

## **Evidence for Indo-Roman trade from Bet Dwarka Waters, West Coast of India**

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### **Abstract**

India had a very active maritime trade contact with the Roman world between the 4<sup>th</sup> century BC and 4<sup>th</sup> century AD. In this context recent finding of a large number of stone anchors, potsherds, lead anchors and a lead ingot from a water depth of 5 to 8 m near present Bet Dwarka jetty is significant. The sherds include amphorae, jars, bowls and lids. Amphora ware is often associated with the Mediterranean trade. Archaeological findings along the Indian coast and a comparative study between amphorae from Bet Dwarka and the Mediterranean Sea suggest that the artifacts from Bet Dwarka may be datable to 1<sup>st</sup> century BC to 2<sup>nd</sup> century AD. The numbers of stone anchors suggest that this was an ancient anchoring point.

**Keywords:** Marine Archaeology, Shipwreck, Indo-Roman Trade, Lead ingot, amphora

## Introduction

Bet Dwarka island, situated in the Gulf of Kachchh about 5 km north of mainland of Okhamandal and about 4 km to the east of Okha port. It is famous for temples dedicated to Lord Krishna. Bet Dwarka is also known as Bet Shankhodhar. The island is a narrow crooked strip of about 13 km long and consists of sand and rock. The eastern part of island is comprised of sand-hills and bushes and is called Hanuman point. Its southwest half is rocky tableland fifty to sixty feet high. The area has been mentioned frequently in foreign literatures such as in the Greek sea guide, the *Periplus Maris Erythraei* (1<sup>st</sup> century AD) which describes it thus:

A promontory stands out from this gulf curving around from Eirion towards the east then south then west and enclosing the gulf called Baraca, which contains seven islands. Those who come to the entrance of this bay escape it by putting about a little and standing further out to sea; but those who are drawn inside into the gulf of Baraca are lost; for the waves are high and very violent and the sea is tumultuous and foul, and has eddies and rushing whirlpools. The bottom is in some places abrupt and in others rocky and sharp, so that the anchors lying there are parted some being quickly cut off and other chafing on the bottom" (Schoff, 1974).

However, Ptolemy mentioned that Barake as an island in the Gulf of Kanthi, which has been identified as Gulf of Kachchh (McCrinkle, 1879).

Coastal sites on the western coast such as Dwarka, Prabhasa Patan, Padri, Hathab, Bharuch, Kamrej and Elephanta (Figure 1), have ample antiquities, mainly potsherds, suggesting maritime trade and commerce relations with the Mediterranean countries around the Christian Era. According to several ancient Tamil texts Romans (*Yavana*) had established their colonies along the east coast of India and the claim has been testified by the discovery of a large number antiquities of Roman origin, which include coins (copper and gold) and pottery. A potsherd from Alagankulam has graffiti of the Roman ship (Kashinathan, 1997). Ancient Tamil texts like Silappatikaram (Pillai, 1989) and Ahananuru (Ramchandran, 1974) vividly described the presence of *Yavana* in India during the early centuries of the Christian era.

The offshore explorations in last 2 seasons (2000-01, 2001-02) along the Bet Dwarka coast have yielded the remains of amphorae, two lead anchors (?) and one circular lead

ingot. Besides a large number of stone anchors of different types and a large quantity of potsherds were discovered. Above findings have been reported for the first time from offshore regions on the Indian coast, which has generated a lots of interest among the archaeologists for better understanding of Indo-Mediterranean trade relation during early centuries of the Christian Era. The present paper therefore primarily deals with the archaeological material concerning with Indo-Mediterranean contact found during offshore explorations off Bet Dwarka. A comparative study has been made between amphorae from other coastal sites in India and shipwrecks in Mediterranean focusing the time bracket of the contact.

### **Previous work**

Onshore explorations have revealed the oldest habitation datable to the late Harappan period and their main source of economy was based on the marine resources, especially for conch shell which is abundantly available in this region (Rao, 1988). There are frequent references in the literature suggesting that this area was famous for the conch shell industry during the early historic period (Chandra, 1977). An important aspect that may be noted here is a continuous occupation from Harappan to modern times (Vora, et. al. 2002). This indicates the importance of this island which, perhaps, is the only site in the Saurashtra coast where a continuous habitation for more than 3500 years is existed.

Onshore and offshore explorations have been carrying out since 1983 around Bet Dwarka Island. The important findings include a late Harappan seal made on conch shell (Rao, 1988), besides a large number of pottery dating back to the Harappan and historical periods (Gaur, et al, 1994). A large number of archaeological artifacts are scattered in a large area in inter tidal zone indicating the shoreline changes in the past (Gaur and Vora, 1999). Offshore exploration near present passenger jetty brought to light a large number of stone anchors of different types (Sundaresh et al. 2003). The data on these anchors are being included in the present paper, as reader may like to understand the importance of other findings in relation with these stone anchors.

### **Methodology**

The underwater diving operation was initiated north of the present Bet Dwarka jetty in a 3 to 8 meter water depth. A float was tied to each object observed underwater specially, with stone and lead anchors. For convenience of plotting, each object was tied

underwater with the rope. Direction of each object was obtained with the help of marine compass similarly distance between two objects were manually measured. Photography and drawing was carried out *in situ*. Lastly important artifacts were recovered for further study. Positions were obtained with the help of Global Position System (GPS).

## **Results**

The exploration area is located about 500 m from the present shoreline between 5 to 8 m water depth towards the northwest direction of the present Bet Dwarka jetty (Figure 2). The explorations brought to light two lead anchors one lead ingot and remains of 7 amphorae apart from a large number of pottery. A large number of stone anchors were noticed from the vicinity. The description of the findings are described below.

### **Lead Objects**

Three lead artifacts were discovered during the exploration. A detailed description of each artifact is given below.

**Object 1.** Discovered in 2000-2001 season and it was lying partially buried in sediment. It has a big axial hole in the centre (Fig. 3a and 3b). The bottom is flat with a few undulating zigzag lines. A layer of marine growth also observed. It tapers upper side and the diameter at the top merges with the hole. The diameter of the anchor is 42 cm, height 11 cm and the dia of hole is 15 cm. The weight of anchor is 70.200 kilogram.

**Object 2.** This was discovered during field season 2001-2002, and was lying exposed on the seabed (Fig. 4a and 4b). A thick layer of marine growth was observed. The height of the object is 9.5 cm and diameter at bottom is 38 cm. The diameter of axial hole is 17 cm. This anchor does not have any mark on the bottom however on the upper surface a deep groove was observed. The weight of this object is 68.500 kilogram.

**Object 3.** Another lead object circular in shape was recovered from 7 m water depth. A layer of marine growth also noticed. The obverse of this object is rough and thick in the middle and gradually thinning towards edges (Fig. 5). Reverse is flat and smooth with out any marks on it. The diameter is 23 cm and average height is 3 cm. The weight of ingot is 8.500 kilogram.

Based on their shapes and sizes first two objects are considered to be the anchors while third one is identified as ingot.

### **Stone artifact**

An unidentified circular stone (Fig. 6 & 7) with a small axial hole found near above lead objects (suggested as Roman hand mill stone). Lower portion is broader and bottom is flat. The object is tapering upper side with thin wall. A horizontal slit on upper side has been noticed, which is narrow on one side and open on the other side. The upper edge of axial hole has been widened. This is made of granite stone and a layer of marine growth noticed over it.

### **Amphorae**

There are the remains of 7 amphorae besides a number of other sherds of amphorae and pots (Fig. 8). The black encrustation has been noticed internally on a few amphorae sherds (Figure 9). They are thick gritty and made of compact clay and has a coarse fabric and rough surface. This ware was mainly used for exporting wine and olive oil from the Roman Empire. Since the olive oil was in lesser demand in India and since sherds have been found with dried resin mixture, it is most probable that majority of Indian examples are wine amphorae. The shape of this vessel is elongated with a pointed base, a narrow cylindrical neck and two handles attached to the neck and the shoulder. The shape could be understood at Nevasa as sherds from different parts of the pots were found there (Ghosh, 1989:315). Though there are number of sherds belong to body parts of the amphorae have been found in Bet Dwarka waters, however, only 7 amphorae have been described as they have preserved either upper portion or lower portion (Figure 10).

1. Upper portion of an amphora with an outward projected nail-headed rim (Fig. 11). One handle is surviving on the shoulder and has a raised neck. The diameter of mouth is 13 cm. The entire pot was covered with a layer of thick marine growth. Pinkish in colour and section is red colour suggesting well firing of pot. Some white substance is noticeable in the section. It is made of well-levigated clay and well fired and has medium fabric. This is very similar to the Roman amphora of the 4<sup>th</sup> -5<sup>th</sup> century AD.

2. Spike base of an amphora with a narrow base measuring 4 cm in dia (Figure 12). The body part of the vessel starts flaring after a height of 6 cm from base point. Pinkish surface, gritty pink core with white particle inclusions. Thickness of core is 1 cm. It has a bulbous body and rough surface. Coarse fabric and well fired. A layer of marine growth also observed.

3. Spike base of an amphora. It has broader base than previous one with 5 cm dia. Flaring of body portion starts after attaining a height of 5 cm from base point. Outer surface is pale colour. Interior is covered with a layer of black encrustation. Thickness of section is 1.1 cm. The section is light pale colour with small particles of black and a few white colour. It has a smooth surface comparatively to previous one. Bulbous body. Internally a black layer of some liquid material also noticed (Figure 13). It has a fine fabric and well fired.

4. Spike base of an amphora with narrow base of a 3 cm diameter. Flaring starts after a height of 3 cm from base point. Outer surface is pinkish in colour. It has a thin section, rough surface and bulbous body. It has a cream colour and gritty core, coarse fabric and well fired. A layer of marine growth also noticed. It is of smaller in size comparatively previous ones.

5. Spike base of an amphora. It has a long, narrow and thin base portion. It is cylindrical type. The diameter of base is 3.5 cm and flaring of body part starts at a height of 8 cm from base point. Outer surface is pale colour. The shape is very different from above ones. Exterior has smooth surface and internally it is rough. It is made of coarse fabric and well fired. A layer of marine growth also noticed.

6. Lower portion of an amphora. Base part has been broken. It is very similar to amphora number 2, however it has a thin section and bulbous body. The section is pale colour with some black and white substance. The thickness of section is 1 cm. Internally rough surface and covered with a layer of marine growth. Coarse fabric and well fired.

7. Lower portion of an amphora. This has a roundish base and bulbous body. Surface is pinkish colour. It has gritty core, coarse fabric and rough surface. From section it appears that clay contain white substance. The thickness of section is less than 1 cm. This sherd is very different from the rest of amphorae.

## **Other pottery**

Apart from amphorae sherds a large number of other pottery was found and description of a few important shapes are given below (Fig. 14).

1. Rim portion of a large sized storage jar of dull red ware with an out played and outward projected rim. It has a bulky body, rough surface, coarse fabric and ill fired. Surface has been eroded significantly. The sherd is covered with a thick layer of marine growth.
2. Thick storage jar with an out played rim. Potsherd is covered with a thick layer of marine growth. The surface of this pot is also eroded significantly. It has thick section. The pot has a coarse fabric and ill fired.
3. Rim portion of a small jar with an undercut rim and triangular section. It has pitted surface, bulky body, medium fabric and ill fired.
4. Rim portion of a jar with an out played beaded rim and short neck. It has a thin section, rough surface, medium fabric and ill fired. The pot is covered with thick marine growth.
5. Rim of a storage jar. It has an outward projected rim and bulky body. Entire pot is covered with a layer of marine growth. It has a thin section. The surface is rough and has coarse fabric.
6. Small sized jar with an outward projected beaked rim. It has a thick layer of marine growth. The surface is rough and medium fabric.
7. A sherd of body portion of an amphora. It has corrugated profile and covered with marine growth. It has smooth surface, medium fabric and well fired.
8. A medium sized bowl of dull red ware with a thickened rim, convex sides and a pedestal base. The pot was made on fast wheel as smooth serration marks are noticed. It is made of well-levigated clay and ill fired. The pot is covered with a layer of barnacles.

9. A deep bowl of dull red ware with a sharpened featureless rim. It has pitted surface perhaps due to erosion. The pot has a corrugated profile. It has rough surface and coarse fabric. The entire pot is covered with a thick marine growth.

10. Base portion of a large storage jar. It has a very thick section and covered with a thick layer of marine growth. The surface of the vessel is affected by erosion. It has rough surface and coarse fabric.

### **Stone anchors**

The stone anchors have been observed near the present Bet Dwarka jetty between the inter-tidal zone and 8 m water depth. This area falls in tidal channel current, which has a maximum speed of 6 knots. Therefore, heavy artefacts like stone anchors can remain under the sea. There are total 42 stone anchors and 25 out of them are composite type (table 1, Fig. 15-16) and rest 17 are grapnel or Indo Arab type (table 2 Fig. 17).

1. Composite anchors are often carved from a flat, thin stone block, giving a triangular shape with a circular upper hole and two lower holes, which may be either rectangular or square. Sometimes, however, composite anchors may have one, two and four holes. On the basis of holes these are composite anchors from Bet Dwarka can be divided in to 2 groups. 1. anchors with 3 holes majority of the anchors falls in this group, they have a circular upper hole and two rectangular or square lower holes. 2. there are two anchors with four holes, besides above mentioned positions of 3 holes, the additional hole is located in the middle of the anchor and it is the widest among all the four holes. 3. in this group there are 2 anchor with two square holes. Only one composite anchor has been found from inter tidal and rest of them are found between 4 to 7 m water depth.

2. Grapnel anchors are cut from a long and thick rock with a square section. Often the anchor has a circular upper hole and the lower two holes on either face are square or rectangular. During the exploration 17 grapnel anchors were observed and 2 of them are lying in inter tidal zone and rest of them were noticed in 4 to 7 m water depth. A few boat used to be moored with a grapnel anchor lying intertidal zone. Rope marks are clearly noticeable. They were lying exposed on the sea-bed. A detailed description of each anchor is given below.





## **Discussion**

The discovery of above findings in Bet Dwarka is significant in view of the maritime history of India is concern. So far amphorae were considered to be carriage of liquid material on the boat but the present discoveries confirms the notion. There are at least four sizes of amphorae from Bet Dwarka waters. It is difficult to determine the kind of liquid material transported from Bet Dwarka amphorae, as a thick layer of marine growth was present on them. It is possible that different material was filled in these amphorae as they are of various types. The finds are concentrated just eastern side of the tidal current channel where except slag period the current speed is 2-3 knot, which did not allow the lighter material to settle down. However, above pottery were found either partially buried in sediment or trapped in between the rocks. These artifacts are not found towards shallower side.

Two lead artifacts with an axial hole appear to be anchors. Although, the anchors have been found in association with Roman shipwrecks in the Mediterranean water and they have been termed as Roman lead anchors (Raban, 1981), but the lead anchors from Bet Dwarka are not similar to them. Similar types of stone anchors have also been reported from nearby areas of Dwarka and Somnath (Gaur, et. al. 2002) and as far as Oman (Vosmer, pers. Comm., 1999) where they have been termed as ring stone anchors. At present these lead artifacts are associated with Roman contact only on their association with amphorae, which, however, may be purely a coincidence also. The association and dating of unidentified objects from Bet Dwarka is a difficult and risky task as this place has been used as an anchoring point since historical times and material of different periods can be mixed up.

### **Are these remains are part of habitation or a shipwreck?**

As it is stated earlier that findings are concentrated between 5 to 8 meter water depth and absence of archaeological findings towards shallower side suggest that these artifacts are not from the habitational site. For instance a large number of pottery have been collected from the South-eastern coast of the Island from high water line to 5 meter water depth, similarly pottery and other archaeological remains have been traced from inter-tidal zone to 8 meter water depths off Poompuhar (Gaur and Sundaresh 1998). The sea level history along the Indian coast suggests that so much fluctuation has not taken

place during last 2000 years or so. With above evidences the possibility of a habitational site at this depth is ruled out.

There are no remains of any timber of a wreck, except potsherds related to amphorae, two lead anchors and an ingot. This may be due to the fact that site is lying in the mouth of the Gulf of Kachchh where tidal currents are severe, which does not allow for settlement of any lighter material and also sediment which preserved organic material and anything lying exposed on seabed will be destroyed by wood borer as they are very active in India waters. For example not a single piece of wood could be traced from a 17<sup>th</sup> century Portuguese wreck in Goa waters (Tripathi, et. al., 2001) because the wreck was exposed on the rocky seabed. Similarly, in Poompuhar a partially exposed shipwreck belong to closing decade of 18<sup>th</sup> century (Gaur et. al, 1997), where metal objects have been surviving and buried portion of wood is intact. All these evidences from Indian waters rules out the possibility of the presence of any hull remains of a shipwreck of early centuries of the Christian Era. However, archaeological findings support the presence of a shipwreck dating back to the Christian Era.

### **Similar findings from west coast of India**

Indian and foreign classical literatures have vividly described the active trade relation between India and northern Mediterranean countries during early centuries of the Christian Era. Warmington (1928) believe that the first two centuries of Christian era, the Roman Empire witnessed the establishment and development of a profitable commerce between two great nations the Mediterranean countries and India. A number of archaeological sites in India have yielded the Roman antiquity including inscriptions, coins and pottery. For the first time amphorae were recovered from the excavations at Taxila presently situated in northern Pakistan, which was dated by Sir John Marshall to the first centuries BC-AD. Wheeler believe (1946:45) that Taxila amphora have traveled overland from Western Asia. Excavation at Dwarka (very close to Bet Dwarka) brought to light remains of an amphora dating back to 2<sup>nd</sup> century AD (Ansari and Mate, 1966). Similarly, a few sherds of amphorae have been discovered from Hathab dating back to 1<sup>st</sup> to 4<sup>th</sup> century AD. (Pramanik, 2004). A large number of amphorae sherds have been recovered from Elephanta Island dating back to 1<sup>st</sup> to 7<sup>th</sup> century AD (Shinde et al ,2002). Like wise several sites on the west coast such as Gopakapattana and Muziris yielded the remains of amphorae dating back to early centuries of the Christian Era. Most of the

mentioned above are lying on the coastal route mentioned in *Periplus Maris Erythraei* and time bracket of their connection with Roman world are more or less same. Therefore, the date of amphorae from Bet Dwarka may be assigned between 1<sup>st</sup> to 4<sup>th</sup> century AD.

## **Conclusion**

The discovery of a large number of pottery related to amphorae suggest that Bet Dwarka Island had International trade contact during the early centuries of the Christian Era. Presence of a large quantity of pottery related to amphorae, two lead anchors and an ingot suggest the possibility of a shipwreck in this area associated with Roman trade dating back to the early historical period. Due to high productivity of Indian waters it is unlikely to trace the remains of hull of the wreck. However, above findings suggest that shipwreck might have occurred in this area in a water depth of 5 to 8 m. The present Bet Dwarka jetty have served as an anchoring point since the early centuries of the Christian Era as a large number of stone anchors are reported from this place. During rough weather and cyclone Bet Dwarka could have served as a sheltered harbour. The archaeological findings from this island indicate that this was a very prominent port and the center of maritime activity since the early centuries of 2<sup>nd</sup> millennium BC. The island of Bet Dwarka may be the Baraca of Periplus of Erythrean Sea and Barake of Ptolemy.

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Table 1: Composite stone anchors discovered from Bet Dwarka waters

<b>Sl. no.</b>	<b>Year and location</b>	<b>Raw material</b>	<b>Weight (estimated)</b>	<b>Max length</b>	<b>Max width</b>	<b>Thick ness</b>	<b>Dia of Upper hole</b>	<b>Lower holes</b>
1	1998 IZ	Limestone	134	100	100	10		13X13, 13X13
2	1998 UW	-do-	216	116	76	21	20	10X12, 12X12
3	1998 UW	-do-	23	80	35	7	13	10
4	1998 UW	-do-	80	90	73	12	14	15X15, 15X16
5	1998 UW	-do-	55	70	54	13	10	11
6	1998 UW	-do-	40	66	50	12	11	
7	2000-01 UW	-do-	35	88	58	6	5	6X6, 6X6
8	2000-01 UW	-do-	46	80	65	7	14	6X6, 6X8
9	2000-01 UW	-do-	60	67	50	15	6, 12	5X7, 5X7
10	2000-01 UW	-do-	25	45	25	15	14	
11	2000-01 UW	-do-	49	60	45	13	8	7X7
12	2000-01 UW	-do-	38	61	45	10	6	7X7, 7X7
13	2000-01 UW	-do-	32	60	50	10	8	10X10, 10X10
14	2001-02 UW	-do-	46	60	50	12	5	5, 5
15	2001-02 UW	-do-	31	70	40	8	6	
16	2001-02 UW	-do-	82	110	45	15	7	12X10, 12X10
17	2001-02 UW	-do-	10	40	42	3		3, 3
18	2001-02 UW	-do-	83	95	70	12	12	12X12, 15X20
19	2001-02 UW	-do-	46	78	65	7	7	7, 8X6
20	2001-02 UW	-do-	44	95	62	7	5	6X6, 6X6
21	2001-02 UW	-do-	99	90	60	15	10	8X8, 12X10
22	2001-02 UW	-do-	20	53	50	6	5	6X6
23	2001-02 UW	-do-	24	60	33	8	5	5, 5
24	2001-02 UW	-do-	78	80	75	11	10X10	4, 4
25	2001-02 UW	-do-	42	55	45	13	8	7X7

**Table 2. Indo-Arab anchors from Bet Dwarka.**

<i>Sl. No.</i>	<i>Year &amp; Location</i>	<i>Material</i>	<i>Max length</i>	<i>Max width</i>	<i>thickn ess</i>	<i>Dia of upper hole</i>	<i>Lower holes</i>	<i>Estimated weight in Kgs</i>
26	1998 IZ	Conglomerate	80	32		-	15X16, 14X16	121
27	1998 IZ	Sandstone	146	36		14	18X18, 18X20	289
28	2001 UW	Limestone	100	25		8	13X14, 8X10	72
29	2001 UW	-do-	90	18		6	10X10, 10X10	48
30	2001 UW	-do-	95	20		6	12X12, 10X10	76
31	2001 UW	-do-	75	20		10	10X10	71
32	2001 UW	-do-	150	30			11X14, 11X15	205
33	2002 UW	-do-	190	45	25	15	20X20, 18X20	283
34	2002 UW	-do-	130	30	28	7	12X12, 12X12	167
35	2002 UW	-do-	115	30	25	7	10X12, 10X10	143
36	2002 UW	-do-	108	25	22	7	11X13, 8X8	93
37	2002 UW	-do-	40	24	20		12X12	30
38	2002 UW	-do-	95	30	22		12X12, 12X12	110
39	2002 UW	-do-	110	25	25	12	12X12	156
40	2002 UW	-do-	65	20	27	6	-	67
41	2002 UW	-do-	50	20	22	6	-	51
42	2002 UW	-do-	65	24	10	4	-	37

Value of sandstone per m<sup>3</sup> = 2300 kg

Value of limestone m<sup>3</sup> = 2500 kg



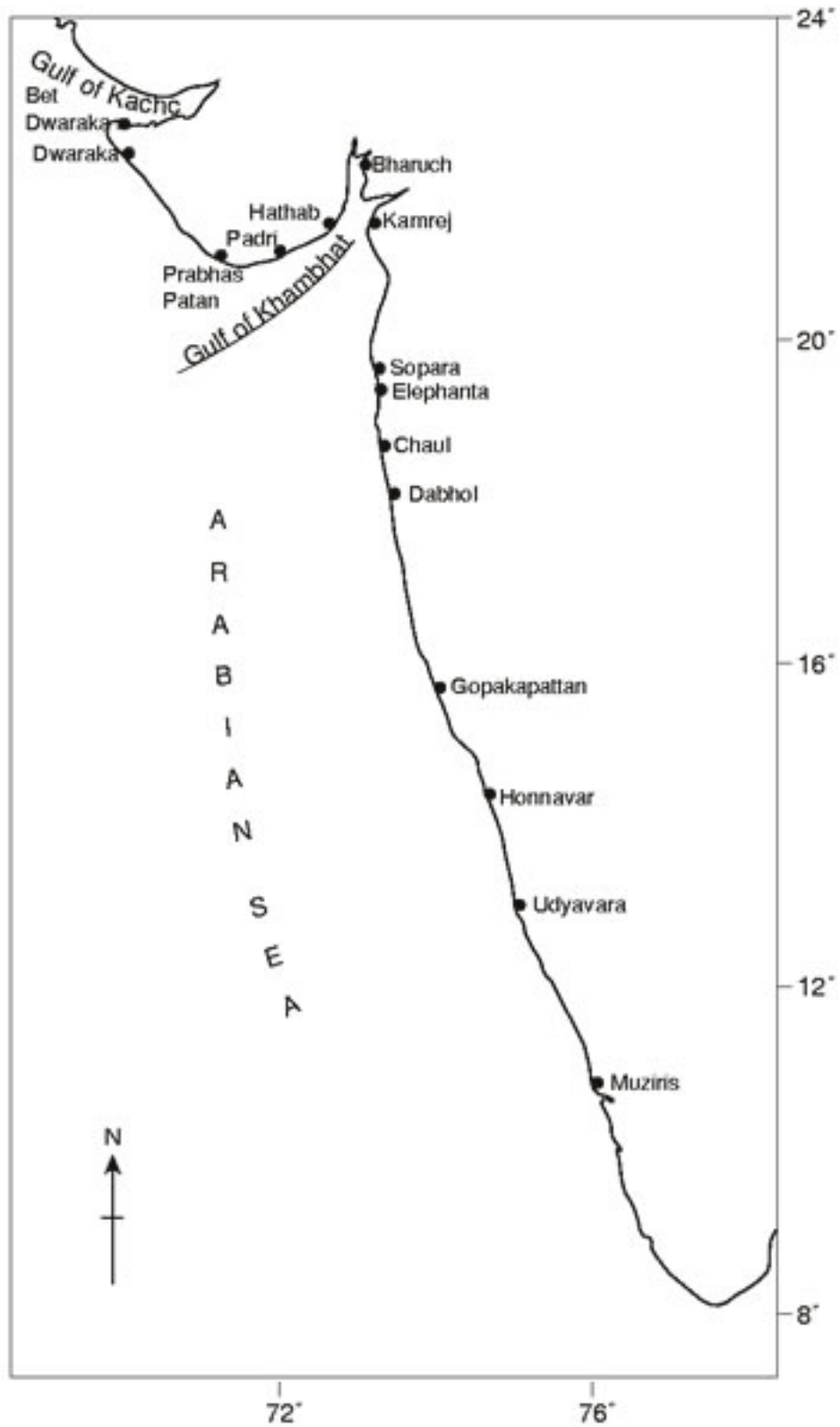


Figure 1. Archaeological sites with evidences of Indo-Roman trade along the Saurashtra coast. (R. Uchil)

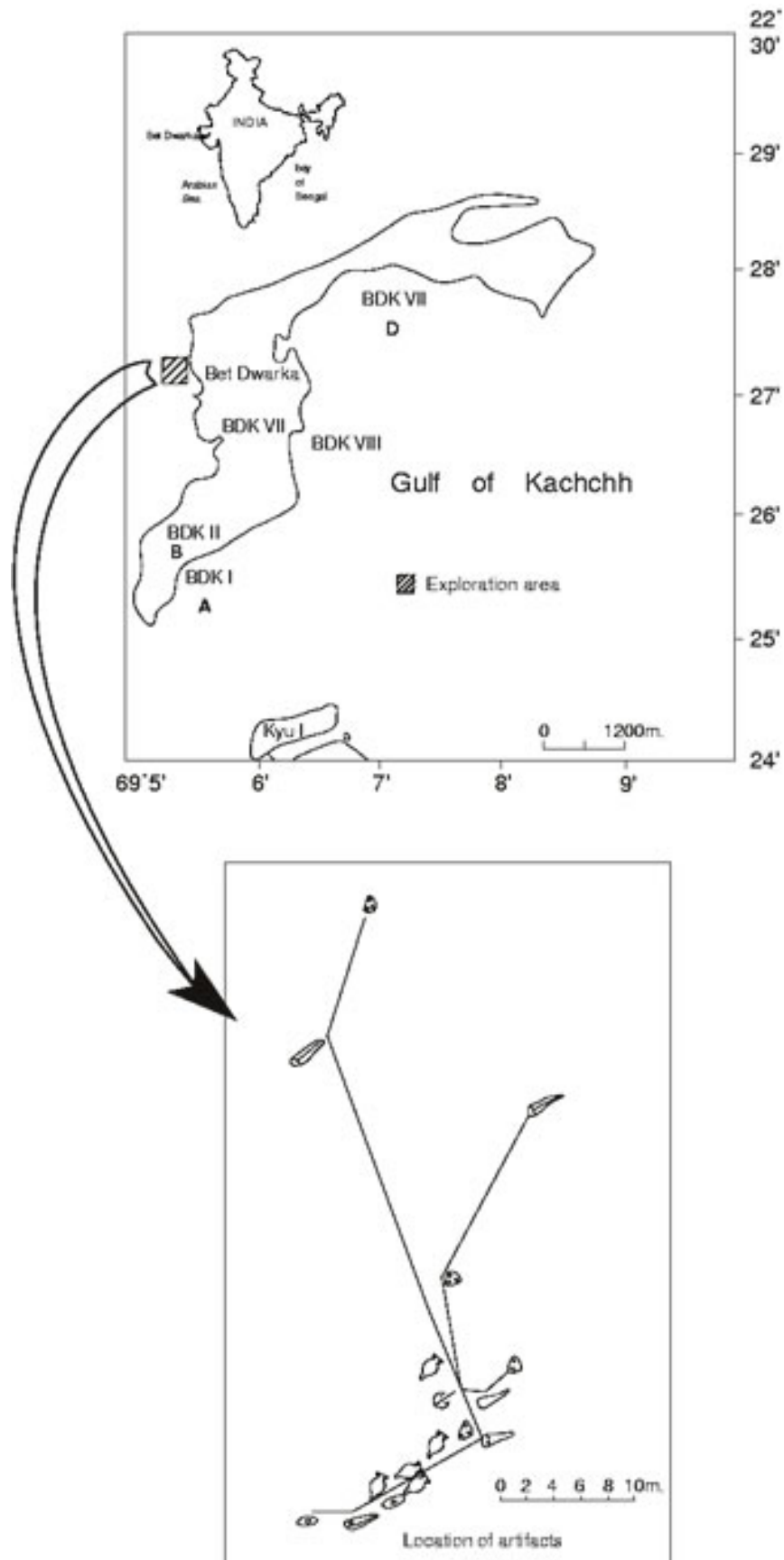


Figure 2. Location of the site on Bet Dwarka Island and the location of artefacts including amphoras, lead objects and anchors under water. (R. Uchil)



Figure 3. Lead object considered to be an anchor found off Bet Dwarka. (scale 25 cm with 5 cm divisions) (S. A. Karim)



Figure 4. Lead object considered to be an anchor found off Bet Dwarka. (scale 25 cm with 5 cm divisions) (S. A. Karim)



Figure 5. Lead ingot from a depth of 7 m off Dwarka. (Scale 10 cm with 2 cm divisions) (S. A. Karim)



Figure 6. An unidentified stone artefact (possibly a handmill) found off Bet Dwarka. (scale 10 cm with 2 cm divisions) (S. A. Karim)



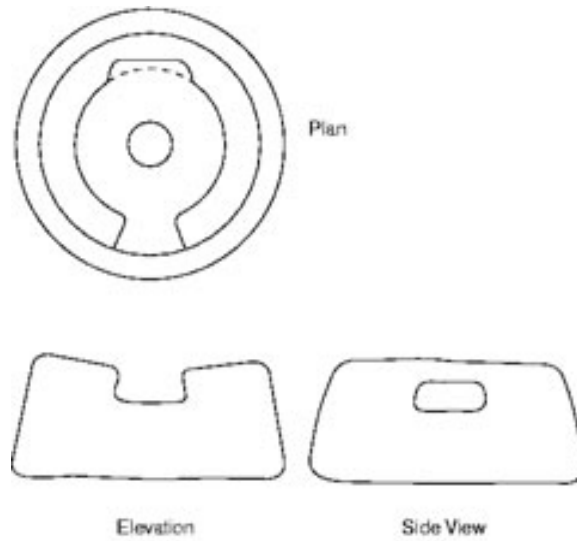


Figure 7. Plan and section drawing of an unidentified stone artefact (possibly a hand-mill) found off Bet Dwarka. (R. Uchil)

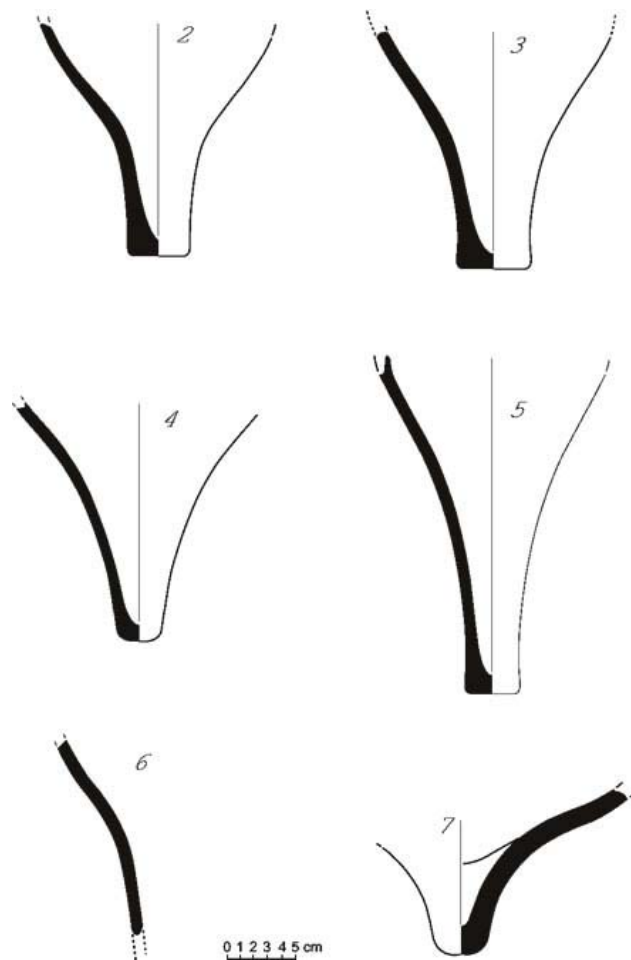


Figure 8. Different sizes of amphora found off Bet Dwarka. (R. Uchil)



Figure 9. Amphora sherds found off Bet Dwarka. (scale 10 cm with 2 cm divisions) (S. A. Karim)



Figure 10. Amphora sherd with black encrustation found off Bet Dwarka. (S. A. Karim)



Figure 11. Upper portion of amphora with handle. (scale 10 cm with 2 cm divisions) (S. A. Karim)



Figure 12. Lower portion of amphora no. 2. (scale 10 cm with 2 cm divisions) (S. A. Karim)



Figure 13. Amphora no. 3. (scale 10 cm with 2 cm divisions) (S. A. Karim)

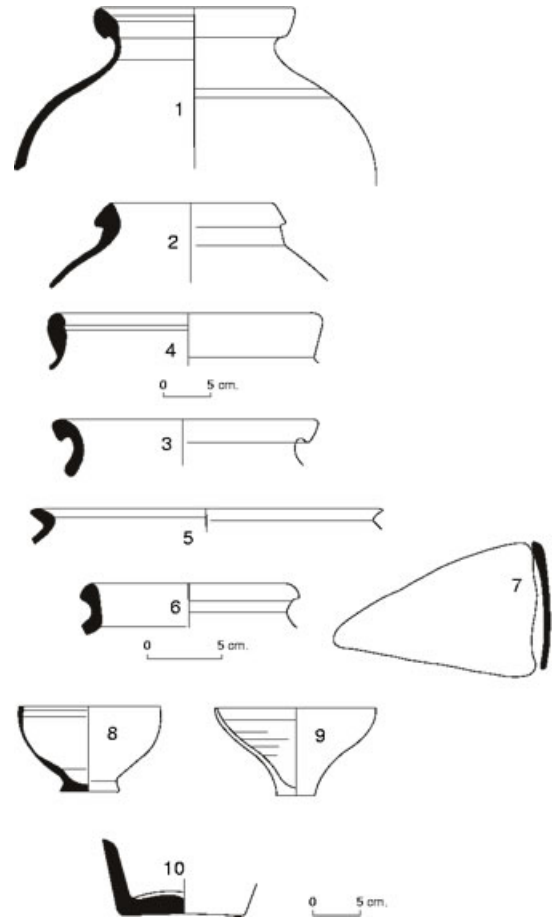


Figure 14. Pottery recovered from Bet Dwarka waters. (R. Uchil)

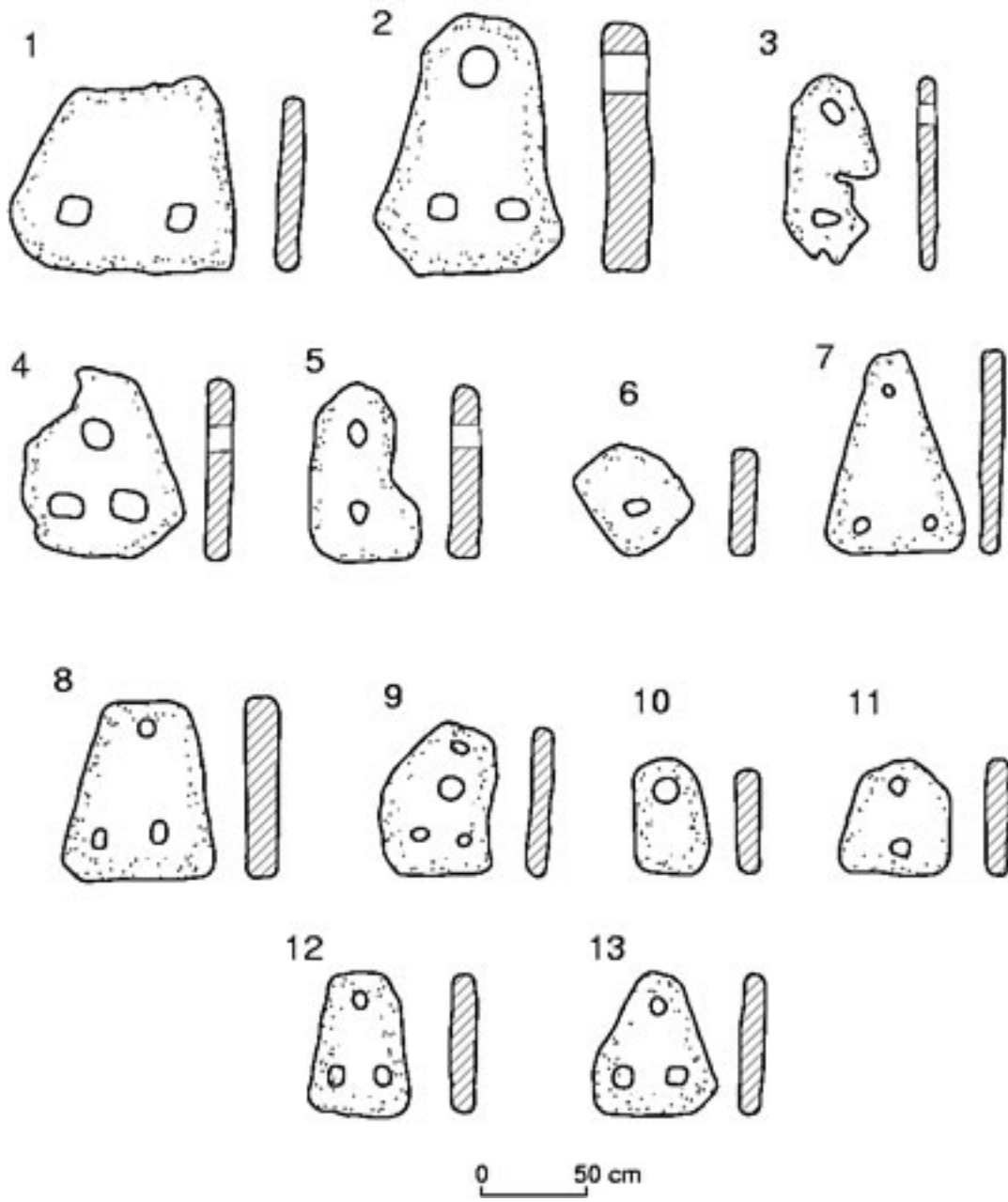


Figure 15. Composite stone anchors from Bet Dwarka. (R. Uchil)



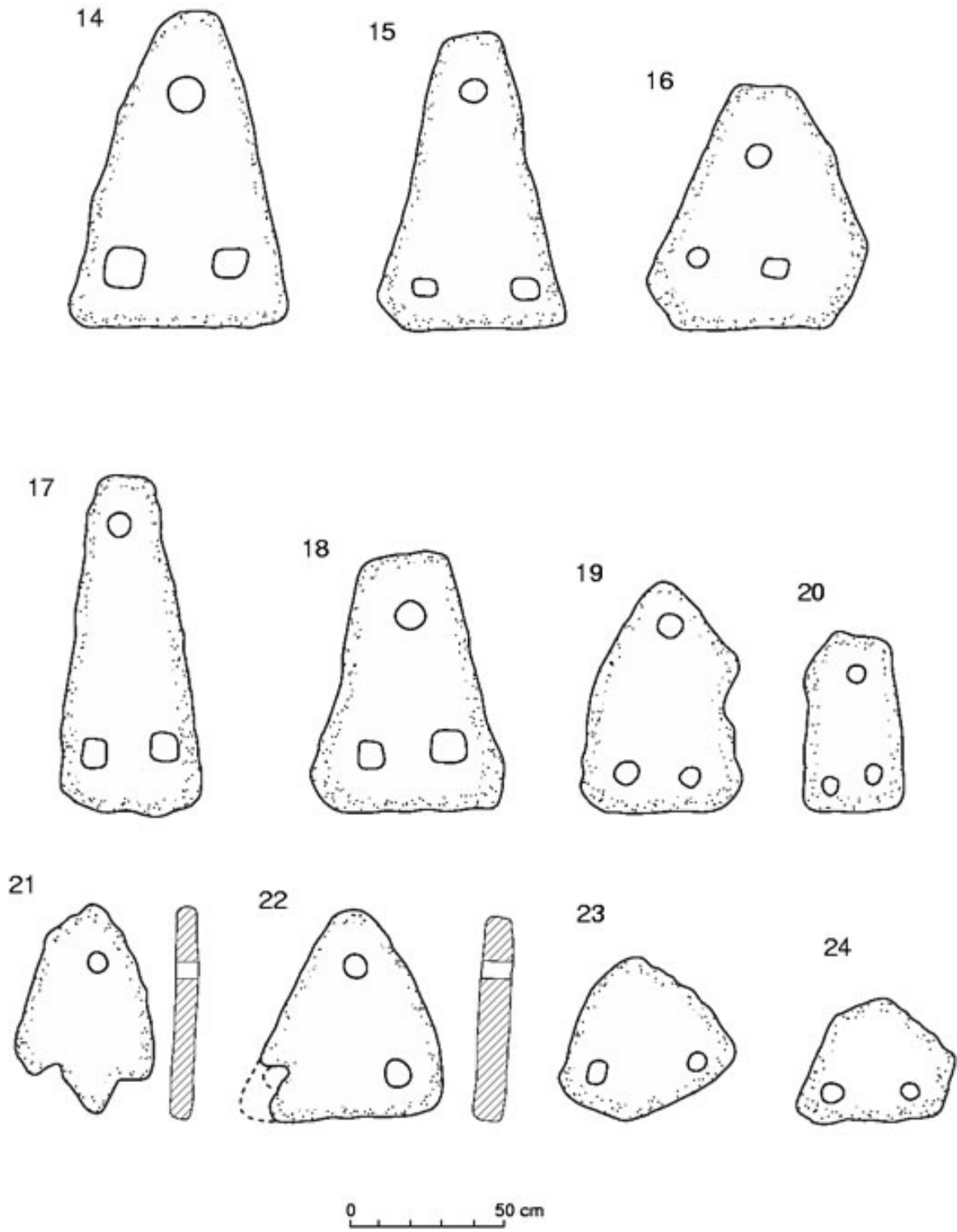


Figure 16. Composite stone anchors from Bet Dwarka. (R. Uchil)

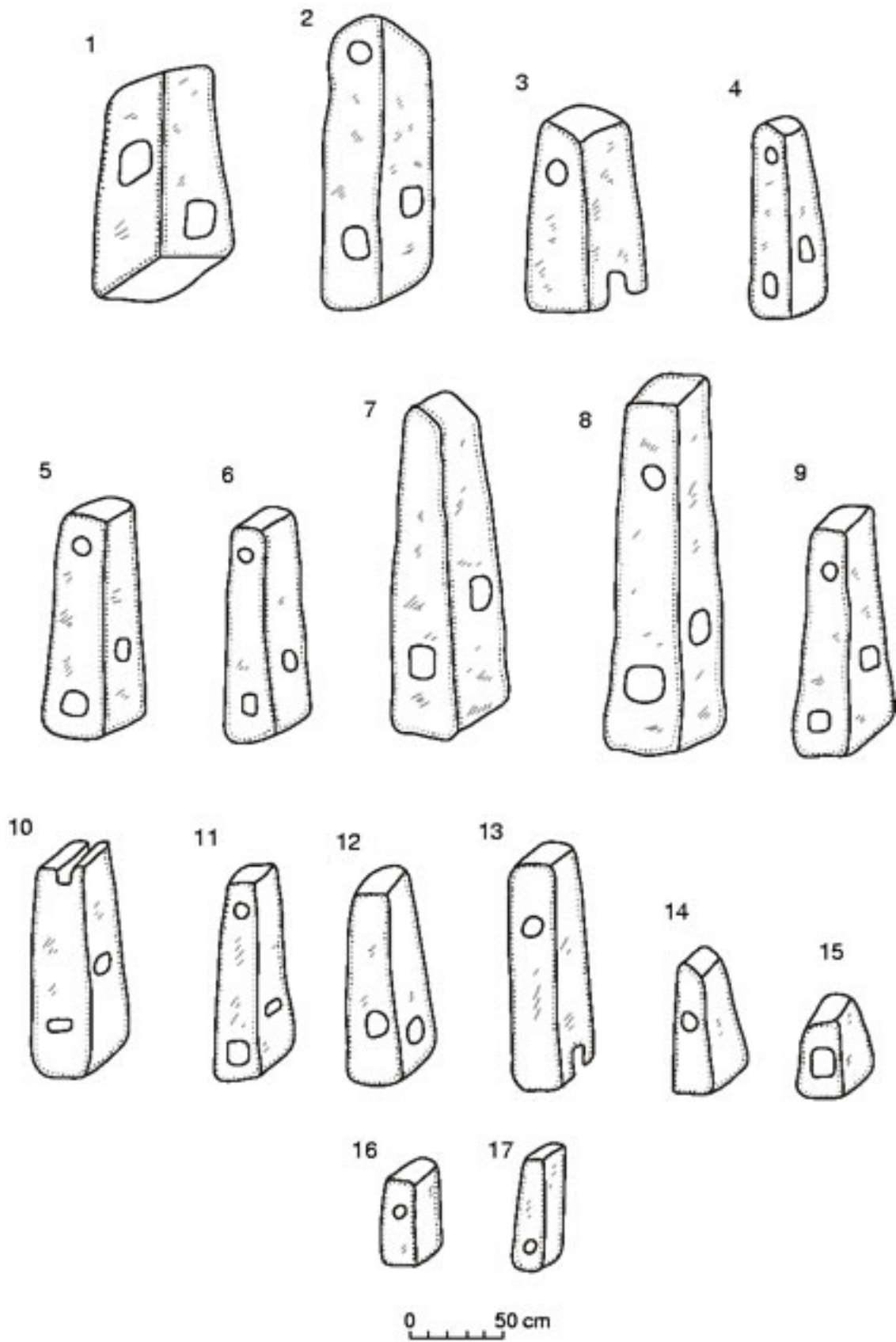


Figure 17. Indo-Arabian stone anchors from Bet Dwarka. (R. Uchil)