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Tricharina tophiseda—a new species from Croatia, with a revision of *T. japonica* (Pyronemataceae, Pezizales)

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Abstract

A new species, *Tricharina tophiseda*, is described in detail on the basis of both teleomorph and anamorph states. A comparative study of the most similar species, *T. japonica*, is provided by re-examination of the holotype and recently collected European material. Highly diverse characters of species in *Tricharina* and closely related genera demonstrate concurrence with polyphyly ascertained by a number of previous phylogenetic studies.

Keywords: Ascomycota, taxonomy, tufa barriers

Introduction

The genus *Tricharina* Eckblad (1968: 60) was established to replace *Tricharia* Boudier (1885: 104), which was a homonym of *Tricharia* Fée (1824: 87) (a genus of lichenised fungi) and therefore illegitimate. *Tricharina* was later emended and monographed by Yang & Korf (1985b), who recognized 12 taxa in this genus, and transferred several species to the new genus *Wilcoxina* Chin S. Yang & Korf (1985b: 511) based on differences in characters of apothecial morphologies, mycelial growth in pure culture, anamorphs and life strategies. Since then, only two new combinations have been added to *Tricharina*: *T. flava* (Fuckel 1870: 322) J. Moravec (1990: 481) and *T. herinkii* (Svrček 1948: 86) Benkert (2010: 54). The genus *Tricharina* is pleomorphic, possessing *Tricharina* apothecial teleomorphic states, and also anamorphic states described as *Ascorhizoctonia* Chin S. Yang & Korf (1985a: 468). Recent molecular phylogenetic studies (Egger 1996, Stielow *et al.* 2013, Hansen *et al*. 2013, Van Vooren *et al*. 2015) have shown that this small genus is apparently polyphyletic, and thus in need of a thorough taxonomic revision.

Ascomycetous fungi of Croatia are underexplored, especially those from non-forest habitats. In the first systematic research of fungal biodiversity on the territory of Krka National Park (Croatia) during 2007 and 2008, effort was put into exploring both non-forest terrestrial and aquatic habitats. River Krka is a natural fluviokarstic phenomenon with preserved large travertine waterfalls (tufa barriers) containing various microhabitats. These habitats are rich in ascomycetous fungi, including a *Tricharina* species discovered twice in 2008 growing on tufa barriers (a novel substratum for this genus). Microscopical observations revealed that these two *Tricharina* collections were similar, but not identical to the descriptions of *Tricharina japonica* Chin S. Yang & Korf (1985b: 497), and were therefore considered to be a species new to science. The holotype of *T. japonica* was re-examined and studied in detail, together with a recent European collection, to clarify differences between these species. Additional tests with pure cultures were also conducted to investigate whether an ascorhizoctonia-type anamorph similar to those reported for other *Tricharina* species was produced (Yang & Korf 1985a, 1985b; Yang & Kristiansen 1989, Barrera & Romero 2001). The examination of the holotype of *T. japonica*, along with a recent European collection showed that the new *Tricharina* species differs in several important aspects. Some taxonomic features in the genus *Tricharina* and allied taxa were also discussed.

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