New species of *Megalaria* (lichenized Ascomycota, Ramalinaceae) from Queensland, Lord Howe Island and Norfolk Island, Australia

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**Abstract**

Four species of *Megalaria* Hafellner are described as new from tropical and subtropical Australia: *M. australiensis* from eastern Queensland and Lord Howe Island (corticolous and containing atranorin; excipulum bilayered, internally pale with variously orientated hyphae; thallus containing atranorin; hyphae variously orientated, 2–3 µm wide, with a blue-black epihymenium (N+); thallus containing atranorin with the outermost 0.5–1 mm thick, not inspersed, uniformly blue-black, or diffuse brownish; ascospores, pycnidial anatomy and conidia were made on hand-cut sections mounted in water; apothecial sections were also treated with 10% potassium hydroxide (K) and 50% nitric acid (N). Calcium oxalate was detected by treatment of thallus fragments with a 10% aqueous solution of sulfuric acid (H₂SO₄); it forms colourless, needle-shaped crystals. Asci were also observed in Lugol’s Iodine (I), with and without pretreatment in K. Chemical constituents were identified by thin-layer chromatography (Elix 2020) and comparison with authentic samples.

**Methods**

Observations and measurements of photobiont cells, thalline and apothecial anatomy, ascii, ascospores, pycnidial anatomy and conidia were made on hand-cut sections mounted in water; apothecial sections were also treated with 10% potassium hydroxide (K) and 50% nitric acid (N). Calcium oxalate was detected by treatment of thallus fragments with a 10% aqueous solution of sulfuric acid (H₂SO₄); it forms colourless, needle-shaped crystals. Asci were also observed in Lugol’s Iodine (I), with and without pretreatment in K. Chemical constituents were identified by thin-layer chromatography (Elix 2020) and comparison with authentic samples.

**The species**

1. *Megalaria australiensis* P.M. McCarthy & Elix

Figs 1, 5B, 6A

MycoBank No.: MB 841085

Characterized by an epiphloeodal thallus containing atranorin (major), uniformly black apothecia 0.33–0.98 mm wide, each with a pale, inner excipulum of loose and variously orientated hyphae, usually lacking crystals, and a thin outer layer of mainly blue-black, thick-walled, radiating hyphae, a blue-black epithymenium (N+ maroon or blood-red), a deep red to medium or deep red-brown or dark brown hypothecium (N+ intensifying or blood-red to crimson), asci that are 58–75 × 11–17 µm in a hymenium 70–100 µm thick, and rather elongate, 1-septate ascospores (12–23 × 4–7.5 µm).

**Type:** Australia, Queensland, Newell, 6 km NE of Mossman, 16°25’S, 145°24’E, 1 m alt., on *Bruguiera* stem in mangrove vegetation beside creek estuary, *H. Streitmann* 31064, 6.vii.1984 (holotype – CANB).

**Thallus** crustose, epiphloeodal, off-white to pale creamy grey or pale to medium greenish grey or greenish grey, sometimes mottled or dirty white-grey, up to 2 mm thick, of comparatively loose, variously orientated hyphae 2–3 µm wide, with a blue-black epihymenium with *Biatora- or Bacidiua-type* ascii or a variant of the *Lecanora-type*, simple, sparingly branched or somewhat anastomosing paraphyses, and small to moderately large, colourless, 1-septate ascospores (Hafellner 1984; Coppins 1992; Ekman & Tønsberg 1996; Fryday 2004, 2007; Galloway 2007; Jagadeesh Ram et al. 2007; Kalb 2007; Fryday & Lendemer 2010; Fryday & Knight 2012; Lendemer et al. 2016; McMullin & Lendemer 2016; Su & Ren 2017; Wang et al. 2019; Aptroot et al. 2021; Cannon et al. 2021; Nimis & Martellos 2021).

Sixteen species of *Megalaria* are known from mainland Australia and its oceanic islands (McCarthy 2020). Recent contributions have included detailed accounts of the genus in Tasmania (Kantvivas 2008, 2016), as well as new taxa and new records from temperate, subtropical and wet-tropical localities (McCarthy & Elix 2016a, b; Elix & McCarthy 2018). In this paper four species are described as new from eastern Queensland and the Australian territories of Lord Howe Island and Norfolk Island in the south-western Pacific Ocean. All have a superficial, off-whitish to pale grey-green thallus that is sparingly rimoso to areoles (0.2–1 mm wide), dull, smooth or irregularly and minutely granulose or verruculose, (40–90–150(–200) µm thick, not containing calcium oxalate (H₂SO₄), I–; soredia and isidia absent. Cortex absent, but the thallus often with a hyaline, amorphous alga-free layer to 10–15 µm thick. Algal layer poorly delimited, to c. 100 µm thick, cells green, chlorococcoid, 6–11 (–13) µm diam., interstitial hyphae short-celled, thin-walled, c. 2.5–3.5 µm wide, Medulla indistinct. Prothallus blackish and sharply defined, or diffuse, broad and bluish black, or not apparent. Apothecia usually very numerous, solitary, paired or forming clusters of 3–6 proliferating from a single apothecium, (0.33–0.61–0.98) mm wide (n = 238; clusters to 1.7 mm wide), becoming sessile; margin usually glossy black, entire, often flexuous, not very prominent. 50–90 µm thick, laterally and downwards basally, tightly coherent, 1.5–2.5 µm wide, with a thick coat 5–8 (–10) µm wide; in the lateral excipulum this layer uniformly blue-black, or with hints of red-brown, K+ deep purple-brown to reddish black in part, N+ maroon to deep maroon; in the basal excipulum with the outermost c. 10–15 µm hyaline to pale blue, the innermost half of this zone blue-black. *Hypothecium* 70–130(–150) µm thick, not inspersed with granules or oil globules, deep red to medium or deep red-brown or dark brown (darkest in the centre, paler towards the hymenium and the excipulum base), N+ intensifying or blood-red to crimson, K+ intensifying or maroon to red-black; hyphae variously orientated, 2.5–4 µm wide. *Hymenium* 70–100 µm thick, not inspersed, uniformly hyaline, or diffuse brownish
adjacent to the hypothecium, K+ deep blue, N–, K–. Epiphyllum usually well-delimited, medium grey-brown to blue-black, 10–20–25 µm thick, N+ maroon or blood-red, K– or K+ bluish green. Paraphyses usually simple for most of their length, with sparse branches and anastomoses mainly in the hypothecium, tightly conglutinate in water, 1–1.5(–2) µm thick; apical cells usually swollen and rounded, 2–3(–4) µm wide, thick-walled, these and the subtending hyphal cell blue-black. Ascii narrowly to broadly clavate or clavate-cylindrical, almost exclusively 8-spored, 58–75 × 11–17 µm [n = 25]; tholus with a narrow, tube-like, moderately to deeply amyloid zone. Ascospores narrowly ellipsoid or oblong-ellipsoid to somewhat fusiform, hyaline, 1-septate, overlapping-uniseriate to irregularly biseriate in the moderately to deeply amyloid zone. Paraphyses simple for most of their length, with sparse branches and anastomoses mainly in the hypothecium, tightly conglutinate in water, 1–1.5(–2) µm thick; epispore not apparent. Pycnidia not seen.

Chemistry: Thallus containing atranorin (major) by TLC.

Etymology: The epithet australiensis refers to this being an Australian species.

Remarks

The corticolous M. australiensis has ascospores that are longer than those of M. crystallifera (12–23 µm long vs 9.5–18 µm; Fig. 6), the blue-black epiphyllum reacts maroon or blood-red in N and the bilayered excipulum is pale with variously oriented hyphae internally but radiating-prosoplectenchymatous and bluish black near the surface. While excipular anatomy is closer to that of M. norfolkensis than the multilayered M. stratoa, the more-or-less uniformly pigmented hypothecium of M. australiensis differs from that of the Norfolk Island species which is distinctly bilayered (darker below and paler above), while the ascospores are narrower (4–3.5–5.7) µm vs (6–8)–(11) µm; Fig. 6).

The similarly small-spored M. laeuri (Th.Fr.) Hafellner, a predominantly temperate species across the Northern Hemisphere, has also reported from tropical and temperate Australia (South Australia, Queensland, New South Wales and Tasmania; McCarthy 2020), albeit with much less certainty than with unequivocal certainty (vide Kantvilas 2008). A corticolous species, with little or no atranorin in its thallus, and an apothecial margin that is often paler than the bluish disc (Coppins 1992; Cannon et al. 2021), apothecial sections have a dominant, pink or purple-pink pigment that intensifies pinkish in K and reacts N+ purple (Th.Fr.).

Characterized by an epiphloeoidal thallus containing atranorin (major), uniformly black apothecia 0.35–0.83 mm wide, each with a comparatively pale, inner excipulum of tightly packed, radiating hyphae with oblong to moniliform cells containing K-soluble crystals and 10–16 × 5–10 µm, a blue-black epiphyllum (N+ purple), a deep red to deep red-brown hypothecium (N+ intensifying or blood-red), asci that are 40–90 × 10–16 µm in a hymenium 55–90 µm thick and, small, 1-septate ascospores (10–17 × 4.5–5.7) µm.

Type: Australia. New South Wales, Lord Howe Island, track to Goathouse Cave, at base of escarpment of Mt Lidgbird, 31°33′48″S, 159°05′11″E, 380 m alt., on base of palm in moist semi-tropical forest, J.A. Elix 42085, 7.ii.1995 (holotype – CANB).

Thallus crustose, epiphyloidal, greenish white to pale creamy grey, continuous to sparingly to richly and intricately rimoses, or areolate (the areoles 0.3–0.8 mm wide), dull, smooth or irregularly and minutely uneven, (40–600–100–120) µm thick, with or without crystal-like inclusions of calcium oxalate crystals (H2SO4 + H2SO4–), 0.1–0.2(–0.3) mm diameter (Fig. 2); cortex 3–5.5 µm thick. Algal layer poorly defined and discontinuous, to c. 70 µm thick; cells green, chlorococcoid, 6–12 µm diam.; interstitial hyphae short-celled, thick-walled, c. 2–3.5 µm wide.

Two endemic species in New Zealand, M. maculosa (Stirt.) D.J.Galloway and M. sublivesis (Nyl.) D.J.Galloway, also produce small 1-septate ascospores, but both have a pale hypothecium (Galloway 1985, 2007). The saxicolous M. obludensis (Nyl.) Fryday & Lendemer (syn. M. instanludii Fryday), from Chile and Campbell Island, New Zealand, has a much thicker, areolate thallus lacking lichen substances, as well as the corticolous M. norfolkensis (Nyl.) Fryday & Lendemer (Kantvilas 2008). A corticolous species, with little or no atranorin in its thallus, and an apothecial margin that is often paler than the bluish disc (Coppins 1992; Cannon et al. 2021) apothecial sections have a dominant, pink or purple-pink pigment that intensifies pinkish in K and reacts N+ purple (Th.Fr.).

Characterized by an epiphloeoidal thallus containing atranorin (major), uniformly black apothecia 0.35–0.83 mm wide, each with a comparatively pale, inner excipulum of tightly packed, radiating hyphae with oblong to moniliform cells containing K-soluble crystals and 10–16 × 5–10 µm, a blue-black epiphyllum (N+ purple), a deep red to deep red-brown hypothecium (N+ intensifying or blood-red), asci that are 40–90 × 10–16 µm in a hymenium 55–90 µm thick, and, small, 1-septate ascospores (10–17 × 4.5–5.7) µm.

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Characterized by an epiphloeoidal thallus containing atranorin (major), uniformly black apothecia 0.35–0.83 mm wide, each with a comparatively pale, inner excipulum of tightly packed, radiating hyphae with oblong to moniliform cells containing K-soluble crystals and 10–16 × 5–10 µm, a blue-black epiphyllum (N+ purple), a deep red to deep red-brown hypothecium (N+ intensifying or blood-red), asci that are 40–90 × 10–16 µm in a hymenium 55–90 µm thick, and, small, 1-septate ascospores (10–17 × 4.5–5.7) µm.

Type: Australia. New South Wales, Lord Howe Island, track to Goathouse Cave, at base of escarpment of Mt Lidgbird, 31°33′48″S, 159°05′11″E, 380 m alt., on base of palm in moist semi-tropical forest, J.A. Elix 42085, 7.ii.1995 (holotype – CANB).
deep maroon; in the basal excipulum the hyphae with blue-black caps; iii) outermost, amorphous, hyaline layer 5–10 µm thick (not always present). Hypoecium 70–110–(130) µm thick, not inspersed with granules or oil globules, deep red to deep brown, with a sharply defined border with the excipulum base, N+ intensifying or blood-red, K+ intensifying or maroon. Hymenium 55–80 µm thick, not inspersed, uniformly hyaline or diffusely pale brownish adjacent to the hypothecium, K1+ deep blue, N+, K–. Ephymenium well-delimited and blue-black or patchily pigmentated, 10–20–(25) µm thick, N+, purple, K– or K+ to bluish green. Paraphyses usually simple for most of their length, with sparse branches and anastomoses mainly in the ephymenium, thinly conglutinate in water, 1–1.5(–2) µm thick; apices deeply pigmentated, slightly swollen and often rounded, 1.5–2.5(–3) µm wide. Asci narrowly to broadly clavate, 8-spored, 40–61 × 10–16 µm [n = 25]; tholus with a narrow, tube-like, moderately to deeply amyloid zone. Ascosporae narrowly ellipsoid or oblong-ellipsoid to somewhat fusiform, hyaline, 1-septate, overlapping-uniseriate to irregularly biseriate or distally massed in the ascus, not or only slightly constricted at the septum, straight, curved or bent, 10–14(–17) × (4.5–)5.5–7 µm [n = 120]; with 1 ascospore 17 µm long; apices rounded or subacute; wall smooth, 0.8–1.2 µm thick; epispore not apparent. Pyenia not seen.

Chemistry: Thallus containing atranorin (major) by TLC.

**Etymology:** The epithet *crystallifera* refers to the K-soluble crystals of the massively impregnated excipulum.

**Remarks**

While the thallus of *M. crystallifera* contains abundant atranorin, and thus matches the three other corticoleous species described here, its small ascospore dimensions, the thickness of the hypothecium and the similarly pigmentated and N-reactive ephymenium agree instead with the saxicolous *M. stratus*. However, the excipulum is bilayered, not multilayered as in the latter taxon, with a comparatively pale, inner excipulum of radiating prosoplectenchymatous or moniliform hyphae, the cells containing massed K-soluble crystals, while in the basal outer excipulum the hyphal tips have distinctive, blue-black caps. Indeed, the faintly powdery hypothecium contains abundant atranorin, and the ephymenium is N+ deep maroon. However, the hymenium is thicker (100–140 µm thick), the ascospores are broader (6–11 µm wide vs 4–7.5 µm wide; Fig. 6), and the deep red to brown hymenopore is distinctly bilayered (darker below and paler above) rather than more-or-less uniformly pigmentated as in *M. australiensis*. Apothecial pigmentation and reactions further distinguish *M. norfolkensis* from *M. laureri* and *M. hafellneriana* (see above), while the thinner and uniformly paler hypothecium of the small-spored corticolous New Zealand endemics *M. maculosa* and *M. sublivesis* are also distinctive and diagnostic.

This lichen is known only from the type locality in Norfolk Island in the south-western Pacific Ocean. It grows on the branches and trunks of trees in lowland, subtropical forest in Lord Howe Island in the south-western Pacific Ocean. Associated species include *Menegazzia lordhowensis* (Elix.) Zahlbr., *Physcia sorediata* (Taylor) Zahlbr., *Porina eminentior* (Nyl.) P.M.CCarthy and *Pyrenula anomala* (Ach.) Vain.

**ADDITIONAL SPECIMENS EXAMINED**

New South Wales, Lord Howe Island: • Intermediate Hill via track to North Hummock, 31°32′04″S, 160°05′33″E, 120 m alt., on Cryptozoon in poor lowland forest with dense scrub on steep slope, J.A. Elix 42028, 5.ii.1995 (CANB); • track from Smoking Tree Ridge to Rocky Run, 31°33′35″S, 159°05′09″E, 170 m alt., on tree in lowland forest on moderate slope, J.A. Elix 42433, 42444, 10.ii.1995 (CANB).

3. Megalaria norfolkensis P.M.C McCarthy & Elix

**Figs** 3, 5D, 6C

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Characterized by an epiphyloedal thallus containing atranorin (major), uniformly black apothecia 0.45–1.48 mm wide with one, with a comparatively pale, inner excipulum of loose and variously orientated hyphae, usually lacking crystals, and a thin outer layer of mainly blue-black, thick-walled, radiating hyphae, a blue-black ephymenium (N+ deep maroon), a bilayered hypothecium (pale to more or less red-brown above, dark red-brown below; N+ intensifying), 4–8-spored ascus (175–900 × 14–20 µm) in a hymenium 100–160 µm thick, and moderately large, 1-septate ascospores (13–24 × 6–11 µm).
Characterized by an epilithic thallus lacking lichen substances, uniformly black to dark grey, 0.32–1.46 mm wide, each with a multilayered and comparatively dark excipulum lacking crystals, and with only the outermost hyphae radiating, with a blue-black epiphytonum (N+ violet or purple-violet), a deep red or maroon to deep red-brown or brown-black hypothecium (N+ deep red, blood-red or crimson), ascii that are 43–65 × 10–15 µm in a hymenium 60–80 (–100) µm thick, and small, 1-septate ascospores (9.5–14.5 × 4–7 µm).

**Type:** Australia, Queensland, 30 km SSE of Cooktown, Walhalla Creek, Home Rule Falls, 15°44'S, 145°18'E, 240 m alt., on semi-shadowed, siliceous rock in gorge beside permanent creek, in *Tristaniopsis*-dominated forest, *H. Streimann* 57533, 23.x.1995 (holotype – CANB; according to the label, duplicate in B, n.v.).

**Thallus** crustose, epilithic, off-white to pale grey, pale greenish grey or pale to medium yellowish grey, continuous to sparingly or richly rimose, or areolate (aroeoles 0.2–1.5 mm wide), dull, smooth or irregularly and minutely granulose or verruculose, (50–)100–250(–300) µm thick, not containing calcium oxalate (H2SO4–); iii) a radiating hyphal layer 10–25 µm thick, the hyphae directed dark, 50–80 µm thick, ± parenchymatous; ii), this subtended by a looser, anatomically similar cupulate, 55–90(–130) µm thick laterally, 90–150(–180) µm thick at the base, predominantly moderately convex, dull greyish black to jet-black, smooth, epruinose. *Prothallus* dark brown, 15–25 µm thick and sharply defined between adjacent thalli, or not apparent. *Apothecia* usually numerous, solitary, paired or forming clusters proliferating from a single apothecium, (0.32–)0.75(–1.46) mm wide [n = 310], becoming sessile; margin usually glossy black, entire or minutely uneven and sharply defined between adjacent thalli, or not apparent.


**Etymology**: The epithet *stratosa* (layered) refers to the anatomy of the excipulum in thin section.

**Remarks**

*Megalaria stratosa*, the only exclusively saxicolous lichen among the new species, has a thallus that lacks lichen substances, comparatively short and narrow ascospores, and the epiphytonum reacts violet or purple-violet in N. Most distinctively, it has a multilayered excipulum, with or without a hyaline, amorphous external layer (Fig. 5). Like two of the three other new taxa (but not *M. norfolkensis*), it has a thin hymenium less than 100 µm deep. Another small-sporic saxicolous species, *M. obludens* (Nyl.) Fryday & Lendemer (syn. *M. imshaugii* Fryday), from Chile and Campbell Island, New Zealand, has an anatomically far less intricate excipulum, a thicker hymenium, a thin, dark blue hypothecium and asci 80–85 µm long (Fryday 2004).

**Additional Specimens Examined**

Quarantine: type locality, *H. Streimann* 57532, 57536, 57538, 23.x.1995 (CANB; according to the label, duplicate in B, n.v.); • 32–35 km SE of Cooktown, Slaley Creek, Home Rule, 15°45'S, 145°17'E, 230 m alt., on semi-exposed, siliceous rock, in forest on moderate slope, *H. Streimann* 64530, 29.viii.1999 (CANB; according to the label, duplicate in B, n.v.); • 18 km NNE of Proserpine, Charleys Creek, 20°15'S, 148°38'E, 50 m alt., on basalt in poor, scrubby forest on rocky hillside, *J.A. Elix* 21004 & *H. Streimann*, 30.vi.1986 (CANB). New South Wales, Lord Howe Island: • Max Nicholls Track, 31°31'08"S, 159°03'03"E, 50 m alt., on basalt, in forest on lowland, forest, *J.A. Elix* 32730, 20.vi.1992 (CANB); • Goathouse Cave, at base of escarpment of Mt Lidgbird, 31°33'30"S, 159°05'15"E, 420 m alt., on semi-exposed, siliceous rock, in forest on moderate slope, *H. Streimann* 55842, 7.ii.1995 (CANB; according to the label, duplicate in B, n.v.); • Boat Harbour, 31°33'40"S, 159°05'05"E, 2 m alt., on basalt rocks along foreshore in disturbed lowland vegetation with palms, *J.A. Elix* 42477, 10.ii.1995 (CANB; according to the label, duplicate in B, H, NY, n.v.).


Jagadeesh Ram, TAM; Aptroot, A; Sinha, GP; Singh, KP (2007): A new isidiate Megalaria species and new records of lichenized, lichenicolous and non-lichenized ascomycetes from India. Nova Hedwigia 85, 139–144.


McCarthy, PM; Elix, JA (2016a): Five new lichen species (Ascomycota) from south-eastern Australia. Telopea 19, 137–151.


Su, Q-X; Ren, Q (2017): A new species of Megalaria (Ascomycota, Ramalinaceae) and M. laueri new to mainland China. Phytotaxa 313, 147–150.

Figure 2. *Megalaria crystallifera* (holotype in CANB). Scales = 2 mm.

Figure 3. *Megalaria norfolkensis* (holotype in CANB). Scale = 2 mm.
Figure 4. *Megalaria stratosa*. A, H. Streimann 57533 (holotype in CANB); B, H. Streimann 55842 (CANB). Scales = 2 mm.

Figure 5. Sectioned apothecia of the new *Megalaria* species. (semi-schematic). A, *M. stratosa*; B, *M. australiensis*; C, *M. crystallifera*; D, *M. norfolkensis*. Scale = 0.2 mm.
The genera *Aspicilia* and *Oxneriaria* (Megasporaceae) in Antarctica

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Abstract
Three species are reported from Antarctica: *A. gremmenii* Øvstedal sp. nov., *A. narssaqensis* (Lynge) Thomson, which is new to the Southern Hemisphere, and *Oxneriaria virginea* (Hue) S.Y.Kondr. & L.Lökös, which is already known from the region.

Introduction
Few species of *Aspicilia* A.Massal. and *Oxneriaria* S.Y.Kondr. & L.Lökös have been reported from Antarctica, viz. *O. virginea* (Hue) S.Y.Kondr. & L.Lökös (Halici et al. 2018, as *Aspicilia virginea*) and *Aspicilia cl. aquatica* Körb. (Øvstedal & Lewis Smith 2001). In addition, two other entities, presumed to represent *Aspicilia*, were recognized but not named by Øvstedal & Lewis Smith (2001, 2004). Neighbouring regions also have few species; for example Argentina has six species (Calvelo & Liberatore 2002), the Falkland Islands one (Fryday et al. 2021) and New Zealand seven (Galloway 2007). By contrast, the vast and well-studied landmasses of the Northern Hemisphere support substantial floras, with 97 species known from North America (Esslinger 2019), 40 from Svalbard (Øvstedal et al. 2009) and 104 from Russia (Urbanavichus 2010).

*Aspicilia* has recently been divided into four segregate genera: *Aspicilia* s. str., *Circinaria* Link and *Sagedia* Ach., both resurrected on the basis of molecular evidence (Nordin et al. 2011), and the newly described and mainly molecular-based *Oxneriaria* S.Y.Kondr. & L. Lökös (Moniri et al. 2019). Since the material examined here is too old for molecular analyses, the present species, apart from *O. virginea*, cannot be placed in that system.

Material and methods
All material is deposited in AAS. The specimens were investigated using a Zeiss Stemo 2000C microscope and a Zeiss Axiolab compound microscope. Microscopic details were obtained by examining hand-cut sections. The sections were mounted in dilute lactophenol cotton blue or water. Measurements were made on sections mounted in 10% KOH. Chemical constituents were identified by thin-layer chromatography (Elix 2014).

The species

*Aspicilia gremmenii* Øvstedal sp. nov.                                                                 Fig. 1

Mycobank No.: MB 842490

Thallus of small rosettes, lead grey, with radiating lobes at the margin. Apothecia urceolate, to 0.4 mm in diam. Ascospores 16–20 × 12–17 μm. Paraphyses not moniliform. No chemical products.

Type: Antarctica, Signy Island, Moraine Valley, 60°43’S, 45°37’W, on exposed moraine boulders. T.N. Hooker 639, 1.ii.1974, (holotype—AAS).

Thallus as small rosettes, up to 9 mm wide, subeffigurate, lead grey, partly with a yellowish tinge. Inner part of thallus weakly rimose, in centre with elevated, adpressed fertile areolae 0.4–0.7 mm wide. Radiating at the margin, closely adpressed, minute lobes, darkened at end. No prothallus. Cortex pseudoparenchymatous, 25–35 μm high, the uppermost cells brownish. Photobiont trebouxoid, c. 10 μm in diam. Medulla with numerous colourless oxalate crystals. Apothecia urceolate, round to irregular, 1–4 per areolae, 0.1–0.4 mm in diam. Thalline margin not seen. Proper margin thin, 20–30 μm in upper part, narrowing.