

# Pseudocyphellaria maculata

## FAMILY

Peltigeraceae

## AUTHORITY

Pseudocyphellaria maculata D.J.Galloway

## 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 a loose straggling habit (especially in alpine grassland); linear-elongate, dichotomously branching lobes with entire margins that are dotted with minute, yellow pseudocyphellae; a conspicuously faveolate upper surface with a well-defined reticulate pattern of white maculae ( $\times 10$  lens), and lacking isidia, phylidia pseudocyphellae and soredia; and a complex chemistry of depsidones, a hopane-triol, and a range of depsidones including salazinic and galbinic acids, compounds rarely found in species of *Pseudocyphellaria* in New Zealand. Specimens from shaded habitats are larger, paler in colour and thinner in texture than specimens from exposed habitats, which tend to be more coriaceous and strongly red-brown in colour.

## DISTRIBUTION

**North Island:** Hawke's Bay (Kuripapango). **South Island:** North West Nelson to Otago (Maungatua). Close to and East of the Main Divide. Known also from Irian Jaya and Papua New Guinea.

## HABITAT

In subalpine grasslands or on successional shrubs in areas modified by fire, 300 – 1,200 m. Most commonly found at the bases of tussocks or beneath alpine shrubs or herbs.



Terricolous, Castle Hill Canterbury.  
Photographer: Marley Ford, Date taken:  
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## DETAILED DESCRIPTION

**Thallus** irregularly spreading, (2-)5-15 cm diam., loosely attached, corticolous. **Lobes** ± linear-elongate, subcanalicate to plane, subdichotomously to irregularly or complexly branched, 1-10 mm wide and 0.5-5 cm long, margins entire, slightly thickened, occasionally ± ascending, rarely subdenticulate with raised, yellow pseudocyphellae. **Upper surface** shallowly to deeply faveolate, interconnecting ridges smoothly rounded or sharp, dark grey-blue when wet and conspicuously white-maculate in well-defined patterns (×10 lens), pale greyish or greenish-grey to greyish-buff when dry, sometimes suffused reddish-brown in parts, matt or slightly shining, often irregularly cracked, minutely scabrid-areolate in parts. **Medulla** white. **Photobiont** blue-green. **Lower surface** pale whitish-buff, distinctly wrinkled-bullate, ± evenly tomentose to margins, tomentum thin, silky, short, white or buff, thicker and darker (becoming brown) centrally. **Pseudocyphellae** minute, bright yellow, round, 0.05-0.3 mm diam., scattered, slightly raised above tomentum, decorticate area plane, margins not prominent. **Apothecia** marginal or submarginal, subpedicellate, 0.5-3.5 mm diam., plane to shallowly convex-undulate, disc in young stages obscured by margins, at maturity dark red-brown to black, matt, epruinose, margins denticulate, pale buff or flesh-coloured, often obscured by disc, exciple corrugate-scabrid, buff or pale flesh-coloured. **Ascospores** biseriate, brown, mainly polaribilocular, occasionally 3-septate, 20-30.6 × 8.3-10.2 µm. **Pycnidia** occasional to frequent, scattered, black, punctiform, minute.

**Chemistry:** Methyl evernate (tr.), tenuiorin, methyl lecanorate (tr.), methyl gyrophorate, evernic acid (tr.), gyrophoric acid (tr.), hopane-6 $\alpha$ ,7 $\beta$ ,22-triol, norstictic (tr.), salazinic, consalazinic, galbinic acids, pulvinic acid, pulvinic dilactone and calycin.

## SIMILAR TAXA

It is separated from *P. crassa* by the pale, thinly tomentose, bullate lower surface, from *P. crocata* by the absence of soredia and from *P. neglecta* by the absence of marginal phyllidia.

Until recently it was believed that *P. lechleri* was restricted to southern South America; material previously reported from New Zealand (Galloway 1985) was subsequently referred to *P. maculata*. However, phylogenetic data suggest that *P. maculata* may be conspecific (Lücking *et al.* 2017), which would result in a temperate Southern Hemisphere (austral) distribution when recognizing a single species. Both *P. lechleri* and *P. maculata* are reported as mostly terrestrial in open grasslands and more rarely as epiphytes (Galloway 2007). For *P. lechleri*, Galloway (1992) observed a predominantly terrestrial growth in the more southern, open grasslands, whereas in the more northern *Fuscospora* forests, the species is commonly found on mossy logs and tree bases and rarely as epiphyte.

A single specimen identified as *Pseudocyphellaria maculata* from New Zealand clusters with South American *P. lechleri*, with identical ITS sequences. *Pseudocyphellaria maculata* was originally distinguished from *P. lechleri* on rather subtle characters, such as supposedly flat lobes with shallower ridges, a thinner tomentum of the lower surface, and the epiphytic as opposed to terrestrial growth habit. However, *P. maculata* was later reported as commonly growing terricolous (Galloway 1985, 2007), and its described morphological variation is similar to that of *P. lechleri*, in particular the distinctly faveolate thallus. Galloway (2007) maintains several differences between the two taxa, including narrower lobes and the presence of galbinic and salazinic acid in *P. maculata*. Considering that the sequenced material of *P. maculata* from New Zealand was identified by Galloway, it is tempting to conclude that the proposed differences might not hold up and the two names best be synonymized. However, we refrain from doing so until a larger number of specimens from New Zealand has been studied. Notably, a recently collected sorediate specimen from New Zealand also clusters phylogenetically with the apotheciate *P. maculata*.

## SUBSTRATE

Terricolous

## ETYMOLOGY

**maculata:** From Latin 'macula' blotch, meaning blotchy

## ATTRIBUTION

Fact sheet prepared by Marley Ford (6 August 2021). Brief description, Distribution, Habitat, Features and Similar taxa sections copied from Galloway (1985, 2007) and Lücking *et al.* (2017).

## REFERENCES AND FURTHER READING

- Galloway D.J. 1985: *Flora of New Zealand: Lichens*. Wellington: PD Hasselberg, Government Printer. 662 pp.
- Galloway D. J. 1992: *Studies in Pseudocyphellaria (lichens) III*. The South American species. *Bibliotheca Lichenologica* 46: 1-275.
- Galloway D.J. 2007: *Flora of New Zealand: Lichens, including lichen-forming and lichenicolous fungi*. 2nd edition. Lincoln, Manaaki Whenua Press. 2261 pp.
- Lücking R., Moncada B., McCune B., Farkas E., Goffinet B., Parker D., Chaves J.L., Lőkös L., Nelson P.R., Spribille T. and Stenroos S. 2017: *Pseudocyphellaria crocata* (Ascomycota: Lobariaceae) in the Americas is revealed to be thirteen species, and none of them is *P. crocata*. *The Bryologist*, 120(4): 441-500.

## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/pseudocyphellaria-maculata/>