



***Chaenothecopsis neocaledonica* sp. nov.: The first resinicolous mycocalicioid fungus from an araucarian conifer**

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Abstract

A new resinicolous species of the genus *Chaenothecopsis* (Ascomycota, Mycocaliciales) is described from resin of *Agathis ovata* in New Caledonia. *Chaenothecopsis neocaledonica* sp. nov. is the first mycocalicioid fungus to be described from the exudates of Southern Hemisphere conifers of the family Araucariaceae. It is easily distinguished from related Northern Hemisphere species by its larger ascospores and unique capitulum structure.

Key words: Araucariaceae, exudate, resinicolous fungi

Introduction

Chaenothecopsis Vainio (1927: 70) is a genus of ascomycetes in the order Mycocaliciales (Mycocaliciomycetidae). Species in the genus are either saprotrophic on wood (lignicolous) or resin (resiniculous), or associate with atmophytic green algae (algicolous) or green algal symbionts of lichens (lichenicolous) (e.g. Tibell 1999, Titov 2006, Tuovila 2013). Recent molecular studies have shown that *Chaenothecopsis* is polyphyletic, but taxonomic changes await wider taxon sampling that is needed to resolve the generic delimitations within the family and order (Tibell & Vinuesa 2005, Tuovila *et al.* 2013).

The majority of previously known resinicolous mycocalicioid species grow on resins of Northern Hemisphere conifers, especially different species of Pinaceae (Titov & Tibell 1993, Tibell & Titov 1995, Rikkinen 2003a, Tuovila *et al.* 2011b). Species on conifer resin have been described from both Eurasian and North-American boreal and temperate forests. Several other *Chaenothecopsis* species live on angiosperm exudates and these include temperate, subtropical and tropical taxa (e.g. Funk & Kujt 1982, Samuels & Buchanan 1983, Tuovila *et al.* 2011a).

Here, we describe a new resinicolous *Chaenothecopsis* species growing on resin of *Agathis ovata* (C. Moore ex Vieillard) Warburg (1900: 186) in New Caledonia, a geologically old island in the southwest Pacific Ocean (Figure 1). The new species is the first resinicolous mycocalicioid fungus from the conifer family Araucariaceae, the natural range of these conifers is mainly restricted to the Southern Hemisphere.

Material and methods

Resiniculous fungi were collected in 2011 from semi-solidified resin flows on trunks of *Agathis ovata* (Araucariaceae) from two locations in the Southern Province of New Caledonia (Figures 1 and 2). The first site (type locality) is along the road RP 3 about 5 km west of Yaté (Figure 2B). The second site is along road GR NC1 in Blue River Provincial Park near the Refuge des Scientifiques (Figure 2A). The vegetation at both sites is semi-open maquis scrubland, typical of ultramafic rocks in south-eastern New Caledonia.

between mycocalicean fungi and conifer exudates is at least 35 to 50 million years old (Rikkinen & Poinar 2000, Tuovila *et al.* 2013). While the early evolution of the resinicolous ecology remains unclear, all the *Chaenothecopsis* clades with species on conifer resins are clearly distinct from the single clade of species from angiosperm exudates (Tuovila *et al.* 2011a, 2013).

We prospected for mycocalicioid fungi on several *Agathis* and *Araucaria* species in different locations (see Figure 1). *Agathis ovata* was checked near Yaté, in the Rivière Bleue Park, along Mont Dzumac road, and along the Mont Humboldt trail, however, *Chaenothecopsis neocaledonica* was only found on two trees in the Yaté site and on one tree trunk in Rivière Bleue. Although we were unable to find further *Chaenothecopsis* specimens, some localities harbour complex resinicolous communities that will be described in separate papers.

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