Pannaria farinosa

SYNONYMS
Psoroma isidiosum, Psoroma leprolomum, Pannaria isidiosa

FAMILY
Pannariaceae

AUTHORITY
Pannaria farinosa Elvebakk & Fritt-Rasm.

FLORA CATEGORY
Lichen – Native

ENDEMIC TAXON
No

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Lichens - Foliose

CURRENT CONSERVATION STATUS
2018 | Not Threatened | Qualifiers: SO

BRIEF DESCRIPTION
Characterised by the corticolous habit; the orbicular to spreading, bright-green to olive-green thallus and laminal soralia producing white, fine soredia.

DISTRIBUTION
North Island: Northland; Taupo/Ruapehu region; Central Volcanic Plateau. **South Island**: Otago. **Campbell Island**.
Also in Australia (Tasmania), Argentina and Chile.

HABITAT
Appearing to inhabitat colder montane enviroments with lots of moisture.

Dunsdale Recreation Reserve, Southland. Photographer: Melissa Hutchison, Date taken: 18/11/2019, Licence: CC BY-NC.

Corticolous, Stewart Island. Photographer: Marley Ford, Date taken: 10/04/2021, Licence: CC BY-NC.

DETAILED DESCRIPTION

Thallus corticolous, lacinately foliose, closely attached, free at margins, forming 5–10 (–20) cm wide rosettes. **Lobes** 1·5–5·0 mm wide, distinctly concave with incurved margins, irregularly to subdichotomously branched, 0·5–3·0 cm long, coalescing and overlapping centrally, c. 500 µm thick. **Upper surface** matt and smooth, but with a fine cobwebby scabrosity, slightly tomentose towards apices, bluish green when moist in the field, pale greenish grey when dry, herbarium specimens purely grey after the chlorobiont has died, then gradually becoming ochraceous brown. Epicortex paraplectenchymatous with the lowermost cells slightly elongated, pale brown to dark brown (when old), 50–75 µm thick. **Lower surface** ecorticate, white near apices, soon becoming brownish-black and densely rhizinate. Prothallus not developed. Soralia mostly 0·04–0·06 mm, initially labriform, originating from the lower side of ascending and strongly incurving lobe margins, becoming broad, moderately convex, hiding the lobe surface and appearing marginal, sometimes coalescing and covering the whole central part of the thallus. Soredia 30–60 µm wide, with an arachnoid surface similar to the medulla of the thallus, and remaining white as a contrast to the thallus turning brown with age. Major photobiont green, of the Myrmecia type, (8–)10– 12 µm wide, arranged in a continuous layer, 30–40 µm thick. **Cephalodia** laminal, abundant on the lower surface, scattered also on the upper surface, globose to subglobose when young, <0·3 mm wide, becoming slightly flattened and irregular when older and 1·0–1·5 mm wide. Cyanobiont of the Nostoc type, cells 3–4 µm wide, subglobose, blue-green, with no distinct chain structures, 20–50 cells organized within 20–50 µm large glomeruli, defined by a 0·5 m thick sheath. **Apothecia** laminal, substipitate, rare, 1·0– 1·5 mm broad; disc rufous brown; thalline excipulum 0·2–0·4 mm thick, crenulatestriate, often sorediate. Epithecium rufous brown, 15–25 µm thick; hymenium colourless, 75–100 µm thick; hypothecium brownish 100–110 µm thick. **Asci** clavate, 70–90 10–13 µm, with no apical IKI+ structures. Paraphyses simple, rarely branching, 2·5 µm thick, with weakly swollen apices. **Ascospores** ellipsoid, (14–)16–18(–21)(8–)10–11 µm, ovoid, lacrymiform or weakly lenticular, proper cell wall moderately verruculose, surrounded by a perispore generally 1 µm thick, often with wide obtuse apical extensions resulting in a citriform shape, occasionally with an acuminate apical extension in one end, 53 µm in size. Perispore surface mostly verruculose. Pycnidia not seen. **Chemistry**: Vicanicin and leprolomin (major), unidentified ‘P. leproloma terpenoids 1’ and ‘2’ (trace), and ‘3’ and ‘4’ (trace). Scabrosin acetate hexanoate and the unidentified satellite scabrosin ester were detected as accessory compounds in a single Chilean specimen.

SIMILAR TAXA

Pannaria farinosa was recently separated from *P. leproloma*. The most striking difference between these two species is the morphology of the vegetative propagules *or P. leproloma* and *P. farinosa*. In *P. leproloma* they are mostly covered by an epicortex and resemble fine-grained globose to coralloid isidia. However, for the most part they are derived from the ecorticate lower surface, and do not fall within the strict definition of isidia. The isidiomorphs (isidia-like) of *P. leproloma* are distinctly larger, >0.13mm, than the vegetative propagules of *P. farinosa*, which are generally <0.06 mm. The latter are typical soredia. They are always formed from ecorticate surfaces, such as the lower sides of uprolled margins, or from cracks in the epicortex. They have a cobwebby surface and remain medulla-white on storage, contrasting with the olive brownish thallus colour that gradually develops on the upper cortex of herbarium specimens of these species. The corticate isidiomorphs of specimens of *P. leproloma* instead develop the same brown colour as the thalli. The difference is clearly seen when *P. leproloma* and *P. farinosa* grow together. *P. leproloma* sometimes develops a distinct prothallus but this is rarely seen in *P. farinosa*. *P. leproloma* is frequently fertile and *P. farinosa* is rarely fertile. The apothecium morphology and anatomy are similar in the two species. The spores are quite similar but the proper spores are regularly ellipsoid in *P. leproloma*, but are often ovoid, lacrymiform or weakly lenticulate in *P. farinosa*. The proper cell wall in *P. leproloma* is also more regularly and strongly verruculose than in *P. farinosa*. The perispore is quite similar in the two species, except in the apical extensions. In *P. leproloma*, such extensions are rare, most often seen as a weak nodulose extension and only very rarely as a long, attenuate extension. Apical extensions are more common in *P. farinosa*, where they are obtuse and larger, resulting in a distinct citriform appearance of the spore; the extension is occasionally acuminate.

SUBSTRATE

Corticolous

ETYMOLOGY

farinosa = fine, mealy texture. Because of the characteristic fine-textured soralia of the species

ATTRIBUTION

Fact sheet prepared by Marley Ford (17 May 2021). Information in the Brief description, Distribution, Habitat, Features and Similar taxa sections copied from Elvebakk & Fritt-Rasmussen (2007).

REFERENCES AND FURTHER READING

Elvebakk A. and Fritt-Rasmussen J. 2007: The New Zealand lichen *Pannaria leproloma* (Nyl.) PM Jørg. and its panaustral relative *P. farinosa* nom. nov. *The Lichenologist 39*(4): 349-359.

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/pannaria-farinosa/