

Investigations at Antroli: A late Harappan site and maritime archaeological exploration on the coast of Navibandar, Saurashtra, Gujarat

A.S. Gaur and Sundaresh and Sila Tripathi
CSIR-National Institute of Oceanography
Dona Paula, Goa-403 004
Email: asgaur@nio.org

Abstract

In an effort to document as much as possible archaeological sites along the Saurashtra coast (before they vanish due to rapid developmental activities), a protohistoric site was located at Antroli near Madhopur to assess the earliest antiquities of the region. The initial habitation has taken place during the 2nd millennium BC and antiquities are very similar to other coastal protohistoric sites. The next habitation deposit belongs to the early medieval period when Maitraka's built a temple and habitation continued till late medieval period. The antiquities indicate that this coastal site might have been a fishing village during the protohistoric time. Coastal explorations at Navibandar yielded the remains of an ancient jetty, road and bullock-cart marks besides a composite type of anchor.

Keywords: Late Harappan, Fishing village, Medieval period, Maritime activities

Introduction

Saurashtra coast continue to promise a great deal in recording the sites of the late phase of the Harappan culture which were engaged in maritime practices similar to the present fishing villages. Earlier excavations of the classical Harappan sites at Nageshwar (Hegde et al., 1990), Lothal (Rao, 1979) and Padri (Shinde, 1992) yielded convincing evidences on the maritime activities dating back to the 3rd millennium BC. The tradition continued during the historical period as the author of the Periplus of Erythrean Sea listed the chain of ports along the Saurashtra coast (Schoff, 1912). The coastal excavations at Bet Dwarka (Gaur et al., 2005) and Hathab (Pramanik, 2004) revealed an active maritime activities and overseas trade relations. Maritime archaeological investigations along the Saurashtra coast have revealed that the maritime activities reached at its zenith during the medieval period (Gaur and Vora, 2011). The coastal excavations at Bet Dwarka (Gaur and Sundaresh, 2003), Bokhira (Gaur et al., 2006) and around Kodinar (Gaur et al., 2011) yielded the evidence of the late phase of the Harappan settlement. These archaeological assessments are based on the ceramic types and are supported by a few absolute dates. Settlement pattern indicates that these sites were comparable with modern coastal fishing village which lacks the basic amenities of cities and towns.

Antroli, a small village, is situated about 10 km east of Madhavpur (Figure 1) and about half km from the main highway (Porbandar-Bhavnagar). Further about a km east of the village an ancient temple (11th-12th AD) which has been renovated, houses a few ancient sculptures. These sculptures are of *Siva Parvati*, *Vishnu* and other deities (Gaur, 2011). The plinth of the temple is originally preserved and painted with lime wash. About 200 m south of the temple an elevated land, serving as barrier between sea and land is present. The exploration yielded the remains of a protohistoric settlement. The site is spread about 100 X 100 m area and a major part of the site has been converted into an agricultural land. A close observation at one place indicates an archaeological deposit of 1 m which also includes medieval period settlement besides protohistoric phase. The pottery observed on the surface indicates that they are similar to those reported from Bet Dwarka, Bhokhira, Kaj and Kanjetar. There is also an archaeological mound of the early medieval period deposit south of the protohistoric settlement. Presently the sea coast is about 1 km and huge sand dune the area from tidal effect. The geomorphology of this area is comprised of an uneven formation mainly of limestone. The surface exploration yielded a variety of shells indicating the use of marine resources available nearby the sea.

The present paper deals with the description of the archaeological findings from Antroli during the excavation and a detail discussion on the settlement pattern of the site and its role in maritime activities for socio-economic aspects.

Trial excavations

Three places were selected to dig till the remains of human habitation is found. The **trench 1** measuring 2.5 m X 2.5 m is laid at the highest point in a cultivated land. Total deposit was noticed about 1.25 m with 4 distinguish layers. The entire habitation belongs to the medieval period. The black ware has been major ceramic assemblage of this trench. The shapes include carinated *handi* and medium sized jars. Other important finds include various type of marine shells and animal bones.

Trench 2: the trench measuring 2 m X 2 m was laid southeast of Trench 1 (Figure 2). The place selected for excavation was undisturbed but affected by a drain used for the irrigation. Thus there was difficulty in identifying the layers. The total excavation continued till 1.2 m until hard rock encountered. The habitation was established on the rock surface. The upper 1 meter deposit belongs to the medieval period and remaining 20 cm is of protohistoric period. The pottery of medieval period is the same as of trench 1 however, pottery from the lowest level belongs to the protohistoric period and many sherds are similar to those of Sorath Harappan (Possehl and Raval, 1989).

Trench 3: the area measuring about 2.5 m X 3 m was excavated about 100 m east of the trench 1. The total deposit is about 20 cm and represented by layer 1. The entire deposit belongs to the protohistoric period. The entire assemblage includes pottery and a few instance of shells.

Pottery

Though, small quantity of pottery was collected from a limited trial excavation (Figures 3-6) but importantly the assemblage belongs to protohistoric and medieval period. The important shape of the

protohistoric period includes stud-handled bowls, jars and lids (Figure 7). The ceramic is very similar to those reported from Bet Dwarka and Bhokhira. The brief description of protohistoric pottery is provided below:

<i>S N</i>	<i>Shape</i>	<i>Rim</i>	<i>Description</i>
1	Thick storage jar	The section of rim is triangular-shaped rim and slightly outward projected	It has a smoky core and devoid from any surface treatment. Coarse fabric and ill fired.
2	Large-sized jar	An outward projected beaded rim	On the exterior painting. Smoky core in the section is present. Fine fabric and well fired.
3	Medium-sized jar	An out-played rim	It has a bulbous body. Medium fabric and well fired.
4	Medium-sized jar	A nail-headed rim	Remains of painting in chocolate colour are noticeable. Fine fabric and well fired.
5	Medium-sized jar	An outplayed rim	Smoky core is noticed. Medium fabric and ill fired.
6	Medium-sized jar	An outplayed rim.	Smoky core in the section is visible. It is washed with ochre colour. Medium fabric and ill fired.
7	Medium-sized jar	An outward projected beaked rim	Smoky core in the section and it is devoid from any wash/slip. Medium fabric and ill fired.
8	Small-sized jar	An outward projected featureless rim	It is devoid from any wash. Smoky core in the section. Medium fabric and ill fired.
9	Small-sized jar	A beaded rim	Fine fabric and well fired.
10	Small-sized jar of dull-red ware	It has an outplayed featureless rim	Smoky core in the section. Medium fabric and ill fired.
11	Medium-sized jar	An outplayed rim	Smoky core in the section. Medium fabric and ill fired.
12	Medium-sized jar	A beaded and an outward projected rim	Medium fabric and ill fired.

13	Medium-sized jar of buff ware	A thickened rim	Surface treated with buff colour. Medium fabric and well fired.
14	Medium-sized jar	A blunt beaked rim	It is devoid from any treatment. Medium fabric and ill fired.
15	Shoulder portion of a jar	A thick and projected ledge below the rim is present	It is washed with colour. Smoky core in the section is present. Medium fabric and ill fired.
16	Small-sized basin	Slightly outward projected rim	Treated with chocolate colour slip. Smoky core, medium fabric and ill fired.
17	Stud-handled bowl	A featureless rim	Smoky core. Medium fabric and ill fired.
18	Bowl of dull red ware	A sharpened rim	Convex sided. Medium fabric and well fired
19	Bowl	A sharpened rim	Convex sided. Medium fabric and well fired.
20	Shallow bowl	Convex sides. Featureless rim	It devoid from any treatment. Medium fabric and well fired.
21	Bowl	Convex sides. Featureless rim	Convex sided. Treated with black slip. Coarse fabric and ill fired.
21a	Bowl	Straight-sided, featureless rim	Externally painted with horizontal lines in chocolate colour. Coarse fabric and ill fired.
22	Bowl	Straight-sided, featureless rim	Coarse fabric and ill fired.
23	Small-sized bowl	Featureless rim	Fine fabric and well fired.
24	Small-sized bowl	Slightly out-turned sharpened rim	Chocolate slip, smoky core. Medium fabric and ill fired
25	Small-sized bowl in grey ware	Slightly incurved rim	Fine fabric and well fired
26	Carinated dish	With a featureless rim	Smoky core. Coarse fabric and ill fired
27	Mid-part of dish-on-stand	Treated with red wash	Smoky core, medium fabric and ill fired.

28	Lower portion of dish-on-stand	Flat sharpened rim	Smoky core. Coarse fabric and ill fired.
29	Lower portion of dish-on-stand	Beaked rim	Coarse fabric and well fired
30	Lower portion of dish-on-stand	Beaded rim	Smoky core, coarse fabric and ill fired.
31	Lower portion of dish-on-stand	Beaked rim	Treated with red wash. Coarse fabric and ill fired
32	Lower portion of dish-on-stand	Black ware	Coarse fabric and ill fired
33	Graffiti on pot	Body part of vessel	Graffiti mark is comprised of a triangular mark with 3 strokes on top of it.

Coastal exploration at Navibandar

Navibandar is about 35 km east of Porbandar on Porbandar- Veraval coastal highway (Figure 8). Bhadar is a major river of the western Saurashtra that flows into the Arabian Sea, about half a km west of Navibandar Lighthouse. The river has a wide estuarine area which served as safe harbour; however due to regular formation of sand bar at the mouth of the river the use of harbour is limited to the small boat fishermen only, and it could not be developed as a major harbour at any given time in the past. The coastline consists of sand dunes and vegetation around the inhabitations. Navibandar is still a fishing port. Navibandar was a part of Porbandar Princely State and was an important transit centre cum check post prior to independence. Presently, Navibandar village comprise of a fortified village along the Saurashtra coast.

The river Bhadar was crossed by a ferry service at Navibandar prior to the construction of the bridge around the early decades of the 20th century. The remains of these points were observed on both sides of the river. The majority of the remains have been buried under the present jetty at Navibandar, however, other side of the river the remains of jetty and road are intact. A passenger jetty with steps was constructed with using large dressed stone blocks. Presently, steps have been destroyed. There is another jetty probably used to unload cargoes and located further down the river mouth area. Though presently area is covered with dense growth of *babool*, but by a closer look the remains of the jetty were observed.

Other unique evidence recorded here is a road which is well planned, 4 meter wide and constructed with well dressed stone (Figure 9). It runs a little over a kilometer. Due to estuary region, at a few places the height of the road was raised by filling the area with stone blocks. On both sides of the road 30 cm high wall was observed at few places perhaps to mark the road during high tide where road might be getting flooded. Another road running from the cargo jetty was observed further down

the river. This is also 4 meter wide and constructed with locally available dressed stone. Unlike earlier road this is plain without any wall on the side. The most interesting feature of the road is the bullock cart marks. The length of this road is about 150 meter. It is made over a shallow channel of estuary and this road was mainly used for transporting the goods from boat to the market by bullock cart and vice versa.

During the exploration a composite type anchor was noticed in a lane of Navibandar village within the fort. It is half buried in a side of village lane (Figure 10). Upper half with a upper circular hole is preserved. It is made of locally available limestone. A heap of stone anchors, present used by the fishermen of Navibandar was noticed in a corner outside a house. They are irregular in shape with a crude hole for holding the rope

Along the Saurashtra coast, iron cannons have been used extensively for maritime purpose specially mooring for the boats. Similarly, at Navibandar, 4 cannons have been used bollard on the jetty and presently used by the fishermen. These cannons are half buried in the jetty specially upside down. Another cannon is found vertically erected at the river mouth. The purpose of the same is unknown. These cannons are heavily corroded and nothing could be traced such symbols or inscription. However, based on the history of Navibandar fort these cannons may be dated to the 17th century AD and perhaps used for defense purpose.

Discussion

The present study is the continuation of earlier studies of the nature of the protohistoric settlements along the Saurashtra coast (Gaur and Sundaresh, 2009). The archaeological investigation at Antroli has brought to light two folds cultural sequence namely protohistoric and medieval periods.

Protohistoric period: This is the third protohistoric site (besides Bet Dwarka and Bhokhira) on the south western Saurashtra coast which has been converted into an agriculture land. The nature of the archaeological site at Antroli indicates a short lived settlement as total deposit does not exceed 25 cm. Also investigation did not yield any structural activity thus the site does not fall under the category of urban settlement and may be a fishing hamlet on the Saurashtra coast. Pottery from Antroli is very similar to those reported from Bet Dwarka (Gaur et al., 2005) and Bhokhira (Gaur, et al., 2006) and major shapes include stud handled bowl which is typical characteristic feature of Sorath Harappan. A stand part of the dish-on-stand and other pottery of protohistoric in nature was also reported from the site. Besides pottery, shells were found in large number perhaps these were used for food economy and no craft were made from these shells. No other antiquities were found from this site. Thus, these coastal habitations on the western Saurashtra coast suggest that these might have been fishing villages with poor living conditions even presently also many coastal fishing villages lack basic amenities.

Medieval Period: The major deposit of the site belongs to the medieval period. A local resident has collected a copper coin of medieval period. A large number pottery of black ware with cooking *handi* as a major shape is the characteristic feature of this phase. A few iron implements were found which indicate that to some extent agriculture dominated as a major living resource besides fishing activities.

Maritime archaeological explorations around Navibandar have provided unique evidence on the coastal transport system existing during the medieval period which was not reported so far from the region. Evidence indicates that in the estuarine areas the crossing of river was a major challenge as the width of the river mouth is greater than the upstream and also the area is affected with tidal system. Thus, the approach road to the ferry/ jetty point was made by using stones. The surface observation suggests that the stone used for the construction is locally available. The marks of the bullock cart on the road as well as on rocky surface suggest that this was the major means of transport system along the coastal area of the Saurashtra coast. The study of old map suggests that the ferry point and road existed prior to 1948.

Stone anchor noticed from Navibandar is very similar to those reported from the closest underwater sites at Visawada and Miyani (Gaur et al., 2007), and Somnath water (Gaur et al., 2008) on the Saurashtra coast. Thus, it is indicating that Navibandar served as a port prior to the construction of fort and tradition continued even till today though anchors are in crude shape. Perhaps Arab boats did not visit this port as no evidence have come to light in the form of Indo-Arab type of anchor, thus indicating that this port has not played a major role in Indo-Arab trading system which is a major feature of the Saurashtra coast during the medieval period (Gaur, 2010). Porbandar on the west and Mangrol on the east were major ports during the early medieval period.

The reuse of iron cannons have been a long practice along the Indian coast for maritime purpose particularly as a bollard on the jetty. Four cannons have been partially buried in the jetty are presently used as bollard. The introduction of the new defense technology and the loss of the Princely states after independence of the country the cannons installed at different strategic location lost their importance for defense purpose and the best use for the cannons found in the coastal areas was as bollard on the jetties. Similar evidences are noticed at Porbandar, Veraval, Bet Dwarka and Mangrol ports.

Conclusion

The archaeological investigation at Antroli has added one more protohistoric site along the Saurashtra coast which had played significant role in maritime activity. The site is non-urban in nature and perhaps it must have served as a protohistoric fishing village. The protohistoric remains further strengthened our view on the survival of Harappan tradition on the coastal areas of the Saurashtra towards the end of the 2nd millennium BC. The less deposit of the habitation indicates a settlement of short duration. The site was reoccupied during the early medieval period as the remains of temple and a habitation deposit was encountered during the investigation.

It has been a well established fact that Indus Civilization had a systematic transport system within its domain. Though, an elaborate description in literature and art on the means of transport during the historical period have been recorded, however archaeological evidences are limited thus the evidence around Navibandar provided unique evidence on coastal transport system prevailing during the medieval period. The boats were used for ferrying people and cargoes from one bank to other and on the land bullock carts were extensively used to transport cargoes. Thus, the study has revealed that the transport system and also the technology of road construction existing during the medieval period. The discovery of stone anchor is the testimony of an active maritime tradition in the region.

Disused iron cannons have been extensively used for maritime purpose, specially as bollard on the jetty along the Saurashtra coast.

Acknowledgements

We are thankful to Shri. K.H. Vora for encouragement during the present study. Thanks are also due to Shri. S.B. Chitari and S.N. Bandodkar for necessary help rendered during the fieldwork. We thank Bhojabhai a resident of Antroli, who has helped in arranging workers and convincing agriculture land owners for investigation. We also thank Dr. Tejas Garge, Dr. Manoj Kumar, Shri. P.P. Pradhan and Shri. Anil Kumar from Archaeological Survey of India (participated during the field work) for constructive discussion in the field.

References

- Gaur, A.S. and Sundaresh. 2003. Onshore excavation at Bet Dwarka Island, in the Gulf of Kachchh, Gujarat. *Man and Environment* XXVIII(1):57-66.
- Gaur, A.S., Sundaresh and K.H. Vora, 2005. *Archaeology of Bet Dwarka Island*. New Delhi: Aryan Books International.
- Gaur, A.S., Sundaresh and P.P. Joglekar, 2006. Excavation at Bokhira (Porbandar) on the Southwestern coast of Saurashtra. *Man and Environment*, XXXI (1):33-39.
- Gaur, A.S. Sundaresh and Sila Tripathi, 2007. Remains of the ancient ports and anchorage points at Miyani and Visawada, on the West Coast of India: Study based on underwater investigations. *The Mariner's Mirror* 93(4):428-440
- Gaur, A.S. Sundaresh and K.H. Vora, 2008. *Underwater Archaeology of Dwarka and Somnath (1997-2002)*. New Delhi: Aryan Books International.
- Gaur, A.S. and Sundaresh, 2009. Archaeology of Western Saurashtra Coast: Post-Urban Harappan Phase. *Abhijñān: Studies in South Asian Archaeology and Art History of Artefacts*, (Ed. Jahan, Shahnaj Husne), Felicitation Vol of Prof. A.K.M. Zakariah. (British Archaeological Reports, International Series S1974) Oxford: Oxford University Press., pp 7-12
- Gaur, A.S. 2010. Gogha: An Indo-Arab trading Post in the Gulf of Khambhat (Cambay). *International Journal of Nautical Archaeology*, 39(1):146-155
- Gaur, A.S. and K.H. Vora, 2011. Maritime Archaeological Studies in India. *The Oxford Handbook of Maritime Archaeology* (Eds Catsambis, A., Ford, B., and Hamilton), New York: Oxford University, pp. 513-434.
- Gaur, A.S., Sundaresh, G.S. Abhayan, P.P. Joglekar, 2011. Excavations at Kanjetar and Kaj on the Sourashtra Coast, Gujarat. *Man and Environment*, 36.2:51-57.
- Gaur, A.S., 2011. *Coastal Archaeological Explorations on the Western Saurashtra Coast (between Navibandar and Veraval)*, Gujarat 2010-11 (Technical Report), Goa: National Institute of Oceanography, pp. 1-18

- Hegde, K.T.M., K.K. Bhan, V.H. Sonawane, K. Krishnan, and D.R. Shah 1990. *Excavation at Nageswar-Gujarat*. Baroda: M.S. University.
- Possehl, G.L. and M.H. Raval, 1989. *Harappan Civilization and Rojdi*. New Delhi: Oxford & I B H Publishing Co. Pvt. Ltd.
- Pramanik, S. 2004. Hathab: An Early Historic Port on the Gulf of Khambhat, *Journal of Indian Ocean Archaeology* 1:133-140.
- Rao, S.R., 1979. *Lothal – A Harappan Port Town Part-I*. New Delhi: Archaeological Survey of India. Shinde, V. 1992. Padri and the Indus Civilization, *South Asian Studies* 8:55-66.
- Schoff, W.H., 1912. *The Periplus of the Erythraean Sea: Travel and Trade in the Indian Ocean by a Merchant of the First Century*. New York and reprinted in 1974 by Munshiram Manoharlal, New Delhi.
- Shinde, V.S., 1992. Padri and the Indus Civilization, *South Asian Studies* 8:55-66.

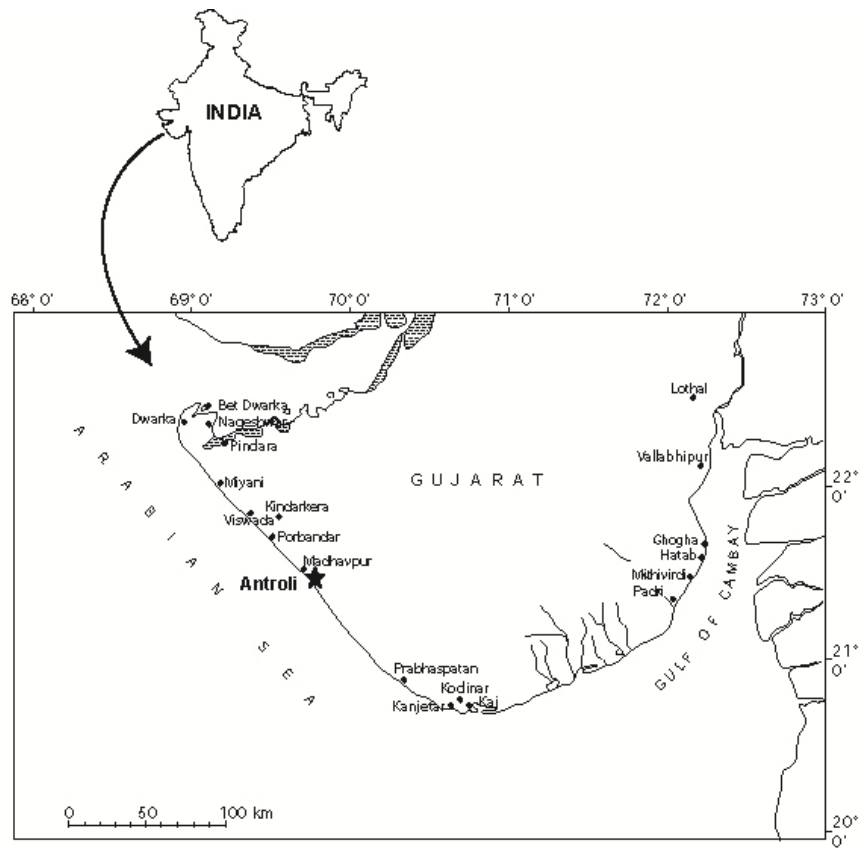


Figure 1. Important Archaeological sites along the Saurashtra Coast

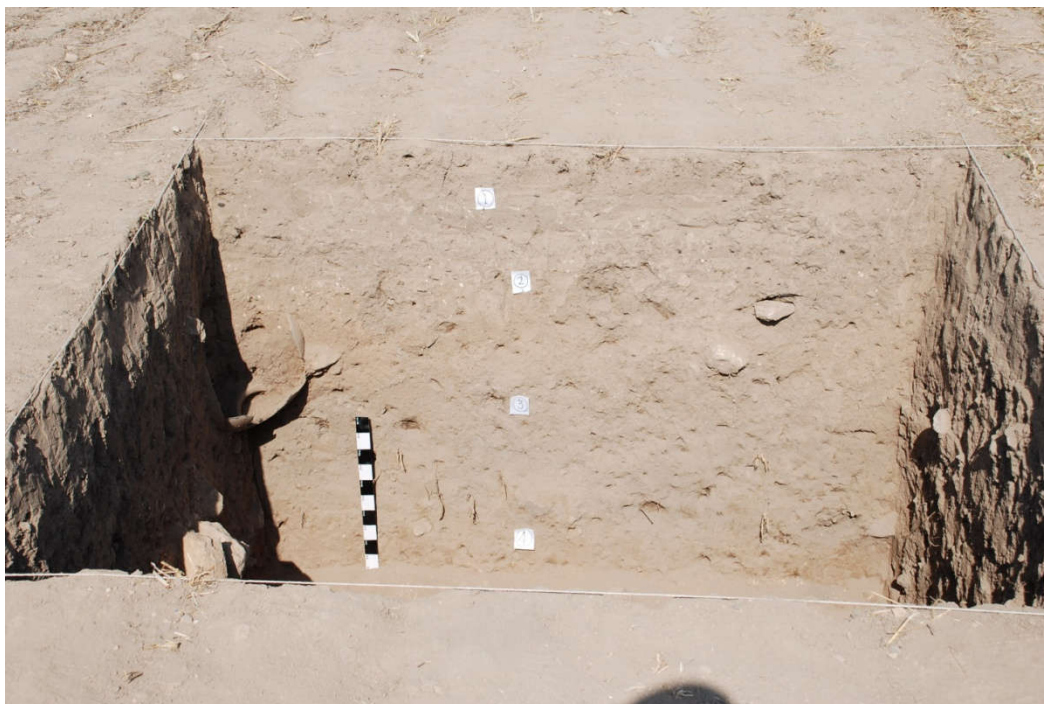


Figure 2. Antroli: An archaeological excavation of protohistoric site.

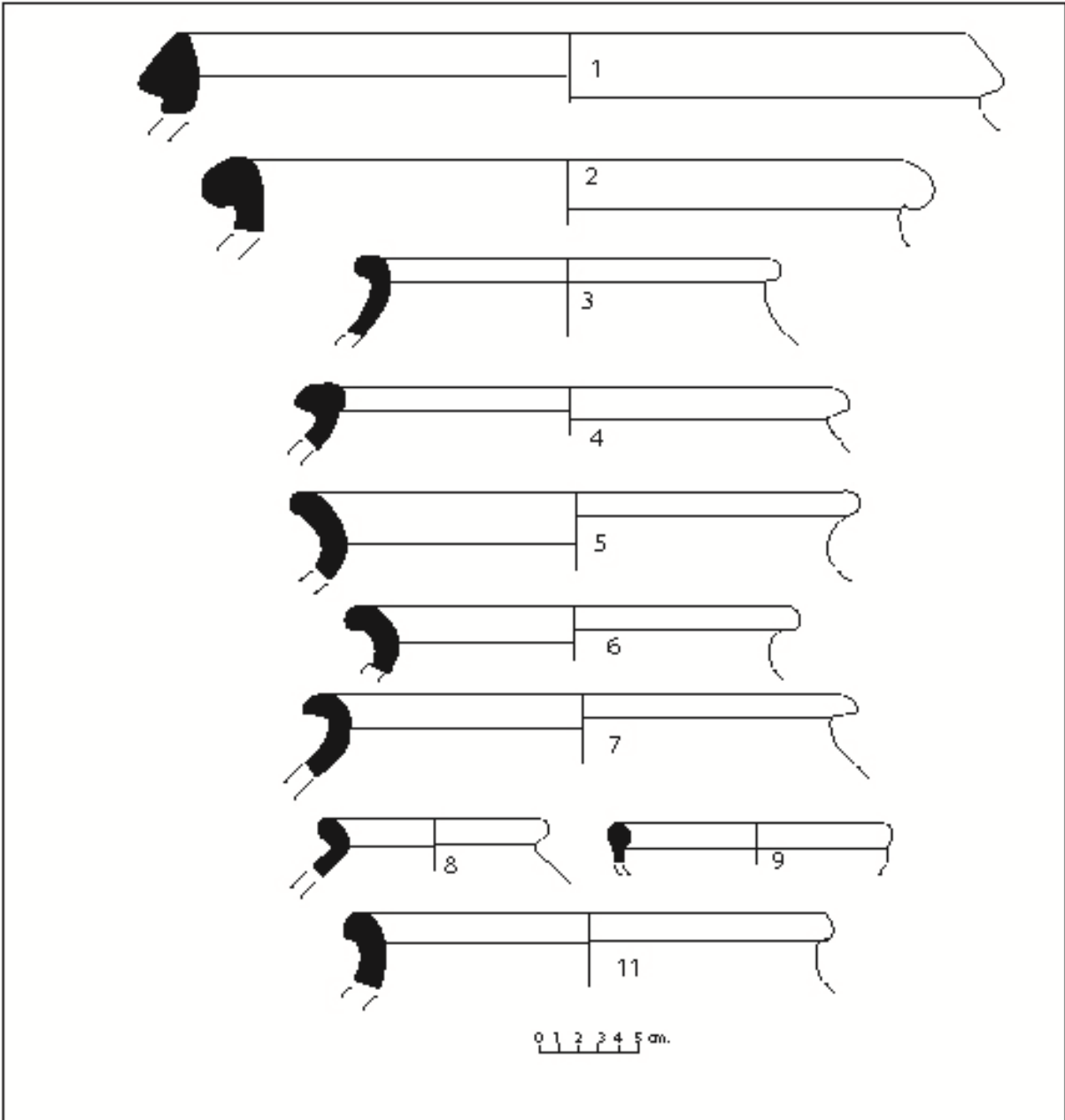


Figure 3. Antroli: Protohistoric Pottery collected during the excavation

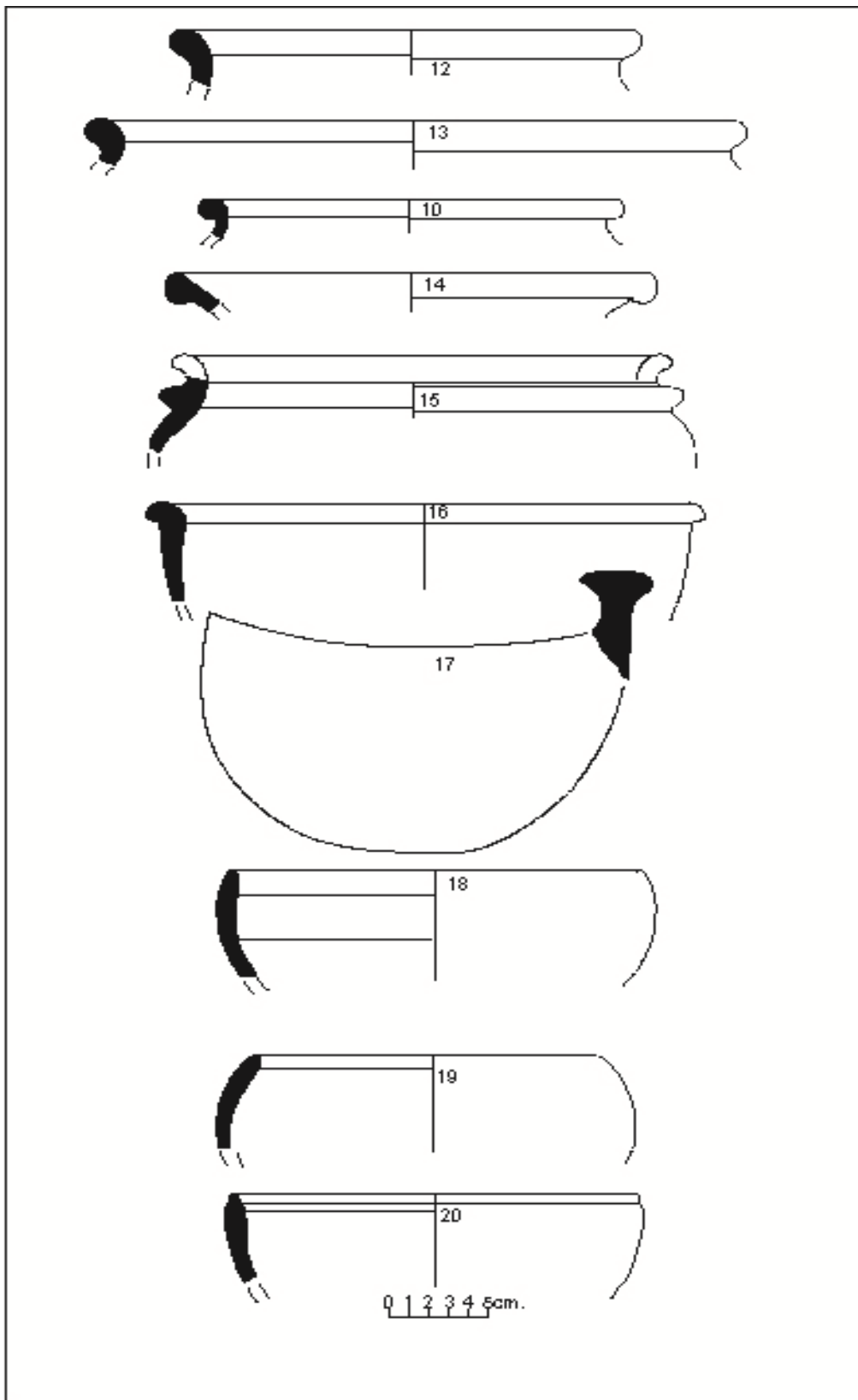


Figure 4. Antroli: Protohistoric pottery found during the excavation

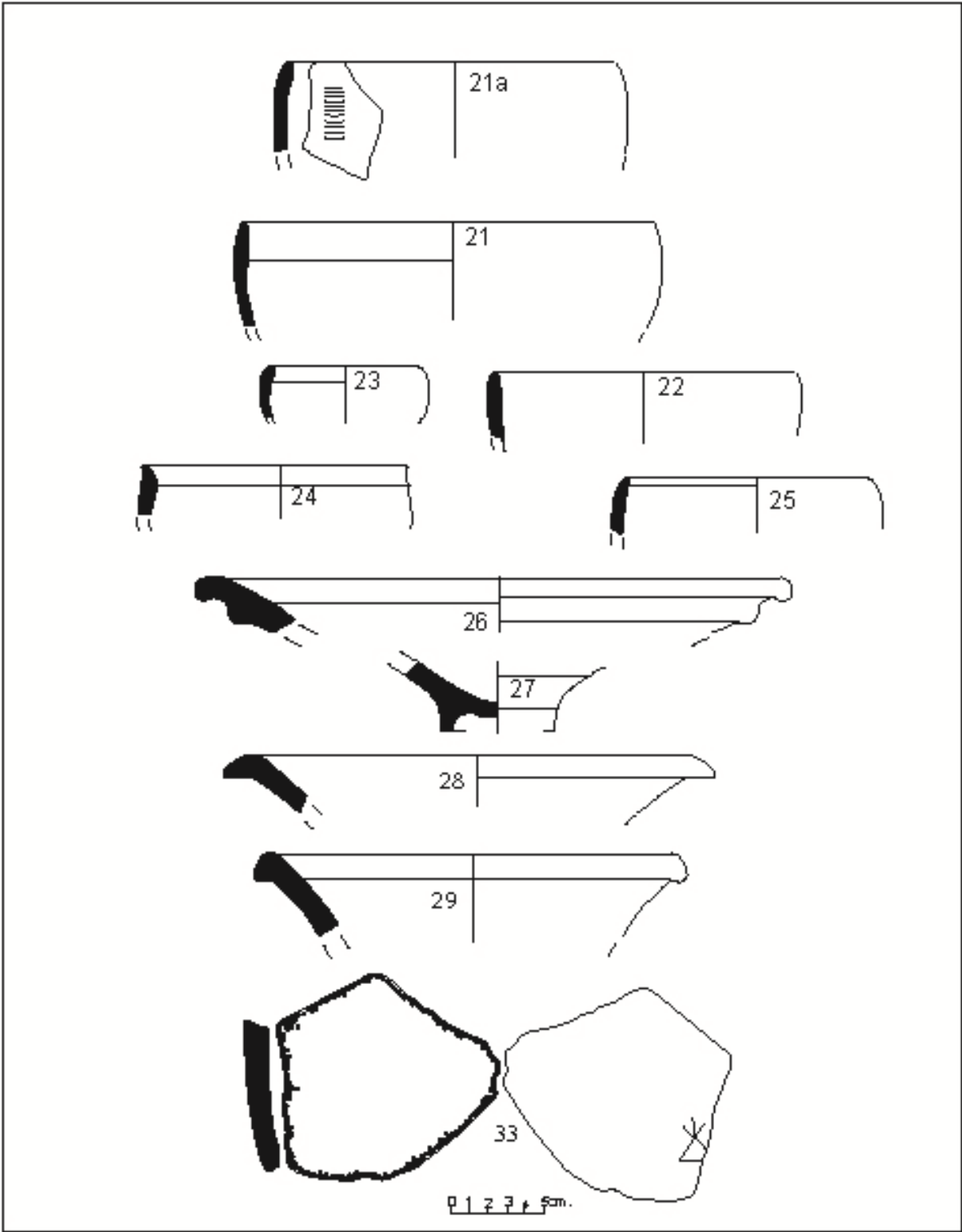


Figure 5. Antroli: Protohistoric pottery found during the excavation

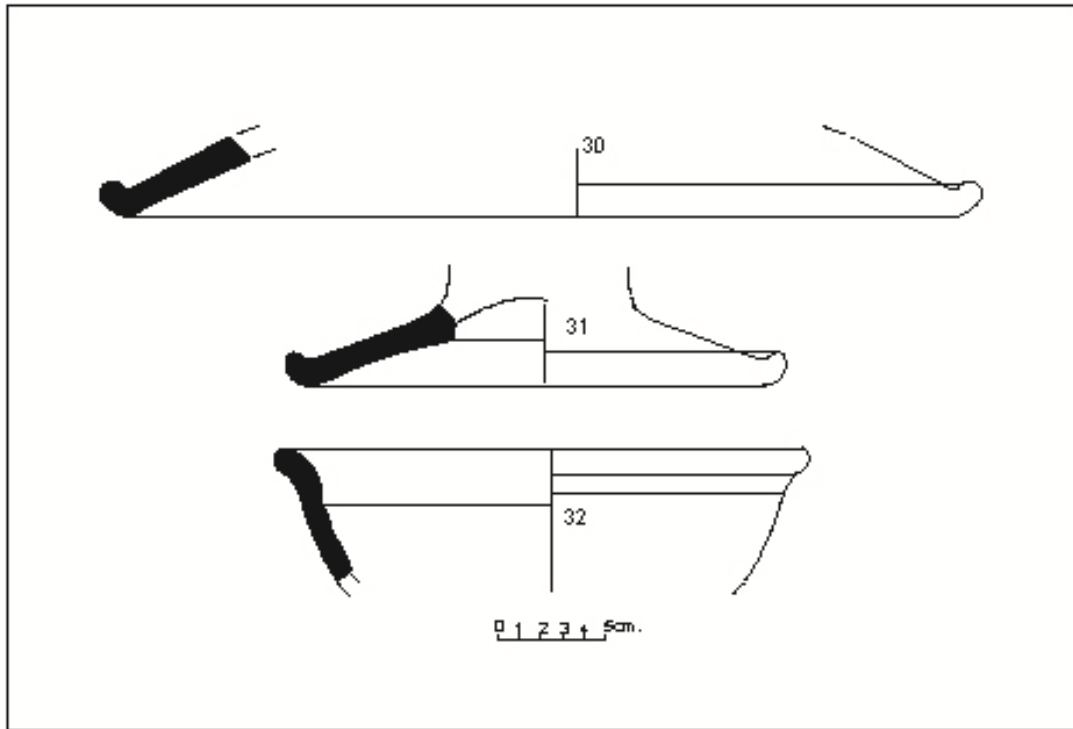


Figure 6. Antroli: Protohistoric pottery found during the excavation



Figure 7 Antroli: Protohistoric pottery found during the excavation

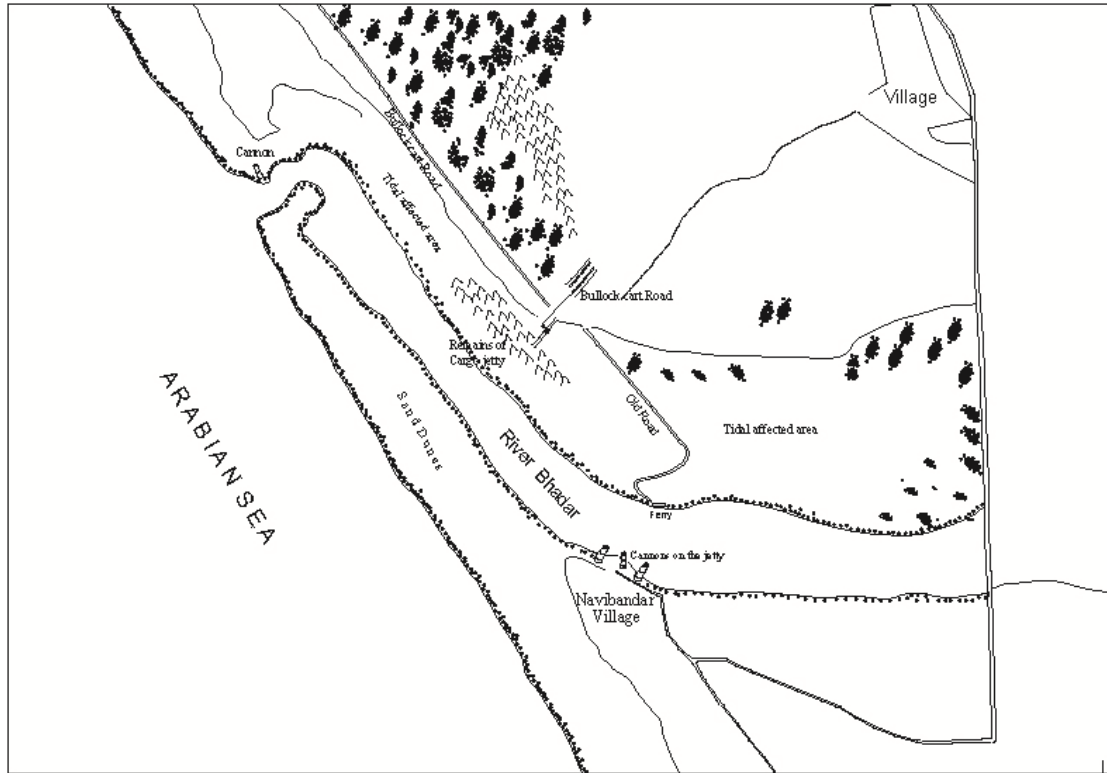


Figure 8. Navibandar: Location of archaeological remains along the Bhadar estuary



Figure 9: Navibandar: Remains of an old road connecting the ferry point



Figure 10. Navibandar: Partially buried composite anchor