

STUDY OF MOLLUSCAN SHELL DIVERSITY ALONG KHAR DANDA BEACH

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ABSTRACT

Molluscs are dominant organisms in many marine communities. They were weapons and tools of early man. They help in maintaining ecosystem. They are excellent material for the study of early climatology. They are sensitive to change in their environment. Molluscs provide an early warning of habitat deterioration. The molluscan shell diversity was studied along Khar danda beach. Different gastropods and bivalves were observed. Maximum gastropods were recorded.

KEYWORDS: *Molluscan Shell, Environment, Diversity.*

INTRODUCTION

Molluscs are second most diverse group and they are susceptible to changes in their environment because of their permeable skin and soft body. They are efficient bioaccumulators and good bioindicators of marine pollution. They prove immensely beneficial both economically and medicinally. They have been important to humans throughout history as a source of food, jewellery, tools and even pets (Vanmali H.S. et. al. 2015) they are recyclers of plant and animal wastes. They help to keep the environment clean. Some of the species have medicinal value. Hence it was decided to study the Molluscan diversity.

MATERIALS AND METHOD

The Molluscan shells were studied during low tide from June to November. Monthly observations were done in the study areas. Two spots were selected spot 1- Harbamauli Dhakka and spot 2 – area around Sagarvinayak Mandir. The samples were identified by observing morphological characters using identification key (Deepak Apte, 1998)

RESULTS AND DISCUSSIONS

The richness of molluscs was found in the summer and later months of monsoon which may be because increase in temperature favours increase in number of molluscs. High temperature and more availability of food are favourable conditions for abundance of zoobenthos. (Michael, 1968) The availability of maximum molluscs during summer months could be related to two important ecological phenomena: i) The abundance of decomposer settled organic matter and macrophytes on the bottom of the water body and (ii) Increased water temperature activating the process of decomposition of these organic sediments (Malhotra et al., 1996). The fluctuation brought about by these processes in that water body, create a very conducive micro as well as macro environment for the healthy growth and multiplication of molluscs fauna. Therefore there is abundance of molluscs with increased water temperature and decomposed organic matter (Garg,et.al. 2009)

The dominant Gastropod molluscs fauna recorded during the study period were *Umbonium*, *Natica*, *Bursa* and *Trochus* and that of Bivalves were *Catylisia* and *crassostrea*.

Umboonium: They are regularly collected, cleaned and marketed and form the basis for the shell craft articles. (Alagaraswami and Meiyappan 1989) estimated the annual production at 600 t. In 1989, a total of 7.2 t of ornamental shells valued at Rs 0.464 million were exported. (Narasimham et al 1993)

Trochus: The meat of *Trochus* is edible and is removed by a short pointed instrument. It is boiled, salted and dried for consumption. The shells are in good demand in the handicraft industry. *Trochus niloticus*, *Turbo marmorata* are costly due to its large size and glittering surface when it is polished. It is also used as lamp - shades and incense - stick stands. They are used in making necklaces, buttons and rings. (Appukuttan, et al .2000) *Trochus* shell is also used in Lime industry, poultry feed, additives. The lime obtained from the shell is used in making pottery, glazes, tooth paste etc. (Ramakrishna et al 2010)

Bivalves: Filter-feeding molluscs not only remove nitrogen from the water column, but also incorporate a high proportion of it into their tissues. (Shumway, et. al. 2003) They form a significant link with primary producers (mainly phytoplankton and bacteria), and also act as calcium and carbon accumulators through their shell construction. (Tanguy, et al 2008). Some of the bivalves such as oysters, clams, scallops and mussels are used as food. or other uses. We get pearl from pearl oysters. (Hedgecock et al., 2005; Saavedra and Bachère, 2006)

Table 1: Harbamauli Dhakka- Gastropod Molluscan Species Recorded

Sr. No.	Gastropod Molluscan Fauna	June	July	August	September	October	November	Total
1	<i>Arca</i>	2	—	—	—	—	2	4
2	<i>Babylonia</i>	1	—	1	—	—	—	2
3	<i>Bursa</i>	2	—	2	—	1	—	5
4	<i>Cellina</i>	1	—	—	—	—	—	1
5	<i>Euchelus</i>	—	—	—	1	—	—	1
6	<i>Gafrarium</i>	2	—	1	1	—	—	4
7	<i>Littorina</i>	2	—	—	—	—	1	3
8	<i>Natica</i>	3	1	—	—	1	2	7
9	<i>Nerita</i>	—	1	—	—	—	—	1
10	<i>Trochus</i>	2	—	1	1	—	2	6
11	<i>Turbo</i>	2	—	—	—	1	1	4
12	<i>Umboonium</i>	3	—	2	—	—	3	8
13	<i>Xanchus</i>	—	—	1	—	—	—	1

Table 2: Sagarvinayak Mandir- Gastropod Molluscan Species Recorded

Sr. No	Gastropod Molluscan Fauna	June	July	August	September	October	November	Total
1	<i>Arca</i>	1	—	—	—	—	—	1
2	<i>Babylonia</i>	—	—	1	—	—	—	1
3	<i>Bursa</i>	2	—	—	—	1	2	5
4	<i>Cellina</i>	—	—	1	—	—	—	1
5	<i>Euchelus</i>	—	—	—	—	—	1	1
6	<i>Gafrarium</i>	1	—	—	—	—	2	3
7	<i>Littorina</i>	2	—	—	—	—	1	3
8	<i>Natica</i>	3	1	—	1	—	3	8
9	<i>Nerita</i>	1	—	—	—	—	—	1
10	<i>Trochus</i>	2	—	—	—	1	1	4
11	<i>Turbo</i>	—	—	—	1	—	1	2
12	<i>Umboonium</i>	3	—	1	—	2	3	9
13	<i>Xanchus</i>	—	1	—	—	1	—	2

Table 3: Average of Gastropod Molluscan Fauna found on both Spots

Sr. No.	Gastropod Molluscan Fauna	Harbamauli Dhakka	Sagarvinayak Mandir	AVG
1	<i>Arca</i>	4	1	3
2	<i>Babylonia</i>	2	1	2
3	<i>Bursa</i>	5	5	5
4	<i>Cellina</i>	1	1	1
5	<i>Euchelus</i>	1	1	1
6	<i>Gafrarium</i>	4	3	4
7	<i>Littorina</i>	3	3	3
8	<i>Natica</i>	7	8	8
9	<i>Nerita</i>	1	1	1
10	<i>Trochus</i>	6	4	5
11	<i>Turbo</i>	4	2	3
12	<i>Umbonium</i>	8	9	9
13	<i>Xanclus</i>	1	2	2

Table 4: Harbamauli Dhakka- Bivalves Molluscan Fauna Recorded

Sr. No.	Bivalves Molluscan Fauna	June	July	August	September	October	November	Total
1	<i>Arca</i>	—	1	—	—	—	—	1
2	<i>Cardium</i>	1	—	—	—	—	—	1
3	<i>Catylisia</i>	2	1	—	—	1	2	6
4	<i>Crassostrea</i>	2	2	—	—	1	2	7
5	<i>Donax</i>	1	1	—	1	—	—	3
6	<i>Perna</i>	—	—	—	—	—	1	1
7	<i>Placenta</i>	1	—	—	—	—	—	1

Table 5: Sagarvinayak Mandir- Bivalves Molluscan Fauna Recorded

Sr. No.	Bivalves Molluscan Fauna	June	July	August	September	October	November	Total
1	<i>Arca</i>	—	—	—	—	—	—	0
2	<i>Cardium</i>	1	—	—	—	—	0	1
3	<i>Catylisia</i>	3	—	1	1	—	2	7
4	<i>Crassostrea</i>	2	2	—	—	—	1	5
5	<i>Donax</i>	—	1	—	—	1	—	2
6	<i>Perna</i>	3	—	—	—	2	—	5
7	<i>Placenta</i>	—	—	—	—	—	1	1

Table 6: Average of Bivalves Molluscan Fauna found on both Spots

Sr. No.	Bivalves Molluscan Fauna	Harbamauli Dhakka	Sagarvinayak Mandir	AVG
1	<i>Arca</i>	1	0	1
2	<i>Cardium</i>	1	1	1
3	<i>Catylisia</i>	6	7	7
4	<i>Crassostrea</i>	7	5	6
5	<i>Donax</i>	3	2	3
6	<i>Perna</i>	1	5	3
7	<i>Placenta</i>	1	1	1

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