

## Some additions to the Coprinaceae of Sikkim Himalaya

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Due to the unique environmental condition Sikkim Himalaya is a treasure house of the luxuriant growth of macrofungi. The present paper reports *Coprinus micaceus*, *C. dessiminatus* and *C. plicatilis* first time from this area.

**Key words :** Agaricales, *Coprinus dessiminatus*, *C. micaceus*, *C. plicatilis*

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### INTRODUCTION

The hills of Sikkim (7096 sq km.) and Darjeeling (3149 sq km.) constitute the Sikkim Himalayan ensemble, is an interesting *per se*. The general physiography of the region is hilly and sloping terrain is the major feature over which most habitation agricultural activity and forest cover may found. Vertical range is from 100 m amsl (foothills), through 4000 m amsl (timberline), up to 8500 m amsl (the Kanchenjunga peak). The three seasons identified in this region\* (Rai and Sharma, 1994). The complex geomorphology, climatic variations and vegetation have made this area flourish with diverse flora, which, in turn, have made it a treasure house for luxuriant growth of macrofungi but very few works have been undertaken regarding the biodiversity of macrofungi of this area (Sarbhoj *et al.*, 1975; Bilgrami *et al.*, 1979, 1991). During last five years authors have surveyed continuously and collected many unreported macrofungi, some of them have already been reported (Acharya and Acharya, 2001; Acharya *et al.*, 2003, 2004; Acharya and

Bhutia, 2003). Earlier, Barkley (1856) had reported three species of *Coprinus* viz. *C. comatus*, *C. hookeri* and *C. vellereus* from this area. No further work has been performed on it. Here authors have presented three species of *Coprinus* first from this area.

### MATERIALS AND METHODS

The study materials were collected during field trips in 2000 to 2003. The morphological and ecological features were noted and colour photographs were taken. The chemical colour reactions were noted on the fresh collection. After the specimens were brought to the laboratory, their microscopic properties were determined by using an Olympus research microscope. All the microscopic structures were drawn with the help of camera lucida. Then they are identified according to Ramsbottom (1965), Bessey (1978) and Singer (1986). The voucher specimen has been deposited in Mycological Herbarium of Darjeeling Government College.

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\* Rains and high humidity, which are the major climatic realms, found in this region

## OBSERVATION AND DISCUSSION

*Coprinus micaceous* (Bull.) Fr. (Fig. 1)

Cap glittering, yellowish, ferruginous and livid ; Disc darker at the length and rimosely splitting, covered with glittering micaceous particles and later becoming sulcate ; Cap is 4.0-4.6 cm, glittering rusty yellow ; gill is  $0.5 \times 1.7$  cm, adnexed, light brown to grayish brown, dark brown along the edges ; Pileus deliquescent, pileus context rough with small white round beads or micaceous particles over the surface ; Stipe is  $5-7 \times 0.3-0.5$  cm white, soft, silky, smooth, fistular and centrally placed cylindrical one ; Basidiospores blackish to brownish, elliptical, smooth  $7.5-10 \times 4.5-6.0 \mu$  in length ; Spore print black ; Spores apiculate, non amyloid. Veil and volva absent, presence of large club shaped cystidia.  $30-32 \times 13-15 \mu$  ; Subhymenium layer distinct with peculiar type of round colourless shaped cells ; Hymenophoral trama regular and made of up septate hyphae.

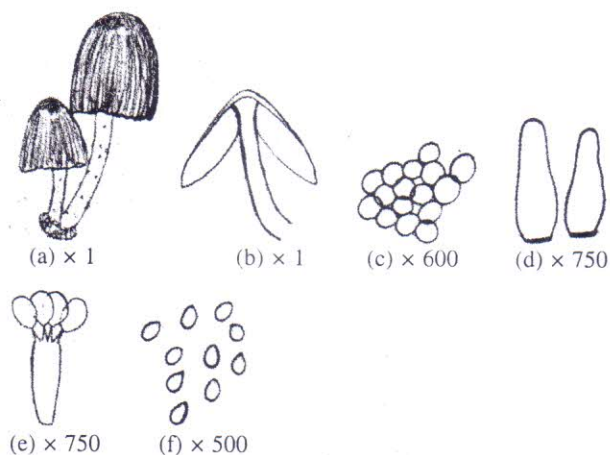


Fig. 1: *Coprinus micaceous* : (a) Basidiocarp ; (b) Basidiocarp with longitudinal section ; (c) Crushed remnant of veil from pileus ; (d) Cystidia ; (e) Basidia ; (f) Basidiospores.

It is collected near Sharma garage over a rotten log, Darjeeling around 6300 ft altitude. The voucher specimen has been deposited in Mycological Herbarium of Darjeeling Government College (DGC/MP/MF-044).

*Coprinus dissiminator* (Pers. Ex Fr.) S. F. Grey. (Fig. 2)

Pileus 1-2 cm, whitish or yellowish, later turning in to ash colour ; generally with small unicellular hyaline erect hairs, visible under a good hand lens ; Pileus ovate than parabolic, slightly expanded, sulcate, fascicular and deliquescent, Pileus context thin, soft, odour indistinct, dull, dry and rivulose ; Gill whitish, adnexed and narrow gill lamellae of least 1-2 lengths ; Strip  $2.5-6 \times 0.1-0.2$  cm, white, fragile, fistular, central, cylindrical and smooth ; Annular veil and volva absent ; Spore print black ; Spores ellipsoid, smooth ; apiculate, nonamyloid, black in colour ; Spores  $9-10 \times 5-6 \mu$ , clavate thin walled bearing four sterigmata with the length of  $0.4-0.5 \mu$  ; Subhymenium layer distinct and pseudoparenchymatous ; Hymenophoral trama regular with septate hyphae. Large club shaped cystidia present,  $32-38 \times 13-18 \mu$ .

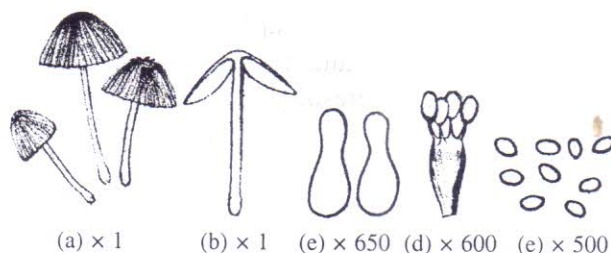


Fig. 2: *Coprinus dissiminator* : (a) Basidiocarp ; (b) Basidiocarp with longitudinal section ; (c) Cystidia ; (e) Basidia ; (f) Basidiospores.

It is almost abundant during rainy season in the adjoining areas of Darjeeling town from July-August on humus forest floor and moist walls. The voucher specimen has been deposited in Mycological Herbarium of Darjeeling Government College (DGC/MP/MF-062).

*Coprinus plicatilis* (Curt. ex Fr) Fr. (Fig 3)

Cap 1-2 cm gray brown, ovate than campanulate giving an umbrella like appearance which plicate radially ; Gill  $1.9-0.7$  cm almost glabrous, cream coloured, adnexed, deliquescent and wide ; Lamellae of at least 1-2 lengths. Cap separated

from the strip by a collarium, radially sulcate cap with no ornamentation; Pileus context thin and soft; Strip 2.5-7.5 × 1-2 cm pale, transparent, cylindrical, smooth, soft, fistular and central, Strip with no hairs, adnate and base slightly bulbous; Annular veil and volva absent; Spores apiculate, nonamyloid, hallow basidium with four basidiospores; Spore print black; Spores 10-14 × 8-9 μ in length, ellipsoid, smooth and black in colour; Subhymenium layer pseudoparenchymatous; hymenophoral trama regular; Cystidia clavate and stilbeous type ranging the length of 30-39 × 25-27 μ in length.

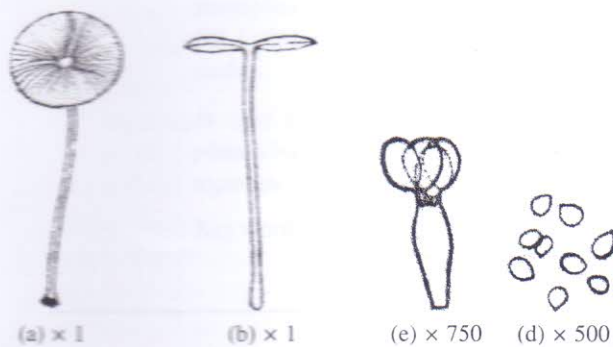


Fig. 3 : *Coprinus plicatilis* : (a) Basidiocarp; (b) Basidiocarp with longitudinal section; (c) Basidia; (f) Basidiospores.

It is found in the grassy meadows during spring to first winter frost. The voucher specimen has been

deposited in Mycological Herbarium of Darjeeling Government Collage (DGC/MP/MF-010).

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