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DIVERSITY OF MOLLUSCS FROM SONGIR AREA OF DHULE DISTRICT

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AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Molluscs are an important element in the environment and used as food by various animals. Nowadays biodiversity is declining tremendously by pollution, mainly aquatic pollution, natural disaster and various human interference in an environment. It's a time and immense need to conserve biodiversity on earth. Present paper deals with the exploration of molluscan diversity from Songir area of Dhule district. The present work was carried out during June 2018 to August 2019 to observe the land and freshwater molluscs from forest, mountains, agricultural lands, gardens, river, ponds, lakes and roadside vegetations in the study area. Fifteen species of molluscs were recorded of which Seven species from terrestrial moist habitat whereas eight species are from freshwater habitat. The land molluscs are from five families includes five snails and one slug and freshwater snails are from four families.

Keywords: Molluscan diversity; gastropods; freshwater snails.

1. INTRODUCTION

Biodiversity is very important life supporting system in various ecosystems. In present time the biotic life is greatly threatened by various anthropogenic activities. The faunistic survey of molluscs provides information of various ecological status of an ecosystem in an area. Among molluscs, gastropods are extremely diverse and adapted group of animals which can survive even in extreme conditions by aestivation.

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Varieties of molluscs are used as food by various invertebrates like, starfishes, other gastropods and vertebrates like, fishes, snakes, birds and various mammals. Humans in France, Japan, Philippines, some of the African countries and even in India, varieties of molluscs are eaten up as proteinoids source of food. Molluscs are an important indicator of environmental changes or pollution. They play a significant role in regulation of food chains of various freshwater ecosystems.

In India, studies on gastropods are carried out by number of workers like, Annandale [1], Prashad [2] and Hora [3]. Studies on some hill stream molluscs from Pune, Maharashtra were carried out by Tonapi [4], Kulkarni [5] studied on molluscs from Marathwada region of Maharashtra and Magare (1997) studied on molluscs from Nandurbar district area of Satpuda mountain area. Magare [6] also studied on molluscs and their habitat structure in ecosystem.

Studies on freshwater molluscs was carried out by Subba Rao and Dey [7], Patil and Talmale [8], Tripathi and Mukhopadyay [9], Magare et al. [10] and Kumar et al. [11]. Considering the paucity of information regarding molluscan diversity in specific locations in the area of Songir, dist-Dhule, the present work is undertaken to make the survey of molluscs in and around Songir.

2. MATERIALS AND METHODS

2.1 Study Area

In North Maharashtra, Songir Taluka is situated in Dhule district on National Highway number 03 and located at $21^0$05'N $74^0$47'E. For diversity studies the survey of molluscs was made in various villages like Sondale, Waghadi kh., Songir proper, Dapura and Sarwad. Various ecosystems and habitats were surveyed and observed varieties of mollusks.

2.2 Sample Collection

An extensive survey was made in and around Songir and allied villages. During survey, various waterbodies like, river, ponds, lake, and various vegetation types. The survey was carried out in forest areas, fields and gardens, marshy places and mountain area, etc. The preliminary studies were carried out mostly in and around Songir proper. The molluscs in these habitats were collected by hand picking, using hand gloves for protection from infective pathogens as varieties of snails and slugs are an intermediate host of various pathogens. The identification was made by using reputed references and literature like, Cook et al. [12], Subba Rao and Mitra [13], Magare [6,14,15] Tripathy and Mukhopadhyay [9]. Identification was also carried out by comparing the specimens and shells with the identified snails and shells from ZSI, Akurdi, Pune.

3. RESULTS AND DISCUSSION

A total of 13 different species of molluscs were reported from Songir area of Dhule district. The molluscs collected was belonging to 09 genera and 13 species from 08 families. During survey the maximum number of molluscan samples were observed from family Cerastuidae of land molluscs and from Viviparidae and Lymnaeidae of freshwater molluscs (Table 1).

Among land molluscs the *Cryptozona semirugata* were very rarely observed and *Cerastua moussonianus* were tremendously observed whereas

Table 1. Diversity of molluscs and site of collection

Sr. No.	Species of mollusc	Family	Place of collection
1	*Achatina fulica*	Achatinidae	Nardana road
2	*Cerastua moussonianus petit.*	Cerastuidae	Songir proper
3	*Cryptozona semirugata Morch (1872)*	Ariophantidae	Waghadi kh.
4	*Marochlamys indica Blanford and Godwin-Austen.*	Ariophantidae	Sondale
5	*Zootecus insularis (Ehrenberg)*	Subulinidae	Dapura
6	*Lamelaxis (Opeas) gracile (Hutton)*	Subulinidae	Sarwad.
7	*Laevicaulis alte (Ferussac)*	Veronicellidae	Songir proper
8	*Bellamya bengalensis (Lamarck)*	Viviparidae	Dapura
9	*Bellamya bengalensis f. dissimilis (Gould)*	Viviparidae	Dapura
10	*Melanoides (T) tuberculate (Muller)*	Thiaridae	Sarwad
11	*Thiara linneata (Gray)*	Thiaridae	Songir proper
12	*Thiara scabra.*	Thiaridae	Songir proper.
13	*Lymnaea accuminata (Lamarck)*	Lymnaeidae	Dapura
14	*Lymnaea luteola (Lamarck)*	Lymnaeidae	Sarwad.
15	*Indoplanorbis exustus Desheyes.*	Planorbidae	Dapura

Table 2. Familywise distribution of number of molluscs from different sites of collection

Sr. No.	Location	Family	Number of samples observed	Number of species observed
1	Songir proper	Cerastuidae	28	01
		Veronicellidae	11	01
		Thiaridae	36	02
2	Dapura	Subulinidae	25	01
		Viviparidae	48	02
		Lymnaeidae	34	01
		Planorbidae	08	01
3	Sarwad.	Subulinidae	40	01
		Thiaridae	31	02
		Lymnaeidae	18	01
4	Nardana road	Achatinidae	03	01
		Cerastuidae	08	01
		Veronicellidae	04	01
		Thiaridae	32	02
5	Sondale	Ariophantidae	08	01
6	Waghadi kh.	Ariophantidae	06	02

from freshwater snails, *Bellamya bengalensis f. dissimilis* were very rare. *Indoplanorbis exustus* were also rare but are very habitat specific and are indicators of altered aquatic environment. Among freshwater snails, *Lymnaea luteola* and *Lymnaea accuminata* were found tremendously in Panzara river.

The samples of more than one family were also observed in various sites of collection. In Songir proper and Sarwad the samples collected are from three different families includes four species each whereas from the collection site Dapura and Nardana road includes samples of four families of five species each (Table 2).

Molluscs play a key role in ecosystem to maintain diversity and food chains. The molluscan habitat also supports many other invertebrates therefore the existence of molluscs in ecosystem plays an important role in lives of many other invertebrates. The existence of some of these molluscs were reported from Satpuda Mountain area of Nandurbar district and allied area by Magare [6,14]. In present work the existence of molluscan diversity in different locations is observed and prepared baseline data of diversity of molluscs.

4. CONCLUSION

Diversity of land and freshwater molluscs in and around Songir Taluka Dist- Dhule is explored., Fifteen species of molluscs were observed from six different locations, comprises seven land snails from the families, Achatinidae, subulinidae, cerasutidae, veronicellidae and Ariophantidae. From freshwater molluscs, eight species were observed from the families, Viviparidae, Thiaridae, Lymnaeidae and Planorbidae. The molluscan samples of more than one family were observed at collection sites, Songir proper, Dapura, Sarwad and Nardana road.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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