

Lithothelium australe

FAMILY

Pyrenulaceae

AUTHORITY

Lithothelium australe Aptroot et H.Mayrhofer

FLORA CATEGORY

Lichen – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Lichens - Crustose

CURRENT CONSERVATION STATUS

2018 | Data Deficient

BRIEF DESCRIPTION

Grey, grey-green crust (with immersed thallus) inhabiting limestone. Fruiting bodies conical, black.

DISTRIBUTION

Endemic. New Zealand. **South Island** (North Westland - Bullock Creek). **Chatham Islands/Rekohu** (Chatham Island - known so far from two sites: Big Bush and Te Matarae Road, see de Lange 2022).

HABITAT

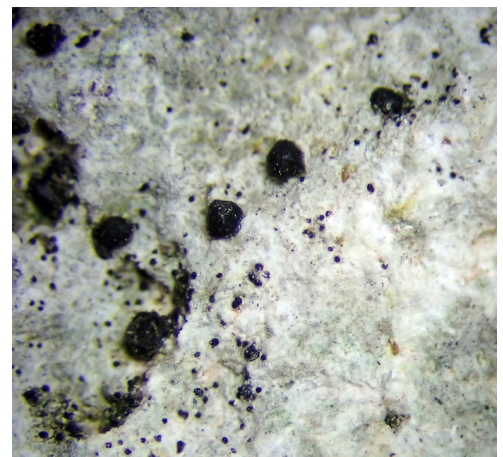
Hard, crystalline limestone, where it has been found on exposed karrenfield.

DETAILED DESCRIPTION

Thallus when moist grey, grey-green, drying white, dull, immersed in substrate such that it resembles weathered limestone, continuous without marginal prothallus. **Photobiont** green. **Perithecia** numerous, simple or with fused ostioles and fused walls, lacking pseudostromatic tissues and crystals, conical, erumpent (not flattened) from substratum, exposed, 0.5-0.7(-0.9) mm diameter, 0.3-0.6 mm tall. **Ascocarp** wall carbonised, without distinct clypeus, up to 150 µm. Ostiole brown, obconical, skewed 100-200 µm diameter. Hamathecium not interspersed with oil droplets, not gelatinised, Iodine negative. Interthecial hyphae true paraphyses, only branched at tips. 1 µm thick. Periphyses absent. **Asci** with saggitiform ocular chambers, 80-100 × 12-15 µm. **Ascospores** uniseriate. red-brown, fusciform with subacute apices, symmetrically septate, not constricted at septa 20-26 × 6-8 µm; with 3 distosepta, 1 µm thick. Endospore up to 3 µm thick. Spore wall smooth, without granules, without gelatinous sheath. **Pycnidia** black, 100-200 µm diameter, wall completely carbonised, up to 40 µm thick. **Conidia** acrogenous, colourless, filiform, 6-10 × 0.2-0.4 µm. **Chemistry:** TLC-, all reactions negative.



Lithothelium australe in situ on hard, crystalline limestone, Te Matarae Road, Rekohu (Chatham Island). Photographer: Peter J. de Lange, Date taken: 09/05/2022, Licence: CC BY.



Perithecia and pycnidia of Lithothelium australe. From herbarium specimen collected from Te Matarae Road, Rekohu (Chatham Island). Photographer: Peter J. de Lange, Date taken: 09/05/2022, Licence: CC BY.

SIMILAR TAXA

Lithothelium is perhaps most similar to *Pyrenula*. The New Zealand *Pyrenula* differ from *Lithothelium australe* by their corticolous / lignicolous rather than saxicolous habit, mostly united rather than usually simple perithecia united by a common stroma, unbranched paraphyses, and mostly broadly ellipsoidal rather than fusiform ascospores that range from 30-70 × 11-35 µm rather than 20-26 × 6-8 µm. In the field *Lithothelium australe* is best recognised by the inconspicuous, immersed thallus, that is grey to grey-green when wet, whitish when dry, and numerous, erumpent, black, simple or fused perithecia. The ascospores are red-brown and usually 3-septate. Pycnidia are black, minute and abundant.

SUBSTRATE

Saxicolous (limestone)

ETYMOLOGY

australe: Southern, from the Latin australis

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange (3 June 2022). Description modified from Aptroot & Mayrhofer (1991) by P.J. de Lange.

REFERENCES AND FURTHER READING

Aptroot, A.; Mayrhofer, H. 1991: *Lithothelium australe* spec. nova, a new lichen from New Zealand. *Mycotaxon* 41: 219-222.

de Lange P. 2022: iNaturalist observation. <https://inaturalist.nz/observations/119556818>. Date accessed: 2 August 2022.

NZPCN FACT SHEET CITATION

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MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/lithothelium-australe/>