

ALOINA

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Aloina Kindb., *Bih. Kongl. Svenska Vetensk.-Akad. Handl.* 6(19): 22 (1882), *nom. cons.*; named for its resemblance to the fleshy leaves of *Aloe*.

Lecto: *A. aloides* (F.W.Schultz) Kindb.

Monoicous or dioicous. Plants in thin turfs or gregarious on calcareous soil. Stems short, usually unbranched, partly buried in soil. Leaves forming a rosette, with an auriculate sheathing base, fleshy, concave; margins broadly incurved, apex cucullate. Costa very broad, flat, forming a cusp or an long excurrent hyaline hairpoint; adaxial surface of costa and lamina covered with branched multicellular chlorophyllous filaments consisting of c. 3–9 ±spherical cells, the terminal cell spherical to conical, thickened apically. Upper and median laminal cells subquadrate, oblate, smooth, thick-walled, medially bistratose; basal cells pellucid, hyaline, rectangular; KOH colour reaction red.

Seta long, twisted to the left below, to the right above. Capsules erect, cylindrical or ovoid-oblong; operculum narrowly conical, c. one-third to at least half the length of the capsule. Peristome single or double, with 32 slender papillose teeth that are twisted, borne on a basal membrane; calyptra cucullate, smooth.

Aloina is a genus of 12 species in North, Central and South America, Europe, Africa Asia, Australia and New Zealand. Two taxa occur in Australia, and although *A. rigida* (Hedw.) Limpr. was reported from South Australia by Catcheside (1980), the specimen cited is actually *A. aloides* var. *ambigua*.

References

- Catcheside, D.G. (1980), *Mosses of South Australia* 153–157.
- Delgadillo, C.M. (1975), Taxonomic revision of *Aloina*, *Aloinella* and *Crossidium* (Musci), *Bryologist*, 78: 245–303.
- Gallego, M.T., Cano, M.J., Ros, R.M. & Guerra, J. (1999), The genus *Aloina* (Pottiaceae, Musci) in the Mediterranean region and neighbouring areas, *Nova Hedwigia* 69: 173–194.
- Scott, G.A.M. & Stone, I.G. (1976), *Mosses of Southern Australia* 154.
- Zander, R.H. (1993), Genera of the Pottiaceae: mosses of harsh environments, *Bull. Buffalo Soc. Nat. Sci.*, 32: 196–199.

Leaves with obtuse apices; costa not ending in a hairpoint **1. A. aloides** var. **ambigua**
Leaves with acute apices; costa ending in a long hyaline hairpoint **2. A. bifrons**

1. *Aloina aloides* (F.W.Schultz) Kindb. var. ***ambigua*** (Bruch & Schimp.) E.J.Craig, *Moss Fl. N. America* 1(4): 214 (1939)

Barbula ambigua Bruch & Schimp., *Bryol. Europ.* 2: 76 (1842); *Aloina ambigua* (Bruch & Schimp.) Limpr., *Laubm. Deutschl.* 1: 638 (1888). T: Europe and Scandinavia, *Lindblom*; *n.v.*

Illustrations: D.G.Catcheside, *op. cit.* 156, fig. 74, as *A. ambigua*; M.T.Gallego, M.J.Cano, R.M.Ros & J.Guerra, *op. cit.* 182, fig. 5; 183, fig. 6; B.Malcolm, N.Malcolm, J.Shevock & D.Norris (2009), *California Mosses* 114 (2009), as *A. ambigua*.

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Plants erect, 1–3 mm tall, green. Leaves lingulate, 2.8–3.2 mm long, 0.5–0.7 mm wide, with a broad sheathing base, erecto-patent to spreading, incurved when dry, weakly spreading when wet; apex incurved and obtuse; costa percurrent; margin entire; upper cells oblate to quadrate, very thick-walled; basal cells quadrate to short-rectangular, with thick cell walls.

Seta reddish brown, 6–12 mm long. Capsules dark brown, 2–3 mm long; operculum c. 1.5 mm long; annulus persistent or not. Basal membrane of peristome variable, occasionally projecting above the capsule mouth, papillose or reduced; teeth remaining discrete, moderately twisted. Spores 14–16 µm diam.

Occurs on calcareous soil on roadsides and in disturbed habitats in south-eastern S.A., southern N.S.W., A.C.T. and Vic. Possibly introduced into Australia, this moss is native to Europe, North Africa and North America.

S.A.: Waterfall Gully, Mount Lofty Ra., *A.C.Beauglehole* 15023 (MEL); Germein Gorge, *I.G.Stone* 6470 (MEL); near Woodside, *I.G.Stone* 6932 (MEL); near Marion, Adelaide, *D.G.Catcheside* 52.289 (MEL); 7 miles [c. 11 km] W of Murray Bridge, *I.G.Stone* 6502 (MEL); E of Taillem Bend, *I.G.Stone* 23694, 23695 (MEL); 16.2 km W of Meningie, *I.G.Stone* 5365 (MEL); Hwy 8, Keith–Bordertown road (26 km), 31 Aug. 1984, *G.A.M.Scott* (MUCV); 38 miles [c. 62 km] N of Kingston, *I.G.Stone* 8060 (MEL); E of Millicent, *I.G.Stone* 5349 (MEL); 16 km W of Gambier, *I.G.Stone* 5341, 5348 (MEL); Donovans Landing, Lower Glenelg River, *A.C.Beauglehole* 15869 (MEL); SE of Dry Creek area, Lower Glenelg River, *A.C.Beauglehole* 15870 (MEL).

N.S.W.: Wombeyan Caves, between Mares Forest Creek and Wombeyan Creek, 21 Nov. 1993, *A.J.Downing* (NSW); 26 km SW of Yass on Wee Jasper road, *H.Streimann* 131 (CANB, MEL); Careys Cave, 4.5 km NNE of Wee Jasper, *R.G.Coveny* 15728a (HO, NSW); *loc. id.*, *H.Streimann* 48749 (AD, CANB); Careys Cave Reserve, Wee Jasper, 28 Sept. 1991, *G.A.M.Scott* (MELU); W side of Goolradigbee River, c. 4 km N of Wee Jasper, *J.H.Willis* (MEL).

A.C.T.: Australian National University, Canberra, 13 Apr. 1984, *P.Ladd* (MUCV).

Vic.: Merbein, *I.G.Stone* 8277 (MEL); Boundary Bend, *I.G.Stone* 5217 (MEL); Annuello, *A.C.Beauglehole* 5137 (MEL); Dimboola Wildflower Sanctuary, *A.C.Beauglehole* 5138 (MEL); Alfred White Lockwood Memorial Drive, Mt Arapiles, 4 July 1998, *Aust. Bryol. Group* (MEL); at turnoff to Mt Arapiles, 4 July 1998, *Aust. Bryol. Group* (MEL); Midlands, 2.5 km SE of Maryborough, *G.Cheers* 294 (MEL); Garfield Wheel, Chewton, 13 June 1997, *G.A.M.Scott* (MELU); Grange Burn, near Hamilton, 4 Sept. 1977, *G.A.M.Scott* (MELU); Glen Aubin Creek, Winnap, 16 May 1990, *G.A.M.Scott* (MUCV); Lower Glenelg Natl Park, *A.C.Beauglehole* 4020 (MEL); E side of Nelson River, Lower Glenelg River, *A.C.Beauglehole* 15868 (MEL); NW of Lake Monebeang, *A.C.Beauglehole* 16225 (MEL); Port Campbell, Twelve Apostles, 12 May 1980, *G.A.M.Scott* (MUCV).

Although this species has been reported from Western Australia, no collections from that State have been located.

Aloina aloides var. *ambigua* is usually distinguished from var. *aloides* by means of sporophyte characters such as paired peristome teeth, the basal membrane and the annulus. However, Australian specimens examined show characteristics of both varieties, and further investigation is required to determine whether var. *aloides* occurs in Australia. In the meantime, all Australian *Aloina* specimens that lack a hairpoint are referred to *A. aloides* var. *ambigua*.

2. *Aloina bifrons* (De Not.) Delgad., *Bryologist* 76: 273 (1973)

Tortula bifrons De Not. *Mem. R. Acc. Sci. Torino* 40: 305 (1838). T: Cagliari, Italy, ad margines agrorum, Herb. E.Fiorini-Mazzanti 22/90, *De Notaris*; holo: RO? *n.v.*

Barbula sullivaniana Müll.Hal., *Hedwigia* 37: 130 (1898); *Aloina sullivaniana* (Müll.Hal.) Broth., in H.G.A.Engler & K.A.E.Prantl, *Nat. Pflanzenfam.* I, 3: 428 (1902); *Tortula sullivaniana* (Müll.Hal.) Watts & Whitel., *Proc. Linn. Soc. New South Wales*, Suppl. 27: 80 (1902). T: Moyston, Vic., *D.Sullivan* 1C; syn: MEL

Illustrations: D.G.Catcheside, *op. cit.* 154, fig. 73, as *A. sullivaniana*; R.H.Zander, *op. cit.* 204, pl. 75; M.T.Gallego, M.J.Cano, R.M.Ros & J.Guerra, *op. cit.* 189, fig. 11; 190, fig. 12.

Plants erect, 1.5–4.0 mm tall, simple, greenish brown, with rusty brown leaf apices. Leaves narrowly to broadly elliptical, incurved when dry, weakly spreading when wet, to 2 mm long,

abruptly narrowed above a base broad; apex acute; costa poorly defined, excurrent in a hyaline hairpoint 0.5–1.0 mm long; laminal margin broadly incurved. Upper laminal cells variable, oblate-rounded, very thick-walled, 15–20 × 7–8 μm; basal cells subquadrate, 15–60 μm long, pellucid, with thin walls; lower marginal cells oblate.

Calyptra cucullate, long, narrow, smooth. Seta yellowish, 10–22 mm long. Capsules c. 3.5 mm long, brown; operculum c. 1.75 mm long. Peristome double, brown. Spores spherical, 10–15 μm diam., yellow.

Occurs on soil in arid and semi-arid regions of southern W.A., S.A., N.S.W. and Vic. Also in western Canada, south-western U.S.A., Mexico, South America, southern Europe, the Middle East, South Africa and New Zealand.

W.A.: Eyre Hwy, 4 miles [c. 6.5 km] W of S.A. border, *I.G.Stone* 8070 (MEL); Norseman to Balladonia road, *I.G.Stone* 23648 (MEL); NNE of Norseman, *A.C.Beauglehole* 15100 (MEL); 20 miles [c. 32 km] W of Caijuna [Caiguna], *I.G.Stone* 6955 (MEL); E of Balladonia, *A.C.Beauglehole* 14838 (MEL); 9 miles [14.5 km] NNE of Norseman on Coolgardie road, *A.C.Beauglehole* 14820 (MEL); Eyre Hwy, 17.7 km W of Mundrabilla, *A.C.Beauglehole* 14848 (MEL); Eyre Hwy, 67.7 km E of Balladonia, *A.C.Beauglehole* 14838 (MEL).

S.A.: Flinders Ra., creek near Arkaba, 13 miles [c. 21 km] N of Hawker, *D.G.Catcheside* 53.226 (AD); Blinman, 25 Aug. 1984, *G.A.M.Scott* (MUCV); Koonalda Caves, *A.C.Beauglehole* 14937 (MEL); Nullarbor HS, 6 Jan. 1952, *D.Kemsley* (MEL); 25 miles E [c. 40 km] of W.A. border, *I.G.Stone* 6111 (MEL); Eyre Hwy, 43 km WSW of Koonalda, *A.C.Beauglehole* 14902 (MEL); Norseman to Balladonia, *I.G.Stone* 23648 (MEL); beside Drakes Nob, *J.A.Curnow* 5863A (CANB); Mundrabilla, 20 miles [c. 33 km] W of Caiguna *I.G.Stone* 6955 (MEL); Spear Creek, *D.G.Catcheside* 53.247 (MEL); 44 miles [71 km] W of Yunta, 12 Feb. 1966, *R.W.Rogers* (BRI); Eyre Hwy, 37 km S of Wirrulla *A.C.Beauglehole* 14958 (MEL); Streaky Bay, *A.J.Hicks* 5150 (MEL); Minnipa, 60 miles [c. 97 km] E of Streaky Bay, July 1952, *A.J.Hicks* (MEL); between Kimba and Iron Knob, *I.G.Stone* 6425 (MEL); 19 km ENE of Kimba, *A.C.Beauglehole* 15108A (MEL); Kyancutta, *I.G.Stone* 6945 (MEL); Burra copper mine, *M.H.Stone* [IGS 4831] (MEL); 17 miles [27.5 km] E of Eudunda, *R.W.Rogers* (AD); Eyre Hwy, Koonalda Caves, 37 km S of Wirrulla, *A.C.Beauglehole* 14937 (MEL); 7 miles [c. 11 km] W of Murray Bridge, *I.G.Stone* 6502 (MEL); 13 km E of Tailem Bend, *R.D.Seppelt* 2478 (MELU).

N.S.W.: Willow Tree Creek Limestones via Attunga, western Moonbi Ra., 9 Sept. 1991, *A.J.Downing* (NSW); Restdown [Cobar district], *W.Bauerlen* 2998 (NSW); Silver City Hwy, 21.3 km N of Coombah Roadhouse, *D.J.Eldridge* BSCS 773 (NSW); 19.5 km N of Pooncarie on Menindee–Wentworth road, *G.H.Bell* 822 (AD); 214 km from Broken Hill towards Wentworth, *I.G.Stone* 8260, 8262, 8266 (MEL); 30 km SE of ‘Belmore’ HS on the ‘Nulla’–Wentworth road, *D.J.Eldridge* BSCS 764 (NSW); Wentworth towards Milparra, *I.G.Stone* 8259 (MEL); 161 km from Broken Hill, *I.G.Stone* 8325 (MEL); Euston, *I.G.Stone* 5224 (MEL); near Euston, *D.G.Catcheside* 74.81 (AD); 8 km N of Coolwater Creek, *A.C.Beauglehole* 33887 (MEL).

Vic.: Eastern Lookout, Wyperfeld Natl Park, 19–26 Aug. 1978, *G.A.M.Scott* (MELU); 19 km W of Mildura, *A.C.Beauglehole* 57267 (MEL); Sunny Cliffs, *A.C.Beauglehole* 16250 (MEL); S of Hattah, *A.C.Beauglehole* 57241 (MEL); Boundary Bend, *I.G.Stone* 5219, 9363, 9364 (MEL); Annuello, *A.C.Beauglehole* 57299, 57294 (MEL); between Boundary Bend and Swan Hill, *I.G.Stone* 1550 (MEL); Kattyong, *H.T.Clifford* (MEL); 19 km S of Ouyen, *A.C.Beauglehole* 5140 (MEL); Chillingollah, *A.C.Beauglehole* 57353, 57358 (MEL); Bushlams Forest Reserve, c. 9 km NE of Sea Lake, near Lake Tyrrell, *H.M.Jolley* 85 (MEL); Ultima, *A.C.Beauglehole* 57363 (MEL); Wyperfeld Natl Park, *A.C.Beauglehole* 28405 (MEL); Hopetoun–Patchewollock road, 23 Aug. 1980, *G.A.M.Scott* (MELU); Roseberry, *A.C.Beauglehole* 5139 (MEL); Quambatook, *A.C.Beauglehole* 57382, 57373 (MEL); Beulah, *A.C.Beauglehole* 57314 (MEL); E of Lake Marmal, *A.C.Beauglehole* 57502 (MEL); Dimboola Natl Park, *A.C.Beauglehole* 1909 (MEL); Dimboola Flora Reserve, *A.C.Beauglehole* 57587 (MEL); Logan [to] Bendigo, *I.G.Stone* 9386 (MEL); Deddick Creek, *A.C.Beauglehole* 73139 (MEL); *A.C.Beauglehole* 73127 (MEL); Moleside Creek, *A.C.Beauglehole* 9473 (MEL); Cape Nelson, *A.C.Beauglehole* 4024 (MEL); Wimmera, *D.Sullivan* (MEL).

Common in southern Australia, but rarely found with sporogones, *A. bifrons* is characterised by the thick, succulent-like leaves with a broad, but poorly differentiated costa, the presence of filaments on the adaxial surface of the lamina and the distinct hyaline hairpoint. The synonymy proposed by Delgado (1973), viz. recognising *A. sullivaniana* as a robust form of *A. bifrons*, is accepted here. However, this view was rejected by Scott & Stone (1976: 154).