

METEORIOPSIS

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Meteoriopsis M.Fleisch. ex Broth., in H.G.A.Engler & K.A.E.Prantl, *Nat. Pflanzenfam.* I, 3: 825 (1906); from the Greek *meteoros* (suspended in the air) and the Latin suffix *-opsis* (resembling or having the appearance of), alluding to its similarity to *Meteorium*.

Lecto: *M. squarrosa* (Hook.) M.Fleisch. ex Broth.

Plants robust, medium-sized to large. Primary stems subpinnately branched, sparsely to densely leaved; secondary stems prostrate or pendent, subpinnately or sparingly branched; branches often reflexed, with obtuse or acute apices. Branch leaves squarrose or widely spreading from erect bases, ovate to ovate-oblong, tapering to a canaliculate apex, mostly clasping at the base; margins generally erect, serrate to serrulate; costa single, pale brown, slender, usually extending to mid-leaf. Laminal cells pellucid or ±obscure, linear-rhomboidal, thin-walled, with 1(–3) papillae per cell; basal cells larger; alar cells slightly differentiated, shorter, ovate, subquadrate or rectangular.

Calyptra mitrate, with a lobed base, long-haired. Seta smooth or ±scabrous. Capsules erect, ovate to oblong-cylindrical; operculum rounded-conical, with an erect subulate beak. Peristome: exostome teeth papillose above, densely striolate below; lamellae high; endostome segments linear, keeled; cilia rudimentary or absent.

Stem leaves are generally similar to branch leaves but usually slightly narrower, less compact and less recurved.

This mainly Palaeotropical genus of c. 15 species is most diverse in SE Asia; two species in north-eastern Qld.

References

- Manuel, M.G. (1977), Monograph of the genus *Meteoriopsis* (Bryopsida: Meteoriaceae), *Bryologist* 80: 584–599.
- Meagher D. & Cairns A. (2016), *Meteoriopsis undulata* Horik. & Nog. (Bryophyta: Meteoriaceae) new to the Australian flora. *Telopea* 19: 37–44.
- Streimann, H. (1991), Taxonomic studies on Australian Meteoriaceae (Musci). 2: The genera *Aerobyopsis*, *Barbella*, *Floribundaria*, *Meteoriopsis*, *Meteorium* and *Weymouthia*, *J. Hattori Bot. Lab.* 69: 277–312.
- Wu, S.-H. & Lin, S.-H. (1986), A taxonomic study of the genera of *Aerobryidium* and *Meteoriopsis* (Meteoriaceae, Musci) of Taiwan, *Yushania* 3(1): 3–16.

Key

- 1 Flagelliform branches absent; median cells of secondary stem leaves unipapillose (rarely 2–3-papillose) **M. reclinata**
- 1: Flagelliform branchlets present, deciduous; median cells of secondary stem leaves mostly 1–2-papillose (sometimes 3-papillose) **M. undulata**

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Meteoriopsis reclinata (Müll.Hal.) M.Fleisch. ex Broth., in H.G.A.Engler & K.A.E.Prantl, *Nat. Pflanzenfam.* I, 3: 826 (1906)

Pilotrichum reclinatum Müll.Hal., *Bot. Zeitung (Berlin)* 12: 572 (1854). T: Mont. Neigherrenoses [Nilghiri Mtns, Tamil Nadu, India], *B.Schmid*; lecto: JE.

Floribundaria robustula Broth. & Watts, *Proc. Linn. Soc. New South Wales* 43: 560 (1918). T: Malanda, Qld, *W.W. Watts 618a*; holotype: H; isotype: BM, NSW.

Illustrations: M.G. Manuel, *Bryologist* 80: 589 (1977); D.H.Norris & T.Koponen, *Acta Bot. Fenn.* 131: 37 (1985); H.Streimann, *J. Hattori Bot. Lab.* 69: 300 (1991); W.R.Buck, D.H.Vitt & W.M.Malcolm, *Key to the Genera of Australian Mosses* 63 (2002).

Plants medium-sized, yellow-green to brownish yellow, slightly glossy. Primary stem \pm inconspicuous. Secondary stems pendent, to 20 cm long; branching sparse, short, irregular; apices neatly and uniformly deflexed. Branch leaves ovate-lanceolate to ovate-oblong, (1.6–)1.9–2.5 mm long, 0.7–1.1 mm wide; acumen twisted, serrate; teeth large, at right angles to the margin or pointing down; leaves broadest near the base; margins plane, weakly serrulate; costa 50–65% of the leaf length. Laminal cells pellucid, with 1 prominent central papilla on each surface, rarely 2 or 3, or the papilla indistinct; median cells (25–)35–50 \times 5 μ m; basal cells \pm rectangular, c. 10 μ m wide, with localised thickening; cells towards the costa hyaline, sublinear, 60–75 \times 7 μ m.

Calyptra c.1.5 mm long. Seta c. 2 mm long, scabrous or \pm smooth. Capsules oblong-cylindrical, c. 2.5 mm long, brown, but blackening with age; operculum c. 1.5 mm long. Peristome: exostome teeth c. 0.7 mm long; endostome segments weakly papillose. Spores 20–30 μ m diam.

Occurs at elevations up to 1200 m in the Wet Tropics of north-eastern Qld, mainly on tree trunks and tree branches, but it has also been collected from a log and a leaf, and rarely saxicolous. Widespread in Asia, extending from India to Japan, South East Asia and eastward into the Western Pacific.

Qld: Windsor Tableland, 39 km NW of Mossman, *H.Streimann 29588* (CANB); Topaz Rd, 13 km SE of Malanda, *H.Streimann 46687* (*Musci Austral. Exs.* 30) (CANB); Centre Peak, Bellender Ker Ra., *D.H.Vitt 27894* (ALTA).

Meteoriopsis undulata Horik. & Nog. in Nog., *J. Sci. Hiroshima Univ.* sect. B., div. 2, 3: 16

T: Japan, Kyushu, Noguchi 9400; holo: Hiroshima University Herbarium, probably destroyed in World War 2 (*vide* Noguchi, cited in Manuel 1977); neotype Japan, Kyushu, Miyazaki-Pref. Nakago-mura, Yasuhisa, Noguchi 93–99, 5 April 1927, herb. Kamamoto University; isoneotype MO.

Illustrations: M.G.Manuel, *Bryologist* 80: 589 (1977); D.Meagher & A.Cairns, *Telopea* 19: 39, 40 (2016).

Plants medium-sized, yellow-green, slightly glossy. Primary stems to 13 cm long, conspicuous, \pm pinnately branched. Secondary stems patent, slightly pendent, to about 8 mm long, densely leafy, branching rare and irregular, flagelliform branchlets very common, fragile and deciduous, branchlet base surrounded by scale-like appendages. Leaves of secondary stems ovate-lanceolate, 1.6–1.8 mm long, 0.69–0.86 mm wide near the branch base but often becoming gradually smaller towards the branch apex; acumen straight to weakly twisted, entire to slightly denticulate; leaves broadest near the base; margins below apex plane, denticulate; costa 50–70% of the leaf length. Laminal cells pellucid, 1–2(–3) papillae on each surface, the papillae often indistinct; median cells fusiform, 41–64 \times 4.4–6.4 μ m; basal cells \pm rectangular, smooth. Flagelliform branchlet leaves lanceolate with a long narrow apex; margin denticulate; costa 30–50% of leaf length; median cells fusiform, 40–45 \times 5–7 μ m, 1–2(–3) papillae on each surface.

Perichaetia and perigonia unknown.

Known only from two locations between Atherton and Tully in the Wet Tropics of north-eastern Qld, on tree trunks, but also collected from a rotting vine. Otherwise known from a very few sites in Japan, Taiwan and China.

Qld: Tully Gorge National Park, *Meagher & Cairns WT-616* (BRI); Wooroonooran National Park, *Meagher & Cairns WT-637* (BRI).