

Afroboletus vietnamensis



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Afroboletus vietnamensis T.H.G. Pham, A.V. Alexandrova, O.V. Morozova, *sp. nov.*

Etymology. The epithet refers to the country Vietnam where the species was collected.

Classification — *Boletaceae*, *Boletales*, *Agaricomycetes*.

Basidiomata medium large sized, boletoid. *Pileus* 30–80 mm diam, initially hemispherical, becoming convex, greyish yellow (2B3–4, 2C3–4, Kornerup & Wanscher 1978), darker in the centre (2D3–4, 3D3–4), paler towards the margin (up to 2A2–3), surface dry, velutinous, tomentous or felted. *Hymenophore* adnate to shortly decurrent to the stipe, 6–8 mm thick, light yellow to greenish yellow (1A4–6), becoming greyish yellow (2B4–5, 3B5–6, 4B4–5); pores irregular, 1–2 mm diam. *Stipe* 60–90 × 10–20 mm, cylindrical or fusiform, often tapered towards the base, dry, deeply broadly alveolate-reticulate, pale yellow (2A3–4), staining pale orange near the base (5A3–5). *Context* pale yellow (2A2–4), staining in the stipe brownish red when bruised, with reddish spots in the stipe base. *Smell* weak, taste not reported. *Spores* (11–)12–12.5(–15) × (8–)8.5–9.5(–11) µm, Q = (1.2–)1.3–1.4(–1.5), dark brown, ellipsoid in outline: amygdaliform with 1–2 µm broad longitudinal wings, sometimes with outgrowths and crystals (SEM). *Basidia* 38–48 × 11–12 µm, 4-spored, narrowly clavate to clavate, clampless. *Cheilocystidia* 52–99 × 5–18 µm, fusoid to lageniform with more or less long neck, *pleurocystidia* similar. *Hymenophoral trama* regular, made up of long, thin, cylindrical hyphae, 70–250 × 4–6 µm. *Pileipellis* a trichoderm, made up of cylindrical hyphae, 5–9 µm wide, with brown intracellular and in some hyphae also incrusting pigment. *Dermatocystidia* of two types: simple lageniform, 37–52 × 8–10 µm, with intracellular light brown pigment, and complex, abundant in the central part, 18–80 × 6–10 µm, fusiform, lageniform, septate: basal part with light brown diffuse intracellular pigment and apical – with bluish black agglutinate intracellular and sometimes additionally incrusting pigment. *Stipitipellis* a hymeniderm of basidiolae-like clavate cells, 19–30 × 7–10 µm. *Caulocystidia* 68–130 × 11–16 µm, lageniform, sometimes septate. *Clamp connections* absent.

Habit, Habitat & Distribution — In groups on soil in evergreen tropical forests. Known from Vietnam.

Typus. VIETNAM, Dak Lak Province, Yok Don National Park, 40 km to the northwest of Buon Ma Thuot city, N12.941306° E107.788167°, h = 212 m, on soil in evergreen tropical forest on the top of the hill dominated by *Fagaceae*, *Euphorbiaceae*, *Sapindaceae*, *Ebenaceae* and *Meliaceae*, 13 May 2014, A. Alexandrova (holotype LE311973, ITS and LSU sequences GenBank MH087059 and MH087058, MycoBank MB824736).

Colour illustrations. Vietnam, Dak Lak Province, Yok Don National Park, type locality; spores; cheilocystidia; elements of pileipellis; dermatocystidium and caulocystidia; SEM photos of spores; basidioma *in situ*; longitudinal section of the stipe and basidiomata *in situ*. Scale bars = 1 cm (basidiomata), 10 µm (microstructures).

Additional material examined. VIETNAM, Binh Phuoc Province, Bu Gia Map District, Bu Gia Map National Park, N12.204509° E107.204415°, h = 346 m, on soil in foothill polydominant tropical forest dominated by *Dipterocarpaceae*, *Lythraceae*, *Rubiaceae*, *Theaceae*, *Lauraceae* and *Arecaceae*, 3 May 2013, A. Alexandrova, LE311972, ITS sequence GenBank MH087060.

Notes — The genus *Afroboletus* has been described based on material from equatorial Africa (Pegler & Young 1981). It is characterised first of all by the dark brown ellipsoid spores with a complex eusporial ornamentation of 8–12 large, winged, longitudinal costae, intercostal ridging, and basal thickened rim. *Afroboletus vietnamensis* resembles *A. malaysianus*, which was invalidly described from the Peninsular Malaysia (Chan 2010). However, *A. vietnamensis* differs from *A. malaysianus* by the paler colour of the pileus, by lageniform cheilocystidia with narrow neck, and by the pileipellis structure with characteristic dermatocystidia containing three types of pigment – diffuse brown intracellular, agglutinated dark-blue intracellular and incrusting. Although *A. vietnamensis* does not cluster in the phylogenetic tree with representatives of any known boletoid genera, including African *Afroboletus*, we consider the introduction of a new genus as premature.

Pham Thi Ha Giang, Saint Petersburg State Forestry University, 194021, 5U Institut'skiy Str., Saint Petersburg, Russia / Joint Russian-Vietnamese Tropical Research and Technological Center, Hanoi, Vietnam;
e-mail: giangvietnga@gmail.com

Alina V. Alexandrova, Lomonosov Moscow State University (MSU), Faculty of Biology, 119234, 1, 12 Leninskie Gory Str., Moscow, Russia / Joint Russian-Vietnamese Tropical Research and Technological Center, Hanoi, Vietnam;
e-mail: alina-alex2011@yandex.ru

Olga V. Morozova, Komarov Botanical Institute of the Russian Academy of Sciences, 197376, 2 Prof. Popov Str., Saint Petersburg, Russia;
e-mail: OMorozova@binran.ru