

## TAXIPHYLLUM

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*Taxiphyllum* M.Fleisch., *Musc. Buitenzorg* 4: 1434 (1923); probably from the Greek *tassos* (rank, arrangement) and *phyllon* (a leaf), in reference to the ±distichous arrangement of the leaves.

T: not designated

Dioicous. Stems creeping, infrequently complanately branched, strongly complanate to subdistichous; in cross section with 2 or 3 layers of small thick-walled cells surrounding broader thin-walled cells; central strand present. Pseudoparaphyllia foliose, conspicuous. Leaves spreading laterally, asymmetrically ovate-lanceolate, acute to acuminate, narrowly to broadly conduplicate; margin ±serrulate throughout; costa short and double. Laminal cells linear, somewhat flexuose, smooth to prorulate, firm-walled, not or scarcely pitted; alar cells weakly differentiated.

Perichaetial leaves oblong, abruptly acuminate. Calyptra cucullate. Seta smooth. Capsules exerted, suberect to horizontal, narrowly ovoid, with a long distinct apophysis; stomata at the base of the capsule, phaneropore. Peristome hypnoid, with 1–3 cilia. Operculum conical to rostrate. Spores spherical, slightly papillose.

*Taxiphyllum* is a genus of c. 30 species found mainly in tropical or subtropical regions. It is characterised by a complanate habit, stems with narrow, thick-walled epidermal cells, non-decurrent leaf bases, leaf margins that are serrulate for almost their length and often long-rostrate opercula.

### Reference

Iwatsuki, Z. (1963), Bryological miscellanies XII. Preliminary notes on the Japanese species of *Taxiphyllum* and its related genera, *J. Hattori Bot. Lab.* 26: 63–69.

### **Taxiphyllum taxirameum** (Mitt.) M.Fleisch., *Musc. Buitenzorg* 4: 1435 (1923)

*Stereodon taxirameus* Mitt., *J. Proc. Linn. Soc. Bot.*, Suppl. 2: 105 (1859); *Isopterygium taxirameum* (Mitt.) A.Jaeger, *Ber. Thätigk. St. Gallischen Naturwiss. Ges.* 1876–77: 439 (1878) [Ad. 2: 505]. T: “Himalaya reg. temp., Simla and Kumaon”, [India], *T.Thomson 1008*; syn: BM, NY; *ibid.*, *T.Thomson 1023b*; syn: BM, NY; Khasian Mtns, [India], *J.D.Hooker & T.Thomson*; syn: BM, NY; Assam, [India], *Griffith*; syn: BM, NY; Nepal, *J.D. Hooker*; syn: BM, NY; Ceylon [Sri Lanka], *Gardner*; syn: BM, NY.

*Isopterygium robustum* Broth., *Bot. Centralbl.* 36: 87 (1888); *Taxiphyllum robustum* (Broth.) Broth., in H.G.A.Engler, *Nat. Pflanzenfam.*, 2nd edn, 11: 463 (1925). T: Brisbane R., Qld, *F.M.Bailey s.n.*; holo: H-BR; iso: MEL.

*Isopterygium teysmannii* Broth. ex F.M.Bailey, *Syn. Queensland Fl.*, Suppl. 3(2): 115 (1890), *nom. illeg. non Isopterygium teysmannii* (Sande Lac.) A.Jaeger (1878).

Illustrations. E.B.Bartram, *Philipp J. Sci.* 68: pl. 28, fig. 477 (1939); W.R.Buck, *Mem. New York Bot. Gard.* 82: 324, pl. 28, figs 1–6 (1998).

Plants medium-sized to robust, pale green to yellowish green, forming loose mats. Stems to c. 8 cm long, creeping, infrequently complanately branched, strongly complanate to subdistichous. Leaves laterally spreading, asymmetrically ovate-lanceolate, 1.2–2.0 mm long, 0.4–0.8 mm wide, acute, narrowly to broadly conduplicate, not or very shortly decurrent; margin serrulate throughout; costa short and double. Laminal cells linear, slightly flexuose, 65–100 × 5–7 µm, prorulate, rather thick-walled, not or scarcely pitted; cells

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toward the leaf apex shorter, rhomboidal; alar cells only weakly differentiated, shorter. Sporophytes not seen in Australian specimens.

Rare and scattered in eastern Qld and known from one locality in south-eastern N.S.W. Also in India and Sri Lanka, SE Asia, China, Japan, Malesia, the Pacific islands and the Neotropics and New World subtropics.

Qld: Cairns Cascades, *I.G.Stone 24384* & *W.D.Reese* (MEL); Ennogerger Scrub, *C.Wild* (MEL). N.S.W.: Barrengarry Mtn, *A.J.Downing et al.* (NSW 749256).

*Taxiphyllum taxirameum* is readily recognisable by its rather robust, strongly complanate to subdistichous shoots, ovate-lanceolate leaves with acute, not at all contracted, leaf apices and leaf margins that are serrulate for almost their entire length. Pseudoparaphyllia are conspicuous especially near the shoot tips around branch primordia and young branches.

The identity of the N.S.W. specimen is in doubt as it appears to share attributes of *Taxiphyllum* and *Isopterygium* (*sensu* W.R.Buck & D.H.Vitt, Key to the genera of Australian mosses, *Fl. Australia* 51: 67–88, 2006; couplet 116). Thus, the pseudoparaphyllia are foliose (as in *Taxiphyllum*), but the laminal cells at the leaf apex are not much shorter than those at mid-leaf, in contrast to *T. taxirameum*. There are other specimens having some leaves in which the apical cells are not conspicuously shorter than the mid-laminal cells. However, the stems of the N.S.W. specimen are never subdistichous, and the leaves are long-acuminate and not conduplicate, with much more strongly serrate margins.