# A PRELIMINARY STUDY OF MOLLUSCAN FAUNA OF SINGHORI WILDLIFE SANCTUARY, RAISEN, MADHYA PRADESH, INDIA

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#### ABSTRACT

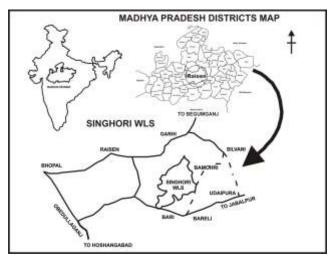
A consolidated list of freshwater and land molluscan species reported for the first time from the Singhori Wildlife Sanctuary, Raisen district of Madhya Pradesh. Overall 17 species of freshwater and land mollusca belonging to 11 genera, under 8 families and 4 orders are identified after studying 386 specimens. Habitat structure study indicates more species diversity in littoral zone inhabiting freshwater mollusca than benthic zone and land inhabitants.

Key words: Freshwater and Land Mollusca, Habitat Structure, Singhori Wildlife Sanctuary.

#### Introduction

Phylum Mollusca is the second largest animal group after insects in the animal kingdom. Mollusca constitute an important part of the ecosystem as they form an integral link in food chain of eutrophic system. They are decomposers of organic matter and contributor of calcium to the soil. They serve as valuable indicator of water quality (Patil, 2008) and useful for ecotoxicoloical studies and environment bioassay experiments and also serve as food for animals and humans. Molluscs have attracted man because of their ornamental, commercial, food and medicinal value. They occur in habitats like freshwater, marine and land, Gastropoda and Bivalvia are the two classes dealt in the present work out of the five found in India. Review of literature depicts that researchers like Subba Rao (1989) and Ramkrishna and Dey (2007) have contributed to our knowledge on freshwater mollusca of India while Indian land snails are described by Mitra et al. (2004). Ramkrishna et al. (2006) have recorded the faunal resources of all National Parks of Madhya Pradesh, in which 26 molluscs species are listed, including 11 each from the Kanha National Park and the Pench National Park where as 12 species each from the Satpura National Park and the Madhav National Park. Recently, Patil and Talmale (in press) have reported 72 species belonging to 38 genera, under 24 families of freshwater and land mollusca from Madhya Pradesh including Chattisgarh.

Since the fauna of the Singhori Wildlife Sanctuary has not been studied earlier and no authentic information on mollusca is available, faunistic surveys were conducted from April, 2009 to March, 2012 to understand the malacological profile of this area.



Map: Location of Singhori Wildlife Sanctuary (Not to Scale)

#### Material and Methods

## Study Area

Singhori Wildlife Sanctuary was notified and came in to existence in July, 1976 in Bari tehsil of Raisen district of Madhya Pradesh (Map). The sanctuary spans over 287.910 km² and geographically located between 22°45' and 22°55' N latitudes and 77°15' and 78°0' E longitudes. The topography is hilly. Most of the streams are seasonal in the sanctuary. Ghoghara and Barna are the two main streams in the sanctuary. According to Dwivedi (2003) there are two forest types viz. teak forests and mixed deciduous forests with teak (*Tectona grandis*) as main tree crop in the sanctuary. The sanctuary inhabits wildlife typical of the central India.

Faunistic surveys of the Singhori Wildlife Sanctuary, Raisen district of Madhya Pradesh were

Singhori Wildlife sanctuary was found to inhabit 17 species of freshwater and land molluscan belonging to 11 genera under 8 families and 4 orders.

Table 1: Taxomomic list of freshwater and land Mollusca from the Singhori Wildlife Sanctuary, Raisen Dist., Madhya Pradesh

Taxa and Zoological Name		Habitat	Locality	No. of speci studied
Phylum:	Mollusca	•		•
Class:	Gastropoda			
Subclass:	Prosobranchia			
Order:	Mesogastropoda			
Superfamily:	Viviparoidea			
Family:	Viviparidae			
Subfamily:	Viviparinae			
Bellamya benga	lensis (Lamarck)	River-Bank	Arjania, Badi, Bhagdehi, Peepalwadi	53
Bellamya bengalensis race doliaris (Gould)		River-Bank	Panzirpa, Senkua, Mugeha river Barna dam	30
Bellamya bengalensis form eburnea (Annandale)		River-Bank	Ekyawan river, Senkua	07
	lensis form typica (Lamarck)	River-Bank	Ratanpur, Panzirpa	12
Superfamily:	Cerithioidea	THE DUTIN	riataripar, riarizir pa	
Family:	Thiaridae			
Subfamily:	Thiaridae			
		Divor Donk	Ekvayyan Mugaha riyara Daanahyadi	20
Tarebia lineata (Gray)  Melanoides tuberculata (Mueller)		River-Bank	Ekyawan, Mugeha rivers, Peepalwadi Barna dam, Badi	
	· · · · · · · · · · · · · · · · · · ·	River-Bank	Peepalwadi, Mugeha river	12
Thiara (Thiara) s		River-Bank	Barna dam	02
Subclass:	Pulmonata			
Order:	Basommatophora			
Superfamily:	Lymnaeoidea			
Family:	Lymnaeidae			
	succinea) accuminata Lamarck	River-Bank	Bhagdehi, Badi, Peepalwadi	77
Lymnea (Pseudo	succinea) luteola Lamarck	River-Bank	Bajani	32
Superfamily:	Planorboidea			
Family:	Planorbidae			
Subfamily:	Planorbinae			
	iusculus (Hutton)	River-Bank	Panzirpa	01
Family:	Bullinidae		·	
Subfamily:	Bullininae			
Indoplanorbis exustus (Deshayes)		River-Bank	Kartoli, Panzirpa, Senkua, Bhagdehi Badi, Peepalwadi	48
Order:	Stylommatophora		Badi, i cepaiwadi	
Family:	Subulinidae			
Subfamily:	Rumininae			
Zootecus insularis (Ehrenberg)		Forest floor	Padariyakala	05
Class:	Bivalvia	1 01 031 11001	r addi ryakara	03
Subclass:	Paleoheterodonta			
Order:				
	Trigoinoida			
Superfamily:	Unionoidea			
Family:	Unionidae			
Subfamily:	Ambleminae	DI 5 ''	D	
Lamellidens corrianus (Lea)		River-Benthic	Ratanpur, Ekyawan river , Badi , Arjania, Bamhori	12
	ysia) corrugata (Mueller)	River-Benthic	Ekyawan, Mugeha rivers	13
Parreysia (Radiatula) caerulea (Lea)		River-Benthic	Ekyawan, Mugeha rivers, Panzirpa, Senkua, Arjania, Bamhori	45
Parreysia (Radiatula) shurtleffiana (Lea)		River-Benthic	Bamhori	03
Subclass:	Heterodonta			
Order:	Veneroida			
Superfamily:	Corbiculoidea			
Family:	Corbiculidae			
Corbicula striatella Deshayes		River-Benthic	Arjania	05
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Bellamya bengalensis (Lamarck)



Iarebia lineata (Gray)



Melanoides tuberculata (Mueller)



Thiara (Thiara) scabra (Mueller)



Zootecus insularis (Ehrenberg)



Lamellidens corrianus (Lea)

Plate 1: Freshwater and Land Mollusca from the Singhori WS, M.P.

undertaken during April, 2009 to March, 2012. Collection and preservation of the freshwater and land molluscs was based on Ramkrishna and Dey (2007) and Mitra *et al.* (2004) respectively. Molluscs were collected from various habitats and localities of the sanctuary (Table 1) and preserved in rectified spirit. Identified specimens were deposited and registered with the National Zoological

Collections of the Zoological Survey of India, Central Zone Regional Centre, Jabalpur, M. P. Digital SLR (Nikon-D70s) camera was used to photograph the identified species in laboratory conditions. Photographs of selected species are given in Plate-1. The key followed for identification is based on Vaught (1989); Ramakrishna and Dey (2007) and Mitra *et al.* (2004) for freshwater and land mollusca.

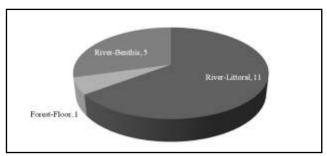


Fig. 1: Habitat Structure of Mollusca in Singhori WS, M.P.

#### Results and Discussion

Based on present faunistic surveys of the Singhori Wildlife Sanctuary, Raisen district of Madhya Pradesh 386 specimens of freshwater and land molluscs were studied. A total of 17 species under 11 genera, 8 families and 4 orders were identified. All the species were

documented for the first time from the sanctuary. As per habitat structure given in Table 1, 11 species were found in littoral zone and 5 species were specific from benthic zone of rivers, forest streams and water-holes while 1 species of land mollusca was also recorded (Fig. 1). This indicates more species diversity in littoral zone inhabiting freshwater mollusca than benthic zone and land inhabitants. During surveys only one land mollusc was collected. This may be attributed to the fact that most of collection was done during dry seasons.

Faunistic surveys conducted during the three years from this protected area revealed and helped to understand and focus on many aspects of future taxonomic research and conservation efforts as a baseline data is the result of the present work.

### Acknowledgements

The author is highly grateful to Dr. K. Venkatraman, Director, Zoological Survey of India, Kolkata for providing facilities and encouragement. Sincere thanks are due to Dr. Kailash Chandra Scientist-F and Additional Director, Zoological Survey of India, Kolkata and Dr. S. Sambath, Scientist-C and Officer-in-Charge, Zoological Survey of India, CZRC, Jabalpur for guidance and encouragement, the Principal Chief Conservator of Forests, Bhopal for permission to collection and survey the areas, and to the DFO, Obedullaganj to provide facilities and accommodation during the surveys. Thanks are also due to the leaders of all faunistic surveys for their valuable collection efforts. Thanks are also due to Shri. M.E. Limje for photography.

# रायसेन, मध्यप्रदेश (भारत) के सिंघोरी वन्यजीव अभ्यारण में माल्यूस्केन फौना का प्रारंभिक अध्ययन सचिन आर. पाटिल

#### सारांश

सिंघोरी वन्यजीव अभ्यारण, रायसेन जिला, मध्यप्रदेश से ताजा पानी और भूमि पर रहने वाली माल्यूस्केन प्रजाति की समेकित सूची पहली बार रिपोर्ट की गई है। 386 नमूनों का अध्ययन करने के उपरान्त ताजा पानी की 17 और भूमि माल्यूस्का के चार अनुक्रमों के 8 कुलों की 11 वंशों से संबंधित प्रजातियों की पहचान की गई है। वासस्थल संरचना के अध्ययन से पता चलता है कि तटवर्ती क्षेत्र में ताजा पानी में रहने वाली माल्यूस्का की संख्या नितलस्थ क्षेत्र और भू–स्थलों से अधिक हो सकती है।

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