

## PTERYGONEURUM

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*Pterygoneurum* Jur., *Laubm.-Fl. Oesterr.-Ung.* 95 (1882); from the Greek *pterygion* (a small wing or feather) and *neuron* (a nerve), in reference to the lamellae on the costa.

Type: *P. cavifolium* Jur. [= *P. ovatum* (Hedw.) Dixon]

Autoicous. Plants small, scattered or gregarious, bulbiform, growing on soil. Stem with a central strand. Rhizoids extensive, smooth, colourless. Leaves elliptical to broadly ovate, concave with incurved margins; costa percurrent or excurrent and forming a strong hyaline hairpoint, occasionally denticulate; in section with an abaxial stereid band; 2–4 chlorophyllose lamellae on the adaxial surface of the leaf; distal portions of lamellae in some species covered with filaments; terminal cells of filaments papillose. Laminal cells smooth, subquadrate-rhomboidal above, short-rectangular below; laminal KOH colour reaction yellow. Axillary hairs of 5–7 short hyaline cells.

Setae short or long, twisted. Capsules erect, ovoid to cylindrical, stegocarpous; operculum rostrate. Peristome absent.

*Pterygoneurum* is a genus of eight species, three of which occur in Europe, North Africa, North America and south-western Asia. Two species are currently recognised in Australia.

### References

- Carrión, J.S., Cano, M.J. & Guerra, J. (1995), Spore morphology in the moss genus *Pterygoneurum* Jur. (Pottiaceae), *Nova Hedwigia* 51: 481–496.
- Catcheside, D.G. (1980), *Mosses of South Australia* 157–159.
- Guerra, J., Cano, M.J. & Ros, R.M. (1995), On the identity of *Pterygoneurum macleanum* and *P. kemsleyi* (Pottiaceae, Musci), *Bryologist* 98: 45–49.
- Scott, G.A.M. & Stone, I.G. (1976), *Mosses of Southern Australia* 185.
- Willis, J.H. (1954), Mosses new to Western Australia, *Victorian Naturalist* 71: 8–12.
- Zander, R.H. (1993), Genera of the Pottiaceae: mosses of harsh environments, *Bull. Buffalo Soc. Nat. Sci.* 32: 1–378.

Costa percurrent to short-excurrent; leaves lacking a hyaline hairpoint..... **1. P. macleanum**  
Costa excurrent, forming a strong hyaline hairpoint..... **2. P. ovatum**

### 1. *Pterygoneurum macleanum* Warnst., *Hedwigia* 58: 69 (1916)

T: Terra Capensis orientalis [Eastern Cape, South Africa], in aperti circa Graaf Reynett, *Maclean* 461; lecto: BM *n.v.*, *fide* Guerra *et al.* (1995); isolecto: B, PRE *n.v.*

*Pterygoneurum kemsleyi* J.H. Willis, *Victorian Naturalist* 71: 8 (1954). T: Feysville, 15 miles [24 km] SE of Kalgoorlie, W.A., 8 Sept. 1951, *D.S. Kemsley s.n.*; lecto: MEL, *fide* Guerra *et al.* (1995); isolecto: FH, WELT *n.v.*

Illustrations: J.H. Willis, *op. cit.* 9; R.H. Zander, *op. cit.* 201, p1. 73; J. Guerra, M.J. Cano & R.M. Ros, *op. cit.* 46, figs 1–12.

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Plants 0.75–2.00 mm tall, green. Leaves broadly ovate, 0.5–0.8 mm long, deeply concave in the upper half, imbricate when dry, strongly incurved when wet; margins plane, incurved from apex to mid-leaf; apex mucronate; costa strong, percurrent or short-excurrent, not forming a hairpoint; adaxial surface of costa bearing 2–3 (–4) lamellae, distal portions of lamellae usually bearing short filaments. Upper laminal cells subquadrate, 11–13 × 14–16 µm; basal cells rectangular, hyaline, 25–30 × 25–38 µm.

Calyptra narrowly cylindrical, c. 2 mm long, smooth. Setae 3–5 mm long, reddish, twisted to the right above. Capsules erect, ovoid, 0.9–1.0 mm long; operculum c. 0.6 mm long. Spores 25–30 µm diam., ±smooth.

Rare in arid and semi-arid areas of southern W.A., S.A., N.S.W. and Vic.; also in South Africa.

S.A.: Barrier Hwy, 147 km by road W of Broken Hill, *J.A.Curnow 5751* (AD, CANB), Koonamore Stn, Yunta, *L.D.Williams 4763* (AD).

N.S.W.: Mootwingee Natl Park, *I.G.Stone 9571* (MEL); Wentworth to Milparra, *I.G.Stone 9548* (MEL); junction of Rufus River Rd and ‘Talgarry’ Rd, c. 25 km NW of Wentworth, *D.J.Eldridge BSCS 780* (NSW); L. Mungo, *D.J.Eldridge BSCS 444* (NSW); 214 km from Broken Hill [to] Wentworth, *I.G.Stone 8262* (MEL).

Vic.: Swan Hill and Boundary Bend, *I.G.Stone 1763* (MEL).

## 2. *Pterygoneurum ovatum* (Hedw.) Dixon, *Rev. Bryol. Lichénol.* 6: 96 (1934)

*Gymnostomum ovatum* Hedw., *Spec. Musc.* 31 (1801). T: Europe; lecto: G n.v.

Illustrations: D.G.Catcheside, *op. cit.* 158, fig. 76; R.H.Zander, *op. cit.* 200, pl. 72; J.Guerra, M.J.Cano & R.M.Ros, *Fl. Briofítica Iberica* 103, fig. 31 (2006); B.Malcolm, N.Malcolm, J.Shevock & D.Norris, *California Mosses* 139 (2009).

Plants 1.0–2.5 mm tall, reddish green. Leaves elliptical to broadly obovate, 0.8–1.0 mm long, 0.55–0.65 mm wide, concave, appressed when dry, spreading when wet, with an obtuse cucullate apex that is slightly denticulate in young leaves; margins entire, inflexed above; costa narrow, golden, excurrent, forming a strong hyaline hairpoint 0.45–0.55 mm long; ventral surface of costa bearing 2–4 lamellae; distal parts of lamellae rarely bearing short filaments. Upper laminal cells smooth, quadrate-rhomboidal, 13–15 µm wide; basal laminal cells short-rectangular, 27–30 × 23–25 µm.

Calyptra split on one side, subulate, c. 1.75 mm long. Setae 2.5–3.5 mm long, yellow-brown, twisted. Capsules erect, ovoid, brown, 0.65–0.75 mm long, striate at the base when dry; operculum short-conical, rostrate. Spores densely granular, dark brown, 25–35 µm diam.

Occurs in W.A., S.A., N.S.W. and Vic.; usually on soil in semi-arid and arid areas. Also in North and South America, Europe, North Africa, south-western Asia, China and New Zealand.

W.A.: Abrakurri Cave, *A.C.Beauglehole 14864, 14878* (MEL); Eyre Hwy, 17.7 km W of Mundrabilla, *A.C.Beauglehole 14846* (MEL); Eyre Hwy, 67.7 km E of Balladonia, *A.C.Beauglehole 14836* (MEL); Dundas Rocks, S of Norseman, *A.C.Beauglehole 14766* (MEL).

S.A.: Parachilna Gorge, Flinders Ra., *D.G.Catcheside 78.311* (AD); Cave No. 3, Murrawijinie Caves, Nullarbor Natl Park, *N.N.Donner 7199* (AD, CANB); Koonalda Cave area, *A.C.Beauglehole 14935* (MEL); Nullarbor HS, 6 Jan 1952, *D.S.Kemsley* (MEL); 26.2 km E of Yalata, *G.H.Bell 129* (AD); near Eyre Hwy, 19.3 km ENE of Kimba, *A.C.Beauglehole 15109* (MEL).

N.S.W.: 5 miles [c. 8 km] SE of Wilcannia, *I.G.Stone 11548* (MEL); 19.5 km N of Pooncarie on Menindee–Wentworth road, *G.H.Bell 821* (AD); road to route 79 [Silver City Hwy], 2 km S of Pooncarie, *I.G.Stone 11524* (MEL); 214 km from Broken Hill towards Wentworth, *I.G.Stone 8262, 8265, 8266, 8294, 8354, 9581* (MEL); Wentworth to Milparra, *I.G.Stone 8252, 8259, 9548, 9550* (MEL); junction of Rufus River Rd and ‘Talgarry’ Rd, c. 25 km NW of Wentworth, *D.J.Eldridge BSCS 780* (NSW).

Vic.: Red Cliffs, *J.H.Browne 935* (MEL); Yatpool, S of Red Cliffs, *A.C.Beauglehole 57341* (MEL); 42 miles [67.6 km] N of Swan Hill, *I.G.Stone 1714, 1715* (MEL); Hattah Lakes Natl Park, *O.B.Lawson [IGS9357]* (MEL); E of road, Boundary Bend, *I.G.Stone 1504, 1516* (MEL); SW side of Hattah Lake, Hattah Lakes Natl Park, *A.C.Beauglehole 5147A, 57233* (MEL); Annuello, *A.C.Beauglehole 5146* (MEL); between Boundary Bend and Swan Hill, *I.G.Stone 1550, 1560, 1566, 1567* (MEL); near Lake Hardy, Murray Sunset Natl Park, *H.M.Jolley 86* (MEL); 19.3 km S of Ouyen, *A.C.Beauglehole 5148* (MEL); Chillengollah, *A.C.Beauglehole*

57361 (MEL); 41 miles [66 km] W of Swan Hill, *I.G.Stone 1613, 1614* (MEL); Bushlams Forest Reserve, c. 9 km NE of Sea Lake, near Lake Tyrrell, *H.M.Jolley 85* (MEL); c. midway between Entrance and Wonga Hut, Wyperfeld Natl Park, *A.C.Beauglehole 28410* (MEL); S of Eastern Lookout, Wyperfeld Natl Park, *A.C.Beauglehole 28324* (MEL); Black Flat Car Park, Wyperfeld Natl Park, 21 Aug. 1980, *G.A.M.Scott s.n.* (MELU); Lalbert, *A.C.Beauglehole 57391* (MEL); Nypo, E of Meridian Line, *A.C.Beauglehole 57261* (MEL); Quambatook, *A.C.Beauglehole 57381* (MEL); Boort Rd, 16 miles [26 km] S from Kerang, *I.G.Stone 1623* (MEL); Beulah, *A.C.Beauglehole 57327* (MEL); Pink L., Dimboola, *I.G.Stone 23719, 23724* (MEL).

Scott & Stone (1976) and Catcheside (1980) stated that Australian material can be very variable, especially in the number of lamellae, the occurrence of filaments on the upper lamellae and the length of the hairpoint.