

Pannaria aotearoana

FAMILY

Pannariaceae

AUTHORITY

Elvebakk & Elix, sp. nov

FLORA CATEGORY

Lichen – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Lichens - Foliose

CURRENT CONSERVATION STATUS

Not Evaluated

BRIEF DESCRIPTION

Thallus foliose, corticolous or saxicolous, forming rosettes 3–15 cm diameter, loosely attached to the substratum, particularly when growing over bryophytes on tree trunks. Upper surface glossy and glabrous, whitish grey when alive and dry, green with a bluish hue when alive and moist.

DISTRIBUTION

North Island: Northland (Hokianga), Waikato, Kaimanawa Mountains (Waipahiki Valley), Taranaki, Manawatu-Wanganui, Central Volcanic Plateau, Wellington. **South Island:** Tasman, Marlborough, Canterbury, West Coast. **Stewart Island/Rakiura. Auckland Islands. Campbell Island/Motu Ihupuku.**

HABITAT

Forest and shrubland



Doughboy Bay, Stewart Island. Photographer: Melissa Hutchison, Date taken: 25/01/2021, Licence: CC BY-NC.



Doughboy Bay, Stewart Island. Photographer: Melissa Hutchison, Date taken: 26/01/2021, Licence: CC BY-NC.

DETAILED DESCRIPTION

Thallus foliose, corticolous or saxicolous, forming rosettes 3–15 cm diam., loosely attached to the substratum, particularly when growing over bryophytes on tree trunks, mostly 200–400 µm thick, lobe apices occasionally thinner. **Lobes** subdichotomously to irregularly branched, 1–2 mm broad, discrete in peripheral parts, coalescing centrally, flat to weakly concave, sometimes with raised margins. phyllidia common, marginal, 2–3 mm broad, 2–4 mm long, 200–300 µm thick, convex with descending apices, occasionally forming coralloid masses. **Upper surface** even or weakly uneven, glossy and glabrous, whitish grey when alive and dry, green with a bluish hue when alive and moist, changing to yellowish-brown after storage in herbaria. Upper cortex 30–60 µm thick, upper half with brown pigmentation in old specimens, upper part sclerenchymatic, otherwise paraplectenchymatic with lumina subglobose to irregularly ellipsoid, 5–12 µm long, walls c.2–4 µm thick. photobiont layer 40–60 µm thick, of globose to subglobose *Trebouxia*, sometimes cf. myrmecia cells, 7–12 µm diam. medulla 100–300 µm thick, lowermost 20–40 µm brown-pigmented. lower cortex lacking; rhizines common, from pale and brush-shaped to squarrose, densely branched and black, sometimes forming a thick, felt-like hypothallus below the thallus, rarely extending beyond the lobe margins as a thin or thick black prothallus. **Cephalodia** scattered, laminal on both the upper and lower surfaces, 0.5–1.5 mm wide, globose, pulvinate or small-placodioid, greyish blue when alive and moist; upper cortex as in the chlorobiont; cyanobiont nostoc, cells bluish-grey, subglobose to irregularly ellipsoid, 3–4.5 × 4.5–7 µm large, organized within spherical glomerules, 10–20 µm large, delimited by a mucilaginous sheath; no chain structures observed. **Apothecia** common, laminal, substipitate, often contorted centrally, 1–4 mm broad, disc concave, greyish rufous brown, always with concentric, ring-like depressions, and often with thalline grains or granules centrally; Thalline excipulum crenulate-striate, c. 0.3 mm wide; epithecium pale brown, 20–35 µm thick, IKI negative; hymenium colourless, but strongly IKI+ blue, 100–120 µm thick; hypothecium light brown, IKI negative, 80–120 µm thick; paraphyses mostly simple, multiseptate, with slightly swollen apices; asci clavate, 13–18 × 80–110 µm large, no internal amyloid structures observed, containing eight ascospores. proper ascospores subglobose to short-ellipsoid, 13.5–18 × 9–13 µm; perispores subglobose to short-ellipsoid, distinctly verrucose, 15–21 × 10.5–16 µm large, single verrucae 1–2 µm wide, 1 µm tall. pycnidia common, marginal or submarginal, on weak laminal ridges or on phyllidia, visible as 0.1 mm wide brown to black-centered verrucae, ostiole fissure-like, conidiospores/spermatia abundant, 2.5–3.5 × 0.5–1.5 µm, bacilliform, occasionally weakly curved, rarely reniform.

Chemistry: Pannarin (major/minor), contortin, O-methyl-leprolomin, porphyrilic acid, '*Pannaria isidiosa* terpenoids 1, 2 and 3' and '*P. gallowayi* terpenoid 1' (majors), '*P. gallowayi* terpenoid 2 and 3' (minor). Porphyrilic acid is lacking from a chemotype mostly present in Auckland and Campbell Islands.

SIMILAR TAXA

Similar to *Pannaria gallowayi*, but differs in having thicker and narrower lobes and by the presence of thick, convex, marginal phyllidia.

SUBSTRATE

Corticolous, rarely foliicolous.

ETYMOLOGY

aotearoana: From the Maori name for New Zealand (although originally the name only referred to the North Island). Derived from the Maori ao 'cloud, daytime, world' and tea 'white' and roa 'long', usually translated as 'land of the long white cloud', a reference to the appearance of the island from the sea.

ATTRIBUTION

Fact sheet prepared by Marley Ford (17 May 2021). Information in the Brief description, Distribution, Features and Similar taxa sections copied from Elvebakk & Elix (2017).

REFERENCES AND FURTHER READING

Elvebakk A, Elix JA. 2017. A trio of endemic New Zealand lichens: *Pannaria aotearoana* and *P. gallowayi*, new species with a new chemo-syndrome, and their relationship with *P. xanthomelana*. *Nova Hedwigia* 105: 167–184. https://doi.org/10.1127/nova_hedwigia/2016/0385.

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/pannaria-aotearoana/>