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Two new species of *Pluteus* (Agaricales, Pluteaceae) from China

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Abstract

Two new species of *Pluteus* section *Pluteus*, *P. griseodiscus* and *P. purpureofuscus*, are described from China. *Pluteus griseodiscus* is characterized by the pale basidiomata, non-pigmented lamellar edges, thick-walled cheilocystidia and the presence of caulocystidia. *Pluteus purpureofuscus* is characterized by a purple-brown pileus, presence of clamp-connections, and growth on coniferous wood. The phylogenetic position of both species is also discussed based on nrITS data.

Key words: Basidiomycota, biodiversity, phylogeny, taxonomy

Introduction

Pluteus Fr. (Pluteaceae, Agaricales) is a large and widely distributed genus typically classified in the Pluteacaea Kotl. & Pouzar (Singer 1986), with approximately 300 known species worldwide (Kirk *et al.* 2008). It is characterized by free lamellae, pinkish spore print, absence of annulus and volva, and inverse hymenophoral trama. Most of taxa in the genus are lignicolous (Orton 1986).

Morphologically (Singer 1986), the genus *Pluteus* was subdivided in three sections, viz., section *Pluteus* with metuloid cystidia and pileipellis as a cutis, section *Hispidoderma* Fayod without metuloid cystidia, but with pileipellis composed of elongated elements organized as a cutis, an hymeniderm or a trichoderm, and section *Celluloderma* Fayod without metuloid cystidia, but with a pileipellis composed of clavate or spheropedunculate elements organized as an hymeniderm, with transitions to an epithelium. This morphological subdivision has been supported by molecular data with some minor rearrangements (Justo *et al.* 2011)

Until now, about 38 species of *Pluteus* have been reported in China (Teng 1963, 1996; Tai 1979; Bi 1988; Bi *et al.* 1993; Yang *et al.* 2010, 2011; Yang 2011). During a recent survey on the genus *Pluteus* in China, several noteworthy collections were found which did not correspond to any previously described taxa in the genus. Further observation revealed that they possessed metuloid hymenial cystidia and a pileipellis organized as a cutis, which conformed the definition of the genus *Pluteus* section *Pluteus* (Singer 1986, Justo *et al.* 2011). Molecular analysis also indicated they were close to the taxa of genus *Pluteus* section *Pluteus*. Therefore, they were described as two new species belonging to genus *Pluteus* section *Pluteus*.

Materials and methods

Taxon sampling and morphological studies:—Macro-morphological descriptions were based on the field notes and photos of the fresh basidiomata collected from southern China. Color descriptions are according to Kornerup & Wanscher (1978). The types and the other examined collections are deposited at the Fungal Herbarium of Guangdong Institute of Microbiology (GDGM) for *P. griseodiscus* and at the Cryptogamic Herbarium of Kunming Institute of Botany, Chinese Academy of Sciences (HKAS) for *P. purpureofuscus* (Hao *et al.* 2014).

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