



FRUTIDELLA ^{1 2}

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Frutidella Kalb, *Hoppea* 55: 582 (1994).

Type: *F. caesioatra* (Schaer.) Kalb

Thallus crustose to granular-papillate, ecorticate, with or without soredia. Photobiont a unicellular green alga with globose cells 7–12 µm wide. Ascomata apothecia, biatorine. Disc grey to blackish, commonly faintly bluish grey-pruinose. Proper exciple ± annular, becoming reflexed and ± excluded, in section not carbonised and composed of conglutinated, radiating, sparsely branched and anastomosed hyphae 1.5–2 µm thick. Hypothecium hyaline or pigmented. Hymenium hyaline, amyloid but with the reaction confined to the asci, not interspersed, overlain by a blue-green, N+ crimson epithecium, remaining ± coherent in K. Paraphyses rather robust and straight, simple to sparsely branched and anastomosed, generally with the apices non-capitate and unpigmented. Asci clavate, 8-spored, approximating the *Lecanora*- or *Biatora*-types: with a well-developed, amyloid tholus, penetrated entirely or almost so by a broadly conical to barrel-shaped, non-amyloid *masse axiale*, sometimes with a darker staining, amyloid edge, and with a short, conical ocular chamber. Ascospores simple, hyaline, non-halonate, ellipsoid, usually with a distinct wall. Conidiomata pycnidia, immersed. Conidia filiform, straight. Chemistry: sphaerophorin or xanthonones characterise the two known species.

A genus of two species found over saxicolous mosses (*F. caesioatra*) or on bark [*F. furfuracea* (Anzi) M. Westb. & M. Svenss.] in cold environments.

Key references: Kalb (1994); Gilbert (2009); Davydov *et al.* (2021).

1 *Frutidella caesioatra* (Schaer.) Kalb

Hoppea 55: 582 (1994); —*Lecidea caesioatra* Schaer., *Naturw. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss.* 2: 10 (1818).

Thallus crustose, granular-papillate to bullate, pale beige-grey, cream-grey to brownish, loosely attached and forming spreading, rather discontinuous colonies to 10 cm wide; individual granules and papillae 0.1–0.3 mm wide, apically rounded or flattened, densely packed together, rarely fused. Apothecia 0.4–1.2 mm wide, subglobose to hemispherical, typically nestled deeply amongst the thallus granules; disc at first plane to undulate, soon becoming convex, occasionally rather tuberculate, grey-black to black, usually with a faint bluish grey pruina; proper exciple soon excluded, in section 50–65 µm thick, hyaline to pale yellowish. Hypothecium 40–100 µm thick, hyaline to pale yellowish in the upper part, yellow-brown, K+ intensifying golden-yellow below, poorly differentiated from and subtended by a sometimes massive, yellow-brown subhypothecium. Hymenium 55–75 µm thick, diffusely bluish green, overlain by a deep blue-green, 10–15 µm thick epithecium interspersed with crystals that do not dissolve in K; paraphyses 2–3 µm thick, occasionally with the apices expanded slightly to 4 µm by a thin, external, gelatinous cap; asci 50–60 × 17–20 µm.

1 This work can be cited as: Kantvilas G (2023). *Frutidella*, version 2023:1. 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/frutidella/>

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

Ascospores (11-)12-15.4-20(-21) × (4.5-)5-6.6-8.5(-9) µm; wall c. 0.5 µm thick. Conidia not found, reported (Gilbert 2009) as 15-25 × 0.7-1 µm.

Chemistry: sphaerophorin; thallus K-, KC-, C-, P-, UV± weakly whitish.

A bipolar species, found in alpine or polar environments worldwide and recorded in Australasia from the high mountains of south-eastern mainland Australia and from New Zealand. It is rare in Tasmania and known only from high dolerite peaks, especially on the Ben Lomond Plateau, where it overgrows mosses on exposed, wind-swept boulders. It is usually easily recognised by its greyish, papillate thallus and thinly pruinose apothecia; the presence of sphaerophorin is diagnostic. The same apothecial pigmentation is seen in species of *Lecidella* and *Carbonea*. The papillate-bullate thallus of *Frutidella* can resemble *Schaereria bullata*, which grows in the same habitats but which differs by having a dark brown thallus, persistently marginate, epruinose, black apothecia, *Schaereria*-type asci and globose ascospores.

Plateau of Mt Olympus, 42°02'S 146°06'E, 1430 m, 2004, G. Kantvilas 23/04 (HO); Snowdrift Tarns, 42°55'S 146°39'E, 1270 m, 2009, G. Kantvilas 435/09 (HO); Ben Lomond, c. 750 m SE of Giblin Peak, 41°32'S 147°40'E, 2022, G. Kantvilas 289/22 (HO).

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INDEX

B		<i>Frutidella furfuracea</i>1
<i>Biatora</i>1	L	
C	<i>Lecanora</i>1	
<i>Carbonea</i>2	<i>Lecidea caesioatra</i>1	
F	<i>Lecidella</i>2	
<i>Frutidella</i>1, 2	S	
<i>Frutidella caesioatra</i>1	<i>Schaereria</i>2	
	<i>Schaereria bullata</i>2	