

Stone anchors from Minicoy Island, Lakshadweep, India

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Abstract

Lakshadweep Islands lie on the sea route between South Asia, Far East and African countries. Being on the trade route, boats and ships used the islands of Lakshadweep as a stopover to take on fresh water. Lakshadweep Islands played an important role in the shipping route before the opening of the Suez Canal.

In order to understand the earliest human habitation at Lakshadweep Islands archaeological exploration was conducted by the Archaeological Survey of India (ASI) and (National Institute of Oceanography) NIO and varieties of pottery, Roman coins and Buddha heads were recovered at Androth, Kadmat, Kavaratti and Minicoy. In addition to these finds, in recent past an Indo-Arabian type of stone anchor has come to light at the Jama Mosque of Funhilol of Minicoy. The anchor was used as a lintel at the entrance of the mosque. Further study shows that ring stone anchors were used by the fishermen of Minicoy until the 20th century. Similarly, ring stone anchors which are popularly known as '*fanaa*' were used by the fishermen of Maldives in recent years. The stone anchors of Minicoy and Maldives resemble stone anchors recovered from other parts of India. Ring stone anchors were used in Minicoy and Maldives till the advent of iron anchors. In this paper an attempt has been made to describe the Indo-Arabian stone anchor of Jama Mosque of Funhilol of Minicoy and ring stone anchor of Minicoy and their importance. Further, a comparative study of the ring stone anchors of India and other parts of the world has been made with the anchors of Minicoy and Maldives.

Key words: Indo-Arabian stone anchor, ring stone anchor, maritime trade, Minicoy, Maldives

The Lakshadweep Islands (Fig. 1) lie on the west coast of India. Until the opening of the Suez Canal they lay on the trade-route between the Mediterranean and South-East Asian countries, and in ancient times were used as a stopover to take on fresh water. It is difficult to ascertain exactly when these islands were inhabited but Saigal (1990) has postulated that they were first settled c.1500 BC. The ships of Gujarat might have passed these islands on their voyages to Egypt c.1500 BC, and terracotta artefacts discovered at Kalpeni may belong to this period. However, further archaeological exploration needed to be undertaken. The Archaeological Survey of India (ASI) and National Institute of Oceanography (NIO) carried out surveys on the Lakshadweep Islands in order to understand their earliest human occupation. Exploration at Kavaratti, Androth, Agatti and Kadmat Islands has yielded Red Polished Ware (RPW), red ware, black ware, dull-red ware and buff ware (IAR, 1983–4; Rao *et al.*, 1995–6). Furthermore, red ware and coarse grey ware belonging to the Early Historic and Medieval periods were also found at Amini, suggesting that the Lakshadweep islands were inhabited during the Early Historic Period, if not earlier.

Exploration brought to light Buddha heads from Minicoy Island (Sharma and Khan, 1994). While digging the foundation of a house, remains of either a Buddhist Vihar or a stupa locally known as 'Moolathu' came to light in Pallisseri village on Minicoy. Similarly, some Buddha heads were recovered in 1982 from the hillock of 'Areppali' on Minicoy. Another Buddha head was discovered in Aludi village on the same island in 1984. One Buddha head has even been reported from a 2-m-high embankment of coral rubble and sand which was constructed for coastal protection in Sedivalu village on Minicoy. This head is 50 cm high by 35 cm wide, and has a socket on its back for attachment to the torso. The facial features have disappeared due to flaking (Sila Tripathi and Gudigar, 2001).

The islands of Lakshadweep were referred to in the Buddhist Jataka stories, the *Periplus of the Erythraean Sea*, Ptolemy, Fa Hien, Cosme, Al Masudi and Ibn Batuta, and in the inscriptions of the Pallava, Chola and Kadamba. The discovery of Roman coins, and mentions by Al Masudi and Ibn Batuta, shows that these islands were known to Roman and Arab mariners, and exchange of commodities was going on between local residents and mariners from India and abroad. Lakshadweep was under the suzerainty of the Pallavas, Cholas and Ali Rajas of Kerala. It appears that the mainland had contact with these islands during the early centuries of the Christian era, if not earlier (Sila Tripathi, 1999).

Though Islam came to Lakshadweep after the 11th and 12th centuries AD, the islanders had established trade relations with Oman and other Gulf countries, exporting coconut, coir and coconut wood, for which the islands were famous. The inhabitants built stitched boats, completely constructed from coconut palms—hull, masts, stitches, ropes and even sails (Hourani, 1995). With the passage of time the maritime contacts between the people of Lakshadweep and Arabs became closer, as demonstrated by the discovery of an Indo-

Arabian stone anchor in the Jama Mosque on Minicoy. This paper discusses the stone anchors of Minicoy Island, Lakshadweep, and ascribes tentative dates to them in relation to the maritime history of the islands.

Indo-Arabian stone anchor

The Indo-Arabian stone anchor found at the Jama Mosque at Funhilol on Minicoy had been used as a lintel for the entrance. Some years back, when the mosque was renovated, the anchor had been removed, and was found lying within the compound (Fig. 2). The mosque was built in the year 1344 of the Hijri (2008 is the Hijri year 1429, so 1344 = 1923). It has been trimmed neatly, and chisel-marks are visible on the surfaces of the lower portion. The upper hole is circular and the lower holes are square (one smaller than the other). A piece has been chipped from the upper side of the anchor, but there are no signs of wear. The upper portion of the anchor is tapered and round and it is comparatively thin (Fig. 3). Made of sandstone, its maximum length is 292 cm, its width 50 cm, and its estimated weight is 896 kg (1 m³ of sandstone weighs 2400 kg). Coral-growth can be seen on its surface at two places, *Montipora sp.*, which is brown, on the upper portion, and *Gonispora sp.* at a square hole. This minimal coral growth suggests that the anchor was not under water for very long. Except for Kapitan's (1994) line-drawing of the anchor, no other details are available.

Ring-stone anchors of Minicoy

As well as this one Indo-Arabian example, ring-stone anchors have been reported from Minicoy Island as well as the Maldives. The fishermen of Minicoy used traditional boats known as *mas odi*, 12.5 m long and 3 m wide, with 7 to 9 oars on each side and two masts made of coconut timber. The other gear included oars, mast, sails, poles, water-splasher and baler and ring-stone anchor (Fig. 4) (Jones and Kumaran, 1959). Ring-stone anchors on Minicoy are made of coral, which is readily available. A suitably-sized block is selected, then shaped, with a wide hole in the centre in which a wooden stock was inserted. The *mas odi* was used for tuna fishing, Minicoy being the main tuna-fishing centre of the Indian subcontinent. However, the use of such anchors is not reported from any other of the Lakshadweep islands.

Similarly in the Maldives these ring-stone anchors were used by fishermen. In *Divehi*, the local language, ring-stone anchors are known as *fanaa*. Of 40–50 cm diameter, they are made of coral fashioned in the form of a slightly concave disc. The width of the hole in which the wooden stock is inserted is 6–10 cm. The stock is made from a 'V' or fork-shape branch of a tree, shaped so that one end of the stock holds the anchor firmly (Fig. 5). They were used in the Maldives until the last century, when they were completely replaced by iron anchors. The *fanaa* was used during bait-fishing in coral-reef areas (pers. comm. M. Shiham Adam).

Dating the Minicoy stone anchors

So far only two fragmentary Indo-Arabian anchors have been found from the stratified layers of Siraf, Iran, which are datable to the 8th–11th century AD (Whitehouse, 1970). Besides this, nowhere in the Indian Ocean region, Persian Gulf or Red Sea have these anchors been reported from stratified layers. On the other hand, remains of wooden flukes in Indo-Arabian stone anchors have been recovered from Galle harbour, Sri Lanka, radiocarbon-dated to 430 ± 80 years BP (Souter, 1998). In the recent past four Indo-Arabian stone anchors have been found in Dabhol, on the west coast of India (Gaur *et al.*, 2007). Remains of wooden flukes were found in the lower holes of one anchor, and were radiocarbon-dated to 590 ± 90 and 600 ± 70 years BP. In addition to this archaeological dating evidence, Indo-Arabian stone anchors have been dated on the basis of historical evidence. For instance, the stone anchor from the Hydross Palli mosque at Kannur has been dated to 600 years ago by the date of construction of the mosque, and an Arabic inscription on a wooden panel there.

Unlike the Kannur anchor, the example from Minicoy must be earlier than the mosque, which was built in 1923. From the available evidence on Indo-Arabian anchors in India it can be stated that they were used in Indian waters until the 18th or 19th centuries. It is difficult to ascertain whether they were used for overseas trade or only in coastal waters.

Discussion

Anchors provide vital evidence on the maritime activities of a country, and are worth studying because information provided by them is unobtainable from any other source. Archaeological finds such as pottery, amphoras, coins, beads, and inscriptions, throw light on maritime trade and contact between different people and regions, but the discovery of varieties of anchors suggests visits of ships from various countries. Anchors can help in understanding the nature of maritime trade, and more stone anchors have been found throughout the world than shipwrecks. In the Mediterranean, stone anchors from under water can be compared with finds on land to help develop typologies and dating criteria. Arab mariners sailed in the Red Sea, Persian Gulf and Indian Ocean with varied climatic and physical conditions hence; technically, they would have designed their anchors differently for rocky, coral and sandy sea-beds. Until further evidence is found for dating Indo-Arabian stone anchors, the earliest use-date of this type remains between the 8th and 11th centuries AD. The date of their introduction to the Indian subcontinent is not known, but it is presumed to be between the 10th and 11th centuries, and they continued in use until the 18th or 19th century.

In addition to the finds of Indo-Arabian stone anchors from Dwarka, Bet Dwarka, Somnath, Sindhudurg, Padmagad, Vijaydurg, Goa, Kannur (Sila Tripathi *et al.*, 2004) and Tamil Nadu (Athiyaman, 2004), recent explorations have brought to light similar types of Indo-Arabian stone anchors from Dabhol (Gaur *et al.*, 2007), Mithi Viridi (Gaur *et al.*, 2005), Gogha, Gopnath, Hatab, Miyani and Visawada (Gaur and Sila Tripathi, 2006) (Fig. 6). Recently,

composite and single-hole stone anchors have been noticed at the Chilika Lake, Orissa and single-hole stone anchors from Manapad of Tamil Nadu, on the east coast of India and they differ in shape and size from ring-stone anchors. Indo-Arabian stone anchors have been reported from a number of ports of the West Coast of India but the maximum numbers are from Gujarat, probably because that was a centre of shipping between ports of the Red Sea and Persian Gulf and the west coast of India in general and Gujarat in particular.

The re-use of the Minicoy anchor as a lintel at the Jama Mosque of Funhilol is the fourth example in the Indian subcontinent (Tripathi *et al.*, 1998). Eight Indo-Arabian stone anchors, for example, were used as lintels in the arches of the parapet wall of the second fortification wall of Vijaydurg fort, and one at the entrance of Padmagad fort (both 17th-century). Others have been used as mooring-bits, and some have been laid on the ground to prevent soil erosion at the dockyard of Vijaydurg, and as a door-sill at the 17th-century Sindhudurg fort. It appears that the shape and size of Indo-Arabian anchors made them suitable for such re-use. In the case of Jama mosque at Minicoy could it be symbolic? We do not know. During the medieval period these anchors were extensively used in the Indian Ocean and Persian Gulf. Their use in the Indian Ocean region can be seen in al-Hariri's 13th-century manuscript *Maqamat* (Hourani, 1995). The Indo-Arabian stone anchors recovered from the Indian Ocean, Persian Gulf and Red Sea coast resemble the grapnel anchor with four flukes depicted on the foreship of the Harari ship (Fig. 7). From the painting it can be stated that the artist has not drawn the features of the ship accurately, so may not be a seaman.

The ring-stone anchors of Minicoy and the Maldives resemble other ring-stone anchors found in Dwarka, Bet Dwarka, Goa, Somnath and other sites of India (Gaur *et al.*, 2002; Tripathi *et al.*, 2006). Ring-stone anchors were suitable for the sea-bed of Minicoy and the Maldives, and have probably been used there since ancient times. Arroyo (1975) mentions several ring-stones with circular holes reported from the Mediterranean Sea (Fig. 8), and in later periods such anchors used by Arab mariners. The logo of the Nautical Archaeology Society, seen on the cover of *IJNA*, has been taken from a bichrome Cypriot jug of the 7th century BC. It depicts a vessel with two oars, with a helmsman at the stern, and another crewman raising or lowering a ring-stone anchor at the bow (Fig. 9) (Fenwick, 2000). This anchor is tied with a rope, without a wooden stock, and the size of the hole appears to be wide.

In the Maldives, such anchors are made of round coral stones with a forked timber as the stock. The forked shaped holds the stone in place and the lateral branch is supposed to hold the rope. In the absence of tangible evidence it is very difficult to suggest that a particular type of anchor originated in a particular place; similar types have been reported from Oman (Vosmer 1999). Arroyo (1975) suggested that ring-stone anchors originated in the Mediterranean, but when he wrote none had yet been identified in the Indian Ocean, hence it is essential to have a comparative study of these anchors. Whether stocks were used or not

is not clear. In Indian waters because of lack of evidence the earliest date of use of these anchors is unknown, but they continued in use until the 20th century.

Conclusion

The finding of an Indo-Arabian stone anchor on Minicoy emphasizes the fact that large ships used to visit these islands. Further, it confirms that islanders had trade contacts with the Arabs in the 11th and 12th centuries AD. Probably, the islanders used Indo-Arabian stone anchors for overseas trade and ring-stone anchors for bait fishing. The lack of sandstone on the island confirms that the Indo-Arabian stone anchor was made on the mainland, while ring-stone anchors were made on the islands of locally available coral stone. Both types of anchors suggest that these were introduced in the Maldives and Minicoy by mariners from the mainland. As there is no reference to stone anchors from other Lakshadweep islands, it cannot be assumed what kind of anchors used by the island mariners as well. As the people of Minicoy are the most indomitable seafarers and had contacts with the countries bordering the Indian Ocean, further exploration and excavation will yield more information on stone anchors.

Stone anchors have been studied by various scholars in different parts of the world. But the origin of a specific type of anchor cannot be attributed to a particular place. However, it has been generally believed that 'Indo-Arabian' types of stone anchors were introduced in Indian waters by Arab mariners and they found this type of anchors suitable for coral and rocky seabed of the Indian Ocean region. Though Arab mariners had trade contacts with the Mediterranean Sea, Indo-Arabian stone anchors are not reported from beyond these regions. Ring-stone anchors have been recovered from the Indian Ocean, Persian Gulf, Gibraltar and the Mediterranean but they vary in period. In India more Indo-Arabian anchors have been reported than ring-stone anchors. Once mariners found a type of anchor suitable for anchoring they adopted it and continued using it for centuries. The finding of various types of stone in Indian water shows that the mariners adopted all varieties of anchors for the safety of their vessels.

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References

- Arroyo, H., 1975, Contribution for the reconstruction of ancient stone anchors, *Cahiers d'archeologie subaquatique* **4**, 147.
- Athiyaman, N., 2004, Ancient anchors off Tamil Nadu coast and ship tonnage analysis, *Current Science* **86.9**, 1261–7.
- Fenwick, V., 2000, Editorial, *IJNA* **29.1**, 1–2.
- Gaur, A. S., Sundaresh, Sila Tripathi., and Vora, K. H., 2007, New evidence on the maritime activity at Dabhol on the Maharashtra coast, *Puratattva* **37**, 186–92.
- Gaur, A. S. and Sila Tripathi., 2006, Marine archaeological explorations on the southwestern coast of Saurashtra, India, *Journal of Indian Ocean Archaeology* **3**, 81–9.
- Gaur, A. S., Sundaresh, and Kumar, B., 2005, The biggest stone anchors (Indo-Arab type) from Mithi Viridi, Bhavnagar, west coast of India, *Journal Indian Ocean Archaeology* **2**, 110–14.
- Gaur, A. S., Sundaresh; Sila Tripathi., and Bandodkar, S. N., 2002, Ring stone anchors from Gujarat, west coast of India, *Mariner's Mirror* **88.4**, 390–404.
- Hourani, G. F., 1995, *Arab Seafaring in the Indian Ocean and Early Medieval Times*. New Jersey.
- Indian Archaeology 1983–84—A Review*. Archaeological Survey of India, New Delhi.
- Jones, S. and Kumaran, M., 1959, The fishing industry of Minicoy Island with special Reference to the Tuna fishery, *Indian Journal of Fisheries* **6.1**, 30–54.
- Kapitan, G., 1994, Stone-sank anchors of the Arab-Indian trade period—were they mooring anchors?, *Bulletin of the Australasian Institute for Maritime Archaeology* **18**, 1–6.
- Rao, S. R., Vora, K. H., Gaur, A. S., Gudigar, P., Sundaresh, and Sila Tripathi., 1995–96, A Preliminary Shipwreck Exploration off Lakshadweep, *Journal of Marine Archaeology* **5–6**, 23–32.
- Saigal, O., 1990, *Lakshadweep*. New Delhi.
- Sharma, A. K. and Khan, M. F., 1994, Buddha heads and some grave headstones from Lakshadweep, in S. R. Rao (ed.), *The Role of universities and research institutes in marine archaeology*, 129–31. NIO, Goa.
- Sila Tripathi., Gaur, A. S., and Sundaresh, 2004, Marine Archaeology in India, *Man and Environment* **29.1**, 28–41.
- Sila Tripathi., and Gudigar, P., 2001, Shipwreck archaeology of the Lakshadweep Islands,

- west coast of India, *IJNA* **30.1**, 37–47.
- Sila Tripathi., 1999, Marine investigations in the Lakshadweep Islands, India, *Antiquity* **73**, 827–35.
- Sila Tripathi., Saxena, M. K., Sundaresh, Gudigar, P., and Bandothkar, S. N., 1998, Marine archaeological exploration and excavation of Vijaydurg—a naval base of the Maratha Period, Maharashtra, on the west coast of India, *IJNA* **27. 1**, 51–63.
- Sila Tripathi., Gaur, A. S., Sundaresh, and Vora, K. H., 2006, Maritime archaeological Explorations of Goa: Findings and Interpretations, in A. S. Gaur and K. H. Vora (eds), *Glimpses of Marine Archaeology in India*, 35–41. NIO, Goa.
- Souter, C., 1998, Stone anchors near Black Fort, Galle, Sri Lanka, *IJNA* **27.4**, 331–42.
- Vosmer, T., 1999, Indo-Arabian stone anchors in the western Indian Ocean and Arabian Sea, *Arabian Archaeology and Epigraphy* **10**, 248–63.
- Whitehouse, D., 1970, Excavations at Siraf, Second interim report, *Iran* **8**, 1–17.

Captions

Figure 1. Location map. (Sila Tripati)

Figure 2. Indo-Arabian stone anchor lying inside the mosque of Funhilol, Minicoy. (Sila Tripati)

Figure 3. Indo-Arabian stone anchor of Minicoy with detailed measurements. (Sila Tripati)

Figure 4. Ring stone anchor of Minicoy used for bait fishing. (Sila Tripati)

Figure 5. *Fanaa* ring-stone anchors of the Maldives. (M. Shiham Adam)

Figure 6. Figure showing the stone anchor find sites in India. (Sila Tripati)

Figure 7. The manuscript of al-Hariri's *Maqamat* of the 13th century depicts the Indo-Arabian stone anchor on the foreshore of the ship. (*Bibliothèque Nationale*, Paris, MS. arabe 5847, fol. 119v)

Figure 8. Ring-stone anchor found in the Mediterranean Sea. (Sila Tripati)

Figure 9. Painting on a 7th-century BC Cypriot jug depicting a ring-stone anchor. (*JNA*)

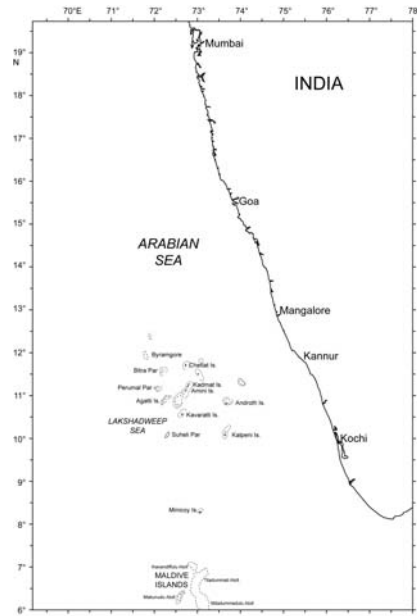


Fig. 1 Figure showing Lakshadweep Islands mentioned in text



Figure-2

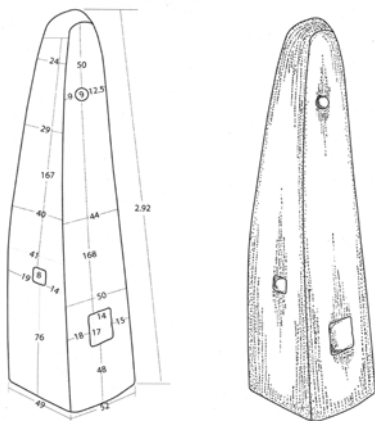


Fig. 3 Indo-Arabian stone anchor of Minicoy with detailed measurements

Figure- 3

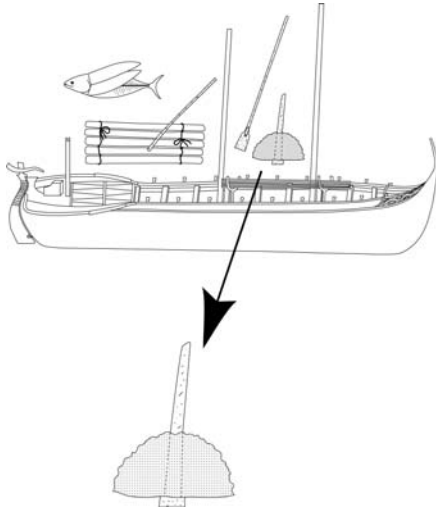


Figure-4



Fig. 5 'Fanaa' ring stone anchors of Maldives

Figure-5



Fig. 6 Figure showing stone anchor find sites in India

Figure-6



Fig. 7 The manuscript of al-Hariri's Maqamat of the 13th century depicts the Indo-Arabian stone anchor on the fosiide of the ship

Figure- 7

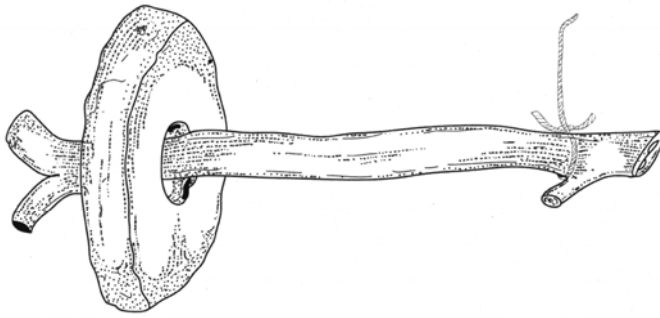


Fig. 8 Ring stone anchor found in the Mediterranean Sea

Figure- 8



Fig. 9 Bichrome painting depicts a ring stone anchor on the 7th century BC Cypriot jug

Figure-9