Phytotaxa 218 (2): 128–136
www.mapress.com/phytotaxa/

Article

ISSN 1179-3155 (print edition)
PHYTOTAXA
ISSN 1179-3163 (online edition)

http://dx.doi.org/10.11646/phytotaxa.218.2.2

The phylogenetic position of *Coniarthonia* and the transfer of *Cryptothecia miniata* to *Myriostigma* (Arthoniaceae, lichenized ascomycetes)

ANDRÉ APTROOT[1], DAMIEN ERTZ[2], JEANNE DOS REIS SILVA[3], MARTIN GRUBE[4] & MARCELA EUGENIA DA SILVA CÁCERES[3]

[1]*ABL Herbarium, G.v.d.Veenstraat 107, NL-3762 XK Soest, The Netherlands; email:andreaptroot@gmail.com*
[2]*Botanic Garden Meise, Department Bryophytes-Thallophytes (BT), Nieuwelaan 38, 1860 Meise, Belgium; email: damien.ertz@br.fgov.be*
[3]*Departamento de Biociências, Universidade Federal de Sergipe, CEP: 49500-000, Itabaiana, Sergipe, Brazil; email: mscaceres@hotmail.com*
[4]*Institute for Plant Sciences, University of Graz, Holteigasse 6, A-8010 Graz, Austria; email: martin.grube@uni-graz.at*

Abstract

Two lichen species with bright orange and pink colours are described. *Coniarthonia megaspora* from NE Brazil, with relative large, hyaline ascospores that are becoming violet in tap water after release. The phylogenetic position of *Coniarthonia* is for the first time assessed, based on Brazilian specimens, and *Arthonia eos* and *A. kermesina* are combined into this genus. Fertile material of *Cryptothecia miniata* is for the first time described from Brazil and Costa Rica. A phylogenetic analysis including the epitype places it close to *Myriostigma candidum* in the recently resurrected genus *Myriostigma*. The genera *Stirtonia* and *Cryptothecia* in their current sense are shown to be both polyphyletic.

Key words: Brazil, Brejo de Altitude, corticolous, Costa Rica, Guyana, Sergipe

Introduction

The genus *Cryptothecia* Stirton (1877: 164) in the wider sense is a strictly tropical group that can be locally common, especially on overhanging tree bark and shaded bamboo. *Cryptothecia* comprises about 60 species worldwide (Wolseley & Aptroot 2009; Aptroot & Spier 2010), and until recently only few corticolous species had been reported from northeastern Brazil (Cáceres 2007). However, three additional species were recently described from this region (Lima *et al.* 2013; Menezes *et al.* 2013). One of the best known species (Lücking *et al.* 2006) is the palaeotropical foliicolous *Cryptothecia candida* (Kremp.) Santesson (1952: 65), which is the type of the genus *Myriostigma* Krempelhuber (1874: 22), a genus that recently was resurrected (Frisch *et al.* 2014) because the type species represents a lineage separate from *Cryptothecia* in a phylogenetic analysis.

Brazil is a large but relatively flat country. Some mountains in semiarid areas of northeastern Brazil are moderately high and covered by a montane forest type, called Brejos de Altitude (Thomas 2008), far away from the coastal Atlantic rainforest. The lichens from this forest type have so far only been investigated in Pernambuco state, by Cáceres (2007). The third author investigated the lichens of the only Brejo de Altitude forest in Sergipe state, the Serra da Guia, in 2014. The most unexpected lichen found during this study is a fertile *Cryptothecia*-like species differing from all known species of the group, which are all whitish to pale greenish, by the bright orange ascigerous areas. On morphology alone, we were uncertain about the generic affinities as this would be the first species of *Cryptothecia* to be described with an anthraquinone, a similar case to the bright orange *Sergipea* M. Cáceres, Ertz & Aptroot (Aptroot *et al.* 2014: 629), that is morphologically close to *Enterographa* Fée (1824: XXXII). Thus, we sequenced the specimen and we found that it groups with *Myriostigma candidum* Krempelhuber (1874: 22). As this species is unmistakable, we were able to find out about the existence of further specimens, collected in Florida, Guyana, Brazil and Costa Rica. A sterile specimen was annotated by Vainio as "*Chiodecton miniatum* Vain. (Ster.)", but never published. A fertile specimen collected by Puiggari was annotated by Zahlbruckner as "*Arthothelium puiggarii sp. nov.*", a name that apparently has never been published. Lücking (in Lücking *et al.* 2011: 140) reported sterile material from Florida as "*Cryptothecia miniata* Vain. ex Lücking", citing the Guyana specimen as type. Therefore, this epithet is taken up for this taxon below, an epitype is selected from the sequenced fertile material, and it is combined in the genus *Myriostigma.*

 Accepted by Thorsten Lumbsch: 26 Feb. 2015; published: 2 Jul. 2015