Flora of Tasmania online

# HYPOCENOMYCE [1]

**Gintaras Kantvilas** [2]

*Hypocenomyce* M.Choisy, *Bull. Mens. Soc. Linn. Soc. Bot. Lyon* 20: 133 (1951).

Type: *H. scalaris* (Ach.) M.Choisy

Thallus squamulose; squamules adnate or ascending and attached by one end, corticate on the upper surface, ecorticate below, with or without soredia, lacking a prothallus. Photobiont a green coccoid alga with ± globose cells 8–18 µm wide. Ascomata apothecia, biatorine, laminal or marginal. Disc concave to plane, sometimes becoming convex, usually black, sometimes a little pruinose. Proper exciple concolorous with the disc or a little paler, persistent, usually flexuose to crenulate, in section cupulate, composed of entangled, thin-walled, short-celled hyphae 2–4 µm wide with rounded lumina. Hypothecium hyaline to yellow-brown or reddish brown. Hymenium hyaline to pale yellowish, I+ blue, overlain by a greenish, N+ crimson epihymenial layer. Paraphyses sparingly branched, 2–3 µm thick; apices sometimes capitate. Mature asci very rarely developed and not studied, possibly (as described by Timdal 1984) approximating the *Biatora*-type; immature asci cylindrical, with an intensely amyloid wall and a thin, weakly amyloid tholus. Mature ascospores unknown, probably simple and ellipsoid to fusiform. Conidiomata pycnidia, laminal or marginal, semi-immersed; wall greenish black, N+ crimson. Conidia bacilliform to filiform. Chemistry: lecanoric acid.

A once-diverse and heterogeneous group of species, *Hypocenomyce* has been redefined using anatomical and molecular data (Timdal 1984; Bendiksby & Timdal 2013) to include just three squamulose species (the *H. scalaris* group), related to the Northern Hemisphere genus *Ophioparma*; all known species occur in Australia. Well-developed asci or ascospores have not been observed, despite the abundance of seemingly well-formed apothecia in some species.

Key references: Timdal (1984); Elix (2009); Bendiksby & Timdal (2013).

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|---|---|---|
| 1 | Squamules ascending, sorediate; soredia marginal or developing on the underside of the squamules | 2 H. scalaris |
| | Squamules adnate, with or without soredia | 2 |
| 2(1) | Esorediate; widespread and common | 1 H. australis |
| | Sorediate; uncommon | 3 H. tinderryensis |

## 1 Hypocenomyce australis Timdal

*Nordic J. Bot.* 4: 95 (1984).

Squamules pale yellowish or yellow-brown to yellow-grey, adnate, plane to convex, sometimes markedly so, 0.3–1.1 mm wide, to 0.5(–0.7) mm thick, roundish, crenulate or minutely effigurate, scattered or contiguous and fused together, not sorediate, forming spreading, diffuse, irregular colonies to 25 cm wide. Apothecia very abundant, to 1.5 mm wide; disc black to dull grey, occasionally slightly bluish grey-pruinose; proper exciple concolorous with the disc or paler greyish, sometimes abraded and pale grey-pruinose at the upper

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edge, conspicuously higher than the disc, very markedly flexuose or deeply lobed, rarely entire, in section 30–60 µm thick laterally, mostly hyaline within, blue-green at the outer edge, inspersed with yellow-brown crystals that dissolve in K. Hypothecium 20–50 µm thick. Hymenium 35–45(–50) µm thick; paraphyses with apices expanded to 3–5 µm, with an external cap of blue-green pigment. Pycnidia black, 0.1–0.2 mm wide, resembling apothecial initials; conidia filiform 10–15 × 0.8 µm.

Chemistry: lecanoric acid; cortex and medulla K–, KC+ red, C+ red, P–, UV–.

A common and widespread species throughout the island, most commonly found on the lignin, charcoal or old, fibrous bark of logs or large standing trees. It has a wide ecological range, occurring in open forest and woodland, or on emergent trees in heathland and moorland, and ranges from lowland to alpine elevations. It is also known from the Australian mainland. The absence of fertile asci is curious given the abundance of well-formed apothecia and the generally wide distribution of this species. It is very distinctive, and is perhaps most easily mistaken for *Trapelopsis flexuosa* (Fr.) Coppins & P. James or *T. granulosa* (Hoffm.) Lumbsch, two lichens with a similar habitat ecology, but with *Trapelia*-type asci and containing gyrophoric acid.

Grass Tree Hill, 42°47′S 147°21′E, 400 m, 1981, *G. Kantvilas 700/81 & P.W. James* (BM, HO); Jane River Track at Adelaide River, 42°18′S 146°01′E, 520 m, 1986, *G. Kantvilas 24/86* (HO); Forty Lakes Peak, 41°44′S 146°26′E, 1350 m, 2006, *G. Kantvilas 392/06* (HO).

### 2 Hypocenomyce scalaris (Ach.) M.Choisy

*Bull. Mens. Soc. Linn. Soc. Bot. Lyon* 20: 133 (1951).

Squamules pale yellowish, yellowish beige to pale brown, ascending and attached at one end, plane to convex, sometimes somewhat hooded, 0.2–1 mm wide, to 1 mm long and to 0.2 mm thick, roundish, with the margins entire, crenulate to minutely microphylline, scattered or, more typically, loosely overlapping, sorediate, forming spreading, diffuse, irregular colonies to 10 cm wide. Soredia whitish or ± concolorous with the thallus, coarsely granular, developing on the undersurface of the squamule margins. Apothecia uncommon, to 0.8 mm wide; disc black to dull grey, commonly bluish grey-pruinose; proper exciple dark grey and paler than the disc, likewise pruinose, entire or flexuose, in section 40–60 µm thick laterally, mostly hyaline within, blue-green at the outer edge, inspersed with yellow-brown crystals that dissolve in K. Hypothecium 25–40 µm thick. Hymenium 40–50 µm thick; paraphyses with apices unpigmented, not or slightly expanded to 2.5–4 µm. Pycnidia not seen; conidia reported as bacilliform, 5–7.5 × 1 µm (Timdal 1984).

Chemistry: lecanoric acid; cortex and medulla K–, KC+ red, C+ red, P–, UV–.

Widespread throughout temperate areas of the world where it occurs mainly on bark and wood in forests and woodlands. It is relatively uncommon in Tasmania and found mostly in the drier, eastern half of the island, growing on charcoal or bark on the lower trunks and stumps of eucalypts. When growing on vertical surfaces, the squamules overlap, rather like roofing shingles. Tasmanian (and Australian) specimens differ from Northern Hemisphere collections by having generally smaller squamules and apothecia.

Southern slope of South Sister, 41°32′S 148°10′E, 640 m, 2004, *G. Kantvilas 381/04 & J. Elix* (HO); Stony Head, N of "Prime Meadow", 41°02′S 147°01′E, 60 m, 2020, *G. Kantvilas 295/20* (HO); Tasman Track, cliffs N of Dolomieu Point, 43°07′S 147°59′E, 120 m, 2021, *G. Kantvilas 18/21* (HO).

### 3 Hypocenomyce tinderryensis Elix

*Australas. Lichenol.* 61: 21 (2007).

Essentially identical to *H. australis* but sorediate (sometimes very sparingly), with irregular, rather erose soralia developing along the margins and upper surface of the squamules, and producing coarse, granular soredia that are concolorous with the thallus, a little paler, or discoloured greyish. It has the same ecological range as *H. australis* and is also known from mainland Australia. No fertile asci have been observed in any material studied, although Elix (2009) reports simple, ellipsoid ascospores, 6–8 × 2.5–3 µm.

Bendiksby & Timdal (2013) express some doubt as to whether this taxon is distinct from *H. australis*. Their misgivings are strongly supported by observations in Tasmania, where incipient development of soredia can be seen in localised parts of several thalli that would otherwise be unequivocally ascribed to *H. australis*. Similar sporadic development of soredia is seen in several other lichens, such as *Trapeliopsis flexuosa* and *T. colensoi* (C.Bab.) Gotth.Schneid., but is not recognised taxonomically.

Bisdee Tier, 42°26'S 147°17'E, 640 m, 2009, *G. Kantvilas 227/09* (HO); Wind Song Property, "Callitris Gully", 42°21'S 147°55'E, 40 m, 2018, *G. Kantvilas 97/18* (CANB, HO, NY, UPS); Mt Jerusalem, S of summit, 41°49'S 146°19'E, 1400 m, 2022, *G. Kantvilas 41/22* (HO).

## REFERENCES

Bendiksby M, Timdal E (2013) Molecular phylogenetics and taxonomy of *Hypocenomyce* sensu lato (Ascomycota: Lecanoromycetes): extreme polyphyly and morphological/ecological convergence. *Taxon* **62** 940–956.

Elix JA (2009) Ophioparmaceae. *Flora of Australia* **57** 32–36.

Timdal E (1984) The genus *Hypocenomyce* (Lecanorales, Lecideaceae), with special emphasis on the Norwegian and Swedish species. *Nordic Journal of Botany* **4** 83–108.

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