

Fissidens gymnocarpus I.G.Stone, *J. Bryol.* 12: 553 (1983)

Type: Cooktown, Qld, *I.G.Stone 15808*; holo: MEL; iso: BRI, MEL.

Illustrations: I.G.Stone, *op. cit.* 554, fig. 1; 555, fig. 2 (1983).

Plants dull green, loosely gregarious. **Stems** to 20 mm long, green to brownish, mostly sinuose, often with dormant buds in leaf axils; branching by 1–few innovations from leaf axils; sterile branches sometimes long, flagelliform, with up to 20 or more pairs of minute, distant, almost elliptical leaves; axillary hyaline nodules not well developed; in section with a small central strand; rhizoids occasionally obscurely papillose, dull brown, arising from the stem base, in leaf axils, or elsewhere on the stems. **Leaves** wide-spreading, usually patent, slightly shrivelled and often secund when dry, to 1.0 mm long, 0.25–0.35 mm wide, 3 times as long as wide, rather distant or just overlapping, largest leaves ±oblong, usually directed slightly inwards towards the stem; **apex** rounded-obtuse; **axillary hairs** occasional, 3-celled; **vaginant laminae** reaching 2/3–3/4 leaf length, unequal, joining midway between the costa and margin, occasionally at the costa or margin; **dorsal lamina** tapering or obtuse at the base, reaching to leaf insertion; **margins** minutely crenulate to serrulate by projecting cells, except where bordered; **limbidium** confined to vaginant laminae, vague, proximal, the cell walls not thickened, rectangular to pointed, 40–70 × 5–10 μm; **laminal cells** irregularly 5–6-sided, (5–) 6–8 (–10) μm wide, ±isodiametric, larger towards the costa, longer towards the base of the vaginant laminae, weakly mammillose with a single minute central papilla that is difficult to observe even in section. **Costa** of *bryoides*-type, ending shortly below the apex, often forked at the apex.

Cladautoicous. **Perigonia** gemmiform, to 0.5 mm long, axillary, numerous, antheridia 120–200 μm long, several in a cluster at the apex of a male branch. **Perichaetial** leaves lacking; archegonia solitary, naked, several lateral on a stem above a leaf axil, 120–200 μm long. **Setae** mostly borne laterally, often more than one per shoot, c. 2.5 mm long. **Capsules** erect, symmetrical, short-oblong, c. 0.4–0.5 mm long, 0.3–0.4 mm wide; **exothecial cells** thin-walled, collenchymatous, quadrate to shortly oblong, 20–40 × c. 20 μm. **Operculum** low-conical, apiculate or with a short oblique rostrum, 0.20–0.23 mm long. **Peristome** of modified *scariosus*-type, often imperfect teeth c. 150 μm long, unevenly split into 2 straight arms that are sometimes conjoined, 35–40 μm wide at the base, densely papillose above. **Spores** large, 35–40 μm diam., green with the walls pale brownish, minutely and sparsely papillose.

[Images](#)

Apparently endemic to northern W.A. and N.T. and eastern Qld. Grows on soil, termite mounds and at the base of scarps.

Selected specimens examined: W.A.: Mitchell Plateau, *D.H.Ashton s.n. (I.G.Stone 23751A)* (MEL). N.T.: Katherine Gorge, *I.G.Stone 23301A* (MEL); Kakadu Natl Park, *I.G.Stone 22363* (MEL). Qld: Hidden Valley, W of Paluma, *I.G.Stone 25051* (MEL).

Fissidens gymnocarpus is characterised by its distantly spaced, obtuse leaves and evidence of meristematic activity with inconspicuous, clear, axillary and internodal cells that give rise to rhizoids, flagelliform innovations, perigonia and solitary naked archegonia resulting in lateral sporophytes without perichaetial leaves.

Possibly related to *F. longevaginatus* Dixon, although the peristome of the latter has long columnar papillae on the inner base of the teeth and smaller spores (12.5–15.0 μm).

Uncertainty remains as to the correct placement of *F. obtusoacuminatus* Müll.Hal. *nom. nud.*, which was erroneously placed in synonymy with *F. gymnocarpus* by Stone (1990) [see *F. cucullatus*].

Fissidens gymnocarpus resembles *F. cucullatus* in general habit, the weak axillary nodules, the frequent innovations in older plants, and in the occurrence of solitary, naked archegonia borne laterally on the stems. The lamina cells of *F. cucullatus* are highly mammillose, and the spores are only 10–18 μm diam.

[Bibliography](#)