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# Archaeology of Bet Dwarka Island

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## Abstract

Explorations along the shore and in the intertidal zone at Bet Dwarka island were carried out by the Marine Archaeology Centre of National Institute of Oceanography (NIO), Goa between 1981-1994. Artefacts of both the protohistoric and historic period were found. The former include a seal, inscriptions and pottery, while the latter consist of coins and pottery. The earliest settlement at Bet Dwarka may be dated to the late phase of the Indus Civilization, i.e. c. 1400 B.C. Bet Dwarka then was perhaps deserted for several centuries and was re-occupied in the 3rd century B.C.

## Introduction

Islands such as Bet Dwarka had played a dominant role in the maritime history of India. Maritime trade with India is attested to in Mesopotamian texts where the word *Meluhha* refers to the western part of the Indian subcontinent. The Indus Valley inhabitants had trade with Mesopotamia. The Kachchh and Kathiawar coasts are famous for the conch shell (*Turbinella pyrum*) which was used during the Indus Civilization for making ornaments (Marshall 1973: 170, 219).

One of the attractions of Bet Dwarka to the early settlers could be the vast potential of the conch shell. Marine archaeological explorations at Bet Dwarka have brought to light a large number of antiquities belonging to the protohistoric period which include a seal made on a conch shell and two inscriptions on potsherds as well as chert blades and pottery.

This paper is a review of the archaeological findings of the marine archaeological explorations conducted at Bet Dwarka from 1981 to 1995 and discusses a few problems regarding the findings of the antiquities at Bet Dwarka.

## Description of the Area

Bet Dwarka island (22° 22'12" N to 22° 28' 36 N and 69° 05'03" E to 69° 09'02" E), is situated in the Gulf of Kachchh about 5 km north of the mainland off Okhamandal and to the east of Okha port. It is famous for temples dedicated to Lord Krishna. Bet Dwarka also

known as Bet Shankhodhar, is a narrow crooked strip about 13 km long and consists of sand and rock. The eastern part of the island comprises sand-hills and bushes and is called Hanuman point. Its south-west half is a rocky tableland 17-20 m AMSL. The geological formations of Bet Dwarka are mostly Upper Miocene and Pliocene marls and arenaceous clays capped by a sandy limestone and a hard calcareous sandstone. These indicate a littoral to epineritic depositional environment, somewhat similar to that of the underlying Gaj clays over which they rest with a disconformity (Merh 1995: 123).

## Previous Work

An Early Historic site was excavated near Nilkantha Mahadev and behind Dhingesvar Mahadev temple, and a potsherd inscribed *Nandakasa* in Mauryan Brahmi script suggests a 3rd century B.C. or slightly earlier date for the settlement (Rao 1988: 48). Exploration of the island led to the recovery of a few sherds suspected to be of protohistoric but not specifically Harappan affinities (Rao 1987: 27). Onshore explorations yielded a number of potsherds belonging to the protohistoric period in the cliff sections near Siddi Bawa Pir, the southeast point of the island (IAR 1979-80: 29).

## Explorations by the Marine Archaeology Centre

Onshore and intertidal zone explorations between 1981 and 1994 brought to light a large number of antiquities at BDK-I, II, VI and IX (Fig. 1).

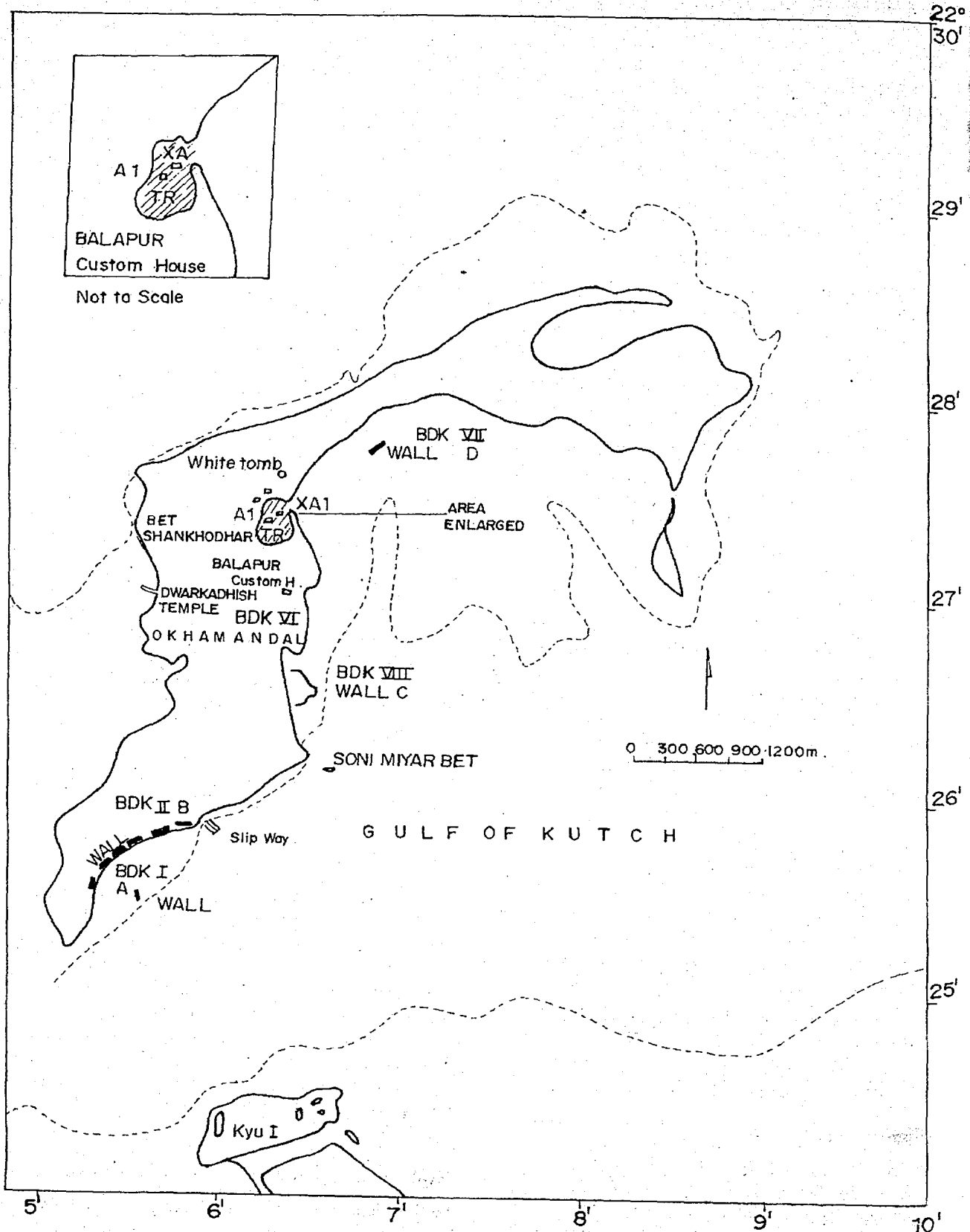


Fig. 1: Location map of Bet Dwarka island

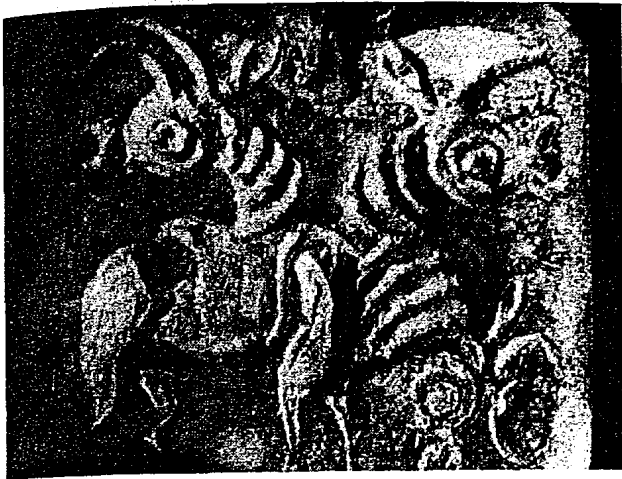


Fig. 2: Indus-type seal with a composite animal motif (anti-clockwise bull, unicorn and goat)



Fig. 3: Seven character inscription on a potsherd

The findings of Bet Dwarka may be divided into two broad periods, i) the protohistoric, which includes a seal, two inscriptions and Late Harappan pottery, and ii) the Historical, which consists of coins and pottery. Due to the absence of a dated stratigraphic context it is not possible to assign a definite age to the shell objects.

#### Period I (Protohistoric Period)

The protohistoric period (3500 to 1000 B.C.) in Indian archaeology is represented by the Indus Valley Civilization, the Chalcolithic culture of the Deccan and the early Megalithic culture of south India. In the case of Bet Dwarka island the earliest date of settlement may be the late phase of the Indus Civilization on the basis of TL dating of pottery (Rao 1988: 72).

#### Seal

A conch shell seal is the most important diagnostic antiquity from the island. It is 20 x 18 mm in size with a three headed animal motif representing a short-horned bull, a unicorn and a goat engraved on it and a perforated knob on its back for holding a ring (Fig. 2). The seal is similar to the one reported from Mohenjo-daro (Marshall 1973: seal no. 382). It was found during the underwater excavation from layer 2 of a trench UW 6 measuring 1 x 1 m, which was laid 400 m seaward of the rocky promontory projecting between BDK I and BDK II (Rao 1990: 72). It has been suggested that the shape and details of the seal could not have remained intact underwater (Tripathi 1996: 53) thus casting doubts on its integrity. The suspicion is illfounded because several well preserved fragile terracotta and ivory objects have also been found from Bronze Age shipwrecks in the Mediterranean waters (Throckmorton 1987: 32). In this case, the seal is made of conch shell

which is perhaps one of the hardest shells in the sea. As the seal was found buried under sediment the excellent preservation can be easily explained. Therefore, its preservation as well as location are beyond any reasonable doubt although the early date of the settlement at Bet Dwarka may be argued.

#### Inscriptions

Of the two protohistoric inscriptions on potsherds found at Bet Dwarka, one has seven characters (Fig. 3) and the other (Fig. 4) has two characters. The former was found in the intertidal zone (Rao 1988: 82) and the other during the onshore explorations. Rao (1987: 52) deciphered the first inscription as *mahagacha-shah-pa* which according to him means "Sea Lord Protect" and the second as *Baga* meaning "God". It is difficult to comment on the decipherment of

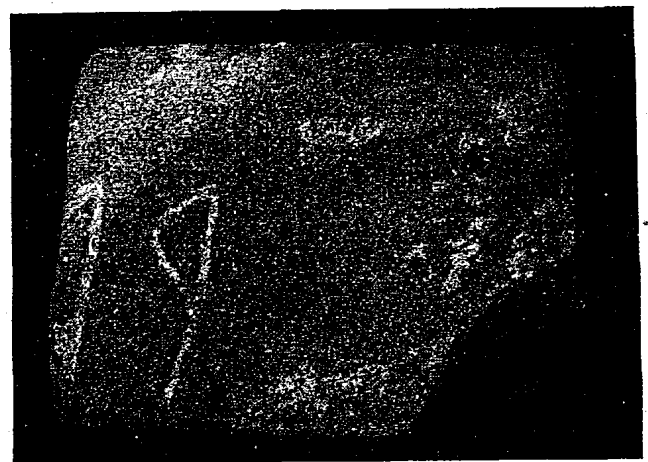


Fig. 4: Two character inscription on a potsherd

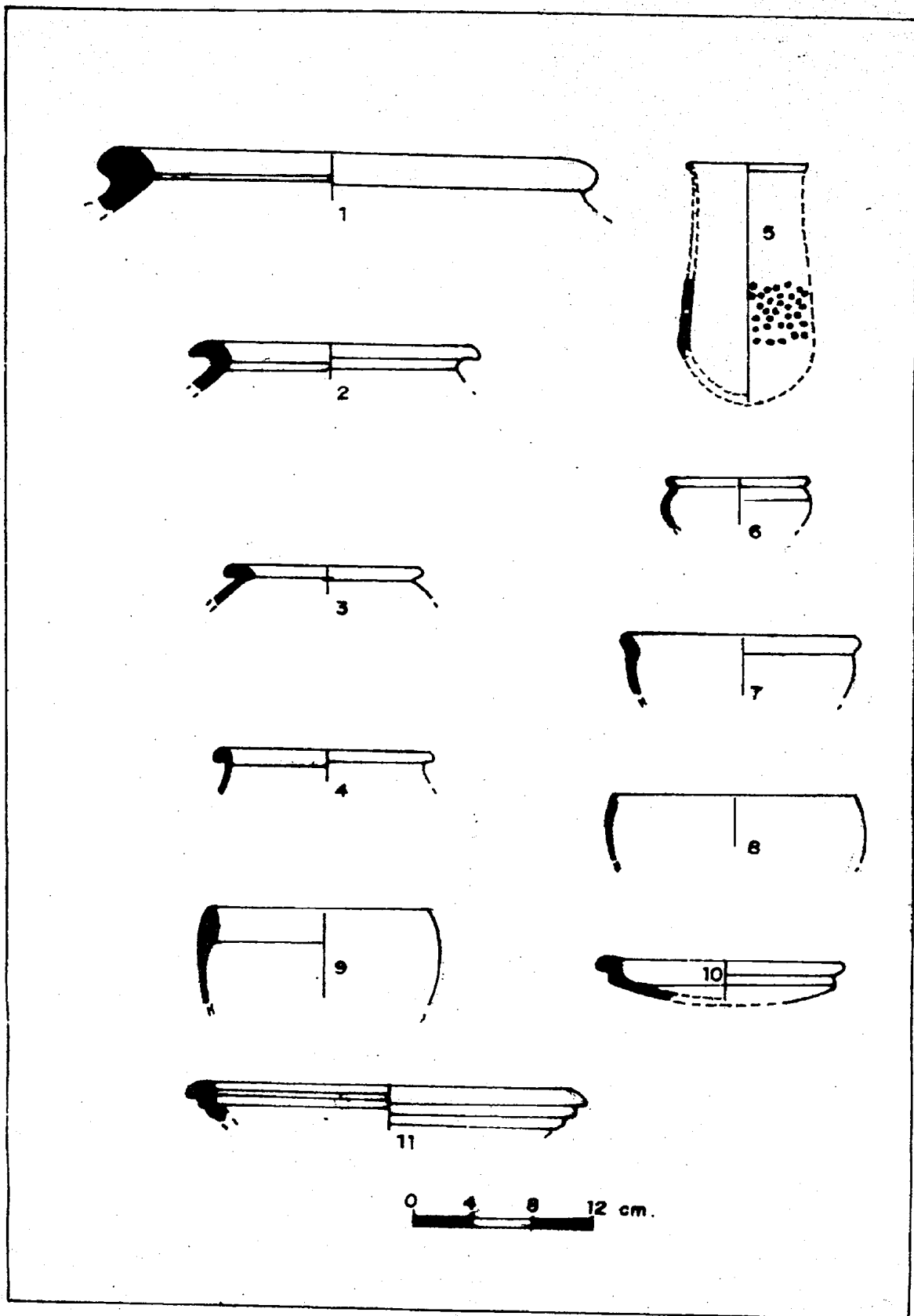


Fig. 5: Protohistoric pottery from Bet Dwarka

this script till all the Harappan scripts are decoded conclusively. However Tripathi (1996: 53) disputes the script on the potsherd since it was recovered from the intertidal zone. It is possible that the potsherd could have recently fallen out of the section facing the sea and therefore the script is similar to the other graffiti marks on the Harappan potsherds. There are also clear differences between the two inscriptions (Fig. 3-4). The inscription on the potsherd from the onshore zone is intact while that one from the intertidal zone is faint and therefore it is difficult to identify the characters. The finding of these potsherds with inscriptions also helps in dating the habitation of Bet Dwarka island.

#### Pottery (Fig. 5)

Pottery has been collected from both the intertidal zone as well as onshore at Bet Dwarka (Gaur *et al.* 1994: 165). Most of the pottery found is fragmentary because of wave action. Some shapes such as perforated jars, carinated dishes and parts of a dish-on-stand in sturdy Red Ware; bowls in Red Ware and Grey Ware, high-necked jars in Coarse Red Ware, assignable to the protohistoric period are found at all Harappan and Late Harappan sites and were found in both the intertidal and onshore collections. Most of the protohistoric pottery of Bet Dwarka is comparable with the pottery of Rangpur IIC-III, which was excavated extensively.

The Red Ware sherds are sturdy with a red core, while the Grey Ware has a light to deep smoky core. The clay used for the Red Ware is fine except in the case of the big storage jars where the clay is coarse.

The pottery is mostly wheel-turned. Pots with a bulbous or carinated body are turned on a wheel and without touching the rim and neck.

The sherds recovered from the intertidal zone have a pitted surface from which all evidence of surface treatment including paintings has been lost. Pottery collected from the surface exploration is decorated on the shoulder and rim portions. Painted decorations appear only on the Red Ware and are in the form of horizontal bands and roundels on the bowls. These decorations are executed in black and chocolate colour.

#### Jars

1. Thick storage jar with a heavy beaded rim and bulbous body, ill fired, coarse fabric. BDK-II 85 (compare with RGP III, type 61).
2. Jar with a bulbous body and sharp projecting rim, well fired, coarse fabric. BDK II-85 (compare with RGP IIA, type 3).
3. Jar with a wide mouth, splayed beaded rim and bulbous body, well fired, fine fabric. BDK-VI 88 (compare with Lothal B type 237 B).

4. Jar of medium size with raised neck and beaded rim, well fired, medium fabric. BDK-IX 90 (compare with RGP III, type 70).
5. Body part of a perforated jar with a medium thickness, well fired, medium fabric. BDK-I 85.

#### Bowls

6. Bowl with a sharp and everted rim, blunt-carinated shoulder, red slip and painted in chocolate colour with roundels, well fired, fine fabric. BDK-VIB 87 (compare with RGP IIC, type 10 a).
7. Bowl with a thick rim and straight sides, slightly convex profile, well fired, medium fabric. BDK-IX 90 (compare with RGP IIB, type 29).
8. Convex sided bowl with a thick rim, red slip, well fired, fine fabric. BDK-IX 90 (compare with RGP IIC type 10 a).
9. Convex sided bowl with a thick rim, red slip, medium thickness, fine fabric, well fired. BDK IX 90 (compare with RGP IIC, type 10B).

#### Dishes

10. Shallow dish with a projecting rim and prominent carinated shoulder, illfired, coarse fabric. BDK-II 85 (compare with RGP IIA, type 76a and also with Lothal A 42f).
11. Dish with a projecting sharp rim, blunt carinated shoulder, well fired, fine fabric. BDK-VI 85 (compare with RGP IIA type 67a).
12. Dish of a dish-on-stand, featureless rim, non-carinated shoulder, well fired, fine fabric. BDK-VIB 87 (compare with RGP IIA, type 77 and also with Lothal A, type 43).

This pottery assemblage suggests that the site was occupied at the beginning of the 2nd millennium B.C. and was contemporary with the protohistoric settlement at Rangpur in Gujarat. X-ray diffraction studies suggest that the suite of minerals of the protohistoric pottery has a close similarities with the local clay and the present-day pottery. This shows that the pottery has been found close to where it was made. The mineralogical study also shows that the people of that time were aware of the properties of the clays and knew which to select as raw material for the pottery (Hashimi *et al.* 1994).

#### Period II (Historical Period)

After a long interval the island was probably reoccupied sometime in the 3rd century B.C. The excavations at the nearby site of Dwarka (Ansari and Mate 1963) yielded information about the early historical settlement and trade contact with the Roman world around the beginning of the

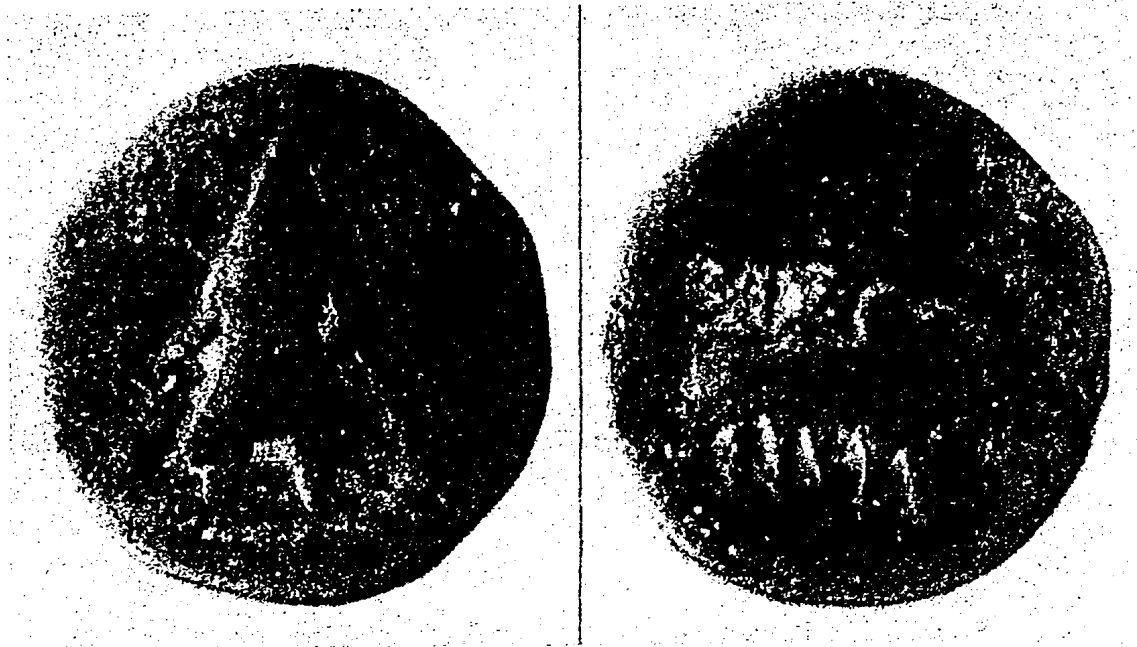


Fig. 6: Kushana period coin discovered during onshore exploration

Christian era. Both pottery and coins were collected from onshore and intertidal explorations.

#### Coins

Of the four coins collected from the island three are of copper while the other is of lead. Two copper coins are identified as belonging to the Kushana period.

1. A copper coin of the Kushana period (1st century A.D.) weighing 15.9809 gm is well preserved but it is badly worn (Fig. 6). On the obverse there is a standing king to the left, wearing a diadem and helmet, sacrificing at an altar. A short sword is held in the left hand

which rests on the waist. The script is not readable. On the reverse it consists of a standing Siva wearing a head-dress with drapery over the shoulder, a trident held in the right hand and a bull standing behind him.

2. The second copper coin belongs to the Kushana period (1st century A.D.), weighs 3.6847 gm and the top portion on both sides is heavily corroded (Fig. 7). On the obverse it consists of a standing and bearded king wearing a conical shaped helmet and offering oblations into an altar with his right hand which also holds an *ankusa*. He is facing left with a fillet flowing on to his shoulder, and he also holds a spear in his raised left

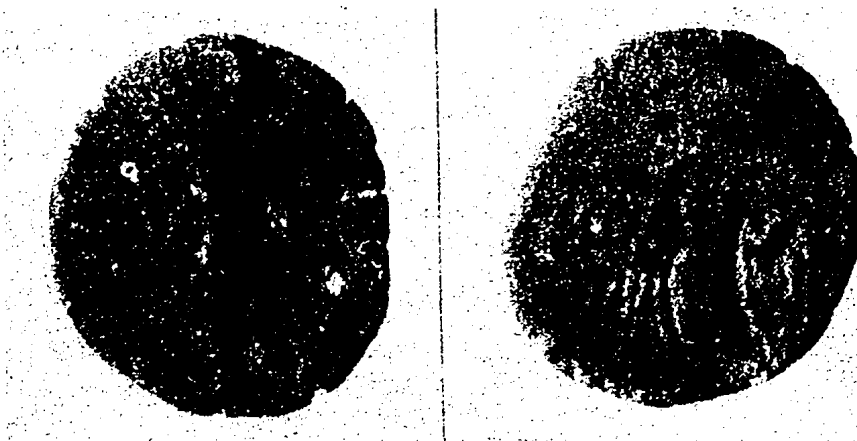


Fig. 7: Kushana period coin discovered during onshore exploration

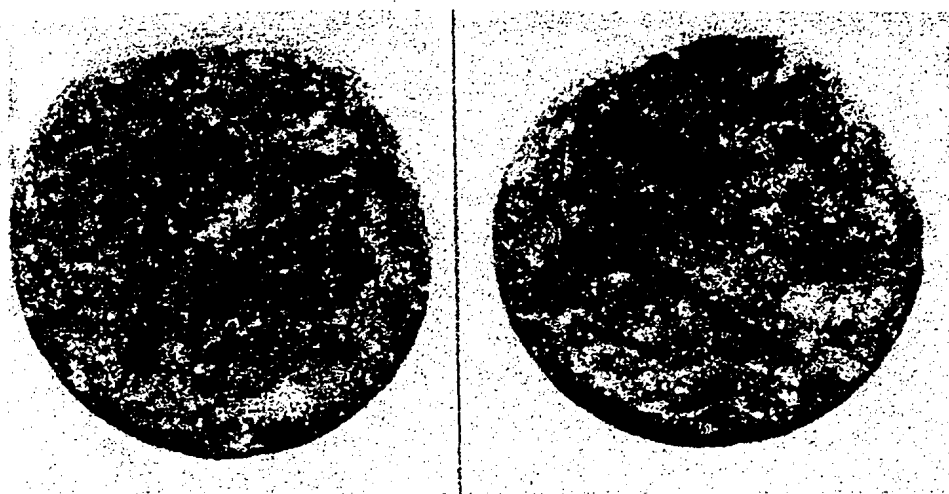


Fig. 8: Unidentified coin discovered during onshore exploration

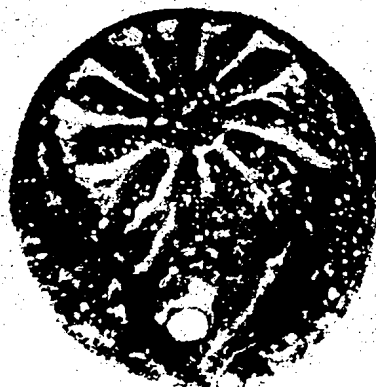


Fig. 9: Unidentified coin discovered during onshore exploration

hand. He is wearing a tunic. The script is not readable. On the reverse is a diademed male standing frontally, facing left and wearing a tunic, mantle, short boots and a low cap tied with a ribbon. The extended right hand makes a peculiar two fingered gesture and he is armed with a short sword held in his left hand which rests on his waist. The script is not readable.

3. Unidentified lead coin weighing 3.4952 gm (Fig. 8).
4. A lead coin weighing 2.1987 gm, (Fig. 9) with a 12 spoked wheel on the obverse. The reverse remains unidentified.

The discovery of the coins suggests that this was an important habitational centre during the historical period.

#### Pottery (Fig. 10)

The pottery of the historical period is generally mixed-up with that of the protohistoric period, but was separated on the basis of shapes and fabrics. The pottery of the historical period is Red Slipped Ware, Red Polished Ware, Coarse Red Ware and amphorae. The pottery is mostly wheel-turned, and imperfect firing in some cases is revealed by a thin smoky colour line in the section. A few of the important shapes are:

1. Storage jar with a flared rim and bulbous body, short neck, red slip, ill fired, coarse fabric. BDK-I 88.
2. High-necked jar of medium thickness with out-turned and deep undercut, concave neck, red slip, well fired, medium fabric. BDK-II 85.



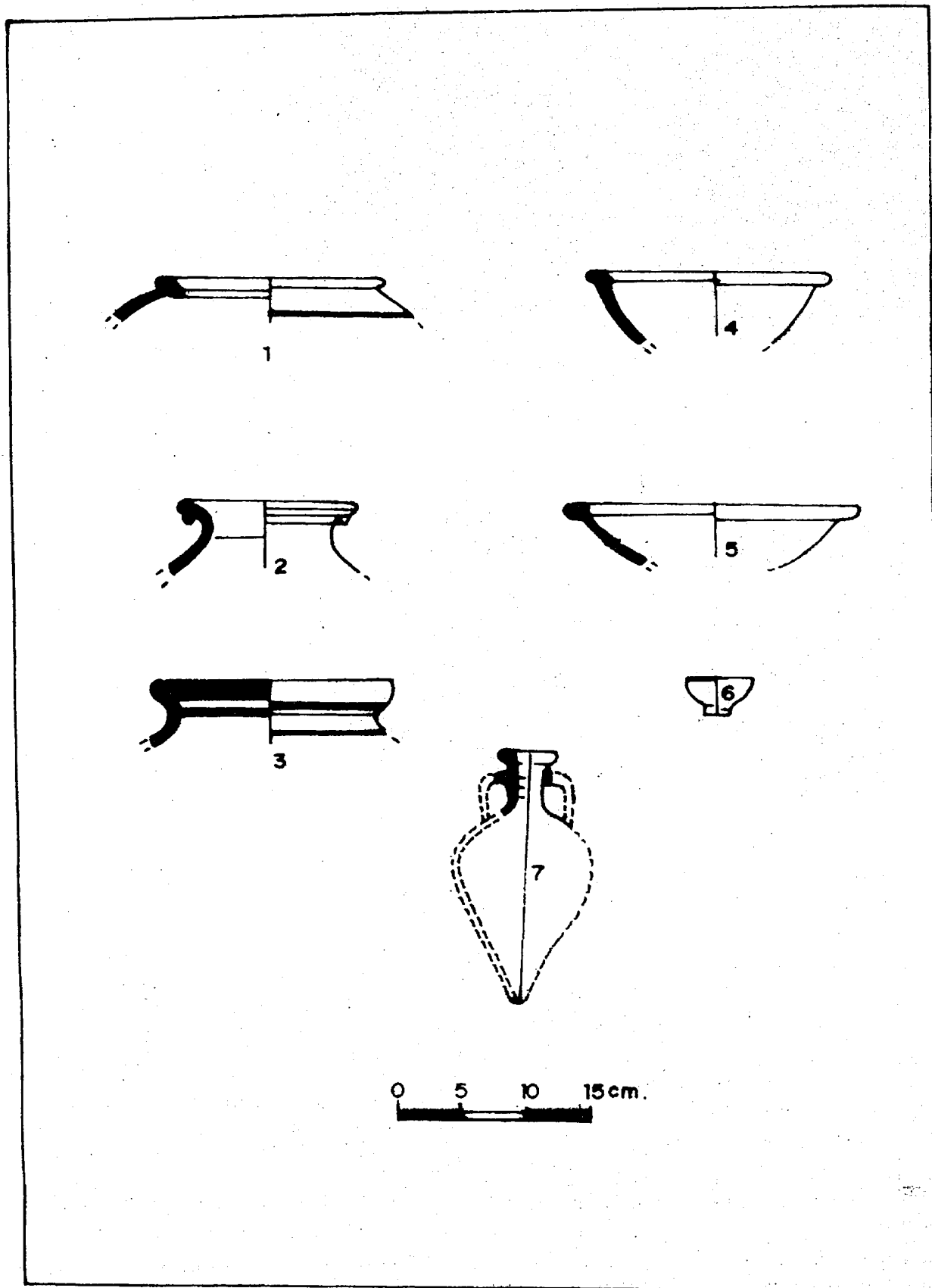


Fig. 10: Historical pottery from Bet Dwarka

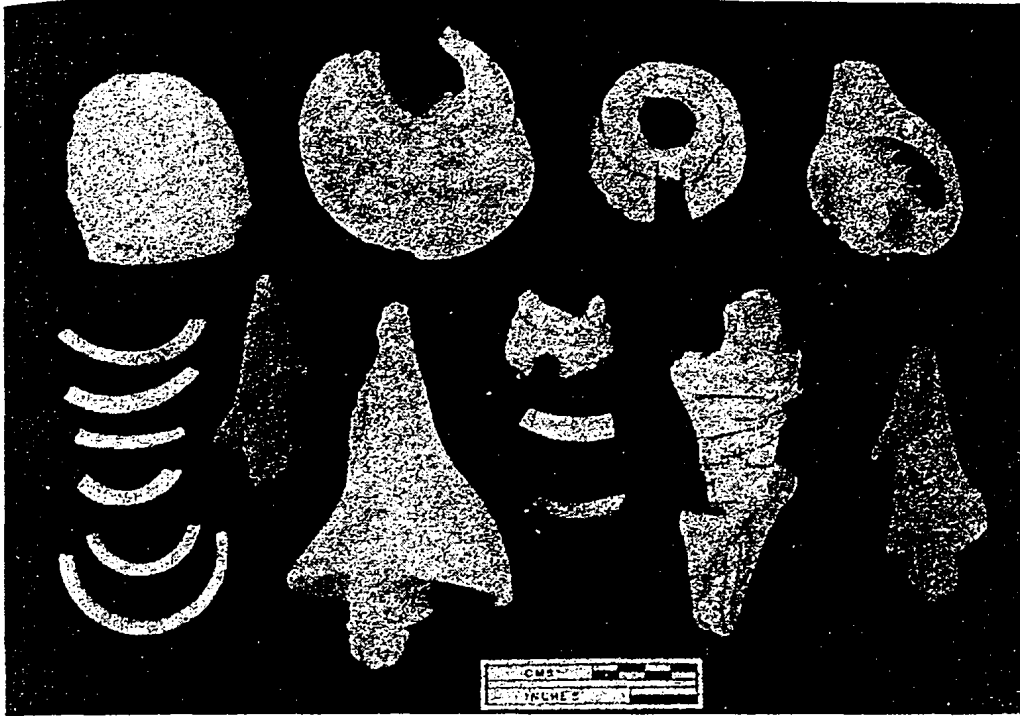


Fig. 11: Shell objects collected during onshore exploration

3. High-necked jar with a beaded rim having black bands on both the sides and some vertical lines also on the shoulder, well fired, coarse fabric. BDK-VI 85.
4. Bowl with nail headed rim, ill fired, medium fabric. BDK-II 85.
5. Convex sided bowl with a sharp rim and ring footed base, a depression on the base. BDK-II 85.
6. Deep dish with a beaded rim, well fired, medium fabric. BDK-II 85.
7. Amphora with straight sides and beaded rim, broken handle, well fired, medium fabric. BDK II-85.

#### Conch Shell Industry

The conch shell industry played a vital role in trade and commerce during the Harappan period. A large number of conch shell objects have been collected along with both the protohistoric as well as historical material, therefore, it is difficult to assign a date for the different shell bangles. However the exploitation of conch shell from the Harappan and historical periods is well established.

The shells collected from Bet Dwarka (Fig. 11) have been identified as *Cyprea ocellata* Linn, *Murex ramosus* Linn, *Murex virgenus* Roding, *Babylonia epirata* Linn, and *Xanus (Turbinella) pyrum* Linn (Shirwaiker and Parulekar 1988: 133). The techniques adopted to manufac-

ture bangles from the conch shell is to extract the columella by sawing off a slice at the tip. These shells were possibly cut with the help of a toothed saw, the marks of which can be observed on the columella. A number of waste columella can be seen with the saw marks.

#### Conclusion

The Harappans settled on Bet Dwarka island probably due to the availability of conch shells which have a commercial value. The discovery of a seal and Indus inscriptions indicate a habitation belonging to the early 2nd millennium B.C. The settlement on the southeastern side of the island was disturbed by wave action as can be seen from the cliff section facing the sea. Moreover a large quantity of pottery recovered from the intertidal zone supports the above inference. This evidence suggests that there was a rise in sea level, at least around Bet Dwarka, but it is difficult to determine the causes of sea level rise at this stage (studies on this aspects are going on at present). Later, the site was deserted for a long period and again reoccupied in the 3rd-4th century B.C. Amphorae suggest trade contacts with the Roman world at the beginning of the Christian Era. The location of Bet Dwarka was very favourable for safe anchorage in the past since it was protected from high waves and storms particularly from the southeastern side of the island.

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