



Hapalopilus nidulans (Polyporales: Polyporaceae) a new record from India

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The genus *Hapalopilus* P. Karst. was described with *Polyporus nidulans* Fr. as type species. The main distinguishing character is the cinnamon colour for the basidiocarp reacting strongly cherry red to violet with KOH. Otherwise it is microscopically similar to the species of *Tyromyces* P. Karst. Under natural conditions *H. nidulans* attacks dry logs or diseased branches; its mycelium soon spreads to the neighboring healthy branches and may ultimately kill the entire tree (Pilát 1937). Earlier the species was reported from the northern hemisphere, Africa: Rwanda-Burundi, Akagera Park, southwest of Luluma, Ihema Lake, Rammelo on deciduous wood (Ryvarden & Johansen 1980). This fungus is not very common; single specimens are found on almost any broadleaved trees, such as: birch, mountain ash, oak, hornbeam, beech, aspen, hazel, alder and linden. It was also recorded in western Europe, East Asia, North America and Australia (Bondartsav 1953).

The species has been intensively studied and

systematically documented in a number of mycological books/monographs of polypores such as Bondartsav (1953), Ryvarden & Johansen (1980), Imazeki et al. (1988), Corner (1991), Zhao & Zhang (1992), Nunez & Ryvarden (1995), Quanten (1997), Hattori et al. (2002). The species described by Corner from tropical Asia and West Pacific archipelago were treated in detail by Dai (2000).

The present paper describes taxonomy and cultural study of *Hapalopilus nidulans* (Fr.) P. Karst. for the first time from India.

Materials and Methods: The basidiocarps were collected during the rainy season, i.e., August to October 2008 from Chhattisgarh State of central India, geographically ranging from Katghora (22°28'58.1" N & 82°31'26.77"E), Kota (22°38'78.3" N & 82°61'26.9"E) and Kanker (20°37'36.9" N & 82°03'56.6"E) (Fig. 1). All macroscopic and habitat characteristics were noted in situ. The specimens were brought to the laboratory where detailed microscopic examinations were made. Identification was done with the aid of published papers, books and monographs (Bondartsav 1953; Ryvarden & Johansen 1980; Zmitrovich et al. 2006). The chemical reaction was determined by placing a small piece of material in 5% KOH solution. For microscopic study the specimens were thin sectioned by using a sharp razor blade. The cyanophily was observed in cotton blue mounted in lactophenol and amyloidy of structures in Melzer's reagent. The photographs were taken with a Nikon F601 SLR camera, macroscopic and microscopic characters were studied under the stereo zoom Leica, model Wild M3Z and advanced research Microscope, Leica, model Leitz DMRB (Germany) with digital Leica EC3 camera. The culture was prepared by following isolation, purification from a basidiocarp on potato dextrose agar (PDA) medium under aseptic conditions and incubated at 27°C for six days then sub-cultured on PDA and incubated for six weeks. After development of the colony, cultural characters were observed and studied by following the method of Stalpers (1978). The specimens are deposited in the Mycology Herbarium of the Forest Pathology Division, Tropical Forest Research Institute, Jabalpur (TF). The records are new to India since the following

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Figure 1. Map of Chhattisgarh showing collection spots

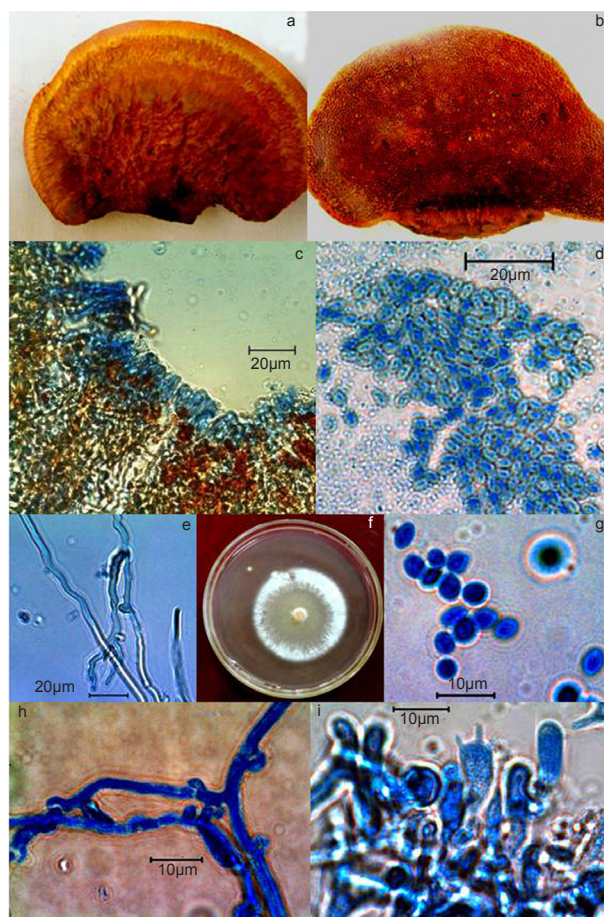


Image 1. *Hapalopilus nidulans*

a-e Fruitbody. a - Pileus; b - Hymenium; c - Basidia with trama; d - Basidiospores; e - Generative hyphae. f-i Culture characters. f - Culture on Potato Dextrose Agar; g - Chlamydospores; h - Basidia with sterigmata; i - Generative hyphae with clamp connection.

authors do not mention them: Butler & Bisby (1954), Tandon & Chandra (1964), Bilgrami et al. (1979, 1981, 1991), Sarbhoy et al. (1975, 1986, 1996), Bhide et al. (1987) and Jamaluddin et al. (2004).

Hapalopilus nidulans (Fr.) P. Karst.

Revue mycol., Toulouse 3(9): 18 (1881). (Image 2a-i)
 ≡ *Polyporus nidulans* Fr., *Syst. mycol.* (Lundae) 1:
 362 (1821)

Material examined

19.x.2009, on stored logs of *Shorea robusta* Gaertn, Kota (Bilaspur, C.G.) (TF 1143); Katghora (Korba, C.G.) (TF 1145), 2.x.2009, on stored logs of *S. robusta*, Kanker, (TF 1144); 29.viii.2009, on stored logs of *Anogeissus latifolia* Wall, (TF 1148); *Chloroxylon swietenia* D.C. (TF 1146); *Ougeinia oojeineusis* (Roxb.) Hocherut, (TF 1149) and *Terminalia tomentosa* W&A, (TF 1147), Pithora (Raipur), coll. C.K. Tiwari,

Jagrati Parihar & R.K.Verma.

This fungus causes white fibrous rot in the associated wood.

Basidiome: annual, soft when fresh, brittle when dry, effuso-reflexed, sessile, dimidiate, 3–6.5 x 2–4.5 x 0.5–1.5 cm. Pileus: cinnamon (colour 1927 Chinook^T (5H12); Mearz & Paul 1950), surface rough with few weak sulcate zones, the inner ones usually smoother than the distal ones, margin thick, entire. Hymenophore: concolorous with the pileus, pores thin walled angular, 1–2 per mm, pores surface with a few large cracks in basidiome, pore tubes up to 3–10 mm deep, cinnamon to ochraceous. Context: light cinnamon, soft and fibrous, brittle up to 4 cm thick at the base. Chemical reaction: positive, all parts of the basidiocarp change to violet in KOH. Hyphal system: monomitic, generative hyphae, clamped, up to 6.0µm

wide, thick walled, branched, smooth, cyanophilous, covered partly in amorphous substances mixed with polygonal reddish to brownish crystals in trama. Cystidia: absent. Basidia: clavate, hyaline, 14–16 x 6–7.5 μm , cyanophilous. Basidiospores: ellipsoid to cylindrical, hyaline, smooth, 3.5–5 x 2–2.5 μm , cyanophilous, non-amyloid.

Culture: Growth characters: Growth slow, 1.5cm in one week. Advancing zone hyaline, even, appressed. Mat translucent, becoming farinaceous with raised felty granules, in some part floccose to floccose-felty, colour initially white later changing to buff pink to orange pink. Reverse unchanged. Odour soury. Hyphal characters: Advancing zone hyphae hyaline, thin to thick-walled, branched, clamped, up to 4 μm wide. Aerial mycelium (a) hyphae as in the advancing zone (b) chlamydospores present, terminal, hyaline, thin-walled (c) basidia hyaline, thin-walled, clavate with sterigmata 12.0–18.5 x 4.5–7.0 μm .

Remark: This fungus is recognized by its cinnamon colour and the striking violet reaction in KOH. The only difference compared with current descriptions is of the number of pores which are 1–2 per mm in the cited specimens, while other authors, such as Ryvarden & Johansen (1980), report 2–4 pores per mm

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