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Agaricales from Western Ghats – VIII

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Four agaric species viz., *Inocybe stuntzi* Grund, *Marasmiellus echinocephalus* Singer, *Rhodocybe collybioides* Singer and *Rhodocybe nitellina* Singer are reported and described for the first time from India.

Key word : Agarics, Western Ghats, new records

INTRODUCTION

In the course of our taxonomic studies on the mushroom flora of Western Ghats of Kerala, we collected and studied some agarics not so far recorded from India. Descriptions of four of them follows. Microscopic characters were studied from free hand sections mounted in 10% KOH stained with 1% congo red. Colours in descriptions are based on Methuen (Kornerup and Wanscher, 1967). All specimens are deposited in the Mycological Herbarium of the Microbiology division, TBGRI.

DESCRIPTION

Inocybe stuntzii Grund, in Mycologia 67 : 19-31 (1975)

(Fig. 1)

Pileus 12-15 mm diam., convex expanding, with a low obtuse umbo; surface 'cocoa brown' (6E6), hygrophanous, uniformly covered with radially appressed fibrillose cocoa brown squamules; margin weakly striate, incised in mature ones. Lamellae adnate, ochraceous brown upto 3 mm broad, moderately crowded, with lamelulae of two lengths; edge whitish, entire ; Stipe 20-25 mm x 15 mm, central, cylindric, equal, narrowly hollow inside; surface concolorous or little paler than the pileus, glabrous ; Context thin, less than 1 mm broad, concolorous to the pileus, unchanging, composed of inflated, thin-walled hyphae, upto 18 µm diam, occasionally with clamp-connexions ;

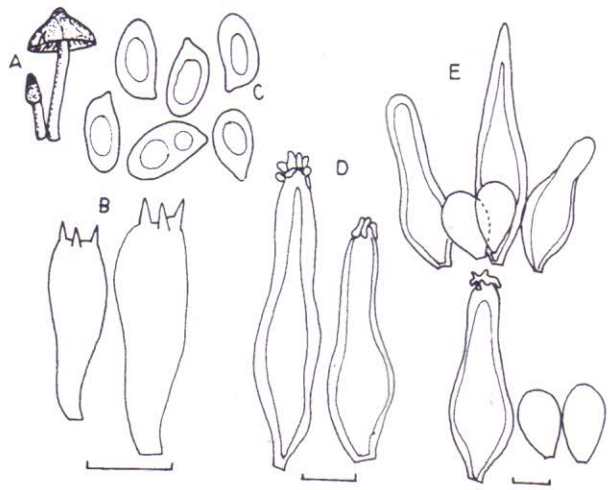

Fig. 1 : *Incoybe stuntzii* : A. habit x 1 ; B. basidia ; C. spores ; D. cheilocystidia ; E. caulocystidia. (Scale bar = 10 µm)

Spores 7.5-10.5 x 4.5-5 µm, ovo-ellipsoid to subamygdaliform, with a smooth, yellowish-brown, thickened wall ; Basidia 25.5-30 x 6-7.5 µm, clavate, bearing four sterigmata. Lamella-edge sterile or heteromorphous, with crowded cheilocystidia. Cheilocystidia 31.5-55 x 10.5-13.5 µm, metuloidal, lageniform with a thickened wall and a crystalline encrusted apex. Pleurocystidia resembling the cheilocystidia in size, shape and wall thickness, scattered on the sides of the lamellae. Hymenophoral trama regular, hyaline, with parallel hyphae, upto 10 µm diam. Subhymenial layer pseudoparenchymatous. Pileipellis a repent epicutis of radially arranged,

brown encrusted hyphae. Caulocystidia abundant over the length of the stipe consisting of metuloids resembling the pleurocystidia, intermixed with thin-walled, clavate, sterile cells.

India, Kerala state, Munnar scattered on soil in Acacia plantations, 30 Aug, 1997, Sibi 4124.

The distinctive features of this *Inocybe* are its dark brown pileus, thick-walled yellow cystidia and smooth spores. Our collection closely agrees with the description of Grund based on Nova Scotian collections (Grund and Stuntz, 1975).

Marasmiellus echinocephalus Singer in Mycologia 47 : 773 (1955).

(Fig. 2)

Marasmius candidus (Bolt.) Fr. var. *setulosus* Josserand & Smith in Mycologia 33 : 496, Figs. li, 2d-f (1941).

Pileus upto 8 mm diam., convex; surface pure white, dry, indistinctly striate; margin entire, smooth. Lamellae adnate with a subdecurrent tooth, upto 15 mm broad, distant, with lamellulae of two lengths. Stipe 7-10 mm × 5 mm, central, or sometimes slightly excentric, cylindric, equal, narrowly hollow inside, pruinose below; surface pure white, 'snuffbrown' (5F6) at the base. Annulus nil. Smell none. Context very thin, transparent, consisting of loosely interwoven hyphae, inflated to 19.5 µm diam., with clamp-connexions. Spores 15-18.5 × 3.5-4.5 µm, fusoid, hyaline, inamyloid, thin-walled, containing numerous refractive oil guttules.

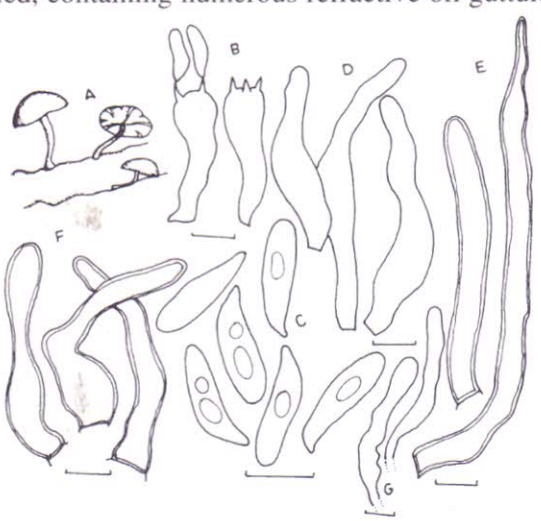

Fig. 2 : *Marasmiellus echonocephalus* : A. habit x 1 ; B. basidia ; C. spores ; D. cheilocystidia ; E. pileal sclerocystidia ; F. sclerocystidia from the stipe surface ; G. caulocystidia. (Scale bar = 10 µm)

Basidia 33-40 × 10.5-12 µm, clavate, bearing two to four sterigmata. Lamella edge heteromorphous. Cheilocystidia 43.5-78 × 7.5-9 µm, fusoid-ventricose to cylindric with an obtusely rounded apex or attenuate, thing-walled, hyaline. Pleurocystidia similar, scattered on the sides of the lamellae. Hymenophoral trama subregular, with thin-walled, hyaline hyphae, 3-16.5 µm. Pileal surface a repent epicutis of radially arranged thin-walled hyphae, intermixed with scattered sclerocystidia, Sclerocystidia 60-97.5 × 7.5-9 µm, either cylindric with an obtusely rounded apex or attenuate, with brownish walls. Base of the stipe also with sclerocystidioid elements similar to the pileal sclerocystidia, 49.5-60 × 7.5-13 µm, with a thickened brown wall, sometimes becoming thin-walled and multiseptate towards the apex.

India, Kerala state, TBGRI campus, Arboratum, scattered on a fallen twig, 8 Dec. 1997, Sibi 4278. The species has been reported from tropical America and Africa (Pegler, 1977) but has not been hitherto reported from India. It is a caespitose species, found growing in large numbers on fallen debris on the forest floor. The Indian collection closely matches with the African material.

Rhodocybe collybiodies Singer, Lilloa 25 : 425 (1952)

(Fig. 3)

Pileus 10 mm diam., convex with a small depression at the centre; surface 'chocolate brown' (6F4), becoming paler, hygrophanous, smooth and glabrous. Lamellae adnate with a decurrent tooth, 'birch grey' (5C2), upto 15 mm broad, close, with lamellulae of three lengths. Stipe 20 mm × 2 mm, central, cylindric, equal, solid, with white basal mycelium; surface concolorous with the pileus, glabrous. Context thin, offwhite, composed of thin-walled, hyaline hyphae, 3-9 µm diam., lacking clamp-connexions. Spores 4.5-6.5 × 3.5-4.5 µm, ovoid to ellipsoid, subangular to indistinctly rugulose, hyaline, thing-walled. Basidia 22.5-27 × 5-6 µm, clavate, bearing four sterigmata. Pseudocystidia abundant, scattered on the edges and sides of the lamellae, 24-57 × 3-6 µm, lanceolate-fusoid, with an acute, constricted or mucronate apex, thin-walled, with a yellowish contents, amorphous in KOH. Hymenophoral trama regular, of thin-walled, hyaline hyphae, 3-9 µm

diam., lacking clamp-connexions. Subhymenial layer pseudoparenchymatous. Pileipellis a repent epicutis, of radially arranged, incrusted hyphae, 3-9 µm diam., with nonincrusted septate cylindric end cells.

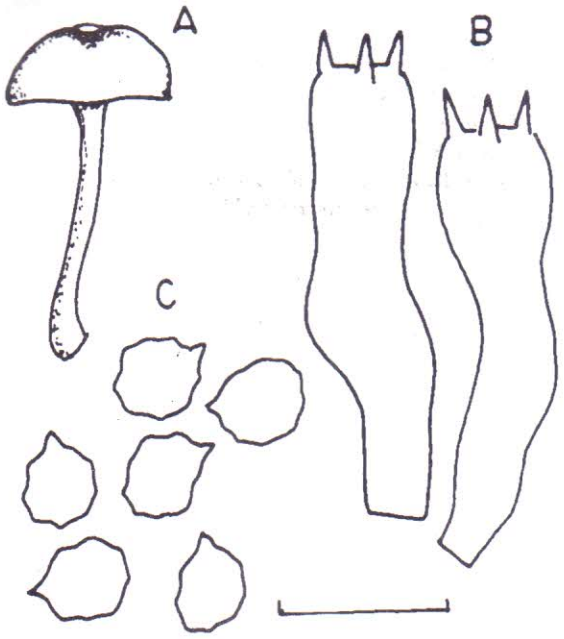

Fig. 3 : *Rhodocybe collybioides.* A. habit x 1 ; B. basidia ; C. spores ; D. cheilocystidia. (Scale bar = 10 µm)

India, Kerala state, TBGRI campus, on soil among forest debris near fern garden, 16 Dec. 1996, Sibi 3728.

The important diagnostic characteristics of the species are the dark brown, hygrophanous cap, hyphae lacking clamp-connexions and the presence of pseudocystidia with pale yellowish contents. Materials from Argentina which was studied by Baroni (1981) represents a good match for the Indian collection.

Rhodocybe nitellina (Fr.) Singer in Mycologia 38 : 667 (1946)

(Fig. 4)

Agaricus nitellinus Fr., Epicrisis : 80 (1938).

Collybia nitellinus (Fr.) Quel., Champ. Jura Voges 3 : 6 (1875).

Rhodopaxillus nitellinus (Fr.) Singer in Ann.Mycol., Berl. 34 : 332 (1936).

Pileus 15-22 mm diam., convex then planoconvex, subumbonate or with a central depression over the disk with age; surface 'cinnamon brown' (6D6), hygrophanous, drying paler, smooth and glabrous. Lamellae subdecurrent, upto 15 mm broad, pinkish-white, close, with lamellulae of three lengths; edge entire, smooth. Stipe 30-35 mm × 3-5 mm, central, cylindric becoming attenuated or dialated towards the base, arising from a white, cottony mycelial mat which is spongy and water soaked; surface concolorous with the pileus. Context thin, composed of thin-walled, hyaline hyphae, upto 16 µm diam. with clamp-connexions. Spores 5-6 × 4.5-5 µm, ovoid to ellipsoid with a rugulose angular outline, thin-walled, hyaline. Basidia 24-27 × 6-7 µm, clavate bearing four sterigmata. Lamella-edge fertile, cystidia absent. Hymenophoral trama regular, hyaline, of thin-walled hyphae, 4.5-18 µm diam. Subhymenium poorly developed. Pileipellis a repent epicutis of radially arranged, nonincrusted or finely incrusted hyphae, upto 7.5 µm diam.

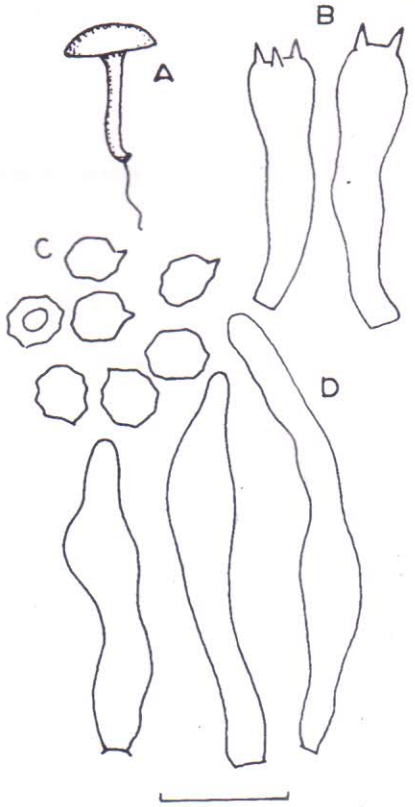

Fig. 4 : *Rhodocybe nitellina* : A. habit x 1 ; B. basidia ; C. spores ; (Scale bar = 10 µm)

India, Kerala state, TBGRI campus, scattered near the river side amongst leaflitter, 3 June 1998, Sibi 4311; 4 June 1998, Sibi 4312.

The Indian collection is identical in every way with the materials from Kenya (Pegler, 1977). *Rhodocybe nitellina* is widespread in Eurasia and North America (Baroni, 1981), but the spores are larger than the Indian as well as Keniyan materials. *R. priseospora* (Pearson) Orton, is a closely related species.

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