

**Fissidens elegans** Brid., *Muscol. Recent. Suppl.* 1: 167 (1806)

Type: Santo Domingo, Haiti, *Poiteau s.n.*; holo: B; iso: BM, NY *fide* R.A.Pursell, *Fl. Neotrop. Monogr.* 101: 136 (2007).

Illustrations: R.A.Pursell, *J. Hattori Bot. Lab.* 55: 247, figs 11, 43, 44. (1984); R.A.Pursell, in A.J.Sharp, H.Crum & P.Eckel (eds), *Mem. New York Bot. Gard.* 69: 51, fig. 33; 52, fig. 34a–e (1994); Z.Iwatsuki & T.Suzuki, *J. Hattori Bot. Lab.* 51: 448, pl. 2, figs 14–27. (1982); R.A.Pursell, *Fl. Neotrop. Monogr.* 101: 137, Fig. 69 (2007).

**Plants** pale green, occasionally tinged with red, erect to decumbent, 1.5–10.0 mm long, c. 1.5 mm wide with leaves. **Stem** simple or branched; in section with a central strand; axillary nodules absent; rhizoids reddish,  $\pm$ smooth, basal and axillary. **Leaves** in numerous pairs, imbricate, crispate, somewhat inrolled from the tips when dry, oblong-lanceolate, often  $\pm$ falciform, 0.8–1.2 mm long, 0.2–0.3 mm wide, 3–5 times longer than wide; **apex** acute, with a sharp apical cell; **margins** crenulate,  $\pm$ entire when bordered; **lamina cells** isodiametric, quadrate to rounded-hexagonal, multipapillose, obscure, 4–7  $\mu$ m wide, in section c. 2 times as deep as wide; **vaginant laminae** of stem leaves reaching 1/2–3/4 leaf length, the apex acute, mostly  $\pm$ equal, half-closed to closed, **limbidium** unistratose, 1–2 (–6) cells wide, on vaginant laminae of fertile and infertile stems, variable in length and occurrence, often submarginal near the base, frequently only on the upper leaves; **dorsal lamina** truncate or tapered below; **costa** percurrent to subpercurrent, of *bryoides*-type, ending 2–8 cells below the apex, usually pigmented.

**Monoicous** (**goniautoicous**, **cladautoicous**, **rhizautoicous**). **Perigonia** gemmiform, axillary or terminal on stems and branches. **Perichaetia** terminal on stems and branches; **perichaetial leaves** longer, c. 1.2 mm long; vaginant laminae occasionally open, limbidium usually better developed than on stem leaves. **Setae** smooth, to 3 mm long. **Capsules** erect, symmetrical, to 0.8 mm long; **exothecial cells** quadrate to oblong, collenchymatous. **Operculum** conical, long-rostrate, to 0.5 mm long. **Peristome** of *scariosus*-type. **Calyptra** cucullate, smooth, to 0.5 mm long. **Spores** 9–13  $\mu$ m diam., smooth.

[Images](#)

Occurs in north-eastern Qld. Uncommon in comparatively dry rainforest, on basalt soil around rocks at altitudes of 280–600 m.

Also known from southern and south-eastern U.S.A., Mexico, Central America, northern South America, the West Indies and the Hawaiian Islands.

*Selected specimens examined:* Qld: “Conjuboy”, 55 km NW of Greenvale, *R.J.Fensham 105* (CANB); Havilah, 48 km S of Collinsvale, *R.J.Fensham 100* (CANB).

This species has not been found with capsules in Australia. However, plants with terminal setae but lacking capsules are present in *Stone 25455*. Details of the sporophyte are from Pursell (2007).

A very variable species characterised by the small, multipapillose lamina cells, the unistratose limbidium, and the sharp, clear apical cell that terminates the leaves.

The *F. elegans* complex includes a number of closely related taxa characterised by obscure, multipapillose lamina cells that, in section, are  $\pm$ twice as high as wide, and by limbidia that are usually restricted to the vaginant laminae (Pursell, 1984). In Australia the complex is represented by *F. elegans*, *F. gardneri* and *F. pallidinervis*. Development of the limbidium in the species complex correlates well with size of the plants. *Fissidens gardneri* has the smallest plants with the weakest limbidia, being unistratose and restricted to the lower parts of the vaginant laminae of perichaetial leaves. In *F. elegans* the vaginant laminae are consistently c. 3/4 or more the length of the leaves. In *F. pallidinervis* the limbidium is partly intramarginal and often indistinct on smaller plants, while in *F. gardneri* 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.

Sporophytes of most species of the complex are very similar, differing primarily in size. Peristome teeth are typically divided to below the middle, finely papillose below the bifurcations and spirally thickened above, and they are strongly inflexed when moist.

*Bibliography*