
Molluscan Diversity Present in Tawarja River at Peth in Latur District of Maharashtra

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Abstract: *Latur district is a part of Maharashtra's Marathwada region in the southern part, which is geographically located in the Deccan plateau between 17°52' and 18°50' North and 76°18' and 79°12' east. It is typically 631 meters (2,070 feet) above mean sea level on the Balaghat plateau. Manjara is the main river which flows on the Balaghat plateau along with its tributaries: Terna, Tawarja and Gharni. The other three tributaries of Manjara are Manyad, Teru and Lendi which flow on the northern plains. Tawarja originates near Murud in Latur taluka and joins the Manjara river at Shivani on the Latur-Ausa boundary. The study was necessary for evaluating the ecological state of water bodies with the help of freshwater molluscs with studies focusing on variety, distribution, and ecology. Two sampling sites were chosen along the Tawarja River in Peth Village for mollusk collection, and these locations were carefully organized from the river's source to its confluence point following various land use/cover patterns. Throughout the course of the research, a total of 13 taxa were noted from all sample sites. The molluscan community was represented by two classes, namely Bivalvia and Gastropoda, with three species belonging to the former and ten to the latter. Three species and one family—the Unionidae—belong to the class Bivalvia. Gastropoda class had three orders, including Mesogastropoda, three families, and seven species. The study's crucial conclusions, which demonstrated that gastropods outnumbered bivalves, were taken. These species can be utilized as bioindicators of pollution and ecosystem health. The findings of this study might contribute to better molluscan fauna management and conservation in the area.*

Keywords: *Freshwater Mollusc, Manjara River, Tawarja River, Latur.*

1. INTRODUCTION

Invertebrates represent nearly most animal diversity (99%), and the phylum Mollusca, which comprises up to 110000 living specimens makes it the second largest animal phylum (Vaughn,



2009). There are seven different classes of Mollusca (Aplacophora, Monoplacophora, Polyplacophora, Bivalvia, Gastropoda, Scaphopoda, Cephalopoda), and India is host to five of them. In the Indian subcontinent, 279 out of 586 families are documented, with about 3600 species in total, out of which nearly 2300 (or 65%) are marine and the rest are freshwater (Tripathy and Mukhopadhyay, 2015). Molluscs are found in almost every ecosystem in the world from the Arctic to the Antarctic, as well as the deep sea, lakes, rivers, and mountain ranges (Hodgson, 2018).

The molluscans is well represented in freshwaters by two classes:- Gastropoda (meaning “stomach foot”) and Bivalvia (referring to “two valves” or shells) (Thorp et al., 2016). All freshwater molluscs have one or two shells composed of a thin outer layer of proteinaceous periostracum and a strong inner layer of mostly crystalline calcium carbonate. Molluscans serve as both environmental and biological indicators by recycling nutrients and surviving as food for specific aquatic animals, and are crucial to maintaining aquatic ecosystems. Some freshwater molluscs are edible and play a key part in the aquatic ecosystem. Additionally, they provide a crucial supply of food for fish, birds, mammals, and even humans. Studying the current status of various biota is crucial in an era when biodiversity is declining globally (Wagh et al., 2019). Molluscs have developed multiple and complex mechanisms for biological mineralization processes. To date, however, and despite the efforts made to elucidate mollusc shell biomineralization, the mechanisms and evolutionary traits remain speculative (Pomar, 2020).

Latur district is a part of Maharashtra's Marathwada region in the southern part, which is geographically located in the Deccan plateau between 17°52' and 18°50' North and 76°18' and 79°12' east. It is typically 631 meters (2,070 feet) above mean sea level on the Balaghat plateau. The district is partly in upper Godavari basin and situated at the plateau of Balaghat and lies in the Manjara river valley. Manjara is the main river which flows on the Balaghat plateau along with its tributaries: Terna, Tawarja and Gharni. The other three tributaries of Manjara are Manyad, Teru and Lendi which flow on the northern plains. Tawarja originates near Murud in Latur taluka and joins the Manjara river at Shivani on the Latur-Ausa boundary.

The study was necessary for evaluating the ecological state of water bodies with the help of freshwater molluscs with studies focusing on variety, distribution, and ecology.



Figure 1. Map showing flowing pattern of rivers in Latur district

River Name	Length	Details on Origin of River		
		Lattitude	Longitude	Altitude (m)
Tararja	47.70 km	18°17'8.093"N	76°19'50.615"E	637

Table No. 1. length of Tawarja river

2. MATERIAL AND METHODS

Study Area:

Two sampling sites were chosen along the Tawarja River in Peth Village for mollusk collection, and these locations were carefully organized from the river's source to its confluence point following various land use/cover patterns.

Collection, Preservation and Identification:

The samples from littoral zone have been collected by hand pick up and net. the samples have been washed in tap water and preserved in 70% alcohol and species were identified from the book of Indian Fresh water Mollusca by Mitra et al ,2004., Ramakrishna and Day, 2007.

When retrieving molluscs from river, individuals were collected from nearby macro- and microhabitats with different current velocities. recently dead molluscs (especially the bivalves) samples were collected. This will prevent killing an individual of one of the many threatened and endangered species. After gently cleaning the shell, allowed the labelled shell to dry without any artificial coating and stored in labelled jars with the 70% alcohol.

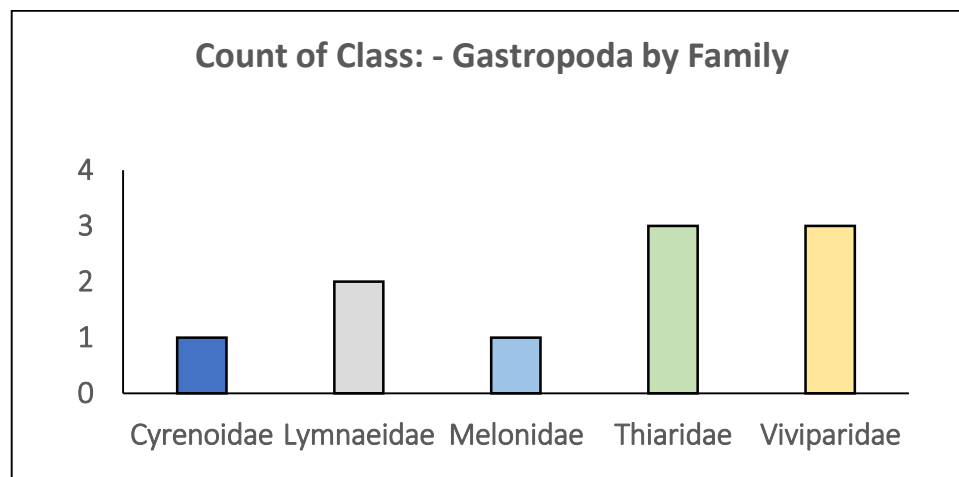
3. RESULTS AND DISCUSSION:

Table No. 2. Gastropoda species

Class: - Gastropoda	Order	Family
<i>Lymnaea acuminata</i>	Basommatophora	Lymnaeidae
<i>Limnaea luteola</i>	Basommatophora	Lymnaeidae
<i>Bellamya bengalensis</i>	Mesogastropoda	Viviparidae
<i>Bellamya crassa</i>	Mesogastropoda	Viviparidae
<i>Ballamya ebornea</i>	Mesogastropoda	Viviparidae
<i>Thiara scabra</i>	Mesogastropoda	Thiaridae
<i>Thiara lineate</i>	Mesogastropoda	Thiaridae
<i>Tarebia granifera</i>	Mesogastropoda	Thiaridae
<i>Melanoides tuberculata</i>	Mesogastropoda	Melonidae
<i>Corbicula striatella</i>	Venerida	Cyrenoidae

Table No. 3. Bivalvia species

Class: - Bivalvia	Order	Family
<i>Lamellidens marginalls</i>	Eulamellbrachiata	Unionidae
<i>Unio occuta</i>	Eulamellbrachiata	Unionidae
<i>Parreysia corruguta</i>	Eulamellbrachiata	Unionidae



Throughout the course of the research, a total of 13 taxa were noted from all sample sites. The molluscan community was represented by two classes, namely Bivalvia and Gastropoda, with three species belonging to the former and ten to the latter. Three species and one family—the Unionidae—belong to the class Bivalvia. Gastropoda class had three orders, including Mesogastropoda, three families, and seven species.

The current study shows that communities of both gastropods and bivalves, represented by a diversity of species, were discovered to reside in the different River sites. Therefore,



understanding how these macroinvertebrates contribute to the processing of nutrition and how they serve as bio-monitoring organisms may be advantageous.

The Tawarja river harbours a variety of plankton and aquatic weeds in the submerged as well as floating state on which thrive a large number of organisms, in the form of fishes, aquatic insects, and mollusks, etc, due to abundant food available throughout the year.

4. CONCLUSION

Freshwater mollusks are used to assess the ecological health of the water bodies. Therefore, it is essential to do studies on variety, distribution, and ecology. The results of the present study revealed the distribution of molluscan species and demonstrated that the gastropod and bivalve communities at the various sites hinder each other. The study's crucial conclusions, which demonstrated that gastropods outnumbered bivalves, were taken. These species can be utilized as bioindicators of pollution and ecosystem health. The findings of this study might contribute to better molluscan fauna management and conservation in the area.

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