



PROTOBLASTENIA ¹

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Protoblastenia (Zahlbr.) J.Steiner, *Verhandl. K.K. Zool.-Bot. Ges. Wien* 61: 47 (1911).

Type: *P. rupestris* (Scop.) J.Steiner

Thallus crustose, immersed in the substratum or superficial, rarely squamulose, ecorticate. Photobiont a unicellular green alga with ± globose cells 6–20 µm wide. Ascomata apothecia, biatorine, soon immarginate, adnate or immersed in the substratum in pits. Disc orange to orange-brown, less commonly yellowish, K+ purple, plane to convex, epruinose. Proper exciple highly reduced, composed of heavily conglutinated, radiating, branched and anastomosed hyphae 1.5–3 µm thick. Hypothecium hyaline to pale yellowish. Hymenium hyaline, interspersed in the upper part with orange, K+ purple crystals, I+ blue, with the reaction confined mainly to the asci. Paraphyses sparingly branched and anastomosed, persistently conglutinated; apices non-capitate. Asci clavate, 8-spored, indistinctly approximating the *Porpidia*- or *Psora*-types: tholus well-developed, amyloid, with a more intensely amyloid, indistinct tube structure; ocular chamber absent. Ascospores simple, hyaline, ellipsoid to globose, thin-walled, non-halonate. Conidiomata pycnidia, immersed (not seen in Tasmanian material). Conidia bacilliform. Chemistry: K+ purple anthraquinone pigments in the apothecia; rarely also in the thallus.

A cosmopolitan genus of approximately 15 species, all restricted to calcareous substrata. Orange or yellow apothecia that react K+ crimson are also found in the genus *Caloplaca*, which differs by having usually persistently marginate apothecia, *Teloschistes*-type asci and polarilocular ascospores. *Protoblastenia* is considered to be most closely related to the terricolous, squamulose genus *Psora*. Species names are applied to Tasmanian specimens with considerable caution.

Key references: Kainz & Rambold (2004); Cannon *et al.* (2022).

1 Thallus endolithic to patchily dull beige-grey; apothecia orange, strongly convex, adnate to slightly basally constricted

2 *P. calva*

Thallus pale yellowish white; apothecia yellow to yellow-orange, plane to weakly convex, adnate

1 *P. aurata*

1 *Protoblastenia aurata* Poelt & Vězda

In J. Poelt, *Bestimm. Europ. Flechten*: 540 (1969).

Thallus epilithic, yellowish white, K-. Apothecia 0.3–0.9 mm wide, scattered, adnate, not immersed in pits; disc yellow to yellow-orange, plane to slightly convex; proper exciple evident when young but soon excluded. Hypothecium hyaline to pale yellowish. Hymenium 60–90 µm thick; paraphyses 2–3 µm thick, with the apical cell constricted at the base and barely expanded to 3.5 µm; asci 50–65 × 15–17 µm. Ascospores broadly ellipsoid, 10–11.9–14(–15) × (5.5–)6–7.7–9(–10) µm.

On limestone outcrops in an abandoned paddock. Superficially the Tasmanian material matches collections from Europe very closely, but the thallus does not contain anthraquinone pigments nor reacts K+ purple, features considered diagnostic for this species. Consequently the name is applied with considerable reser-

1 This work can be cited as: Kantvilas G (2024). *Protoblastenia*, version 2024:1. In MF de Salas (Ed.) *Flora of Tasmania Online*. 2 pp. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery: Hobart). <https://flora.tmag.tas.gov.au/lichen-genera/protoblastenia/>

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

vation. Despite the single specimen having abundant, well-formed apothecia, mature ascospores are exceedingly rare.

Taylor's Flats, 41°25'S 145°59'E, 380 m, 2019, G. Kantvilas 122/19 (HO).

2 *Protoblastenia calva* (Dicks.) Zahlbr.

Cat. Lich. Univ. 7: 1 (1931); —*Lichen calvus* Dicks., *Fasc. Plant. Cryptog. Brit.* 2: 18 (1789).

Thallus endolithic and inapparent, or dull beige-grey. Apothecia 0.4–1.2 mm wide, scattered, slightly basally constricted to adnate, not immersed in pits; disc bright orange to brownish orange, strongly convex. Hypothecium hyaline. Hymenium 60–90 µm thick; paraphyses 1.5–2.5 µm thick, with apices 2–3 µm thick; asci 45–60 × 13–22 µm. Ascospores broadly ellipsoid to occasionally almost subglobose, 10–12.2–15(–16) × 6–7.7–9 µm.

Widespread in the temperate Northern Hemisphere but extremely uncommon in Tasmania where it has been recorded from limestone outcrops in wet heathland and moorland, typically associated with species of *Verrucaria* and *Thelidium*. This species is recognised macroscopically by the immarginate, bright orange apothecia, and anatomically by the simple ascospores. Superficially similar species of *Caloplaca* and *Candelariella* that occur on limestone invariably have apothecia with a persistent margin. Tasmanian specimens have rather larger, broader, occasionally almost subglobose ascospores in comparison to specimens from Europe. In earlier accounts and lists of Tasmanian lichens, specimens of *P. calva* were ascribed to *P. rupestris* (Scop.) J.Steiner, a species which differs by its conspicuous, well-developed thallus.

Maxwell River near confluence with Prince Rivulet, 200 m, 1985, G. Kantvilas 191/85 (BM, HO); Vale of Belvoir, 41°33'S 145°53'E, 800 m, 1993, G. Kantvilas 47/93 (HO).

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