



TONINIOPSIS ¹

Gintaras Kantvilas ²

Toniniopsis Frey, *Ber. Schweiz. Bot. Ges.* 35: 73 (1926).

Type: *T. obscura* Frey [= *T. illudens* (Nyl.) Kistenich, Timdal, Bendiksby & Ekman]

Thallus crustose to squamulose, usually with the cortex and epinecral layer poorly developed or absent, sometimes maculate, lacking pores and pseudocyphellae; isidia and soredia absent; calcium oxalate sometimes present. Photobiont a unicellular green alga with ± globose cells 6–15 µm diam. Ascomata apothecia, biatorine, sessile, basally constricted. Disc plane to convex, black, occasionally faintly pruinose. Proper exciple persistent or becoming ± excluded, ± concolorous with the disc, in section annular, generally opaque and intensely pigmented reddish brown, ± unchanged in K and N, composed of radiating, branched, thick-walled hyphae, sometimes containing calcium oxalate. Hypothecium mostly reddish brown. Hymenium hyaline, overlain by a greenish, K-, N+ violet epithecium. Paraphyses sparingly branched, 2–2.5 µm thick; apices distinctly capitate, to 4–6 µm wide, internally pigmented or with a pigmented, gelatinous outer coat. Asci clavate, 8-spored, of the *Bacidia*-type: tholus well-developed, amyloid, with a weakly amyloid, conical *masse axiale* and a short, conical ocular chamber. Ascospores 1–7-septate, hyaline, ellipsoid, bacilliform or fusiform-acicular, thin-walled, non-halonate. Conidiomata pycnidia, rare, immersed. Conidia filiform, curved, 12–20 × 1 µm. Chemistry: containing no substances of taxonomic significance identifiable by TLC.

A genus of about seven species found on rocks and soil, widely distributed throughout the world. Like *Bibbya* and *Thalloidima*, *Toniniopsis* is a segregate of the large, variable genus *Toninia*, which was characterised chiefly by a crustose to squamulose thallus, biatorine to lecideine apothecia, *Bacidia*-type asci, weakly conglutinated paraphyses, and usually transversely septate, hyaline ascospores. Also like these genera, it is circumscribed chiefly by molecular data and its distinguishing morphological features are not clear-cut. It can be differentiated by its having a generally more strongly pigmented exciple and by containing a green, N+ violet pigment (*bagliettoana*-green) in the epithecium.

Key references: Timdal (1992); Ekman (1996); Kantvilas (2018); Kistenich *et al.* (2018); Cannon *et al.* (2021).

1 Thallus squamulose, pale brownish, containing calcium oxalate; ascospores fusiform, 1–3-septate, 13–24 × 3–5 µm

1 *T. aromatica*

Thallus granular or warty, greyish white, lacking calcium oxalate; ascospores filiform to narrowly fusiform, 3–7-septate, 25–40 × 1.5–2.5 µm

2 *T. bagliettoana*

1 *Toniniopsis aromatica* (Sm.) Kistenich, Timdal, Bendiksby & Ekman

Taxon 67: 898 (2018); —*Lichen aromaticus* Sm., in J.E. Smith & J. Sowerby, *Engl. Bot.* 25: tab. 1777 (1807); *Toninia aromatica* (Sm.) A.Massal., *Framm. Lichenogr.*: 24 (1855).

Thallus squamulose; squamules scattered or contiguous, pale brownish, epruinose but often with conspicuous whitish abraded areas, irregular to ± effigurate, plane to unevenly convex and rather lumpy, 0.5–2 mm wide, lacking pores or pseudocyphellae, interspersed with at least some crystals of calcium oxalate.

1 This work can be cited as: Kantvilas G (2024). *Toniniopsis*, version 2024:1. In MF de Salas (Ed.) *Flora of Tasmania Online*. 3 pp. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery: Hobart). <https://flora.tmag.tas.gov.au/lichen-genera/toniniopsis/>

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

Apothecia 0.5–1.2 mm diam., black, epruinose, containing scattered calcium oxalate; disc plane at first, usually becoming convex; proper exciple persistent or becoming inapparent and excluded in more convex apothecia, in section 60–70 µm thick, opaque dark red-brown, ± intensifying reddish in K. Hypothecium 40–60 µm thick, pale to dark reddish brown. Hymenium 45–65 µm thick, overlain by a diffuse emerald green epithecium, N+ violet, unchanged in K; apices of paraphyses pigmented internally; asci (35–)45–60 × 10–15 µm. Ascospores 1–3-septate, fusiform, (13–)15–18.2–22(–24) × 3–3.9–4.5(–5) µm. Pycnidia not seen.

A widely distributed species in the Northern Hemisphere and Australasia, typically found on calcareous soil or rock. It is rarely collected in Tasmania, where most records are from the old mortar of ruined buildings. Although all literature consulted explicitly states that this species lacks calcium oxalate, this substance was consistently recorded in all specimens studied, including those from Europe. The squamulose thallus, black, epruinose apothecia, the green epithelial pigment (*bagliettoana*-green) and fusiform ascospores make this species readily recognisable.

Spiky Bridge, 42°11'S 148°04'E, 60 m, 2011, G. Kantvilas 230/11 (HO); Plunkett Point, 42°59'S 147°43'E, 10 m, 2016, G. Kantvilas 129/16 (HO); Cape Portland, The Ruins, N end of Home Beach, 40°45'12"S 147°57'28"E, 10 m, 2018, G. Kantvilas 298/18 (HO).

2 *Toniniopsis bagliettoana* (A.Massal. & De Not.) Kistenich & Timdal

In P. Cannon *et al.*, *Rev. British Lich.* 11: 76 (2021). —*Scoliciosporum bagliettoanum* A.Massal. & De Not., in A. Massal., *Mem. Lichenogr.*: 126 (1853); *Bacidia bagliettoana* (A.Massal. & De Not.) Jatta, *Sylloge. Lich. Ital.* 421 (1900).

Thallus crustose, coarsely granular or warty, greyish white, epruinose, forming spreading, diffuse patches; granules scattered or contiguous, lacking pores or pseudocyphellae; calcium oxalate absent. Apothecia 0.4–1 mm diam., black, epruinose; disc persistently plane or becoming undulate to convex; proper exciple persistent or becoming inapparent in more convex apothecia, in section 25–40(–50) µm thick, opaque with mostly dark red-brown pigment. Hypothecium to 150 µm thick, sometimes interspersed with oil droplets, yellowish brown or reddish brown in the upper part, dilute reddish brown to hyaline below. Hymenium 45–55(–60) µm thick, overlain by a greenish epithecium, K± intensifying greenish, N+ violet; paraphyses with a pigmented, gelatinous outer cap; asci 40–45 × 8–10 µm. Ascospores 3–7-septate, filiform to narrowly fusiform, (25–)26.5–33.3–40 × (1.5–)2–2.1–2.5 µm, with apices typically acute and a little attenuated at the distal end.

Widely distributed in temperate areas of the world and locally abundant in eastern Tasmania on thin, dry soil and dolerite pebbles in gaps in dry, open sclerophyllous woodland.

Approx. 1 km NE of Rocky Tom, 42°49'S 147°23'E, 340 m, 2019, G. Kantvilas 181/19 (HO); Mt Forestier summit, 42°55'S 147°51'E, 315 m, 2020, G. Kantvilas 92/20 (HO); Lake Leake Road, 42°01'S 147°57'E, 340 m, 2020, J. Jarman *s.n.* (HO).

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