

NECKERA

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Neckera Hedw., *Sp. Musc. Frond.* 200 (1801); named in honour of the Belgian botanist Noël Martin Joseph de Necker (1730–93).

Lecto: *N. pennata* Hedw.

Monoicous. Plants forming loose brackets; larger plants often pendulous. Primary stem creeping; fronds short and erect to long and flexuose, simple to pinnately branched, complanate; central strand absent; paraphyllia present. Leaves ovate to ovate-lanceolate, often cultriform, asymmetrical, with transverse undulations from mid-leaf to the leaf apex; apex acute to acuminate; margin entire below, serrulate from mid-leaf, serrate at the apex; costa absent or faint and short, often forked at the tip. Laminal cells thick-walled, linear; upper laminal cells shorter; basal cells distinctly pitted; alar cells forming a small patch or not differentiated.

Perichaetia in leaf axils of secondary stems. Perigonia in leaf axils of secondary stems and on side branches. Calyptra cucullate, smooth. Seta very short, smooth. Capsules immersed, ovoid to oblong-cylindrical; stomata absent; annulus not differentiated; operculum conico-rostrate, oblique. Peristome: exostome teeth narrowly triangular, tapering, occasionally fenestrate; outer face with a distinct median line, horizontally striate at base, papillose above; endostome with a low basal membrane; processes narrow, often fenestrate; cilia absent. Spores globose, papillose.

Neckera is a cosmopolitan genus of c. 45 species which is most diverse in the tropics. One species occurs in eastern Australia.

References

Enroth, J. (2009), Lectotypification of *Neckera hymenodonta* Müll.Hal. (Neckeraceae, Bryophyta), *Telopea* 12: 445–446.

Ji, M-C. & Enroth, J. (2008), *Neckera hymenodonta* (Neckeraceae, Bryopsida) reinstated, with an emended description, *Ann. Bot. Fenn.* 45: 277–280.

***Neckera hymenodonta* Müll.Hal., *Bot. Zeitung (Berlin)* 9: 564 (1851)**

T: “Bek” [Esk] River, near Launceston, Tas., 1850, *S.Mossman* 746; lecto: NY, *fide* J.Enroth, *Telopea* 12: 445 (2009).

Neckera pennata Hedw. var. *tasmanica* Hampe, *Linnaea* 25: 715 (1853). T: “Van Diemensland” [Tas.], *C.Stuart s.n.*; holo: BM; iso: MEL 1001469, 1001470.

Neckera aurescens Hampe, *Linnaea* 28: 212 (1856). T: “Broadribb” [Brodribb] River, Vic., *F.Mueller s.n.*; holo: BM.

Neckera leptotheca Mitt., *Hooker’s J. Bot. Kew Gard. Misc.* 8: 263 (1856). T: “Broad-rib” [Brodribb] River, Vic., *F.Mueller*; lecto: NY (*here chosen*); isolecto: MEL 29183; Cabbage Tree River, Vic., *F.Mueller* 93; syn: MEL 1001479; Tarwin, Vic., *F.Mueller* 103; syn: MEL 1001478, NY. [The lectotype of *N. leptotheca* is possibly a duplicate of the holotype of *N. aurescens*.]

Neckera leichhardtii Hampe, *Linnaea* 36: 520 (1870). T: N.S.W., *L.Leichhardt s.n.*; holo: BM.

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Illustrations: W.R.Buck, D.H.Vitt & W.M.Malcolm, *Key to the Genera of Australian Mosses* 22 (2001), as *N. pennata*; M-C.Ji & J.Enroth, *Ann. Bot. Fenn.* 45: 278, fig. 1 (2008).

Plants robust, to c. 16 cm long, bright or pale green to golden, forming extensive loose bracketed colonies, often pendulous. Fronds simple to almost pinnately branched, complanate. Leaves spreading, ovate to ovate-lanceolate, 2–3 mm long, 0.80–1.44 mm wide, undulate, especially when dry. Laminal cells thick-walled, $53\text{--}56 \times 5\text{--}6 \mu\text{m}$; paraphyllia uniseriate, on stems and branches; pseudoparaphyllia abundant.

Perichaetia c. 2.5 mm tall; perigonia c. 1 mm tall. Seta 1–2 mm long, yellow. Capsules orange-brown. Peristome: exostome teeth pale yellow to brown, narrowly triangular; outer face horizontally striate at the base, papillose above. Spores 18–28 μm diam.

Occurs in south-eastern Qld, coastal N.S.W., eastern and south-eastern Vic. and Tas.; grows in rainforest at altitudes up to 1400 m, epiphytic or epilithic. A common moss in New Zealand.

Qld: Mt Mistake, June 1885, *F.M.Bailey* (BRI). N.S.W.: Weeping Rocks, New England Natl Park, 72 km E of Armidale, *H.Streimann* 47746 (CANB). Vic.: N bank of the Jamieson R., Wrens Flat, *N.H.Scarlett* 98-10 (MEL). Tas.: Warners Sugarloaf, 18.5 km S of Deloraine, *J.A.Curnow* 2006 (HO); Mt Roland, *A.V.Ratkowsky* H765 (CANB).

Australian material shows considerable variability in the degree of leaf undulation and in the length and sharpness of the leaf acumen. The leaves in Tasmanian and Victorian specimens are almost consistently strongly undulate, especially when dry, and they have a markedly attenuated acuminate apex. By contrast, many specimens from New South Wales and Queensland have less undulate to almost smooth leaves and a much shorter acumen. The same variation has been found among foreign collections of *N. pennata*. The type specimen of *N. aurescens* is one of the conspicuously undulate plants with greatly attenuated leaf apices. *Neckera hymenodonta* freely produces sporogones throughout Australia.

Excluded Name

Neckera pennata Hedw., *Sp. Musc. Frond.* 200 (1801)

Neckera hymenodonta was synonymised with *N. pennata* by Sainsbury (*Rev. Bryol. Lichénol.* 21: 213–225, 1952), but it has recently been reinstated as a distinct species by Ji & Enroth (2008). The main distinguishing character is the presence of paraphyllia in *N. hymenodonta* and their absence in *N. pennata*. Moreover, Ji & Enroth (2008) also suggested differences in the peristome, viz. the absence of an endostome membrane in *N. pennata*, in contrast to *N. hymenodonta*. However, the reported absence of an endostome was an error (J.Enroth, *pers. comm.*, 2009).

All material in Australian herbaria labelled *N. pennata* and examined by us is referable to *N. hymenodonta*. Consequently, *N. pennata* is excluded from the Australian bryoflora.