



## SARCOGYNE <sup>1</sup>

Gintaras Kantvilas <sup>2</sup>

*Sarcogyne* Flot., *Bot. Zeitung* 9: 753 (1851).

Type: *Sarcogyne corrugata* Flot. [= *S. clavus* (DC.) Kremp.]

Thallus crustose, areolate to subsquamulose, often inconspicuous or immersed, sometimes corticate. Photobiont a unicellular green alga with  $\pm$  globose cells 8–16  $\mu\text{m}$  diam. Ascomata apothecia, lecideine to biatorine, sessile or immersed in pits in the substratum. Disc concave, plane or convex, reddish brown to black, occasionally pruinose. Proper exciple usually cupulate, sometimes annular and discontinuous beneath the hypothecium, thick and persistent or thin and sometimes  $\pm$  excluded, carbonised, sometimes only at the outer edge, or not carbonised, composed of compacted, cellular hyphae. Hypothecium hyaline to dark brown. Hymenium hyaline, reacting variously in I and KI, not inspersed. Asci cylindrical to clavate, of the *Acarospora*-type: multi-spored, , with a thick, non-amyloid or very weakly amyloid tholus and a thin KI+ blue outer wall; ocular chamber not developed. Paraphyses simple to sparingly branched, distinctly septate; apices capitate. Ascospores very numerous (mostly 50–100 or more) in the ascus, simple, hyaline, non-halonate, thin-walled. Conidiomata pycnidia; conidia minute, subglobose to ellipsoid. Chemistry: most species do not contain substances detectable by TLC.

A genus of about 40–50 species, found mostly on calcareous and siliceous rocks, or, less commonly, on soil. Although occurring on all continents, including Antarctica, the greatest speciation is found in temperate and semi-arid regions. A significant number of species have been described from mainland Australia (McCarthy & Elix 2021). Traditionally, *Sarcogyne* was distinguished from *Acarospora* by the carbonised apothecial margin, and from *Polysporina* by the  $\pm$  simple paraphyses, and by lacking an umbonate or gyrose apothecial disc and a carbonised epithecium. However, since the molecular studies of Westberg *et al.* (2015) and others, the concept of the genus has broadened to include species formerly included in these genera.

Key references: McCarthy & Kantvilas (2013); Westberg *et al.* (2015); Knudsen *et al.* (2021); McCarthy & Elix (2021).

1 Apothecia immersed in pits in the substratum, < 0.4 mm wide  
Apothecia sessile, mostly 0.4–1 mm wide

1 *S. meridionalis*  
2 *S. regularis*

### 1 *Sarcogyne meridionalis* P.M.McCarthy & Kantvilas

*J. Adelaide Bot. Gardens* 26: 17 (2013).

Thallus mostly endolithic and inconspicuous, off-white to pale grey, to 30–70  $\mu\text{m}$  thick. Apothecia immersed in the substratum and leaving shallow pits after their decay, 0.17–0.4 mm diam.; disc black and plane to deeply concave when dry, when wetted becoming dark reddish brown to dull black and slightly pulpy and translucent, occasionally faintly grey-pruinose; proper exciple dark brown to black, usually epruinose but often with a very thin, uneven, whitish encrustation of thallus, in section not carbonised, 25–50  $\mu\text{m}$  thick.

1 This work can be cited as: Kantvilas G (2023). *Sarcogyne*, **version 2023:1**. In MF de Salas (Ed.) *Flora of Tasmania Online*. 3 pp. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery: Hobart). <https://flora.tmag.tas.gov.au/lichens/genera/sarcogyne/> (accessed 27 September 2022).

2 Tasmanian Herbarium, Tasmanian Museum & Art Gallery, PO Box 5058, UTAS LPO, Sandy Bay, TAS 7005, Australia.

Hypothecium hyaline, I+ yellow-brown, 30–60(–80)  $\mu\text{m}$  thick. Hymenium 60–90(–110)  $\mu\text{m}$  thick, I+ blue, KI+ blue, with a brownish epithecium 10–15  $\mu\text{m}$  thick; asci 60–75  $\times$  14–32  $\mu\text{m}$ , containing 150–200 ascospores; paraphyses 1.5–2(–3)  $\mu\text{m}$  wide, with apices 3–4(–5)  $\mu\text{m}$  wide, partially brown-pigmented. Ascospores ellipsoid to elongate-ellipsoid, 3–4.5–6  $\times$  1.5–2–2.5  $\mu\text{m}$ . Pycnidia not seen.

Widespread in south-eastern Australia, especially in coastal areas, where it occurs on exposed, usually highly weathered limestone. In Tasmania, it is known only from Flinders Island. This distinctive lichen is characterised by the endolithic to thinly subepilithic thallus, and very small, immersed apothecia that are solitary, paired, clustered or form rows, each having a dull black and deeply concave, epruinose disc and a usually thin, non-carbonised exciple. There is a further, somewhat similar, unidentified species in southern Australia (including Flinders Island) that occurs in identical habitats but has larger apothecia, 0.3–0.6 mm diam. with a thicker (c. 60  $\mu\text{m}$ ) exciple.

Flinders Island, c. 0.5 km SE of Mt Killiecrankie, 39°49'S, 147°51'E, 120 m, 2006, G. Kantvilas 38/06 & B. de Villiers (HO); Flinders Island, The Dock, 39°48'S 147°52'E, 10 m, 2014, G. Kantvila 301/14 (HO).

## 2 *Sarcogyne regularis* Körb.

Syst. Lich. Germ.: 287 (1855).

Thallus endolithic, inconspicuous. Apothecia sessile, to 1 mm diam.; disc red-brown to black, usually thickly blue-grey-pruinose, plane to convex; proper exciple dark brown to black, sometimes faintly greyish-pruinose, in section dark brown to orange-brown, 30–70  $\mu\text{m}$  thick. Hypothecium hyaline to yellow-brown, I+ blue, 50–80  $\mu\text{m}$  thick. Hymenium 75–100  $\mu\text{m}$  thick, I+ soon reddish brown, KI+ blue, with a brownish epithecium; asci 65–80  $\times$  15–18  $\mu\text{m}$ ; paraphyses 2–3  $\mu\text{m}$  wide, with apices 2.5–5  $\mu\text{m}$  wide, partially brown-pigmented. Ascospores ellipsoid to elongate-ellipsoid, (3.5–)4–5.1–6  $\times$  1.5–2.4–3  $\mu\text{m}$ . Pycnidia not seen.

Cosmopolitan on calcareous substrata. Common but only rarely collected in Tasmania, where it is mostly seen on concrete and mortar on walls, paths and graves, although it also occurs on exposed limestone outcrops in paddocks. It is easily recognised on account of its calcicolous habitat and sessile apothecia with a red-brown to black, typically thickly whitish to bluish grey pruinose disc, and black, often thickly pruinose proper exciple.

Near Liena Road and Mersey Forest Road junction, 41°34'S, 146°15'E, 350 m, 1984, G. Kantvilas 366/84C & P. James (BM, HO); Tunbridge, Midland Hwy near northern exit from township, 42°09'S, 147°25'E, 200 m, 1998, G. Kantvilas 172/98 (HO); Cascades, Hobart, 42°54'S, 147°17'E, 130 m, 1998, G. Kantvilas 165/98 (HO).

## REFERENCES

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## INDEX

### A

*Acarospora*.....1

### P

*Polysporina*.....1

### S

*Sarcogyne*.....1

*Sarcogyne clavus*.....1

*Sarcogyne corrugata*.....1

*Sarcogyne meridionalis*.....1

*Sarcogyne regularis*.....2