Flora of Tasmania online

POLYSPORINA [1]

Gintaras Kantvilas [2]

Polysporina Vězda, *Folia Geobot. Phytotax.* 13: 399 (1978).

Type: *P. simplex* (Taylor) Vězda [= *Acarospora privigna* (Ach.) A. Schneid.]

Thallus crustose, usually inapparent and immersed, rarely lichenicolous, ecorticate. Photobiont a unicellular green alga with ± globose cells 10–16 µm wide. Ascomata apothecia, ± lecideine, superficial or sunken in pits in the substratum. Disc roundish to irregular, brownish to brown-black, epruinose, umbonate or gyrose due to carbonised inclusions in the epithecium. Proper exciple soon becoming fissured and exfoliating, in section cupulate, composed of radiating, short-celled hyphae, black and carbonised at least in the outermost parts. Hypothecium hyaline to pale yellow-brown. Hymenium hyaline, sometimes amyloid (I+ blue) or hemiamyloid (KI+ blue), occasionally inspersed with oil droplets, overlain by a dark pigmented or carbonised epithecium. Asci of the *Acarospora*-type: elongate-clavate to pyriform, multi-spored, with a well-developed, thickened, non-amyloid or very weakly KI+ blue tholus lacking internal differentiation and a thin, KI+ blue outer wall; ocular chamber not developed. Paraphyses richly branched, anastomosed and entangled, conspicuously septate, 1–2.5 µm thick, not capitate. Ascospores very numerous in the asci (usually >100), simple, hyaline, non-halonate, ovate to ellipsoid. Conidiomata pycnidia, immersed, resembling apothecial initials. Conidia minute, ellipsoid. Chemistry: nil.

Polysporina was traditionally distinguished from the related *Acarospora* and *Sarcogyne* by the fissured, carbonised apothecial margin, the carbonised epithecium, and the richly branched, non-capitate paraphyses. However, this distinction was blurred by there being species in all three genera that showed intermediate traits. Following the molecular study by Westberg *et al*. (2015), the distinction between *Acarospora* and *Sarcogyne* was confirmed, but *Polysporina* was found to be polyphyletic. The genus was synonymised with *Acarospora* and most species were transferred there or to *Sarcogyne*. This view is accepted here without reservation, but the position of a few Southern Hemisphere species remains unclear. Whereas the Australian endemic, *P. terricola*, was transferred to *Acarospora* by Knudsen & Kocourková (2015), this was based on inferred relationships to other *Acarospora* species rather than on a study of specimens. With respect to apothecial morphology and anatomy, this taxon is superficially extremely different from what is traditionally included in *Acarospora*, and until it is subjected to formal analysis, it is retained in *Polysporina*.

Key references: Kantvilas (1998); Hitch *et al*. (2009); Knudsen & Kocourková (2015); Westberg *et al*. (2015); Knudsen *et al*. (2021).

1 Polysporina terricola Kantvilas

Lichenologist 30: 552 (1998); *Acarospora tasmaniensis* K.Knudsen & Kocourk., *Opusc. Philolich.* 14: 147 (2015). Type: Tasmania, 2 km W of New Norfolk along Glenora Road, 42°47′S 147°02′E, 90 m, on soil over Permian mudstone in dry sclerophyll forest, 19 February 1997, *G. Kantvilas 40/97* (holo—HO!; iso—PRA-V!).

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Thallus effuse, patchy, pale greyish to inapparent, forming discontinuous colonies several centimetres wide. Apothecia superficial to somewhat sunken in the substratum, 0.25–0.6 mm wide; disc black to brown-black, concave and smooth when young, becoming plane, verrucose and contorted with age, not gyrose; proper exciple prominent and persistent, black, scabrid, rather inrolled when young, in section brown to dark brown, I–, 20–40 µm thick laterally. Hypothecium 20–40 µm thick, I–. Hymenium 170–240 µm thick, I+ blue, inspersed with oil droplets, overlain by a dark yellow-brown to brown epithecium 10–30 µm thick, usually with vertical breaks in older apothecia; asci 90–160 × 20–35 µm; paraphyses richly branched and anastomosed, *c.* 1 µm thick, with numerous oil vacuoles 2.5–6 µm wide, appearing moniliform. Ascospores ellipsoid, 4–6(–7) × 2–3(–3.5) µm. Pycnidia not seen.

Very infrequently seen and collected, but also extremely inconspicuous and therefore easily overlooked. This species grows on soil in open *Eucalyptus amygdalina*-dominated dry sclerophyll forest, at sites that have been disturbed by frequent fire, grazing by livestock and firewood gathering; it is also known from southern New South Wales. Its taxonomic history is discussed above and its inclusion in *Acarospora* [as proposed by Knudsen & Kocourková (2015)] is delayed pending further study. Several features, such as the richly branched oil paraphyses, are not displayed by other members of that genus.

Grasstree Hill Road, *c.* 1.5 km E of Grasstree Hill summit, 42°47′S 147°23′E, 200 m, 1997, *G. Kantvilas 33/97 p.p.* (HO).

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