

LEUCOLOMA

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Leucoloma Brid., *Bryol. Univ.* 2: 218 (1827), *nom. cons.*; from the Greek *leukos* (white) and *loma* (a fringe or hem), in reference to the hyaline leaf border.

Type: *L. bifidum* (Brid.) Brid.

Dioicous; male and female plants usually similar. Plants forming rough mats or loose turfs. Stems erect or ascending, often with a creeping basal part, reddish brown, densely foliose, lacking tomentum; central strand usually absent. Leaves ovate-lanceolate to narrowly ovate-lanceolate, canaliculate, V-shaped near the apex, smooth or slightly wavy along the costa; alar patches single-layered; margin entire throughout or serrulate near the apex; border differentiated, consisting of up to 8 rows of linear hyaline cells; costa subpercurrent, in cross section with 4 guide cells and 2 layers of stereids on either side. Upper laminal cells isodiametric, not pitted, papillose at least abaxially, descending along the costa; lower juxtacostal cells elongate to linear, thick-walled, often pitted, smooth; alar cells with strongly thickened lateral walls or with lateral and end walls equally thickened.

Calyptra cucullate or mitrate. Sporogones solitary, on a very short to long seta; capsules globose to elongate-cylindrical, straight to curved; stomata absent; annulus not differentiated. Peristome teeth asymmetrically bifid, outside vertically striate with cross-connections between striae in the basal part. Spores spherical, finely papillose.

Leucoloma is a large pantropical genus of more than 100 species, about half of which are endemic to Madagascar. Two species are known from Australia.

The genus is characterised by leaves with juxtacostal bands of short cells similar to the upper laminal cells descending into the lower part of the leaf.

La Farge-England (1998) provided a synopsis of the genus together with an infrageneric classification. Two subgenera are recognised, *Leucoloma* and *Syncratodictyon* Renaud, and each is subdivided into several sections, and the latter also in subsections and series.

Subgenus *Leucoloma* is characterised by alar cells with strongly thickened lateral walls, a sharp transition between juxtacostal and intramarginal cells, mitrate calyptrae and immersed to short-exserted capsules on short setae. Subgenus *Syncratodictyon* has alar cells with equally thickened lateral and end walls, a gradual transition between juxtacostal and intramarginal cells, cucullate calyptrae, and exserted capsules on a seta longer than 4 mm. In Australia, *L. circinatum* belongs to subg. *Syncratodictyon* and *L. molle* to subg. *Leucoloma*.

Reference

La Farge-England, C. (1998), The infrageneric phylogeny, classification, and phytogeography of *Leucoloma* (Dicranaceae, Bryopsida), *Bryologist* 101: 181–220.

- Plants to 1 cm tall; alar cells with lateral and end walls equally thickened, often enlarged; margin near the leaf apex rough due to papillae, but not serrulate; upper laminal cells papillose on both sides **1. *L. circinatum***
- Plants to 6 cm tall; alar cells with lateral walls more strongly thickened than end walls; margin near the leaf apex serrulate; upper laminal cells papillose on the abaxial side only **2. *L. molle***

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1. *Leucoloma circinatulum* E.B.Bartram, *Farlowia* 4: 237 (1952)

T: Leo Ck, Upper Nesbit R., Qld, *L.J.Brass* 1988; holo: FH.

Plants forming short turfs to 10 mm tall. Stems erect, mostly simple; central strand absent. Leaves falcate-secund, narrowly ovate-lanceolate, 2.5–3.0 mm long, c. 0.3 mm wide; margin entire throughout, rough above due to papillae. Upper laminal cells and lower juxtacostal cells oblate to short-oblong, rounded, 6–15 × 8–10 µm, papillose on both sides, ±gradually grading into lower intramarginal cells, these elongate to short-rectangular, 15–50 × 6–8 µm, not pitted; alar cells with lateral and end walls equally thickened, often enlarged. Perichaetia and sporogones unknown.

Known from only two collections from north-eastern Qld, one on wet rocks in a creek bed, the other on a tree stem. Endemic.

Qld: Mossman Gorge, *I.G.Stone* 8994 (MEL).

Leucoloma circinatulum is readily distinguished from *L. molle* especially by the alar cells and leaf margin. However, while I am unaware of any characters that distinguish this species from the tropical Asian *L. mittenii* M.Fleisch., I have not seen enough of the latter to make a definitive conclusion. *Leucoloma mittenii* is scattered throughout continental tropical Asia, especially India and Thailand, and it just reaches the Malay Peninsula. Hence, if *L. circinatulum* proved to be conspecific, this would create a species with a very disjunct distribution.

2. *Leucoloma molle* (Müll.Hal.) Mitt., *J. Proc. Linn. Soc., Bot.*, Suppl. 1: 13 (1859)

Dicranum molle Müll.Hal., *Syn. Musc. Frond.* 1: 354 (1848). T: Java, [Indonesia], *F.W.Junghuhn*; lecto: L, *fide* C.La Farge, *Bryologist* 105: 612 (2002); isolecto: NY, S.

Leucoloma subintegrum Broth., *Öfvers. Förh. Finska Vetensk.-Soc.* 33: 93 (1891). T: Palm Camp, Bellenden Ker Ra., Qld, *F.M.Bailey* 639; holo: H-BR; iso: NSW, S.

Dicranum bauerae Müll.Hal., *Hedwigia* 36: 359 (1897); *Leucoloma bauerae* (Müll.Hal.) Paris, *Index Bryol.*, Suppl. 1: 232 (1900). T: Bloomfield River, Qld, 1884, *Miss Bauer*; holo: B, destroyed; iso: PC, *fide* C.La Farge, *op. cit.* 607.

Illustrations: A.Eddy, *Handb. Malesian Mosses* 1: 178, fig. 153 (1988); D.H.Norris & T.Koponen, *Acta Bot. Fenn.* 139: 42, fig. 12j–n (1990).

Plants growing in loose turfs or rough mats; shoots to 6 cm long. Stems erect to ascending, or creeping with ascending upper parts, frequently branched in the creeping part; central strand absent. Leaves erecto-patent to homomallously curved, narrowly ovate-lanceolate, 3.0–5.6 mm long, 0.4–0.7 mm wide; margin entire below, serrulate in the upper 15–20%. Upper laminal cells and lower juxtacostal cells obrectangular to short-rectangular, 6–15 × 5–7 µm, papillose on the abaxial side, abruptly separated from lower intramarginal cells to the side; lower intramarginal cells elongate to short-linear, 20–60 × 5–7 µm, weakly to distinctly pitted; alar cells with strongly thickened lateral walls.

Calyptra mitrate. Sporogone with a short seta; capsules globose to short-ellipsoidal.

Occurs in lowland and montane rainforest in north-eastern Qld; grows in creek lines, on rocks, tree trunks and branches at altitudes up to 1200 m. Also in Sri Lanka, China, Japan, throughout Malesia, Vanuatu, the Society Islands and the Hawaiian Islands.

In the field and under a hand lens *L. molle* can be confused with *Dicranoloma leichhardtii*, as the leaves appear to be strongly bordered. However, what appears to be a border under low magnification in fact consists of the actual border, together with the intramarginal cells. In the field *L. molle* can be distinguished from *D. leichhardtii* by the narrower leaves that are very slightly wrinkled and undulate when dry.