

ISOPTERYGIOPSIS

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Isopterygiopsis Z.Iwats., *J. Hattori Bot. Lab.* 33: 379 (1970); refers to its similarity to the genus *Isopterygium*.

Type: *I. muelleriana* (Schimp.) Z.Iwats.

Dioicous or autoicous. Plants small to medium-sized, glossy. Stems creeping, irregularly pinnately branched; epidermal cells in cross section of stem often large and hyaline; outer walls thin or slightly thickened; central strand indistinct. Rhizoids papillose and axillary. Pseudoparaphyllia absent. Leaves erect to widely spreading and weakly to distinctly complanate, narrowly triangular, acuminate, entire, ecostate; leaf base not decurrent. Gemmae, when present, forming axillary fascicles of filamentous propagules 2–7 cells long.

Seta elongate. Capsules suberect; annulus differentiated; operculum bluntly low-conical.

Isopterygiopsis was segregated from *Isopterygium* due to the absence of stem pseudoparaphyllia in the former, the occurrence of larger, hyaline or thin-walled epidermal cells in stems, axillary papillose rhizoids, filamentous propagules and a differentiated annulus (Iwatsuki, 1970). The pseudoparaphyllia and propagules are similar to those of *Plagiothecium*, but *Isopterygiopsis* differs in having non-decurrent leaf bases (Iwatsuki, 1987).

The genus has been variously placed in the Plagiotheciaceae (Iwatsuki & Ramsay, 2009) or, as currently, in the Hypnaceae (Goffinet *et al.*, 2012).

This small genus of three species occurs in Europe, North America, Africa, Asia as far north as Japan, with a single species in Australasia. Epiphytic on tree or tree fern trunks, fallen logs or, less commonly, on rocks or in rock crevices.

References

Goffinet, B., Buck, W.R. & Shaw, A.J. (2012), *Classification of the Bryophyta* <http://www.eeb.uconn.edu/people/goffinet/Classificationmosses.html>.

Iwatsuki, Z. (1970), A revision of *Plagiothecium* and its related genera from Japan and her adjacent areas. I, *J. Hattori Bot. Lab.* 33: 331–380.

Iwatsuki, Z. (1987), Notes on *Isopterygium* Mitt. (Plagiotheciaceae), *J. Hattori Bot. Lab.* 63: 445–451.

Iwatsuki, Z. & Ramsay, H.P. (2009), The genera *Isopterygium* Mitt. (Bryopsida, Hypnaceae) and *Isopterygiopsis* Z.Iwats. (Bryopsida, Plagiotheciaceae). *Telopea* 12:371–384.

Zhang, M.-X. & He, S. (2005), Hypnaceae, *Moss Flora of China* 8: 80–260.

Isopterygiopsis pulchella (Hedw.) Z.Iwats., *J. Hattori Bot. Lab.* 63: 450 (1987)

Leskea pulchella Hedw., *Sp. Musc. Frond.* 220 (1801); *Isopterygium pulchellum* (Hedw.) A.Jaeger, *Ber. Thätigk. St. Gallischen Naturwiss. Ges.* 1876–77: 441 (1878). T: In silvis umbrosis Scotiae [Scotland]; n.v.

Isopterygium arachnoideum Broth., *Öfvers. Förh. Finska Vetensk.-Soc.* 42: 112 (1900). T: Hunters Scrub, Tuekumbil [Tuckumbil], Richmond R., N.S.W., *W.W.Watts 549*, lecto: H-BR, *fide* Z.Iwatsuki & H.P.Ramsay, *op. cit.* 380 (2009); isolecto: NSW (4 packets); Three-Mile Scrub, N.S.W., *W.W.Watts 879*; syn: H-BR. [A specimen, *W.W.Watts 587*, in MEL is not a syntype, *fide* H.P.Ramsay & J.Seur, *Register of Type Specimens of Mosses in Australian Herbaria* 52, 1994].

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Isopterygium subarachnoideum Broth., *Öfvers. Förh. Finska Vetensk.-Soc.* 42: 113 (1900). T: Hunters Scrub, Richmond R., N.S.W., *W.W.Watts 744*, *W.W.Watts 588*; lecto: H-BR, *vide* Z.Iwatsuki & H.P.Ramsay, *loc. cit.*; isolecto: NSW. [No material of the supposed syntype, *W.W.Watts 588*, was found in either H-BR or NSW.]

Illustrations: Z.Iwatsuki, *op. cit.* 335, fig. 1M1, M2 (1970); H.Crum & L.E.Anderson, *Mosses of Eastern North America* 2 : 1176, fig. 582 (1981); A.J.E.Smith, *The Moss Flora of Britain and Ireland* 2nd edn fig. 295 (2004); M.S.Ignatov & E.A.Ignatov, *Moss Flora of Middle European Russia* 2: fig. 439 (2004); M-X.Zhang & S.He, *op. cit.* pl. 689, all as *Isopterygium pulchellum*; B.Malcolm, N.Malcolm, J.Shevock & D.Norris, *California Mosses* 287 (2009); Z.Iwatsuki & H.P.Ramsay, *op. cit.* 381, fig. 6.

Autoicous. Plants small and slender, forming flat bright green or yellow to greyish green mats. Stems mostly unbranched, several arising from the bases of perichaetia; stem in cross section with large epidermal cells; cortical cells with the outer wall thin or slightly thickened. Branches numerous, often ascending. Leaves usually not crowded, often secund at the tips, 0.7–1.2 mm long, less than 0.2 mm wide at the base. Mid-laminal cells linear, 35–70 × c. 5 µm; cells scarcely differentiated at the basal angles. Gemmae occasional, fusiform or cylindrical, 2–5 cells long.

Seta 8–16 mm long, initially orange or yellow, becoming orange-red. Capsules oblong-cylindrical, c. 1.5 mm long; annulus of 2 rows of cells; operculum with a short beak; Endostome with non-perforate segments; cilia 1 (–2). Spores 9–13 µm diam.

Rare in south-eastern Qld, more common in N.S.W, Vic. and Tas.; grows mainly on tree fern trunks but also on exposed rocks, cliffs, in rock crevices or on bark. Also in Europe, North America, central and northern Asia and New Zealand.

Qld: Coomera Gorge, McPherson Ra., *I.R.Telford* (CANB). N.S.W.: Valley of Waters, Blue Mtns, *W.W.Watts 5434*, *5435*, *5436*, *10471* (NSW); Cambewarra, *W.W.Watts 6590*, *9930*, *9946* (NSW); “Kingwell”, Wyong, *W.W.Watts 9604*, *9480*, *8971*, *8972*, *9631*, *9715*, *9532*, *9722* (NSW); Werrikimbie Natl Park. *A.Downing*, *S.Kingsley* & *R.Peacock WGS84* (MQU). Vic.: Mt Drummer, *N.A.Wakefield s.n.* (MEL 1031453). Tas.: Zeehan, *W.A.Weymouth 630* (HO); Recherche, *W.A.Weymouth 2586*, *2618* (HO); Upper Meander, Dec. 1912, *L.Rodway* (HO).