

***Erioscyphella* in New Zealand**

P.R. Johnston, November 2021

Based on multi-gene phylogenies (e.g. <https://doi.org/10.7931/gx9a-c781>) *Lachnaceae* forms a well-supported clade within *Helotiales*, sister to *Solenopezziaceae*. Within *Lachnaceae*, *Erioscyphella* forms a well-resolved clade (Fig. 1), and based on an ITS phylogeny, New Zealand has at least nine species within this clade (Fig. 2).

In addition, although separate in the ITS gene tree, another two New Zealand species are phylogenetically close, one is '*Lachnellula*' *rhopalostylis* and the second is referred to '*Lachnum*' *palmae* (Fig. 1). They cluster within *Erioscyphella* with strong support in the multi-gene analysis, but form a long branch within the *Erioscyphella* clade. Both fungi have the thick-walled, gelatinous excipular tissue characteristic of *Erioscyphella*. If they were to be placed in their own genera, the remainder of *Erioscyphella* would be paraphyletic.

The New Zealand specimens of '*Lachnum*' *palmae* are phylogenetically distinct to those referred to the same species from Japan and China. Both represent a fungus morphologically typical of *Erioscyphella* (*Lachnum*-like but with thick-walled, gelatinous excipular tissue), have filiform ascospores greater than 50 µm long, and are found on palms. Whether either the Japanese or the New Zealand fungi phylogenetically match the morphologically similar tropical American type population on '*L.*' *palmae* is unknown.

'*Lachnellula*' *rhopalostylidis* is phylogenetically distinct from other *Lachnellula* species with DNA sequence data, e.g. *Lachnellula suecica*, KC464642 (CBS 268.59 ex Muller ex France), *L. flavovirens*, etc, but the type species *L. chrysophthalma* remains unsequenced. Spooner (1987) did not accept '*L.*' *rhopalostylidis* as *Lachnellula*, suggesting *Crocicreas* as a more likely genus. This no doubt reflects the highly gelatinous excipular tissue of '*L.*' *rhopalostylidis*, morphologically reminiscent of *Crocicreas* but phylogenetically distant from the type species *Crocicreas gramineum* (see <https://doi.org/10.7931/gx9a-c781>). A highly gelatinous excipulum is not out of place for *Erioscyphella* in the sense it is accepted here.

Other named New Zealand species in the *Erioscyphella* clade include *Erioscyphella abnormis*, *E. brasiliensis* and two species that need recombining into *Erioscyphella*, '*Lachnum*' *berggrenii* and '*Lachnum*' *nothofagi* (Fig. 2). Unnamed New Zealand species include two species on tree ferns (one on *Cyathea smithii*, the other on *C. dealbata* and on *C. australis* in Australia, both with a *Cyathicula*-like excipulum, differing in ascospore size), a species on *Dracophyllum* leaves, a species on *Phormium* leaves, a species on *Asplenium polypodium* fronds, and a species on bark of fallen wood. Another unnamed Australian species on *Dracophyllum* and *Richea* leaves is also represented in the ITS tree (Fig. 2).