

MOLLUSCAN DIVERSITY IN MOSAM RIVER DIST. NASHIK, MAHARASHTRA, INDIA

Dilip K. Ahire¹, Kanchan S. Ruptake²

1. Dept of Zoology, Art's Science and Commerce College Mulher Tal. Satana Dist. Nashik, MS.
(Affiliate to Savitribai Phule Pune University, Pune, MS)

dilipahire7272@gmail.com

2. S.S.G.M Science, Gautam Arts and Sanjivani Commerce College, Kopargaon
(Affiliate to Savitribai Phule Pune University, Pune, MS)

kanchnruptake4997@gmail.com

ABSTRACT

The present study has been carried out on molluscan diversity in Mosam river dist. Nashik, Maharashtra, India. Mollusca diversity of Mosam River was studied during June 2021 to June 2022. Mosam river originates from Salher Fort in Nashik district. The water of this river is used for various activities like aquaculture industrial, irrigation and human activities. Also, this river goes further and joins the Girna river. A total of 19 molluscs species were recorded of which 11 species are Gastropoda 8 species are Bivalvia. Class Gastropoda was reported by 1 order, viz., Mesogastropoda. class Bivalvia was reported by two orders, viz., Veneroida and Unionida. The abundance of the molluscan fauna indicates the rich productivity.

Keywords: *Mollusca, Gastropoda, Bivalvia, Mosam, River, Nashik.*

1. INTRODUCTION

Mollusca is one of the most diverse groups of animals on the planet, with at least 50,000 living species (and more likely around 200,000). It includes such familiar organisms as snails, oysters, squid, octopuses, clams, scallops, and chitons. Molluscs are common fauna of bottom resonance communities in aquatic ecosystem. This are also found attached with floating vegetation in fresh water bodies and their role in the dynamics of the aquatic ecosystem and their contribution to biomass production is little known. Freshwater gastropods are either herbivorous or detritivore or they may passively consume small invertebrates associated with periphyton [1]. Molluscs are extremely important communities of many ecological communities. They prove immensely beneficial both of the economically and medicinally [2]. They have been important to humans throughout history as a source of food, jewellery, ornaments, tools and even pets. Freshwater molluscs play significantly role in public and veterinary health [3].

Molluscs forms an important link in food chain from primary to tertiary level and also are an edible source for coastal population. The molluscs are the soft - bodied, heterogenous group of animals with different structural forms, majority of the molluscs are known by their shell, but in

some forms the shell is absent. According to Venkatraman and Venkatraman (2012)[4], out of the 80,000 to 100,000 species of molluscs recorded from various parts of the world, In India, 5070 species of molluscs have been recorded of which, 3370 species are from marine habitats [5]. These molluscs belong to 220 families and 591 genera, of which 1900 are gastropods, 1100 are bivalves, 210 are cephalopods, 41 are polyplacophores and 20 are scaphopods [4]. The molluscan diversity helps to assess the effect of environmental impacts on the benthic ecosystem functioning, and molluscs serve as an important food resource. Several investigations were undertaken on major benthic animal groups of freshwater system. Notable contributions to our knowledge of molluscan fauna have been made by several authors. Roy and Gupta (2010) worked on Molluscan Diversity in river Barak and its Tributaries in Assam. A total of 16 molluscan taxa belonging to the 2 classes viz., Gastropoda and Bivalvia 4 orders, 5 families and 9 genera were recorded from 12 different sites on River Barak and its tributaries like Chiri, Sonai, Rukni, Ghagra and Katakhal. The snail, *Brotia costula episcopalis* (Lea), and the bivalve *Lamellidens marginalis* (Lamarck) were the most ubiquitous species in the river system[6]. Dahegaonkar et.al., (2011) studied diversity of benthic macro invertebrates in two lotic ecosystem. Molluscan species showed their dominance by contributing six species from the Gastropods and two from Pelecypods [7]. Subramanian and Jaiswal (2012) worked on freshwater fauna of India. Indian wetlands are habitat for 287 species of molluscs. Species such as *Sulcospira hugelyi*, is common in streams of peninsular India[8]. Kumar and Vyas (2012) revealed about distribution of molluscan community in the selected reach of river Narmada in central zone. A total of 19 species (13 gastropod and 6 bivalve species) were recorded during the study. Among gastropoda *Thiara tuberculata* (Muller) and *Tarebia granifera* (Lamarck) were most dominant species recorded. In bivalvia *Parreysia (Radiatula) occata* (Lea) and *Corbicula striatella* (Deshayes) were found nearly at all stations [9]. Waghmare et.al., (2012) identified freshwater Molluscan diversity of Bhima river, near Pandharpur. Altogether 15 species of freshwater molluscs were identified viz. 7 species from Gastropoda and 8 species from Pelecypoda (Bivalvia) in this area [10].

The largest molluscan classes i.e., Gastropoda and Bivalvia have successfully survived in all continents (fresh water) except Antarctica [11]. Freshwater gastropods are found nearly all aquatic habitats including rivers, lakes, streams, swamps, underground aquifers and springs, as well as temporary ponds, drainage ditches and other ephemeral and seasonal waters. Most of the Mollusca lived submerged throughout the life, and many are specialized for particular habitats such as aquatic vegetation, stones, rocks, wood and other solid surfaces or soft sediment to complete their life cycle. Some are amphibious and few are able to tolerate periods of time out of water such as species of Ampullariidae family while others are capable of prolonged periods of aestivation in soil during dry periods. Biodiversity loss is a worldwide threat due to intensive anthropogenic activities such as changes in land or water use and destruction of environmental resources.

Mosam River flow in Nashik District of Maharashtra. It originates at Salher fort taluka. Satana dist. Nashik. The aim of present research work revealed about distribution of molluscan community in the selected reach of River Mosam.

2. MATERIALS AND METHODS

2.1. Study Area:

For the study of molluscan diversity in Mosam River. There are the four sample area I have choosed around the river. The first area (S.A-I) is Ajande, Haranbari is the Second area(S.A-II), Jaykheda is the third area(S.A-III) And Nampur is the forth area(S.A-IV). This four study area are located in Nashik District, Maharashtra.

2.2. Collection, Preservation and Identification:

Molluscs were collected by hand picking method and preserved in 5% formalin for further study. Collected molluscs were washed, photographed with the help of digital camera and identified as per Tonapi (1980)[13] and Subba Rao (1989) [13].

3. RESULT AND DISCUSSION

A total of 19 taxa were recorded from all sampling sites during the period of the study from 2021-2022. The molluscan community's was represented by two classes, viz., Gastropoda and Bivalvia. The Gastropods of which 11 species and 8 species are Bivalvia. The class Gastropoda was reported by 1 order, Mesogastropoda; 5 family and 7 genera with 12 species. Class Bivalvia was reported by two orders, viz., Unionida and Veneroida; two families; 3 genera; and 9 species.

A similar study was conducted Durga Prasad et.al., (2001) recorded 48 species of molluscs from Gasthani estuary of which 27 species were gastropods and 21 species were pelecypods [14]. Dahegoankar et.al., (2011) studied molluscs from Wardha and Zarpal river and shown their dominance by contributing, six species from the Gastropods and two from Pelecypods [15]. Suryawanshi et.al., (2012) studied biodiversity of molluscs from river Godavari, reservoir and pond, reported 24 species of fresh water molluscs. Maximum species were collected from Derla tank while minimum species were collected from Godavari river [16]. And also similar study was conducted on molluscan community of the Bharathapuzha River in Kerala and thirteen species of molluscs belonging to five orders, eight families and ten genera were reported [17]. Farida (1988) recorded 59 species from Layari river. Among them, 31 species belong to class Gastropoda, 27 species belong to Bivalvia and the class Scaphopoda contains only one species [18]. Amanullah and Hameed (1996) studied The Kaveri river and reported 13 species of molluscs of which 8 species were gastropods and 5 species bivalves. The gastropod species were grouped under 5 different families (Viviparidae, Thiaridae, Pillidae, Lymnaeidae and Planorbidae) and family Thiaridae was the most dominant group representing 50% of the total gastropod population. Five species of bivalve molluscs were classed under 2 different families namely Unionidae and Corbicidae [19].

The abundance of the molluscan fauna indicates the rich productivity. The species inhabiting bottom of the river play an important role in converting organic matter together with the meiobenthos into biomass which in turn is consumed by the fishes. Thus the molluscs help in the secondary productivity and form an important component in the food web of the river ecosystem. Macro invertebrates of Mosam river rich in Molluscan diversity. Total 15 species of

molluscs were identified from river & it indicates that productivity is rich. The species inhabiting at the bottom play an important role in converting organic matter together with the meiobenthos in to biomass which in turn is consumed by the fishes. Thus the molluscs help in the secondary productivity and form an important component in the food chain & web of the river ecosystem.

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