METEORIACEAE

Heinar Streimann†

Meteoriaceae Kindb., *Gen. Eur. N.-Amer. Bryin.* 7 (1897).

Type: *Meteorium* (Brid.) Dozy & Molk.

Dioicous, unisexual. Plants pleurocarpus, slender to robust, greenish, usually pendent or creeping, filiform. Stems distantly and usually irregularly branched, elongate, flexuose, densely foliose. Rhizoids smooth, reddish. Leaves ovate-lanceolate, acuminate; base often cordate, usually auriculate; margin usually denticulate or dentate; costa slender, extending to 65–75% of the leaf length or more, rarely absent. Laminal cells usually papillose; alar cells generally poorly developed; basal alar cells hyaline.

Perigonal and perichaetial leaves differentiated. Calyptra cucullate or mitrate, long, often hairy. Seta short, often exserted, generally smooth. Capsules emergent, erect, rarely suberect, predominantly ovate to oblong, usually smooth, rarely scabrous; operculum tall, conical or rostrate, generally curved. Peristome double; exostome teeth 16, linear-lanceolate, densely papillose or papillose only in the upper half; endostome segments alternating with exostome teeth, papillose, linear to filiform, mostly perforated, often as long as the teeth; cilia absent, rudimentary or 2. Spores spherical, papillose.

This family includes c. 21 genera (Goffinet *et al.*, 2011) and more than 300 species that are epiphytes in tropical, subtropical and temperate moist forests and thickets. It is represented in Australia by six genera and 14 species, one of which is endemic. Australian Meteoriaceae are restricted to eastern coastal and hinterland areas, with only *Papillaria* and *Meteorium* extending into drier habitats.

Although capsules are uncommon in Australian Meteoriaceae, many species can be abundant in suitable habitats. Some, such as *Papillaria flexicaulis*, produce numerous subapical rhizoids, so that branch fragments can act as vegetative propagules.

References

Buck, W.R. (1994), A new attempt at understanding the Meteoriaceae, *J. Hattori Bot. Lab.* 75: 51–72.

Goffinet, B., Shaw, A.J. & Buck, W.R. (2011), *Classification of the Bryophyta*. [http://www.eeb.uconn.edu/people/goffinet/Classificationmosses.html]

Noguchi, A. (1976), A taxonomic revision of the family Meteoriaceae of Asia, *J. Hattori Bot. Lab*. 41: 231–357.

Norris, D.H. & Koponen, T. (1985), Bryophyte flora of the Huon Peninsula, Papua New Guinea. VII. Trachypodaceae, Thuidiaceae and Meteoriaceae (Musci), *Acta Bot. Fenn.* 131: 1–51.

Streimann, H. (1991), Taxonomic studies on Australian Meteoriaceae (Musci). 1. Introduction, and the genus *Papillaria*, *J. Hattori Bot. Lab*. 69: 203–256.

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.

KEY TO GENERA

1 Cells in divergent rows at the ±auriculate leaf base 2
1: Cells in vertical rows; leaf base not auriculate 3

Cite as: H.Streimann, *Australian Mosses Online. 2. Meteoriaceae.*
http://www.anbg.gov.au/abrs/Mosses_Online/Papillaria.pdf (2012)

2 Leaves generally 3-plicate; laminal cells unipapillose ..... **METEORIUM**

2: Leaves, if plicate, with only 1 or 2 plicae; laminal cells multipapillose ..... **PAPILLARIA**

3 Plants slender; leaves narrow, lanceolate; apex filiform or flexuose-capillaceous, rarely acuminate 4

3: Plants robust; leaves broader, ovate; apex always acuminate 5

4 Leaves widely spreading, multipapillose; cell outline ±obscure; costa reaching mid-leaf ..... **FLORIBUNDARIA**

4: Leaves ±appressed, scarcely papillose, ±ecostate; cell outline distinct ..... **BARBELLA**

5 Leaves appressed; apex transversely undulate; costa extending more than two-thirds of the leaf length ..... **AEROBRYOPSIS**

5: Leaves spreading to squarrose; apex straight; costa extending to half of the leaf length ..... **METEORIOPSIS**