

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

T: locality unknown, Brazil, *Gardner s.n.*; holo: NY

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

Illustrations: Z.Iwatsuki & T.Suzuki, *op. cit.* 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).

Dioicous. Plants semi-prostrate, down-curved when dry, green to yellowish, minute, 0.5–3.5 mm tall, in tufts from moribund stems, occasionally branching by innovations from the apex or base. Stem lacking a central strand, pale green or brownish, fleshy, often naked in the lower half except for bracts; axillary nodules obscure. Leaves bract-like below, distant or overlapping, abruptly larger above, short-oblong-lingulate, 0.3–0.8 mm long; apex obtuse; margins crenulate by projecting cells; limbidia weakly developed, mostly absent except in perichaetial and subperichaetial leaves where confined to the proximal 25–33% of vaginant laminae. Costa failing well below the apex, sometimes not much beyond the junction of the vaginant lamina, often forked above, occasionally partly obscured by laminal cells; dorsal lamina narrowed below, almost reaching the insertion; vaginant laminae spreading, c. two-thirds leaf length, unequal, the minor lamina ending near or on the costa. Laminal cells convex, rounded-hexagonal, 5–8  $\mu\text{m}$  long, multipapillose with large papillae.

Perigonia terminal on shoots, almost as long as female shoots, or bud-like and c. 0.5 mm tall, apparently independent; antheridia few, oval, c. 150  $\mu\text{m}$  long. Perichaetia terminal, the leaves 0.8–1.3 mm long; vaginant laminae gaping, undulate; margin crenulate except in bordered region; limbidium weak, occasionally partly intramarginal with the margin  $\pm$ entire and frequently narrowly recurved; archegonia terminal, occasionally axillary, 0.20–0.25 mm long. Setae straw-coloured, 1.0–1.5 mm long, usually smooth; vaginula c. 0.12 mm long. Capsules oval, c. 0.50 mm long and 0.35 mm wide, wide-mouthed; exothecial cells at mouth  $\pm$ quadrate for 2 or 3 rows, oblong below, their walls evenly thickened. Peristome teeth short, 80–100  $\mu\text{m}$  long, undivided or partly divided, papillose (although these sometimes eroded), not spirally thickened, modified *scariosus*-type.

Very rare in northern N.T. and north-eastern Qld; on shaded rocky outcrops. Also in the Neotropics, Africa and South and East Asia.

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