Flora of Tasmania online

TASMIDELLA [1] [2]

Gintaras Kantvilas [3]

Tasmidella Kantvilas, Hafellner & Elix, *Lichenologist* 31: 214 (1999).

Type: *T. variabilis* Kantvilas, Hafellner & Elix [= *T. subfuscescens* (Hellb.) Kantvilas]

Thallus crustose, ecorticate. Photobiont a unicellular green alga with globose cells 6–13 µm wide. Ascomata apothecia, biatorine, sessile, basally constricted. Proper exciple in section annular, persistent or becoming ± excluded, composed of radiating, branched and anastomosed hyphae to 2 µm wide, densely inspersed with oil droplets to 20 µm wide. Hypothecium hyaline to pale yellowish, likewise inspersed. Hymenium hyaline, not inspersed, bluish-green, N+ crimson pigment in the upper part, overlain by pale brown, angular granules insoluble in K. Paraphyses simple, not capitate, separating freely in K. Asci broadly clavate, 8-spored, with a well-developed, amyloid tholus penetrated by a non-amyloid, *masse axiale* with convergent flanks; ocular chamber not developed. Ascospores mostly simple, very rarely 1-septate, hyaline, with a distinct, clearly 2-layered wall. Conidiomata pycnidia, immersed, inconspicuous, with a hyaline wall. Conidia filiform, 12–14 × 1 µm. Chemistry: atranorin only or xanthones.

A genus of two, chiefly chemically differentiated, epiphytic species, found in cool temperate habitats in Australasia. With its usually black apothecia, *Tasmidella* is superficially similar to a number of other crustose genera that occur in similar situations, such as *Lecidella*, *Megalaria* and *Sarrameana*. It is distinguished from these by the unique combination of its ascus-type, exciple structure and, in particular, the double-walled, 0(–1)-septate ascospores. Its taxonomic position remains unclear (Kistenich *et al.* 2018).

Key references: Kantvilas *et al.* (1999); Kantvilas (2023).

1 Thallus dull yellowish, containing xanthones (K–, C+ orange, UV+ orange-pink); apothecia frequently becoming convex and immarginate with age; disc typically epruinose — 2 T. subfuscescens

Thallus pale cream or grey, containing atranorin only (K+ yellowish, C–, UV–); apothecial margin persistent; disc mostly plane and thinly bluish grey-pruinose — 1 T. inactiva

1 Tasmidella inactiva (Kantvilas, Hafellner & Elix) Kantvilas

Muelleria 42: 4 (2023); —*Tasmidella variabilis* var. *inactiva* Kantvilas, Hafellner & Elix, *Lichenologist* 31: 220 (1999). Type: Tasmania, Hartz Mountains National Park, Lake Osborne Track, 43°13'S 146°45'E, on *Nothofagus cunninghamii* in subalpine woodland, 820 m, 9 August 1981, *G. Kantvilas 488/81 & P. James* (holo—HO!; iso—BM!, GZU!).

Thallus smooth, rimose-areolate to weakly verruculose, pale cream or grey, to 250 µm thick but frequently much thinner, esorediate, forming diffuse patches to c. 5 cm wide; prothallus usually present, effuse, bluish black, visible at the thallus periphery or where the thallus is thin or discontinuous. Apothecia 0.5–1.5(–2) mm wide; disc most commonly black to grey-black, thinly bluish grey-pruinose, sometimes pale brownish and epruinose, occasionally piebald, mostly plane, or becoming undulate to convex; proper exciple prominent and persistent, glossy black, in section 70–120 µm thick laterally, blue-green, K+ olive-green, N+ crimson at

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

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the upper edge, brownish at the sides, becoming weakly pigmented to hyaline within, sometimes with traces of additional violet, K+ vivid turquoise pigment; pigments deposited between (and not within) the hyphae. Hypothecium often patchily I+ violet, 90–200 µm thick, densely inspersed with oil droplets. Hymenium 60–100 µm thick; paraphyses (1–)1.5–2 µm thick, with apices generally unthickened or to 2–2.5 µm wide; asci 50–70 × 15–30 µm. Ascospores straight or occasionally slightly curved, ellipsoid, (12–)13.5–*16.4*–20(–22.5) × 7–*8.0*–10 µm; wall 1–1.5 µm thick. Pycnidia not found.

Chemistry: atranorin and chloroatranorin; thallus K+ yellowish, KC–, C–, P–, UV–.

Known from Tasmania and New Zealand, where it occurs as an epiphyte on the smooth bark of young trees in high-elevation rainforest, subalpine woodland and scrub. The grey thallus and thinly marginate, lightly pruinose apothecia are very distinctive. Epruinose individuals with a dull-coloured thallus can be more problematic to distinguish from *T. subfuscescens*.

The Gap, Florentine Road, 42°43'S 146°29'E, 600 m, 1997, *G. Kantvilas 266/97* (HO, MSC); Lots Wife, 42°57'S 146°28'E, 1070 m, 2000, *G. Kantvilas 469/00* (HO); Lake Skinner Track, 42°57'S 146°41'E, 910 m, 2014, *G. Kantvilas 470/14* (HO).

2 Tasmidella subfuscescens (Hellb.) Kantvilas

Muelleria 42: 5 (2023); —*Biatora subfuscescens* Hellb., *Bih. Kongl. Svenska Vetensk.-Akad. Handl.*, Afd. 3 21 (no. 13): 104 (1896).

Tasmidella variabilis Kantvilas, Hafellner & Elix var. *variabilis*, *Lichenologist* 31: 214 (1999). Type: Tasmania, *c.* 4 km E of McPartlan Pass, 42°51'S 146°14'E, on *Banksia marginata* in open *Eucalyptus nitida*-dominated woodland, 360 m, 5 December 1995, *G. Kantvilas 186/95* (holo—HO!; iso—GZU!).

Anatomically identical to *T. inactiva* but differing by containing xanthones, and with a generally coarser, more verruculose, dull yellowish thallus. The black, pale brown or piebald apothecial disc is rarely pruinose, frequently becomes convex with age, and the margin is excluded; new apothecia are frequently seen regenerating on the disc of old, moribund apothecia. The ascospores are (13–)14–*16.7*–21(–22) × 6–*6.9*–8 µm.

Chemistry: thiophanic acid and arthothelin; thallus K–, KC–, C+ orange, P–, UV+ orange-pink.

Widespread and very common in Tasmania where it occurs in wetter areas from sea-level to alpine elevations. The dull yellowish thallus with abundant black or brownish-piebald apothecia is very distinctive. It occurs on bark, wood and dead *Richea pandanifolia* leaves, with particularly common habitats including the trunks and branches of *Banksia marginata* in buttongrass moorland, and the twigs and small branches of alpine shrubs. The most intensely pigmented apothecia are found in the most exposed, sunniest habitats; in deep shade the apothecia are frequently flesh-coloured. On *Richea* leaves the thallus tends to be very thin and smooth, and the apothecia are jet-black. This species is also known from Victoria and New Zealand.

Lake Esperance, 43°14'S 146°46'E, 980 m, 1963, *P.W. James* (BM, HO); Sphinx Bluff, 41°37'S 147°44'E, 1370 m, 1996, *G. Kantvilas 15/96* (HO); Shipstern Bluff, 43°12'S 147°45'E, 80 m, 2011, *G. Kantvilas 181/11* (HO).

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