**RADULINA**

_Helen P. Ramsay_{1}


_Lecto: Hypnum pickeringii* Sull. [= *Radulina borbonica* (Bél.) W.R.Buck]

Autoicous. Plants small to medium in mostly thin dull and green to golden mats. Stems creeping, freely but irregularly branched; branches often ascending and falcate-cuspidate. Pseudoparaphyllia foliose. Leaves strongly falcate-secund, scarcely altered when dry, lanceolate to ovate-lanceolate, gradually long-acuminate, concave; margins plane, serrulate above, serrulate to entire below; costa usually absent, occasionally short and double. Laminal cells elongate, hexagonal to linear, firm- to thick-walled, ±porose, pluripapillose, the unbranched papillae uniseriate to biseriate over the lumina; alar region differentiated; basal cells larger, inflated; outermost cells thin-walled, others yellow, thick-walled, in a single row across the insertion; supra-alar cells quadrate, in a single row. Calyptra cucullate, naked. Seta slender, elongate, reddish, tuberculate just below the capsule, smooth below. Capsule inclined to horizontal, arcuate, short-cylindrical; exothecial cells short-rectangular, strongly collenchymatous; annulus lacking; operculum obliquely long-rostrate. Peristome double; exostome teeth and endostome segments 16, similar in length; cilium 1. Spores medium-sized, finely papillose. Chromosome numbers not known.

Buck & Tan (1990) recognised four species of *Radulina*, including *R. hamata*. Subsequently, Buck (1993) added a fifth species, *R. borbonica*. Tan *et al.* (2005) suggested that the genus was confined to western Melanesia, especially Papua New Guinea, while Ramsay *et al.* (2004) reported *R. hamata* from Australia. A more recent revision by O’Shea (2006) examined large numbers of collections, including types, and has concluded that the genus comprises four species and an additional variety. His assertion that *R. hamata* is conspecific with *R. borbonica* is accepted here. Thus, the Palaeotropical *Radulina* occurs in tropical Africa and islands in the western Indian Ocean, as well as India, SE Asia, Malesia, Japan and the Pacific islands. Only one species, the widespread *R. borbonica*, is known from northern Australia.

Both *Radulina* and *Trichosteleum* have pluripapillose laminal cells. However, the former can be characterised by its narrowly ovate-lanceolate falcate-secund leaves with inflated basal alar cells and setae that are distally verrucose. Although *Radulina* can resemble *Acroporium* in having cuspidate branch apices and concave leaves with thick-walled laminal cells, it is distinguished by the pluripapillose laminal cells and alar cells that do not curve in towards the insertion.

**References**


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{1} cf- National Herbarium of New South Wales, Mrs Macquaries Road, Sydney, New South Wales 2000.

_Cite as:_ H.P.Ramsay, _Australian Mosses Online. 1. Sematophyllaceae: Radulina._


Plants variable, forming dense intricate tufts or mats, pale or lurid green, dull to slightly glossy. Stems irregularly pinnate; branches decumbent or ascending, 2–3 mm long, usually hooked at the tips. Leaves crowded, gradually lanceolate-acuminate from a concave expanded ovate base, 1.0–2.2 mm long, c. 0.5 mm wide, often smaller, ecostate; margins erect, sharply serrate distally. Laminal cells linear to narrowly elliptic, 30–50 µm long, c. 5 µm wide, with a row of papillae over the lumina; alar region with a basal row of 2 or 3 large inflated hyaline cells.

Perichaetia on stems; perichaetal leaves abruptly long-acuminate, sharply serrate. Seta 10–15 mm long. Capsule small, c. 0.5 mm long, ovoid, horizontal-pendulous; operculum with a short rostrum. Peristome double; exostome teeth 16, narrowly furrowed on the outer surface, cross-striolate below, coarsely papillose above, trubeculate on the abaxial surface; endostome with a high basal membrane; segments keeled, perforate, shorter than the teeth; ciliolium 1, narrow, neither nodulose nor appendiculate.

Widespread from Malesia through the Pacific to the Hawaiian Islands; also in tropical Africa, India, Indian Ocean islands, SE Asia, China, Japan, Papua New Guinea and Australia (N.T. and north-eastern Qld). Occurs in dry coastal and montane rainforest, on trees and on rotting logs on river flats and slopes.

N.T.: Melville Is., J.Russell-Smith 1299 (AD, DNA, MEL); loc. id., H.Streimann 42434 (CANB). Qld.: Fishery Falls, W.B.Schofield 79866 & M.I.Schofield (NSW); Frenchmans Ck, W.W.Watts Q583, Q562b (NSW); Mossman Gorge, I.G.Stone 15082 (MEL); slopes of Black Mtn, NW of Kuranda, H.Streimann 31114 (CANB); Daintree Natl Park, B.O. van Zanten 68.1110 (GRO, NSW).
Radulina borbonica is characterised by the slender, strongly falcate, serrulate leaves with pluripapillose laminal cells. The pluripapillose cells give fresh specimens a dull green appearance.