

REPORT ON SOME TERRESTRIAL MOLLUSCS FROM DIFFERENT REGIONS OF NEPAL

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Abstract

Nine species of terrestrial molluscs were collected at eastern, mid western and far western regions of Nepal. The documented molluscan samples are represented with 4 families under three orders. Out of the total record of nine species, four species belonged to the family Ariophantidae, three species to Subulinidae, one species to Bradybaenidae and one to Veronicellidae.

Key words: Molluscs, Nepal, record, species, terrestrial.

Introduction

Nepal is a land of various interest accommodating diverse faunal and floral components. It stands on a latitude of 26° 22' to 30° 27' North and its longitude is between 80°4' to 88°12' East. This Himalayan country has broadly been divided into three main distinct regions which includes the lowland (65m to 915m), midland (915m to 2745m) and the highland areas above 2745 m of elevation to the north.

Relevant literatures regarding the terrestrial molluscs of Nepal are very scarce. Godwin-Austen (1910) and Majupuria (1981-1982) have reported a few species of freshwater and terrestrial molluscs from different parts of Nepal including Kathmandu valley. Some notable works were done by Subba and Ghosh (2000), Subba and Ghosh (2001), Subba (2003), Thapa (2003) and Subba and Pandey (2005) who made significant reports of various molluscan species from different parts of the country Piffier *et al.* (1999), Yadav *et al.* (1980) made interesting studies on the population status of various species of fresh water molluscs of Nepal.

Study Area

The study sites were selected on the basis of hotspots where rich diversity of molluscs is accommodated. These include some of the parts of Ilam, Panchthar, Taplejung, Sunsari, Dhankuta and Tehrathum of the eastern region, likewise, Dang, Banke, Kailali and Kancharpur of the mid western and far western regions respectively. The geographical position, suitable climatic conditions, diverse vegetation and topography of the eastern, mid western and far western regions of the country show interesting variations among molluscan species so these places were preferred for the present study.

Material and Methods

Samples of terrestrial mollusc were collected during 1999-2003 at different altitudes of 70 m to 3000 m. Random sampling was done at suitable sites like gardens, fields, forests, rocky and shady places etc. The shells of land molluscs were simply hand picked, cleaned and

kept safely in containers which then were preserved in 70% ethanol for further investigation. Natural colour, habits and habitats were duly noted during the time of collection.

Identification of each specimen was made with the help of available literature viz. Cooke *et al.* (1896) Raut and Ghose (1984), Hymen (1993). Some specimens and coded samples were sent to the Zoological Survey of India (ZSI) Calcutta, for identification and re-confirmation.

Results and Discussion

The hills and plains of the east display many preferable habitats for diverse species. The land molluscs collected during the survey period are presented in Table -I. The nine species of terrestrial mollusc recorded in the present survey belonged to four families like Bradybaeridae (one species), Subulinidae (3 species), Ariophantidae (four species), and Veronicellidae (one species). Rich diversity of the terrestrial molluscs was found during rainy seasons. The drought season represented dry shells in majority. The moist places occurring near the stream, canals, cascades and lakes represented high rate of diversity of the terrestrial molluscan species, but this is not applicable to every species as there always appeared over lapping phenomenon regarding the distribution of the molluscan species.

Among the recorded species, *Aegista (Plectotropis) tapeina* was confined to the altitude of 1700 m in the east which was covered with stones and decayed leaves. Their shells were found at wet and rocky places of the forest.

Four species of terrestrial mollusc of Ariophantidae were found interesting in their distribution as they shared their habitats both in the lowland and midland regions. These include *Macrochlamys lubrica*, *Rotungia williamsoni*, *Cryptaustenia ovum* and *Taphrespira compluvialis*, the former second one was reported at rocky places of Kailali and Kanchanpur districts. The rest three species were found in the low land and midland regions of east Nepal.

Laevicaulis alte (Black Slug) was collected from various localities of Morang, Dang, Banke, Kailali and Kanchapur districts. It was found in wet and moist areas in association with algal plants. The occurrence of *Opeas* sp. was confined to Morang district only. Its report was made outside the kitchen and was climbing and approaching to the damp areas covered with vegetations like algae and mosses. *Bacillium* sp. was found at stony beds of cardamom gardens of the Panchthar and Ilam districts in the east.

Glessula tenuispira and *Aegista (placetotropis) tapeina* were also collected from Panchthar and Ilam districts of the east. These were not recorded in Kailali, Kanchanpur and Dang districts of the west.

The climate and vegetation are important abiotic and biotic components which play crucial role for the distribution of molluscan species in a particular area. Most of the plant species of eastern Nepal are not available in the west, besides the amount of rainfall which is said to be an important factor for the distribution of molluscan species is lesser in west, comparative to

the eastern region. It may be one of the reasons why the eastern molluscan species are rare and many of them are not found in the western parts of the country (Table - I).

Distribution of Land Molluscs in Different Districts of Nepal

Genus	Species	Family	Eastern										Midwestern		Farwestern	
			Il.	Panc h	Tap.	Sun.	Dhan.	Tehr	Mor	Ba.	Da	Kai.	Kan.			
<i>Aegista</i> (<i>Plectatopsis</i>)	<i>tapeina</i> (Benson)	Bradybaeridae	+	+	-	+	+	+	+	+	-	-	-	-	-	
<i>Glossida</i>	<i>temiskipira</i> (Benson)	Subulinidae	+	+	+	+	+	+	+	-	-	-	-	-	-	
<i>Bacillum</i>	sp.	"	-	+	-	-	+	+	+	-	-	-	-	-	-	
<i>Opereis</i>	sp.	"	-	-	-	-	-	-	-	+	-	-	-	-	-	
<i>Macrochlamys</i>	<i>lubrica</i> (Benson)	Ariophantidae	+	+	+	+	+	+	+	+	+	-	-	-	+	
<i>Rotungia</i>	<i>williamsoni</i> Godwin-Austen	"	-	-	+	-	-	-	+	-	-	-	-	-	-	
<i>Cryptaustenia</i>	<i>ovum</i> (Godwin-Austen)	"	-	+	-	+	+	+	+	+	+	-	-	-	-	
<i>Taphrespira</i>	<i>cempluvialis</i> (Blanford)	"	-	+	+	-	-	-	+	-	-	-	-	-	-	
<i>Laevicaulis</i>	<i>alte</i>	Veronicellidae	-	-	-	-	-	-	-	+	+	+	+	+	+	

Abbreviations

Il= Ilam, Panch.= Panchthar, Tap.= Taplejung, Sun.= Sunsari, Dhan.= Dhankuta, Tehra.= Tehrathum,
 Mor.= Morang, Ba.= Banke, Da=Dang, Kai.= Kailali, Kan.= Kanchanpur.
 Sign '+' indicates presence of mollusc during survey, '-' indicates absence of mollusc during survey.

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