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## A new species of *Lentinus* from India

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**ABSTRACT**—*Lentinus alpacus* sp. nov. is described, illustrated, and discussed based on collections made in Maharashtra State, India. *Lentinus alpacus* is tentatively placed in subg. *Panus* sect. *Panus*, where it is distinguished by its small, reddish brown, squarrose basidiomata.

**KEY WORDS**—*Basidiomycota*, *Polyporaceae*, *Polyporales*, taxonomy

### Introduction

The genus *Lentinus* sensu Pegler (1983b; *Polyporaceae*) is widespread in the tropics. A review of literature (Manjula 1983; Natarajan et al. 2005; Kumaresan & Senthilarasu unpubl. data) revealed that the genus is well represented in India. Several species have been described and reported from Kerala State alone (Manimohan & Leelavathy 1995; Joseph et al. 1995; Manimohan et al. 2004; Kumar & Manimohan 2005), but only one species, *L. cochleatus*, has been reported from Maharashtra State (Trivedi 1972). In this paper, a new species of *Lentinus* collected from Pune, Maharashtra State, is described, illustrated, and discussed.

### Materials & methods

Thin, handmade sections were made from dried specimens, revived in 10% KOH, and stained in 3% Phloxine. Fifty basidiospores were measured for evaluation of the range of spore-size and extreme values are given in parentheses followed by mean spore measurements in parentheses. Camera lucida diagrams were made using a Nikon Y-IDT prism attached to a Nikon E200 microscope. Microphotographs were made using Zeiss Axio Imager A2 microscope. The colour names and notations used are from Kornerup & Wanscher (1978). The examined collections cited are deposited at Ajrekar Mycological Herbarium (AMH), MACS' Agharkar Research Institute, Pune, India.

**Taxonomy*****Lentinus alpacus*** Senthil. & S.K. Singh, **sp. nov.**

PLATES 1, 2

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Differs from *L. courtetianus* in a squarrose red pileus and thin, hispid stipe.TYPE: India, Maharashtra State, Pune, Pune University Campus (18°31'18.4"N 73°49'53.6"E), on decaying twigs, solitary, 21.07.2011, G. Senthilarasu (**holotype**, AMH 9442).ETYMOLOGY: *alpacus* (Sanskrit), small.

PILEUS 6–25 mm diam., orbicular, plano-concave or infundibuliform; surface Venetian red (8D7) to Persian red (8E8), squarrose: scales reddish brown (9F8), more towards the disc, at first often with purplish tints; margin incurved, thin, entire, ciliate, not striate. LAMELLAE subdecurrent, white to orange white (5A2) to pale orange (5A3) to grayish orange (6B3), becoming dark brown (8D4-8D5) on drying, crowded, with numerous lamellulae, thin, less than 1 mm broad; edge entire, concolorous with the sides. STIPE central to excentric, rarely lateral, 14–25 × 1–1.5 mm, equal, cylindrical; surface reddish brown (8E8-9F8), hispid, solid, arising from concolorous basal tomentum. PILEUS CONTEXT ≤ 1 mm thick, orange white (5A2) to pale orange (5A3).

BASIDIOSPORES (5–)5.5–6.5(–7) × (2–)2.5–3(–3.5), (6.1±0.31 × 2.9±0.14) µm, Q = 2.1, oblong-ellipsoid to subcylindrical, hyaline, smooth, with a few guttules. BASIDIA 18–25 × 5–6.5 µm, cylindrico-clavate to clavate, tetrasporic; sterigmata up to 5 µm long. LAMELLA EDGE sterile, with scattered cheilocystidia together with metuloids. CHEILOCYSTIDIA 20–30 × 8–12 µm, clavate to subclavate with broadly rounded apex, hyaline, thin-walled. PLEUROCYSTIDIA abundant, gloeocystidioid, 18–45 × 5–11 µm, cylindrico-clavate with obtusely rounded apex, often constricted, initially embedded within the hymenium and projecting 20 µm beyond the basidia. METULOIDs scattered, on sides and edge of lamellae, 19–25 × 7–11.5 µm, thick-walled, 1–3.5 µm thick, subventricose with an obtusely rounded apex, projecting 15 µm beyond the basidia. LAMELLA TRAMA irregular, consisting of thick walled, hyaline, skeletal hyphae 2–2.5 µm diam. SUBHYMENIUM indistinct. PILEAL SURFACE a regular cutis consisting of radially repent hyphae, often disrupting to form pileal squamules at the margin, distinctly trichoderm at the disc due to more squamules; squamules up to 840 × 80 µm, composed of fascicles of monomitic hyphae, up to 5 µm diam., often containing brown vacuolar sap, thick-walled, septate with clamp connections. PILEAL CONTEXT consisting of dimitic hyphal system; generative hyphae up to 3 µm diam., not inflated, hyaline, thin-walled, with clamp connections, often collapsing and difficult to observe; skeletal hyphae up to 2.5 µm, hyaline, unbranched, thick-walled, with a narrow lumen. HYPHAL PEGS absent.

ADDITIONAL SPECIMENS EXAMINED: INDIA, MAHARASHTRA STATE, Pune, Pune University Campus (18°31'18.4"N 73°49'53.6"E), 03.08.2009, (AMH 9457), 26.07.2012, (AMH 9526), 01.08.2012 (9527) G. Senthilarasu.

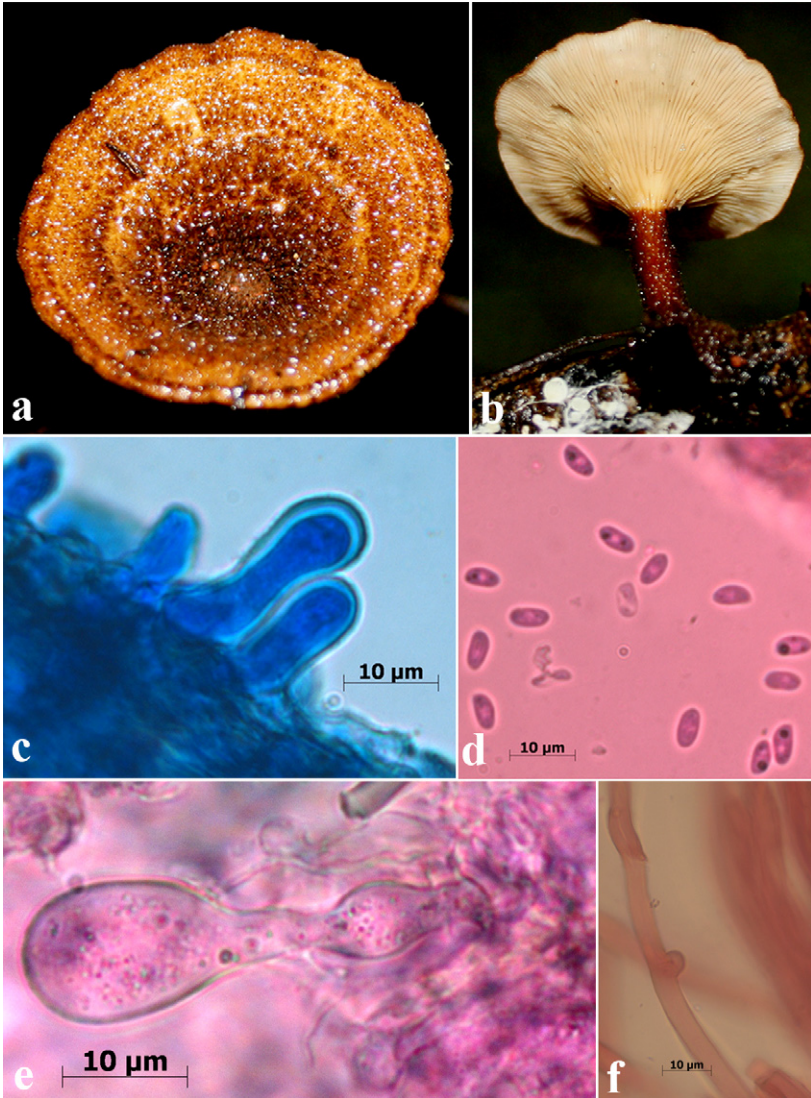


PLATE 1. *Lentinus alpaca*: Under natural conditions on Pune University Campus. A. Surface view. B. Gill view. C. Metuloids. D. Basidiospores. E. Gloeocystidia. F. Pileipellis generative hypha with clamp connection. Photo: Senthilarasu G.

*Lentinus alpaca* is a fairly common and widespread species in the Pune University Campus but usually found solitary on decaying twigs every year during monsoon. The habit is also (rarely) connate, with a single basidiome arising from the stipe apex of partly decayed basidiome.

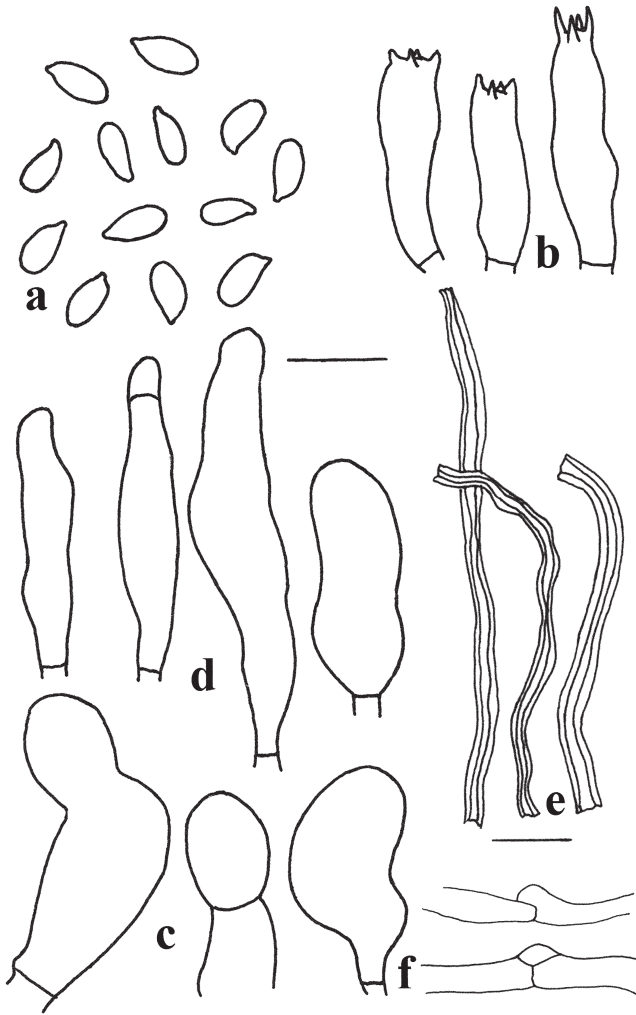


PLATE 2. *Lentinus alpacus*:

A. Basidiospores. B. Basidia. C. Cheilocystidia. D. Pleurocystidia. E. Skeletal hyphae.  
F. Generative hyphae with clamp connections. Scale bar = 10  $\mu\text{m}$ .

The generic demarcation and phylogenetic relationships of *Panus* Fr. and *Lentinus* Fr. are controversial (Corner 1981; Pegler 1983b; Singer 1986; Hibbett & Vilgalys 1991, 1993, Grand et al. 2011). These have been accepted as separate genera by many modern authors (Corner 1981; Moser 1978; Singer 1975, 1986), but were reduced by Pegler (1983b) to subgenera within a broader

concept of *Lentinus*. Redhead & Ginns (1985) created the genus *Neolentinus*, characterised by bipolar mating systems and the ability to cause brown rot, to accommodate species from *Lentinus* sections *Pulverulenti*, *Cirrhosi*, and *Squamosi* sensu Pegler (1983b). *Lentinus* sensu stricto is characterized by species having radiate, descending, or intermediate tramas with ligative hyphae and hyphal pegs in the hymenium, whereas *Panus* sensu stricto is distinguished by strongly radiate hymenophoral trama with dimitic hyphae and lacking hyphal pegs. Additionally, in *Panus* young basidiomata are brightly pigmented in purple and fade with age (Hibbett et al 1993). At present it is not clear to which segregate genus *L. alpaca* belongs. However, it could be accommodated in subgenus *Panus* sensu Pegler (1983b) as it lacks both skeleto-ligative hyphae in the context and hyphal pegs in the hymenium, and in section *Panus* based on its hymenial cystidia, hymenophoral trama of radiate construction and entire lamella edge. Therefore, we have followed the broad *Lentinus* concept of Pegler (1983b).

In sect. *Panus*, one African species, *L. courtetianus* Har. & Pat. (Pegler 1983b), resembles *L. alpacus* in having more or less similar sized basidiomata and cheilo- and pleurocystidia. However, *L. courtetianus* has a smooth, pure white or lemon yellow tinted pileus and thicker (3–10 mm diam.), smooth, glabrous, subbulbous stipe.

*Lentinus alpacus* closely resembles the neotropical species *L. tephroleucus* Mont. (Pegler 1983b) in having small, infundibuliform pileus with short erect fasciculate hairs that become squamulose towards margin and similar sized basidiospores and basidia. However, *L. tephroleucus* has a pale yellowish to grayish brown or cinnamon brown pileus with glabrescent disc and cream coloured lamellae. Microscopically, *L. tephroleucus* is clearly unrelated from *L. alpacus* because of its sclerocystidia.

The southeastern Asian species *Lentinus ciliatus* Lév. (Pegler 1983b) also shares a squamulose pileus and similar-sized spores and basidia but differs in its larger basidiomata, cinnamon to fuscous brown pileus with densely ciliate margin, and thick-walled sclerocystidia.

*Lentinus leprieurii* Mont. (Pegler 1983a), which resembles *L. alpacus* in its brown pileus with fasciculate hairs, short stipe, and similar-sized basidiospores and basidia, differs in its larger pileus, brown lamellae, thicker stipe ( $\leq 6$  mm), cylindrical cheilocystidia, and absence of pleurocystidia. Moreover, *L. leprieurii* grows in tufts, not solitary.

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