



Studies on molluscs of Betna wetlands and its surroundings, Nepal

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Abstract

This paper deals with 15 freshwater and 1 terrestrial mollusc species collected from Betna wetland and its surroundings. Among the collected 16 species, 12 species were gastropods representing 3 orders, 6 families, 8 genera and 4 species were bivalves representing 1 order, 2 families and 2 genera. Seven species of the total species of molluscs were edible and consumed by the local people and 3 species were harmful.

Key words: Molluscs diversity; Betna wetland

1. Introduction

The Betna wetland is located at Belbari Village Development Committee of Morang District. It extends between 26°20' to 26°53' latitude and 87°16' to 87°41'E longitude. It covers 5.5 hectares and receives natural water from its upper catchment area. Its surrounding area consists of forest, small stream, little marsh area, paddy fields etc. Due to the presence of wetlands (lakes) and other suitable habitats, it is rich in molluscan diversity. Regarding the diversity of molluscs, very few works have been done in Nepal. However, Subba and Ghosh [1,2] has made reports on molluscs of Nepal. Majupuria [3] has reported a few species of land and freshwater molluscs from Kathmandu valley. Investigation on different aspects of population dynamics of fresh water snails have also been carried out by Yadav et.al. [4], and Pfeiffer et. al. [5] Sharma [6] reported some species of molluscs from the various aquatic systems of the Koshi river basin belt. Subba and Pandey [7] studied molluscan diversity of Jhapa district of Nepal and reported 17 species freshwater and 4 species land molluscs. Subba and Ghos [8] reported 9 species of terrestrial molluscs from eastern, mid- eastern and far western regions of Nepal.

2. Materials and methods

The freshwater molluscs were collected from Betna wetland (oxbow lakes), paddy fields, marshes area and stream while the land molluscs were collected from shady and moist places. The specimens were collected up to one year from July 2008 to June 2009. The molluscs were

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mainly collected by hand picking method and also with the help of nylon cloth net (40 meshes/cm²), nylon scoop, forceps etc. The collected specimens were kept in polythene bags and plastic containers. Then the animals were preserved in 5 % formalin for further study. Dead specimens with dry shells were also collected. Identifications were made according to Preston [9] Mellanby [10] and Subba Rao [11].

Table 1: Molluscs species of Betna wetlands and its surroundings

Class	Order	Family	Scientific name
Gastropoda	Mesogastropoda	Pilidae	<i>Pila globosa</i> (Swainson, 1822)
Gastropoda	Mesogastropoda	Pilidae	<i>Pila theobaldi</i> (Hanley, 1875).
Gastropoda	Mesogastropoda	Thiaridae	<i>Brotia costula</i> (Rafinesque, 1833)
Gastropoda	Mesogastropoda	Thiaridae	<i>Thiara punctata</i> (Lamarck, 1822)
Gastropoda	Mesogastropoda	Thiaridae	<i>Thiara tuberculata</i> (Mullar, 1774)
Gastropoda	Mesogastropoda	Thiaridae	<i>Thiara granifera</i> (Lamarck, 1822)
Gastropoda	Mesogastropoda	Viviparidae	<i>Bellamyia bengalensis</i> (Lamarck, 1882)
Gastropoda	Basommatophora	Lymnaeidae	<i>Lymnaea luteola</i> (Lamarck, 1822)
Gastropoda	Basommatophora	Lymnaeidae	<i>Lymnaea acuminata</i> (Lamarck, 1822)
Gastropoda	Basommatophora	Planorbidae	<i>Indoplanorbis exustus</i> (Deshayes, 1834)
Gastropoda	Basommatophora	Planorbidae	<i>Gyraulus convexiusculus</i> (Hutton, 1849)
Gastropoda	Pulmonata	Stenogyridae	<i>Achatina fulica</i> .
Bivalvia (Pelecypoda)	Unionoida	Unionidae	<i>Lamellidens marginalis</i> (Lamarck, 1819)
Bivalvia (Pelecypoda)	Unionoida	Amblemidae	<i>Parreysia favidens</i> (Benson, 1862)
Bivalvia (Pelecypoda)	Unionoida	Amblemidae	<i>Parreysia caerulea gaudichaudi</i> (Eydoux, 1838)
Bivalvia (Pelecypoda)	Unionoida	Amblemidae	<i>Parreysia caerulea</i> (Lee, 1831)

3. Results and Discussion

Altogether 16 species of molluscs belonging to 2 classes, 4 orders, 8 families and 10 genera were identified (Table 1). Among 16 species, 12 species were gastropods representing 3 orders, 6 families, 8 genera, and 4 species were bivalves representing 1 order, 2 families and 2 genera (Table 1). Seven species of the total species of molluscs were edible and consumed by the local people (Table 2) and 3 species were harmful (Table 3). Among three species, *Achatina*

fulica is more harmful, it destroys all types of plants. Among the collected species, *Bellamya bengalensis* and *Lymnaea acuminata* were found abundantly in the study area.

Table 2: Edible molluscs of Betna wetland and its surroundings

S.N.	Name of the species	Tribes who eat molluscs.
1	<i>Pila globosa</i> (Swainson, 1822)	Jhangad, Bantar, Sardar, Malaha etc.
2	<i>Brotia costula</i> (Rafinesque, 1833)	Jhangad, Bantar, Sardar, Malaha etc.
3	<i>Bellamya bengalensis</i> (Lamarck, 1882)	Jhangad, Bantar, Sardar, Malaha etc.
4	<i>Lamellidens marginalis</i> (Lamarck, 1819)	Jhangad, Bantar, Sardar, Malaha, Choudhary etc.
5	<i>Parreysia favidens</i> (Benson, 1862)	Jhangad, Bantar, Sardar, Malaha, etc.
6	<i>Parreysia caerulea gaudichaudi</i> (Eydoux, 1838)	Jhangad, Bantar, Sardar, Malaha, etc.
7	<i>Parreysia caerulea</i> (Lee, 1831)	Jhangad, Bantar, Sardar, Malaha, etc.

Table 3: Harmful molluscs of Betna wetland and its surroundings

S.N.	Name of the species	Harmful activities
1	<i>Bellamya bengalensis</i> (Lamarck, 1882)	Pest of seedlings of paddy
2	<i>Lymnaea acuminata</i> (Lamarck, 1822)	Intermediate host of Liverfluke.
3	<i>Achatina fulica</i>	Destroy vegetable and crop pest.

References

- [1] B. R Subba and T.K Ghos, J. Bombay Nat. Hist. Soc. **97**(2000):452.
- [2] B. R. Subba and T.K. Ghos, J. Bombay Nat. Hist. Soc. **97**(2001)58.
- [3] T.C. Majupuria, Wild is Beautiful: Introduction to fauna and Wildlife of Nepal. S. Devi, Gwalior, India, (1981- 82) p. 507.
- [4] U.K.R Yadav, S.B. Karki, and P.N. Mishra, J. Nat. His. Mus. **4**(1980)33.
- [5] M.P. Feiffer, S. Sharma and B. M. Dahal, Proc. of III Nat. conf. on Sci. and Tech. Nepal, (1999)1371.
- [6] U.P. Sharma, Ecological Society (ECOS), Kathmandu, Nepal (1996) 92.
- [7] B.R. Subba and M.R. Pandey, J. Nat. Hist. Mus. **22**(2005) 22.
- [8] B.R. Subba and T.K. Ghos J. Nat. Hist. Mus. **23** (2008) 78.
- [9] H.B. Preston, The Fauna of British India including Ceylon and Burma, Taylor and Francis, London (1915).
- [10] H. Mellanby, Animal Life in Freshwater, Methuen and Co., London (1963).
- [11] N. V. Subba Rao, Handbook of Freshwater Molluscs of India, Zoological Survey of India, Calcutta (1989).