

## MEIOTHECIELLA

Helen P. Ramsay<sup>1</sup>

*Meiotheciella* B.C.Tan, W.B.Schofield & H.P.Ramsay, *Nova Hedwigia* 67: 215 (1998); from the genus name *Meiothecium* with the diminutive suffix *-ella*, in reference to the close relationship of the two genera.

Type: *M. papillosa* (Broth.) B.C.Tan, W.B.Schofield & H.P.Ramsay.

Polyoicous. Plants mat-forming, yellowish green, glossy. Stems slender, creeping, to 25 mm long, loosely branched, with clusters of rhizoids scattered along the main stem and primary branches below the leaf insertion. Branches erect, short, 0.3–0.5 mm tall. Pseudoparaphyllia foliose. Leaves appressed to erect, slightly wrinkled when dry, ovate, ovate-lanceolate to lanceolate, 0.50–0.75 mm long, 0.2–0.3 mm wide near the base, concave, ecostate; apices obtuse to acute, rarely short-acuminate; margins entire to serrulate, formed by projecting marginal cells, narrowly recurved on one or both sides, becoming more recurved toward the apex. Laminal cells oval, rhomboidal to short-fusiform, 10–15 µm long, becoming oblong at the middle of the leaf base, thin- to thick-walled, unipapillose dorsally and ventrally, occasionally with a few smooth cells or with a low papilla; alar region with a distinct basal row of 4 or 5 somewhat inflated mostly thin-walled and lightly pigmented cells; supra-alar cells a few rows of quadrate cells.

Perigonia small, bud-like; perigonial leaves broadly ovate, acute, with entire margins. Perichaetia on stems; outer perichaetial leaves longer than vegetative leaves, ovate to ovate-lanceolate, c. 1 mm long and 0.2–0.3 mm wide, ±entire; inner perichaetial leaves oblong-lanceolate, serrulate to serrate in the upper half. Laminal cells mostly oblong-rhomboidal, unipapillose, a few almost smooth, occasionally prorulose. Calyptra cucullate, mainly smooth, roughened at the distal end due to prorulose cells. Seta 3–5 mm long, smooth. Capsule erect to suberect, ovoid to short-oblong, 0.50–0.75 mm long; operculum short-conical, with a short curved rostrum. Peristome single, fragile, absent in old capsules. Spores not seen in Australian material, 20–25 µm diam. elsewhere. Chromosome number not known.

Tan *et al.* (1998) removed the two species of *Meiothecium* with unipapillose cells, *viz.* *M. papillosa* and *M. gymnostomum*, to the newly described *Meiotheciella*. In addition, they considered that the caducous peristome and serrate to serrulate perichaetial leaf margins, coupled with an eastern Palearctic distribution, supported its recognition as a separate genus. In a recent revision of *Meiothecium*, O'Shea (2007) placed *Meiotheciella* in synonymy, since *Meiothecium intextum* Mitt., not discussed by Tan *et al.* (1998), has a fragile peristome and serrate perichaetial leaves, two of the supposed diagnostic characters of *Meiotheciella*. This leaves the presence of a single papilla on laminal cells in *Meiotheciella* as the primary distinguishing character, and O'Shea considered this insufficient for genus recognition. Other genera in the Sematophyllaceae are separated primarily on papillose features, e.g. *Radulina* and *Trichosteium*, and Tan (pers. comm.) prefers *Meiotheciella* to remain as a separate genus pending a world revision of *Meiothecium*. Tan's recommendation is followed here.

Tan *et al.* (2011: 31) and Tan (pers. comm.) consider that the characters shared by *Meiotheciella* and *Meiothecium tenellum* (now in synonymy with *M. intextum*), e.g. habit and marginal teeth on perichaetial leaves, indicate derivation of *Meiotheciella* from that taxon. They report *Meiotheciella papillosa* from Papua New Guinea and Fiji, where it occurs in

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<sup>1</sup> c/- National Herbarium of New South Wales, Mrs Macquaries Road, Sydney, New South Wales 2000.

habitats disturbed by human activity; it is also known from Malesia and New Caledonia. Tan's recommendation is accepted here.

The genus *Meiotheciella* is regarded here as being monotypic.

#### References

O'Shea, B.J. (2007), *Meiothecium intextum* (Bryopsida: Sematophyllaceae): an overlooked taxon in Asia and Oceania, with notes on related taxa, *J. Bryol.* 29: 275–276.

Ramsay, H.P., Schofield, W.B. & Tan, B.C. (2004), The family Sematophyllaceae (Bryopsida) in Australia. Part 2. *Acroporium*, *Clastobryum*, *Macrohymenium*, *Meiotheciella*, *Meiothecium*, *Papillidiopsis*, *Radulina*, *Rhaphidorrhynchium*, *Trichosteium*, *Warburgiella*, *J. Hattori Bot. Lab.* 95: 1–69.

Tan, B.C., Schofield, W.B. & Ramsay, H.P. (1998), Miscellanies of Australian Sematophyllaceae with a new genus *Meiotheciella*, *Nova Hedwigia* 67: 213–223.

Tan, B.C., Koponen, T. & Norris, D.H. (2011), Bryophyte flora of the Huon Peninsula, Papua New Guinea LXXIII. Sematophyllaceae (Musci) 2. *Brotherella*, *Clastobryopsis*, *Clastobryum*, *Heterophyllum*, *Isoclatiella*, *Isoclatiellopsis*, *Meiotheciella*, *Meiothecium*, *Papillidiopsis*, *Rhaphidostichum* and *Wijkia*, *Acta Bryolichenol. Asiatica* 4: 3–58.

***Meiotheciella papillosa*** (Broth.) B.C.Tan, W.B.Schofield & H.P.Ramsay, *Nova Hedwigia* 67: 216 (1998)

*Pterogoniella papillosa* Broth., *Bull. Acad. Int. Géogr. Bot.* 13: 85 (1904); *Meiothecium papillosum* (Broth.) Broth., *Nat. Pflanzenfam.* I, 3: 1103 (1908). T: Jahove, New Caledonia, Jan. 1910, *Franc*; [ in I.Thériot. *Musci et Hepaticae Novae-Caledoniae Exsiccati* 162.] chosen by Tan *et al.* (1998) as the type. This has no nomenclatural standing unless the holotype is lost [it cannot be found at H-BR], in which case the *Franc* specimen could serve as a neotype (Tan *et al.*, 2011: 30).

*Meiothecium gymnostomum* M.Fleisch., *Musc. Buitenzorg* 4: 1227 (1923). T: Soekamandi to Salak, near Buitenzorg, West Java [Indonesia], 2 Apr. 1898, *M.Fleischer s.n.*; lecto: FH, *vide* B.C.Tan, W.B.Schofield & H.P.Ramsay, *op. cit.* 218; syn: Botanical Garden, near Buitenzorg, West Java [Indonesia], 2. Apr. 1898, *M.Fleischer s.n.* (FH).

*Meiothecium papillosum* (Broth.) Broth. var. *obtusifolium* Broth. & Paris, *Öfvers. Förh. Finska Vetensk.-Soc.* 53A: 38 (1911).

Illustrations: B.C Tan, W.B.Schofield & H.P.Ramsay, *op. cit.* 216, figs 8–19.

Description as for the genus.

In Australia, this species appears to be extremely rare and is confined to north-eastern Qld; also in Java, the Philippines, Marshall Islands, Papua New Guinea, New Caledonia and Fiji. Grows on the bark of tree trunks and branches.

Qld: Mount Spec Natl Park, near Townsville, *D.H.Norris 39869* (NSW, UBC).

The Australian specimens are slightly larger than those from New Caledonia and Java.