

Two parasitic macrofungi-an addition to the Agaricales of the Sikkim Himalaya

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Sikkim Himalaya is a treasure house of the luxuriant growth of macrofungi. The present paper reports *Asterophora parasitica* and *Asterophora lycoperdoides*-two parasitic fungi from this area.

Key words: *Asterophora parasitica*, *Asterophora lycoperdoides*

Sikkim is a small beautiful state of India in the Eastern Himalayas with steep mountains and deep valleys. It lies between latitudes 27°5' N to 20° 9' N, longitudes 87° 59' E to 88° 56' E. It is wedged between Nepal in the West and Bhutan in the east and China in the north and northeast. In the south it shares its border with the State of West Bengal. The longest north-south distance is about a 100 km and the east-west breadth ranges between 60–70 km. Its total area is 7,299 sq. km. Rains and high humidity are the major climatic realms found 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, has made it a treasure house for luxuriant growth of macrofungi but very little work have been undertaken regarding the biodiversity of macrofungi of this area (Sarhboy *et al.*, 1975; Bilgrami *et al.*, 1979, 1991). During last few years we have surveyed continuously and collected many unreported macrofungi, some of them have already been reported (Acharya and Acharya, 2001; Acharya and Bhutia, 2003. Acharya *et al.*, 2003; Acharya *et al.*, 2004).

The study materials were collected during field trips in 2005 to 2007 from Ravangla, West Sikkim. 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 cameralucida. Then they were identified according to Ramsbottom (1965), and Singer (1986). The voucher specimens were deposited in University of Calcutta, Department of Botany.

Asterophora parasitica (Bull.; Fr.) Sing.

The parasitic *A. parasitica* (Tricholomataceae) grows in the cluster sprouting on the fruitbodies of an aged *Russula sp.* (Fig. 1). Pileus white, then grayish, smooth, silky, convex to flattened or campanulate, expanding upto 3-4 cm. Gills initially thick, distant, white, adnate, shallow, very thick, soft with 2-3 different gill lengths. Spores white, oval, smooth 4-6 × 3-3.5 μm. Later there appears stellate shaped chlamydospores with 15–10 μm diameter. The stipe is 1 – 4 cm. long, central, slender white to



Fig. 1 : *Asterophora parasitica*

grayish and pruinose, cystidia absent. Hymenophoral trama regular and made of up septate hyphae. Veil and volva absent. Monomethyl paramidophenol strongly positive with context. The smell is sickening, unpleasant. It is collected from Ravangla, West Sikkim. The voucher specimen has been deposited in Molecular and Applied Mycology and Plant Pathology Laboratory (WS/MF-038).

***Asterophora lycoperdoides* (Bull. : Fr.) Ditmar.**

A. lycoperdoides (Tricholomataceae) is relatively rare and parasitizes over an aged *Russula* sp. in cluster (Fig. 2). The pileus 2 – 3 cm, white then quickly turning brownish ochre, becoming cottony and powdery after the formation of asexual spores or chlamydospores, which are bluntly stellate, body globose with blunt arms with 12-18 μm diameter. Cap soon becomes densely powdered with brownish chlamydospores. Gills white then brown, adnate, distant, thick sometimes forked, hymenophoral trama regular. Stipe 2 – 3 cm, white then grayish



Fig. 2 : *Asterophora lycoperdoides*

brown, solid, central. The basidiospores white, oval, smooth, 4 – 6 \times 3.5 – 4 μm , cystidia absent. Veil and volva absent. Smell strongly rancid. It is collected from Ravangla, West Sikkim. The voucher specimen has been deposited in Molecular and Applied Mycology and Plant Pathology Laboratory (WS/MF-039).

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