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Ethnomycology of Chepang Community in Chitwan

Nina Pandey[1] and Usha Budhathoki[2]

[1]*Department of Botany, Patan Multiple Campus, Tribhuvan University, Lalitpur*
[2]*Central Department of Botany, Tribhuvan University, Kirtipur, Kathmandu*
E-mail: ninapandey@yahoo.com

Abstract

Chepangs are the mycophagus group. This paper highlights the use of different species of mushrooms by these people in Chitwan district. Fifty species of edible mushrooms beloning to 14 families have been identified at the generic level. Seventeen species are used for culinary purpose, three species for medicinal purpose, few species for domestic purpose and one species for decorative purpose. *Dictyophora duplicata* (Bosc) Ed. Fishcer is a new record for Nepal. Chepangs consume this mushroom at its young stage only.

Key words: edible mushrooms, Chepang, *Dictyophora duplicata*

Introduction

The investigation and study about the utilization of mushrooms by different ethnic groups is called ethnomycology. This aspect is not yet studied in detail in Nepal (Adhikari 2000). Today, ethnomycology has been attracting researchers of various disciplines all over the world particularly in the developing countries where large portion of indigenous population depend upon minor natural resources. In the initial stages of research on mycological specimens in Nepal, there were no specific intentions of ethnomycological investigations.However, mushrooms were collected and reported as edible or inedible according to human uses (Singh 1966, 1981-82,1991,1999,1996,2004). Some ethnic groups of people covered in ethnomycological studies include Chepang (Tullons & Bhandari 1992), Sherpas (Sacherer 1979), Tamangs (Kharel 1999, Pandey *et al.* 2006) and Thakali (Bill & Cotter 1989).The geographical areas covered by ethnomycological studies in Nepal include Kathmandu (Singh 1966, 1974), Kathmandu valley and adjoining areas (Pandey & Budathoki 2002, Pandey & Budathoki 2006 a 2006 b) Dumre, Pokhara, Mustang, Manang (Bhandari 1991), Pokhara and Kathmandu valley (Joshi & Joshi 1999), Rolwaling (Sacherer 1979) and Western Central Region of Nepal (Adhikari *et al.* 2005). Tullons & Bhandary (1992) described *Amanita chepangiana* used as food by Chepangs of Chitwan district. Still many areas in Nepal are untouched and waiting for explorations.

Wild edible mushrooms are one of the most important minor forest products, which are locally traded in local markets of different parts of Nepal (Kharel & Rajbhandary 2005).

In various languages spoken in Nepal mushroom is known as Chyau, Bammhukan (Newari), Shymo or Shyamu (Tamang), Shamu (Sherpa),Ghyabo (Gurung), Mugan (Magar), Pat (Limbu), Chhani (Tharu) and Kukurmutta (Hindi) (Adhikari 2000). The authors of this article have recorded some new names for mushrooms: Musa (Chepang) (Praja), Timu (Thakali),Kacchu (Danuwar), Beemti (Tharu) which are being used in Nepal (Pandey 2006a, 2006b). Mushroom species so far recorded in Nepal are 110 – edible, 13-medicinal, 45 – toxic and 6- others (Adhikari 2000).

Study area

The study was undertaken in Amrit Dharapani Community forest and Tikauli forest of Chitwan district which are located in the central Terai region of Nepal covering an area of 2238.39 km^2 and extend between latitude 27^{0}21' to 27^{0}64' N and longitude 83^{0}55' to 84^0 48' E. This area has subtropical climate with a mean annual rainfall of 1512mm and temperature between 7-39^0 C. The forest types are comprised of Bhabar and

Terai forests and Doon Sal forests. The vegetation is more or less uniform throughout the study areas comprising of valuable tree species of Sal (*Sorea robusta*). Other important tree species found in the area are Asna (*Terminalia tomentosa*), Harro (*Terminalia chebula*), Barro (*Terminalia bellirica*), Jamun (*Syzygium cumini*), Sissoo (*Dalbergia sissoo*) and Dabdabe (*Lannea coromandelica*), etc. Praja, Kumal, and Tharu are some tribal groups being mixed with Chettris and Brahmins in the study areas.

Chepangs inhabit Central Nepal, in districts mainly along the border of northern Chitwan, north western Makwanpur, western Gorkha and southern Dhading. Their population is estimated to be 32,000. Chepangs are considered as one of the primitive communities in Nepal (Manandhar 2000).They usually build their houses in the middle of the forest. The houses are small and narrow with a small entrance, a low roof thatched with grass and typically no ventilation. Walls are made up of tree branches and the house contains only one room on the ground floor, on one side they sleep and use the other side as a kitchen.

Meterials and Methods

Ethnomycological field research was carried out during July 2002 and June-July 2003. Interviews of the targeted community were held with the help of a questionnaire. Mushroom specimens were collected during the visits. The vernacular names and uses of the various species were also obtained. The specimens were sun dried and brought to the laboratory for microscopic studies. Identification was done on the basis of literature (Adhikari 2000, Arora 1986, Pacioni 1985, Konemann 1999, Singer 1981, Rea 1922, Webster 1980, Miller1984, Imazeki *et al.*1988, Dikinson, and Lucas 1979, Svrack 1975 & Kreiger1967).The specimens have been preserved at Tribhuvan University Central Herbarium, Kathmandu, Nepal.

Results and Discussion

According to the Chepangs of Chitwan, 17 species of mushrooms are edible. (Chetan musa, Yamu musa, Dhudha musa, Cheimu musa, Kadum musa, Baum musa, Hardi musa, Pankamu musa, Khaukarey musa, Lisa musa, Phuli musa, Chapi musa, Gobrey musa, Chamrey musa, Gosaydunge musa, Raktey musa and Thokpa musa).

Yaroning musa (*Pycnoporus cinnabarinus, P. sanguineus*) is inedible. It is used medicinally for score ear. If a piece of mushroom is dipped in mustard oil, after few hours the color of oil changes into red. This red oil is used for ear to relief pain. *Trametes versicolor* in young stage is used for culinary purpose and matured stage is used to treat cuts and wounds. The mushroom is used by making a paste in water. *Coriolus hirsutus* is used to treat cuts and wounds as above. Different species of *Hymenochaete* were found to seal crevices of the wooden pots (Theki) called "Theki Talney Chyau". Large attractive *Ganoderma species is* used for decorative purpose.

Among fifty species Dictyophora duplicata is a new record for Nepal. Chepangs have named his species as "Hardi musa". The details of this species have been given below.

Dictyophora duplicata (Bosc) E. Fischer (1888)

Philips (1981), *Mushrooms of North America.* 290. –Orson (1984), *Mushroom of North America,* 170. –Teng (1988), The Higher Fungi of China, 518.- Friden L.V (1969),*Mushroom of the world*, 158.-Lincoff G.H (1989), *Simon and Schuster's guide to Mushrooms,* 356. –Kringer L.C.C (1967), *The mushroom handbook*, 218.

Mature fruiting body - Spike-like 12-17 cm high, 2-4 cm thick; with a "cap" area that is ridged and covered with a slimy, malodorous, olive-brown substance that eventually wears off (or is carried away by flies), leaving a light brown coloring; with a white stem that arises from a white, sack-like , the stem being 7-12 cm long and 3.5-4.5 cm thick, white, chambered, hollow and projecting from the large oval (egg) from which the fruiting body expands ; with a laced, white "skirt" hanging 3-6 cm from the bottom edge of the cap (sometimes collapsing against the stem).

Immature fruiting body - Like a flesh-colored to whitish "egg" 4-7 cm high; when sliced revealing the stinkhorn-to-be encased in a gelatinous substance.

Microscopic observation

Spores- Spores - 3.5-4 x 1.5-2 µm; elliptical or flattened, smooth & colorless.

Specimen examined - It was spotted in a solitary state near a tree stump, in tropical forest. Found during June

to September at an altitude of 225 to 300m; Date of collection: 29/06/2003,

Collection No. 23356 TUCH, Pandey N.

Edibility - Edible in young egg stage.

Distribution -North America, Japan, China and Nepal.

The brownish olive, chambered head and the netted shirt-like veil (indusium) form a most beautiful fungus, hence called "Queen of Mushroom" as long as one posses an insensitive nose.*Dictyophora indusiata* (Vent).Ed. Fischer differs from the present species in having veil extending to about 10cm. Below the pileus, made up of slender tubular threads, with polygonal meshes 5-7 mm. diameter.

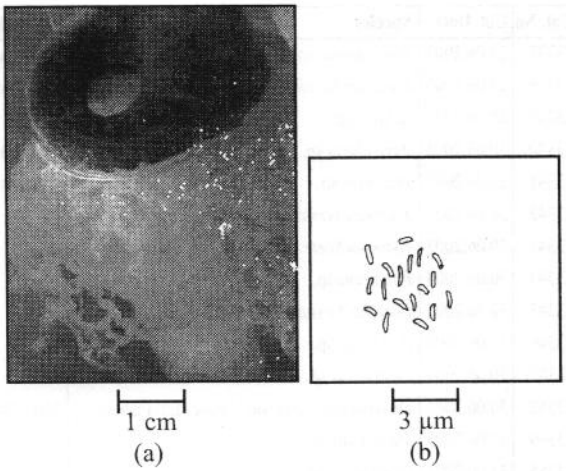

Fig.1. Different stages of *Dictyphora duplicata* (a) Mature stage (b) spores

Table 1. Mushrooms collected from the study area

Col. No	Col. Date	Species	Chepang Name	Nepali Name	Family	Uses	Substractum
22210	21.07.2002	*Pyconporus cinnabarinus* (Jacq. ;Fr.) Karst	Yaroning musa	Sindurey, Rato	Polyporaceae	Medicinal	Stump
22211	21.07.2002	*Phellinus* sp.			Phellinaceae		Stump
22212	21.07.2002	*Hymenochaete* sp.			Hymenochaetaceae	Seal	Stump
22213	21.07.2002	*Hymenochaete* sp.			Hymenochaetaceae	Seal	Stump
22214	21.07.2002	*Lentinulles ursinus* (Fr. :Fr.) Kuhner	Ghompa musa		Pleurotaceae	Edible	Stump
22215	21.07.2002	*Russula* sp.		Kishan Chyau	Rusullaceae	Edible	Soil
22216	21.07.2002	*Marasmius androceus*			Marasmiaceae		Leaf (Shorea)
22217	21.07.2002	*Marasmius* sp.		Bulaki	Marasmiaceae		Soil
22218	21.07.2002	*Russula delica* Fr		Chaatey	Rusullaceae	Edible	Soil
22119	21.07.2002	*Amanita Chepangena* (Tullons & Bhandari)			Amanitaceae		Soil
22120	21.07.2002	*Termitomyes Eurhizus* (Berk.) Heim.	Kadum musa	Deuley Kalungey	Tricholomataceae	Edible	Soil (Dhamero ko Gola)
22121	22.07.2002	*Clavulina* sp.		Sinkey	Clavariaceae		Soil
22122	22.07.2002	*Lactarius* sp.	Khakaurae musa	Dhude	Russullaceae	Edible	Soil
22224	22.07.2002	*Polyporus* sp.			Polyporaceae		Stump
22225	22.07.2002	*Amanita vaginata* (Bull. : Fr.) Vitt		Chaatey	Amanitaceae	Edible	Soil
22226	22.07.2002	*Auricularia auricula-judae* (Bull.: Fr.) Wettst.	Dhudha musa	Chipley	Auriculaceae	Edible	Stump
22227	22.07.2002	*Microporus xanthopus*			Polyporaceae		Stump
22228	22.07.2002	*Daldinia concentrica* (Bull. :Fr.) Ces & De Not		Dalley	Xylariaceae		Stump
22229	22.07.2002	*Scleroderma citrinum* Pers. : Pers.	Wamum musa	Kodo, Til, Aalu	Sclerodermataceae	Edible	Soil
22230	22.07.2002	*Fomitopsis* sp.			Fomitopsidaceae		Stump
22231	22.07.2002	*Stereum hirsutum* (Wild. :Fr.) Fr.			Stereaceae		Stump
22232	22.07.2002	*Innonotus* sp.			Hymenochaetaceae		Stump (sal)
22234	22.07.2002	*Pleurotus* sp.	Yamu musa	Kanney	Pleurotaceae	Edible	Decayed wood
22235	22.07.2002	*Pleurotus* sp.	Yamu musa		Pleurotaceae	Edible	Stump
22236	22.07.2002	*Hymenochaete* sp.			Hymenochaetaceae		Stump (sal)
22237	22.07.2002	*Gleophyllum* sp.			Fomitopsidaceae		Stump
22238	22.07.2002	*Daedolphis* sp.			Polyporaceae		Stump
22239	22.07.2002	*Phellinus* sp.			Hymenochaetaceae		Stump
22240	22.07.2002	*Xylaria* sp.			Xylariaceae		Stump
23332	29.06.2003	*Ganoderma* sp.		Kathey	Ganodermataceae	Decorative	Stump
23333	29.06.2003	*Pyconporus sanguineus* (Fr.) Murr.	Yaroning musa	Rato, Sindurey	Polyporaceae	Medicinal	Fallen twig
23334	29.06.2003	*Clavaria* sp.			Clavariaceae		Soil
23335	29.06.2003	*Guepenia spathularia* (Schw.) Fr.			Tremellaceae		Decayed wood (sal)
23336	29.06.2003	*Hymenochaete* sp.			Hymenochaetaceae		Stump (sal)

Col. No	Col. Date	Species	Chepang Name	Nepali Name	Family	Uses	Substractum
23337	29.06.2003	*Scleroderma polyrhizum* J.F. Gmel. :	Pakamu musa	Dalley, Aalu, Kodo	Sclerodermataceae	Edible	Soil
23338	29.06.2003	*Cantharellus cibarius*l (Fr. :Fr.) Fr.	Chapi musa	Soli, Pahelo	Cantharellaceae	Edible	Soil
23339	30.06.2003	*Xylaria* sp.			Xylariaceae		Stump
23340	30.06.2003	*Auricularia* sp.	Dhudha musa	Chipley	Auriculariaceae	Edible	Stump (sal)
23341	30.06.2003	*Pleurotus* sp.	Yamu musa	Kamey	Pleurotaceae	Edible	Stump
23342	30.06.2003	*Trametes versicolar*l (L.:Fr) Llyod)		Rekhi	Polyporaceae	Medicinal	Stump (sal)
23343	30.06.2003	*Hymenochaete* sp.			Hymenochaetaceae		Stump (sal)
23344	30.06.2003	*Polyporus* sp.			Polyporaceae		Stump (sal)
23345	30.06.2003	*Coriolus hirsutus* (Fr.) Quel.		Kathey	Coriolaceae	Medicinal	Stump (sal)
23346	30.06.2003	*Polyporus* sp.			Polyporaceae		Stump (sal)
23347	30.06.2003	*Lentinullus* sp.		Chaatey	Pleurotaceae	Edible	Soil
23348	30.06.2003	*Dictyophora duplicata** (Bosc) Ed. Fishcer	Hardi Musa	Aandy	Phallaceae	Edible	Soil
23349	31.06.2003	*Marasmius* sp.		Bulaki Chyau	Marasmiaceae		Stump
23355	31.06.2003	*Ganoderma* sp.		Kathy	Ganodermataceae	Decorative	Stump
23356	31.06.2003	*Innonotus* sp.			Hymenochaetaceae		Stump
23357	31.06.2003	*Mycena* sp.		Masiney	Marasmiaceae		Soil

* It refers new record for Nepal.

Chepang Recipe

The Chepangs cook wild edible mushrooms in earthern pot which is know as "Gwa". They boil the mushroom with salt, chilli and specie if available. They also eat some wild edible mushrooms by rapping them either with leaves of Bhorla (*Bauhinia vahlii*) or Chiuri (*Bassia butyraceae*) and roasting on fire. The leaves will dry and fall down and the mushrooms will be ready to eat. *Auricularia* species are known as 'Dhunda Musa' which are used to prepare soup. Other edible mushrooms are cooked as usual vegetables.

When enough quantity of mushrooms are available, besides consuming in fresh stage, they are also dried in the sun and stored for future use.

Chepangs collect several species of edible mushrooms from the forest through their traditional experience in monsoon. Mushroom collection is done early in the morning because people compete for gathering best species. There were no poisoning cases due to consumption of wild mushroom because Chepangs consumed them according to their traditional expertise. People consumed only those species which were suggested by elderly people. In Chitwan there is no trade of wild mushrooms because there were no buyers in urban areas.The consumers in the urban areas use only cultivated mushroom.

Conclusion

The present study indicates that the study area is rich in mushroom resources and Chepang people have good knowledge regarding the edibility of various mushrooms and their utility pattern.

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