

Notes on a Collection of Slime Moulds from Nainital*)

T. N. Lakhnopal, Departement of Botany, Hans Raj College,
University of Delhi, Delhi 7

Ten species of slime moulds are recorded, collected during the winter season. Two of them (*Lycogala flavofuscum* and *Arcyria incarnata*) are new records for India. *Lycogala flavofuscum* is of much significance because it is not a common species.

This paper records ten species of slime moulds collected from Nainital* during the winter season of 1970, in the last week of November. Two of these are new records for India and have been fully described and illustrated. *Lycogala flavofuscum* (Ehernb.) Rost. is of much significance because it is reported to be "rather an uncommon species" by Martin and Alexopoulos (1969). At the time when this collection was made, the vegetation all around had dried up, snowing had begun in the far off areas and it was very dry. Fifteen specimens were found growing on a single log of wood, on way to Cheena Peak and one specimen was collected from near the Government House. No specimen was recorded from rest of the localities visited. These specimens appear to be the left overs from the rainy season, however, the fruiting bodies are quite healthy and mature showing their resistance to cold and dry conditions.

Laboratory methods for study and identification of the specimens is based on 'The Myxomycetes' by G. W. Martin and C. J. Alexopoulos. All the specimens have been deposited in the Herbarium of the Departement of Botany, Hans Raj College (HHRC/TNL), University of Delhi, Delhi-7, constituting the nos. 123-136. Duplicates of nos. 123, 125, 129, 131 and 134, have also been deposited in the Departement of Biology, Chico State College, California, U.S.A.

1. *Lycogala flavofuscum* (Ehernb.) Rost., in Fuckel, Jahrb. Nass. Ver. Nat. 27-28: 68. 1873.

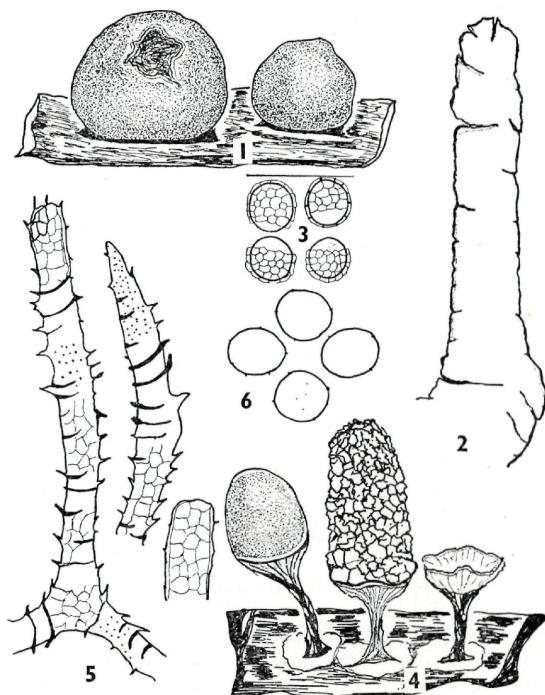
Collected on a dead stump of wood, Nainital (U.P.), November 24, 1970. HHRC/TNL 126. New. record for India.

Fructification aethalioid; aethalia scattered, solitary or in groups

*) Nainital (altitude 1920 m) is surrounded by high mountains on three sides viz. Cheena Peak 2612 m; Deopatta 2436 m; Ayarpatta 2487 m. This encloses a lake with a circumference of about 3.2 km. The average rainfall is about 250 cm. The rainy season lasts from the middle of June to the end of September. Up to now the slime moulds have been collected from Nainital only during the rainy season.

of 2 or 3, subglobose or hemispheric, pulvinate, sessile, slightly narrowed at the base, or may be broadly effused, greyish brown or silvery grey, smooth, glossy, 10–18 mm long and 8–12 mm wide; hypothallus prominent, rotate, silver grey; cortex thick, fragile, shining, smooth, glossy; dehiscence irregular, mostly the fragile peridium rupturing at the top.

Pseudocapillitium well developed, greyish brown, pallid by transmitted light, consisting of branched tubes, 6–30 μm wide, united to form an intricate network, expanded at the joints and then up to 60 μm wide, tubes smooth or wrinkled, free ends rare, rounded and slightly swollen.



Figs. 1–3. *Lycogala flavofuscum*. 1. Two aethalia with slightly constricted base, $\times 1$. — 2. A portion of pseudocapillitial thread, $\times 1000$. — 3. Reticulate spores, reticulations covering $\frac{3}{4}$ of the surface, $\times 1000$.

Figs. 4–6. *Arcyria incarnata*. 4. Fruiting bodies, $\times 20$. — 5. Capillitial threads showing different types of markings, $\times 1000$. — 6. Spores $\times 1000$.

Spores clay brown in mass, pallid by transmitted light, globose, 5—6 μm in diameter, prominently reticulate, reticulations covering $\frac{3}{4}$ of the total surface.

This species has been recorded from Europe, North America, South America, South Africa and China so far. This is its first record from India. Martin & Alexopoulos (1969), mention that "the large size, the thick brittle nearly smooth cortex, and the very coarse pseudo-capillitium are the marks of this widely distributed but rather uncommon species. Even small specimens are readily distinguished from *Lycogala epidendrum* (L.) Fries by more pulvinate habit, and the thick brittle peridium. The spores are somewhat less strongly marked and slightly smaller."

This collection differs from the typical species in the absence of a stalk, in the presence of less frequent free ends and predominantly reticulate spores, the reticulations covering only $\frac{3}{4}$ of the surface.

2. *Arcyria cinerea* (Bull.) Pers., Syn. Fung. 184. 1801.

Collected on bark; dead stump, mosses and dead wood, Nainital (U. P.), November 24, 1970. HHRC/TNL 130 a; 130 b; 130 c and 130 d respectively.

All the collections are typical of the species. All except 134 b possess solitary as well as clustered sporangia, 134 b is exclusively a clustered form. It was found intermixed with *Stemonitis fusca* Roth. and infected with *Aspergillus* sp. and *Cunninghamella* sp.

3. *Arcyria incarnata* (Pers) Pers., Obs. Myc. 1 : 58. 1769.

Collected on dead stump of wood, Nainital (U. P.), November 24, 1970. HHRC/TNL 125. New record for India.

Fructification sporangiate, stipitate, total height 1,6 mm; sporangia gregarious or densely crowded, subglobose or subcylindric, 0,5—0,7 mm long and 0,4—0,5 mm in diameter, dull grey or greyish brown, brownish black at the base; stalk 0,8—1 mm long, dark brown or dark reddish brown, dull or shining, broader at the base, narrow upwards, longitudinally rugose, filled with spore like but larger cells; hypothallus well developed, rotate and confluent, reddish brown; peridium thin, membranous, shining, iridescent, early evanescent, greyish brown, marked by radiating lines at the base; dehiscence irregular, peridium falling away above, leaving a deep cup behind, cup or calyculus irregular, striated longitudinally, striations more prominent at the base.

Capillitium well developed, consisting of smoky brown threads united to form a large-meshed net, appearing brownish yellow in the transmitted light, 5 or 6 μm in diameter (except the spines), marked with spines, half spirals and reticulations, reticulations more prominent at the ends, subsequent cogs under one focus give an impression of 2 or 3 spirals, spines up to 6 μm long, pointed or blunt, free ends frequent, blunt and usually more spiny than the rest of the thread. The capillitium is loosely attached at the base but quite firmly so as not to fall apart.

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Autor(en)/Author(s): Lakhanpal T. N.

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