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Short communication

Boletus orientialbus, a new species with white basidioma from subtropical China

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ABSTRACT

Boletus orientialbus is described as a new species from Fujian Province, a subtropical region of China. It is morphologically characterized by its white basidioma with a white and unchanging context, white pores becoming yellow with age, a reticulate stipe, and ellipsoid to elongate basidiospores. A detailed description, color photos of fresh basidiomata, and a line-drawing of microscopic features are presented.

Many new or interesting taxa have been discovered during the studies of Chinese boletes in the last 10 years (Yang et al. 2003; Li 2007; Zhou and Yang 2008; Li et al. 2009, 2011, 2013; Li and Yang 2011; Zeng and Yang 2011; Zeng et al. 2011, 2012, 2013; Orihara et al. 2012; Zhang et al. 2012; Gelardi et al. 2013). However, there are still a large number of undescribed taxa of boletes in the country. During a fieldtrip in Fujian Province, a subtropical region in southeastern China, we encountered a few collections of a bolete, which was tentatively named "*Alloboletus* sp. 2" (Feng et al. 2012). The molecular phylogenetic analyses based on *rpb1* and nrLSU data support the specimens as an independent lineage within the clade "*Alloboletus*", a provisional name proposed by Dentinger et al. (2010). "*Alloboletus*" can be regarded as a lineage of the genus *Boletus* L. s.s., the porcini s.l. (Feng et al. 2012). Subsequent morphological examination further confirms that it is different from the all known species of *Boletus* s.s., and, thus, we described these collections as a new species herein.

The specimens were described and photographed in the field, and deposited in the Herbarium of Cryptogams, Kunming Institute of Botany, Chinese Academy of Sciences (HKAS). Color codes are from Kornerup and Wanscher (1981). The

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microscopic studies were carried out following Zeng et al. (2013), and the molecular techniques used to obtain one internal transcribed spacer (ITS) sequence were also described in Zeng et al. (2013).

Boletus orientialbus N.K. Zeng & Zhu L. Yang, sp. nov.

Figs. 1, 2.

MycoBank no.: MB 804007.

Pileus hemispherical to applanate, surface white to cream-colored; hymenophore tubulose, pores "stuffed" with white mycelium when young; pore surface white, then yellow to olivaceous yellow, unchanging in color when injured. Stipe subcylindric, concolor with pileus, upper half reticulate, lower half nearly smooth. Context white, unchanging in color when injured. Basidiospores 7–10 × 4.5–5 μm, ellipsoid to elongate, smooth. Pileipellis a trichoderm composed of 4–8 μm wide hyphae.

Type: China, Fujian Province, Zhangping County, Tiantai National Forest Park, alt. 365 m, solitary on the ground in forest of *Lithocarpus* spp. and *Castanopsis* spp., 28 August 2009, N.K. Zeng 639 (Holotype, HKAS 62907).

rDNA sequence ex holotype: JN563856 (nrLSU), JN563873 (*rpb1*) (Feng et al. 2012), and KC886282 (ITS).

Etymology: "*orienti-*" refers to the locality of the type specimen; "*albus*" refers to the white color of basidiomata.

Basidioma large. Pileus 9–13 cm in diameter, hemispherical to applanate, surface dry, white (1B1) to cream-colored (1B2), sometimes brownish (5B3) when old, nearly smooth; pileal margin decurved, plane or slightly uplifted; context 1–1.7 cm thick in the center of pileus, white (1B1), unchanging in color when injured. Hymenophore tubulose, depressed around apex of stipe, "stuffed" with white mycelium when young; pores angular, about 0.1 mm in diameter, at first white (1B1), with age yellow (2A5) to olivaceous yellow (2B4), unchanging in color when injured; tubes 0.6–1.3 cm long, white (1B1) when young, then yellowish (1A3). Stipe 8–10 × 1.5–2.5 cm, central, subcylindric, surface dry, concolor with pileus, upper 2/3 with white reticulations, lower 1/3 nearly glabrous; context white (1B1), unchanging in color when injured. Basal mycelium whitish (1B1). Annulus absent. Taste and odor not distinctive. Basidia 25–36 × 8–13 μm, clavate, thin-walled, colorless in KOH, 4-spored; sterigmata 4–5 μm long. Basidiospores [100/5/5] (6–) 7–10 × (4–) 4.5–5 (–6) μm, Q = (1.20–) 1.40–2.00, Q_m = 1.67 ± 0.18, ellipsoid to elongate, sometimes broadly ellipsoid, slightly thick-walled (<1 μm), olive brown to yellowish brown in KOH, smooth. Cheilocystidia abundant, 23–57 × 11–16 (–21) μm, ventricose, subfusiform, subclavate or clavate, thin-walled, colorless in KOH. Pleurocystidia rare, 40–70 × 7–15 μm, subfusiform or fusiform, thin-walled, colorless in KOH. Hymenophoral trama boletoid, made up of hyphae 3–10 μm wide, thin-walled, colorless to yellowish in KOH. Pileipellis a trichoderm composed of more or less vertically arranged, thin-walled, frequently branching, filamentous hyphae 4–8 μm in diameter, colorless in KOH; terminal cells 20–60 (–80) × 4–7 μm, narrowly clavate to subcylindrical. Pileal trama made up of hyphae 4–10 μm in diameter, thin-walled, colorless to yellowish in KOH. Clamp connections absent in all tissues.

Known distribution: Southeastern China.

Additional materials examined: China, Fujian Province: Zhangping County, Tiantai National Forest Park, alt. 377 m,

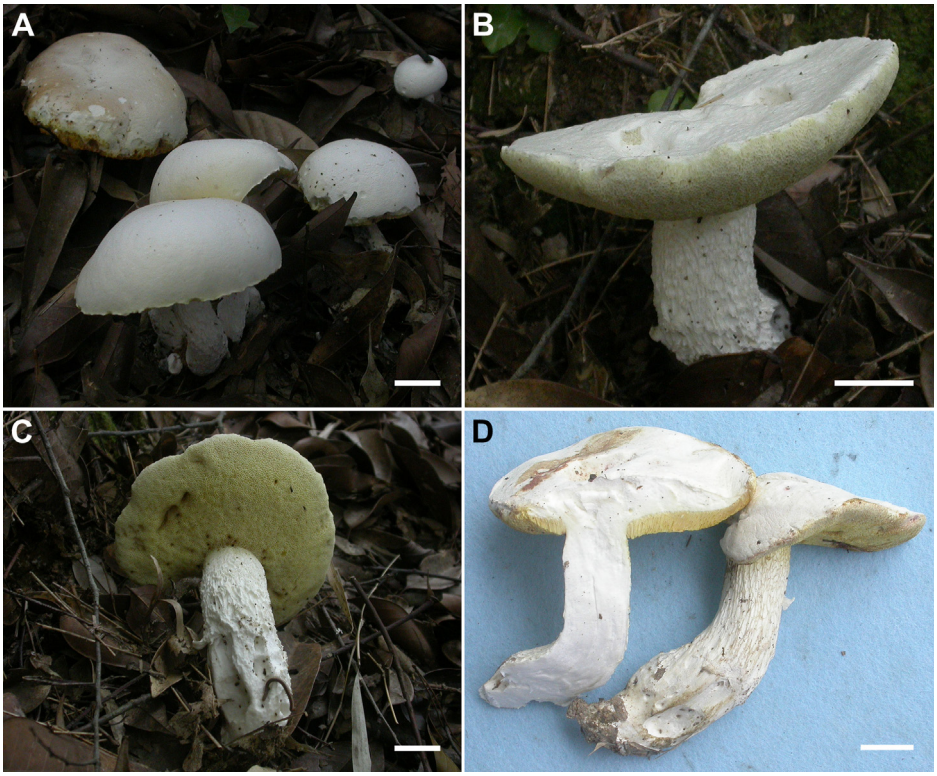

Fig. 1 – Basidiomata of *Boletus orientialbus*. A: HKAS 76152. B–D: HKAS 62907 (holotype). *Bars*: 2 cm.