



## CALVITIMELA <sup>1 2</sup>

Gintaras Kantvilas <sup>3</sup>

*Calvitimela* Hafellner, in J. Hafellner & R. Türk, *Stapfia* 76: 150 (2001).

Type: *C. armeniaca* (DC.) Hafellner

Thallus crustose, with a cortex of rather amorphous hyphae; prothallus frequently present, black, effuse, evident at the thallus margins and between the areoles. Photobiont a unicellular green alga with  $\pm$  globose cells 8–18  $\mu$ m wide. Ascumata apothecia, soon immarginate, broadly adnate to  $\pm$  sunken in the thallus surface. Disc plane to convex, black,  $\pm$  glossy, epruinose. Proper exciple very thin and inapparent, soon excluded, in section  $\pm$  annular, composed of paraphysis-like hyphae. Hypothecium hyaline to brownish, usually layered. Hymenium hyaline, amyloid, with greenish, N+ crimson-red pigment in the upper part. Paraphyses robust, mostly simple,  $\pm$  parallel; apices not expanded, coherent, coated with pigment and a gelatinous sheath. Asci clavate, 8-spored, of the *Lecanora*-type: tholus well-developed, amyloid, penetrated entirely by a cylindrical to barrel-shaped, weakly amyloid *masse axiale*; ocular chamber short, conical. Ascospores simple or occasionally thinly 1-septate, hyaline, ellipsoid, non-halonate, typically with a prominent wall. Conidiomata pycnidia, immersed. Conidia bacilliform. Chemistry: complex, including a wide range of cortical and medullary compounds that characterise the different taxa.

A genus of 11 species, found on rocks in cold environments in both hemispheres. Molecular and anatomical data indicate that *Calvitimela* is related to *Mycoblastus* and *Tephromela*. It was segregated from the latter on account of its immarginate apothecia, lack of crimson-red apothecial pigments and *Lecanora*-type asci. However, the morphology and anatomy of its apothecia are more suggestive of *Mycoblastus*, which has 1–2-spored asci approximating the *Biatora*- or *Lecidella*-types.

Key references: Hafellner & Türk (2001); Gilbert (2009).

### 1 *Calvitimela armeniaca* (DC.) Hafellner

In J. Hafellner & R. Türk, *Stapfia* 76: 151 (2001); —*Rhizocarpon armeniacum* DC., in J.-B. Lamarck & A. De Candolle, *Fl. Franç.*, edn 3, 2: 366 (1805); *Tephromela armeniaca* (DC.) Hertel & Rambold, *Bot. Jahrb. Syst.* 107: 494 (1985).

Thallus areolate-bullate to almost subsquamulose, forming spreading, irregularly roundish patches to c. 50 mm wide, pale yellowish or greenish grey when fresh, turning deep red-brown on storage; individual areoles 0.7–3 mm wide and to 2(–3.5) mm thick, very markedly convex, crowded together and overlapping; prothallus black, conspicuous. Apothecia unknown in Tasmania, reported (Gilbert 2009) as 0.8–2(–4.5) mm wide, broadly adnate to subimmersed; ascospores (8–)9–12  $\times$  (3–)3.5–4.5(–5)  $\mu$ m. Pycnidia likewise unknown in Tasmania; conidia reported as 6.5–10  $\times$  1.5–1.8  $\mu$ m.

Chemistry: alectorialic acid and fumarprotocetraric acid ( $\pm$ ); cortex K+ reddish, KC+ red, C–, P+ faint yellow; medulla K–, KC–, C–, P+ red.

1 This work can be cited as: Kantvilas G (2023). *Calvitimela*, 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/calvitimela/>

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Although no fertile material is known from Tasmania (or mainland Australia), this species is easily recognised in the field by its pale yellowish grey, markedly areolate-bullate thallus, with the black prothallus clearly visible at the thallus periphery and between individual areoles. In herbarium storage, specimens turn a reddish colour (due to alectorialic acid) which stains packets and labels. This is a bipolar species widely distributed in the Arctic and on high mountains throughout the world. In Tasmania, it is known from alpine dolerite on some of the island's highest peaks, although it is poorly represented in herbaria because of its tendency to grow on the flat, exposed faces of very large rocks where it is challenging to collect.

Forty Lakes Peak, 41°44'S 146°26'E, 1350 m, 2006, *G. Kantvilas* 383//06 (HO); Mountains of Jupiter summit, 41°57'S 147°11'E, 2012, *G. Kantvilas* 654/12 (HO); Ben Lomond, Plains of Heaven, 41°32'S 147°39'E, 1500 m, 2021, *G. Kantvilas* 492/21 (HO).

## REFERENCES

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