIII
THE FIJIAN SPECIES OF LAURACEAE

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In attempting to identify a series of Lauraceae collected by me in Fiji in 1947,[1] I soon became aware that several novelties were represented. It proved difficult to ally these properly without reviewing all the species known from Fiji and considering those from the adjacent archipelagos. The present treatment offers keys to the genera and species of the family now known to occur in Fiji, with citations of literature and available herbarium specimens. For the purposes of this study all the Fijian Lauraceae of the following herbaria were assembled: Arnold Arboretum (A); Bernice P. Bishop Museum (Bish); Gray Herbarium (GH); New York Botanical Garden (NY); and U. S. National Herbarium (US). A few critical types and isotypes were kindly loaned by the authorities of the Royal Botanic Gardens, Kew (K). I am greatly indebted to the curators and directors of the named institutions for their coöperation.

Species of Lauraceae occur with some frequency in the Fijian rain-forests; usually they are small or medium-sized trees, but a few species are among the larger forest trees. Their use as a source of timber is probably fairly limited, but certain species have fragrant bark which is used by the Fijians to perfume coconut and other oils. Thirty-six species of Fijian Lauraceae are here recognized, of which I describe 14 as new; in addition three new combinations are proposed (two of them for Samoan plants). All the Fijian species appear to be endemic with the exception of the widespread parasite, *Cassytha filiformis,* and *Endiandra elaeocarpa,* which is also noted from Samoa. As has been observed in other families of predominantly rain-forest trees in Fiji, specific endemism approaches 100 per cent, the relationships of species being either local or with plants from the New Hebrides or Samoa.

KEY TO THE GENERA OCCURRING IN FIJI

Foliose trees or shrubs, not parasitic.

Inflorescence paniculate, the flower-clusters not enclosed by an involucre of imbricate bracts; flowers hermaphrodite (in our species).

Anthers 4-celled; stamens 9 in our species, the 6 outer ones with introrse anthers and eglandular filaments, the 3 inner ones with extrorse anthers and filaments biglandular near middle; staminodes 3, stipitate; fruit a berry borne on a small cupule.....1. *Cinnamomum.*

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Anthers 2-celled.

Fertile stamens 9, the 6 outer ones with introrse anthers and eglandular filaments, the 3 inner ones with extrorse anthers and filaments with basal short-stalked glands; staminodes 3, subsessile; fruit subglobose or ellipsoid, completely surrounded by the perianth-tube.....2. *Cryptocarya.*

Fertile stamens 3, with extrorse or rarely lateral anthers, the filaments biglandular toward base with sessile glands; staminodes 3, sessile, subglobose, minute; fruit free, elongate and subcylindric in our species.....3. *Endiandra.*

Inflorescence umbellate-racemose, the umbels (sometimes solitary in leaf-axils) enclosed by an involucre of imbricate bracts; flowers unisexual; anthers 4-celled; fruit a berry borne on a small cupule.....4. *Litsea.*

Parasitic herbs, the leaves reduced to scales.....5. *Cassytha.*

1. CINNAMOMUM Burm.

Although it is obvious that several species of *Cinnamomum* are present in Fiji, it is difficult to differentiate them, primarily because fertile material seems to be particularly scarce in this genus. Two of the entities here discussed, *C. pedatinervium* and *C. camphoratum* var. *"fitiana,"* were described by Meissner on the basis of sterile material. Curiously, neither of these has since been collected in flowering or fruiting condition, although flowers are known for the other species here recognized. My key is based largely on leaf-characters such as shape, size, and venation; such characters, although often difficult, are usable, but of course the entities should be substantiated by floral differences. The six species which I recognize from Fiji all appear to be endemic; one of them is described as new.

The local name *mathou* is apparently used indiscriminately for the genus in Fiji, and several of the species provide a fragrant bark which is scraped and used to perfume coconut oil.

KEY TO THE SPECIES

Leaf-blades ovate to elliptic or lanceolate, comparatively large, usually more than 9 cm. long and 4.5 cm. broad (or lanceolate if narrower), conspicuously 3(or 5-)-nerved, the secondary basal nerves nearly as prominent as the costa.

Principal nerves diverging from the broadened distal portion of the petiole, the secondary basal nerves usually following the blade-margin for 5–10 mm. and then dividing; leaf-blades usually rounded at base and suddenly decurrent on the petiole, obtuse at apex; petiole 2–2.5 cm. long.....1. *C. pedatinervium.*

Principal nerves slightly concurrent with the costa proximally, or the secondary basal nerves, if diverging from apex of petiole, not following the blade-margin nor emitting important branches; leaf-blades attenuate to obtuse (rarely rounded) at base.

Leaf-blades oblong- or ovate-elliptic, averaging 2–2.5 times as long as broad, the basal secondaries rarely concurrent with the costa for a short distance.

Branchlets of inflorescence copiously tomentellous with pale hairs 0.5–0.7 mm. long; pedicel 2–3 mm. long at anthesis, stout; perianth-segments 2–2.6 mm. long, the 3 inner ones obviously the narrower; stamens 1.8–2 mm. long, the filaments spreading-pilose, the anthers very densely yellow-glandular; staminodes about 1.5 mm. long; leaf-blades acuminate or at least conspicuously cuspidate at apex..... .....2. *C. pallidum.*

Branchlets of inflorescence essentially glabrous at anthesis, the sericeous indument, if present (as on pedicels), of hairs 0.1–0.2 mm. long; pedicel usually 5–7 mm. long at anthesis, comparatively slender; perianth-segments subequal, 3–4 mm. long; stamens 2.2–3 mm. long, the filaments minutely sericeous-hispidulous, the anthers not conspicuously glandular; staminodes 1.8–2.3 mm. long; leaf-blades obtuse or rounded at apex.....3. *C. leptopus.*

Leaf-blades lanceolate, averaging 3 times as long as broad, attenuate at base, gradually long-acuminate at apex, 3-nerved, the basal secondaries usually concurrent with the costa for 5–15 mm., the lower surface of blades often faintly glaucous and sometimes with a trace of indument (of long, pale, tangled hairs) along the nerves.....4. *C. fitianum.*

Leaf-blades oblong-ovate, comparatively small, 4–8.5 cm. long, 2–4.5 cm. broad, rounded or broadly obtuse at base.

Secondary basal nerves of the leaf-blades inconspicuous, scarcely reaching the middle of the leaf; petiole 3–10 mm. long; bracts and bracteoles of inflorescence persistent, 3–5 mm. long; inflorescence-branches and perianth sericeous.....5. *C. rigidum.*

Secondary basal nerves of the leaf-blades obvious, nearly as prominent as the costa; petiole 13–18 mm. long; bracts and bracteoles of the inflorescence caducous; inflorescence-branches and perianth densely fulvo-lanuginose.....6. *C. Degeneri.*

1. **Cinnamomum pedatinervium** Meissn. in DC. Prodr. 15(1): 15. 1864; Seem. Fl. Vit. 201. *pl. 48* p. p. 1867; Drake, Ill. Fl. Ins. Mar. Pacif. 278. 1892.

DISTRIBUTION: Known with certainty only from the type collection, probably from Kandavu.

(?) KANDAVU: Mt. Mbuke Levu, *Seemann 376* (GH, K in part, NY TYPE).

The type collection is admittedly from more than one plant, Seemann (Fl. Vit. 202) citing it from "Buke Levu" [Mt. Mbuke Levu, on Kandavu] and Voma Peak [near Namosi, Viti Levu]. All of the material of this number is sterile. Part of it is characterized by having comparatively large leaf-blades on long (2–2.5 cm.), distally flattened petioles, the principal veins diverging from the petiole, the lateral basal nerves often widely spreading before again dividing at or near the leaf-margin. The second part of the type number has smaller leaf-blades on short (less than 1 cm. long) petioles, the principal nerves being sometimes concurrent for a short distance or, if separating from the base, not widely divergent.

Meissner's original description is apparently based on the first of these concepts, and the specimen from his herbarium, now deposited at the New York Botanical Garden, is not a mixture; clearly, therefore, the first plant discussed above may be taken as *C. pedatinervium*. This is the plant illustrated at the left of Seemann's *plate 48*. The Kew sheet of *Seemann 376* is a mixture, part of it representing the second plant discussed above and illustrated in the upper right portion of Seemann's *plate 48*, as *fig. 1*.

The short-petioled small-leaved specimen which is the atypical portion of *Seemann 376* may be confidently identified as *C. rigidum* Gillespie. There remains the problem of deciding which portion of *Seemann 376* was obtained on Kandavu and which on Mt. Voma; this cannot be positively stated. However, since *C. rigidum* is known to occur on Mt. Naitarandamu, near Namosi, it is probable that the atypical portion of Seemann's number was the part he obtained on Mt. Vomá. Furthermore, it is significant that the typical material of *C. pedatinervium* cannot, in my opinion, be exactly matched, and that no other specimens of *Cinnamomum* from Kandavu are at hand. It is probable, therefore, that the type locality of the species is Mt. Mbuke Levu on Kandavu; further collections of *Cinnamomum* from this mountain will doubtless clarify the situation.

Seemann cites a specimen of *C. pedatinervium* from the island of Ngau, collected by Berwick; not having seen this specimen, I cannot verify its identity, but it just as likely represents another species of the genus.

As represented by the type material, *C. pedatinervium* differs from the other large-leaved species of the genus in Fiji in the divergence and lateral branching of the basal nerves, as discussed above and as shown in Seemann's plate. Since this material is sterile, inflorescence-characters cannot be utilized, although they may well exist. Gillespie (in Bishop Mus. Bull. 91: 7. 1932), in referring his no. *2718* to *C. pedatinervium*, was aware of the difference in venation but considered it of secondary importance. On the basis of characters mentioned in my key I believe Gillespie's plant to represent a new species, described below as *C. leptopus*.

2. **Cinnamomum pallidum** Gillespie in Bishop Mus. Bull. 91: 6. *fig. 5*. 1932.

DISTRIBUTION: Endemic, known from Viti Levu and probably also occurring on both Ovalau and Vanua Levu; elevations of near sea-level to about 1000 meters have been recorded. The species is a small tree, up to 10 m. in height, occurring in forest.

VITI LEVU: Mba: Tholo-i-Nandarivatu, *Gillespie 3904* (Bish, GH); Serua: Mburetolu, on Taunovo Creek, *B. E. Parham 2857* (A); Naitasiri: Nanduna, Waindina River, *B. E. Parham 1082* (A); Rewa: Mt. Korombamba, *Gillespie 2273* (Bish, GH), *Meebold 16441* (Bish, NY). OVALAU and VANUA LEVU [Mbua: Mbua Bay]: *U. S. Expl. Exped.* (GH 3 sheets, US 40444). Fiji, without definite locality: *Horne 99* (GH TYPE), *867a* (GH).

Of the cited specimens, all are sterile except the two collected by Horne, these demonstrating the conspicuously tomentellous inflorescence which clearly differentiates the species from *C. leptopus,* described below. The sterile specimens cited are referred here because of their acuminate leaf-blades, although identification of sterile material of this and the next species must remain tentative.

3. **Cinnamomum leptopus** sp. nov.

Cinnamomum pedatinervium sensu Gillespie in Bishop Mus. Bull. **91**: 7. *fig. 6.* 1932, non Meissn.

Arbor ad 12 m. alta, ramulis subteretibus gracilibus glabris, juventute haud obscure puberulo-sericeis; petiolis rugulosis supra complanatis 10–20(–25) mm. longis glabris; laminis coriaceis in sicco viridi-olivaceis concoloribus ovato- vel elliptico-lanceolatis, 8–18 cm. longis, 4–10 cm. latis, basi rotundatis vel obtusis et in petiolum decurrentibus, apice obtusis vel rotundatis haud attenuatis, margine leviter incrassatis, utrinque glabris, 3(vel obscure 5-)-nerviis, nervis secundariis principalibus cum costa ad 1 cm. concurrentibus vel e basi orientibus curvatis fere ad apicem adscendentibus utrinque elevatis vel subtus subprominentibus, nervis tertiariis transversis numerosis et rete venularum intricato utrinque prominulis vel subplanis; inflorescentiis subterminalibus diffuse paniculatis ad 20 cm. longis, pedunculis brevibus ramulisque gracilibus sub anthesi subglabris, bracteis bracteolisque mox caducis, pedicellis gracilibus 5–7 mm. longis pilis 0.1–0.2 mm. longis arcte sericeis; perianthio sub anthesi 5–5.5 mm. longo pilis circiter 0.1 mm. longis copiose argenteo-sericeo, tubo intus glabro, segmentis 6 subaequalibus haud carnosis oblongo-lanceolatis 3–4 mm. longis circiter 1.5 mm. latis subacutis intus praesertim basim versus dense sericeis; staminibus 6 exterioribus 2.2–2.4 mm. longis, filamentis ligulatis gracilibus ubique sericeo-hispidulis, antheris oblongis 0.8–1 mm. longis introrse 4-loculatis, staminibus 3 interioribus 2.5–3 mm. longis, filamentis ad 2 mm. longis medium versus glandulas sessiles auriculatas ovoideas circiter 0.7 mm. diametro gerentibus intus glabris, antheris similibus extrorsis; staminodiis 3 clavatis circiter 2 mm. longis, stipite gracili dorso hispidulo, capitulo anguste deltoideo sagittato circiter 0.8 mm. longo; ovario ellipsoideo in stylum gracilem circiter 2 mm. longum attenuato; fructibus immaturis ellipsoideis ad 7 mm. longis, perianthii tubo glabratis, lobis subpersistentibus.

VITI LEVU: M b a : Slopes of Mt. Tomanivi [Mt. Victoria], alt. 1000 m., *Gillespie 4084* (Bish); N a m o s i : Summit of Mt. Voma, alt. 1000 m., Sept. 6, 1927, *Gillespie 2718* (Bish, GH TYPE, NY). VANUA LEVU: M a t h u a t a : Seangganga Plateau, in drainage of Korovuli River, vicinity of Natua, alt. 100–200 m., *Smith 6867* (A, US) (tree 8–12 m. high, in patches of forest in open rolling country; leaves and wood aromatic).

The type collection bears flowers and *Smith 6867* young fruits with subpersistent floral parts; *Gillespie 4084* is sterile. The new species is closely related only to *C. pallidum* and cannot, in my opinion, be referred to the immediate relationship of *C. pedatinervium.* It differs from *C.*

pallidum in the characters of inflorescence-indument, flower-size, and leaf-apices mentioned in my key.

It is possible that the Samoan specimens which Christophersen (in Bishop Mus. Bull. 128: 89. 1935) refers to *C. zeylanicum* Bl. are closely related to, or even identical with, *C. leptopus*. Christophersen notes his plant as "a rare escape from cultivation." There is no evidence that the Fijian specimens are non-indigenous, and I do not believe they can be referred to the Malaysian species.

4. **Cinnamomum fitianum** (Meissn.) comb. nov.

Cinnamomum camphoratum var. *fitiana* Meissn. in DC. Prodr. **15**(1): 11. 1864.

DISTRIBUTION: Known from Viti Levu, Vanua Levu, and Taveuni; it occurs in forest or woods at elevations up to about 900 m. In Thakaundrove I noted the species as a tree about 15 m. high, with the name of *mbatho*, a form of the more common *mathou*. For the type specimen the unusual name of *vorovoro* was noted.

VITI LEVU: Mba: Vicinity of Nandarivatu, *Gillespie 4154* (Bish, GH), *4205* (Bish). VANUA LEVU: Mbua: Mountains behind Sandalwood [Mbua] Bay, *U. S. Expl. Exped.* (GH 2 sheets); Thakaundrove: Southwestern slope of Mt. Mbatini, *Smith 614* (Bish, NY). TAVEUNI: Vicinity of Wairiki, *Gillespie 4649* (Bish, GH, NY). Fiji, without precise locality: *Milne 260* (K TYPE) ("woods above Nandi," i.e. either Nandi in the present Province of Mba, Viti Levu, or Nandi Bay in southern Mbua Province, Vanua Levu); *Horne 832* (GH).

The cited specimens, all sterile, are distinguished from other Fijian species of this relationship by the comparatively narrow and lanceolate leaf-blades, which are definitely 3-nerved and usually with obviously concurrent principal secondaries. I am unable to refer this plant to any of the other local species, and nothing indicates that it is an introduction. This is the concept which Gillespie, in herbaria, referred to *C. iners* Reinw. ex Bl., but apparently the record for Fiji has not been published. In foliage, only intangible and unsatisfactory characters distinguish the Fijian plant from *C. iners,* which is presumed (cf. Allen in Jour. Arnold Arb. 20: 61. 1939) to have a distribution of Malaysia, Ceylon, and the Malay Peninsula. I raise Meissner's epithet to specific rank in order to obtain a more convenient way of referring to the Fijian entity; if this case parallels others in the family, the collection of flowering material will indicate that our plant is distinct from any Malaysian species.

5. **Cinnamomum rigidum** Gillespie in Bishop Mus. Bull. **91**: 7. *fig. 7.* 1932.

Cinnamomum pedatinervium sensu Seem. Fl. Vit. *pl. 48, fig. 1.* 1867, non Meissn.

DISTRIBUTION: Known definitely only from the mountains of Viti Levu, at elevations up to 1200 m., where Gillespie noted it as a small tree in mossy forest; unfortunately the other available specimens lack data.

VITI LEVU: Mba: Mt. Tomanivi [Mt. Victoria], near summit, *Gillespie 4118* (Bish, GH); Namosi: Mt. Naitarandamu, summit, *Gillespie 5103*

(Bish TYPE). Fiji, without precise locality: *Seemann 376* in part (K) (possibly from Mt. Voma, Namosi, Viti Levu; see discussion of *C. pedatinervium*); *U. S. Expl. Exped.* (GH 2 sheets); *Horne 872* (GH), *974* (GH).

Of the cited specimens, only the type is fertile, but the species is well characterized by its small leaves, short petioles, and inconspicuous secondary basal nerves.

6. **Cinnamomum Degeneri** Allen in Sargentia 1: 34. 1942.

DISTRIBUTION: Known only from the type collection.

VITI LEVU: Mba: Nauwanga, vicinity of Nandarivatu, alt. 750 m., *Degener 14531* (A TYPE, Bish, NY, US) (*mathou;* specimen from fallen tree in dense forest).

Although Dr. Allen did not compare this new species with *C. rigidum,* that is probably its closest relative; *C. Degeneri* is amply distinct, however, in its comparatively long-petiolate leaves with prominent secondary basal nerves, and in the more copious indument of its inflorescence-branches and perianth.

2. CRYPTOCARYA R. Br.

Cryptocarya is represented in Fiji by eight species, all apparently endemic; of these, three are here described as new. Throughout the Fijian species the flowers are remarkably consistent in dimensions and indument, so that they provide few characters for specific differentiation. Leaf-venation and type of leaf-pubescence seem to be the most useful and dependable characters, while to a certain extent the fruit-surface and the thickness of the mature perianth-tube are characteristic. The local names *mathou* and *kalinimathou* are commonly used for species of *Cryptocarya,* indicating that the Fijians group it with *Cinnamomum;* both genera have a fragrant bark used for scenting coconut oil.

KEY TO THE SPECIES

Lower surface of leaf-blades glabrous or inconspicuously sericeous (usually evanescently so) with appressed hairs hardly exceeding 0.2 mm. long, not barbellate in nerve-axils.

Leaf-blades lanceolate-oblong, 3–5 times longer than broad, rounded or narrowly cordate at base, pinnate-nerved with 4–6 pairs of secondaries, the margins recurved especially toward base.....1. *C. lancifolia.*

Leaf-blades ovate to elliptic-oblong, usually 2–3 times longer than broad, acute to obtuse (rarely broadly rounded) at base, the margins not conspicuously recurved.

Leaf-blades pinnatinerved, the secondaries 4–8 per side, often curved-ascending but the lower ones hardly longer or more conspicuous than the upper ones.

Perianth-segments within and filaments obscurely sericeous or faintly pilose; fruit at apparent maturity up to 24 mm. long and 15–17 mm. broad, stipitate at base; leaf-blades ovate or oblong-elliptic, 8–20 cm. long, 3.5–11 cm. broad, usually obtuse to rounded (sometimes acute) at base, the secondaries 5–8 per side.....2. *C. fusca.*

Perianth-segments within comparatively densely sericeous; filaments sericeous-hispidulous; apparently mature fruit 10–16 × 8–12 mm., contracted but hardly stipitate at base; leaf-blades ovate or ovate-lanceolate, 5–8(–11) cm. long, 2–5(–6) cm. broad, acute at base, the secondaries 4–6 per side.....3. *C. turbinata.*

Leaf-blades triplinerved or subtriplinerved, the lowermost secondaries very conspicuous, ascending, oriented directly from the petiole or concurrent with the costa to a varying distance (but rarely as much as 2 cm.), the lateral nerves arising from the costa distally 1–4 pairs, comparatively inconspicuous....4. *C. Hornei.*

Lower surface of leaf-blades pilose with spreading hairs usually 0.5 mm. or more long, or similarly pilose at least on costa and secondaries, or conspicuously barbellate in nerve-axils.

Axils of secondary nerves of lower leaf-surfaces not barbellate, essentially no more copiously pilose than the costa, the blades oblong-lanceolate; fruit comparatively smooth, inconspicuously costate or ecostate.

Leaf-blades pinnatinerved, the secondaries 5–7 per side, ascending, the lowermost ones not pronounced, the lower surface uniformly pilose.....5. *C. constricta.*

Leaf-blades subtriplinerved, the lower secondaries sharply ascending, longer and more pronounced than the 2 or 3 pairs arising from the costa distally, the lower surface sometimes glabrescent except for the costa and secondaries.....6. *C. Turrilliana.*

Axils of secondary nerves of lower leaf-surfaces barbellate with obvious tufts of crispate hairs, the blades elliptic or ovate-oblong, pinnatinerved, the secondaries 5–9 per side, subspreading; fruit drying with irregular angles or obviously costate, the perianth-tube much thickened in fruit.

Leaf-blades (7–)9–15 cm. long, 5.5–9.5 cm. broad, broadly obtuse at base, short-cuspidate at apex, essentially glabrous beneath except for the large (4–7 mm. in diameter) barbellate axillary areas, the costa and secondaries leprose-puberulent; fruit irregularly ovoid, drying with conspicuous projecting angles.....7. *C. barbellata.*

Leaf-blades 5–8 cm. long, 2.5–4.5 cm. broad, usually truncate-rounded at base, acuminate at apex, the indument of costa and secondaries beneath comparatively obvious and persistent, the barbellate axillary areas small, usually 1–2 mm. in diameter; fruit subglobose, drying with obvious parallel costae.....8. *C. parinarioides.*

1. **Cryptocarya lancifolia** A. C. Sm. in Bishop Mus. Bull. 141: 70. *fig. 34.* 1936.

DISTRIBUTION: Endemic and apparently rare, known from Viti Levu and Vanua Levu, in dense bush at elevations of 150–430 m.; the type is from a slender tree 5 m. high.

VITI LEVU: Naitasiri: Nasinu, *Gillespie 3641* (A, Bish, US). VANUA LEVU: Thakaundrove: Yanawai River region, Mt. Kasi, *Smith 1762* (Bish TYPE, GH, NY, US).

Although the Gillespie specimen is sterile, it agrees excellently with the type in the very distinct and characteristic foliage.

2. **Cryptocarya fusca** Gillespie in Bishop Mus. Bull. 91: 8. *fig. 8.* 1932.

DISTRIBUTION: Known only from Viti Levu and Vanua Levu, at elevations of 150–1000 m., usually reported from dense forest. It is said to be a tree, usually 8–20 m. high, with a trunk up to 40 cm. in diameter. Recorded local names are: *kalinimathou* (in central Viti Levu), *kaurivau* or *kaurau* (in Namosi), *vorovoro* (in Mbua), and *karaua* (in Thakaundrove).

VITI LEVU: Mba: Hills between Nandala and Nukunuku Creeks, along trail from Nandarivatu toward Lewa, *Smith 6196* (A, US) (perianth brownish yellow); western slopes of Mt. Nanggaranambuluta [Lomalangi], *Smith 6323* (A, US); valley of Nggaliwana Creek, north of the sawmill at Navai, *Smith 5344* (A, US); Nandronga & Navosa: Uluvatu, vicinity of Mbelo, near Vatukarasa, *Tabualewa 15557* (A); Namosi: Vicinity of Namosi, *Gillespie 2624* (Bish TYPE, GH); near Namuamua, *Gillespie 3033* (Bish); Naitasiri: Northern portion of Rairaimatuku Plateau, between Mt. Tomanivi [Mt. Victoria] and Nasonggo, *Smith 6105* (A, US); Tamavua woods, near Suva, *Gillespie 2053* (A, Bish, GH); Rewa or Naitasiri: Central Road, Suva, *Mrs. B. H. Tothill 515* (A, Bish). VANUA LEVU: Mbua: Southern slope of Mt. Seatura, *Smith 1610* (Bish, GH, NY, US); Thakaundrove-Mathuata boundary: Crest of Korotini Range, between Navitho Pass and Mt. Ndelaikoro, *Smith 536* (Bish, GH, NY, US). Fiji, without definite locality: *Horne 650* (GH).

Although the type collections of *C. fusca* and *C. turbinata* differ quite obviously in foliage, examination of the cited specimens of this relationship indicates that the line between the species is by no means clear cut. In general, the leaves of *C. turbinata* are the smaller and are proportionately narrower. The flowers of *C. turbinata* have a more obvious indument within and the mature fruits seem to be the smaller. However, it is difficult to place some specimens, and the species, in spite of the diversity of the extreme forms, are not entirely satisfactory.

3. **Cryptocarya turbinata** Gillespie in Bishop Mus. Bull. 83: 7. *fig. 5.* 1931.

DISTRIBUTION: Known from Viti Levu, Vanua Levu, and Koro, from a wide range of altitudes (100–1120 m.), occurring in open to dense forest. It is a tree up to 25 m. in height, with a trunk diameter up to 80 cm. Mentioned local names are: *mathou* or *kalinimathou* (in central Viti Levu), *mbatho* (in Mbua, where I noted that the bark is grated and used to scent coconut oil, a use indicated for other Fijian Lauraceae as well), and *'lilingi* (on Koro).

VITI LEVU: Mba: Slopes of Mt. Nanggaranambuluta [Lomalangi], east of Nandarivatu, *Gillespie 3915* (Bish TYPE, GH); summit of Mt. Nanggaranambuluta, *Smith 5676* (A, US) (perianth-segments brown, yellow-tinged); Nandronga & Navosa: Northern portion of Rairaimatuku Plateau, between Nandrau and Nanga, *Smith 5582* (A, US). VANUA LEVU: Mbua: Southern portion of Seatovo Range, *Smith 1528* (Bish, GH, NY, US); Mathuata: Southern slopes of Mt. Numbuiloa, east of Lambasa, *Smith 6395* (A, US) (fruit jet-black). KORO: Eastern

slope of main ridge, *Smith 954* (Bish, GH, NY, US). Fiji, without definite locality: *Horne 1068* (GH), *1117* (GH).

As remarked above, this entity is not too clearly separable from *C. turbinata*. However, the specimens here cited show less variation in foliage than those cited for the preceding species.

4. **Cryptocarya Hornei** Gillespie in Bishop Mus. Bull. 83: 6. *fig. 4.* 1931.

Cryptocarya Degeneri Allen in Sargentia **1**: 34. 1942.

DISTRIBUTION: Endemic, but apparently the most widespread species of *Cryptocarya* in Fiji, known from several of the islands, at altitudes between sea-level and 900 m. It is reported to be a tree up to 10 m. in height, with a trunk diameter up to 20 cm.; in the Lau Group it grows on limestone soils. Local names are: *matho* (in Ra, where Degener noted that the bark was used to scent coconut oil), *ivi ivi* (on Moala), *wawanunu* (on Vanua Vatu), and *nduvundu* (on Fulanga); the last three names are unexpected in the Lauraceae and their authenticity should be checked.

VITI LEVU: Mba: Mountains near Lautoka [i.e. western slopes of Mt. Evans Range], *Greenwood 904* (A), *1090* (A, Bish, US); vicinity of Nandarivatu, *Degener 14311* (A, Bish, NY, US), *Smith 5049* (A, US); Nandronga & Navosa: Vicinity of Mbelo, near Vatukarasa, *Degener 15228* (A, NY); Ra: Mataimeravula, vicinity of Rewasa, near Vaileka, *Degener 15412* (A TYPE of *C. Degeneri*, Bish, NY, US); Namosi: Mt. Voma, *Gillespie 2893* (Bish, GH, US); Naitasiri: Vicinity of Nasinu, *Gillespie 3491* (Bish). OVALAU: Above Levuka reservoir, *Gillespie 4529* (Bish, GH). VANUA LEVU: Thakaundrove: Natewa Peninsula, hills west of Mbutha Bay, *Smith 808* (Bish, GH, NY, US) (fruit black). MOALA: Near Naroi, *Smith 1317* (Bish, GH, NY, US); on cliff near sea, *Mrs. J. D. Tothill 75* (Bish). VANUA VATU: On limestone slopes, *Bryan 552* (A, Bish). AIWA: Central wooded plateau, *Bryan 523* (Bish). FULANGA: On limestone formation, *Smith 1130* (Bish, GH, NY, US). ONGEA LEVU: Central forest, *Bryan 439* (Bish, US). Fiji, without definite locality: *Horne 170* in part (GH), *171* (GH TYPE), *128* (GH); *U. S. Expl. Exped.* (US 653981); *Seemann 377* (GH).

As represented by the cited specimens, *C. Hornei* seems to be a fairly consistent entity, recognized by its ovate or ovate-lanceolate, obviously triplinerved leaf-blades. In most specimens the principal nerves are oriented from the base, but in others they are concurrent for some distance, rarely as much as 2 cm. The most extreme specimens in this respect are *Greenwood 904* and *1090*, *Smith 5049*, and *Bryan 552*, but these and others show a certain amount of variation in the concurrence of the principal nerves, and I doubt if this character, which is apparently not correlated with others, is significant in this case.

The most careful comparison I can make between the types of *C. Hornei* and *C. Degeneri* discloses no consequential difference in foliage or branchlets. The type of the first is in flower and of the second in fruit, but the indument of the inflorescences is similar, being necessarily sparser in the fruiting specimen.

Seemann (Fl. Vit. 202. 1867) suspected his sterile no. *377* of being an undescribed species and provided a brief diagnosis for it as "*Laurinea*, n. 377," in his notes on the genus *Tetranthera*.

The closest relative of *C. Hornei* seems to be **Cryptocarya elegans** (Reinecke) comb. nov. (*Cinnamomum elegans* Reinecke in Bot. Jahrb. **25**: 633. 1898; Christophersen in Bishop Mus. Bull. **128**: 89. 1935), a Samoan species of which my concept is based on material from Savaii and Upolu (*Reinecke 540a* [US], cited in original description; *Rechinger 1868* [US]; and *Christophersen 2868* [US], cited by Christophersen). These specimens, in flower and fruit, can belong only to *Cryptocarya;* as compared with *C. Hornei,* the Samoan species has larger floral parts and the leaf-blades with more obvious sericeous indument beneath, especially on the principal nerves. However, the two entities are very close, and it should be noted that specimens of *C. Hornei* from Lau have a heavier indument than those from the larger Fijian islands, indicating a transitional population.

5. **Cryptocarya constricta** Allen in Sargentia **1**: 35. 1942.

DISTRIBUTION: Known only from the type collection.

VITI LEVU: Naitasiri: Suva Pumping Station, alt. 30 m., *Degener & Ordonez 13761* (A TYPE, Bish, NY, US).

This very distinct species, known only in fruit, is at once distinguished by its oblong-lanceolate pinnatinerved leaf-blades, which are conspicuously and uniformly pilose beneath. In leaf-shape and -texture it suggests some of the specimens of *C. fusca,* which may be its general relationship, but its status as a species seems unquestionable.

6. **Cryptocarya Turrilliana** sp. nov.

Arbor ad 20 m. alta, ramulis teretibus gracilibus, juventute pilis ferrugineis 0.3–0.7 mm. longis densissime hispidulo-tomentosis, demum canopuberulis et subglabratis; petiolis gracilibus supra canaliculatis 10–25 mm. longis ut ramulis pubescentibus; laminis chartaceis in sicco olivaceo- vel fusco-viridibus saepe subtus pallidioribus, ovato-lanceolatis, 8–18 cm. longis, 3–8.5 cm. latis, basi attenuatis et in petiolum longe decurrentibus, superne gradatim acuminatis (acumine ipso 5–15 mm. longo obtuso), margine leviter recurvatis, primo utrinque pilis ferrugineis 0.4–0.7 mm. longis patenti-pubescentibus, indumento subtus saltem costa nervisque principalibus longe persistente supra demum fugacio, subtriplinerviis, nervis secundariis principalibus cum costa ad 2.5 cm. concurrentibus (interdum e basi orientibus) adscendentibus et costa supra acute elevatis subtus prominentibus, nervis tertiariis 4 vel 5 brevibus e nervis secundariis principalibus orientibus ad margines arcuato-patentibus, nervis e costa superne utrinsecus 2 vel 3 utrinque elevatis, rete venularum intricato utrinque prominulo, areolis minutis; inflorescentiis axillaribus ad 5 cm. longis (immaturis) paniculatis multifloris, pedunculo ad 2 cm. longo et rhachi ramulisque pilis 0.3–0.5 mm. longis densissime ferrugineo-hispidulis, bracteis oblongis 2–3 mm. longis extus copiose pubescentibus; floribus

subsessilibus, pedicellis ad 0.5 mm. longis; perianthio sub anthesi 3–3.5 mm. longo extus pilis circiter 0.2 mm. longis dense ferrugineo-hispidulo-sericeo, tubo obconico intus glabro, segmentis 6 subcarnosis suborbiculari-ovatis circiter 1.5 mm. longis et 1.3 mm. latis intus obscure argenteo-sericeis; staminibus fertilibus 1–1.2 mm. longis, filamentis ligulatis minute hispidulis, 3 intimis basi utrinque glandulam stipitatam gerentibus, antheris deltoideis 0.6–0.7 mm. longis, 3 intimis extrorsis connectivo producto saepe luteo-glandulosis; staminodiis 3 ovoideo-deltoideis 0.7–0.9 mm. longis subsessilibus acutis dorso parce sericeis; ovario ellipsoideo in stylum gracilem ad 1 mm. longum attenuato; infructescentiis persistenter ferrugineo- vel cano-tomentellis, fructibus paucis nigris subglobosis ad 12 mm. diametro sublevibus haud vel inconspicue costatis apice contractis, calycis tubo extus parce puberulo tenui 0.2–0.4 mm. crasso, segmentis subpersistentibus.

VITI LEVU: Nandronga & Navosa: Northern portion of Rairaimatuku Plateau, between Nandrau and Nanga, alt. 725–825 m., *Smith 5520* (A, US) (*lindi thevutheva;* tree 20 m. high, in dense forest). VANUA LEVU: Mathuata: Seanggangga Plateau, in drainage of Korovuli River, vicinity of Natua, alt. 100–200 m., Nov. 28, 1947, *Smith 6731* (A TYPE, US) (tree 10 m. high, in patches of forest in open rolling country; flower-buds pale brown); southern slopes of Mt. Numbuiloa, east of Lambasa, alt. 100–350 m., *Smith 6381* (A, US) (*tumbunivorovoro;* tree 5 m. high, in open forest; fruit jet-black).

The new species shows a relationship to *C. Hornei* in its leaf-venation and to *C. constricta* in its pubescence, but it is clearly distinct from both. Its outstanding characters are the fairly persistent indument of its branchlets, leaves, and inflorescence, and the type of venation. The principal nerves are typically highly concurrent and bear obvious short curved tertiaries on the marginal side. Variation in both indument and venation is apparent among the three cited specimens; the type (in young flower) has the densest tomentum and the most highly concurrent nerves. Number *5520,* in fruit, has the tomentum persistent only on the nerves, the principal ones of which are spreading from the petiole. Number *6381,* also in fruit, is somewhat intermediate in both respects. In spite of this variation I feel that only a single species is represented, and it seems impossible to refer this to any described entity.

It is a pleasure to name the new species in honor of Dr. W. B. Turrill, of the Royal Botanic Gardens, Kew, in recognition of his important study of im Thurn's Fijian collection (in Jour. Linn. Soc. Bot. 43: 15–39. 1915).

7. **Cryptocarya barbellata** sp. nov.

Arbor ad 15 m. alta, ramulis gracilibus fuscis, juventute angulatis ferrugineo-leproso-puberulis demum glabratis; petiolis sat robustis supra complanatis 12–15 mm. longis ut ramulis puberulis; laminis subcoriaceis in sicco viridi-fuscis oblongo-ellipticis, (7–)9–15 cm. longis, 5.5–9.5 cm. latis, basi late obtusis, apice breviter cuspidatis, margine subplanis, supra glabris, subtus costa et secundariis parce leproso-puberulis etiam in axillis

nervorum pilis ferrugineis circiter 1 mm. longis conspicue barbellatis, pinnatinerviis, costa valida supra in sulcula depressa vel subplana subtus prominente, nervis secundariis utrinsecus 5–9 erecto-patentibus leviter curvatis supra paullo depressis subtus elevatis, rete venularum intricato supra immerso vel plano subtus prominulo; inflorescentiis axillaribus anguste paniculatis sub anthesi 2–4 cm. longis paucifloris, pedunculo brevi et rhachi ramulisque inconspicue ferrugineo-puberulis vel minute hispidulis; pedicellis subnullis vel ad 1 mm. longis pilis fusco-aureis 0.1–0.2 mm. longis sericeis; perianthio sub anthesi obovoideo 3–3.5 mm. longo, tubo carnoso extus ut pedicello sericeo intus glabro, segmentis 6 tenuiter carnosis orbiculari-ovatis 1.5–1.8 mm. longis latisque apice rotundatis vel obtusis extus parce intus dense sericeis; staminibus fertilibus circiter 1.4 mm. longis, filamentis ligulatis ubique minute sericeo-hispidulis, 3 intimis basi utrinque glandulam minute stipitatam gerentibus, antheris ovoideo-deltoideis circiter 0.8 mm. longis, 3 intimis loculis extrorso-lateralibus connectivo producto apice truncato; staminodiis 3 cordato-ovoideis circiter 1 mm. longis subsessilibus acutis dorso parce sericeis; ovario ovoideo glabro in stylum teretem circiter 0.8 mm. longum attenuato; fructibus paucis in sicco irregulariter ovoideis ad 2 cm. diametro angulis paucis conspicuis lateraliter praeditis, calycis tubo demum glabro incrassato 0.5–1 mm. crasso, segmentis caducis.

VITI LEVU: Mba: Western slopes of Mt. Nanggaranambuluta [Lomalangi], east of Nandarivatu, alt. 850–1000 m., Oct. 2, 1947, *Smith 6319* (A TYPE, US) (tree 15 m. high, in dense forest; flower-buds pale yellowish green).

This species and the following, also new, form a clearly marked group among the Fijian *Cryptocaryae,* marked by their pinnatinerved leaves with conspicuous axillary hair-tufts on the lower surfaces; their fruits have the perianth-tube comparatively thick and either angled or costate in drying. Dimensions and shape of leaf-blades, degree of indument, and fruit-shape readily differentiate the two species.

8. **Cryptocarya parinarioides** sp. nov.

Arbor ad 10 m. alta, ramulis gracilibus subteretibus fuscis, juventute leproso-puberulis etiam pilis patentibus circiter 0.3 mm. longis crispato-pubescentibus demum glabratis lenticellatis; petiolis gracilibus leviter canaliculatis 8–10 mm. longis ut ramulis pilosis; laminis chartaceis in sicco fuscis subtus pallidioribus, ovato-oblongis, 5–8 cm. longis, 2.5–4.5 cm. latis, basi plerumque truncato-rotundatis, apice gradatim acuminatis, margine leviter recurvatis, supra glabris, subtus costa et secundariis ut petiolis pilosis etiam in axillis nervorum pilis circiter 0.5 mm. longis distincte barbellatis, pinnatinerviis, costa supra valde impressa subtus prominente, nervis secundariis utrinsecus 5–8 curvato-patentibus supra paullo impressis subtus elevatis, rete venularum intricato utrinque minute prominulo, areolis minutis; infructescentiis axillaribus ad 6 cm. longis, pedunculo brevi et rhachi ramulisque pilis ad 0.3 mm. longis ferrugineo-tomentellis vel hispidulo-puberulis demum glabratis; fructibus subsessilibus paucis

subglobosis 10–14 mm. diametro conspicue plus minusve 12-costatis, calycis tubo extus glabro rugoso 1.5–2 mm. crasso lenticellato copiose immerso-luteo-glanduloso; florum partibus in fructu subpersistentibus; perianthii segmentis 6 oblongis circiter 1.5 × 1.2 mm. apice rotundatis extus puberulis intus sericeis; staminibus fertilibus 1–1.2 mm. longis, filamentis gracilibus ligulatis parce pilosis, glandulis evanescentibus, antheris ovoideis circiter 0.7 mm. longis, 3 intimis connectivo truncato; staminodiis 3 cordato-ovoideis subsessilibus circiter 0.8 mm. longis.

VITI LEVU: Mba: Vicinity of Nalotawa, eastern base of Mt. Evans Range, alt. 550–600 m., May 15, 1947, *Smith 4451* (A TYPE, US) (*malawaso;* tree 10 m. high, in forest along stream).

The new species is readily distinguished from *C. barbellata,* described above, by its smaller and differently shaped leaf-blades, with more persistent indument on the nerves but with much smaller (although still obvious) axillary hair-tufts, and by its regularly costate fruits. The perianth-tube of *C. parinarioides* in fruit is particularly thick, distinctly ridged without but smooth within; the outer portion is copiously yellow-glandular, while the inner portion is characterized by the presence of coarse stone-cells. The leaves of the new species bear a superficial resemblance to those of *Parinarium insularum* A. Gray, the *sea* of the Fijians.

3. ENDIANDRA R. Br.

Of *Endiandra* I am able to recognize seven species in Fiji, one of them occurring also in Samoa; three species are here described as new. Characters pertaining to leaf-size and shape, indument of leaves and floral parts, and shape of perianth are useful in differentiating the species. It is interesting to note that the Fijians apparently have no native name for this genus, individuals of which seem to occur singly in densely forested areas.

KEY TO THE SPECIES

Perianth-tube subglobose, the segments comparatively small, about 1 mm. long, glabrous within; stamens thick-carnose, angular, with essentially lateral locules, the connective swollen and truncate at apex; leaf-blades usually oblong-lanceolate, (7–)9–18 cm. long, (2.5–)3.5–7 cm. broad.... ..... 1. *E. reticulata.*

Perianth-tube shortly obconical, less conspicuous than the lobes at anthesis; stamens dorsiventrally flattened, with obviously extrorse locules.

Perianth-segments densely tomentellous within at least toward base, the tube densely sericeous within; filaments sericeous or tomentellous at least dorsally.

Lower surface of leaf-blades glabrous or sparsely tomentellous only on nerves or inconspicuously strigillose with hairs about 0.1 mm. long.

Leaf-blades obovate or elliptic, (7–)13–23 cm. long, (5–)6–12.5 cm. broad, with (5–)6–8 secondaries per side, cuspidate or acuminate at apex, drying brownish or dark olivaceous, essentially concolored, glabrous beneath or with a tangled pubescence along the nerves; indument of inflorescence-

branches and pedicels spreading, the hairs weak, crispate; filaments sericeous dorsally, the anthers glabrous.....
.....2. *E. elaeocarpa.*

Leaf-blades broadly elliptic, 7–10 cm. long, 4–8.5 cm. broad, with 3–5 secondaries per side, rounded or retuse at apex, drying brownish, paler beneath, on lower surface inconspicuously but regularly strigillose with minute appressed golden hairs; indument of inflorescence-branches and pedicels strigillose, the hairs appressed; filaments copiously tomentellous on all surfaces, the indument extending to the dorsal surfaces of anthers.....3. *E. Gillespiei.*

Lower surface of leaf-blades densely and uniformly pilose with spreading hairs 0.5 mm. or more long, the blades elliptic-obovate, usually 9–14 × 3.5–6 cm., obtuse or short-cuspidate at apex, the secondaries 4 or 5 per side.....4. *E. trichotosa.*

Perianth-segments glabrous on both sides or very sparsely pilose toward base within, the tube glabrous or faintly puberulent or very minutely sericeous within; filaments glabrous.

Flowers comparatively small, the perianth-segments less than 2 mm. long, the stamens less than 1.5 mm. long; leaf-blades usually glaucous or paler beneath, the veinlet-reticulation comparatively coarse, the ultimate obvious areoles 1 mm. or more across.

Leaf-blades ovate-elliptic, 7–13 cm. long, 4–8 cm. broad, often coriaceous; perianth-segments 1.5-2 mm. long; stamens 1.2–1.5 mm. long.....5. *E. monticola.*

Leaf-blades ovate-lanceolate, 4.5–6 cm. long, 2–3.3 cm. broad, comparatively thin, chartaceous in texture; perianth-segments 0.8–1 mm. long; stamens about 1 mm. long..6. *E. tryphera.*

Flowers comparatively large, the perianth-segments 2.5–3 mm. long, the stamens about 2 mm. long; leaf-blades drying olivaceous, nearly concolored, the veinlet-reticulation finely prominulous, the ultimate obvious areoles 0.2–0.4 mm. across.....7. *E. luteola.*

1. **Endiandra reticulata** Gillespie in Bishop Mus. Bull. 83: 8. *fig.* 7. 1931.

DISTRIBUTION: Endemic, thus far known definitely only from Viti Levu, in forest at elevations of 300–1120 m.; it is reported as a slender tree 5–12 m. high.

VITI LEVU: Mba: Tholo-i-Nandarivatu Mt., *Gillespie 3905* (Bish TYPE, GH); summit of Mt. Nanggaranambuluta [Lomalangi], *Gillespie 4341* (Bish, GH); hills between Nandala and Nukunuku Creeks, along trail from Nandarivatu toward Lewa, *Smith 6181* (A, US); hills east of Nandala Creek about 3 miles south of Nandarivatu, *Smith 5950* (A, US); Namosi: Vicinity of Nanggarawai Village, *Gillespie 3220* (Bish); vicinity of Namuamua, 2 miles down Namosi trail, *Gillespie 3073* (Bish). Fiji, without locality: *U. S. Expl. Exped.* (US 653977).

On the basis of perianth and stamen characters, mentioned in my key, this species is very distinct from the other Fijian *Endiandrae;* however, a close relationship should be noted between *E. reticulata* and *E. aneityensis* Guillaumin (in Jour. Arnold Arb. 13: 84. 1932), of the New Hebrides. The

two species are practically indistinguishable in foliage and inflorescence, but the New Hebrides plant has the perianth-segments and filaments slightly narrower and the anther-locules more definitely extrorse.

Fruits of *E. reticulata,* not previously described, are present on my nos. *5950* and *6181* and *Gillespie 3073* and *3220.* They are essentially similar to those of *E. elaeocarpa,* being oblong-cylindric, faintly curved, at maturity dull purple and up to 65 × 27 mm., with a thick rugulose pericarp.

2. **Endiandra elaeocarpa** Gillespie in Bishop Mus. Bull. 83: 7. *fig. 6.* 1931.

Tetranthera elaeocarpa A. Gray ex Seem. Fl. Vit. 202, nomen. 1867; Gillespie in Bishop Mus. Bull. 83: 7, as synonym. 1931.

DISTRIBUTION: Fiji (Viti Levu, Ovalau, and Taveuni) and Samoa (specimens cited from Upolu and Savaii by Christophersen in Bishop Mus. Bull. 128: 92. 1935). In Fiji it has been noted as a tree up to 25 m. in height, occurring in dense forest at elevations of 300–900 m.

VITI LEVU: Mba: Mountains near Lautoka [i.e. western flank of Mt. Evans Range], *Greenwood 941* (A), *1091* (A, Bish, US); Rewa: Southeastern slopes of Mt. Korombamba, *Gillespie 2091* (Bish, GH). OVALAU: *U. S. Expl. Exped.* (GH TYPE). TAVEUNI: Western slope between Somosomo and Wairiki, *Smith 888* (Bish, GH, NY, US). Fiji, without locality: *Horne 199* (GH).

The Samoan specimens cited by Christophersen appear to belong to this concept; variation in foliage and inflorescence in Samoa seems no greater than in the Fijian population, although on the whole the leaves tend to be smaller.

In view of the fairly obvious floral differences between this species and the preceding (*E. reticulata*), it is surprising that one should encounter difficulty in placing fruiting or sterile material, especially as the two type specimens are quite different in general aspect and branchlet-indument. In general, the branchlets of *E. elaeocarpa* have a denser and longer indument, but this may become quite evanescent (although it persists in the type, a fruiting specimen). The leaf-blades of *E. elaeocarpa* tend toward a more obovate (rather than oblong-lanceolate) shape, they usually become brownish rather than olivaceous upon drying, and their veinlet-reticulation in general is a trifle the coarser and sharper. However, these vegetative characters appear nearly useless in distinguishing certain specimens, such as *Gillespie 3073* and *3220,* which he identified as *E. elaeocarpa,* but which appear to me just as likely to belong to *E. reticulata* on the basis of their comparatively small and narrow leaf-blades.

Gillespie indicated the binomial *E. elaeocarpa* as a new combination, but Gray's basonym had not been validly published; therefore the entity should have been treated as a new species and no parenthetical author should be cited.

3. **Endiandra Gillespiei** sp. nov.

Arbor, ramulis gracilibus apicem versus angulatis pilis adpressis aureis

circiter 0.1 mm. longis puberulis vel strigillosis, demum glabrescentibus teretibus fuscis rugulosis; petiolis 10–18 mm. longis rugulosis ut ramulis pilosis supra complanatis vel leviter canaliculatis; laminis chartaceis in sicco supra fuscis subtus pallidioribus saepe glaucis, late ellipticis, 7–10 cm. longis, 4–8.5 cm. latis, basi late obtusis et in petiolum decurrentibus, apice rotundatis vel leviter retusis, margine subplanis, supra glabris, subtus inconspicue sed dense aureo-strigillosis (pilis circiter 0.1 mm. longis), costa supra elevata subtus prominente, nervis secundariis utrinsecus 3–5 arcuato-adscendentibus utrinque elevatis, rete venularum utrinque prominulo; inflorescentiis axillaribus paniculatis plerumque 4–7 cm. longis, pedunculo gracili subtereti 1.5–3 cm. longo et rhachi ramulisque copiose strigillosis (pilis fulvo-cinereis circiter 0.1 mm. longis), ramulis lateralibus 3–7 ad 3 cm. longis plerumque 2–4-floris; pedicellis post anthesin 2–3 mm. longis apice 1- vel 2-bracteolatis, bracteolis oblongo-lanceolatis circiter 0.8 mm. longis extus strigillosis caducis; perianthii tubo obconico extus minute strigilloso intus dense fulvo-sericeo, segmentis 6 aequalibus subcarnosis obscure pellucido-glandulosis oblongis circiter 1.8 × 0.8 mm. apice obtusis, extus puberulis vel glabrescentibus, intus pilis 0.2–0.3 mm. longis dense tomentellis; staminibus 3 circiter 1.3 mm. longis, filamentis ligulatis angustis ubique pilis fulvis 0.2–0.3 mm. longis copiose tomentellis basim versus biglandulosis, antheris deltoideis complanatis circiter 0.7 mm. longis et latis dorso subsericeis, loculis extrorsis, connectivo obtuso; staminodiis sessilibus irregulariter subglobosis circiter 0.5 mm. diametro; ovario subgloboso glabro, stylo tereti circiter 0.7 mm. longo, stigmate minuto.

OVALAU: Along stream above the Levuka reservoir, alt. 550 m., Jan. 30, 1928, *Gillespie 4525* (A, Bish, GH, US 1967775 TYPE).

The species here described is most readily distinguished by the indument of its perianth and filaments, indicating its relationship with *E. elaeocarpa*, from which it differs in the characters of foliage and inflorescence detailed in my key. Superficially it is more suggestive of *E. monticola*, from which it differs not only in its pubescent flowers, but also in the rounded leaf-apex and the more obvious hairs of the lower leaf-surface.

4. **Endiandra trichotosa** sp. nov.

Arbor gracilis ad 12 m. alta, ramulis sat robustis subteretibus ad nodos complanatis, juventute purpurascentibus rugulosis pilis ferrugineis patentibus crispatis circiter 0.5 mm. longis copiose pilosis, demum cinereis glabrescentibus; petiolis robustis 1–2 cm. longis supra complanatis ut ramulis pilosis; laminis chartaceis in sicco utrinque fuscis elliptico-obovatis, (7–)9–14 cm. longis, 3.5–6 cm. latis, basi acutis et in petiolum decurrentibus, apice obtusis vel breviter cuspidatis, margine leviter recurvatis, supra costa interdum hispidula excepta glabris, subtus pilis 0.5–0.7 mm. longis pallide ferrugineis patentibus dense et uniformiter pilosis, costa supra paullo elevata subtus prominente, nervis secundariis utrinsecus 4 vel 5 curvato-adscendentibus marginem versus anastomosantibus supra leviter subtus valde elevatis, rete venularum intricato utrinque

prominulo; inflorescentiis axillaribus paniculatis 1.5–4.5 cm. longis pauciramosis, pedunculo subcomplanato brevi et ramulis copiose crispato-pilosis, bracteis minutis caducis; pedicellis teretibus subnullis vel ad 2 mm. longis pilis 0.2–0.3 mm. longis ferrugineis hispidulo-tomentellis; perianthio sub anthesi campanulato-rotato subcarnoso apice circiter 4 mm. diametro, tubo extus ut pedicello piloso intus dense sericeo, segmentis 6 deltoideis apice obtusis extus subglabris intus saltem basim versus crispato-pilosis, 3 exterioribus 1.8–2 mm. longis 1.6–1.7 mm. latis, 3 interioribus paullo minoribus; staminibus ad 1 mm. longis, filamentis carnosis brevibus latis pilis ferrugineis circiter 0.3 mm. longis ubique crispato-pilosis basi inconspicue biglandulosis, antheris late oblongis 0.4–0.5 mm. longis apice rotundatis, loculis extrorsis; staminodiis 3 obscuris sessilibus subglobosis circiter 0.3 mm. diametro; ovario ovoideo glabro, stylo breviter conico circiter 0.5 mm. longo, stigmate minuto.

VANUA LEVU: Mathuata: Southern base of Mathuata Range, north of Natua, alt. 100–250 m., Dec. 4, 1947, *Smith 6825* (A TYPE, US) (slender tree 12 m. high, in dense forest; perianth-segments greenish white).

This very distinct species differs from *E. elaeocarpa,* which is patently its closest relative, in the conspicuous and uniform indument of its lower leaf-surfaces. Its leaf-blades have obtuse or very shortly cuspidate apices and comparatively few secondary nerves.

5. **Endiandra monticola** A. C. Sm. in Bishop Mus. Bull. 141: 71. *fig. 36.* 1936; Allen in Sargentia 1: 35. 1942.

DISTRIBUTION: Endemic, known from Viti Levu, Vanua Levu, and Rambi, at elevations of 30–900 m. It has been noted as a shrub or tree 3–7 m. in height, occurring in hill forest or dry forest on ridges.

VITI LEVU: Naitasiri: Navutu-Nanduna track, *B. E. Parham 3012* (A); vicinity of Nasinu, *Greenwood 1122* (A, Bish); Suva Pumping Station, *Degener & Ordonez 13775* (A). VANUA LEVU: *U. S. Expl. Exped.* (US 653999); Mathuata: Summit ridge of Mt. Numbuiloa, east of Lambasa, *Smith 6491* (A, US); Thakaundrove-Mathuata boundary: Crest of Korotini Range, between Navitho Pass and Mt. Ndelaikoro, *Smith 563* (Bish TYPE, GH, NY, US). RAMBI: *Horne 434* (GH, US).

This species is less closely related to *E. elaeocarpa* than I originally suggested; it is readily distinguished by leaf-shape and by its essentially glabrous flowers. Young fruits are found on three of the collections; they are typical for the genus, oblong-cylindric, up to 4 × 1 cm. (presumably immature), with a black, rugulose pericarp.

6. **Endiandra tryphera** sp. nov.

Arbor (?), ramulis gracilibus subteretibus praeter partes novellas pilis adpressis aureis circiter 0.1 mm. longis puberulas glabris cinerascentibus; petiolis gracilibus rugulosis 8–12 mm. longis supra leviter canaliculatis glabris vel juventute minute puberulis; laminis chartaceis utrinque glabris siccitate supra fuscis subtus glaucis, ovato-lanceolatis, 4.5–6 cm. longis, 2–3.3 cm. latis, basi acutis vel obtusis et in petiolum anguste decurrentibus, apice subacutis vel obtuse cuspidatis, margine subplanis, costa utrinque

elevata, nervis secundariis utrinsecus 3–5 adscendentibus leviter curvatis cum rete venularum utrinque prominulis; inflorescentiis axillaribus paniculatis sub anthesi 1–2 cm. longis, pedunculo brevi et rhachi gracilibus subteretibus pilis fulvis circiter 0.1 mm. longis parce puberulo-strigillosis, ramulis lateralibus paucis brevibus 1–3-floris, bracteolis lanceolato-oblongis ad 1 mm. longis extus parce strigillosis; pedicellis sub anthesi 1.5–2 mm. longis ut rhachi pilosis; perianthii tubo breviter obconico utrinque glabro, segmentis 6 tenuiter carnosis obscure glandulosis ovato-deltoideis, 0.8–1 mm. longis latisque, obtusis, utrinque glabris vel intus basim versus parce pilosis; staminibus 3 glabris circiter 1 mm. longis, filamentis complanatis angustis basim versus biglandulosis, antheris deltoideis longitudine filamentas aequantibus luteo-glandulosis, loculis extrorsis, connectivo obtuso; staminodiis sessilibus deltoideo-subglobosis circiter 0.4 mm. diametro; ovario ovoideo glabro, stylo breviter conico circiter 0.3 mm. longo, stigmate minuto.

FIJI, without definite locality: *U. S. Expl. Exped.*, in 1840 (US 653997 and 653998 TYPE).

From *E. monticola,* its only close ally, the new species differs obviously in its thin-textured, small leaves and in its small floral parts. Although in the size and shape of its leaves it more nearly resembles *E. luteola,* it differs strikingly from that in leaf-texture and venation and in size of flowers, as pointed out in my key.

7. **Endiandra luteola** A. C. Sm. in Bishop Mus. Bull. 141: 70. *fig. 35.* 1936.

DISTRIBUTION: Known only from the originally cited material.

TAVEUNI: Western slope, between Somosomo and Wairiki, alt. 300 m., *Smith 763* (Bish TYPE, GH, NY, US). A collection from OVALAU, *Graeffe* (K), which I originally cited, has not been re-examined in connection with the present study.

The comparatively large, strictly glabrous flowers, the small leaves, and the very fine veinlet-reticulation characterize this species.

4. LITSEA Lam.

This large and complex genus is represented in Fiji by 14 species, of which I describe seven as new. The presence or absence of perianth-segments, together with various aspects of foliage and indument, make most of the species readily recognizable. A local name used in a generic sense is *lindi.*

KEY TO THE SPECIES

Flowers without perianth-segments.

Leaf-blades comparatively small, very rarely exceeding 12 × 7 cm., the secondary nerves (including basal ones, which are frequently pronounced) not more than 5 per side; inflorescence comparatively small, the peduncle 3–12 mm. long, the floral bracts 3–5 mm. in diameter; mature fruits not much exceeding 1 cm. in length.

Lower surface of leaf-blades glabrous except for axillary hair-tufts, or inconspicuously scattered-pilose; rachis of inflorescence up to

4 mm. long, the umbels 3–6 per inflorescence; pedicels at anthesis 2–4 mm. long; stamens 12–17.....1. *L. Pickeringii.*

Lower surface of leaf-blades pilose with minute scattered hairs, these subappressed or spreading, 0.1–0.2 mm. long; rachis of inflorescence minute, 1–2 mm. long, the umbels 1 or 2 per inflorescence; pedicels at anthesis less than 1 mm. long; stamens 6–9.. .....2. *L. palmatinervia.*

Leaf-blades comparatively large, usually 12–18 × 7–13 cm., the secondary nerves (basal ones not pronounced) usually 6–8 per side; inflorescence large, the peduncle 12–20 mm. long at anthesis, the floral bracts 7–8 mm. in diameter; mature fruits 4 cm. or more long..... .....3. *L. magnifolia.*

Flowers with perianth-segments.

Floral bracts usually glabrous, rarely sparsely strigose dorsally; perianth-segments 1–2.2 mm. long at anthesis, glabrous or sparsely sericeous dorsally; leaf-blades comparatively small, only rarely exceeding 10 × 5 cm., the secondary nerves not more than 5 per side (or 6 in sp. no. 7).

Leaf-blades elliptic, usually 3–7 cm. long and 2–3.5 cm. broad, rounded or broadly obtuse at apex, the secondaries curved-ascending; stamens or staminodes 6–9.

Inflorescence, including pedicels and floral parts, strictly glabrous except for a few scattered hairs on perianth and filaments; leaf-blades subcoriaceous, glaucous beneath..... .....4. *L. Seemanni.*

Inflorescence noticeably pubescent, the pedicels copiously sericeous, the perianth-segments and filaments sericeous dorsally at least toward base.

Leaf-blades subcoriaceous, concolored; peduncle minutely appressed-puberulent; flowers 6 or 7 per umbel; pedicels 0.7–1.5 mm. long, the pubescence about 0.1 mm. long; perianth-segments ciliolate; longest filaments 1–1.3 mm. long.....5. *L. Hornei.*

Leaf-blades chartaceous, with comparatively conspicuous venation, glaucous beneath; peduncle glabrous; flowers 4 or 5 per umbel; pedicels about 0.5 mm. long, the pubescence 0.2–0.3 mm. long; perianth-segments eciliate; longest filaments about 0.7 mm. long....6. *L. Grayana.*

Leaf-blades usually more than 7 cm. long and 3 cm. broad or, if smaller, gradually narrowed distally to an obtusely cuspidate apex; stamens or staminodes 12 or more.

Petioles 2.5–3.5 cm. long; leaf-blades elliptic-oblong, usually 8–10 × 4–4.5 cm., with very fine veinlet-reticulation prominulous on both surfaces; peduncles 12–14 mm. long at anthesis, the floral bracts 4.5–5 mm. in diameter; flowers about 5 per umbel, the pedicel about 1 mm. long; perianth-segments 1.5–2.2 mm. long, glabrous, eciliate.....7. *L. Richii.*

Petioles usually less than 1.5 cm. long; leaf-blades with the veinlet-reticulation comparatively coarse, often immersed; peduncles not more than 8 mm. long at anthesis, the floral bracts not more than 4 mm. in diameter; flowers 2–4 per

umbel, essentially sessile; perianth-segments not more than 1.5 mm. long, ciliolate and usually sericeous dorsally.

Leaf-blades predominantly lanceolate or narrowly elliptic, usually about 3 times as long as broad, acute at base, and gradually narrowed to an obtuse apex, the lower secondaries often short and obscure.....8. *L. vitiana.*

Leaf-blades predominantly elliptic, usually less than twice as long as broad, often obtuse at base and obtusely cuspidate at apex, the lower secondaries usually obvious and ascending at a slightly sharper angle than the upper ones.....9. *L. montana.*

Floral bracts tomentellous or sericeous dorsally; perianth-segments 1.5–4 mm. long at anthesis, densely sericeous dorsally; leaf-blades usually larger, exceeding 10 cm. in length (except sp. no. 13), the secondary nerves 6 or more per side (fewer in sp. no. 13).

Leaf-blades oblong-elliptic, rounded or faintly retuse at apex, rounded to broadly obtuse at base, glabrous beneath at maturity; perianth-segments apparently always 6.

Rachis of inflorescence 2–6 mm. long, ferruginous-tomentose; petioles 1.5–2.5 cm. long; leaf-blades usually 10–13 × 4–5 cm., the petioles and nerves of lower surface often puberulent when young, the secondary nerves 9–11 per side.....10. *L. Imthurnii.*

Rachis of inflorescence 7–10 mm. long, glabrous; petioles 3–5.5 cm. long; leaf-blades usually 12–19 × 6–9.5 cm., strictly glabrous, the secondary nerves 6–8 per side.....11. *L. burckelloides.*

Leaf-blades ovate, gradually narrowed distally into an obtuse or obtusely cuspidate apex, broadly obtuse to acute at base; perianth-segments sometimes more than 6.

Lower surface of leaf-blades (only rarely less than 10 cm. long) persistently pubescent at least on costa and secondaries, the secondary nerves at least 6 per side; peduncles 7–14 mm. long at anthesis; perianth-segments 6–10, 2.5–4 mm. long; stamens 12–16, the outer filaments up to 4 mm. long..12. *L. mellifera.*

Lower surface of leaf-blades (usually 6–8.5 cm. long) glabrous at maturity, the secondary nerves 4 or 5 per side; peduncles about 5 mm. long at anthesis; perianth-segments 6, not more than 2 mm. long; stamens 9 (sometimes 10–12), the outer filaments about 2 mm. long.....13. *L. Alleniana.*

Flowers not known; leaf-blades elliptic-oblong, usually 7–10 × 3–4.5 cm., copiously short-pilose beneath, pinnate-nerved, with 4 or 5 secondaries per side.....14. *L. mathuataensis.*

1. **Litsea Pickeringii** (Seem.) Drake, Ill. Fl. Ins. Mar. Pacif. 278. 1892.

Tetranthera Pickeringii A. Gray ex Seem. Fl. Vit. 203. 1867.

DISTRIBUTION: Endemic, but perhaps the most widely distributed species of the genus in Fiji, often common locally (e.g. on the western slope of Taveuni). It has been reported as a tree (rarely as a shrub) 4–18 m. high, occurring at elevations of 30–900 m. in forest, wooded ravines, thickets, etc. Local names are *kasinga* (on Koro), *lilindi* (on Moala), and *nduvundu vuvula* (on Kambara); it is probably also known as *lindi,* which is more or

less a generic name for *Litsea* in parts of Fiji. The only specimen definitely cited by Seemann is his own no. *378,* from Taveuni. He further notes: "Also collected in Viti by U. S. Expl. Exped."; this record was based upon a communication from Gray (quoted on p. 202 of Flora Vitiensis) stating that the Exploring Expedition plant was identical with *Seemann 378.* Therefore, in spite of the specific epithet and the accredited authorship, I believe that *Seemann 378* must be taken as the type collection.

VITI LEVU: Mba: North of Natalau, near Lautoka, *Degener 14993* (A, Bish, NY, US); Nauwanga, vicinity of Nandarivatu, *Degener 14559* (A, Bish, NY, US); hills between Nggaliwana and Tumbeindreketi Creeks, east of the sawmill at Navai, *Smith 5898* (A, US); western and southern slopes of Mt. Tomanivi [Mt. Victoria], *Smith 5306* (A, US); Nandronga & Navosa: Along Singatoka River, *Greenwood 833* (A); Naloka, *B. E. Parham 1411* (A). VANUA LEVU: Mbua: Mbua Bay, *U. S. Expl. Exped.* (GH, US 40458, 40459). TAVEUNI: Somosomo, *Seemann 378* (TYPE COLL., GH); western slope, between Somosomo and Wairiki, *Smith 723* (Bish, GH, NY, US), *838* (Bish, GH, NY, US); vicinity of Waiyevo, *Gillespie 4653* (Bish, GH, NY, US), *4666* (Bish). KORO: East coast, *Smith 1040* (Bish, GH, NY, US). MOALA: Near Maloku, *Smith 1336* (Bish, GH, NY, US). KAMBARA: Limestone formation, *Smith 1248* (Bish, GH, NY, US). Fiji, without locality: *Horne 290* (GH), *385* (GH).

The type is a sterile specimen, *Seemann 378,* and consequently flowers of *L. Pickeringii* have not been described. The abundant flowering material now available indicates that the species is characterized by the absence of perianth-segments, the comparatively long pedicels, and the numerous (12–17) stamens. Of the Fijian species of *Litsea,* the first three in the present treatment have flowers without perianth-segments, while the remaining species have a distinct perianth. This character, although frequently not usable in the herbarium, appears to be the most basic one in the genus and to permit a natural grouping of species. *Litsea Pickeringii* is further characterized by having its leaf-blades of moderate size, usually pale or glaucous beneath, few-nerved, with usually obviously longer and ascending basal secondaries, and with characteristic hair-tufts in the axils of at least the lower secondaries.

In herbaria the binomial is often accredited to the authorship of (A. Gray) Benth. & Hook. However, the epithet was first published by Seemann as *Tetranthera Pickeringii* "A. Gray in litt. ad auct. sine descript.," and so Seemann should be considered the publishing author, to whom parenthetical reference should be made. Drake del Castillo, in his Illustrationes Florae Insularum Maris Pacifici, attributed innumerable combinations to Bentham & Hooker, citing pages of Genera Plantarum where such combinations were in fact not made. In these cases, of which there are several in *Litsea,* Drake should be considered the authority for the binomial.

2. **Litsea palmatinervia** (Meissn.) Drake, Ill. Fl. Ins. Mar. Pacif. 278. 1892.

Tetranthera palmatinervia Meissn. in DC. Prodr. **15**(1): 191. 1864; Seem. Fl. Vit. 202. *pl. 51.* 1867.

DISTRIBUTION: Known only from Namosi Province, in southern Viti Levu, at altitudes of 350–900 m.; although neither habit nor habitat data are available, the collections are presumably from small trees or shrubs in forested regions. The type is *Seemann 375,* deposited in the Meissner Herbarium at the New York Botanical Garden.

VITI LEVU: Namosi: Trail between Nanggarawai and Saliandrau, *Gillespie 3216* (Bish); vicinity of Namosi, *Gillespie 2828* (A, Bish, GH), *3044* (Bish, GH, NY); Mt. Voma, near summit, *Seemann 375* (GH, K, NY TYPE), *Gillespie 2724* (Bish); vicinity of Namuamua, 2 miles along Namosi trail, *Gillespie 3069* (A, Bish, GH, US).

This small-leaved species is possibly a local, but quite distinct, derivative from the more widespread *L. Pickeringii,* from which it differs in the reduced size and number of inflorescence-parts and its smaller leaf-blades with minute indument on the lower surface. Seemann, following Meissner's description, states: "Calyx 6-partite. Stamens 9 or 12?" However, my observations of type material indicate the complete absence of a perianth and the number of stamens as 6 to 9. Seemann's artist has correctly indicated the lack of a perianth, but I believe that he shows too many stamens, unless there is great variation in this feature.

3. **Litsea magnifolia** Gillespie in Bishop Mus. Bull. 83: 6. *fig. 3.* 1931.

DISTRIBUTION: Endemic, known from scattered localities on Viti Levu, Vanua Levu, and Taveuni, at elevations ranging from near sea-level up to 1200 m. The specimens are from trees (up to 18 m. or more high) in forested regions. The type is *Gillespie 2823.* In the original publication the local names of *wa koro vundi* and *moo ndari* are recorded, but in my observation *wa korovundi* (*wa* = vine) refers on Viti Levu to the genus *Faradaya* (Verbenaceae).

VITI LEVU: Mba: Slopes of Mt. Nairosa, eastern flank of Mt. Evans Range, *Smith 4051* (A, US); Naitasiri-Namosi boundary: Mt. Naitarandamu, *Gillespie 3313* (Bish), *3361* (Bish); Namosi: Mountain ridges in vicinity of Namosi, *Gillespie 2823* (Bish TYPE, GH); slopes of Mt. Voma, *Gillespie 2921* (Bish, GH). VANUA LEVU: Thakaundrove: Savuthuru Mt., near Valethi, Savu Savu Bay region, *Degener & Ordonez 13851* (A, Bish, NY, US). TAVEUNI: Vicinity of Waiyevo, *Gillespie 4783* (Bish, GH, NY, US).

On the basis of its floral characters this very distinct species must be placed as a relative of *L. Pickeringii,* but it is at once distinguished by the large size of its foliage and inflorescence-parts and by the very different venation. Although Gillespie mentions the stamens as "about 12," I have noted them as 14–18 in number in specimens including his no. *4783,* the basis of his floral description.

Christophersen has described a Samoan variety of *L. magnifolia,* which has been carefully considered so that a trinomial might be applied to the Fijian plant if desirable. The Samoan entity is characterized primarily by having its young branchlets and innovations crispate-pilose with reddish hairs 0.2–0.3 mm. long, the indument extending to the petioles and midribs of young leaves. The Fijian specimens of *L. magnifolia* have even the

young branchlets essentially glabrous, while the new parts are minutely sericeous with dull gray or whitish hairs about 0.1 mm. long. It is my observation that in this genus such differences are paralleled by obvious floral distinctions. Since flowers are not yet known for the Samoan plant, a full comparison cannot be made, but I believe that the two entities should not be retained in a single species. Therefore, I propose the new binomial **Litsea samoensis** (Christophersen) comb. nov. (*Litsea magnifolia* var. *samoensis* Christophersen in Bishop Mus. Bull. 128: 89. *fig. 10.* 1935) for the Samoan plant.

4. **Litsea Seemanni** (Meissn.) Drake, Ill. Fl. Ins. Mar. Pacif. 278, as *L. Seemannii.* 1892.

Tetranthera Seemanni Meissn. in DC. Prodr. **15**(1): 192. 1864; Seem. Fl. Vit. 203. *pl. 49.* 1867.

DISTRIBUTION: Known only from the summit of Mt. Voma (alt. about 915 m.), Viti Levu, where it occurs as a small tree up to 7 m. high. The type is *Seeman 374;* Meissner indicates the actual type specimen as "v. s. comm. a cl. inventore." However, no specimen of this collection is found in Meissner's personal herbarium, deposited at the New York Botanical Garden.

VITI LEVU: Namosi: Summit of Mt. Voma, *Seemann 374* (TYPE COLL., GH, K), *Gillespie 2745* (Bish), *B. E. Parham 557* (A), *598* (A).

Litsea Seemanni and the two new species described below form a very compact little group in the genus in Fiji, characterized by small, few-nerved, obtuse leaf-blades, compact foliage and inflorescences, and reduced number of stamens.

5. **Litsea Hornei** sp. nov.

Frutex vel arbor (?), ramulis gracilibus teretibus rugulosis primo purpurascentibus et obscure puberulis mox glabrescentibus cinerascentibusque; foliis ubique glabris, petiolis rugulosis supra complanatis 7–10 mm. longis, laminis subcoriaceis in sicco fuscis concoloribus ellipticis, 4–7 cm. longis, 2–3.5 cm. latis, basi acutis et in petiolum anguste decurrentibus, apice rotundato-obtusis vel paullo emarginatis, margine leviter recurvatis, penninerviis, costa supra subplana subtus prominente, nervis secundariis utrinsecus 3 vel 4 curvato-adscendentibus supra planis subtus paullo elevatis, rete venularum intricato supra subimmerso subtus prominulo; inflorescentiis ♂ axillaribus breviter umbellato-racemosis, rhachi ad 5 mm. longa apice minute ferrugineo-sericea mox glabra, umbellis 2 vel 3, bracteis sub pedunculis oblongis 1–1.5 mm. longis dorso sericeis caducis; pedunculo ad 4 mm. longo pilis brunneis minute adpresso-puberulo, bracteis 4 vel 5 pellucido-glandulosis suborbicularibus 3–4 mm. diametro margine interdum parce ciliolato excepto glabris; umbellis 6- vel 7-floris, pedicellis sub anthesi 0.7–1.5 mm. longis pilis aureis circiter 0.1 mm. longis copiose sericeis; perianthii segmentis 6 submembranaceis pellucido-glandulosis oblongo-lanceolatis circiter 2 mm. longis, obtusis, pilis 0.1–0.2 mm. longis dorso parce sericeis, margine integris ciliolatis; staminibus 9 (interdum 7 vel 8), filamentis exterioribus 1–1.3 mm. longis basim versus dorso

sericeo-strigosis glandulis pellucido-punctatis infra medium praeditis, antheris oblongis 0.8–1 mm. longis.

FIJI: Without definite locality, *Horne 972* (GH TYPE), 1877–78.

The plant here described differs from its close ally, *L. Seemanni,* primarily in the pubescence of its inflorescence-parts, especially the pedicels, and in having its leaf-blades concolored rather than glaucous beneath.

6. **Litsea Grayana** sp. nov.

Tetranthera Seemanni var. *chartacea* A. Gray ex Seem. Fl. Vit. 202, nomen. 1867.

Frutex vel arbor (?), ramulis gracilibus, novellis puberulis purpurascentibus, mox glabris cinereisque; foliis ubique glabris, petiolis supra complanatis 8–15 mm. longis, laminis chartaceis in sicco supra fusco-olivaceis subtus glaucis vel pallidioribus ellipticis, 4.5–8.5 cm. longis, 2–3.5 cm. latis, basi attenuatis et in petiolum longe decurrentibus, apice obtusis vel subrotundatis, margine subplanis, penninerviis, costa supra elevata subtus prominente, nervis secundariis utrinsecus plerumque 3 curvato-adscendentibus (infimis saepe conspicuioribus) utrinque acute elevatis, rete venularum utrinque conspicue prominulo; umbellis ♂ in axillis foliorum distalium solitariis vel 2–4 in inflorescentiam racemosam aggregatis, rhachi ad 4 mm. longa gracili glabra; pedunculo ad 6 mm. longo glabro, bracteis 4 ubique glabris pellucido-glandulosis e basi 3- vel 4-nervatis obovato-suborbicularibus circiter 3.5 mm. diametro; umbellis 4- vel 5-floris, pedicellis sub anthesi circiter 0.5 mm. longis pilis aureis 0.2–0.3 mm. longis copiose sericeis; perianthii segmentis 6 membranaceis pellucido-glandulosis oblongo-lanceolatis circiter 1.5 mm. longis, subacutis, basim versus dorso sericeis, eciliatis; staminibus (raro 5 vel 6) 7–9, filamentis exterioribus circiter 0.7 mm. longis inferne dorso parce strigillosis glandulis pellucido-punctatis infra medium praeditis, antheris 0.7–1 mm. longis.

FIJI: Without definite locality, *U. S. Expl. Exped.* (GH, US 40461 TYPE).

Gray's manuscript name on these specimens, published in a note by Seemann, indicates his awareness of the relationship of the plant, which is certainly very close to *L. Seemanni* but which differs in leaf-texture and inflorescence-indument. From the preceding new species, *L. Hornei,* the Exploring Expedition plant may be distinguished by its thinner leaf-blades with comparatively conspicuous venation and by its smaller floral parts, the minute pedicels having a longer pubescence.

7. **Litsea Richii** sp. nov.

Tetranthera Richii A. Gray ex Seem. Fl. Vit. 202, nomen. 1867.

Frutex vel arbor (?), ramulis gracilibus glabris subteretibus rugulosis, primo purpurascentibus, demum cinereis; foliis ubique glabris (vel petiolis juvenilibus basim versus obscure puberulis), petiolis gracilibus supra complanatis 2.5–3.5 cm. longis, laminis subcoriaceis in sicco utrinque olivaceis elliptico-oblongis, (6–)8–10 cm. longis, (3–)4–4.5 cm. latis, basi

acutis et in petiolum decurrentibus, apice obtuse cuspidatis, margine planis, penninerviis, costa supra paullo subtus valde elevata, nervis secundariis utrinsecus 4–6 subpatentibus utrinque elevatis, rete venularum intricato utrinque praecipue supra valde prominulo; inflorescentiis ♂ axillaribus breviter umbellato-racemosis, rhachi 4–9 mm. longa pilis circiter 0.3 mm. longis pallidis parce pilosa, umbellis 6–8 inferioribus caducis, bracteis sub pedunculis oblongis circiter 1 mm. longis obtusis caducis; pedunculo sub anthesi 12–14 mm. longo ut rhachi piloso, bracteis 4 copiose luteo-glandulosis suborbicularibus 4.5–5 mm. diametro glabris margine scariosis eciliatis; umbellis circiter 5-floris, pedicellis gracilibus sub anthesi circiter 1 mm. longis pilis stramineis circiter 0.3 mm. longis sericeis; perianthii tubo ut pedicello sericeo, segmentis 6 ovato-oblongis 1.5–2.2 mm. longis copiose pellucido-glandulosis, obtusis, glabris, eciliatis; staminibus 12 brevibus, filamentis exterioribus circiter 0.5 mm. longis inferne parce setulosis medium versus minute biglandulosis, antheris oblongis 0.8–1 mm. longis.

FIJI: Without definite locality, *U. S. Expl. Exped.* (GH, US 40460 TYPE).

Following Gray's apparent intention, I name this species for William Rich, one of the botanists on the South Pacific Exploring Expedition. It is a very distinct entity, clearly related to *L. vitiana* and *L. montana,* discussed below, but differing in obvious characters of foliage and inflorescence. The long petioles, very fine veinlet-reticulation, long peduncles, and strictly glabrous perianth-segments distinguish the present species.

8. **Litsea vitiana** (Meissn.) Drake, Ill. Fl. Ins. Mar. Pacif. 278. 1892. *Tetranthera vitiana* Meissn. in DC. Prodr. **15**(1): 514. 1864; Seem. Fl. Vit. 203. *pl. 50.* 1867.

DISTRIBUTION: Endemic, known from Viti Levu, Ovalau, and Taveuni, at elevations from near sea-level to 900 m. It is reported as a tree 5–10 m. tall, occurring in forest or woods, sometimes with the local name *lindi.* The type specimen, *Storck 903,* from Ovalau, is stated by Meissner to be in the De Candolle Herbarium.

VITI LEVU: Mba: Vicinity of Nandarivatu, *Gillespie 4170* (Bish, GH, NY, US), *4170.1* (Bish); slopes of the escarpment north of Nandarivatu, *Smith 6058* (A, US); northern slopes of Mt. Namendre, east of Mt. Koromba [Pickering Peak], *Smith 4516* (A, US); Nandronga & Navosa: Southern slopes of Nausori Highlands, above Tumbenasolo, *Greenwood 1185* (A); Ra: Vicinity of Rewasa, near Vaileka, *Degener 15450* (A), *15457* (A, Bish, NY, US), *15492* (A, Bish, NY, US). OVALAU: Port Kinnaird, *Storck 903* (TYPE COLL., GH, K). TAVEUNI: Mt. Manuka, on western slope between Somosomo and Wairiki, *Smith 777* (Bish, GH, NY, US). Fiji, without locality: *U. S. Expl. Exped.* (GH, US 40456).

Combinations of foliage and floral characters, as pointed out in my key, distinguish this species from other Fijian entities except the more recently described *L. montana,* discussed below.

9. **Litsea montana** Turrill in Jour. Linn. Soc. Bot. 43: 36. 1915.

DISTRIBUTION: Endemic, thus far known from Viti Levu and Taveuni,

at elevations of 450–1200 m. It is said to be a tree 5–20 m. tall, found in forest or dense woods; local names are *lindi* (general) and *thavuwaru* (in Mt. Tomanivi region). The type is *im Thurn 217*.

VITI LEVU: Mba: Nandarivatu, *im Thurn 217* (K TYPE); slopes of the escarpment north of Nandarivatu, *Smith 6288* (A, US); Tholo-i-Nandarivatu Mt., *Gillespie 3900* (Bish, GH, NY); Nandarivatu, road to Waikumbikumbi, *Gillespie 3194* (Bish); western and southern slopes of Mt. Victoria, *Gillespie 4115* (Bish, GH), *Smith 5279* (A, US); Nandronga & Navosa: Northern portion of Rairaimatuku Plateau, between Nandrau and Nanga, *Smith 5503* (A, US); southern slopes of Nausori Highlands, above Tumbenasolo, *Greenwood 1186* (A). TAVEUNI: Western slope between Somosomo and Wairiki, *Smith 745* (Bish, GH, NY, US).

The characters utilized in my key to distinguish this entity from *L. vitiana* are far from satisfactory, and it must be admitted that the specimens cited under the two species were identified arbitrarily by the superficial aspect of their foliage. Differences in leaf-proportion are noticeable in the two type collections, but there are many intermediate specimens. It has not been possible to compare floral characters satisfactorily, as most of the available material bears fruits. The type collection of *L. vitiana* bears staminate flowers and *Smith 777* pistillate flowers. The only flowering specimens of *L. montana* are the type and *Smith 745*, both pistillate. From these few collections it is seen that the umbels of *L. vitiana* may have 2, 3, or 4 flowers, whereas those of *L. montana* have only 2 flowers, as far as observed; few as these observations are, they indicate that the character of number of flowers, mentioned by Turrill as a basis for his species, is not reliable. I refrain from reducing *L. montana* to the synonymy of *L. vitiana* at this time, since it is possible that future examination of ample flowering material may indicate a basis for the two species; for the present, however, they are maintained with some skepticism.

10. **Litsea Imthurnii** Turrill in Jour. Linn. Soc. Bot. 43: 35. 1915.

DISTRIBUTION: Known only from the type specimen.

VITI LEVU: Mba: Nandarivatu (alt. about 850 m.), *im Thurn 224* (K TYPE).

It is curious that this excellently marked species has not been recollected, although several botanists have visited Nandarivatu since im Thurn. *Litsea Imthurnii* is readily distinguished by its comparatively large, oblong-elliptic leaf-blades with numerous secondaries and rounded or retuse apices, and by its copiously sericeous floral bracts, pedicels, and perianth-segments. With the three species described below as new, it forms a distinct and unmistakable group in Fiji.

11. **Litsea burckelloides** sp. nov.

Arbor (?), ramulis validis subteretibus, primo purpurascentibus et inconspicue puberulis, mox glabrescentibus; foliis ubique glabris, petiolis validis striato-rugulosis 3–5.5 cm. longis, laminis coriaceis in sicco supra

olivaceo-fuscis subtus brunnescentibus oblongo-ellipticis, (10–)12–19 cm. longis, (5–)6–9.5 cm. latis, basi inaequilateraliter rotundatis vel late obtusis, apice rotundatis vel leviter retusis, margine paullo incrassatis, penninerviis, costa valida supra complanata vel leviter canaliculata subtus prominente, nervis secundariis utrinsecus 6–8 subpatentibus marginem versus abrupte curvatis supra subplanis subtus valde elevatis, rete venularum intricato utrinque prominulo vel supra subimmerso; inflorescentiis ♂ axillaribus umbellato-racemosis, rhachi 7–10 mm. longa nigrescente glabra cicatricibus incrassata, umbellis circiter 6 inferioribus caducis, bracteis sub pedunculis oblongis circiter 1.5 mm. longis dorso sericeis caducis; pedunculo paullo ante anthesim circiter 5 mm. longo pilis pallide ferrugineis 0.2–0.3 mm. longis sericeo glabrescente, bracteis 4 vel 5 papyraceis obscure pellucido-glandulosis suborbicularibus circiter 6 mm. diametro dorso ut pedunculo dense sericeis; umbellis circiter 6-floris, pedicellis brevibus et perianthii tubo pilis circiter 0.2 mm. longis dense sericeis, segmentis 6 pellucido-glandulosis obovato-oblongis ante anthesim circiter 2.5 × 1.5 mm. extus sericeis; staminibus 12–15, filamentis parce pilosis, antheris oblongis circiter 1 mm. longis.

FIJI: Without definite locality, *Horne 733* (GH TYPE), 1877–78.

The species here described is obviously closely related only to *L. Imthurnii,* from which it is readily distinguished by its long petioles and larger, strictly glabrous leaf-blades with fewer secondary nerves. The new species at a first glance does not suggest *Litsea,* but its foliage bears a striking resemblance to that of some Pacific species of *Burckella* (Sapotaceae); hence the specific epithet.

12. **Litsea mellifera** sp. nov.

Tetranthera enneadenia A. Gray ex Seem. Fl. Vit. 202, nomen. 1867.

Arbor ad 35 m. alta, trunco ad 1 m. diametro, ramulis teretibus saepe validis juventute canescenti- vel ferrugineo-tomentellis demum glabrescentibus; petiolis validis 1.5–3.5 cm. longis supra complanatis ut ramulis tomentellis demum glabratis; laminis subcoriaceis in sicco utrinque fusco-viridibus vel subtus pallidioribus ovatis, (8–)10–18 cm. longis, (4.5–)6–14 cm. latis (foliorum juvenilium petiolis ad 6 cm. longis et laminis ad 40 × 19 cm.), basi inaequilateraliter late obtusis et in petiolum breviter decurrentibus, in apicem obtusum vel obtuse cuspidatum gradatim angustatis, margine planis vel leviter recurvatis, supra glabris vel primo costa tomentellis, subtus (praecipue secus costam et nervos) ferrugineo-tomentellis vel puberulis (pilis 0.1–0.3 mm. longis) faciei interdum subglabratis ac etiam secus nervos interdum pilis 0.5–0.8 mm. longis subsetosis, penninerviis, costa valida supra leviter elevata vel subcanaliculata subtus prominente, nervis secundariis utrinsecus 6–8 erecto-patentibus marginem versus curvatis supra planis vel leviter impressis subtus prominentibus nervis tertiariis subparallelibus interconnexis, rete venularum supra intricate prominulo subtus laxiore elevato; inflorescentiis ♂ saepe copiosis axillaribus vel ramulis defoliatis enatis, umbellato-racemosis,

rhachi sub anthesi ad 18 mm. longa cicatricibus incrassata et pedunculis copiose ferrugineo-tomentellis (pilis crispatis 0.1–0.2 mm. longis), umbellis 5–12 inferioribus caducis, bracteis sub pedunculis oblongis 2–3 mm. longis dorso copiose tomentellis caducis; pedunculo sub anthesi 7–14 mm. longo, bracteis 4 vel 5 papyraceis obscure pellucido-glandulosis obovato-suborbicularibus 6–7 mm. diametro ut pedunculo dorso tomentellis; umbellis 5–7-floris, pedicellis 2–3 mm. longis et perianthii tubo pilis circiter 0.3 mm. longis copiose sericeis, segmentis 6–10 membranaceis oblongis 2.5–4 mm. longis 1–2 mm. latis apice rotundatis vel obtusis dorso pilis 0.4–0.6 mm. longis ferrugineis dense strigoso-sericeis; staminibus 12–16 sub anthesi quam perianthii segmentis longioribus, filamentis filiformibus exterioribus ad 4 mm. longis conspicue villosis basim versus biglandulosis, antheris oblongis 1.2–1.5 mm. longis dorso luteo-glandulosis; calyce sub fructu coriaceo cupuliformi apice ad 17 mm. diametro margine undulato-lobato, fructu oblongo-ellipsoideo ad 3 cm. longo et 1.8 cm. lato apice obtuse apiculato.

DISTRIBUTION: Known from scattered localities on Viti Levu, Ovalau, Vanua Levu, and Taveuni, at elevations from near sea-level to about 850 m. Observations pertaining to habit, habitat, and local names are mentioned below. The type is *Smith 4393*.

VITI LEVU: Mba: Slopes of Mt. Nairosa, eastern flank of Mt. Evans Range, alt. 700–800 m., May 14, 1947, *Smith 4393* (A TYPE, US) (*vuruti-moko;* tree 35 m. high, in dense forest, the trunk 1 m. in diameter; inner perianth-segments and stamens white, soon becoming yellowish); slopes of the escarpment north of Nandarivatu, alt. 550–800 m., *Smith 6290* (A, US) (tree 20 m. high, in woods along stream); Ra: Tuvavatu, between Rewasa and Nokonoko, near Vaileka, alt. 50–200 m., *Degener 15369* (A, Bish, NY, US) (*lindi;* tree 10 m. high, in forest); Nandronga & Navosa: Southern slopes of Nausori Highlands, in drainage of Namosi Creek above Tumbenasolo, alt. 300–450 m., *Smith 4576* (A, US) (tree 25 m. high, in dense forest; stamens cream-white); Naitasiri: Raradawai, Wainamo-Wainisavulevu Divide, alt. 850 m., *St. John 18261* (Bish, US) (*linchi lailai;* tree 15 m. high, the trunk 1 m. in diameter; fruit red). OVALAU: *U. S. Expl. Exped.* (GH, US 40457, source of the name *Tetranthera enneadenia*). VANUA LEVU: Mbua: Mbua Bay, *U. S. Expl. Exped.* (GH, with large juvenile leaves); lower Wainunu River valley, alt. 0–200 m., *Smith 1737* (Bish, GH, NY, US) (*kasinga;* tree 18 m. high, in dense forest). TAVEUNI: Above Waiyevo, alt. 300 m., *Gillespie 4735* (Bish) (near rocky stream).

Most of the cited specimens bear staminate inflorescences, but mature fruits are described from *St. John 18261,* while *Smith 6290* bears young fruits. The flowers of this species are very fragrant, and I noticed that bees were attracted in large numbers to such specimens as my nos. *4393* and *4576*. Some of the cited material has been identified as *L. magnifolia,* to which it bears a superficial similarity, but of course the perianth characters and the pubescence immediately distinguish the new species. *Litsea mellifera* is most closely allied to *L. Imthurnii,* from which it differs in very obvious characters of leaf-shape and pubescence, as pointed out in my key.

13. **Litsea Alleniana** sp. nov.

Arbor ad 12 m. alta, ramulis subteretibus glabris (novellis obscure ferrugineo-puberulis) primo purpurascentibus mox cinereis; foliis juventute petiolo et faciei inferiore puberulis mox ubique glabratis, petiolis supra canaliculatis 12–16 mm. longis, laminis subcoriaceis in sicco supra fusco-olivaceis subtus pallidis ovatis, 6–8.5 cm. longis, (3–)4–5 cm. latis, basi inaequilateraliter subacutis et in petiolum decurrentibus, in apicem obtuse cuspidatum angustatis, margine subplanis, penninerviis, costa supra subplana subtus prominente, nervis secundariis utrinsecus 4 vel 5 erecto-patentibus supra leviter subtus conspicue elevatis, rete venularum intricato utrinque prominulo; inflorescentiis ♂ axillaribus vel ramulis defoliatis enatis, umbellato-racemosis, rhachi sub anthesi 5–9 mm. longa cicatricibus incrassata et pedunculis pilis ferrugineis 0.1–0.2 mm. longis dense adpresso-strigosis, bracteis sub pedunculis subcoriaceis oblongis circiter 1.5 mm. longis caducis, umbellis 6–10 inferioribus caducis; pedunculo sub anthesi circiter 5 mm. longo, bracteis 4 papyraceis obscure pellucido-glandulosis suborbicularibus circiter 5 mm. diametro ciliolatis dorso minute sericeo demum exterioribus plus minusve subglabratis; umbellis circiter 5-floris, pedicellis sub anthesi circiter 1.5 mm. longis et perianthii tubo pilis circiter 0.2 mm. longis dense ferrugineo-sericeis, segmentis 6 membranaceis oblongis 1.5–2 mm. longis 1–1.3 mm. latis copiose glandulosis apice rotundatis vel obtusis dorso ut pedicello sericeis; staminibus 9 (interdum 10–12) quam perianthii segmentis longioribus, filamentis exterioribus circiter 2 mm. longis pilis brevibus strigillosis basim versus biglandulosis, antheris oblongis circiter 1.2 mm. longis.

VITI LEVU: Mba: Summit of Mt. Koroyanitu, high point of Mt. Evans Range, alt. 1165–1195 m., May 2, 1947, *Smith 4232* (A TYPE, US) (tree 12 m. high, in dense ridge forest and thickets; filaments white).

This plant is obviously closely related to *L. mellifera,* described above, in comparison with which it is reduced in size of foliage and inflorescence-parts and in number of stamens. Its completely glabrous and comparatively few-nerved leaves, short petioles, and the closer indument of its perianth-segments and filaments further distinguish *L. Alleniana.* On the basis of leaf-size the new species might be sought as a relative of *L. montana,* but differences in inflorescence-pubescence and leaf-texture, venation, etc., show that it is not of this alliance.

It is a privilege to associate the name of this species with that of Dr. Caroline K. Allen, in recognition of her extensive and valuable work on the Lauraceae.

14. **Litsea mathuataensis** sp. nov.

Arbor ad 6 m. alta, ramulis gracilibus teretibus fusco-cinereis apicem versus pilis ferrugineis 0.1–0.2 mm. longis dense hispidulo-tomentellis demum glabratis; petiolis gracilibus subteretibus 10–20 mm. longis ut ramulis pilosis; laminis papyraceis in sicco supra fusco-viridibus subtus glaucis elliptico-oblongis, (5–)7–10 cm. longis, (2.5–)3–4.5 cm. latis, basi

acutis et in petiolum decurrentibus, apice obtuse cuspidatis, margine subplanis, supra glabris, subtus pilis pallidis circiter 0.2 mm. longis suberectis copiose pilosis etiam interdum basim costae versus pilis longioribus stramineis densius indutis, penninerviis, costa supra subplana subtus prominente, nervis secundariis utrinsecus 4 vel 5 adscendentibus leviter curvatis supra planis subtus acute elevatis, rete venularum utrinque prominulo; inflorescentiis non visis; infructescentiis axillaribus breviter umbellato-racemosis, rhachi subnulla vel ad 2 mm. longa ut ramulis pilosa, umbellis sub fructu ut videtur solitariis, pedunculo valido ad 10 mm. longo plerumque puberulo; fructibus 1 vel 2, pedicellis validis ad 5 mm. longis parce puberulis vel glabratis; calyce sub fructu coriaceo cupuliformi apice 6–8 mm. diametro subintegro, fructu oblongo-ellipsoideo ad 17 mm. longo et 8 mm. lato apice obtuse apiculato.

VANUA LEVU: Mathuata: Southern slopes of Mt. Numbuiloa, east of Lambasa, alt. 100–350 m., Oct. 27, 1949, *Smith 6364* (A TYPE, US) (tree 6 m. high, in open forest). Fiji, without locality: *Horne s. n.* (GH).

The cited specimens are in fruit and so cannot be accurately placed within the genus, but they so clearly represent an entity not represented among the species discussed above that I venture to describe them as new. The pubescence of the lower leaf-surface and the branchlets distinguishes *L. mathuataensis* from *L. vitiana,* which is very possibly its closest ally. If perianth-characters should indicate that the new species is related to *L. Pickeringii,* it will be readily differentiated by its pubescence and its distinctly pinnate venation.

5. CASSYTHA L.

1. **Cassytha filiformis** L. Sp. Pl. 35. 1753; Meissn. in DC. Prodr. 15(1): 255. 1864; Seem. Fl. Vit. 203. 1867; Drake, Ill. Fl. Ins. Mar. Pacif. 279. 1892; Greenwood in Proc. Linn. Soc. 154: 103. 1943.

DISTRIBUTION: This widespread parasitic herb, found throughout tropical regions, occurs frequently in Fiji at elevations up to about 350 m. It is most abundant in thickets behind beaches or on dry river-banks. A local name is *wa urulangi* (or *wa uruilangi* or other variants).

VITI LEVU: Mba: Shores of Mba River near its mouth, *Smith 4743* (A, US); Serua: Vicinity of Ngaloa, along beach, *Degener 15090* (A, Bish, NY, US); Navua, over shore bushes, *Parks 20362* (Bish). VANUA LEVU: Mbua: Mbua Bay, *U. S. Expl. Exped.* (US 40439); Mathuata: Southern slopes of Mt. Numbuiloa, east of Lambasa, *Smith 6433* (A, US). KAMBARA: *Moore 26* (US). FULANGA: Beach, limestone formation, *Smith 1211* (Bish, GH, NY, US). Fiji, without definite locality: *U. S. Expl. Exped.* (GH); *Seemann 373* (GH); *Horne* (GH).

SPECIES EXCLUDED FROM FIJI

ACTINODAPHNE MULTIFLORA Benth. in Hook. Lond. Jour. Bot. 2: 230. 1843.

Meissner (in DC. Prodr. 15(1): 214. 1864) mentions this species as

Smith, A C. 1951. "Studies of Pacific Island plants, VIII. The Fijian species of Lauraceae." *Journal of the Arnold Arboretum* 32(1), 27–58. https://doi.org/10.5962/bhl.part.9728.

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