

**Fissidens flaccidus** Mitt., *Trans. Linn. Soc. London* 23: 56 (1860)

non *F. flaccidus* Müll.Hal. ex A.Jaeger, *Ber. Thätigk. St. Gallischen Naturwiss. Ges.* 1874–75: 124 (1876), *nom. illeg.* Type: Niger Expedition, *Vogel s.n.*; holo: NY; iso: BM.

*Fissidens maceratus* Mitt., *Trans. & Proc. Roy. Soc. Victoria* 19: 91 (1882). Type: Brisbane R., Qld, *F.M.Bailey*; holo: NY, *fide* R.A.Pursell, *Bryologist* 100: 194 (1997); Z.Iwatsuki & T.Suzuki, *J. Hattori Bot. Lab.* 79: 146 (1996).

*Fissidens splachnobryoides* Broth., in K.M.Schumann & C.A.G.Lauterbach, *Fl. Schutzgeb. Süswee* 81 (1900). Type: Butaueng, New Guinea, *Kaernbach*; holo: H-BR.

Illustrations: H.C.Gangulee, *Mosses of Eastern India* 463, fig. 211 (1971), as *F. splachnobryoides*; Z.Iwatsuki & T.Suzuki, *J. Hattori Bot. Lab.* 51: 451, pl. 5 (1982), as *F. splachnobryoides*; D.H.Norris & T.Koponen, *Ann. Bot. Fennici* 24: 199 (1987), as *F. splachnobryoides*; I.G.Stone, *J. Bryol.* 15: 117, fig. 1; 118, fig. 2; 120, fig. 3 (as *F. "Chillagoe"*) (1988); R.A.Pursell, *Fl. Neotrop. Monogr.* 101: 239, fig. 133 (2007).

**Plants** pale green, brownish below. **Stems** 4–9 mm long, 1.5–3.0 mm wide with leaves; in section with or without a narrow indistinct central strand; rhizoids basal or in axils of lower leaves, pale to golden, smooth or indistinctly sculptured; axillary hyaline nodules weakly developed or absent; **axillary propagules** green, multicellular filaments borne on short branched or unbranched rhizoid-like outgrowths from leaf axils, occasionally abundant. **Leaves** in 4–10 pairs, lingulate-lanceolate, broadest in the apical lamina, 0.4–2.6 mm long, 0.1–0.6 mm wide, laxly inserted, erecto-patent when moist; **apex** acute to short-acuminate; **limbidium** of very narrow thick-walled cells on all laminae, mostly bistratose, 2–5 cells wide, reaching or almost reaching the acute apex; **vaginant laminae** reaching 1/2–3/5 leaf length, closed, **margins** entire, occasionally weakly serrulate; **dorsal lamina** wedge-shaped at the base, ending above the insertion; **lamina cells** thin-walled, smooth to bulging-mammillose, rectangular to hexagonal, mostly 30–40 × 15–20 µm, smaller towards the apex, larger basally; **costa** of *bryoides*-type, thin, failing below the apex, c. 3/4 leaf length.

**Dioicous?** **Male plants** not seen. **Perichaetia** terminal; **perichaetial leaves** similar to but shorter than upper stem leaves. **Setae** c. 4 mm long, yellow-brown. **Capsules** erect, 0.7–1.0 mm long, not contracted at the mouth; **exothecial cells** thin-walled, bulging, quadrate, c. 30 µm long, collenchymatous. **Operculum** conical, c. half the length of the theca. **Peristome** to c. 300 µm long; teeth 50–60 µm wide at the base. **Calyptra** not seen. **Spores** 15–20 µm diam., nearly smooth.

[Images](#)

Occurs in the Kimberley region of northern W.A., in montane rainforest in north-eastern Qld, in drier country to the west, and in south-east Qld. Grows on soil and crumbling limestone.

Occurs in India, Nepal, Bhutan, Sri Lanka, China, Japan, SE Asia, Indonesia, the Philippines, Papua New Guinea, New Caledonia, Central America and the Caribbean.

*Selected specimens examined:* W.A.: Winjana Gorge, Kimberley, May 1988, *G.A.M.Scott* (MEL). Qld: Hippie Tower, Maidenhair Grotto, Chillagoe, *I.G.Stone 21765* (MEL); Granite Gorge, Mareeba, *I.G.Stone 15926* (MELU); Hippie Tower, Chillagoe, *M.Godwin C2498* (AD, MEL); Balancing Rock, Chillagoe, *I.G.Stone 16716* (MEL).

Pursell (1997) placed *F. maceratus* in the synonymy of *F. flaccidus* Mitt., along with *F. mollis* Mitt. and other names. However, the type of *F. mollis* does not seem to be conspecific with *F. maceratus*. Further detailed comparative study is needed to clarify the relationships of these taxa.

*Fissidens flaccidus* is characterised by the complete (but sometimes inconspicuous) limbidium, the laxly flexuose leaves, and the thin-walled and mostly ±elongate lamina cells. In New Guinea, the species (as *F. splachnobryoides*) seems to be common in cultivated areas (Norris & Koponen, 1987).

Stone (1988) included an undescribed form as *F. "Chillagoe"*, and she included in her discussion several specimens under that name which were smaller than typical *F. flaccidus*: Hippie Tower, Chillagoe, Qld, *M.Godwin C2498*; Mareeba, Granite Gorge, *I.G.Stone 15926*;

Balancing Rock, Chillagoe, Qld, *I.G.Stone 16716*. These forms are now considered to fall within the circumscription of *F. flaccidus*.

Ida Bruggeman-Nannenga (pers. comm., 10 Oct. 2014) stated: "I am not sure all these species are indeed *F. flaccidus* Mitt., which would then be enormously variable. On the other hand these species with large cells seem to be very variable with regard to cell size, costal length, length of leaves and stems, presence or absence of a central strand and the presence or absence of gemmae etc. Moreover some of these characters seem to be a function of each other and also reactive to their environment."

Propagulae can sometimes germinate in leaf axils, giving the plant a profusely branched appearance.

#### [Bibliography](#)