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STUDY OF MARINE MOLLUSCS AT KOLIYAK COAST**SHUCHI BHATT^{1*} AND SRINIVASAN M²**

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ABSTRACT:

The present study is based on the diversity of molluscan at Koliyak coast. The study site is placed on the Bhavnagar coast. Mollusc plays an important role in the marine ecosystem. A intend of this study to obtain baseline data of Koliyak coast. During investigation total of six molluscs.

KEY WORDS: *Molluscan, Bhavnagar, Koliyak coast.*

INTRODUCTION:

Mollusc is greatly flourishing in the marine ecosystem; it can be survived in all latent area. Sunlight area is most preferable to survive, with plenty of sunlight. The intertidal zone is dynamic which an interface between sea and terrestrial is. The littoral zone is often uncovered to the atmosphere. Intertidal organisms are common to study widely last two-three decades [1]. Distribution of community depends on the nature of organisms, waves, substratum, etc. Marine mollusc can survive in mostly an entire habitat. It is capable of subsisting in rocky coast, sandy and mudflat, in sandy shore diversity of mollusc may be less. Nowadays biodiversity and its conservation with a particular group are recommended by the researcher to priority level. The gastropods and bivalve are the largest class in a mollusc phylum [Bouchet et al. Mollusca include as a to a great extent varied phylum of invertebrates, it is living species of molluscs varying from 50,000 to 1,20,000 species, mollusca is comprising about 23% of the marine organisms (Chapman 2009). (5). Mollusca is essential for the marine ecosystem, Mollusca provides Livelihood to millions of people

living in the coastal area so many coastal areas is a hotspot for overseas trading, fisheries, etc. The ornamental mollusc is a promising source in India. Ancient period shells are tremendous impact on Indian tradition and economy. It leads to the increasing global demand for cowries, shells, etc. It has a highly priced in India as well as foreign countries (Appukuttan, 1996). Current research is primarily focus on the scenario of Koliyak coast.

STUDY AREA:

It is located between 20-30 km away from the Bhavnagar in Gujarat. The muddy shoreline about one km area exposed during low tide. Koliyak is a one of the famous temple. Pilgrims come to visit not only from Gujarat but also from other states. The Koliyak is situated in the Gulf of Khambhat, it has a high turbidity level. Many time during high tide the water level reaches up to 12 feet.



Fig. 1: During low tide exposed area at Koliyak

MATERIALS AND METHOD:

The object of the survey was to carry out the list of mollusc species at present. During the lowest low tide surveyed taken when the maximum area of intertidal was exposed. The dead or inactive mollusc was collected from January 2017 to February 2018. The area was fully muddy and some rocky area. The collected sample brought to the laboratory for further description. Identification and further study is carried out the help of books, literature, WoRMS etc.

RESULT AND DISCUSSION:

Three seasons (winter, summer and monsoon) were included. During study total six species were found. During winter *Umbonium vestiarium* (Linnaeus, 1758), *Laternula sp.* *Astralium stellare* (Gmelin, 1791), *Trochus radiatus* (Gmelin, 1791), *Optediceros breviculum* (Pfeiffer, 1855), *Tellina sp.* species were observed. In summer *Umbonium vestiarium* (Linnaeus, 1758), *Laternula sp. species* were found. In monsoon *Umbonium vestiarium* (Linnaeus, 1758), *Laternula sp.*, *Optediceros breviculum* (Pfeiffer, 1855), *Tellina sp.*

I. *Umbonium vestiarium* (Linnaeus, 1758):

It is known as a “common button top”. It is exclusively marine species. It is found in the dense population, solitary can be found very active. Mostly found in the indo-pacific region. its shell is small upto 15.5mm in height. Color variation such as pink or brown with gray marking, white, pale red, etc..it is widely used as an economical utilize in the different coastal area from the Tamil Nadu, Telangana, Andhra Pradesh.

II. *Laternula sp.:*

Laternula sp. is a bivalve of marine water. The shell is very thin and lucid. Pair of valves is conjoining to the hinge. *Laternula sp.* is belonging to Laternulidae family; morphology of this family is moderately steady so, the function of a ligament is likely in the Laternulidae family.

III. *Astralium stellare* (Gmelin, 1791):

Its looks like a star, therefore, it is also called as Star shells. Usually, the length of *Astralium stellare* found up to 40-60 mm. Fossils record of the genus *Astralium* is found in the Australia, Brazil, Japan, United States, etc. Aperture implicitly ovate, in the base area outer lip with a depression. Umbilicus is not present.

IV. *Trochus radiatus* (Gmelin, 1791):

Commonly found in the Gulf of Kutch, Palk bay, Andaman and Nicobar, etc. The colour is pale yellow with bright, dark red bands. The shell is a conical, quadrangular aperture. Smooth collumela. Asymmetrical reddish spots can be found in the basal surface.

V. *Optediceros breviculum* (Pfeiffer, 1855):

Commonly known as the red mangrove shell. It is considered under Least Concern (LC) List. The shell have tiny operculate. *Optediceros breviculum* is harmless to humans. The shell is bright red

but sometimes black also occur. It can be found either creeping in the mud or attached to grass in the muddy zone. Assiminiidae family observed in the mangrove, Muddy shore and sandy with high density (8,9).

VI. *Tellina* sp.:

The shells are connected by large external ligaments. The shells of Tellinidae are fragile. Each valve has two cardinal teeth with hinge line, laterally teeth are generally present. The shells which belong to family Tellinidae know as a Tellins or Tellens.

CONCLUSION:

During the study on the coast of Koliyak, total six molluscs species were found. Which were belongs to six taxa, two classes; four orders and five families. It has a muddy shoreline. During low tide exposition of low tide area is approximately more than 300-500 meter to seaward. *Umbonium vestiarium* (Linnaeus, 1758) was found in dense population barely found in single species.

REFERENCES:

1. Little C, Kitching JA (1996) The Biology of Rocky Shores. (1st edtn), Oxford University Press, Oxford.
- 2 Bouchet Ph., Lozouet P., Maestrati Ph., Heros V. 2002. Assessing the magnitude of species richness in tropical marine environments: exceptionally high numbers of molluscs at a New Caledonia site. *Biological Journal of the Linnean Society*, 75: 421-436
- 3 T. Anandaraj, U. Balasubramanian, P. Murugesan and S. Muthuvelu International Journal of Pharmaceutical & Biological Archives Biodiversity of Marine Mollusks in East Coastal Area of Thanjavur District, Tamil Nadu, India 2012; 3(1):131-133
4. Venkataraman, K. & M. Wafar (2005). Coastal and marine biodiversity of India. *Indian Journal of Marine Sciences* 34 (1): 57-75.
5. Mohamed, K.S. (2012). Marine mollusc diversity in India- Exploitation and conservation challenges in the 21st century, pp. 37-64. In: Ramachandran, A. & A. Joseph (eds.). *Marine Biodiversity: Status, Opportunities and Challenges*. Department of Marine Biology, Microbiology and Biochemistry, Cochin University of Science and Technology, Kerala.
6. Chapmann, A.D. (2009). Numbers of Living Species in Australia and the World.
7. Appukuttan, K. K., (1996). Marine mollusc and their conservation. In Menon, N. G. and C. S. G. Pillai (Eds.) *Marine biodiversity, Conservation and management*, CMFRI, Cochin.4:66-77.

8. Suzuki, T., Nishihira, M., Paphavasit, N., Shikano, S., Nakasone, Y., Piumsomboon, A. U. and Aumnuch, E. 1997. Ecological distribution and community structure of benthic animals in Samut Songkhram mangrove swamp, Thailand. *In*: Nishihira, M. (ed.), Benthic Communities and Biodiversity in Thai Mangrove Swamps. pp. 41-77. Biological Institute, Tohoku University, Sendai.
9. Macintosh, D.J., Aksornkoae, S., Vannucci, M., Field, C.D., Clough, B.F., Kjerfve, B., Paphavasit, N. and Wattayakorn, G. (eds.) 1991. Final Report of the Integrated Multidisciplinary Survey and Research Programme of the Ranong Mangrove Ecosystem. UNDP/UNESCO Regional Mangroves Project RAS/86/120, Bangkok. 183 pp.

Table 1: List of the mollusca at Koliyak

No.	Species	Class	Order	Family
1	<i>Umbonium vestiarium</i> (Linnaeus, 1758),	Gastropoda	Littorinimorpha	Assiminidae
2	<i>Optediceros breviculum</i> (Pfeiffer, 1855),	Gastropoda	Littorinimorpha	Assimineidae
3	<i>Laternula sp.</i>	Bivalvia	Anomalodesmata	Laternulidae
4	<i>Astralium stellare</i> (Gmelin, 1791)	Gastropoda	Trochida	Turbinidae
5	<i>Trochus radiatus</i> (Gmelin, 1791)	Gastropoda	Trochida	Trochidae
6	<i>Tellina sp.</i>	Bivalvia	Cardida	Tellinidae