



A New Species of *Calomnion* (Bryopsida) from Lord Howe Island

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Calomnion is small genus of mosses of about a half dozen species that is restricted to the South Pacific and Australasia. *Calomnion complanatum* (Hook. f. & Wils.) Lindb. (= *C. laetum* Hook. f. & Wils., illegitimate, earlier species included) is reported from New Zealand and Australia, *C. denticulatum* Mitt. is known from Samoa, *C. schistos-tegiellum* (Besch.) Wijk & Marg. is known from the Society Islands, and *C. melanesicum* H. A. Miller has recently been described from Vanuatu and Fiji. The genus is defined by the following features: simple stems with terminal sex organs (ac-rocarpy), dimorphic leaves in three ranks, highly differentiated perichaetial leaves, erect capsules, and the complete absence of a peristome. From *Rhizogonium* sensu stricto, with which it shares many characters, it is distinguished by erect capsules and lack of a peristome. The leaves never possess a margin defined by a border of elongate cells as do some species of *Rhizogonium*. Species of *Calomnion* are found almost exclusively on tree fern trunks that are heavily matted with adventitious roots.

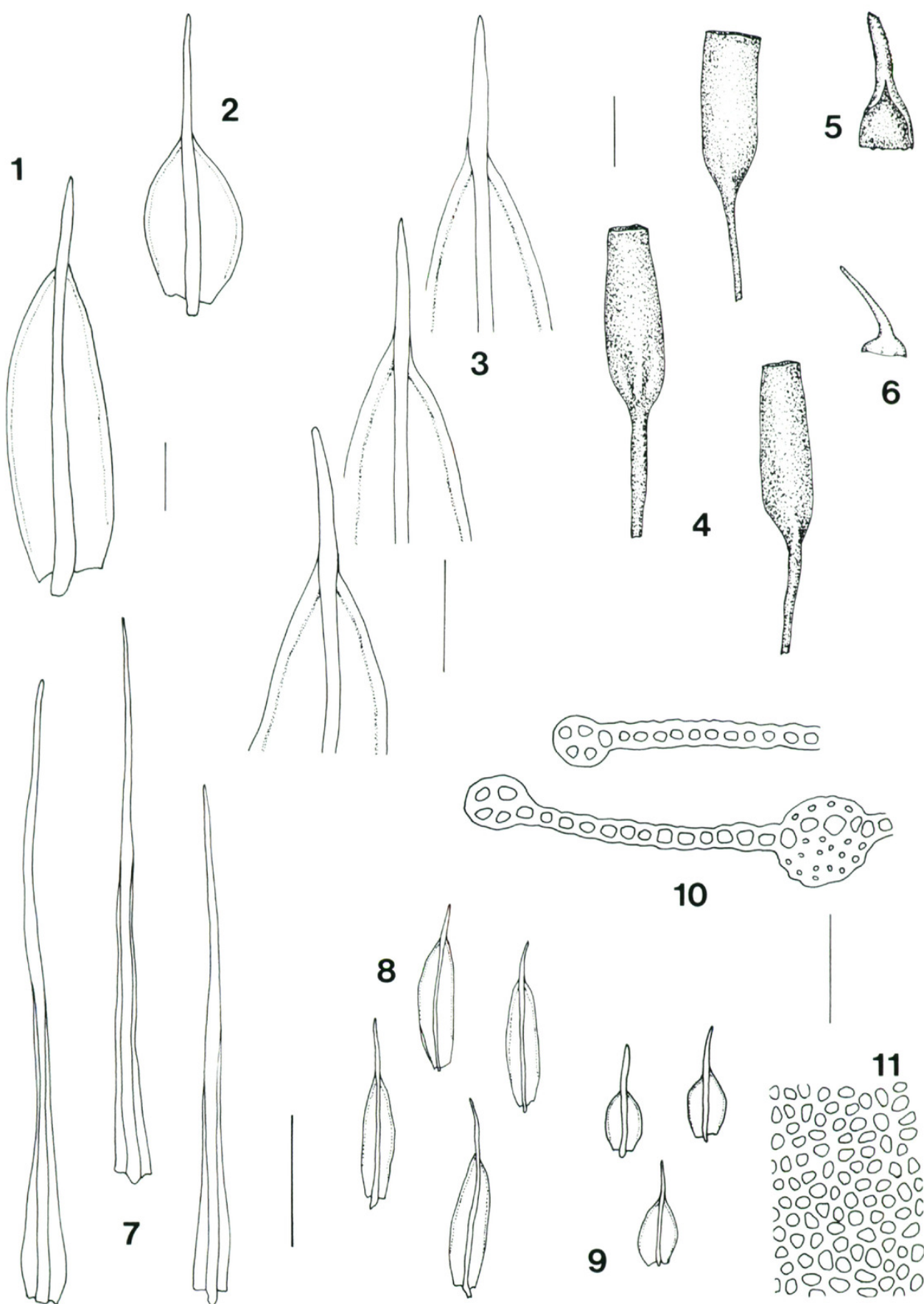
During 1981, collections of bryophytes from Lord Howe Island (31°30'S, 159°05'E) made by Helen Ramsay and myself included several specimens that represent a new species of *Calomnion*, here described as new to science.

Calomnion milleri Vitt, sp. nov. TYPE: Lord Howe Island. E slope of Mt. Lidgbird, SE of Goat House Cave on montane slope, 21 Nov. 1981, Vitt 28739 (holotype, ALTA; isotypes, NY, NSW). Figures 1–11.

Plantae aureo-virides, ad 1.0 cm altae. Folia dimorpha, oblonga, acuminata, aristata, margine incrassata, integra; costa excurrente; cellulae superiores 6–8 μ m latae, ro-

tundo-quadratae, laeves. Perichaetia terminalia; folia 4.0–5.0 mm longa, flexuosa subulata; costa longe excurrente. Flores dioici. Setae 0.8–1.0 mm longae. Capsulae 1.2–1.4 mm longae, cylindricae, erectae, laeves, immersae. Peristomium nullum. Calyptrae cucullatae.

Plants small, delicate, up to 1.0 cm long, shiny, golden green, in dense mats on tree fern trunks. Stems erect from persistent protonemata, simple, terminated by perigonia or perichaetia. Leaves along proximal region of stems small, lanceolate, acuminate, monomorphic, loosely erect-spreading; leaves along distal portions of stems larger, dimorphic, in three distinct ranks; dorsal ranks of leaves somewhat erect-falcate to erect-deflexed when dry, erect when moist, 1.1–1.3 mm long, oblong to narrowly ovate-oblong, acuminate, stoutly aristate, ventral rank of leaves erect when dry, 0.7–0.8 mm long, ovate to obovate, acuminate, cuspidate; margins entire, thickened and appearing revolute; costa strong, single, excurrent and filling the arista or cusp; upper cells 6–8 μ m wide, rounded-quadrate, thick-walled, smooth, unistratose except at margins, there the marginal 2–4 rows distinctly bistratose forming a strongly differentiated border; basal cells rounded-quadrate to shortly elliptic-rectangular, thick-walled, smooth; alar cells undifferentiated. Perichaetial leaves loosely erect, strongly differentiated from vegetative leaves, 4.0–5.0 mm long, linear to linear-lanceolate, subulate to long-acuminate; perigonial leaves loosely erect, strongly differentiated from vegetative leaves, 2.1–2.3 mm long, subulate from an ovate, sheathing, expanded base. Dioicous. Setae 0.8–1.0 mm long, erect, smooth; capsules 1.2–1.4 mm long, cylindric, smooth, erect, immersed, sometimes slightly wider in lower portion; exothelial cells 12–25 μ m wide, 18–50 μ m long, rounded-rectangular



Figures 1-11. *Calomnion milleri* Vitt. — 1. Dorsal leaf. — 2. Ventral leaf. — 3. Dorsal leaf apices. — 4. Capsules. — 5. Calyptra. — 6. Operculum. — 7. Perichaetial leaves. — 8. Dorsal leaves. — 9. Ventral leaves. — 10. Transverse sections of upper portions of dorsal leaves. — 11. Upper cells of dorsal leaves. Scale bar for Figures 1-3 = 0.2 mm; 4-9 = 1.0 mm; 10-11 = 50 μ m. Drawn from the holotype.

to quadrate, becoming shorter and reddish at rim; stomates superficial, at base of capsule. Peristome none. Annuli of one row of short-elliptic cells. Opercula conic, long rostrate. Calyptrae short, cucullate, with a scabrous beak. Spores 12–16 μm , finely papillose. Chromosome number $n = 6$ (Helen Ramsay, pers. comm., voucher specimen—Vitt 28393).

Paratypes. LORD HOWE ISLAND. E slope of Mt. Lidgbird, SE of Goat House Cave on montane slope, 21 Nov. 1981, Vitt 28729 (ALTA, NY, CHR), 28732 (ALTA, MO); 16 Nov. 1981, Vitt 28393 (ALTA), 28394 (ALTA, H), 28395 (ALTA, FH, S, DUKE); summit of Mt. Gower, 17 Nov. 1981, Vitt 28460 (ALTA, MO, NSW), 28532 (ALTA).

The eight specimens reported from Lord Howe Island were collected from roots matting the trunks of tree ferns in upper montane, subtropical rainforest between 450 and 875 m. The surrounding subtropical forest is dominated by *Metrosideros nervulosa*, *Dracophyllum fitzgeraldii*, and *Cyathea* spp.

I have seen material of this species only from Lord Howe Island. A specimen from Norfolk Island (Streimann 34569, CBG) containing only female plants clearly refers to another taxon.

This species is distinguished from species of *Rhizogonium* by erect, immersed capsules and complete lack of a peristome. *Hymenodon* possesses mammillose leaf cells and piliferous leaves. From the remaining species of *Calomnion*, *C. milleri* is distinguished by bistratose and thickened leaf margins, immersed capsules on setae that are shorter than the capsules, and by the long, slenderly acuminate, subulate perichaetial leaves.

Calomnion milleri is named in honor of Harvey Alfred Miller, a good friend, whose research on the bryoflora of the Pacific Islands has greatly increased our knowledge of these plants.

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