

LEPTOTHECA

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Leptotheca Schwägr., *Sp. Musc. Frond.*, Suppl. 2, 1: 135 (1824); from the Greek *leptos* (fine and thin), and the Latin *theca* (a capsule), presumably referring to the long, thin capsules of the genus.

Type: *L. gaudichaudii* Schwägr.

Dioicous. Plants densely tufted, varying greatly in colour, from yellow to dark green. Stems simple, tomentose in lower half. Rhizoids papillose on larger segments, dark brown. Propagula common in upper stem between leaves, filamentous, red-brown. Leaves unranked, not complanate, imbricate, erect-spreading, curled and often twisted when dry, linear-lanceolate to ovate-lanceolate, acuminate to obtuse; margin plane, denticulate or serrate with single teeth; costa percurrent to excurrent, often serrate dorsally in upper half; laminal cells small, isodiametric. Perichaetia terminal. Calyptra cucullate. Capsules erect to horizontal, long-cylindrical; exothecal cells short- to long-rectangular; operculum domed to bluntly rostrate. Peristome double; endostome segments slightly shorter than exostome teeth. Spores globose, papillose.

A genus of two species, with one species and its two varieties occurring in Australia. Previously, *Leptotheca* was placed in the Aulacomniaceae, but Churchill & Buck (1982) transferred it to the Rhizogoniaceae based on the chromosome number, peristome morphology, laminal cell type and the excurrent, dorsally-toothed costa.

Reference

Churchill, S.P. & Buck, W.R. (1982), A taxonomic investigation of *Leptotheca* (Rhizogoniaceae), *Brittonia* 34: 1–11.

Leptotheca gaudichaudii Schwägr., *Sp. Musc. Frond.*, Suppl. 2, 1: 135 (1824)

Bryum gaudichaudii (Schwägr.) Spreng., *Syst. Veg.* 4(1): 212 (1827); *Aulacomnium gaudichaudii* (Schwägr.) Mitt., *Hooker's J. Bot. Kew Gard. Misc.* 8: 262 (1856). T: Port Jackson, [N.S.W.], *Gaudichaud*, holo: G n.v. fide S.P.Churchill & W.R.Buck, *Brittonia*, 34: 5 (1982); iso: BM.

Leptotheca beccarii Müll.Hal., *Genera Musc. Frond.* 148 (1901). T: Mt Wellington, [Tas.], *Beccari*, lecto: PL n.v., fide S.P.Churchill & W.R.Buck, *loc. cit.*; isolecto: NY.

Weissia leptocarpa Schwägr., in *Gaudichaud, in Freycinet, Voy. Uranie, Bot.* 225 (1828). T: G-HEDW? n.v.

Plants tufted. Stems pale green to brown, to 30 mm tall, often with propagula in the upper stem. Leaves curled, slightly twisted and folded along the costa when dry, widest just below mid-leaf; laminal cells 6–12 µm.

Inner perichaetial bracts ovate, with a tapering hairpoint; outer bracts linear-lanceolate. Calyptra long and cylindrical. Setae c. 20 mm long. Capsules long-cylindrical, c. 4 mm long, with wide furrows forming distinct vertical parallel ridges. Endostome basal membrane 25–33% the length of the exostome, with 2 papillose cilia. Spores 10–14 µm diam. $n = 10, 20$, fide H.P.Ramsay, *Austral. J. Bot.* 22: 316 (1974).

This species is characterised by the propagula which are very commonly found in the upper stem. The leaves are slightly asymmetrical as the junction of the upper leaf margin to the costa is usually uneven on either side of the costa.

Two varieties are recognised.

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Leaves ovate-lanceolate; costa distinctly excurrent **a. var. gaudichaudii**
Leaves oval; costa percurrent to slightly excurrent **b. var. watsii**

a. *Leptotheca gaudichaudii* Schwägr. var. *gaudichaudii*

Illustration: G.O.K.Sainsbury, *Bull. Roy. Soc. New Zealand* 5: 283, pl. 41 (1955).

Leaves ovate-lanceolate, with an acuminate to obtuse apex, 0.63–1.50 mm long, 0.23–0.48 mm wide; costa distinctly excurrent.

This variety is commonly found on tree bases, dead timber, tree ferns, rocks and soil in Qld, N.S.W., A.C.T., Vic. and Tas. It also occurs in New Zealand, southern Africa and southern South America.

Qld: Paling Yard Ck, 21 km ESE of Stanthorpe, *H.Streimann* 52965 (CANB). N.S.W.: near Nerriga, *D.McVean* 2674112 (CANB). A.C.T.: Little Collins Ck, *H.Streimann* 5270 (CANB). Vic.: Mt Zero, *H.Streimann* 2601 (CANB). Tas.: Horseshoe Falls, *J.A.Curnow* 2596 (CANB).

b. *Leptotheca gaudichaudii* var. *watsii* (Cardot) S.P.Churchill & W.R.Buck, *Brittonia* 34: 9 (1982)

Leptotheca watsii Cardot, *Wiss. Ergebn. Schwed. Südpolar Exped.* 4(8): 146 (1908). T: Mt Wellington, [Tas.], *W.Watts*; holo: PC *n.v.*; iso: BM, NY *n.v.*, *fide* S.P.Churchill & W.R.Buck, *loc. cit.*

Illustrations: S.P.Churchill & W.R.Buck, *op. cit.* 7, figs 17 & 18 (1982).

Leaves oval; apex acute; costa percurrent to slightly excurrent.

This variety is found only in Tas.

It was not possible to examine specimens, and the description is based on the observations of Churchill & Buck (1982).