



ASPICILIA ¹

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Aspicilia A.Massal., *Ric. Auton. Lich. Crost.*: 36 (1852).

Type: *A. cinerea* (L.) Körb.

Thallus usually crustose and areolate, occasionally small-foliose, umbilicate, nodulose or subfruticose, ± corticate, sometimes with a well-developed prothallus. Photobiont a unicellular green alga with roundish cells 8–17 µm diam. Ascumata apothecia, roundish, aspicilioid, sunken in the thallus surface, becoming emergent, with a reduced thalline margin formed by the edge of the adjacent thallus. Disc concave to plane, brown to black, occasionally pruinose. Proper exciple very thin and reduced, in section cupulate, poorly differentiated from adjacent tissues. Hypothecium hyaline. Hymenium hyaline, usually hemiamyloid and KI+ intense blue, overlain by a greenish to olive, K+ olive-brown, N+ green epithelial layer (*Aspicilia*-green). Asci clavate, 8-spored, of the *Aspicilia*-type: with a very well-developed, dome-like, non-amyloid tholus and a thin, KI+ blue wall. Paraphyses simple to sparsely branched, moniliform in the upper part, with a globose uppermost cell. Ascospores simple, hyaline, broadly ellipsoid, non-halonate. Conidiomata pycnidia, immersed. Conidia filiform. Chemistry: usually depsidones, especially norstictic acid.

Aspicilia was for many years a heterogeneous assemblage of species that shared a green photobiont, immersed, pseudolecanorine apothecia (termed aspicilioid), asci with a prominent, non-amyloid tholus, simple, hyaline ascospores, a greenish epithecium, moniliform paraphyses and filiform conidia. Although mostly crustose and saxicolous, the genus also included vagrant species with more elaborate growth forms, including those known as “manna lichens”. Molecular studies (e.g. Nordin *et al.* 2010) have seen the subdivision of the genus into more natural units, but *Aspicilia* remains a large genus of some 200 species, widely distributed across all continents, and growing in habitats ranging from semi-inundated in fresh-water streams to hot deserts and polar and alpine environments. In the current classification, it differs from the segregate genera *Circinaria* and *Lobothallia* (both of which occur in Tasmania) by the common occurrence of depsidones and the absence of the fatty acid, aspicilin, the consistently 8-spored asci, and the long, filiform conidia. *Aspicilia* is poorly represented in Tasmania and has been rarely collected and studied. All identifiable collections are ascribed to a single species that also occurs in the Northern Hemisphere. In practice, the genus is readily recognised, and the combination of rather sunken apothecia, the distinctive asci, paraphyses and apothecial pigment, and relatively large ascospores is diagnostic. The asci tend to occur at different heights within the hymenium and tend to rupture easily in standard squash preparations.

Key references: Owe-Larsson *et al.* (2007); Fletcher *et al.* (2009); Nordin *et al.* (2010).

1 *Aspicilia epiglypta* (Norrl. ex Nyl.) Hue

Nouv. Arch. Mus. Hist. Nat. 5, sér. 2: 7 (1912); —*Lecanora epiglypta* Norrl. ex Nyl., *Flora* 64: 4 (1881).

Thallus crustose, areolate, pale to dull grey, sometimes blackened, lacking soredia and isidia, forming small, irregular thalli, usually to c. 50 mm wide, intermixed with other lichens; prothallus absent; individual areoles 0.4–0.8 mm wide, to 300(–500) µm thick, rhomboid to irregularly angular, plane to convex, sometimes

1 This work can be cited as: Kantvilas G (2023). *Aspicilia*, version 2023:1. In MF de Salas (Ed.) *Flora of Tasmania Online*. 2 pp. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery: Hobart). <https://flora.tmag.tas.gov.au/lichen-genera/aspicilia/>

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

becoming gnarled, contiguous but usually separated by deep cracks, in section KI-. Apothecia 0.3–0.6 mm wide, usually roundish or occasionally deformed-ovate, very numerous and dominating the thallus, or rather sparse and scattered, mostly 1(–3) per areole; thalline margin poorly developed, visible as a thin, raised, ± incurved rim surrounding the disc, in section poorly differentiated from the thallus; disc concave, black to grey-black, usually roughened and wrinkled, epruinose; proper exciple to 20–30 µm thick, hyaline, I+ blue. Hypothecium 40–80 µm thick, interspersed with scattered oil droplets. Hymenium 100–160 µm thick, interspersed with scattered, large oil droplets; asci 90–130 × 20–32 µm; paraphyses 2–3 µm thick, with apices 3–4 µm wide. Ascospores 19–24.3–29(–30) × 10.5–14.0–19(–20) µm. Conidia straight, 15–22 × 0.5–0.8 µm.

Chemistry: norstictic and connorstictic acids; medulla K+ yellow→red, KC–, C–, P+ orange; microscope squashes of the thallus yield red, needle-like crystals in K.

Widely scattered but never common, generally on the highest peaks and mostly on the Central Plateau and at Ben Lomond. The majority of specimens tend to be in poor condition with few well-fertile asci. This species is also known from the temperate Northern Hemisphere. It belongs to the *A. cinerea* group (the “core” of the genus) and is distinguished from that species by the longer conidia and larger ascospores. The identification of Tasmanian specimens remains provisional. A sterile but superficially identical taxon containing hypostictic acid has been collected at Mt Rufus. Molecular investigations (by C. Gueidan) suggest it is related to but not conspecific with *A. malvinae* Fryday & T.B.Wheeler from the Falkland Islands, which also contains hypostictic acid. A further sterile taxon (from Ben Lomond) contains stictic acid.

Bisdee Tier, 42°26'S 147°17'E, 640 m, 2009, *G. Kantvilas 258/09* (HO); near Wombat Pool, Cradle Mtn, 41°39'S 145°57'E, 1030 m, 2017, *G. Kantvilas 69/17* (HO); Ben Lomond, c. 750 m SE of Giblin Peak, 41°32'S 147°40'E, 1530 m, 2022, *G. Kantvilas 295/22* (HO).

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INDEX

A	L
<i>Aspicilia</i>1	<i>Lecanora epiglypta</i>1
<i>Aspicilia cinerea</i>1, 2	<i>Lobothallia</i>1
<i>Aspicilia epiglypta</i>1	M
<i>Aspicilia malvinae</i>2	manna lichens.....1
C	
<i>Circinaria</i>1	