



A new species of *Tremella* from Macaronesia

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Abstract

Tremella laurisilvae, a species new to science with a parasitic strategy on *Biscogniauxia* species, is described from the evergreen laurel forests of Macaronesia. The basidiocarps are macroscopically differentiated by finger-like lobes and brown-orange colour. Micromorphological differences with phylogenetically related species are evaluated and its phylogenetic placement in Tremellomycetes is inferred from ITS rDNA sequences. A detailed description, plate with photographs and a key to species from Europe and Macaronesia are provided.

Keywords: Basidiomycota, Canary Islands, Heterobasidiomycetes, Madeira, Tremellales

Introduction

The jelly fungi, traditionally placed in the class Heterobasidiomycetes, have been revealed as a polyphyletic group in Agaricomycotina and split into three currently accepted classes: Tremellomycetes, Dacrymycetes and Agaricomycetes (Hibbett 2006). One of the best known genera, *Tremella* Pers., includes parasitic species that grow on or in association with ascocarps of the Ascomycota or basidiocarps of the Basidiomycota as well as lichens (Diederich 1996). *Tremella* is a cosmopolitan genus of around 120 species (Scorzetti *et al.* 2002, Millanes *et al.* 2011).

Tremella exhibits an extraordinary macromorphological variability of basidiocarps (cerebriform, foliose, lobed, pulvinate) and colour (white, yellow, orange, brown). Some species have relatively large, gelatinous basidiocarps (e.g. *T. foliacea* Pers., *T. mesenterica* Retz.), while other species parasitize the hymenium of hosts without creating basidiocarps (e.g. *T. giraffa* Chee J. Chen, *T. polyporina* D.A. Reid). The basidia can be globose, ovoid, pyriform or clavate, longitudinally and/or obliquely septate, with cylindric sterigmata that are variable in length, with or without swollen apex and subglobose to oval basidiospores. The species treated herein could be related to one of the three following groups: *T. fuciformis*, *T. indecorata* or *T. foliacea* that are mainly differentiated by: (1) colour and size of basidiocarps, (2) morphology of the lobes, (3) parasitic or saprobic nutritional modes, (4) presence of clamped hyphae, (5) morphology of vesicular cells below the hymenium, (6) presence/absence and morphology of conidiogenous cells, (7) morphology of terminal cells in the sterile surface of basidiocarps, (8) sterigmata morphology, and (9) morphology of basidiospores (Chen 1998).

While eleven species of *Tremella* have been reported from Macaronesia, only three of them are not lichenicolous: *T. foliacea* Pers., *T. mesenterica* Retz. and *T. coffeicola* (Berk.) P. Roberts. The former two species have been reported in almost all the archipelagos, except Cabo Verde, and the latter one is only present in the Azores (Bañares Baudet 2005, Beltrán-Tejera 2010, Melo *et al.* 2010a, 2010b). The lack of biodiversity of *Tremella* in Macaronesia is surprising considering there are suitable humid habitats, such as the evergreen laurel forest, present in most of the archipelagos. Evergreen laurel forests are cloud forests that develop between 350–1500 m under the influence of Northeast trade winds and the highest mean annual precipitation in the Canary Islands (500–1200 mm). These forests are composed of perennial broadleaved laurifolious trees (*Apollonia barbujuana*, *Ilex canariensis*, *Laurus novocanariensis*, *Morella faya*, *Ocotea foetens*, *Persea indica*, *Prunus lusitanica* subsp. *hixa*, etc.), and ericoid species (*Erica arborea*, *E. platycodon*) on the ridge-crest (Del-Arco *et al.* 2010).

The species presented in this paper was found in the evergreen laurel forest and does not correspond with any known species (Martin 1952, Lowy 1971, Jülich 1984, Torkelsen 1997, Chen 1998); we hereby describe it as a new species.