Abstract Different flesh mushrooms grow widely in Meghalaya. Altogether five edible species were collected and identified which were found abundantly in forest and are known to be consumed by local people for time immemorial. The species identified are Lentinus edodes (Berk) Sing., Boletus edulis Bull ex Fr., Clavaria cinerea (Fr.) Schroet, Clavaria aurea (Fr.) Quet and cantharellus floccosus Juss.

INTRODUCTION

Meghalaya (25°47’N and 26°10’N latitude and 89°45’E and 92°47’E longitude) is a hilly state projecting like a monument between the two plains of Assam in the north and Bangladesh in south, it has a wide variation in altitude, topography, agroclimate, etc. The region in general is blessed with a rich forest growth, with about 0-50% of the geographical area covered with lush green forests. These forests, abound in macrofungi which are found growing on the forest-floor, wigs and branches, rotting plant parts, in mycorrhizal association with higher plants, etc. Local tribal population of the area has been utilizing a few of the edible fungi for table purposes as it has several nutritive and medical values. Antiviral, antitumour and hypolipidemic activities of Lentinus edodes and antirheumatism, activity of Boletus edulis have already been reported (Bahl, 1983). The edible fungal flora or the region as such still remains to be scientifically explored. The present investigation was, therefore, initiated to survey and identify the edible fungi of the region with respect to their morphology distribution, habitat and edibility etc.

Materials and Methods

A field survey was undertaken during the month of July-August of the current year (1995) in the hills of Meghalaya covering the places viz., Nongstoin, Nongpoh and Upper Shillong. For this survey, perforated polythene bags were arrived by the survey team for collection of mushrooms. The edible mushroom species were collected on the basis of information made available by the local tribal people on their edibility. Later on morphological studies were done and these were preserved for further studies. The descriptions were based on study of fresh as well as dried material, the colour terminology used is that of Kornerup and Wanscher (1967).

Results and Discussion

On the basis of morphological studies, collected mushroom species have been identified and described below.

Lentinus edodes (Berk) Singer

Commonly known as “Shiitake” mushroom. It is a typical and popular forest mushroom whose commercial production is done on
logs in China and Japan. In India, it is grown since the last 800 years (Shukla, 1994). It grows extensively in decaying logs of Daks (Quercus serrata, Q. acutissima, Q. mangolica var. grossoserrata), horn beans (Corpinus japonica) and chestnut (castacea crenata) in Meghalaya forests.

Sporophores 5-12 cm are solitary or in groups in the decaying logs. Cps pale to dark reddish brown, convex & becoming broadly convex to nearly plane on aging. Margin was inrolled when young. Cap covered by white veil remmante, cracking, flesh was creamy firm easily drying and reconstituting. Gills are white & either adnate or adnexed. They are also crowded within curved edges & are smooth or lightly serrate. Stipe 3.5 X 3.35 cm, central on maturity, short, very tough, smooth or slightly fibrillose. Spore mass white with size ranging from 5.5 – 6.5 X 3-3.5 µm. They are subcylindrical, smooth, nonamyloid. Basidia tetrapolar. Pleurocystidia none. Hyphae hyaline 5-7 µm wide, gill trama with thick walled hyphae. Clamp connection present.

Boletus edulis Bull ex Fr.

B. edulis, an dibble bolete, is regarded as a prized delicacy in the west and consumed in Himachal as well, but lesser extent (Lakhanpal et al., 1988). Earlier edulis was recorded by Lakhanpal (1988) from Himachal Pradesh, Sagar and Lakhanpal (1994) from North West Himalayas, harsh et al (1983) from Kumaun hills and sarma et al. (1994) From Himachal Pradesh.

Pileus 2-12cm broad, broadly covex in age, surface dry, viscid when wet, glabrous, smooth, wrinkled o shallow pitted, light yellowish brown to brownish or with darker shads of brown, dusted with a whitish bloom, margin regular, smooth, incurved when young, context firm, 10-15 mm thick, white, unchanging smell pleasant, taste is like that of meat, tubes 8-10mm deep, adnected but depressed around the stipe, pale whitish, yellowish white to olive yellow in age, unchanging, pores minute, roundish stuffed in hung yellow to yellowish brown in age, stipe central, 4-9 cm long, 1-2 cm across, bulbous when young becoming equal, base subradicating. Light brownish in the apex, whitish yellow below, reticulate in the upper half, flesh firm, white, unchanging.

Spores olive brown in mass, 12-16 X 4-5.5 µm, ellipsoid, subfusciform, inequilaterally in profile, yellowish to olive, yellow in KÖH, inamyloid, smooth, clavate, 4 spores, pleurocystidia scattered, narrowly fusoid venticose, thin walled, cheilocystidia similar. It grows profusely on ground in coniferous forest.

Clavaria spp

The family of fungi, Commonly called the “Club” different species of clavaria were earlier recorded by Thind and Sagar (1985) from Eastern Himalayas, shashikant and rampal (1993) from jammu and Kashmir and thind and sharda (1985) from the Himalayas. The species of this genera grows singly or in pairs in coniferous forests.

Clavaria aurea (Fr) Quel

Yellowish pale brown, branches erect, parallel, on wood, 3-10cm high branches slender, often violet tinged, flesh tough, bitterish, smell frintly spic on decayed stumps buried branches penetrated by white mycelium strands.

Clavaria Cinerea (Fr) Schroet.
Stipe stout, massive, with dense branching reddish at tips, 5-10 cm high, upto 20 cm road, yellowish brown or tan, stipe massive 3-4 cm high to 6 cm wide, branchlet tips varying red to purplish, flesh brittle, mild, smells fruity.

*Cantharllus floccosus* Juss.

The most obvious distinguishing characters of the genus are the vase or funnel shape of the cap, and recurrent forked gills, that in most species are so thick that the appear more like ridges than true gills. Cap 5-8 cm wide, at first conical or almost cylindrical with the flat top, latter sallow funnel shape scally, yellow to pale orange, margin curved downward or rolled inward, flesh white, firm gills 8-12 cm, 1-2 mm wide, 1 mm thick, ridge-like, long decurrent but ending rather abruptly on the stem, frequently forked and joined, yellow to reddish yellow. Stem 3-6 cm long, 1-2 cm thick, uniform in diameter, solid, pale yellow, often with white mycelium at the base, solitary to scattered on the ground in diameter, solid, pale yellow, often with white mycelium at the base, solitary to scattered on the ground in upland hardwood and conifer forest.

The nutritive value of these edible mushrooms growing wild in Meghalaya need to be determined and its medicinal value has to be established. Further work on these mushroom species is required to find out the farming technology for commercial production. These may substitute other protein rich foods and lead to the economic development of the rural people.

Reference:

1. Bahl, Nita, Medicinal Value of Edible fungi In: Proceeding of Te International conference on science and cultivation technology of edible fungi (Kaul and Kapur ed) pp. 204-209 (1983).

2. Christensen, C.M., Common Edible fungi, Burgens publishing company, pp. (1974).

3. Harsh, N.S.K. and Bisht, N.S., Boletaceae of Kumaun Hills, India, Curr Sci Vol 52, 316-317, (1983).

4. Kornerup, A, and Wansher, J.H., Methuen Handbook of colour, (London: Methuen & Co) pp. 243 (1967).

5. Lakhanpal, T.N., Sharma Rajeev and Kumar Ashok, Boletus edulis Bull ex. Fr. – An Edible Mushroom New to India, Curr. Sci., Vol 57, 611-612 (1988).

6. Sagar A. and Lakhanpal, R.N., Fleshy Fungi of North west Himalayas – XV. Six Species of Boletus New to India, Indian science Abstract, Vol. 30 (10), (1994).

7. Sharma, B.M. Singh B.M. and Kumar, A., Notes on some promising wild Edible Mushroom of himachal Pradesh, Mushroom research, Vol 3 (1), 38 (1994).

8. Shashikant and Rampal R.K., New Records of clavariaceae from J& K., Indian science abstract, Vol. 129 (10), (1993).
9. Shukla, A.N., Cultivation of Japanese mushroom shiitake in Indian, Indian forester, Vol 120 (8) 714-719 (1994).

10. Thind, K.S. and Sharda, R.M., New Records of the genus Clavaria from the Himalayas, Indian Science Abstract Vol 20(8), (1984).

11. Thind, K.S. and Sharda, R.M., Clavaroid fungi from Eastern Himalayas, Indian Science Abstract Vol 22(13), (1984).