



Campylospora brasiliensis, a new species of freshwater fungi from Brazil

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Abstract

Campylospora brasiliensis is a new freshwater fungus that has been collected from submerged mixed leaf litter in the Brazilian Atlantic Rainforest. A molecular phylogenetic analysis based on ITS sequences of the rDNA reveals it as a new species. Comparison with other species of *Campylospora* is provided.

Key words: anamorphic fungi, ingoldian fungi, ITS sequences, phylogeny, taxonomy

Introduction

Among the freshwater fungi, the ecological group of ingoldian fungi presents conidia with typical tetra- or polyradiate and varyingly branching. The conidia are produced almost exclusively on conidiophores ranging from the leaf tissue into water. These fungi contribute to decomposition of leaves or woody debris by the release of extracellular enzymes and so increase their palatability for shredders, through nutritional enrichment (Bärlocher 1992, Cheng *et al.* 1997, Goh 1997).

The genus *Campylospora* (Ranzoni 1953: 373) has been cited worldwide, e.g. in Africa: South African Republic (Webster *et al.* 1994); Americas: Argentina (Arambarri & Spinedi 1984), Brazil (Schoenlein-Crusius & Milanez 1990, Malosso 1995, Schoenlein-Crusius 2002, Fiuza & Gusmão 2013), Ecuador (Matsushima 1993), Hawaii (Ranzoni 1979), Peru (Matsushima 1993), Venezuela (Nilsson 1962, Cressa & Smits 2007, Smits *et al.* 2007, Silva & Briedis 2009), U.S.A. (California, Ranzoni 1953); Asia: India (Sridhar & Kaveriappa 1992), Thailand (Tubaki *et al.* 1983, Sakayaroj 2005); Europe: England (Ingold 1974), Spain (Casas & Descals 1997), Austria (Regelsberger *et al.* 1987); Oceania: Australia (Cowling 1963), New Zealand (Aimer & Segedin 1985).

The distribution of the species of *Campylospora* is known from biodiversity studies based on microscopic examination of natural leaf litter samples or of conidia obtained in the laboratory by enhancing the fungal sporulation in previously colonized leaves in water samples. However, several misinterpretations in identifying the species occur frequently, leading to biased data on distribution of the genus (Fiuza & Gusmão 2013, Marvanová & Laichmanová 2014). Thus, complete characterization and description of new species is only appropriate if based on the taxa isolated in pure culture (Fiuza & Gusmão 2013).

During the survey of aquatic hyphomycetes inhabiting submerged mixed leaf litter in waterfalls situated in the “Parque Estadual de Ilhabela”, an important fragment of Brazilian Atlantic Rainforest, conidial fungus, morphologically matching the genus *Campylospora*, was detected. Supported by phylogenetic analysis from ITS region the rDNA, *C. brasiliensis* is described as a new species.

Material & Methods

Collection of samples

At Toca waterfall, Cemitério stream, Caminho da Praia Vermelha river, Tesouro da Colina waterfall, all situated in