

Placopsis murrayi

FAMILY

Trapeliaceae

AUTHORITY

Placopsis murrayi D.J.Galloway

FLORA CATEGORY

Lichen – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Lichens - Placodioid

CURRENT CONSERVATION STATUS

2018 | At Risk – Naturally Uncommon | Qualifiers: RR

BRIEF DESCRIPTION

Characterised by the thick, tartareous, closely attached thallus with neatly delimited, pleated margins; a white medulla suffused with a yellow pigment (K+ reddish purple) in the lower parts; conspicuous long, deep, parallel cracks radiating from centre to margins; characteristic immersed, elongated, vein-like cephalodia; immersed aspicilioid apothecia developing centrally; and broadly ellipsoidal to ovoid ascospores, (20–)23–27(–28.5) × 15–17.5 µm.

DISTRIBUTION

North Island: Hawke's Bay (Waipawa Saddle (Lat. 44°S) on the Ruahine Range). **South Island:** Canterbury (Goat Pass at the head of the Mingha Valley near Arthur's Pass (Allison Knight, pers. comm.)), mountains of Otago and Southland between lat 44°30'S and 45°16'S (e.g. Secretary Island, Head of Gorge Burn, S arm of Lake Te Anau, Dusky Sound, Mt Hodges).

Only rarely collected. More widely distributed in high-rainfall areas and is well worth looking for, as it is a most exciting lichen to see in the field.

HABITAT

On hard rocks above treeline in high-rainfall areas close to, but especially west of, the Main Divide in Fiordland, south-western New Zealand. Here, it associates with *Aspiciliopsis macrophthalma*, *Porina guentheri*, *Porpidia macrocarpa*, *Placopsis aspicilioides*, *P. lambii*, *P. subcribellans*, and also with an unidentified, athalline species of *Scolicosporum*. Further north, in West Otago (Hidden Falls), *P. murrayi* co-occurs on damp, moss-covered rocks with *Hypogymnia lugubris*, *Lichina minutissima*, *Mycobilimbia australis*, *Parasiphula fragilis*, *Placopsis subgelida*, *Siphula decumbens*, and *Stereocaulon colensoi*.

The apparent rarity of *P. murrayi*, plus the difficulty in collecting specimens of it from extremely hard rock in remote parts of Fiordland, has meant that comparatively few specimens have so far been collected, and we do not as yet have a very good idea of its ecological requirements. It is not known from Stewart Island or from the subpolar islands to the south (Galloway 2004).



Arthurs Pass. Photographer: Melissa Hutchison, Date taken: 21/02/2020, Licence: CC BY-NC.



Arthurs Pass. Photographer: Melissa Hutchison, Date taken: 21/02/2020, Licence: CC BY-NC.

DETAILED DESCRIPTION

Thallus rosette-forming to irregularly spreading, or in coalescing patches, closely attached to substratum, 400–650(–800) μm thick, tartareous, (1–)2–5(–7) cm diam., without a marginal prothallus, but with a dark-brown to black prothalline zone underlying thallus and attaching to substratum, 150–250 μm thick, overlain by a pigmented, ochraceous zone, 50–100 (–250) μm thick, the pigment commonly visible as an ochraceous zone at base of cracks near centre of thallus, and reacting K+ reddish purple. **Upper surface** pale-pinkish or pinkish white when dry (pale lettuce-green when wet); uniform, smooth or shallowly undulate, minutely maculate through regular discontinuities in photobiont layer, small, isolated clumps of photobiont appearing as minute, green maculae ($\times 10$ lens) when wet; without isidia, pseudocyphellae or pruina; dissected by long, deep, parallel cracks radiating from centre to margins, cracks dividing margins into contiguous, flabellate lobes (1–)2–4(–6) mm wide. **Margins** entire, flat or shallowly convex, suffused brownish, abruptly and neatly delimited. **Medulla** white, with an ochraceous pigment (K+ reddish purple) in lower parts. **Photobiont** green, chlorococcoid, in dense clusters, cells rounded, 5–7 μm diam., in a discontinuous layer 140–150 μm thick. **Cephalodia** immersed, level with thallus surface, elongated, vein-like, never rosette-forming, 1–3 mm wide, 1–3 cm long, dividing into 2–3 branches towards periphery, radiating centrally and penetrating thallus to within 1 cm of margins, pulvish blue when moist, pale pinkish white when dry, surface smooth or cracked, not pruinose; cyanobiont *Scytonema*, in chains, cells compressed, cylindrical to fabiform, 10–12.5 μm diam. **Apothecia** immersed, aspicilioid, developed on central areolae and delimited by narrow to deep cracks, solitary to 2–4-together, round to irregular or deformed through mutual pressure, 0.5–1.5(–2.5) mm diam., disc concave to plane, red-brown, covered with a thin to thick, pinkish or pale-brownish pruina. **Thalline margin** prominent, entire, smooth to minutely papillate, swollen, 0.2 mm thick, pale-pinkish. Proper margin very thin, visible as a pale-pinkish rim to disc, often separated from thalline margin by a narrow crack. Epithecium brownish, granular, 15–30 μm thick. Hymenium hyaline to pale yellowish brown, 150–200(–225) μm tall. Hypothecium opaque, densely interwoven, yellow-brown to dark red-brown. **Asci** cylindrical, 130–150 \times (12–)15–20 μm . **Ascospores** uniseriate in ascus, broadly ellipsoidal to oval, apices rounded or pointed, (20–)23–27(–28.5) \times 15–17.5 μm . **Pycnidia** widely scattered, immersed in thallus, 250–350 μm diam., ostiole punctiform-depressed, pale red-brown. Conidia not seen.

Chemistry: Thallus K– (above), K+ red-purple (lower medulla), C+ red, KC+ red, Pd–; containing gyrophoric acid (major), 5-O-methylhiassic acid (minor), lecanoric acid (minor), and two unidentified anthraquinones (minor) reacting K+ red-purple.

SIMILAR TAXA

It is distinguished from *Aspiciliopsis macrophthalma* by the elongated vein-like cephalodia, and the differing chemistry (Galloway 2013). The Campbell Island endemic, *P. venosa*, has smaller ascospores, narrower cephalodia, and a different chemistry (Galloway 2007).

SUBSTRATE

Saxicolous

ETYMOLOGY

murrayi: This species was first collected by the late James Murray (1923–1961), in February 1959, from rocks in subalpine grassland above treeline on Secretary Island in Fiordland. Murray noted on his collection that the species was rare in this locality, and he recorded it as “*Placopsis* (*Aspiciliopsis*) new sp.” (Murray 1963a: 230). It is named in his honour.

The development of branched, elongated, vein-like, immersed cephalodia in the New Zealand species *P. murrayi* and *P. venosa* is a remarkable advance on the more usual, orbicular, flattened-effigurate to hemispherical type of cephalodia found in all other species (Galloway 2013).

ATTRIBUTION

Fact sheet prepared by Melissa Hutchison (27 March 2022). Brief description, Distribution, Habitat, Features, and Similar taxa sections copied from Galloway (2007, 2013).

REFERENCES AND FURTHER READING

- Galloway DJ. 2004. *Placopsis hertelii* (Agyriaceae, Ascomycota) endemic to New Zealand, with descriptions of four additional new species of *Placopsis* (Nyl.) Linds., from New Zealand. *Bibliotheca Lichenologica* 88: 147–161.
- Galloway DJ. 2007. Flora of New Zealand Lichens. Revised 2nd edition including lichen-forming and lichenicolous fungi. In two volumes: vol. 1 pp 1–1006; vol. 2 pp 1007–2261). Manaaki Whenua Press, Lincoln, NZ. 2261 p.
- Galloway DJ. 2013. The lichen genera *Aspiciliopsis*, and *Placopsis* (Trapeliales: Trapeliaceae: Ascomycota) in New Zealand. *Phytotaxa* 120(1): 1–194. <https://doi.org/10.11646/phytotaxa.120.1.1>.

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/placopsis-murrayi/>