

LEPYRODONTACEAE

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Lepyrodontaceae Broth., in H.G.A.Engler & K.A.E.Prantl, *Nat. Pflanzenfam.* 1, 3: 771 (1906).

Type: *Lepyrodon* Hampe

Dioicous; male plants full-sized or dwarfed. Pleurocarpous. Stems creeping or ascending, irregularly pinnately or sympodially branched. Paraphyllia and pseudoparaphyllia lacking; branch primordia *Bryum* type, subtype AA or AI. Leaves narrowly to broadly ovate, plane to concave, often hair-pointed, rounded or auriculate at the base; costa short and single or double. Laminal cells linear, vermicular, pitted; alar cells poorly differentiated.

Seta long, straight. Capsules suberect to erect, ellipsoidal. Peristome reduced and without an exostome, or with a rudimentary exostome and a reduced endostome with a short basal membrane; cilia absent or rudimentary.

The monotypic Lepyrodontaceae is known from Australia, New Zealand and South America. The family is characterised by a variable, weakly developed costa; long, firm-walled laminal cells; poorly differentiated alar cells; dioicous sexual condition; erect, smooth capsules with obliquely rostrate opercula; and a reduced peristome in which the exostome is altogether absent or very much reduced. The New Zealand endemic, *Dichelodontium* Broth., was added to the Lepyrodontaceae by Allen (1998), because of the many morphological characters shared with *Lepyrodon*, especially the peristomial ones. However, recent molecular analysis (Blöcher, 2004) has demonstrated this genus to be aligned with the Ptychomniaceae (*sens. lat.*, incl. Garovagliaceae) in which it was originally placed.

References

Allen, B.H. (1998), A revision of the moss genus *Lepyrodon* (Leucodontales, Lepyrodontaceae), *Bryobrothera* 5: 23–48.

Blöcher, R. (2004), *Molecular Evolution, Phylogenetics and Biogeography in Southern Hemispheric Bryophytes with Special Focus on Chilean Taxa*. Ph.D. thesis, Bonn.

LEPYRODON

Lepyrodon Hampe, *Ann. Sci. Nat., Bot.*, sér. 5, 4: 367 (1865); from the Greek *lepyros* (stripped) and *odon* (a tooth), in reference to the exostome teeth being absent or very much reduced.

Type: *L. suborthostichus* (Müll.Hal.) Hampe

Plants small to medium-sized or ±robust, forming spreading mats or turfs. Stems creeping and irregularly pinnately branched or ascending and mostly sympodially branched; creeping parts and base of erect parts densely tomentose; in cross section with 1–3 layers of small thick-walled cells surrounding large thinner-walled cells; central strand variably developed. Rhizoids reddish, smooth to very slightly warty; axillary hairs short-filamentous, consisting of 3–6 cells with the basal 1 or 2 cells isodiametric to short-oblong, brownish tinged and the distal 2–4 cells elongate and hyaline; flagellate branches often present. Stem leaves or leaves of creeping parts of stem and lowermost leaves of erect part smaller than branch leaves or leaves higher up, ovate-lanceolate to triangular; branch leaves or upper leaves tumid-

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imbricate or erect to erecto-patent, linear to broadly ovate, smooth or plicate, often hair-pointed, rounded or auriculate at the base; costa short and single or double, often asymmetrically forked. Laminal cells short-linear to linear, slightly vermicular, smooth, thin to thick-walled, pitted; cells towards the apex shorter; basal cells shorter and wider; alar cells shorter, otherwise not differentiated.

Perichaetia small, mostly at the base of the erect part of the stem. Calyptra cucullate, smooth; base \pm entire. Sporogones solitary or aggregated. Seta straight, smooth. Capsules erect to suberect, straight, ellipsoidal, smooth, with a \pm pronounced apophysis; exothecial cells irregularly rectangular to rounded, rather thin-walled, shorter, oblate in 3 or 4 rows at the orifice; stomata present at the base of the capsule, phaneropore, often slightly raised; annulus persistent, compound; operculum obliquely rostrate above a conical base. Peristome with exostome teeth absent or rudimentary; endostome finely papillose outside, smooth inside, with a low basal membrane; processes not keeled, widely fenestrate; cilia absent or 1 or 2 rudimentary stubs. Spores spherical, finely papillose.

Lepyrodon, a genus of seven species, is largely restricted to southern temperate regions of Australia, New Zealand and South America, with a single species extending into the Neotropics as far north as Mexico. Two species are known from Australia.

My observations on the branching pattern in Australian *Lepyrodon* contrast with Allen's (1998). Allen (1998) noted that in a few species plants consistently form mats with the stems creeping and irregularly pinnately branched, but that most species form turfs and have creeping, irregularly branched stolons with rudimentary, well-spaced leaves from which arise relatively short, erect, densely and evenly foliate secondary stems. In all Australian material that I have seen, the stems are ascending with the creeping part stoloniform and the erect part densely foliate, with sympodial branching in the bend at the base of the upright part. Monopodial branching occurs in the creeping parts, but is very rare in the erect part. Likewise, Allen (1998) reports the stomata to be superficial or immersed, while my observation is that stomata that appear to be immersed and cryptopore, on closer inspection have their guard cells projecting above the surrounding exothecial cells and often slightly overlapping them.

Key

Leaves deeply plicate, narrowly ovate to ovate or narrowly triangular; exostome lacking.....**1. L. australis**
Leaves smooth to rugulose, ovate to broadly ovate; exostome reduced, hyaline **2. L. pseudolagurus**

1. *Lepyrodon australis* Hampe ex Broth., in H.G.A.Engler & K.A.E.Prantl, *Nat. Pflanzenfam.* 1, 3: 773 (1906)

T: Nelson Mtns, New Zealand, *Sinclair*; lecto: NY *n.v.*, *fide* B.H.Allen, *op. cit.* 28; on rocks and trees, Otago, New Zealand, *Hector & Buchanan*; syn: NY.

Plants small to medium-sized, glossy pale to bright green or yellowish green, forming mats or turfs. Stems creeping, sympodially branched. Leaves erect, imbricate, narrowly ovate to ovate or narrowly triangular, 2–4 mm long, 0.6–0.8 mm wide, concave, deeply plicate, narrowly acuminate, ending in a short or long hyaline point, auriculate at the base. Laminal cells short-linear, 30–100 \times 4–5 μ m, pitted.

Exostome absent. Spores 12–18 μ m diam.

Very rare in Tas., found on a *Nothofagus* trunk in rainforest (c. 750 m); also in New Zealand.

Tas.: Lake St. Clair, Cradle Mountain-Lake St. Clair Natl Park, *D.H.Norris* 27965, 28125 (CANB).

[Image](#)

[Distribution map](#)

2. *Lepyrodon pseudolagurus* B.H.Allen, *Bryobrothera* 5: 40 (1998)

T: Arthur Hut Track, Flora Saddle Mtn, 25 km SSW of Motueka, North West Nelson Flora Reserve, Nelson, New Zealand, *H.Streimann* 51054; holo: MO; iso: CANB, NY, S.

Plants medium-sized to robust, glossy pale to bright green or yellowish green, forming turfs. Stems creeping, sympodially branched. Leaves erect-tumid, ovate to broadly ovate, 3.0–4.5 mm long, 1.0–1.3 mm wide, deeply concave, smooth or rugulose, acuminate, gradually or abruptly contracted into a short or long hyaline point, rounded at the base. Laminal cells short-linear to linear, 55–130 × 6–9 µm, pitted.

Exostome rudimentary, consisting of 16 short sparingly papillose hyaline stumps. Spores 12–18 µm diam.

Occurs in the Blue Mountains N.S.W. (historical record), Vic. and Tas., in high altitude eucalypt forest and above the tree line (1000–1850 m), mostly in rock crevices, rarely on tree bases. Also in New Zealand and Campbell Island.

N.S.W.: Tuross River Cascades, *J.H.Willis* 1 (MEL). Vic.: Devils Hollow Gorge, Lankey Plain, Dargo High Plains, *A.W.Thies* 1526B (MEL); Mount Howitt road from Licola, Eastern Highlands, *I.G.Stone* 2470 (MEL). Tas.: near Trappers Hut, Walls of Jerusalem Natl Park, *N.Klazenga* s.n. (MEL).

Although this was formerly considered to be part of *Lepyrodon lagurus* (Hook.) Mitt., Allen (1998) described *L. pseudolagurus* for Australian and New Zealand material which he considered to be distinct from South American populations. The two species are gametophytically very similar, but differ in *L. lagurus* having dwarf males, while male plants in *L. pseudolagurus* are almost as large as the females. Furthermore, *L. pseudolagurus* often has flagelliform branches and a rudimentary exostome, which is lacking in *L. lagurus*.

In the field *Lepyrodon pseudolagurus* can resemble *Leptostomum inclinans* R.Br. (Leptostomataceae), which can grow in the same places, but can be distinguished by its glossier and less hoary appearance and by the weakly developed costa. Dry leaves of *L. inclinans* tend to arrange themselves in a spiral around the stem, while their stance does not change very much in *L. pseudolagurus*.

[Image 1](#)

[Image 2](#)

[Image 3](#)

[Image 4](#)

[Distribution map](#)