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Wild edible Helvellaceae from Darjeeling Himalaya

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Due to the unique environmental condition Darjeeling Himalaya is a treasure house of the luxuriant growth of macrofungi. The present paper reports two uncommon edible mushrooms *Morchella esculenta* (L.) Pers. and *Verpa conica* (Mull.) Swartz first time from this area.

Key words : Helvellaceae, *Morchella esculenta, Verpa conica*

INTRODUCTION

The wild mushrooms have been eaten by mankind since times immemorial. Their use in Indian literature dates back to 3000 BC (Kumar *et al.*, 1990). Darjeeling Himalaya, a segment of Eastern Himalaya's located at the junction of Indo-Malayan and palaeartic biogeographic realms along with its diverse physiography and varying climatic zones, has contributed to the ocurrence of many edible species of mushrooms. Taking into acount the large horizontal and vertical range and the innumerable ecological niches, the Himalayas are still comparatively little explored for macro-fungi. Very few works have been undertaken regarding the biodiversity of macro-fungi of this area (Bilgrami *et al.*, 1979, 1991 ; Butler and Bisby, 1960 ; Sarbhoy, 1975). During last five years we have surveyed continuously and collected many unreported macrofungi, some of them have already been reported (Acharya and Acharya, 2001 ; Acharya *et al*, 2003, 2004a, 2004b ; Acharya and Bhutia, 2003). Here we have reported two very uncommon edible Helvellaceae of this area namely *Morchella esculenta* (L.) Pers. and *Verpa conica* (Mull.) Swartz.

MATERIALS AND METHODS

During the field survey of macro-fungi at Darjeeling hills, several specimens were collected. During field survey, morphological and ecological features were noted and colour photographs were taken. All the specimens were brought to the laboratory and 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 were identified according to Ramsbottom (1965) and Seaver, (1961). The voucher specimen were deposited in Mycological Herbarium of Darjeeling Government College, Darjeeling. The description of these species is given hereunder.

OBSERVATION AND DISCUSSION

Morchella esculenta (L.) Pers.

Pileus diameter ranging from 8-8.5 cm. ovoid, attenuated upwords but obtuse at the apex ; pits irregular, longitudinally elongated, having a width of 4-10 mm, yellowish, becoming blackish or

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brownish when dried. Ribs irregularly anastomosing, thick and lighter coloured then the interior of the pits usually yellowish (Fig. 1) ; stem length ranging from 5-5.5 cm and diameter of 1.7-3 cm, yellowish white, hollow and fragile. Stem little enlarged at the base and irregularly lacunose ; ascus length ranging from 187.95-223.75 µ, spores uniseriate, ellipsoid, hyaline yellowish in mass, 14.3-19.69 × 8.95-10.74 µ ; paraphyses slightly elongated at the apex, having a diameter of 9.84-11.63 µ and length of 107,4-118.14 µ.

The specimen was collected from humicolous soil under forest trees of Lloyd Botanic Garden, Darjeeling, from June-July. The voucher specimen has been preserved in the Mycological Herbarium of Darjeeling Government College, Darjeeling, West Bengal (DGC/MP/MFA-15).

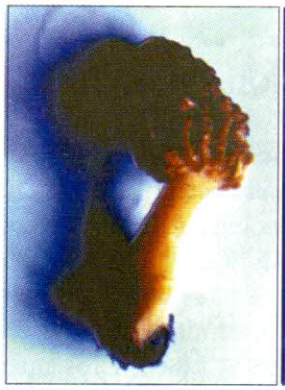

Fig. 1

Fig. 2

***Verpa conica* (Mull.) Swartz**

Pileus campanulate, brown above, whitish beneath the margin often slightly reflexed, diameter 4-5 cm, equally deflaxed all round with the margin pressed to the stem but free; stem cylindric/subcylindric, reaching a length of 7-9 cm and breath 1.4-1.7 cm, slightly narrowed above, whitish with scales arranged in partial circles around it or giving a transversely seriate appearance, very loosely stuffed (Fig 2) ; asci cylindrical, gradually tapering below into a more or less contorted stem like base, reaching a length of 290 µ and diameter 25 µ ; 8 spored ; ascospores uniseriate, ellipsoid, slightly yellowish at maturity, 12.2-15.8 × 22-26 µ ; paraphyses stout, sparingly septate, reaching a diameter of 10 µ.

The specimen was collected from humicolous soil under forest trees near Mangpoo, Darjeeling, from June-July. The voucher specimen has been preserved in the Mycological Herbarium of Darjeeling Government College, Darjeeling, West Bengal (DGC/MP/MFA-09).

REFERENCES

Acharya, K. and Acharya, R. 2001. *Cyathus* and *Geastrum*–An addition to Darjeeling Mycoflora. *The Indian Forester*, **127** : 950-952.

Acharya, K. and Bhutia, T. P. 2003. Two new contribution of the theleophoraceae of Eastern Himalaya. *The Indian Forester*, **129** : 1051-1052.

Acharya, K. ; Rai, M. ; Rai, N. P. and Giri, S. 2003. Two new records of Agaricales from Darjeeling hills, West Bengal. *J. Mycopathological Research*, **41** : 113-114.

Acharya, K. Rai, M., Subba, J. and Gurung, S. 2004a. Two species of lecterius–New report from Darjeeling, West Bengal. *Indian Jornal of Applied and Pure Biology*, **19** : 63-66.

Acharya, K. ; Rai, M. and Sen, S. 2004b. *Otidea onotica*–A new record from Sikkim Himalaya. *Indian Jornal of Applied and Pure Biology*, **19** : 215-217.

Bilgrami, K. S. ; Jamaluddin, S. and Rizwi, M. A. 1979. *Fungi of India. Part I : List and references,* Today and Tomorrow's Printers and Publishers, New Delhi.

Bilgrami, K. S. ; Jamaluddin, S. and Rizwi, M. A. 1991. *Fungi of India.* Today and Tomorrow's Printers and Publishers, New Delhi.

Butler, E. J. and Bisby, G. R. 1960. *Fungi of India,* ICAR, New Delhi.

Kumar, A. ; Bhatt, R. P. and Lakhanpal, T. N. 1990. In : *The Amanitaceae of India,* Bishen Singh Mahendra Pal Singh, Derha Dun.

Ramsbottom, J. 1965. *A handbook of the larger British fungi,* Alden & Mowbray Ltd. Great Britain.

Sarbhoy, A. K. ; Girdharilal and Varshney, J. L. 1975. *Fungi of India,* Navajug Traders, New Delhi.

Seaver, F. J. 1961. *The North American Cup-fungi,* Hafner Publishing Comp, New York.

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