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Splanchnonema-like species in Pleosporales: introducing *Pseudosplanchnonema* gen. nov. in Massariaceae

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Abstract

In this paper we introduce a new genus *Pseudosplanchnonema* with *P. phorcioides* comb. nov., isolated from dead branches of *Acer campestre* and *Morus* species. The new genus is confirmed based on morphology and phylogenetic analyses of sequence data. Phylogenetic analyses based on combined LSU and SSU sequence data showed that *P. phorcioides* formed a distinct clade within the family Massariaceae and is sister to *Massarina eburnea*, the type species of *Massarina*. The new genus *Pseudosplanchnonema* differs from *Massarina* in having ascomata without clypei, a thick peridium and larger, 1-septate, guttulate, dark brown ascospores. The new genus is compared with genera in the family Massariaceae and a detailed description and illustrations of the species *P. phorcioides*, including its asexual morph, is provided.

Key words: morphology, *Morus* sp., multi-gene analysis, Pleomassariaceae, SSU

Introduction

The family Massariaceae was introduced by Munk (1956) to accommodate species with immersed, flattened or spherical ascomata, cellular pseudoparaphyses, clavate to cylindro-clavate asci, and hyaline, fusiform to narrowly fusiform, 1 to 3-septate ascospores with or without a mucilaginous sheath. Previously these species had been placed under the genus *Massaria* (Munk 1956). The family is typified by the genus *Massarina*, which was established to segregate taxa with hyaline ascospores based on *Massarina*, *Keissleriella*, *Metasphaeria*, *Pseudotrachia* and *Trichometasphaeria* (Munk 1956, Hyde *et al.* 2013). Following its introduction, many studies have been conducted on the above mentioned genera, with the exception of *Massarina*, have been transferred to other families (Suetrong *et al.* 2009, Zhang *et al.* 2012, Hyde *et al.* 2013, Wijayawardene *et al.* 2014). *Massarina* has also been placed within Lophiostomataceae in Pleosporales (Bose 1961, Barr 1992, Aptroot 1998, Thambugala *et al.* 2015). Massariaceae was considered as a synonym of Lophiostomataceae in some subsequent studies (Barr 1987). However, recent morphological and molecular studies provide evidence that these two families evolved separately (Thambugala *et al.* 2015). Hence, Massariaceae and Lophiostomataceae were treated as separate families in the order Pleosporales (Liew *et al.* 2002, Zhang *et al.* 2009a, 2012, Hyde *et al.* 2013, Wijayawardene *et al.* 2014).

Members of the family Massariaceae are found in terrestrial habitats, and are saprobic on wood or twigs (Hyde *et al.* 2013). This narrow generic concept, which has been described above, was also accepted for *Massarina*, which comprised *M. eburnea* (Tul. & C. Tul.) Sacc. and *M. cisti* S.K. Bose (Zhang *et al.* 2009b, 2012); molecular data is lacking for many other *Massarina* species. *Massarina eburnea*, *M. cisti* and *M. igniaria* (C. Booth) Aptroot together with *Byssothecium circinans* Fuckel forms a distinct monophyletic clade which can be considered as *Massarina*