Cylindrosporus flavidus gen. et comb. nov. (Hymenochaetales, Basidiomycota) segregated from Onnia

LI-WEI ZHOU*

State Key Laboratory of Forest and Soil Ecology, Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang 110016, P.R. China
* Corresponding author: e-mail: liwei_zhou1982@163.com; tel. & fax number: +86-24-83970348

Abstract

Onnia is one of the seven genera of Inonotus s.l., belonging to Hymenochaetaeae. According to the current concept, Onnia differs from the other six genera of Inonotus s.l. mainly by its either stipitate or sessile basidiocarps, duplex context, presence of hymenial setae and hyaline, thin-walled basidiospores. As the only species with sessile basidiocarps and cylindrical basidiospores in Onnia, O. flavidus was transferred from Inonotus without molecular test. In this study, for the first time, Onnia flavidus is included in nLSU- and ITS-based phylogenetic analyses. Phylogenetic analyses showed that Onnia flavidus belonged to Hymenochaetaeae and was clearly separated from Onnia and other six genera of Inonotus s.l. Moreover, there is no other current genus in Hymenochaetaeae fit to accommodate this species from both morphological and phylogenetic perspectives. Therefore, a monotypic genus Cylindrosporus is newly proposed to accommodate the new combination C. flavidus. The distinct characters of Cylindrosporus that distinguish it from other morphologically and phylogenetically related genera are discussed.

Key words: Hymenochaetaceae, Inonotus s.l., phylogeny, polypores, taxonomy

Introduction

Inonotus P. Karst., typified by Boletus hispidus Bull. (Donk 1960), is one of the largest genera in the Hymenochaetaceae (Basidiomycota). In a broad sense, Inonotus has more than 100 species and is characterized by an annual habit, poroid basidiocarps and a monomitic hyphal system in the family (Ryvarden 2005). Several more natural genera were later proposed to accommodate species originally belonging to Inonotus. Among these genera, Inocutis Fiasson & Niemelä, Inonotopsis Parmasto, Mensularia Lázaro Ibiza and Onnia P. Karst. were first confirmed to be separated from the reduced concept of Inonotus by molecular evidence (Wagner & Fischer 2001, 2002b) and accepted by later taxonomic studies (Dai 2010, Zhou 2014). Recently, two additional genera, Sanghuangporus Sheng H. Wu, L.W. Zhou & Y.C. Dai and Tropicoporus L.W. Zhou, Y.C. Dai & Sheng H. Wu, were further segregated from Inonotus (Zhou et al. 2015). Prior to the present study, seven genera of Inonotus s.l. were accepted.

According to the current concept emended by Dai (2010), Onnia differs from the other six genera of Inonotus s.l. mainly by its duplex context, presence of hymenial setae and hyaline, thin-walled basidiospores. It is also characterized by including species developing either stipitate basidiocarps growing on the ground or sessile basidiocarps on wood (Dai 2010). As the only species with sessile basidiocarps and cylindrical basidiospores in Onnia, O. flavidus (Berk.) Y.C. Dai was transferred from Inonotus to Onnia without molecular work by Dai (2001). The main morphological characters of Onnia flavidus supporting this transfer are the combination of duplex context with a black line, presence of setae and hyaline, thin-walled basidiospores that are more close to the delimitation of Onnia (Dai 2001).

In the present study, I try to establish whether Onnia flavidus belongs to Onnia from a phylogenetic perspective.

Materials and methods

Morphological studies.—The studied specimens are deposited at the herbarium of the Institute of Microbiology, Beijing Forestry University (BJFC). The microscopic procedure follows Dai (2010). Sections were prepared in Cotton Blue and Melzer’s reagent, and were examined using a Nikon Eclipse 80i microscope at magnifications of 1000×.