

## NOTOLIGOTRICHUM

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*Notoligotrichum* G.L.Sm., *Mem. New York Bot. Gard.* 21(3): 50 (1971); from the Greek *nothos* (false), *oligos* (few) and *trichos* (a hair), originally in reference to the sparsely hairy calyptra, here indicating resemblance to the genus *Oligotrichum* DC.

Type: *N. australe* (Hook.f. & Wilson) G.L.Sm.

Dioicous. Plants in cushions or loosely caespitose, olivaceous to brown. Stems usually simple, very rarely branched. Rhizoids restricted to the stem base. Leaves contorted or incurved when dry, erect-spreading to slightly recurved when moist; lamina triangular or linear-lanceolate, shorter or only slightly longer than the sheathing base, gradually narrowing to an acute often cucullate apex; abaxial cells with incrassate walls; margin denticulate or entire, flat or upcurved, unistratose; sheathing base ovate, gradually narrowing (without shoulders) to blade; cells with firm walls; costa percurrent to slightly excurrent, reddish brown, with a few abaxial teeth at apex; lamellae adaxial, almost completely covering the lamina, with subquadrate to ovate cells having incrassate to firm walls.

Perigonia terminal. Calyptra apically smooth to rough, with a few short hairs. Setae usually solitary. Capsules inclined, pale to dark brown; urn slightly gibbous dorsally, constricted at mouth; exothecial cells subquadrate to elongate, with firm walls; stomata present on basal part; operculum rostellate. Peristome teeth 16 or 32, elongate-triangular, hyaline. Spores with a granulose surface.

A Southern Hemisphere genus of about ten species. Represented in Australia by two non-endemic species, *Notoligotrichum* is a pioneer plant of open soil in rather mesic habitats.

### **1. *Notoligotrichum australe*** (Hook.f. & Wilson) G.L.Sm., *Mem. New York Bot. Gard.* 21(3): 51 (1971)

*Polytrichum australe* Hook.f. & Wilson, in J.D.Hooker, *Fl. Nov.-Zel.* 2: 87, fig. 6, 95 ('1855') [1854]; *Psilopilum australe* (Hook.f. & Wilson) Mitt., *J. Proc. Linn. Soc., Bot.* 4: 97 (1860). T: Ruahine Mtns, North Island, New Zealand, *W.Colenso*; n.v.

Illustrations: J.Hyvönen, *Acta. Bot. Fenn.* 133: 139, fig. 18 (1986); J.Beever, K.W.Allison & J.Child, *Mosses of New Zealand*, 2nd edn 27, fig. 12c (1992), as *Psilopilum australe*; R.D.Seppelt, *The Moss Flora of Macquarie Island* 220, fig. 87 (2004).

Stems to 18 mm tall. Leaves incurved when dry, erect-spreading to slightly incurved when moist, 2.8–5.4 mm long; lamina triangular, 0.4–0.8 mm wide; margin entire or slightly denticulate, flat, unistratose, 4–9 cells wide; sheathing base distinctly widened; costa percurrent to slightly excurrent; lamellae 30–48, crenate and coarsely papillose by upper margin, 5–8 cells high.

Setae 1 (rarely 2) in each perichaetium. Urn 2.4–4.9 mm long, 1.6–2.7 mm wide. Peristome teeth 16. Spores 14–30 µm diam. *n* = 7, *vide* H.P.Ramsay, *J. Hattori Bot. Lab.* 82: 215 (1997).

Occurs in N.S.W., Vic. and Tas.; also in New Guinea, New Zealand, Macquarie Is., Heard Is. and southern Africa. A species of exposed habitats, usually confined to heaths above the tree-line.

N.S.W.: Mt Kosciuszko, *I.G.Stone 11263* (MEL). Vic.: Mt Bogong, Feb. 1923, *A.J.Tadgell* (MEL). Tas.: Mt Wellington, *A.V.Ratkowsky B336* (MEL); Mt Barrow State Reserve, *A.Moscal 24586* (HO); Collins Bonnet, *A.V.Ratkowsky H376* (HO).

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*Notoligotrichum australe* is distinguished from *N. crispulum* by its short-stemmed, stout habit and erect-spreading to incurved leaves. Sainsbury (*Bull. Roy. Soc. New Zealand* 5: 37, 1955) listed the hyaline leaf margins as a diagnostic character, but they are not present in all specimens. The leaf lamina is also typically triangular, whereas in *N. crispulum* it is lanceolate.

**2. *Notoligotrichum crispulum* (Hook.f. & Wilson) G.L.Sm., *Mem. New York Bot. Gard.* 21(3): 51 (1971)**

*Polytrichum crispulum* Hook.f. & Wilson, in J.D.Hooker, *Fl. Nov.-Zel.* 2: 87, fig. 3, 95 ('1855') [1854]; *Psilopilum crispulum* (Hook.f. & Wilson) Mitt., *J. Proc. Linn. Soc., Bot.* 4: 97 (1860); *Catharinea crispula* (Hook.f. & Wilson) Hampe, *Linnaea* 37: 517 (1872). T: Huiaarau, North Island, New Zealand, *W.Colenso*; n.v.

*Catharinea pyriformis* Hampe, *Linnaea* 37: 517 (1872); *Atrichum pyriforme* (Hampe) A.Jaeger, *Ber. Tätigk. St. Gallischen Naturwiss. Ges.* 1873–74: 244 (1875); *Psilopilum pyriforme* (Hampe) A.Jaeger, *Ber. Tätigk. St. Gallischen Naturwiss. Ges.* 1877–78: 452 (1879). T: Blue Mtns, N.S.W., *F.Mueller*; iso: BM, MEL.

Illustrations: G.O.K.Sainsbury, *Bull. Roy. Soc. New Zealand* 5: 38, pl. 4, fig. 2 (1955); J.Beever, K.W.Allison & J.Child, *Mosses of New Zealand*, 2nd edn 27, fig. 12d (1992), as *Psilopilum crispulum*.

Stems to 45 mm tall. Leaves contorted or incurved when dry, erect-spreading to slightly recurved when moist, 4.1–7.6 mm long; lamina broadly lanceolate, 1.0–1.6 mm wide; margin denticulate apically, flat, unistratose, 5–13 cells wide; sheathing base very slightly widened; costa percurrent; lamellae 42–68, on adaxial surface of lamina, straight to regularly crenate and sparsely papillose by upper margin, 1–4 cells high, with rounded or bottle-shaped apical cells; outer wall the same thickness or slightly thicker than other walls.

Urn 3.7–5.8 mm long, 2.0–3.4 mm wide. Peristome teeth 32. Spores 20–23 µm diam.

Occurs in N.S.W., Vic. and Tas.; also in New Zealand. Grows on soil in rather shaded habitats.

N.S.W.: Blue Mtns, *F.Mueller* (MEL). Vic.: Falls Creek, *R.D.Seppelt* 4478 (HO); Bogong High Plains, *I.G.Stone* 9410 (MEL). Tas.: Wanderer R., *A.M.Buchanan* 6251 (HO); Cradle Mtn, *A.V.Ratkowsky* H379 (HO).

As indicated by the specific epithet, the contorted, rather distant leaves are a distinctive feature of this moss. Small specimens of *N. crispulum* can be difficult to identify when dry, but when moistened, the lanceolate shape of the lamina is readily seen. The sheathing base is about the same width as the lamina, and the lower lamellae, with their sparsely papillose apical cells, are also diagnostic.