

Fissidens crenulatus Mitt., *J. Proc. Linn. Soc.*, Suppl. 1: 140 (1859)

T: Nepal, *N. Wallich*; holo: NY

Autoicous. Plants small. Leaves multijugate, oblong-lanceolate, usually uniform; apex acute to acuminate. Costa percurrent to strongly excurrent. Vaginant laminae usually reaching past mid-leaf, \pm closed; limbidium extending to the top of the vaginant lamina or ceasing below it, 2–6 cells wide, hyaline, thick-walled; dorsal lamina tapered or abruptly rounded to the base or above. Margin crenulate-serrulate. Laminal cells \pm rounded-hexagonal, 4–8 μ m wide, slightly larger in vaginant laminae, convex, unipapillose, rarely bipapillose.

Setae terminal and/or from a basal shoot. Perichaetial leaves narrower and slightly longer than stem leaves. Capsules erect, symmetrical; exothecial cells distinctly collenchymatous; operculum domed-rostrate.

Occurs at low altitudes in north-eastern Qld, from Cape Tribulation to S of Cardwell; also in India, Nepal, SE Asia, Malesia, the Philippines, China and Japan. Two varieties are known from Australia.

Limbidium multistratose, usually reaching the top of the vaginant lamina; costa usually distinctly excurrent; perigonia mostly bud-like in leaf axils var. **crenulatus**

Limbidium unistratose, mostly c. half as long as the vaginant lamina; costa usually percurrent; perigonia terminal on separate shoots or axillary near the apex of a female plant.....var. **elmeri**

Fissidens crenulatus Mitt. var. **crenulatus**

Illustrations: H.C.Gangulee, *Mosses of Eastern India* 504, fig. 235 (1971); Z.H.Li, *Acta Bot. Fennica* 129: 32, ig. 14a–i (1985).

Autoicous. Leaves to c. 1.4 mm long, c. 4 times as long as wide. Vaginant laminae to c. 3/5 the leaf length; limbidium strong, 2–6-seriate, 1–3-stratose, reaching or almost reaching the top of the vaginant lamina. Costa distinctly excurrent. Perigonia bud-like in lower leaf axils of a fertile shoot, rarely terminal. Setae to 5 mm long, smooth to very indistinctly scabrous. Calyptra mitriform, flared at the base, c. 0.45 mm long, \pm smooth. Terminal perichaetia with leaves c. 1.5 mm long and 0.3 mm wide. Lateral perichaetial shoots with only 3 or 4 leaves, bud-like, c. 0.55 mm tall, the perichaetial leaves c. 0.5 mm long, with greatly reduced upper laminae.

Occurs in north-eastern Qld, usually on sandy soil. Also in India, Nepal, SE Asia, Malesia, the Philippines and China.

Qld: Bingil Bay, near Mission Beach, *I.G.Stone 22115* (MEL); Edmund Kennedy Natl Park, Cardwell, *I.G.Stone 17610* (MEL).

Fissidens crenulatus Mitt. var. **elmeri** (Broth.) Z.Iwats. & Tad.Suzuki, *J. Hattori Bot. Lab.* 51: 386 (1982)

Fissidens elmeri Broth., *Leafl. Philipp. Bot.* 2: 652 (1909). T: Dumaguete, Cuernos Mtns, Negros Occidental, Negros, Philippines, on bark, June 1908, *A.D.E.Elmer 10320*; holo: H-BR.

Illustrations: Z.Iwatsuki & T.Suzuki, *op. cit.* 469, pl. 23; Z.-H.Li, *Acta Bot. Fennica* 129: 32, fig. 14j–q (1985).

Dioicous or autoicous. Leaves similar to var. *crenulatus* but mostly less than 1.2 mm long; costa percurrent to slightly excurrent. Vaginant laminae of vegetative leaves with the

limbium 1–3-seriate, unistratose, usually reaching c. half the leaf length. Perigonia either on separate shoots or as short shoots at the stem apex with perichaetia. Setae terminal, scabrous, c. 2.5–3.0 mm long. Calyptra variably scabrous with prorate cells. Perichaetial leaves slightly longer and narrower than stem leaves.

Occurs in north-eastern Qld. Also in SE Asia, Malesia, the Philippines, China and Japan; grows on rock or as an epiphyte.

Qld: Dalrymple Gap, Cardwell, *I.G.Stone 19134* (MEL).

The saxicolous Australian specimens agree reasonably well with the epiphytic type specimen. However, it is possible that they are only a form of *F. rupicola* (*q.v.*) with longer costae than usual.