

Gastropod fauna of Bet Dwarka - Gulf of Kutch

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Collections of molluscan shells - intact, shell objects, and shell debris - as a part of recent Dwarka explorations, were examined, with special reference to gastropods. Several cut pieces, comprising of columella, operculum and other fragments of sacred chank, *Xanus (Turbinella) pyrum* (Linn) were conspicuous. The circular cutmarks on columella and body whorls on the remains of the sacred chank shell indicate that this species was commonly exploited and flourishing trade of shell bangles prevailed during protohistoric period. Present status of gastropods in Gulf of Kutch is also discussed.

INTRODUCTION

Marine shells have fascinated man since the dawn of civilization. Many trade routes of ancient people have been worked out by Archaeologists identifying the sources of shells found during exploration.

India has played major role in Indian Ocean trade. Exploration of Harrappan Port Town Lothal (Rao, 1979) and Nageshwar (Hedge *et al.* 1989) has revealed the significant contribution of marine shells in the Harappan trade network.

Archaeological exploration of another promising Late Harappan site, Bet Dwarka, also called Shankhodhara, was undertaken during recent archaeological survey of submerged port city of Dwarka (NW Coast, Gujarat State). Present paper deals with the gastropod fauna recovered during this exploration, with special emphasis to the shell industry prevailing in that period.

STUDY AREA

Bet Dwarka, situated 2 km east of Port Okha, is a narrow strip of sand and rock about 13 km long. Onshore explorations were carried out during low tide six sites along this island (Fig. 1).

Earlier preliminary onshore exploration has suggested remains of an ancient town further seaward. Underwater excavations were undertaken by SCUBA diving at 5 to 6 m depth, 50-100 m seaward of *insitu* walls found during exploration near the site BDK I.

GASTROPOD FAUNA

Gastropods recovered from Bet Dwarka can be considered under two heads: the Surface Collection and Subtidal Collection:

(i) Surface Collection

Six species of gastropods were recovered from onshore explorations. Taxonomic status of these species is given below:

Family Cypraedae

Cypraea ocellata Linn

A single specimen in good state of preservation was recovered from site BDK II. This is the most common species found all along the intertidal regions of Bet Dwarka.

Cypraea sp

Species level identification was not possible as this shell was damaged.

Family Muricidae

Murex (chicoreus) ramosus Linn

A large specimen was recovered from intertidal zone. This species is widely distributed throughout Indian Seas.

Murex virgineus (Roding)

This is common species found in Gulf of Kutch.

Family Buccinidae

Babylonia spirata (Linn)

This oval shell with its smooth shiny surface is known to occur in large numbers along Bet Dwarka shores.

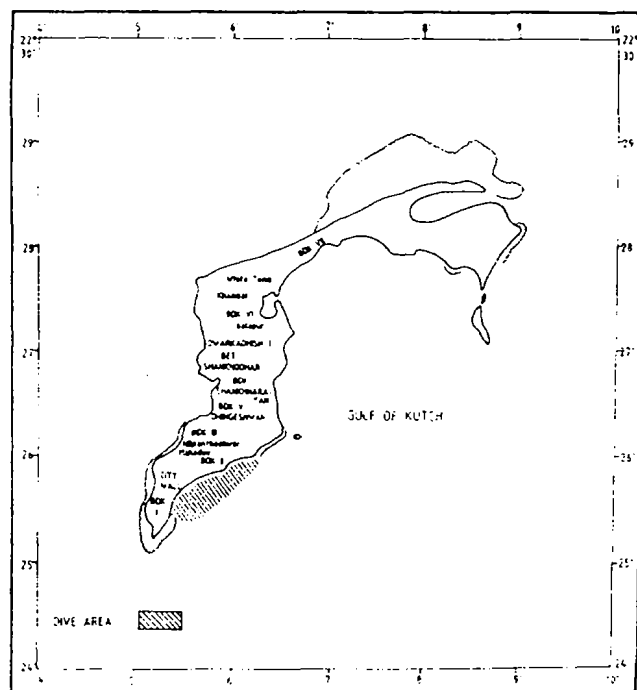


Fig. 1 Map of Bet Dwarka showing the locations of study area

Family Xancidae*Xancus (Turbinella) pyrum* (Linn)

This species is strictly confined to Indian Waters. It is extremely abundant on the south east coast of India. Along west coast, its occurrence is restricted to Gulf of Kutch area.

(ii) Subtidal Collection

This includes mainly the rejected cut pieces of sacred chank *Xancus (Turbinella) pyrum* (Linn). As, during underwater excavation, main importance was given to the procuring of other articles, smaller gastropods present in this area might have been overlooked.

SHELL INDUSTRY

From times immemorial, shell working has been practised extensively in India. Recent surface exploration and underwater excavation at Bet Dwarka has revealed the skill of the post-Harappan community in manufacturing the articles of shell.

Flourishing trade of shell bangles must have prevailed in the protohistoric period at Bet Dwarka. This is evident from the presence of innumerable unfinished shell bangles from all the explored sites. Most of the recovered bangles were highly polished and some had very fine corrugated exterior giving a good idea of the craftsmanship of the time.

The most common species exploited at Bet Dwarka for making artifacts of shells was *X. pyrum*. Thousands of fragments of Columella and body portions of this sacred chank were found at all the shell working sites. Exploitation of this species to a large extent was possible due to availability of rich beds of this chank at Bet Dwarka and its nearby areas.

Although primary importance was given to the bangle industry, circular cuts found on the columella, found along with other shell debris suggests that inlay work was also being carried out at the same sites. But, finished or unfinished inlay pieces were not recovered from these sites.

Besides this, another gastropod species *Babylonia spirata* was also found to be used in the manufacturing of inlay pieces. The smooth shiny texture of these species must have made it ideal for inlay work.

Interestingly, a large number of stony operculums belonging to family Turbinidae were found during surface exploration. The use of the stony circular forms with plano-convex surface is unknown. But, possibility of it being used as buttons in that period cannot be ruled out.*

Although, a large specimen of *M. ramosus* was recovered from intertidal zone, there is no indication of it being used for the manufacture of inlay pieces, or bangles, as was done at Nageswar (Hegde *et al* 1984: 3-12).

* Shell buttons are found at Lothal, a Harappan Port-Town at the head of the Gulf of Cambay (See Rao 1985, II) - Editor.

From all these factors, it is evident that like Nageswar, Bet Dwarka had also been an important centre for shell working.

PRESENT CONDITIONS

Gulf of Kutch harbours rich gastropod fauna. So far, 72 species of gastropods have been recorded from this area (Menon *et al* 1961: 475-494). Among these, sacred chank *X. pyrum* holds a special position as this is the only species of gastropod of commercial importance. Most important beds of this chank are known to occur in the intertidal zones of Okha, Aramada, Poshitra, Ajad, Wadinar, Bhaana, Salaya, Sikka, Pirotan Island and Bedi on the southern bank of the Gulf (Nayar and Mahadevan, 1973: 672-686).

Although the sacred chanks are known to occur in depths of 10-20 meters with sandy bottom (Hornell, 1951:94), along Gujarat Coast, they are found in the proximity of the coral reefs and are collected by hand picking during low-tide.

In recent years, demand for chank shells has increased considerably. Bet Dwarka, an important place of Hindu pilgrimage, supports a good market for materials made of chank. Since, a few rich chank grounds are being explored every year, the supply has dwindled to a large extent. This necessitates to explore new chank beds, besides conserving the presently exploited chank beds of Bet Dwarka.

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