

**Fissidens oblongifolius** Hook.f. & Wilson, *London J. Bot.* 3: 547 (1844)

Type: Bay of Islands, New Zealand: 1839–43, *J.D.Hooker 321b*; lecto: BM, *vide* M.A.Bruggeman-Nannenga, R.A.Pursell & Z.Iwatsuki, *J. Hattori Bot. Lab.* 77: 263 (1994).

**Plants** dark green, loosely gregarious. **Stems** simple or branched by innovations from below terminal gametoecia, 5–15 mm long; in section with a central strand; rhizoids basal or occasionally from lower leaf axils. **Leaves** in numerous pairs, overlapping in mid-stem, patent, oblong-lanceolate, 2.00–3.75 mm long, 0.40–0.75 mm wide; **apices** acute to obtuse and apiculate, curving away from the substratum when dry; **laminae** unistratose; **margins** crenulate; **vaginant laminae** reaching 1/2–3/4 leaf length, ending obliquely, closed or nearly so; **dorsal lamina** tapered to the base, often failing above the leaf insertion; **lamina cells** small, 7–10 µm, smooth to mammillose; **costa** of *oblongifolius*-type, ending below the leaf apex.

**Autoicous**, rarely **dioicous**. **Perigonia** axillary on fertile stems. **Perichaetia** terminal; **perichaetial leaves** longer than stem leaves. **Setae** pale brown, terminal, 2–10 mm long. **Capsules** 0.75–1.40 mm long, horizontal to inclined, moderately to strongly asymmetrical; **exothecial cells** quadrate, collenchymatous, 12–25 µm long, 10–15 µm wide. **Operculum** long-rostrate, as long as the theca. **Peristome** of *similiretis*-type; trabeculae closely spaced on outer basal part with low vertical striae, the forks nodulose and papillose; teeth c. 65–90 µm wide at the base. **Calyptra** campanulate, c. 1 mm long, covering the operculum. **Spores** small, 8–10 µm diam.

Occurs in southern, south-eastern and eastern Australia, and in Lord Howe Island and Norfolk Island.

Also in Central and South America, West Africa, Malesia, China, Japan, New Caledonia and New Zealand.

Although *F. oblongifolius* usually grows on soil and rocks, Iwatsuki & Suzuki (1989) found that it often occurs on tree bases in New Caledonia. It is very variable in size of the plants and the dimensions of the laminal cells. The capsules are short, but curved and asymmetrical.

The moss is characterised by being autoicous, having the costa usually ending a few cells below the leaf apex, strongly mammillose cells, ±asymmetrical capsules on relatively long setae, and the *similiretis*-type peristome.

Stone (1990b), in proposing *F. arboreus* as a synonym of *F. hyophilus*, noted that “the type specimen of *F. hyophilus* (which is very meagre) was not specifically distinct from *F. arboreus* Broth. The specimen accompanied by a pencil drawing (but without name) in Mitten’s herbarium, matches the type description of *F. hyophilus* and the locality is the same, so there can be little doubt that it is the original specimen used for the protologue. It is mounted on the same sheet as the type specimen of *F. integerrimus* Mitt. and placed just after that species by Mitten (1882) in his list of Australian mosses.”

Four varieties are recognised in Australia.

- 1 Growing on rock or soil; leaf apices curved towards the substratum when dry; setae 5–10 mm long ..... var. **oblongifolius**
- 1: Growing on bark; leaf apices curved away from the substratum when dry; setae to c. 3 mm long ..... 2
- 2 Plants unbranched, dioicous ..... var. **palmerstonensis**
- 2: Plants usually branched, autoicous ..... 3
- 3 Costa pale, 40–60 µm wide at the base; leaves c. 5–7 times longer than wide ..... var. **hyophilus**
- 3: Costa deep reddish gold, to 80 µm wide at the base; leaves c. 10 times longer than wide ..... var. **longiligulatus**

**Fissidens oblongifolius** Hook.f & Wilson var. **oblongifolius**

*Fissidens woollsonianus* Müll.Hal., *Gen. Musc. Frond.* 66 (1901), *nom. nud.*, fide I.G.Stone, *J. Bryol.* 16: 246 (1996b).

Illustrations: G.A.M.Scott & I.G.Stone, *The Mosses of Southern Australia* 85, pl. 7; 87, pl. 8; 89; pl. 9 (1976); D.G.Catcheside, *Mosses of South Australia* 84, fig. 23 (1980); J.Beever, B.Malcolm & N.Malcolm, *The Moss Genus Fissidens in New Zealand : an illustrated key* 50 (2002); H.Streimann, *The Mosses of Norfolk Island* 85, fig. 37 (2002).

**Plants** dark green. **Stems** 10–15 mm tall, simple or sparingly branched. **Leaves** 2.0–3.5 mm long, 0.65–0.75 mm wide; **apex** acute to obtuse, curved towards the substratum when dry; **vaginant laminae** c. 3/4 leaf length, ending obliquely, closed; **margins** ±crenulate; **laminal cells** small, c. 8 µm wide, obscure, mammillose.

**Autoicous. Perigonia** axillary on fruiting stems. **Setae** terminal, 5–10 mm long. **Capsules** 1.0–1.4 mm long, gibbous on the back.

[Images](#)

Occurs in S.A., Qld, N.S.W., Vic., Tas. and in Norfolk Island; usually on rock or on clay banks in moist habitats.

Also in Central and South America, West Africa, Malesia, China, Japan, New Caledonia, northern New Zealand and islands in the South Pacific Ocean.

*Selected specimens examined:* S.A.: Botanic Gardens Annex, Mount Lofty Ra., *R.H.Kuchel 1189* (AD). Qld: Mt Haig, *I.G.Stone 19742* (MEL). N.S.W.: Bay View, near Mona Vale, *M.Tindale M11011* (MEL, NSW); Northwood, Sydney, June 1884, *T.Whitelegge 79* (MEL); *loc. id.*, *T.Whitelegge 67* (MEL 1034161); North Shore, Sydney, May 1884, *T.Whitelegge 85* (MEL). Vic.: East Gippsland, *C.Walter s.n.* (MEL). Tas.: Guy Fawkes Rivulet, near Hobart, 2 Jan. 1893, *W.A.Weymouth* (HO 75546).

Stone (1990b) remarked that the type specimen of *F. woollsonianus* Müll.Hal. had probably been destroyed. However, three specimens under that name from New South Wales (see above) were conspecific with *F. oblongifolius* and, on that basis, she proposed the synonymy of *F. woollsonianus* in *F. oblongifolius*.

**Fissidens oblongifolius** Hook.f. & Wilson var. **hyophilus** (Mitt.) Beever & I.G.Stone, *New Zealand J. Bot.* 36: 84 (1998)

*Fissidens hyophilus* Mitt., *Trans. & Proc. Roy. Soc. Victoria* 19: 92 (1882). Type: between Burnett and Brisbane Rivers, Qld, *F.Mueller*; holo: NY.

*Fissidens arboreus* Broth., *Öfvers. Förh. Finska Vetensk.-Soc.* 33: 95 (1891), fide I.G.Stone, *J. Bryol.* 16: 245 (1990). Type: Pimpana, Qld, Aug. 1887, *C.Wild 5*; holo: H-BR?; iso: BRI, MEL, NSW, NY.

Illustrations: I.G.Stone, *J. Bryol.* 16: 247, fig.1g–k (1990), as *F. hyophilus* var. *hyophilus*; J.Beever, B.Malcolm & N.Malcolm, *The Moss Genus Fissidens in New Zealand: an illustrated key* 48 (2002); H.Streimann, *Mosses of Norfolk Island* 87, fig. 38 (2002).

**Plants** 5–10 mm tall, usually branched by innovations. **Upper leaves** c. 2.5 mm long and 0.4 mm wide, c. 5–7 times longer than wide; **apex** obtuse to shortly and bluntly apiculate, curved away from the substratum when dry; **vaginant laminae** to c. mid-leaf, almost closed; **dorsal lamina** reaching the insertion; **laminal cells** 7–10 µm wide, clear, smooth; **costa** pale, 40–60 µm wide at the base.

**Autoicous. Perigonia** axillary. **Setae** terminal on main stem or on innovations, to c. 3 mm long. **Capsules** erect; theca c. 0.75 mm long.

[Images](#)

Occurs in eastern Qld and N.S.W. as well as Lord Howe Island and Norfolk Island; usually on the bark of tree trunks or exposed roots.

Also in China, Japan and New Zealand.

Stone (1990b) noted that the very meagre type of *F. hyophilus* did not differ appreciably from *F. arboreus* Broth. The specimen, accompanied by a pencil drawing, but without a name in Mitten's herbarium, matched the type description and locality of *F. hyophilus*, leaving little doubt that it was the original specimen used for the protologue.

**Fissidens oblongifolius** Hook.f. & Wilson var. **longiligulatus** (Broth. & Watts), Brugg.-Nann., Pursell & Z.Iwats., *J. Hattori Bot. Lab.* 77: 265 (1994)

*Fissidens longiligulatus* Broth. & Watts, *Proc. Linn. Soc. New South Wales* 40: 367 (1915); *Fissidens hyophilus* var. *longiligulatus* (Broth. & Watts) I.G.Stone, *J. Bryol.* 16: 245 (1990b). Type: Mt Gower, Lord Howe Is., W.W.Watts 525; lecto: H-BR, *fide* I.G.Stone, *loc. cit.*; isolecto: NSW.

Illustrations: I.G.Stone, *op. cit.* 247, fig.1 l, m (1990), as *F. hyophilus* var. *longiligulatus*.

**Leaves** ligulate, to 3.75 mm long, comparatively narrow, c. 10 times longer than wide; **apices** obtuse to shortly and bluntly apiculate, curved away from the substratum when dry; **costa** broad and strong, deep reddish gold, to 80 µm wide at the base.

**Autoicous. Perigonia** axillary on fruiting stems. **Spores** c. 12 µm diam.

#### [Images](#)

Endemic to Lord Howe Island; grows on twigs and rootlets.

Only known from the type collection on Lord Howe Island, this variety is characterised by its prominent deep reddish golden and strongly sinuous costa and longer leaves.

Stone (1990b) noted that the two specimens cited in the protologue of *Fissidens longiligulatus* Broth. & Watts from Lord Howe Island, which she examined from H-BR and NSW, represented different species. *Watts 382* was not significantly different from *F. asplenioides* and *Watts 525* was very close to *F. hyophilus*. In the protologue, *F. longiligulatus* is related to *F. arboreus* and not to *F. asplenioides*. The habitat "On trees" is that of *F. arboreus*, in contrast to *F. asplenioides* which usually grows on soil or rock. Details of specimens examined from H-BR and NSW are given in Stone (1990b), together with the justification for selecting *Watts 525* (in H-BR) as the lectotype.

Many specimens from northern New South Wales and Queensland identified as *F. hyophilus* by Stone have been examined. None is intermediate with the *longiligulatus* expression.

**Fissidens oblongifolius** Hook.f. & Wilson var. **palmerstonensis** (I.G.Stone) J.E.Beever & I.G.Stone, *New Zealand J. Bot.* 36: 87 (1998)

*Fissidens hyophilus* Mitt. var. *palmerstonensis* I.G.Stone, *J. Bryol.* 18: 159 (1994). Type: K-tree Rd, Palmerston [Wooroonooran] Natl Park, Qld, on bark of tree buttress, *I.G.Stone 24487*; holo: MEL.

Resembles var. *hyophilus*, but the plants are dioicous and the stems are unbranched. Male plants are separate with terminal perigonia.

#### [Images](#)

Known only from the type collection from north-eastern Qld.

Stone (1990b) noted that the type specimen closely resembled *F. hyophilus*, but it differed in the unbranched stems and dioicous condition. In the absence of other collections, no further taxonomic assessment is possible.

#### [Bibliography](#)