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A new foliicolous species of *Strigula*
(Strigulaceae) from New South Wales

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Abstract: The foliicolous *Strigula caerulensis* P.M. McCarthy sp. nov. (Strigulaceae) is described from cool-temperate montane rainforest in eastern New South Wales.

Strigula, a genus of c. 90 species, is predominantly foliicolous in the wet tropics and subtropics (Santesson 1952, Lücking, 2008). Twenty-five species are known from Australia, 19 of which are obligately foliicolous (McCarthy 2009). Here, *S. caerulensis* is described from a fern pinna in cool-temperate montane rainforest in eastern New South Wales.

Strigula caerulensis P.M. McCarthy sp. nov.

Fig. 1

Thallus foliicola, supracuticularis, griseoviridis vel viridis, circa 8–10 μm crassus. Algae ad *Phycopeltis* pertinentes, cellulis rectangularis vel oblongis, 12–20 \times 5–8 μm . Perithecia plerumque superficiales, (0.22–)0.30(–0.36) mm diametro. Involucrellum carbonaceum, 15–30 μm crassum, ad basim excipuli descendens, vix expansum. Asci anguste obclavati aut cylindrici, 41–58 \times 8–10 μm . Ascospores elongatae-ellipsoideae aut fusiformes, 1-septatae, biseriatae, (10–)12.5(–15) \times (3.5–)4.5(–5.5) μm . Macroconidia bacilliformes, 1-septatae, 10–12 \times 1.5–2.0 μm .

Type: Australia. New South Wales: Blue Mountains Natl Park, Mount Wilson, Waterfall Track, 33°30'31"S, 150°22'32", alt. 835 m, on *Blechnum patersonii* in cool-temperate rainforest, P.M. McCarthy 2780 & J.A. Elix, 5.v.2009 (holotype NSW).

Thallus crustose, epiphyllous, supracuticular, c. 8–10 μm thick, pale greyish green to bright green, dull, continuous, smooth, but closely following the contours of the rugulose substratum; prothallus not apparent. Photobiont *Phycopeltis*; cells rectangular to oblong, 12–20 \times 5–8 μm , forming a loose reticulum. Perithecia moderately numerous, almost superficial, \pm hemispherical to subconical, (0.22–)0.30(–0.36) mm diam. [$n = 45$], smooth or faintly radially furrowed, largely exposed, or overgrown almost to the apex by the very thin and inconspicuous thallus. Perithecial apex dull to glossy black, rounded to subacute, occasionally with a minute ostiolar papilla to 30 μm wide; ostiole inconspicuous. Involucrellum carbonaceous, extending to exciple base level, scarcely spreading laterally over the substratum, 15–30 μm thick. Exciple 10–15 μm thick, pale greyish brown externally, hyaline within. Centrum depressed-ovate, 0.13–0.26 mm diam. Paraphyses long-celled, unbranched, 1.0(–1.5) μm thick. Periphyses absent. Asci fissitunicate, 8-spored, narrowly obclavate to cylindrical, rarely \pm fusiform, 41–58 \times 8–10 μm [$n = 40$], thin-walled but with a thicker apex, a minute ocular chamber and a short well-defined stalk c. 5 μm long. Ascospores elongate-ellipsoidal to fusiform, 1-septate, biseriatae in the ascus, constricted at the septum, (10–)12.5(–15) \times (3.5–)4.5(–5.5) μm [$n = 50$]; cells 1(–2)-guttulate, not separating within the ascus or following release; distal cell often slightly shorter and broader. Conidiomata sparse, hemispherical to subconical, dull black, partly overgrown by the thallus, 0.08–0.12 mm diam.; macroconidia bacilliform, 1-septate, 10–12 \times 1.5–2.0 μm , most with thread-like apical gelatinous appendages 5–10 μm long; microconidia not seen.

Etymology: The epithet *caerulensis* alludes to the Blue Mountains National Park where the new lichen was collected.

Remarks

Strigula caerulensis is characterized by the very thin, greenish supracuticular thallus, small but rather prominent perithecia and comparatively large asci and broad biseriatae ascospores. In Australia, a supracuticular thallus and *Phylloporis*-type perithecial morphology are also seen in the pantropical *S. multipunctata* (G.Merr. ex R.Sant.) R.C.Harris, *S. obducta* (Müll.Arg.) R.C.Harris, *S. phyllogena* (Müll.Arg.) R.C.Harris, *S. platypoda* (Müll.Arg.) R.C.Harris and the recently described *S. austropunctata* P.M. McCarthy (Santesson 1952, Lücking 2008, McCarthy 2009). However, when *S. caerulensis* is compared to those and broadly similar taxa from other regions, discontinuously small perithecia without a thick thalline layer exclude all but *S. platypoda*, and that species has 0.3–0.5 mm diam. perithecia, 25–40 \times 4–6 μm asci and 2.0–3.5 μm wide, uniseriate to irregularly biseriatae ascospores.

Currently known only from the type locality, in cool-temperate rainforest in the Blue Mountains west of Sydney, New South Wales, *S. caerulensis* grows within and 0.5–1.5 mm on either side of the adaxial costal groove of pinnae of the Australasian fern *Blechnum patersonii*. The host is especially abundant near the bases of damp soil and rocky banks, and is often heavily shaded by shrubs, sedges and larger ferns. Other foliicolous lichens collected at this species-poor site are *Gyalectidium microcarpum* (Vězda) Lücking, Sérus. & Vězda, *Trichothelium alboatrum* Vain. and *T. assurgens* (Cooke) Aptroot & Lücking. Such a depauperate flora is noteworthy, being reminiscent of some montane rainforest localities in Victoria rather than the luxuriant foliicolous communities dominated by Porinaceae, Pilocarpaceae and Strigulaceae on the Southern Tablelands of New South Wales.

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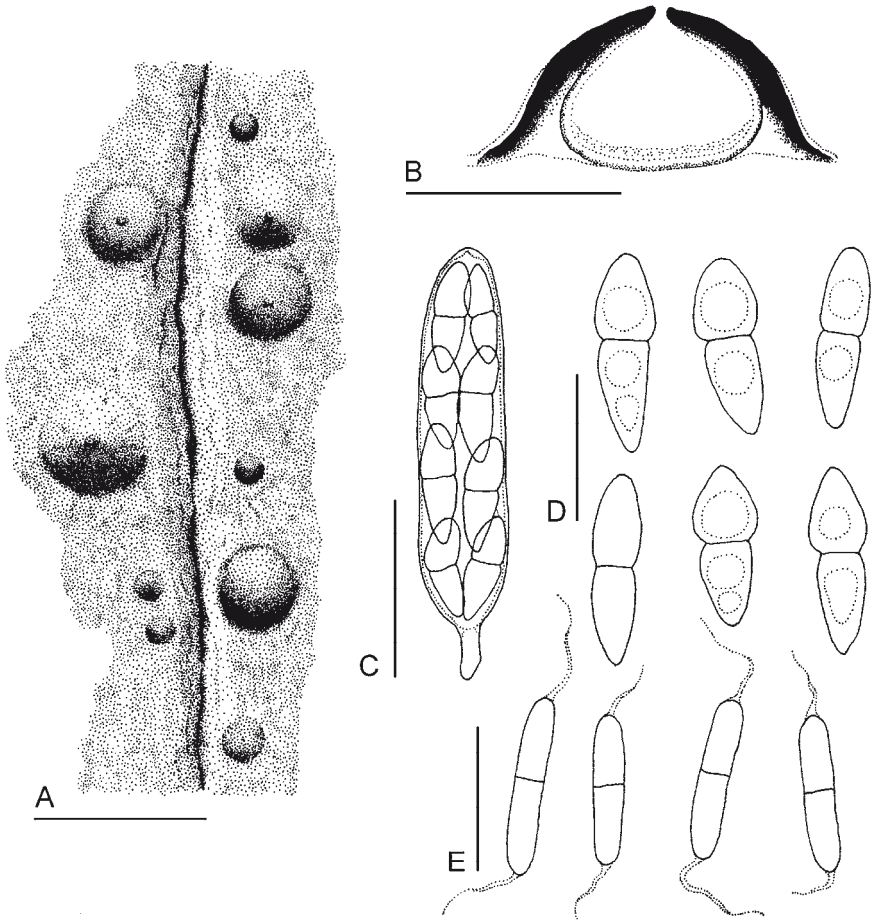


Figure 1. *Strigula caerulensis* (holotype). A, Thallus, perithecia and conidiomata near the costal groove of the host pinna. B, Sectioned perithecium (semi-schematic). C, Ascus. D, Ascospores. E, Macroconidia. Scales: A = 0.5 mm; B = 0.2 mm; C = 20 μm; D, E = 10 μm.