

## PINNATELLA

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*Pinnatella* M.Fleisch., *Hedwigia* 45: 79 (1906); from the Latin *pinna* (a feather) and the Latin suffix *-ellus* (indicating a diminutive), in reference to the small feather-like fronds.

Lecto: *P. kuehliana* (Bosch & Sande Lac.) M.Fleisch.

Dioicous. Plants stipitate-frondose. Primary stem creeping; leaves with appressed basal parts; apex reflexed; fronds irregularly densely pinnate to bipinnate, terete-foliate, often with conspicuous axillary flagelliform branches; central strand present (can be difficult to distinguish in juvenile plants). Stipe leaves patent, short- to long-acuminate above a broadly ovate to triangular basal part; margin entire, narrowly recurved, entire or serrulate at the apex; costa single, failing below the apex. Frond axis and branch leaves appressed to erecto-patent, ovate-lanceolate to ovate-lingulate, concave, often asymmetrical, plicate and curved inwards when dry, broadly acuminate to obtuse; margin entire to crenulate below, serrulate at the apex, slightly undulate, incurved at the base; costa single, strong, sinuose, ending below the apex, often forked at top; intramarginal limbidium often present. Laminal cells thick-walled, often with raised corners; upper laminal cells irregular, oval to rhomboid or hexagonal; marginal cells smaller, quadrate; basal cells rectangular to almost linear, occasionally slightly pitted; alar cells occasionally differentiated, forming a small patch.

Perichaetia in leaf axils of the frond axis; perigonia lateral on main branches. Seta straight, smooth below, mammillose above. Capsules exserted, broadly cylindrical to subellipsoidal; stomata at the base, phaneropore; annulus not differentiated; operculum conico-rostrate, smooth, oblique. Peristome: exostome teeth narrowly triangular; outer face with a distinct median line, spiculose-papillose; endostome with a low to moderately high basal membrane; processes narrowly triangular, densely papillose, fenestrate; cilia absent. Spores finely papillose.

This is a pantropical genus of 15 species (Enroth, 1994). Two subgenera were recognised by Enroth (1994); one of the two Australian species, *P. kuehliana*, belongs to subg. *Pinnatella*, while *P. alopecuroides* is referable to subg. *Urocladium* (M.Fleisch.) Enroth.

### References

- Enroth, J. (1989), Bryophyte flora of the Huon Peninsula, Papua New Guinea. XXVII. Neckeraceae (Musci), *Acta Bot. Fenn.* 137: 41–80.
- Enroth, J. (1994), A taxonomic monograph of the genus *Pinnatella* (Neckeraceae, Bryopsida), *Acta Bot. Fenn.* 151: 1–90.

### Key

- Leaves ovate-lanceolate; intramarginal limbidium of elongate cells conspicuous; costa forming an abaxial keel when dry ..... **1. *P. alopecuroides***
- Leaves ovate-lingulate, intramarginal limbidium absent or inconspicuous; costa not forming an abaxial keel ....  
..... **2. *P. kuehliana***

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## 1. *Pinnatella alopecuroides* (Mitt.) M.Fleisch., *Hedwigia* 45: 84 (1906)

*Neckera alopecuroides* Mitt., *J. Proc. Linn. Soc., Bot. Suppl.*, 1: 123 (1859); *Hypnum alopecuroides* Hook., *Icon. Pl.* 1: 24 (1836), *nom. illeg.* (later homonym, *non* Dubois, 1803). T: Nepal, *Wallich s.n.*; lecto: BM, *vide* J.Enroth, *Acta Bot. Fenn.* 151: 15 (1994).

*Pinnatella intralimbata* M.Fleisch., *Hedwigia* 45: 82 (1906). T: Residenz Krawang, Mt Pangerango, West-Java, [Indonesia], *M.Fleischer s.n.*; holo: FH.

Illustration: J.Enroth, *op. cit.* 16, fig. 8 (1994).

Plants to c. 30 mm tall, yellowish to green. Stipe leaves often overlapping; frond axis and branch leaves ovate-lanceolate, 1.6–1.9 mm long, 0.8–1.1 mm wide, keeled and strongly curved inwards when dry, gradually tapering to slightly constricted towards the acute and slightly mucronate apex; costa forming a distinct abaxial red-brown keel; intramarginal limbidium conspicuous. Upper laminal cells irregularly oval to hexagonal, 6–8 × 5–9 µm; median laminal and marginal cells smaller; basal cells slightly pitted; cells of intramarginal limbidium elongate, pitted; alar cells not differentiated or quadrate and forming a small patch.

Perichaetia c. 1 mm long. Perigonia and sporogones not found.

Epiphytic in rainforest in eastern Qld at elevations of 360–1140 m. Also in India, Sri Lanka, Nepal, China, SE Asia, Malesia and New Caledonia.

Qld: Windsor Tableland, 38 km NW of Mossman, *H.Streimann 29741* (CANB); Royal Arch Caves Natl Park, 5 km SW of Chillagoe, *H.Streimann 46484* (CANB); Mount Windsor road, N of Mt Carbine, *D.H.Norris 43140* (CANB); Windsor Tableland, 39 km NW of Mossman, *H.Streimann 29678* (CANB); along Greenes Falls Track, Maiala (Mount Glorious) Natl Park, NW of Brisbane, *D.H.Norris 36602* (CANB).

*Pinnatella alopecuroides* differs from *P. kuehliana* in having leaves that are strongly keeled and curved towards the stem when dry, as well as glossy ridges in the upper part formed by the intramarginal limbidia.

## 2. *Pinnatella kuehliana* (Bosch & Sande Lac.) M.Fleisch., *Hedwigia* 45: 80 (1906)

*Thamnium kuehlianum* Bosch & Sande Lac., *Bryol. Javan.* 2: 71 (1863). T: “in monte Tjikoerai”, Java, [Indonesia], *Kühl & Van Hasselt*; holo: L n.v.

Illustrations: J.Enroth, *op. cit.* 67, fig. 11 (1989); J.Enroth, *op. cit.* 26, fig. 11 (1994).

Plants to c. 25 mm tall, bright green to yellow-green. Stipe leaves distant. Frond axis leaves appressed to erecto-patent, ovate-lingulate, 0.58–0.90 mm long, 0.36–0.50 mm wide, often asymmetrical, only slightly curved inwards when dry, not keeled; apex obtuse, often slightly mucronate. Branch leaves smaller and more widely patent; intramarginal limbidium absent or inconspicuous. Upper laminal cells irregularly oval to rhomboid, 6–11 × 5–9 µm; median cells predominantly rhomboid; basal cells long-rectangular; alar cells not differentiated; 2–4 rows of marginal cells in the basal three-quarters small and quadrate.

Perichaetia c. 1 mm long. Perigonia and sporogones not found.

Occurs in rainforest in eastern Qld at altitudes of 360–800 m; epiphytic on shrubs and trees or growing on logs. Also in China, continental SE Asia, Malesia, Lord Howe Island and other islands in the south-western Pacific Ocean.

Qld: Palmerston Hwy, 11.7 km E of Milla Milla, Francis Ra., *G.E.Kantak & S.P.Churchill 863* (CANB); McHugh Bridge, over Beatrice R., Palmerston Hwy, between Ravenshoe and Innisfail, *D.H.Vitt 28088* (CANB); Walter Hill Ra., 26 km SE of Ravenshoe, *H.Streimann 30483, 30483* (CANB); Blencoe Ck, Cardwell Ra., 48 km NW of Cardwell, *H.Streimann 36899* (CANB).

*Pinnatella kuehliana* has smaller leaves than *P. alopecuroides*, and it lacks or has an indistinct intramarginal limbidium. The stipe is generally much longer than in *P. alopecuroides*, and there is a gradual change from stipe leaves to stem leaves. Moreover, the frond axis and branch leaves differ in size.