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MOLLUSCAN FAUNA OF MANAULI ISLAND IN RELATION TO ENVIRONMENTAL NICHE

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INTRODUCTION

The Manauli Island is situated between longitudes 79°7' to 79°8' E and latituate 9°12'30' to 9°13' N, in the Ramanathapuram District, Tamil Nadu. Reddiah (1970) reported a chain of well-developed fringing reefs from Tuticorin to Rameswaram Island in the south. Manauli is one of the islands in the series in between the Indian mainland and Sri Lanka and is placed about 15 km. south of Mandapam in the Gulf of Mannar. Ray (1946) and Satyamurti (1952 & 1956) published accounts on the taxonomy of the fauna of Mandapam, Pamban, Krusadai Islands etc. in the Gulf of Mannar. Pillai & Appukuttan (1980) reported on distribution of molluscs in the coral bed of south-eastern coast. Even then the knowledge is incomplete for the fauna of Manauli Island. Efforts have been made by us to present an account of the molluscs within different ecological zones of this island.

LIST OF MOLLUSCA COLLECTED

(Dead shells are excluded from the list)

Phylum	Mollusca
Class	Gastropoda
Order	Archaeogastropoda
Family	Trochidae
Subfamily	Monodontinae

1. *Cantharidus interrptus* (Wood)

Family Phasianellidae

2. *Phasianella nivosa* Reeve

Family Neritidae

3. *Clithon oualaniensis* (Lesson)

Family Phenacolepadidae

4. *Phenacolepas crenulata* (Broderip)

Order Mesogastropoda

Family Littorinidae

5. *Littorina* (*Littoraria*) *kraussi* Rosewater
6. *Littorina* (*Littorinopsis*) *scabra scabra* (Linnaeus)
7. *Littorina* (*Littorinopsis*) *carinifera* (Menke)
8. *Nodilittorina* (*Nodilittorina*) *pyramidalis pyramidalis* Quoy & Gaimard

Family Planaxidae

9. *Planaxis* (*Planaxis*) *sulcatus* (Born)

Family Potamididae

10. *Cerithidea* (*Cerithideopsilla*) *cingulata* (Gmelin)
11. *Terebralia palustris* (Linnaeus)
12. *Cerithium columna* Sowerby
13. *Clypeomorus splendens* (Sowerby)

Family Naticidae

14. *Natica gualtieriana* Recluz

Order Neogastropoda

Family Muricidae

15. *Morula granulata* (Duclos)

Family Columbellidae

16. *Pyrene* (*Columbella*) *scripta* (Lamarck)
17. *Mitrella marquessa* (Gaskoin)

Family Nassariidae

18. *Nassarius* (*Niotha*) *distortus* (A. Adams)
19. *Nassarius* (*Alectrion*) *glans glans* (Linnaeus)

Order Basommatophora

Family Ellobiidae

20. *Melampus flavus* Gmelin

Family Atyidae

21. *Haminoea galba* Pease

Order Stylommatophora
Family Onchidiidae
22. *Onchidium verruculatum* Cuvier

Class Bivalvia
Order Eulamellibranchiata
Family Mesodesmatidae
23. *Mesodesma trigona* Deshayes

GENERAL REMARKS

The island of Manauli stretches east to west and is formed out sandstone on almost all sides excepting a small western portion. It appears to be a continuous landmass, but as the tide rises tidal water enters about the middle of the island on one side from the east and on the other from west. These two creeks are fringed with mangroves. The southern and the eastern slopes of this island are fringed with washed coral blocks both living and dead. The central part of the island has a sand dune with growth of *Acacias*. The southern beach gradually slopes to sandy bottom embedded with living and dead coral boulders. The three ecological zones with their molluscan fauna are recognised as (1) Creeks and backwaters, (2) Mangrove swamps and (3) Coral-sand bottom of the sea.

(1) *Creeks and backwaters* : Mosquitoes and other insects were found breeding in the backwaters. The backwater pools have soft and loose mud, at the bottom, which is exposed during low tide. This area is inhabited by the estuarine potamidids and cerithids like *Cerithidea* (*Cerithideopsilla*) *cingulata* (Gmelin), *Terebralia palustris* (Linnaeus) and *Cerithium columna* Sowerby. The snails of *Melampus flavus* (Gmelin) are seen crawling on the mud flats.

(2) *Mangrove Swamps* : The mangroves consist of *Avicennia marina*, *Bruguiera cylindrica*, *Rhizophora mucronata* etc. The molluscs of this zone include littoral forms like *Littorina* (*Littorinopsis*) *scabra scabra* (Linnaeus) and *Nodilittorina* (*Nodilittorina*) *pyramidalis pyramidalis* Quoy and Gaimard are dominant. These littorinids are found to crowl in shady

places of the trunks, branches and leaves of the mangrove plants at high water mark.

(3) *Coral-sand bottom* : The wide rampart of the island is the shallow sea with rippling clear water. Sandy shore slopes into the bottom which has algal vegetation and sparsely distributed coral lumps. While wading through the 20-30 cm. depth of water, *Cantharidus interruptus* (Wood), *Phasianella nivosa* Reeve and *Clithon oualaniensis* (Lesson) are observed on algal vegetation of alginophytes such as *Turbinaria decurrens, Sargassum wighte, Padina tetrastomatina* and agarophytes like *Hypnaea valentiae* and *Boergeseana forbessi.* The species *Natica gualtieriana* Recluz is collected nearby the algal patches. While wading through the water on the northern slope of the island, proceeding to a depth of 30-35, we come across the Atyid species *Haminoea galba* Pease on the sandy floor in small colonies. Nearby them the eggmasses are suspended in water, anchored to the sandy bottom. The snails have their shells covered with the lappets of their feet. Those shells at a further depth are found to crawl over the weeds. The snails are in abundance on the southern slope, facing the open sea. The bivalve *Mesodesma trigona* Deshayes is seen buried in the sandy substratum. On the coral blocks and weeds, the species *Pyrene* (*Columbella*) *scripta* (Lamarck) and *Mitrella marquessa* (Gaskoin) are seen in clear water and are always in submerged condition. The species *Nassarius* (*Niotha*) *distortus* (A. Adams) and *Nassarius* (*Alectrion*) *glans glans* (Linnaeus) are found in small number on the bare sandy bed in between the coral blocks.

At a greater depth, the sandy bottom is strewn with gravels, coral fragments and lumps. This habitat is occupied by the muricid, *Morula granulata* (Duclos).

Twenty three species were collected during the exploration and nine of them are estuarine.

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