

New or noteworthy records of *Polyporus* from India

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Three species of *Polyporus* have been described and illustrated based on the collections made in India. Of these species *Polyporus alveolaris* (DC : Fr.) Bond. & Sing. and *Polyporus ciliatus* Fr. : Fr. have been reported for the first time from India.

Key words : *Polyporus alveolaris*, *Polyporus ciliatus*, *Polyporus tenuiculus*, India

INTRODUCTION

During 1990-92 we collected several polypores from India which included two species of *Polyporus* not recorded from India before. Besides, one species was obtained which was described earlier incompletely (Bakshi 1971) under the genus *Favolus*, which according to modern concept of taxonomy, now belongs to the genus *Polyporus* (Domanski *et al.* 1967 ; Ryvardeen, 1978 ; Telleria, 1980 ; Parmasto, 1984 ; Gilbertson and Ryvardeen 1987). All these species are described in this paper. Voucher specimens are deposited in the Mycological

Herbarium of the Visva Bharati University (VBMH) and in the Herbarium of the Division of Mycology and Plant Pathology, Indian Agricultural Research Institute, New Delhi (HCIO).

OBSERVATIONS

Polyporus alveolaris (DC. : Fr.) Bond. & Sing., Ann. Mycol. 39 : 58, 1941.

Basionym : *Cantharellus alveolaris* DC. : Fr., Syst. Mycol. 1 : 322, 1821.

Basidiomes annual, fleshy when fresh, coriaceous on drying, sessile or shortly stipitate. Pileus 2.7 cm in diam., 6.5 mm thick. sub-circular or reniform : surface yellowish or cream-yellow, with age becoming ivory to pale buff, fibrillose to squamose with flattened squamules : margin undulate or lobate : context thin, up to 1.5 mm thick ; hymenial surface white to cream brown. pores rhomboidal, radially elongated, 1-2 per mm, dissepiments thin, becoming lacerate with age, pore tubes decurrent, up to 5 mm thick.

Hyphal system dimitic. Generative hyphae hyaline, thin-walled, usually 2-4 μ m wide, very rarely some inflated up to 8 μ m wide. Binding hyphae hyaline, irregularly wide, thick-walled, undulating, often tortuous, occasionally branched, usually 3-10 μ m wide, tapering whip-like apices 1.5-2.0 μ m wide. Basidia 4-sterigmate, clavate, 15-26 x 4-10 μ m. Basidiospores hyaline, cylindric, thin-walled, with several guttulae, 7.5-11.0 x 3.3-4.0 μ m.

Occurrence-on dead twigs in Burdwan causing white rots.
Specimens examined : VBMH 93151.

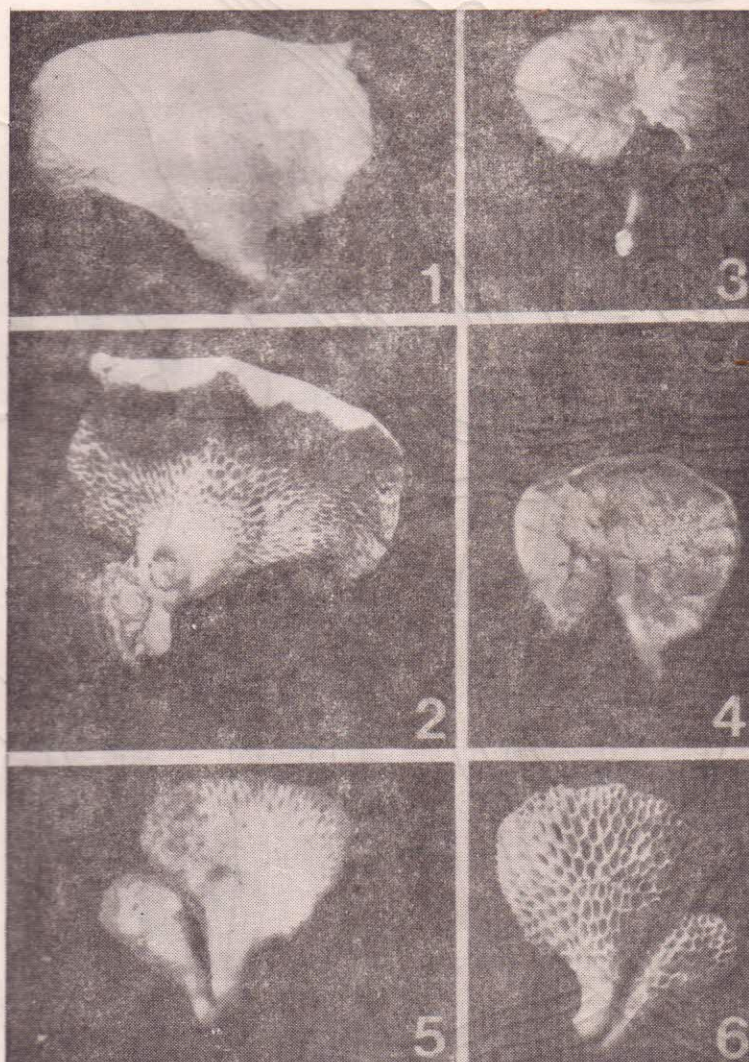
Polyporus ciliatus Fr. : Fr., Syst. Mycol. 1 : 349, 1821.

Basionym : *Polyporus ciliatus* Fr., Obs. Mycol. 1 : 123, 1818.

Basidiomes annual, soft-coriaceous, centrally stipitate. Stipe up to 4 cm long and 0.15-0.4 cm wide, tan to brownish, reddish-brown cuticle visible at the base when fresh. Pileus up to 10 cm in diam and 0.5 cm thick, circular, flat or slightly depressed at the centre ; upper surface straw coloured, greyish-brown or blackish-brown, glabrous or with pressed squamules ; margin thin, with cilia when fresh, inturned when dry ; context white to pale, 1-3 mm thick, hymenial surface cream, becoming tan later, glistening on light, pores circular or angular, 4-5 per mm, pore tubes up to 2 mm long.

Hyphal system dimitic. Generative hyphae hyaline, clamped, usually thin-walled, branched, 2-3 μ m wide, but many irregularly swelled up to 8.5 μ m ; on the pileus surface occur patches of pellicular structure formed of greatly anastomosed thin-walled as well as also thick-walled generative hyphae and also occur closely spaced pale brown thin-to thick-walled generative hyphae, 3.0-5.6 μ m wide, having blackish-brown irregular deposits on walls.

Gloeoplerous hyphae present, 3.0–3.5 μm wide. Binding hyphae hyaline, thick-walled to solid, dendritic, much undulating, 1.5–7.5 μm wide. Basidia clavate, with 2 and 4 sterigmate, 15.0–20.0 $\times$ 6.0–7.5 μm . Basidiospores



Figs. 1—2. Basidiocarp of *Polyporus alveolaris*.

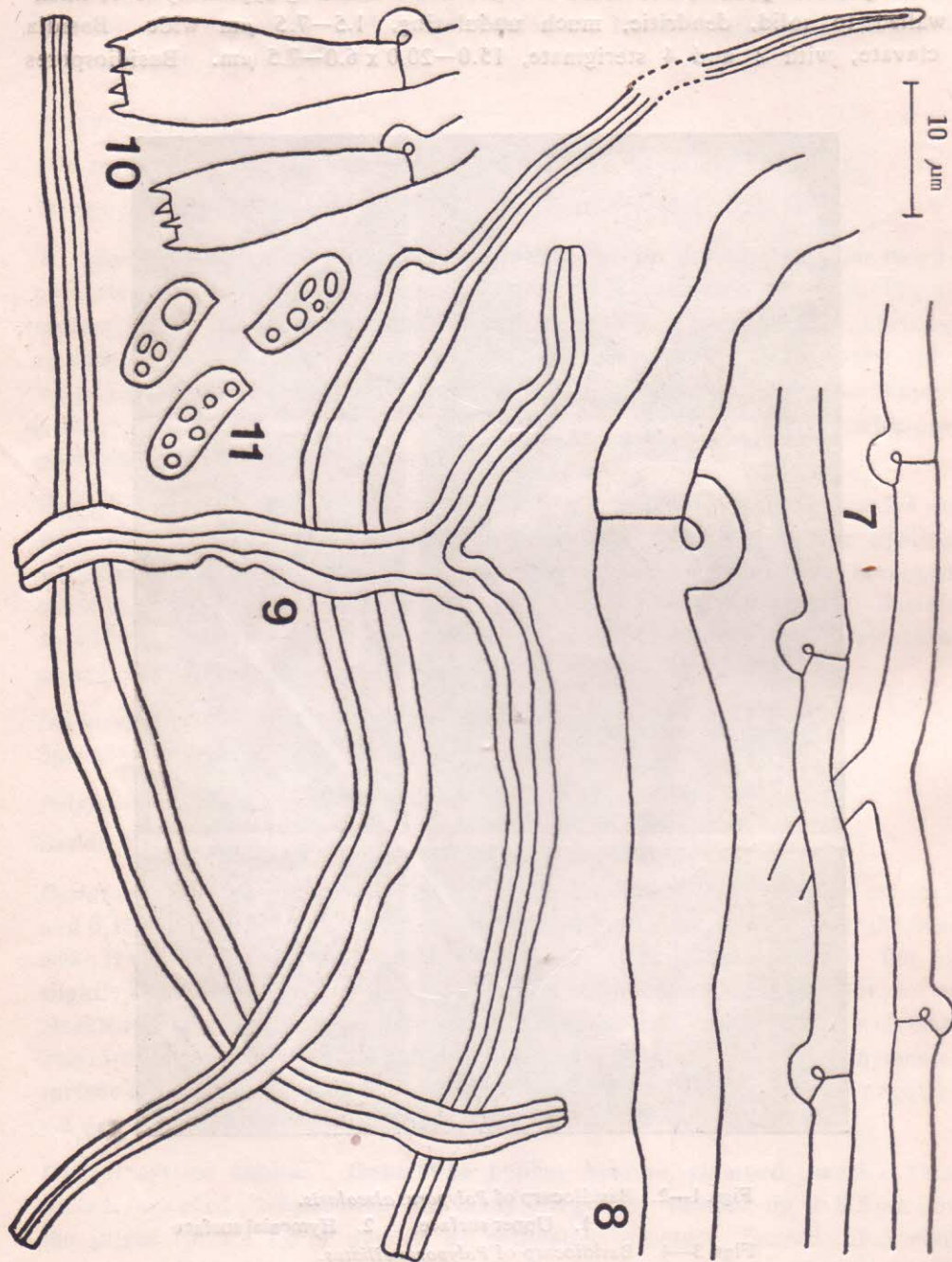
1. Upper surface. 2. Hymenial surface

Figs. 3—4. Basidiocarp of *Polyporus eiliatus*.

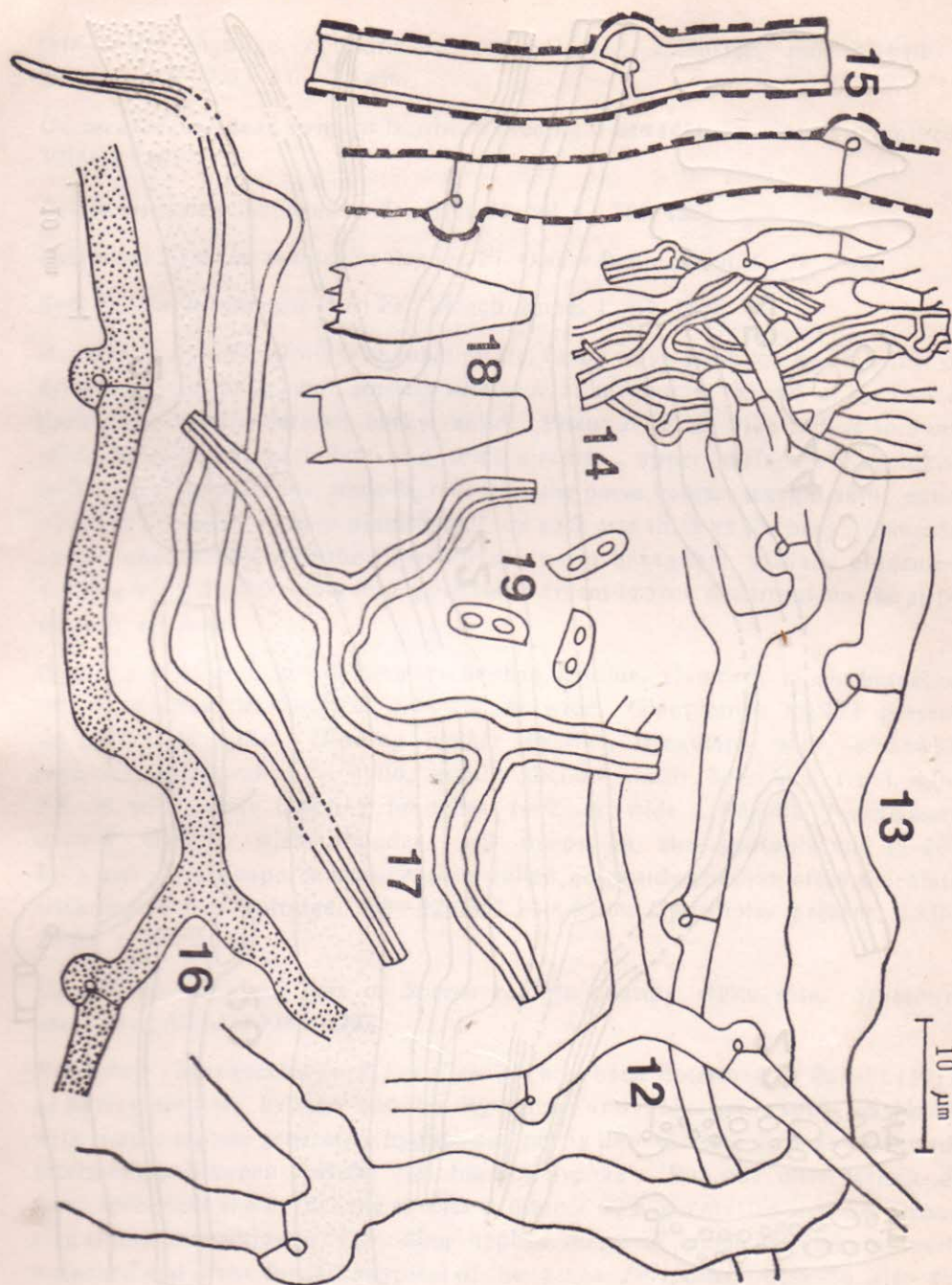
3. Upper surface. 4. Hymenial Surface.

Figs. 5—6. Basidiocarp of *Polyporus tenuiculus*.

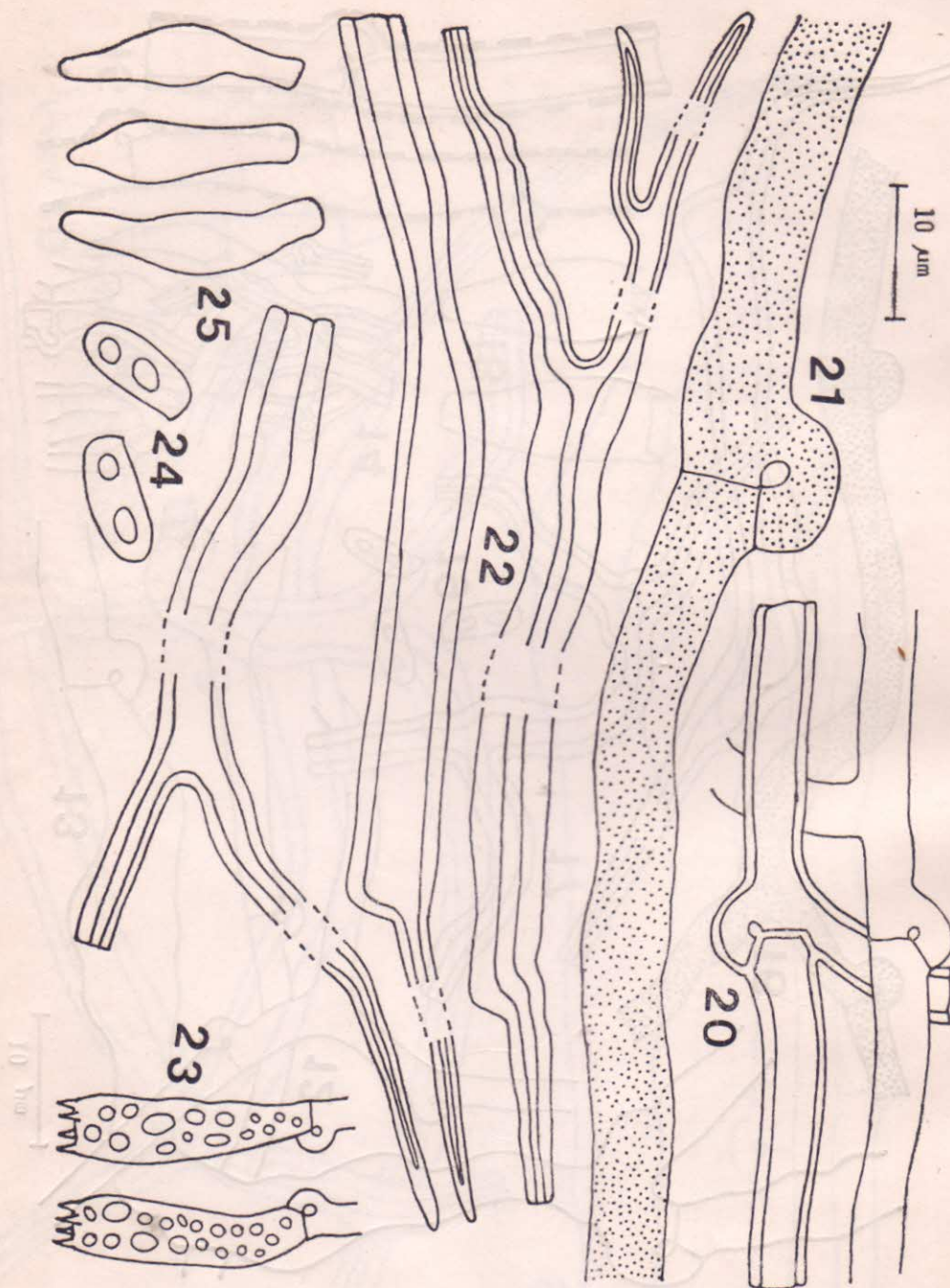
5. Upper surface. 6. Hymenial surface.



Figs. 7—11. Microscopic structures from basidiocarp of *Polyporus alveolaris*. 7. Thin-walled generative hyphae. 8. Inflated generative hypha. 9. Binding hyphae. 10. Basidia. 11. Basidiospores.



Figs. 12—19. Microscopic structures from basidiocarp of *Polyporus ciliatus*. 12. Thin-walled generative hypha. 13. Irregularly swelled generative hypha. 14. Pellicular structure formed of thin- and thick-walled generative hyphae. 15. Pale brown thin-to-slightly thick-walled generative hyphae having blackish brown deposits on walls. 16. Gloeoplerous hypha. 17. Binding hyphae. 18. Basidia. 19. Basidiospores.



Figs. 20—25. Microscopic structures from basidiocarp of *Polyporus tenuiculus*.
 20. Thin-to slightly thick-walled generative hyphae. 21. Gloeoplerous hypha. 22. Binding hyphae. 23. Basidia. 24. Basidiospores. 25. Cystidioles.

thin-walled, hyaline, cylindric or sub-cylindric, apiculate, mostly with 2 guttulae, $5.6-7.0 \times 2.0-2.5 \mu\text{m}$.

Occurrence—on dead twigs in Burdwan causing white rots. Specimens examined: VBMH 9361.

Polyporus tenuiculus (Beauv.) Fr., Syst. Mycol. 1 : 344, 1821.

Basionym : *Favolus tenuiculus* Beauv., Fl. Oware Benin Afr:q. 1 : 74, 1806.

Syn. *Favolus bresiliensis* (Fr.) Fr., Elench. Fung. 1 : 44, 1828.

Basidiomes annual, stipitate to substipitate, fleshy when fresh corky or brittle on drying, solitary or in small clusters with several basidiomes joined at the base of their stipes. Stipe lateral, corky, solid. Pileus 2–8 cm wide and up to 5 mm thick, flabelliform, spatulate and semi circular; upper surface white, pinkish buff on drying, glabrous, smooth, reflecting the pores below; margin thin, entire or lobed; context white to pinkish-buff, up to 2 mm thick at the base; hymenial surface concolorous with the pileus surface, pores hexagonal, radially elongated, 1–2 mm wide, dissepiments thin, pore tubes cream-brown, decurrent on the stipe, up to 3 mm long.

Hyphal system dimitic. Generative hyphae hyaline, clamped, much branched, thin to slightly thick-walled, $3.3-5.0 \mu\text{m}$ wide. Gleoplerous hyphae present, up to $8.5 \mu\text{m}$ wide. Binding hyphae hyaline, irregularly wide, somewhat tortuous, thick-walled to solid, usually dichotomously branched, trunk $4.0-8.5 \mu\text{m}$ wide while tapering branches $1-2 \mu\text{m}$ wide. Basidia 4-sterigmate, narrow clavate, with abundant oil drops in the protoplasm, $17-20 \times 4-5 \mu\text{m}$. Basidiospores hyaline, thin-walled, ellipsoid-cylindric, often apiculate, with one to two guttulae, $8.3-12.0 \times 2.5-4.0 \mu\text{m}$. Cystidioles present, $15.0-20.0 \times 2.5-4.0 \mu\text{m}$.

Occurrence—on dead logs of *Shorea robusta* causing white rots. Specimens examined: VBMH 9381, 9382.

Remarks: This species (= *F. brasiliensis*) has been described by Bakshi (1971) as having aseptate hyphae and by Ryvarden and Johansen (1980) as dimitic with simple septate generative hyphae and partly like skeletal hyphae and partly intermediate between skeletal and binding hyphae. But our observations on fresh specimens show that the species is dimitic with generative hyphae possessing clamp connections and binding hyphae many of which are dichotomously branched and often dendritic—typical of the genus *Polyporus*. Sharing also the other characters of this genus viz., producing stipitate annual basidiomes, hyaline, cylindrical basidiospores and causing white rots, the species undoubtedly finds its right place under the genus *Polyporus*, as also viewed by Gilbertson and Ryvarden (1987).

REFERENCES

- Bakshi, B K, (1971), *Indian Polyporaceae (on Trees and Timber)*. I. C. A. R. New Delhi.
- Domanski, S., Orlos. H. and Skirgiello, A (1973). *Fungi*, Warsaw (English Translation).
- Gilbertson, R. L. and Ryvarden, L. (1987). *North American polypores*, Vol. II, Fungiflora, Oslo, Norway.
- Parmasto, E. (1984). The genus *Elmerina* (Polyporaceae s. str.). *Nova Hædwigia*, 39, 101-116.
- Ryvarden, L. (1978). *The Polyporaceae of North Europe*. II. Fungiflora, Oslo, Norway.
- Ryvarden, L. and Johansen, I. (1980). *A preliminary polypore flora of East Africa*. Fungiflora, Oslo, Norway.
- Telleria, M. T. (1980). *Aphylllophorales Espanoles*. Bibliotheca Mycologica. J. Cramer, Band 74.

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