

Fissidens gardneri Mitt., *J. Linn. Soc. Bot.* 12: 593 (1869)

Type: *sine loc.*, Brazil, *Gardner s.n.*; holotype: NY; isotype: BM, H-BR, S.

Fissidens microcladus Thwaites & Mitt., in W.Mitten, *J. Linn. Soc. Bot.* 13: 324 (1873). Type: *sine loc.*, Ceylon [Sri Lanka], *G.H.K.Thwaites 143*; isotype: NY.

Illustrations: Z.Iwatsuki & T.Suzuki *J. Hattori Bot. Lab.* 51: 465, pl. 19, figs 10, 13, 14 (1982), as *F. microcladus*; R.A.Pursell, *Mem. New York Bot. Gard.* 69: 54, fig. 35f–h (1994); R.A.Pursell, *Fl. Neotrop. Monogr.* 101: 151, fig 76a–o (2007).

Plants semi-prostrate, down-curved when dry, green to yellowish green, 0.5–3.5 mm tall, forming tufts from moribund stems. **Stems** minute, occasionally branched from the apex or base, pale green to brownish, fleshy, often naked in the lower half except for bract-like leaves; in section lacking a central strand; axillary nodules obscure. **Leaves** bract-like below, distant or overlapping, abruptly larger above, usually curled inwards from the tips, short-oblong-lingulate, 0.3–0.8 (–1.8) mm long; **apex** obtuse, rounded; **margins** crenulate by projecting cells; **limbidium** weakly developed, mostly absent except in perichaetial and subperichaetial leaves where confined to the proximal 1/4–1/3 (–1/2) of vaginant laminae; **vaginant laminae** reaching to c. 2/3 leaf length, spreading, unequal, the minor lamina ending near or on the costa; **dorsal lamina** narrowed below, almost reaching the insertion; **lamina cells** convex, rounded-hexagonal, 5–8 µm long, multipapillose with large papillae; **costa** of *bryoides*-type, ending well below the apex, sometimes not much beyond the junction of the vaginant laminae, often forked above, occasionally partly obscured by lamina cells.

Monoicous or **dioicous**. **Perigonia** terminal on shoots almost as long as female shoots, or bud-like, axillary or apparently independent and c. 0.5 mm tall; antheridia few, oval, c. 150 µm long. **Perichaetia** terminal; **perichaetial leaves** 0.8–1.3 mm long, vaginant laminae gaping, undulate, margins crenulate, except in border region, limbidium weak, occasionally partly intramarginal with the margin ±entire and frequently narrowly recurved; archegonia terminal, occasionally axillary, 200–250 µm long. **Setae** straw-coloured, 1.0–1.5 (–2.5) mm long, usually smooth, occasionally weakly pustulose. **Capsules** oval, symmetrical, 0.4–0.6 mm long, 0.35 mm wide, wide-mouthed; **exothecial cells** ±quadrate to shortly oblong, the walls thin and evenly thickened. **Operculum** conical-rostrate. **Peristome** anomalous, modified *scariosus*-type; teeth short, 80–100 µm long, undivided or partly divided, papillose throughout, not spirally thickened. **Calyptra** conical-rostrate. **Spores** 9–13 µm diam.

[Images](#)

Very rare in northern N.T. and north-eastern Qld. Grows on tree trunks, shaded rocky outcrops, termite mounds and on soil.

Also known from the Neotropics, Africa and in South and East Asia.

Selected specimens examined: N.T.: Baroalba Ck, 15 km SSE of Jabiru airfield, *H.Streimann 42358* (CANB, NY); Katherine Gorge, *I.G.Stone 23310 p.p.* (MEL). Qld: The Archways, Mungana, Chillagoe, *I.G.Stone 15944* (MEL); Mimosa Ck, Blackdown Tableland, *I.G.Stone 20227* (MEL); Edmund Kennedy Natl Park, Cardwell, *I.G.Stone 24397* (MEL).

This very small moss is recognised by its rounded leaves; the costa not reaching much beyond the end of the unequal vaginant laminae; the limbidium confined to the proximal parts of the vaginant laminae of perichaetial and subperichaetial leaves; the small and obscure, multipapillose cells; and the anomalous peristome.

Although usually described as smooth, the setae of the holotype (of *F. microcladus*) and Australian specimens have weakly pustulose cells. Sometimes, the upper leaves can have acute apices, but the lower leaves are generally obtuse. Plants usually have flagelliform innovations and are often associated with small barren plants, both of which have very rounded leaf apices.

Pursell (1984) regarded *F. gardneri* as the smallest of the *F. elegans* complex of species. Within that complex, it also has the weakest limbidia, being unistratose and restricted to the lower parts of the vaginant laminae of perichaetial leaves. The vaginant laminae are conspicuously unequal, and the distal end of the minor lamina narrows and ends on or near

the costa in all leaves. This character state is typically seen in perichaetial leaves of many species of *Fissidens*, but seldom in all leaves on a plant.

[Bibliography](#)