

POGONATUM

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Pogonatum P.Beauv., *Mag. Encycl.* 5: 329 (1804); from the Greek *pogon* (a beard), in reference to the hairy calyptra.

Type: *P. aloides* (Hedw.) P.Beauv.

Dioicous. Plants loosely caespitose, whitish green to brown. Stems erect, simple, rarely branched. Rhizoids restricted to stem base and bases of lowermost scale-like leaves. Leaves contorted to incurved when dry, erect-spreading to slightly squarrose when moist; lamina linear-lanceolate, gradually narrowing to a sharp apex, with dorsal cells ovate to subquadrate; margin serrate with multicellular teeth, flat to slightly upcurved, unistratose; sheathing base ovate, gradually narrowing or almost as wide as lamina, with subquadrate to rectangular cells with firm walls; costa percurrent to very slightly excurrent, reddish brown, apically sharply serrate with numerous dorsal teeth; lamellae covering almost the entire lamina.

Calyptra hairy. Setae usually solitary. Capsules erect or slightly inclined, pale to dark brown; urn cylindrical, terete to faintly plicate; exothecial cells mammillose, subquadrate to elongate, with firm walls; stomata absent; operculum rostellate. Peristome teeth 32, compound, reddish brown; epiphragm attached to peristome teeth apices. Spores with a granulose surface.

A genus of c. 50 species in both hemispheres. Represented in Australia by three non-endemic taxa, *Pogonatum* is a pioneer plant of open, fine-grained soil.

Reference

Hyvönen, J. (1989), A synopsis of genus *Pogonatum* (Polytrichaceae, Musci), *Acta Bot. Fenn.* 138: 1–87.

1. *Pogonatum neesii* (Müll.Hal.) Dozy, *Bryol. Jav.* 1: 36, 40 (1856), *Ned. Kruidk. Arch.* 4(1): 75 (1856)

Polytrichum neesii Müll.Hal., *Syn. Musc. Frond.* 2: 563 (1851). T: Java, [Indonesia], *Blume*; holo: B n.v. (probably destroyed).

Polytrichum australasicum Müll.Hal. & Hampe, *Linnaea* 26: 500 (1855); *Pogonatum australasicum* (Müll.Hal. & Hampe) A.Jaeger, *Ber. Tätigk. St. Gallischen Naturwiss. Ges.* 1873–74: 256 (*Gen. Sp. Musc.* 1: 718) (1875). T: along the wood road over the Blackspur, Vic., *F.Mueller*; iso: BM.

Polytrichum brachypodium Müll.Hal., *Hedwigia* 36: 342 (1897); *Pogonatum brachypodium* (Müll.Hal.) Watts & Whitel., *Proc. Linn. Soc. New South Wales* 27 (Suppl.): 18 (1902). T: Fitzroy Falls, Moss Vale, N.S.W., Nov. 1884, *T.Whitelegge*; iso: H.

Polytrichum camarae Müll.Hal., *Hedwigia* 36: 341 (1897); *Pogonatum camarae* (Müll.Hal.) Paris, *Index Bryol.* 978 (1897); *Pogonatum baileyi* Broth ex Müll.Hal., *Hedwigia* 36: 342 (1897), *nom. inval.* (in synonym.). T: Clarence R., N.S.W., Nov. 1875, *Wilcox*; syn: JE; White Cap Mtns, *De la Camara*; syn: H, JE.

Polytrichum gippslandiae Müll.Hal., *Hedwigia* 36: 341 (1897); *Pogonatum gippslandiae* (Müll.Hal.) Paris, *Index Bryol.* Suppl. 1: 278 (1900). T: Tyers R., Gippsland, Vic., 1881, *H.Tysdale*; iso: H.

Polytrichum nanocarpum Müll.Hal., *Hedwigia* 36: 340 (1897); *Pogonatum nanocarpum* (Müll.Hal.) Paris, *Index Bryol.* Suppl. 1: 278 (1900). T: Walhalla, Gippsland, Vic., 1884, *H.Tysdale*; n.v.

Illustrations: T.Osada, *J. Hattori Bot. Lab.* 28: 199, fig. 11 (1965), as *Pogonatum akitense*; J.Hyvönen, *Acta Bot. Fenn.* 133: 128, fig. 12 (1986); A.Noguchi, *Moss Flora Japan* 1: 41, fig. 13b (1987), as *Pogonatum akitense*.

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Stems to 5.5 cm tall. Leaves incurved to contorted when dry, erect-spreading to slightly squarrose when moist, 3.7–7.9 mm long; lamina narrowly lanceolate, 0.5–1.0 mm wide; margin serrate with multicellular teeth, flat to upcurved, unistratose, 2–5 cells wide; sheathing base widened; costa percurrent to excurrent, with numerous abaxial teeth apically; lamellae 26–48, on adaxial surface of lamina, crenate by upper margin, 3–6 cells high, with apical cells retuse (in cross-section), smooth or very slightly papillose.

Urn 3.5–6.1 mm long, 1.1–1.7 mm wide. Spores 7–11 μm diam. $n = 7$, *vide* H.P.Ramsay, *J. Hattori Bot. Lab.* 82: 217 (1997).

Occurs in Qld, N.S.W. and Vic.; also widely distributed in temperate and tropical Asia and the western Pacific; a plant of bare loamy soil and sand on stream banks and roadsides.

Qld: Springbrook, *I.G.Stone 4956* (MEL); Binna Burra, *I.G.Stone 12961* (MEL). N.S.W.: Bourkes Ck, *H.Streimann 15317* (HO); Clyde Mtn, *R.Filson 10930* (MEL). Vic.: Yarra State Forest, *K.R.Thiele 6* (MEL).

Pogonatum neesii has adaxial lamellae with retuse apical cells which are distinctly crenate when seen in side view.

2. *Pogonatum subulatum* (Brid.) Brid., *Bryol. Univ.* 2: 122 (1827)

Polytrichum subulatum Brid., *J. Bot. (Schrader)* 1800(1): 287 (1801). T: New Zealand, *Nelson*; holo: E.

Polytrichum nanournigerum Müll.Hal., *Hedwigia* 36: 340 (1897); *Pogonatum nanournigerum* (Müll.Hal.) Paris, *Index Bryol. Suppl.* 1: 278 (1900). T: North Island, New Zealand, 1882, *F.M.Reader*, “misit 1892 ex Dimboola Victoriae”; *n.v.*

Illustrations: G.A.M.Scott & I.G.Stone, *The Mosses of Southern Australia* 75, pl. 5 (1976); J.Hyvönen, *Acta Bot. Fenn.* 138: 57, fig. 18 (1989); J.Beever, K.W.Allison & J.Child, *Mosses of New Zealand*, 2nd edn 27, fig. 12e (1992).

Stems to 4.5 cm tall. Leaves incurved to contorted when dry, recurved when moist, 3.6–6.5 mm long; lamina linear-lanceolate, 0.8–1.2 mm wide; margin regularly serrate, flat, unistratose, 2–6 cells wide; sheathing base slightly widened; costa percurrent to excurrent, with apical abaxial teeth; lamellae 36–54 on adaxial surface of lamina, 2–4 cells high, straight to slightly crenate by upper margin, with apical cells rounded (in cross-section), the outer wall as thin as or only slightly thicker than other cell walls.

Urn 3.2–4.5 mm long, 1.0–1.8 mm wide. Spores 7–11 μm diam. $n = 7$, *vide* H.P.Ramsay, *J. Hattori Bot. Lab.* 82: 219 (1997).

Occurs in N.S.W., A.C.T., Vic. and Tas.; also in New Zealand. A plant of bare ground, especially on roadside banks.

N.S.W.: Toomumbar State Forest, *R.Coveny 4435* (NSW). A.C.T. Brindabella Ra., *H.Streimann 5265* (H). Vic.: Dandenong Ra., *D.G.Catcheside 54.98* (CANB). Tas.: Mt Wellington, *A.V.Ratkowsky H342* (HO); Liffey Falls State Reserve, *A.Moscal 17653* (HO).

Pogonatum subulatum is the most common of the three *Pogonatum* species in Australia. It is readily distinguished by the narrow sheath and rather remote adaxial lamellae.

3. *Pogonatum tubulosum* Dixon, *J. Bot.* 80: 34 (1942)

T: above Port Moresby, Uniri R., Central Province, [Papua] New Guinea, *Carr 15194*; holo: BM.

Illustrations: J.Hyvönen, *Acta Bot. Fenn.* 133: 126, fig. 11 (1986); J.Hyvönen, *Acta Bot. Fenn.* 138: 55, fig. 17 (1989).

Stems to 2.3 cm tall. Leaves incurved to contorted when dry, slightly recurved to erect-spreading when moist, 3.7–7.9 mm long; lamina narrowly lanceolate, 0.4–1.1 mm wide; margin serrate with multicellular teeth, flat or upcurved, unistratose, 3–5 cells wide; sheathing base widened; costa percurrent to excurrent, with apical abaxial teeth small or absent; lamellae 28–50, on adaxial surface of lamina, 4–6 cells high, irregularly crenate by the upper margin, with apical cells rounded to rarely retuse (in cross-section).

Urn 3.2–4.1 mm long, 1.3–1.5 mm wide. Spores 10–13 μm diam.

Occurs in north-eastern Qld; also in New Guinea. This is a plant of loamy stream banks and roadsides.

Qld: Main Coast Ra., 18 km NNW of Mt Molloy, *H.Streimann 30351* (CANB, L, NICH, NY); Mt Lewis, *B.O. van Zanten 681179* (CANB, L, MEL, NY); Mt Fisher, Atherton Tableland, *I.G.Stone 15730, 15736* (MEL); Palmerston Natl Park, *I.G.Stone 25113* (MEL); Lamins Hill, near Malanda, *G.H.Bell 641* (AD).

Only one of the six known Australian specimens includes sporophytes, and the description of these characters is based on comparatively few measurements. *Pogonatum tubulosum* is easily distinguished from other species by the irregularly crenate apical cells of the lamellae.