

MEESIA

Graham H. Bell¹ & David G. Catcheside†

Meesia Hedw., *Sp. Musc. Frond.* 173 (1801), *nom. cons.*; named for the Dutch gardener David Meese (1723–70).

Type: *M. longiseta* Hedw., *typ. cons.*

Perennial plants in rather dense caespitose tufts, yellowish green to green or dark green above, brown to blackish below. Lower stems densely matted with rhizoids, occasionally branching; basal portions mostly buried in mud. Leaves decurrent, suberect to squarrose from an erect base, smooth, oval-oblong to lanceolate or lingulate; costa strong, wide at base, ending below apex to short-excurrent; upper laminal cells small, rectangular, somewhat incrassate; basal cells larger, rectangular, hyaline.

Setae long. Capsules elongate-pyriform, curved, with the apophysis equal in size to the theca; operculum small, conical, obtuse; annulus double. Exostome short, usually less than half the height of the endostome, finely papillose; outer plates large; inner lamellae low; endostome processes linear-lanceolate with a hyaline border, keeled and somewhat perforate along the keel, ±smooth, sometimes joined apically; rudimentary cilia occasionally present. Spores large. Chromosome number variable ($n = 10, 13, 14, 20$), *vide* R.Fritsch, *Regnum Veg.* 108: 152 (1982).

A genus of c. 10 species, found in Europe, North and South America and Asia; two species are known from Australia and New Zealand. The only African species (*M. kenya* P. de la Varde) was placed in synonymy with *Ceratodon purpureus* (Hedw.) Brid. (Ditrichaceae; R.Ochyra, *Cryptogamie Bryologie* 22: 23–28, 2001). Colonies occur as dense tufts in wet boggy habitats, often with *Sphagnum*.

Leaves in 3 rows, squarrose; leaf margin serrate; apex elongate and narrowly acute; rhizoids finely papillose ...
..... **2. *M. triquetra***

Leaves in 5–8 rows, not squarrose; leaf margin entire; apex bluntly acute; rhizoids coarsely verrucose
..... **1. *M. muelleri***

1. *Meesia muelleri* Müll.Hal. & Hampe, *Linnaea* 28: 208 (Sept. 1856)

T: Cobberas Mountain, [Vic.], 1854, *F.Mueller*; holo: BM (Herb. Hampe) *n.v.*; iso: MEL *n.v.*, NSW 366234.

Meesia macrantha Mitt., *Hooker's J. Bot. Kew Gard. Misc.* 8: 260 (Sept. 1856), *nom. illeg.*, based on same type as *M. muelleri* [placed in synonymy under *M. muelleri* by Mitten himself (*Trans. & Proc. Roy. Soc. Victoria* 19: 70, 1882)]. T: Cobberas Mountains, [Vic.], *F.Mueller*; holo: NY (Herb. Mitten); iso: BM, MEL, NSW.

Illustration: W.R.Buck, D.H.Vitt & W.M.Malcolm, *Key to the Genera of Australian Mosses* 97 (2002).

Autoicous. Plants green to yellow-green, 2–5 (–10) cm tall, the uppermost 1–2 cm is annual growth. Rhizoids crimson, densely verrucose. Leaves erect when dry, little changed when moist; oblong-lingulate to narrowly lanceolate, 1.5–3.0 mm long, 0.4–0.5 mm wide, broadly carinate; margin entire; costa c. 150 µm wide at base; laminal cells short-rectangular, increasing in size from 20–30 × 10 µm apically to 40–60 × 15–20 µm at the base. Axillary hairs to 200 µm long, with 2 or 3 rectangular reddish basal cells and 1 elongate hyaline apical cell.

¹ State Herbarium of South Australia, Plant Biodiversity Centre, Hackney Road, Hackney, South Australia 5069.

Androecia discoid. Setae reddish brown, flexuose, 1.5–4.0 cm tall. Capsules pyriform, c. 2 mm long and 0.8–1.0 mm wide, curved and gibbous, with the peristome at right angles to ground. Peristome pale; cilia rudimentary or absent. Spores green or brown, 40–55 µm diam., densely covered with fine papillae and ridges.

Occurs in scattered colonies in bogs, often with *Sphagnum*, in open grassland amid subalpine sclerophyll forest in N.S.W., A.C.T. and Vic. Usually with large numbers of sporophytes when fertile; also in New Zealand.

N.S.W.: Badja Sawmill, NE of Cooma, *M.Mueller 2019* (AD, MEL); Swamp Caves, Kiandra Rd, Yarrangobilly, *W.W.Watts 8891* (NSW). A.C.T.: Gibraltar Ck, Back Flat, *L.G.Adams 1562* (CANB, NSW). Vic.: Lankey Plain, Dargo High Plains, *H.Streimann 53266* (CANB).

2. *Meesia triquetra* (L. ex Jolycl.) Ångstr., *Nova Acta Regiae Soc. Sci. Upsal.* 12: 357 (1844)

Mnium triquetrum L. ex Jolycl., *Syst. Sex. Vég.* 76 (1803). T: Europe; *n.v.*

Illustrations: D.H.Norris *et al.*, *Ann. Bot. Fennici* 36: 259, fig. 1 (1999); A.J.E.Smith, *Moss Flora of Britain and Ireland* 452, figs 4, 5 (1978).

Dioicous. Plants dark green above, brown to black below, 3–5 (–12) cm tall. Rhizoids crimson, finely papillose. Leaves curled to strongly crisped when dry, in 3 rows, squarrose, spreading from an erect hyaline sheathing base, ovate-lanceolate or the upper portion narrowly triangular, 2–4 mm long, 0.8–1.0 mm wide, carinate above, gradually narrowed to an acute apex; margin serrate from projecting cell ends; costa strong, almost percurrent to short-excurrent; upper laminal cells 20–24 × 10–16 µm; lower cells 50–60 × 20 µm. Axillary hairs to 200 µm long, with 2 or 3 short brown basal cells and a single elongate hyaline apical cell.

Androecia discoid. Setae 3–10 cm long. Capsules elongate-pyriform, curved, 4–6 mm long. Peristome brownish to hyaline; cilia 3, short. Spores globose, to 40 µm diam., yellow-brown, finely papillose. *n* = 10, 20, *fide* R.Fritsch, *Regnum Veg.* 108: 79 (1982).

Occurs in medium-sized colonies in swampy, grassy areas amid subalpine sclerophyll forest, apparently restricted to the Great Dividing Range in south-eastern N.S.W., A.C.T. and Vic. Widespread in the Northern Hemisphere (North America, Europe and northern and eastern Asia).

N.S.W.: Badja sawmill, NE of Cooma, *M.Mueller 2015* (AD, MEL, NSW). A.C.T.: Smokers Flat, *H.Streimann 53401* (AD, CANB, HO). Vic.: Black Mountain Rd, Rocky Plains, East Gippsland, *I.G.Stone 11493* (MEL).

No sporophytes were seen in Australian specimens.