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A new angiocarpous *Lactarius* species from Thailand

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Abstract

Lactarius bisporus sp. nov. is described from primary tropical forest in Thailand. Morphological characters and DNA sequence data are given. Comparisons with the closely related angiocarpous taxon *Lactarius pomiolens* are provided.

Key Words: basidiomycetes, ectomycorrhiza, taxonomy, truffle-like *Russulales*

Introduction

As in numerous other agaricomycete groups, it is now accepted that also in the *Russulales* angiocarpous species have evolved many times from gymnocarpous species, and that the shape of the basidiocarps has long been overestimated as a phylogenetic character (Miller *et al.* 2001, Desjardin 2003, Eberhardt & Verbeken 2004, Nuytinck *et al.* 2004, Verbeken *et al.* 2014). After the recent division of the milkcaps in three genera: *Multifurca* Buyck & V. Hofst. (Buyck *et al.* 2008, 2010), *Lactarius* Pers., and *Lactifluus* (Pers.) Roussel (Buyck *et al.* 2008, 2010, Norvell 2011, Barrie 2011), all truffle-like milkcap species known so far seem to belong to the genus *Lactarius.* Before the inclusion of angiocarpous Russulales in agaricoid genera was accepted, a number of genera were erected to include sequestrate species. Milk-exuding species were often, but not exclusively, described in *Arcangeliella* Cavara or *Zelleromyces* Singer & A.H. Sm. (Miller et al. 2001, Eberhardt & Verbeken 2004, Nuytinck *et al.* 2004).

The angiocarpous habit evolved in the three main subgenera: *L.* subg. *Plinthogalus* (Burl.) Hesler & A.H. Sm., *L.* subg. *Russularia* (Fr. ex Burl.) Kauffman and *L.* subg. *Piperites* (Fr. ex J. Kickx f.) Kauffman (Verbeken *et al.* 2014). Angiocarpous Russulales are mainly known from North America and Australia, but also occur in the tropics where their diversity is probably underestimated (Eberhardt & Verbeken 2004, Verbeken *et al.* 2014). A recent expedition in Northern Thailand revealed another new truffle-like milkcap, which is proposed here as *Lactarius bisporus* sp. nov.

Material and Methods

Morphological study

Macroscopic characters are all based on fresh material. Microscopic features were studied from dried material mainly in Congo Red in L4 (Clémençon 1973). Spore ornamentation is described and illustrated as observed in Melzer's reagent. For details on terminology we refer to Verbeken (1998) and Verbeken & Walleyn (2010). Line-drawings were made by A. Verbeken, with the aid of a drawing tube at original magnifications: 6000 × for spores, 1000 × for individual elements and sections. Basidia length excludes sterigmata length. Spores were measured in side view in Melzer's reagent, excluding the ornamentation, and measurements are given as {(MIN) [AV-2×SD]–*AV*–[AV+2×SD]

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