

A REVISION OF LEVIERIA (MONIMIACEAE)

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SUMMARY

Seven species are recognized, of which two (*L. scandens* and *L. orientalis*) are described as new. Six species are reduced to synonymy (*L. parvifolia* A. C. Smith; *L. rudolfii* Perkins; *L. schlechteri* Perkins; *L. urophylla* Perkins; *L. laxiflora* Perkins; *L. forbesii* Perkins). All species occur in New Guinea, one extends to Queensland, and one to the Moluccas.

INTRODUCTION

Beccari founded the genus *Levieria* to include a single species, *L. montana*, which he had collected on the Arfak Mountains. The range of this species was later found to extend into the Moluccas as far west as Ceram and Ambon, and also to the east into Papua New Guinea. Subsequently Perkins described several species from New Guinea and transferred one Queensland species described by von Mueller as *Mollinedia* (?) *acuminata* to this genus. In 1941 A. C. Smith added a further species from New Guinea.

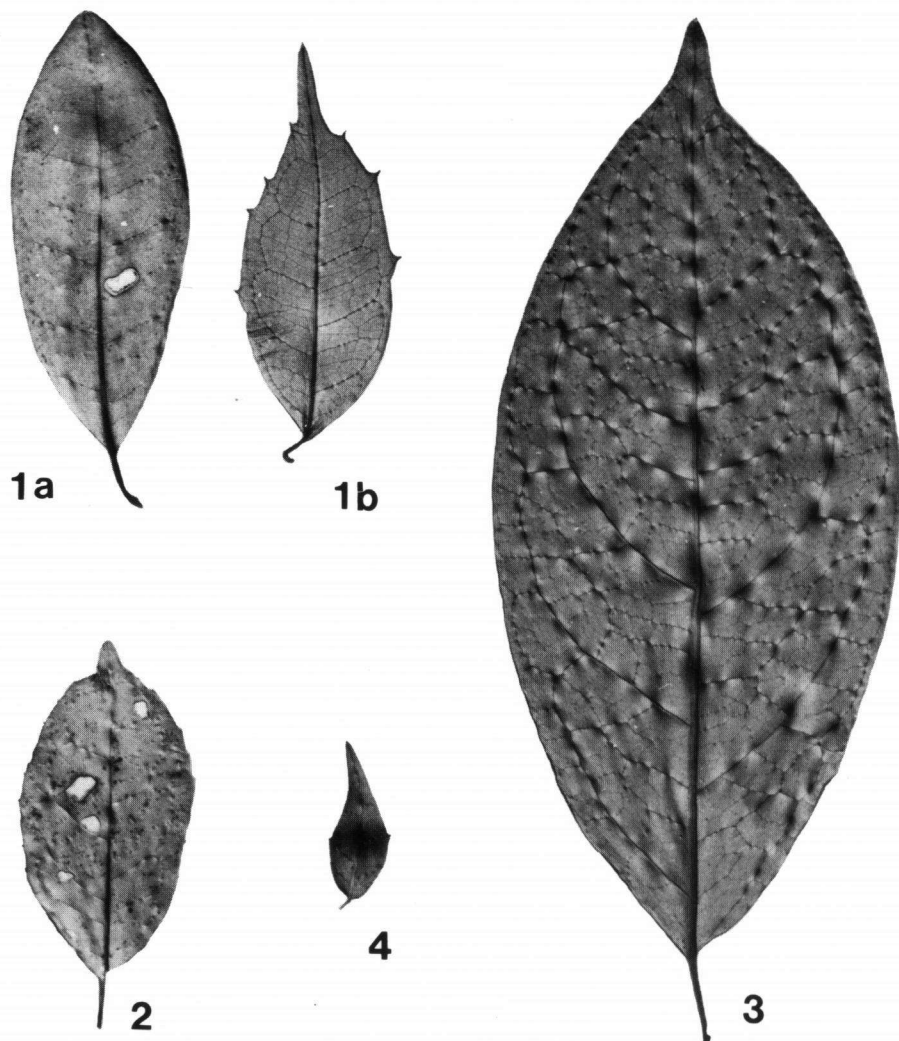
At the time of Perkins's revision, in 1915, very little material was available. The very numerous collections made since then have clarified specific limits, and this has called for the reduction to synonymy of five of Perkins's species and also that of A. C. Smith. In addition the range of the Queensland species is found to extend to south-east New Guinea, and two new species, both with restricted ranges, are described.

The species of *Levieria* are difficult to define because they are usually variable and diagnostic characters are elusive. Since even the characters found most useful in defining the species merge, it might be thought that the whole genus consists of a reticulum of continuous variation. However, plants with intermediate characters are relatively few (except between *L. squarrosa* and *L. parvifolia*, here united), so that the species can be recognized with some confidence once they have become familiar, but identification by means of key characters is uncertain. Floral and fruit characters are of little value (and are not often well displayed on herbarium specimens), so the species are here keyed by means of foliage characters. As these are difficult to define, the key is intended to be used in conjunction with the illustrations, bearing in mind that these show only representative states.

LEVIERIA

Levieria Becc., Malesia 1 (1877) 192; Perkins and Gilg, Pflanzenreich 4 (1901) 20; Perkins, Bot. Jahrb. 52 (1915) 192; Perkins, Übersicht über die Gattungen der Mominiaceae. Leipzig (1925) 20.

Trees or shrubs, rarely climbing. Leaves simple, opposite, exstipulate, glabrous when mature or more or less pubescent below, entire or dentate. Dioecious, with



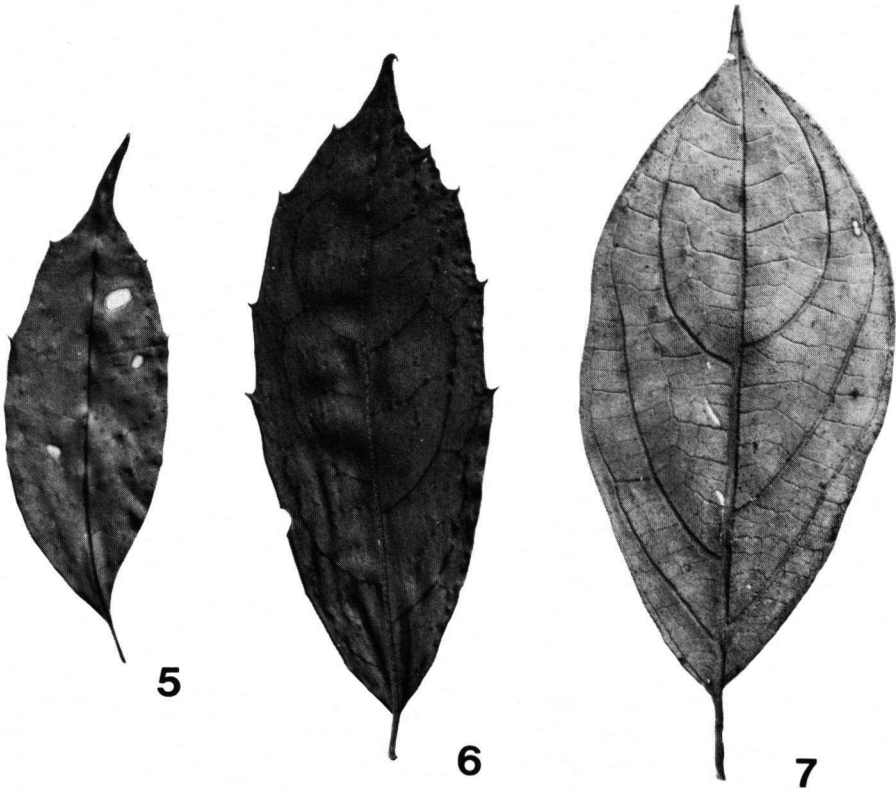
Figs. 1–4. Leaves of species of *Levieria*, all $\times \frac{3}{4}$. — 1. *L. squarrosa*; a. eastern form (Streimann and Kairo NGF 47579); b. western form (van Royen and Sleumer 7472). — 2. *L. orientalis* (Brass 24841). — 3. *L. nitens* (white NGF 10340). — 4. *L. scandens* (Vinas and Wiakabu Lae 59615).

terminal or lateral cymose inflorescences. Male flowers with a small receptacle bearing 8 rounded tepals enclosing numerous almost sessile stamens; connective projecting; anthers opening by longitudinal slits. Female flowers \pm globose with a small ostiole bounded by 4 irregular tepals. The margin of the receptacle soon becoming reflexed to expose the ovoid sessile drupes.

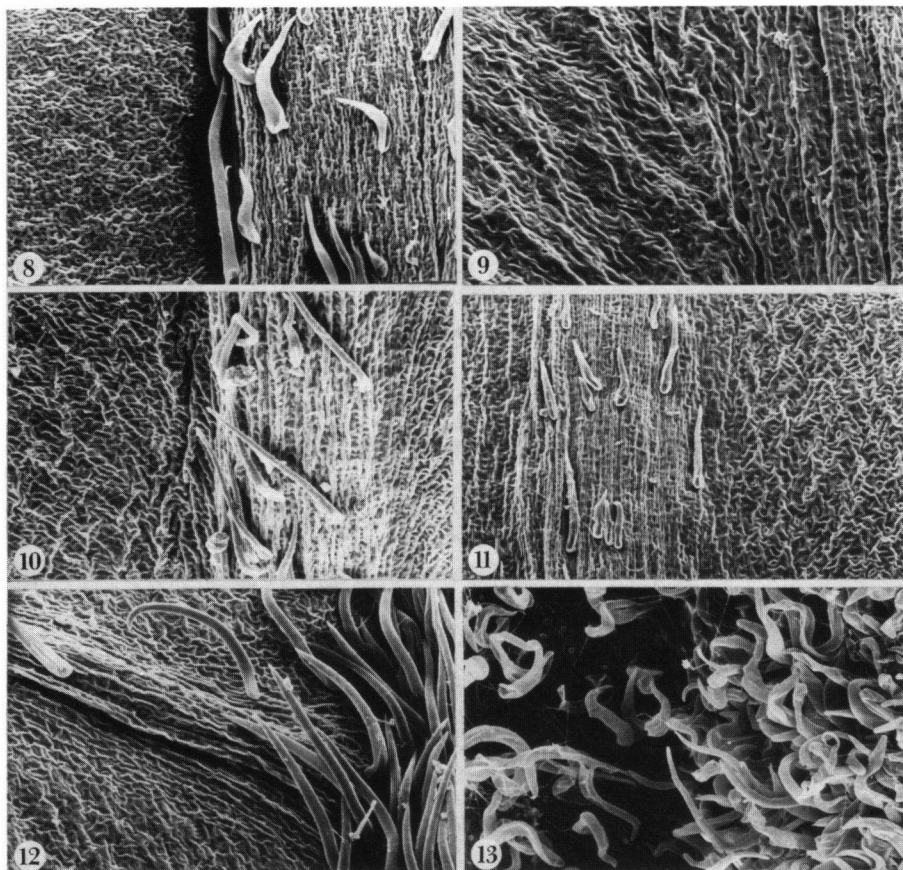
Distribution: Moluccas (Ceram, Ambon), West Irian, Papua New Guinea (not in the Bismarck Archipelago), Queensland.

Ecology: Mainly in lower montane rain forest, between 1200 and 3000 m. but descending to sea level. Frequent in the shrub layer and lower canopy of rain forest; persisting in regrowth areas, more rarely on shrubby hillsides.

Notes: Male plants of the genus may be recognized by the separate rounded tepals borne on a very small receptacle. Female plants in flower and fruit are distinguished by the developing drupes becoming exposed by a curling outwards of the receptacle together with the tepals on its margin. This type of fruit development distinguishes the *Hedycaryeae* from other tribes of the family. In the *Mollinedieae* the tepals and the upper part of the receptacle fall as a calyptra after flowering, leaving a distinct circular abscission scar. In the *Monimiaceae* the receptacle encloses the developing carpels until they are mature.



Figs. 5–7. Leaves of species of *Levieria*, all $\times \frac{2}{3}$. — 5. *L. acuminata* (Schodde and Craven 4869). — 6. *L. montana* (Hoogland and Craven 10940). — 7. *L. beccariana* (Millar and Sayers NGF 23781).



Figs. 8 – 13. Scanning electronmicrographs of lower leaf surfaces of species of *Levieria*, all $\times 30$. — 8. *L. squarrosa* (western form) (Vink 17228). — 9. *L. squarrosa* (eastern form) (Streimann and Kairo NGF 47579). — 10. *L. scandens* (Vinas and Wiakabu Lae 59615). — 11. *L. acuminata* (Schodde 4778). — 12. *L. montana* (Hoogland and Craven 10940). — 13. *L. beccariana* (Hope ANU 10720).

KEY TO THE SPECIES

- 1a. Undersurface of mature leaf glabrous 2
- b. Undersurface of mature leaf with some indumentum (at least a few hairs at the base of the mid-rib). 4
- 2a. Lamina broadly elliptic to elliptic 3
- b. Lamina obovate or narrowly elliptic. 1. *L. squarrosa*
- 3a. Leaf about 5 cm long, or shorter. 2. *L. orientalis*
- b. Leaf about 7 cm long, or longer. 3. *L. nitens*
- 4a. Indumentum of lower leaf surface confined to the mid-rib 5
- b. Indumentum of lower leaf surface extending to the lateral veins (and sometimes to the whole lamina). 7

- 5a. Liana with small leaves (3 cm long, or less). 4. *L. scandens*
 b. Trees or shrubs, leaves longer than 3 cm. 6
 6a. Lateral veins clearly defined, blade usually rhombic or obovate. 1. *L. squarrosa*
 b. Lateral veins indistinct, blade narrowly elliptic. 5. *L. acuminata*
 7a. Leaf with a long narrow apiculum, blade small (usually 7 × 2.5 cm). 5. *L. acuminata*
 b. Apiculum, if present, shorter; blade larger (usually more than 8 cm long). 8
 8a. Leaf oblong, hairs mostly straight and often sparse. 6. *L. montana*
 b. Leaf obovate, hairs crisped and usually copious. 7. *L. beccariana*

1. *Levieria squarrosa* Perkins. — Figs. 1, 8, 9, 14

L. squarrosa Perkins, Bot. Jahrb. 52 (1915) 196; A. C. Smith, J. Arn. Arb. 22 (1941) 232. — *L. parvifolia* A. C. Smith, J. Arn. Arb. 22 (1941) 233. '*L. montana* Becc.' Kanehira and Hatusima, Bot. Mag. Tokyo 56 (1942) 249.

Sparsely branched shrub or small tree, occasionally to 18 m high; stems more or less densely covered with minute hairs at least when young, often becoming glabrous. *Leaves* opposite; petiole 4–8 mm long, glabrous or minutely hairy; lamina chartaceous, obovate, or rhombic, 3–12 × 1–4 cm, in two principal forms with intermediate states frequent: (1), apex rounded or sub-acute, margin entire, glabrous; (2), with an acute apiculum, upper part of margin dentate, mid-rib below with obscure minute appressed hairs (rarely with dense but very short crisped hairs); mid-rib prominent, lateral veins arched and meeting within the margin. Dioecious. *Male inflorescence* either small lateral pleiochasia (up to c. 4 cm long) or terminal pleiochasia or panicles (up to c. 8 cm long); rhachis and branches of panicles with a few pairs of pedicels (c. 8 mm long) and a terminal flower, minutely hairy, and with pairs of small lanceolate bracts below the pedicels and sometimes along the peduncle and rhachis. *Male flowers* more or less globose, 7 mm across; receptacle small, bearing 8 tepals; 4 outer tepals rotund, sub-coriaceous, with sparse hairs on the outer surface; 4 inner smaller, narrower, membranaceous, glabrous. *Stamens* numerous (c. 25 or more); connective acuminate; anthers sub-sessile, loculi lateral, separate, each opening by a longitudinal slit. *Female flowers* lateral or terminal, solitary or in few-flowered racemes (c. 4 cm long); receptacle coriaceous, broadly cupuliform (5–8 mm across) with an irregularly cleft mouth (4 tepals may be more or less clearly defined); carpels numerous (ca. 25 or more), c. 2 mm long, densely packed over the receptacle, obovoid, truncated distally and bearing a short style. *Drupes* numerous, ovoid, apex acute, glabrous, ca. 9 × 5 mm when dry, sessile on a recurved leathery pilose receptacle.

Distribution: New Guinea (From Vogelkop Peninsula to the Owen Stanley Range).

Ecology: A laxly branched shrub in the undergrowth of rain forest, sometimes semi-scandent, or a lower-storey tree up to 18 m high with rather dense leafy branches. Occurring above 1800 m, ascending to 3000 m (rarely descending to 250 m). In montane and mossy forests of varying composition (*Podocarpus*, *Libocedrus*, *Nothofagus*, *Castanopsis*) and also in regrowth and marginal forest.

Vernacular: *Ang* (Hindenburg Range); *Eberak* (Mendi); *Iekiem* (Ka-



Fig. 14. *L. squarrosa*. — a. twig of male plant (western form) (Pullen 5227), $\times \frac{1}{2}$; b. male flower $\times 5$, and stamen; c. twig of female plant (eastern form, Brass 29090), $\times \frac{1}{2}$; d. female flower, $\times 4$, and in longitudinal section, $\times 5$; e. fruit. $\times \frac{3}{4}$ (Womersley and Floyd 6908).

paukoe); *Kalipka* (Minj); *Kammakam*, *Kamokam* (Enga); *Kip* (Togoba); *Kolkola* (Eipomek); *Kombo* (Onim); *Kunguma* (Togoba); *Main-gobugont* (Minj); *Melaik* (Togoba); *Mungomunk* (Mendi); *Tantan* (Mendi); *Timonksagu* (Wabag).

Notes: The bark is grey-brown, smooth with very shallow fissures; inner bark pinkish brown. The wood is heavy, light brown with wide, pale rays. Flowers yellowish-green, drupes orange to reddish black on yellow receptacle.

The form of the leaf is extremely variable, at first suggesting that two species are involved (Fig. 1, 14). Obtuse, entire, glabrous leaves occur in the eastern portion of New Guinea, whereas apiculate, dentate and obscurely tomentulose leaves occur towards the west. There is, however, a considerable area of overlap of the two forms (mainly between 144° E and 146° E) and in this region leaves with intermediate characters are abundant. Thus, although all specimens from the two ends of New Guinea are quite distinct in several characters, these two forms are connected by a broad zone in which it is impossible to separate them. For this reason it has been necessary to recognize only one species — see van Steenis in *Flora Malesiana I*, Vol. 5, (1957), p. cxci.

2. *Levieria orientalis* Philipson, *sp. nov.* — Fig. 2

Arbor foliis oppositis; petiolus 5–8 mm longus; lamina late elliptica, c. 5.0 × 2.5 cm, glabra, apiculus brevi obtuso, minutis in margine dentibus. Dioecia ? (flores masculi non visi). Inflorescentia ex cymis paucifloribus composita. Flores feminei, coriacei, glabri, globosi, c. 3 mm diam., ostolio brevi, carpelli c. 20. — **T y p u s:** *Brass 24841* (A).

A tree to 10 m high; shoots glabrous except for the youngest parts. *Leaves* opposite, glabrous; petiole 5–8 mm long; lamina chartaceous, broadly elliptic or elliptic; about 5 × 2.5 cm, broadly cuneate at the base, the rounded apex produced in a short obtuse apiculus; margin with few widely spaced teeth; mid-rib prominent below; lateral veins rather obscure, arched and meeting within the margin. Probably dioecious, male flowers not seen. *Inflorescence* of terminal and lateral few-flowered cymes or flowers solitary. *Female flowers* with a glabrous, coriaceous, globose receptacle, c. 3 mm diam., the ostiole small with obscure tepal-lobes; carpels c. 20, densely packed over the receptacle, ovoid with a short style. *Drupes* ovoid, c. 8 × 6 mm, sessile on a reflexed sparsely hairy receptacle.

Distribution: Papua New Guinea. Milne Bay Province. Endemic to Goodenough Island.

Ecology: A much branched tree, 8–10 m high, occurring at the edge of forest at 1500 m.

Notes: Drupes black on a yellow receptacle. The glabrous, broad elliptic leaves suggest *L. nitens*, but are much smaller, and their short apiculus is obtuse.

3. *Levieria nitens* Perkins. — Figs. 3, 15

L. nitens Perkins in Perkins and Gilg, *Pflanzenreich*, 4 (1901) 21; A. C. Smith, *J. Arn. Arb.* 22 (1941) 232. — *Steganthera schlechteri* Perkins, *Pflanzenreich Nachtr. Heft 49* (1911) 21 (non *Levieria schlechteri* Perkins). — *L. rudolfii* Perkins, *Bot. Jahrb.* 52 (1915) 196.

A moderate to large tree reaching 45 m; bole 25 m, buttressed, d.b.h. 1 m, or a shrub sometimes with semi-scandent branches; young shoots with appressed, often golden, hairs. *Leaves* opposite, glabrous; petiole 10–15 mm; lamina chartaceous, elliptic, broadly elliptic or oblong, 7–17 × 2.5–6 cm; base cuneate or attenuate; apex produced as an apiculus; margin entire or occasionally with a few small teeth;

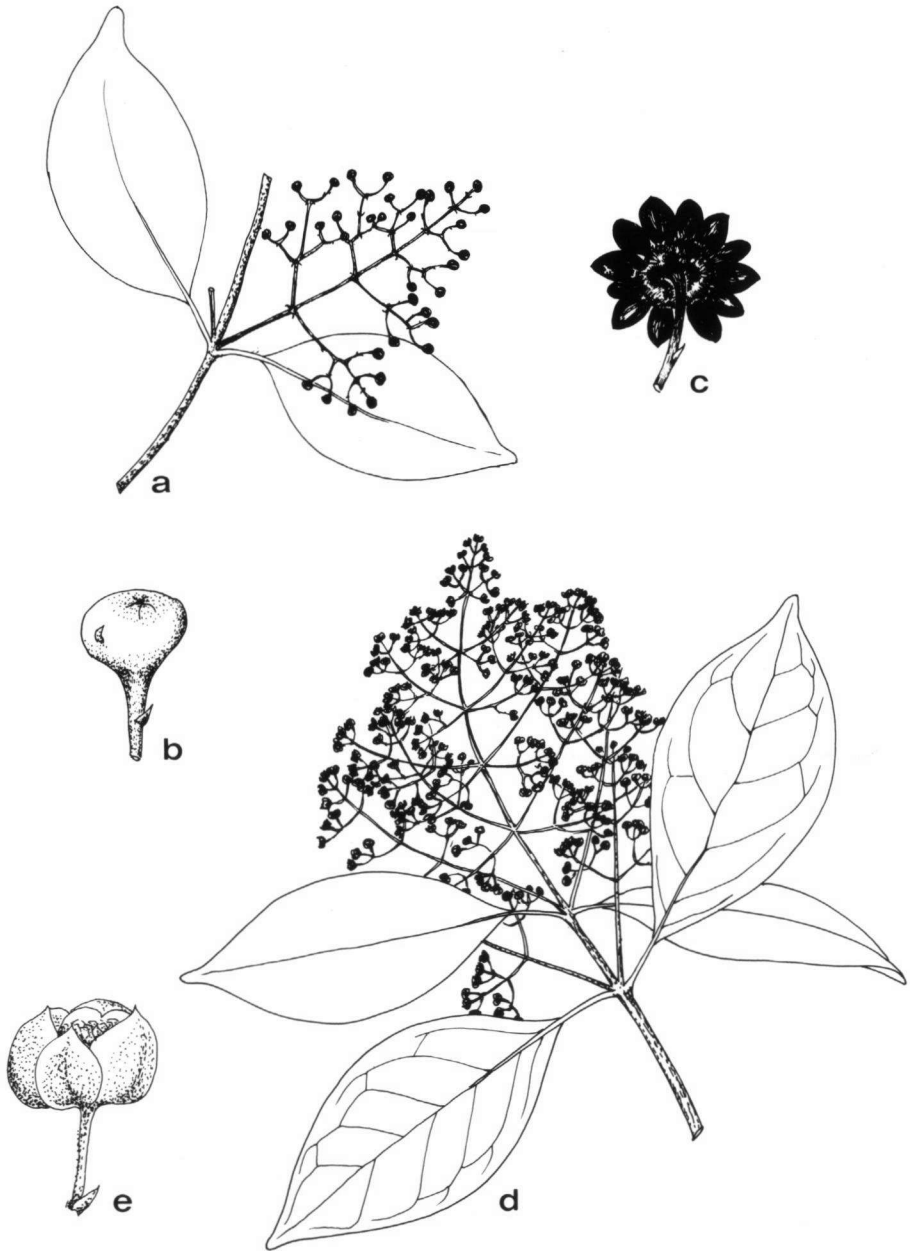


Fig. 15. *L. nitens*. — a. twig of female plant, $\times \frac{1}{2}$ (Johns NGF 47253); b. female flower, $\times 5$; c. fruit, $\times \frac{1}{2}$ (Millar NGF 23427); d. twig of male plant, $\times \frac{1}{2}$ (Clarke ANU 9587); e. male flower, $\times 7\frac{1}{2}$.

mid-rib prominent; lateral veins usually indistinct, arched and meeting within the margin. Dioecious. *Inflorescence* of lateral or terminal pleiochasia or usually finely branched panicles, minutely hairy, about 10–15 cm long; the rhachis bearing pairs or whorls of branches subtended by small bracts. *Male flowers* globose, 3–4 mm across; receptacle small; tepals 8, rounded; stamens numerous, connective projecting, anthers sessile, loculi opening by longitudinal slits. *Female flowers* with a coriaceous cupuliform receptacle, c. 4 mm diam., with an irregularly cleft ostiole; carpels numerous, densely packed over the receptacle, ovoid with short style. *Drupes* numerous, ovoid, 8–10 × 4–5 mm (when dry), sessile on a leathery, pilose receptacle with a reflexed margin.

Distribution: New Guinea (From the Vogelkop Peninsula to the Huon Peninsula and Tufi).

Ecology: A tree to 45 m high, though normally smaller and even shrubby; the branches sometimes sprawling or semi-scandent. Occurring in montane and mossy forest, associated with *Nothofagus*, *Castanopsis*, *Lithocarpus*, etc. Also in regrowth and on scrubby slopes. Usually ranging between 500 and 1800 m, but occasionally descending almost to sea level.

Notes: Bark smooth or becoming fissured, olive- or grey-brown; under bark pinkish. Wood soft, straw coloured, with large rays. Flowers greenish-cream, drupes orange to black on yellow or orange receptacles.

The mature leaves are entirely glabrous, even at the base of the mid-rib, a character found in other *Levieria* species only in *L. orientalis* (which has smaller leaves and is confined to Goodenough Island) and in some specimens of *L. squarrosa* (which has leaves of a different shape). The lamina of *L. nitens* is broadly elliptic and apiculate, whereas that of *L. squarrosa* is narrowly obovate or elliptic and usually obtuse and not apiculate (in glabrous forms). Confusion is more likely to occur between *L. nitens* and *L. montana*. In that species the leaf shape is often very similar to that of *L. nitens* and the inconspicuous hairs of the leaf may be confined to the underside of the mid-rib and may be largely lost by abrasion.

4. *Levieria scandens* Philipson, *sp. nov.* – Figs. 4, 10

Frutex scandens foliis oppositis; petiolus c. 2 mm longus; lamina lanceolata vel lanceolato-ovata, 2.5–3 × 0.8–1.0 cm, basim rotundata vel cuneata, apice angustata, mucronulata paucis in margine dentibus, paucis in media costa minutis pilis. Dioecius? (flores feminei non visi). Inflorescentia plerumque ex dichasiis composita. Flores masculi, tepalis 8 rotundatis, staminibus c. 20. — **T y p u s:** *Vinas & Wiakabu LAE 59615* (L.), junction of Mogofogola and Bielga Rivers on Fologomon – Busilmin track (5°. 00' S, 141°. 05' E).

A woody liane with lateral shoots c. 1.5 mm diam., when young densely covered with minute appressed hairs. *Leaves* opposite, closely set along the branches; petiole c. 2 mm long, bearing minute hairs; lamina chartaceous, lanceolate to lanceolate-ovate, 2.5–3 × 0.8–1.0 cm, rounded or cuneate at the base, narrowed to a mucronulate apex; margin sub-revolute with few irregular teeth; mid-rib prominent below, with a few obscure hairs on its lower part, lateral veins obscure. Probably dioecious, female flowers not seen. *Inflorescence* usually of simple dichasia, minutely hairy, terminating the lateral branches and in their upper axils. *Male flowers* globose, 2 mm across (in bud); tepals 8, rounded, borne on a small receptacle; stamens c. 20, connective projecting, obtuse, anthers sessile, loculi opening by longitudinal slits.

Distribution: Papua New Guinea (West Sepik Province, Telefomin sub-Province, Mogofogola River).

Ecology: A liana in montane forest, at 2100 m.

Notes: The small lanceolate-ovate leaves are unmatched in any other species of the genus. Other species occasionally show straggling growth, but this species appears to be a true liane.

5. *Levieria acuminata* (F. v. Muell.) Perkins. — Figs. 5, 11.

L. acuminata (F. v. Muell.) Perkins, Bot. Jahrb. 25 (1898) 570. — *Mollinedia? acuminata* F. v. Muell., Fragm 5 (1866) 155.

A small tree to 15 m high; young shoots minutely pubescent. *Leaves* opposite; petiole 10–15 mm long, usually glabrous; lamina elliptic-lance to elliptic, about 7–10 × 2–4 cm, membranaceous; base cuneate or attenuate; apex prolonged as a narrow acute apiculum; margin entire or with small teeth; mid-rib prominent; lateral veins indistinct, arched and meeting within the margin; the mid-rib bearing inconspicuous hairs, or the whole lower surface finely tomentose. Dioecious. *Inflorescence* of terminal and axillary pleiochasia or panicles, the male being more finely branched and usually larger than the female, pubescent, the rachis bearing pairs of small bracts. *Male flowers* globose, 3–4 mm across; tepals c. 8, the outer broad and rounded; stamens numerous (c. 20–40), crowded on a small receptacle, connective projecting, reflexed, obtuse, anthers sessile, opening by longitudinal slits. *Female flowers* with a coriaceous, globose receptacle, c. 3 mm diam., the ostiole with 4 irregularly cleft tepals; carpels numerous, densely packed over the receptacle, ovoid with a short style; drupes ovoid, sessile on a reflexed receptacle.

Distribution: Australia (Northern Queensland). Papua New Guinea (Central Province and Morobe Province, Aseki).

Ecology: A small tree to 15 m high, in primary rain forest or second growth, alt. 1200–3000 m, but descending to near sea level in Queensland.

The cream or greenish flowers are fragrant.

Notes: This extension of the range of a Queensland species is based on five collections made by Carr in 1935–1936 and two collections by Schodde and Craven in 1966. While some collections match Queensland specimens closely, others differ in the greater extent of the pubescence on the lower leaf surface.

6. *Levieria montana* Becc. — Figs. 6, 12

L. montana Becc., Malesia 1 (1877) 193. — *L. schlechteri* Perkins, Pflanzenreich Nachtr. Heft 49 (1911) 7. — *L. urophylla* Perkins, Bot. Jahrb. 52 (1915) 193. — *L. laxiflora* Perkins, Bot. Jahrb. 52 (1915) 195.

A shrub, sometimes semi-scandent, or small tree to 15 m high; young shoots densely covered with minute appressed hairs. *Leaves* opposite; petiole 6–14 mm; lamina membranaceous, broadly to narrowly oblong or elliptic, 4.5–13 × 1.5–6 cm; base acute or obtuse; apex narrowed more or less abruptly into an acute or obtuse apiculum; margin entire or occasionally with a few small teeth; mid-rib prominent; lateral veins arched and meeting within the margin; the mid-rib below bearing minute crisped or straight hairs, which usually extend on to the lateral veins

and occasionally on to the entire lower surface of the lamina. Dioecious. *Male inflorescences* axillary and terminal, paniculate, 10–15 cm long, densely and minutely hairy; the rachis bearing pairs of pleiochasial branches subtended by small bracts; male flowers globose, 4–7 mm across, receptacle small; tepals 7–8, outer rounded, sub-coriaceous, hairy, inner smaller, membranaceous; stamens 25–50, connective projecting, anthers sessile, loculi opening by a longitudinal slit. *Female inflorescence* similar to male or simple axillary and terminal racemes. Female flowers with a coriaceous, globular, cupuliform receptacle, 5–8 mm diam., aperture irregularly cleft; carpels numerous, densely packed over the receptacle, ovoid with a short style. *Drupes* numerous, ovoid, 8 × 5 mm when dry, sessile on a leathery, pilose receptacle with a reflexed margin.

Distribution: Moluccas (Ceram, Ambon), New Guinea (Biak, Vogelkop, North West Irian, Sepik Province, Finisterre Range, Huon Peninsula and the Wagau-Garaina region of Morobe Province).

Ecology: A slender shrub, sometimes semi-scandent or epiphytic, or a small tree with drooping branches. In forest or scrub, often in lower montane rain forest between 1200 and 1900 m, but in the western part of its range (NW Irian, Biak, Moluccas) also near sea level.

Uses: In the southern foothills of the Finisterre Range shrubs are preserved by villagers because the conspicuous pendulous fruits attract birds which are then shot from cover.

Vernacular: *Dandanggu* (Naho language), *Hoppetu* (Wagu), *Mardichber*, *Mardiewer*, *Mardieber* (Biak), *Woisingai* (Wasuk).

Notes: The bark is smooth grey-brown or fawn. The flowers are light yellow and the mature drupes are bright orange or deep purple, borne on firm fleshy yellow or orange-brown receptacles.

The leaf is characteristically oblong-elliptic and apiculate, with short crisped or appressed hairs along the lower surface of the mid-rib, and sometimes also on the lateral veins, or even on the lower surface of the lamina. The degree of hairiness is variable, being most strongly developed on the type (from the Arfak Mountains). Size of the lamina and the degree of dentation of its margin are also variable. Leaves of juvenile shrubs are larger, broader, thinner in texture, and more dentate than those of adults.

Miss Perkins (1915) did not have the type of *L. montana* Becc. available when describing *L. urophylla* and was herself doubtful of the distinctness of this species. Unaccountably, she regarded *L. montana* as glabrous, although the original description clearly refers to the indumentum of the lower surface of the leaf. There has been some confusion also concerning the use of the name *L. schlechteri* Perkins. The type specimen is given as *Schlechter 17176*, and is described as having glabrous leaves when mature. However, the labels of this number are named *L. laxiflora* Perkins and the mid-ribs bear minute hairs (in some specimens rather severely abraded). *L. schlechteri*, therefore, is here regarded as synonymous with *L. montana*.

7. *Levieria beccariana* Perkins. — Figs. 7, 13, 16

L. beccariana Perkins in Perkins and Gilg, Pflanzenreich 4 (1901) 21. — *L. forbesii* Perkins, Pflanzenreich Nachtr. Heft 49 (1911) 7.



Fig. 16. *L. beccariana*. — a. twig of male plant, $\times \frac{1}{2}$ (Fisher 83); b. male flower from side, $\times 3$, and above, $\times 4$ (Pullen 7910); c. twig of female plant, $\times \frac{1}{2}$ (Millar and Sayers NGF 23781); d. female flowers after anthesis, $\times 1\frac{1}{2}$; e. fruits from behind and side, $\times 1$ (Floyd and Hoogland 3997).

A tree to 20 m high, or shrub, sometimes semi-scandent; young shoots densely covered with minute hairs. *Leaves* opposite; petiole 8–15 mm long, pubescent or glabrescent; lamina chartaceous, broadly to narrowly obovate or elliptic, 6–15 × 2.6–7 cm; base cuneate; apex usually acute apiculate, sometimes obtuse; margin entire or occasionally dentate in its upper part; mid-rib prominent; lateral veins approaching the margin, the lower veins often ascending well beyond the middle of the blade; the whole undersurface often russet or fawn, more or less densely covered in short curled or rarely lax hairs, or these confined to the principal veins. Dioecious. *Inflorescence* of terminal and axillary panicles, those in the upper axils often combining to form a massive compound leafy panicle, the male rather more finely branched than the female; rachis bearing pairs of pleiochasial branches subtended by small bracts, tomentose. *Male flowers* globose, 4–6 mm across; receptacle small; tepals rounded; stamens numerous, connective projecting, anthers sessile, loculi opening by longitudinal slits. *Female flowers* with a coriaceous cupuliform receptacle 5–8 mm diam., with 4 irregularly cleft tepals; carpels numerous (c. 20–100), densely packed over the receptacle, ovoid with a short style. *Drupes* numerous, ovoid, 8 × 5 mm when dry, sessile on a leathery pilose receptacle with a reflexed margin.

Distribution: Papua New Guinea. On the central ranges from the Telefomin area to Milne Bay. This species does not overlap the range of *L. montana* except in the Wagau-Garaina area.

Ecology: A tree to 20 m high with a clear bole 30 cm diam. and pendulous branches, or a slender sometimes semi-scandent shrub, occurring in montane and mossy forest of varying composition (*Nothofagus*, *Castanopsis*, *Araucaria*.) Also in regrowth. Alt. 1200–2800 m.

Vernacular: *Dangrumon* (Chimbu), *Gokey* (Wagau), *Homa* (Hademari), *Kiangap* (Enga), *Komali* (Enga), *Kombo Kombo* (Upper Kangel), *Lupulupu* (*Sirunki*), *Tangitang* (Tomba), *Tsuk* (Porget), *Umgude* (Oksapmin).

Notes: Bark smooth with very small fissures, greyish or reddish-brown; inner bark pinkish, aromatic. Wood brittle, cream-brown, with prominent rays. Flowers greenish-yellow, drupes orange to black on a yellow receptacle.

The leaves are characteristically obovate with the lower veins ascending for much of the length of the lamina, but elliptical leaves and more spreading lateral veins are not infrequent. The mid-rib and lateral veins are usually densely clothed with minute crisped, often russet or fawn tomentum, and this frequently covers (if only sparsely) the whole lamina. These hairs may be short and crisp as in the type, or longer and more lax (as in the type of *L. forbesii*), but these differences are not considered of specific importance. One or two collections in which the tomentum is practically confined to the mid-rib approach rather closely to *L. montana* Becc. Since these specimens are from the region where the ranges of the two species meet (the Wagau-Garaina region of Morobe Province) it is probable that some admixture of the two species occurs there.

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