

PLATYHYPNIDIUM

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Platyhypnidium M.Fleisch., *Musci Fl. Buitenzorg* 4: 1536 (1923); from the Greek *platy-* (broad) and *hypnidium* (probably derived from the moss genus *Hypnum*), in reference to the rather broad shoots.

Type: Not designated.

Autoicous or sexual condition unknown. Plants medium-sized to large; branches \pm straight when dry. Axillary hairs with 2–8 upper cells. Stem leaves not plicate; leaves on stoloniferous shoots occasionally scale-like; costa single, short or long, occasionally double, smooth; margin plane, regularly denticulate or finely denticulate in upper half or further down. Median laminal cells linear or short-linear, incrassate or only slightly so, eporose, smooth; alar cells undifferentiated or rectangular to elongate-rectangular, somewhat inflated, often forming a diffusely delimited, short-rectangular to isodiametric group, decurrent or shortly so.

Seta smooth or mammillose. Capsules horizontal; operculum rostrate. Peristome: exostome perfect, red; endostome with a high basal membrane; processes well developed and with broad perforations; cilia c. 75% the length of the processes.

Species with an appearance of *Platyhypnidium* occur in rocky habitats in and near running water. Whereas numerous aquatic Brachytheciaceae species have been referred to this genus, they actually belong to several groups that are not particularly closely related to one-another. The three Australian species treated here under *Platyhypnidium* are now referred to *Hedenaesia* Huttunen & Ignatov or *Rhynchostegium* Bruch & Schimp., and one of the species has never been treated in *Platyhypnidium*.

References

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- 1 Costa extending 10–40 (–60)% up the leaf, very thin except near the base where it can be 60 μ m wide, occasionally forked almost from the base..... **Rhynchostegium brevinerve**
- 1: Costa extending (50–) 60–85% up the leaf, sometimes percurrent, broader, up to 92 μ m wide near the base, not forked.....2

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- 2 Leaf apex narrowly acute to broadly acuminate, occasionally almost rounded or broadly obtuse; seta mammillose; outer surface of exostome deeply furrowed (not split) in lower part. **P. austrinum**
- 2: Leaf apex subobtusely, broadly acute or broadly apiculate; seta smooth; outer surface of exostome not furrowed..... **P. aquaticum**

Platyhypnidium aquaticum (A.Jaeger) M.Fleisch., *Musci Fl. Buitenzorg* 4: 1537 (1923)

Rhynchostegium aquaticum A.Jaeger, *Ber. Thätigk. St. Gallischen Naturwiss. Ges.* 1876–77: 378 (1878). T: Los Laches in rivulis ad saxa, Bogota, [Colombia], 2800 m, June; BM? n.v.

Rhynchostegium muelleri A.Jaeger, *Ber. Thätigk. St. Gallischen Naturwiss. Ges.* 1876–77: 378 (1878); *Platyhypnidium muelleri* (A.Jaeger) M.Fleisch., *Musci Fl. Buitenzorg* 4: 1537. 242 (1923). T: Java, [Indonesia], *De Vriese*; Gedé et Salak, [Indonesia], *Teysmann*; Sumatra, [Indonesia], *A. Wiltens*; L? n.v.

Plants medium-sized to large, irregularly and rather sparingly branched, medium to brownish green. Stem leaves erect to erecto-patent, straight or homomallous, slightly twisted when dry, weakly concave to almost flat, broadly ovate to ±orbicular, abruptly narrowed to a subobtusely, broadly obtuse or broadly apiculate apex; costa single and extending (50–) 60–85% up the leaf, 60–92 µm wide near the base; margin regularly and occasionally strongly denticulate in the upper 50–75%. Median laminal cells 56.5–140.5 × 6.5–10.5 µm; alar group extending from the leaf margin 20–30% the distance to the leaf centre at insertion. [Sporophyte not seen from Australia: seta smooth; outer surface of exostome not furrowed.]

Occurs in N.S.W.; grows on rocks and boulders in and beside streams. Widespread in tropical and subtropical regions.

N.S.W.: Gloucester R., 35 km WSW of Gloucester, *H. Streimann 1585* (CANB, H), 44736 (S), 60375 (NY, Wynns, 2006).

Platyhypnidium austrinum (Hook.f. & Wilson) M.Fleisch., *Musci Fl. Buitenzorg* 4: 1537 (1923)

Hypnum austrinum Hook.f. & Wilson, in J.D.Hooker, *Fl. Nov.-Zel.* 2: 108, pl. 89, fig. 4 (1854); *Eurhynchium austrinum* (Hook.f. & Wilson) A.Jaeger, *Ber. Thätigk. St. Gallischen Naturwiss. Ges.* 1876–77: 356 (1878); *Hedenaesia austrina* (Hook.f. & Wilson) Huttunen & Ignatov, *Taxon* 59: 801 (2010). T: [Wellington,] New Zealand, 1850, *Dr. Lyall 104*; lecto: BM, *fide* L.Hedenäs (1996).

Hypnum austroalpinum Hampe, *Linnaea* 30: 640 (1860); *Brachythecium austroalpinum* (Hampe) A.Jaeger, *Ber. Thätigk. St. Gallischen Naturwiss. Ges.* 1876–77: 337 (1878). T: “Alpes austral.”, [Vic.], 1855, *F. Mueller 15*; lecto: BM; isoleccto: BM, *fide* L.Hedenäs (1996).

Hypnum moorei Broth. & Geh., *Öfvers. Förh. Finska Vetensk.-Soc.* 37: 168 (1895); *Rhynchostegium moorei* (Broth. & Geh.) Paris, *Index Bryol.* 1131 (1898); *Platyhypnidium moorei* (Broth. & Geh.) M.Fleisch., *Musci Fl. Buitenzorg* 4: 1537 (1923). T: Frenchman’s Cap, Tas., 1893, *T.B. Moore sub no. 39*; lecto: H-BR, *fide* L.Hedenäs (1996).

Illustrations: L.Hedenäs, *op. cit.* 80, fig. 11A, B (2002).

Plants medium-sized to large, irregularly and rather sparingly branched, medium to dark green, sometimes brownish. Stem leaves erect to erecto-patent, straight or homomallous, occasionally subimbricate, twisted and shrunken when dry, strongly concave to almost flat, ovate or broadly ovate to ±orbicular, abruptly narrowed to a rounded, broadly obtuse or narrowly acute to broadly acuminate apex; costa single and extending (50–) 60–80% up the leaf, 46–88 µm wide near the base; margin regularly denticulate in the upper 50–75%, sometimes more strongly denticulate near the apex. Median laminal cells 48.5–119.5 × (6.5–) 7.5–10.5 µm; alar group (when differentiated) extending from the leaf margin 20–25% the distance to the leaf centre at insertion.

Seta strongly mammillose throughout. Outer surface of exostome deeply furrowed (not split) in lower part. Spores 14.5–20.0 µm.

Known from north-eastern and south-eastern Qld, eastern N.S.W., A.C.T., Vic. and Tas.; usually grows on outcrops and boulders in and beside creeks or waterfalls, occasionally on other substrata, and at altitudes up to 1400 m. Also in Macquarie Island and New Zealand.

Qld: The Knoll Natl Park, *A.Moscal* 20702 (HO). N.S.W.: Richmond R., *W.W.Watts* 5227 (H-BR).
A.C.T.: Gibraltar Falls, *H.Streimann* 4520 (CANB). Vic.: Kalimna, *W.W.Watts* 1146 (NSW). Tas.:
German Town, *J.A.Curnow* 2467 (CANB).

Due to its usually large size, dark color and distinctive ecology, *P. austrinum* can only be confused with the other species treated here under *Platyhypnidium*. The combination of ovate to \pm orbicular leaves with rounded to broadly acuminate apices, and very regularly denticulate upper margins is not seen outside this group among Australian species of Brachytheciaceae.

***Rhynchostegium brevinerve* Huttunen & Ignatov, *Taxon* 59: 805 (2010)**

T: "N. Queensland", [Fishery Falls, S of Cairns], 4. Nov. 2004, *A.Cairns* 11043 & *D.Meagher*; holo: S; iso: MHA.

Plants medium-sized, irregularly branched, green. Stem leaves erect to erecto-patent, slightly twisted-flexuose when dry, slightly concave, broadly ovate to ovate-orbicular; apex broadly obtuse; costa single, to 60 μ m wide near the base, sometimes forking almost from base, extending 10–40 (–60)% up the leaf; margin denticulate in upper half, subentire or slightly denticulate below. Median laminal cells 70–120 \times 6–8 μ m; alar cells weakly differentiated. Gametangia and sporophytes unknown.

Only known from the type locality in north-eastern Qld; floating in streams.

Rhynchostegium brevinerve differs from other Australian Brachytheciaceae species of running waters in its less well developed costa, which is thin, usually short, and occasionally forked near the base.