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Strobilomyces pteroreticulosporus (Boletales), a new species of the *S. strobilaceus* complex from the Republic of Korea and remarks on the variability of *S. confusus*

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Abstract

A new species, *Strobilomyces pteroreticulosporus*, is described based on two recent collections from the Republic of Korea. This new taxon is well characterized by morphological characters, and proved using *rpb1* and ITS2 sequences. The variability of size and basidiospore ornamentation of the common species *S. confusus* is also discussed.

Key words: Basidiomycota, Boletaceae, molecular analyses, phylogeny, taxonomy

Introduction

The genus *Strobilomyces* is characterized by a dry pileus densely covered with woolly or rigid scales, flesh becoming reddish changing to blackish when bruised, and blackish brown, globose to broadly ellipsoid basidiospores with reticulate, subcristate to verrucose ornamentation (Singer 1986). It is a well-delimited genus of Boletoidae (Boletaceae), forming a distinct clade (Wu *et al.* 2014).

The first author has been collaborating with South-Korean colleagues on taxonomic projects since 2007. During yearly collection trips, several *Strobilomyces* collections were made. After comparison with similar Asian taxa (Sato *et al.* 2011, Gelardi *et al.* 2013), one of them, a fungus with rather large basidiospores, and a distinct, high, completely reticulate basidiospore ornamentation has been revealed to be a new species, which is described here.

Material & Methods

Morphology—Macroscopic descriptions of collected specimens are based on fresh basidiomata and have been provided by the first author. Colour abbreviations follow Kornerup & Wanscher (1983). Authors of fungal names are cited according to the Authors of Fungal Names page (http://www.indexfungorum.org/AuthorsOfFungalNames.htm). Microscopic features are described from dried material mounted in H_2O, KOH, Melzer's reagent, and Congo red, using an Olympus BX-50 light microscope (Tokyo, Japan) at a magnification of 1000×. For basidiospores, the factors E (quotient of length and width in any one spore) and Q (mean of E values) are used. Herbarium specimens are deposited in the herbaria BRNM (Moravian Museum, Brno, Czech Republic) and TO (Department of Plant Biology, University of Turin, Italy).

SEM microphotographs of basidiospores were taken using the Tescan Mira 3 LMU electron microscope.

DNA extraction, PCR amplification, and DNA sequencing—Genomic DNA was extracted from c. 20 mg per specimen of four dried specimens (BRNM 718716, BRNM 766847, BRNM 766848 and BRNM 766850), by using the DNeasy Plant Mini Kit (Qiagen, Milan Italy) according to the manufacturer's instructions. *Rpb1* and ITS regions were amplified according to procedures described in Gelardi *et al*. (2013). Amplification reactions were performed in a T3000 Thermocycler (Biometra, Goettingen, Germany). The PCR products were purified with the QIAquick PCR

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