

## A New Species of *Chondropsis* (Lichenised Ascomycotina) from Australia and New Zealand

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### Abstract

Elix, John A., and Child, Peter. A new species of *Chondropsis* (lichenised Ascomycotina) from Australia and New Zealand. *Brunonia* 9: 113-15 (1986). A new lichen species, *Chondropsis sorediata*, is described from Australia and New Zealand.

### Introduction

The lichen genus *Chondropsis* Nyl. (Parmeliaceae) is found only in the Southern Hemisphere in mainland Australia and the South Island of New Zealand. *Chondropsis* Nyl. is a later homonym of *Chondropsis* Raf. (Gentianaceae), but has now been proposed for conservation (Hawksworth and Cannon 1983). This lichen genus has long been considered to be monotypic (Bibby 1955; Filson 1967; Filson and Rogers 1979; Galloway 1980, 1985) but we now report the occurrence of a second highly distinctive morphotype in this genus.

### *Chondropsis sorediata* Elix & Child, sp. nov. (Fig. 1)

Thallus ut *Chondropsis semiviridis* sed superficie superiore sorediata ad apices loborum differt.

*Typus.* New Zealand. Otago. Scattered on soil amongst sparse grasses, old terrace just below Victoria Bridge, Waitiri, Kawarau Gorge, 290 m. *Peter Child 2338 pr.p.*, 1.v.1985; CHR — holotype.

*Thallus* foliose, loose on soil, pale yellow to pale yellow-green, becoming pale olive-green with age, forming rosettes 1-2 cm in diameter (wet), these contracting into convex clumps when dry, 0.5-1.0 cm in diameter; *lobes* linear-elongate, 1.0-2.0 mm wide, dichotomously branched, separate, not at all imbricate, apices rounded, curling inwards when dry, the thallus becoming subspherical with the underside of the lobes outermost. *Upper surface* often shiny, smooth, weakly maculate, soreciate, the apices (and rarely the margins) of the lobes becoming swollen and developing terminal, sublauriform soralia, the soredia farinose; medulla white; *lower surface* rarely shallowly caniculate in part, pale yellow to dull buff, minutely wrinkled, erhizinate. *Apothecia* very rare, sessile to substipitate, 0.5-2.0 mm in diameter, disc shallowly concave, reddish brown, amphithecium smooth or becoming soreciate, margin thick and prominent, crenulate or minutely fissured, ultimately soreciate, concolorous with the thallus; spores (8), colourless, ellipsoid, 5-6 by 2.5  $\mu$ m (may be immature).

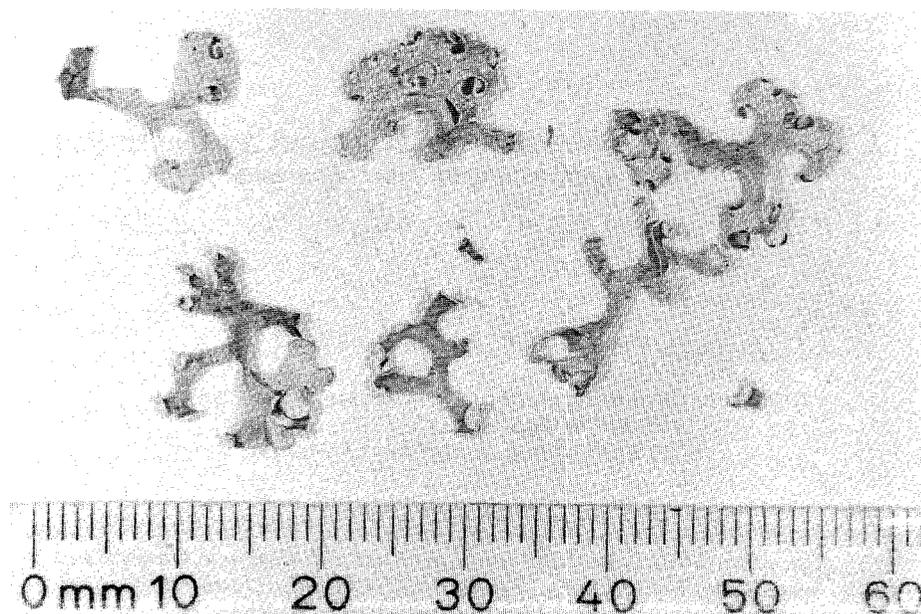


Fig. 1. *Chondropsis sorediata* Elix & Child (J. A. Elix 11437 in ANUC).

**Chemistry.** Cortex K–, medulla K+ pale brown, C–, P+ orange-red; containing usnic acid, fumarprotocetraric acid, succinprotocetraric acid and protocetraric acid ( $\pm$  trace).

Morphologically this distinctive new species bears a close resemblance to the much more common *C. semiviridis* (Nyl.) Nyl., with similar thalli growing loose on soils which form rosettes when moist, but contract into convex clumps when dry. Such clumps are readily borne along by the wind and in the case of *C. semiviridis*, often form dense accumulations of the thalli in sheltered niches of the open, elevated, semi-arid grasslands of central Otago in New Zealand and the Southern Tablelands of New South Wales. The distribution and ecophysiology of *C. semiviridis* in Australia have been investigated in detail by Rogers (Rogers 1971).

*C. sorediata* is clearly distinguished from *C. semiviridis* by the presence of soredia, and even though *C. sorediata* is usually sympatric with *C. semiviridis*, *C. sorediata* is a much rarer and more scattered species. When the two species do co-occur, *C. sorediata* generally can be distinguished by its deeper and duller colour (a darker olive-green tinge to the thallus) as well as the distinctive soralia. It would appear that *C. sorediata* has two modes of vegetative reproduction, that is by fragmentation of the thallus as well as from the soredia.

Although these two taxa are chemically identical we consider them to be separate species with *C. sorediata* being the sorediate counterpart of *C. semiviridis*. The concept of pairs of species that are chemically and morphologically identical except for the production of vegetative propagules by one, has received considerable recent attention (Poelt 1970, 1972; Tehler 1983) with the authors coming to conflicting conclusions. At the present time we favour distinguishing the two *Chondropsis* taxa at species level because of the accompanying differences in the geographic distribution as well as the morphological differences. In contrast to *C. semiviridis* which is common and widely dispersed throughout the drier areas of southern Australia and the South Island of New Zealand, *C. sorediata* appears to be very rare in south-eastern Australia (only one collection examined) but reasonably common with more limited distribution in New Zealand.

These two species also differ in ecological preferences. Whereas *C. sorediata* is restricted to cooler, subalpine semi-arid lands, *C. semiviridis* occurs both in these areas and in warm, hot semi-arid and arid areas.

In New Zealand this new species is found in semi-arid areas of induced steppe in the South Island (central and north Otago, Mackenzie country and Hakataramea valley) where it occurs most commonly at altitudes of 640–700 m in open grassland with patches of bare, eroded soil and alluvial terraces heavily grazed by sheep and/or rabbits, and may be associated with other soil lichens including *C. semiviridis*, *Cladia aggregata* (Sw.) Nyl., *Xanthoparmelia concomitans* Elix & Johnston, *X. molliuscula* (Ach.) Hale, *X. reptans* (Kurok.) Elix & Johnston and *X. flavescens* (Gyelnik) D. Gall.

### Specimens Examined

AUSTRALIA: New South Wales. On soil in grazed grassland on ridge, Rock Flat Creek, Cooma–Numeralla road, 10 km north-east of Cooma, 36°12'S.; 149°13'E.; 840 m, *J. A. Elix 11437*, 15.xi.1983 (ANUC).

NEW ZEALAND. All collections on soil amongst sparse grasses. South Island. Canterbury. Hakataramea Pass road junction, west side (Tekapo Basin), 550 m, *Peter Child 2394*, 2.vi.1985 (P. Child); Hakataramea Pass road, east side near Dalgety Stream, 790 m, *Peter Child 2398*, 2.vi.1985 (CBG, P. Child). Otago. Tucker Hill road, Alexandra, 200 m, *Peter Child 2203*, 10.iii.1985 (P. Child); "Dog Trial" river terrace, 3.5 km north of Lowburn, 210 m, *Peter Child 2211*, 15.iii.1985 (ANUC, P. Child); road verge near Lindis Crossing, 240 m, *Peter Child 2262*, 8.iv.1985 (ANUC, P. Child); field adjacent to cemetery, Muir Road, Hawea Flat, 370 m, *Peter Child 2270*, 9.iv.1985 (MEL, P. Child); near Duntroon, Waitaki Valley, 210 m, *Peter Child 2373*, 28.v.1985 (P. Child).

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