

# Shipping Anchors from the Vengurla Rocks Island and Malwan (Malvan), Maharashtra, West Coast of India

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## Abstract

The port and trade centres of Maharashtra have played a significant role in maritime trade with other overseas countries since ancient times. The coastline of Maharashtra is 760 km long and extends from Bardi in the north of Gujarat to Redi near Goa in the south. Literary sources, namely *The Periplus of the Erythraean Sea*, and archaeological evidence suggest a chain of ports, namely Chaul, Elephanta, Dabhol, Kalyan, Sopara, Vijaydurg, Vengurla, and many others that flourished under different dynasties across different periods of history. Earlier, maritime archaeological investigations at sites such as Vijaydurg, Dabhol, and Sindhudurg yielded material evidence, including both stone and iron anchors. However, there was no mention of anchors from the Vengurla Rocks Island waters. The underwater reconnaissance at 12 m water depth off Vengurla Rocks Island brought to light stone as well as iron anchors. In this paper, recent underwater findings such as anchors, a short history of Vengurla, and seabed topography, observed off Vengurla Rocks Island, are presented.

## Introduction

In the maritime history of India, the coastline of Maharashtra has seen some noteworthy action since the Early Historical period. The historical and archival records highlight that the Maharashtra coast was known for frequent naval battles between the Marathas and the Europeans. As a result of this, several European ships were either sunk or wrecked and damaged in the waters of coastal Maharashtra. Apte (1973) documented many shipwrecks off the Vijaydurg shores. In order to locate the remains of shipwrecks around Vijaydurg, underwater explorations were carried out by the CSIR-National Institute of Oceanography, Goa. In the course of underwater exploration behind the fort and in the River Vagothan, a stone structure, tiny Chinese ceramic sherds, highly eroded pottery, and two slingshots were discovered. Similarly, many Indo-Arabian and composite type of stone anchors of different sizes were found near the tidal dockyard on the banks of the River Vagothan (Tripathi *et al.* 1998a). Also, eight well-preserved Indo-Arabian types of stone anchors were recorded, which were used as lintels in the second fortification wall of the Vijaydurg Fort (Tripathi *et al.* 1998b). The explorations at Sindhudurg Fort on the Malwan (Malvan) coast also revealed both composite and Indo-Arabian types of stone anchors. All the stone anchors of the Sindhudurg Fort are embedded on the platform as pavings near the landing jetty and at the entrance of the fort. Among others, two Indo-Arabian types of stone anchors were erected on the platform, where passenger

boats were tied to these anchors. Similarly, one more Indo-Arabian stone anchor was noticed at the entrance of the Padmagad Fort, opposite Sindhudurg Fort, which is used as a lintel (Tripathi and Gaur 1997). During dredging of the Dabhol Creek channel near the jetty, four Indo-Arabian types of stone anchors were found. Among these four stone anchors, only one anchor has all three holes, and the remaining anchors have only the lower holes. Besides, a two-fluked iron anchor was found in the side sanctum of the Loyaleshwar temple near Dabhol jetty, which is being worshipped by the locals as well as the fishermen (Gaur *et al.* 2007; Gaur *et al.* 2009) (Fig. 1).

Jithin, the first author of the paper, undertook the scuba diving course at the Indian Institute of Scuba Diving and Aquatic Sports (IISDA), Malwan, Maharashtra. Later, he carried out a few dives and underwater explorations off Vengurla Rocks. It was during these dives that one ring stone anchor and one four-fluked iron anchor were discovered off Vengurla Rocks Island. Besides these findings, a two-fluked iron anchor was found in 4 to 5 m water depth at Malwan. In this paper, an attempt has been made to describe the methodology of underwater explorations off Vengurla Rocks Island and Malwan, their present status and few other details are presented that have bearing on the history of the sites.

## Methodology

The underwater explorations conducted at Vengurla Rocks Island were accomplished by Self-Contained Underwater Breathing Apparatus (SCUBA) between 11 and 14 m of water depth. The visibility was good. In the course of diving, the seabed topography, stone and iron anchors, and

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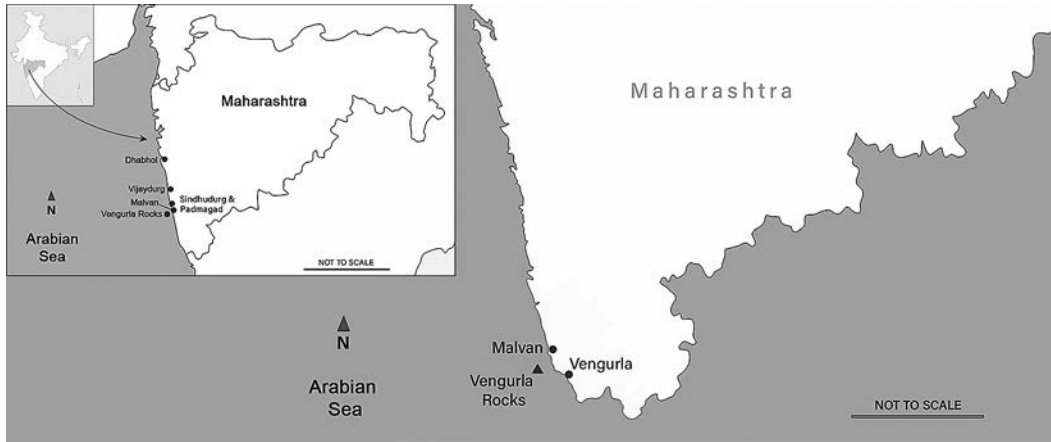


Fig. 1: Stone anchor sites in Maharashtra



Fig. 2: The old and new lighthouses on the Vengurla Rocks Island (Photo: Jithin)

boulders were all photographed with a handheld GoPro Hero 5 Black camera. The water depth was recorded with the help of a dive computer. Reference drawings were prepared on a dive slate made of PVC sheet using both B and HB pencils. A 30 cm reference metal scale was used for photography, and measurements were recorded using fibreglass tape. The position of the site was recorded using the Garmin Forerunner 55, a wearable smart watch device with Global Positioning System (GPS) capability. Its accuracy is  $\pm 16$  m.

### **Location**

Vengurla Rocks Island is located 19 km from Malwan. The area is very suitable for novice divers and their practice because of its fair visibility, coarse sand, rocky bottom, silt and sediment movement, good water depth, and no hindrances. Sometimes, the presence of suspended sediment particles reduces underwater visibility. The other beauty is the ruins of the old lighthouse on a rocky mass, currently inhabited by different types of seabirds and insects. Nearby, on top of the Vengurla Rocks, there is another lighthouse, which was built at a later period. Records in the public domain specify that the new lighthouse was constructed in 1870 CE (Fig. 2). However, information about the old lighthouse remains unknown to the public.

### **A Brief History of Vengurla**

Vengurla has been a harbour and trading centre since ancient times. Pirates infamously used the port as a place of retreat. During the 16th century, Vengurla Port was under the control of the Sultanate of Bijapur (Pendse 2018). Later on, Chhatrapati Shivaji Maharaj, the Maratha King annexed Vengurla (Bellarykar 2016). A group of Dutch merchants led by Leendart Janszoon got permission from Adil Shah in 1639 CE to build a fort at a cost of 3000 guilders. The construction was not complete until 1655 CE, but Pieter Koopman was the first head of this small factory of Vengurla. The establishment of the factory at Vengurla was a great strategic loss to the Portuguese, as Vengurla was just 80 km north of Goa and readily provided supplies to the Dutch fleet. The primary function of this factory was to serve as a watchtower, able to monitor the movements of Portuguese ships at Goa. The factory served as a victualling base for the Dutch fleet that annually blockaded Goa between 1636 and 1644 CE to keep the Portuguese fleet away from the Portuguese-Dutch war in Malacca and Sri Lanka, which raged until the 1660s. This factory also became a haven for Dutch spies. The strategic importance of Vengurla ended as the Dutch established their control over Cochin in 1633 CE (Pendse 2018). The Dutch merchants at Vengurla crafted a treaty with the officials of Shivaji Maharaj and secured a letter of assurance from them that would guarantee the Dutch to conduct their trade freely, as was done before. Due to the frequent wars

fought between the Marathas, Mughals, and Sultanate of Bijapur; the Dutch trade at Vengurla had practically come to a standstill. This compelled the Dutch to meet Shivaji Maharaj and his various officials to sort out the issues and resume trade. Nevertheless, the actual trade did not continue on account of some monopolistic and monetary concerns (Bellarykar 2016). The British established a small factory at Vengurla sometime around 1772 CE. Later, on October 3rd, 1812, the Raja of Sawantwadi ceded his sovereignty of the Vengurla fort and its dependencies. In November 1817, the Peshwa power was overthrown, and its territories in Konkan fell to the British (Savur 1982). However, this region was the centre of maritime trade during the 16th–18th centuries CE. This important trade centre of historical times was twice destroyed by many attackers between 1664 and 1812 CE.

### **Archaeological Results**

#### *A Stone Anchor*

During the underwater explorations off the Vengurla Rocks, a ring-stone type of stone anchor (Fig. 3) was found at 12 m water depth. Marine growth, including soft corals, was noticed on the surface of the stone anchor. Its upper portion is tapering, the base is flat, and the size of the hole is bigger than the size of the anchor. The inner side of the hole is smooth, and no rope marks are visible on the anchor. The anchor is damaged slightly on the right, as a small portion has been chipped off from its outer surface. No material traces related to the ring stone anchor were found at the site. It is believed that the ring stone anchor could be made of either basalt or limestone because earlier similar findings along the west coast of India belonged to the same stone material. The weight of the anchor was unable to be recorded underwater due to a lack of resources; however, it is extremely heavy and beyond the lifting capacity of an average healthy adult male. A rough



**Fig. 3:** Ring stone anchor lying on the seabed off the Vengurla Rocks Island (Photo: Jithin)



**Fig. 4:** Divers examining the iron anchors off the Vengurla Rocks Island and Dandi Beach, Malwan (Photo: Jithin)

estimate suggests the maximum width of the stone anchor could be 70 cm. The imagery reference suggests that the stone anchor has suffered surface damage due to extensive use.

#### *Metal Anchor No. 1*

A four-fluked iron anchor (Fig. 4), which is heavily encrusted and corroded, was found near Vengurla Rocks at 13.1 m water depth. The length of the anchor shank is 1.3 m. Flukes from the two arms are missing. The flukes might have eroded or fallen elsewhere. No markings or engravings are seen due to the extreme level of corrosion and marine growth. Its approximate weight could be more than 200 kg. The diving team consisted of four divers, but it was challenging to move the anchor from the seabed, so the anchor was left *in situ*. On further study of the anchor, the anchor shank appears corroded given its burial in the seabed; however, the ring used to tie the rope is present.

#### *Metal Anchor No. 2*

Another iron anchor was found close to Dandi Beach, Malwan, at 4 to 5 m water depth. The length of the shank is 2.59 m, and the length of its exposed arm (fluke) is 1 m. The other fluke appears to be buried in the seabed. The iron ring meant for tying the rope is missing. The anchor appears to be in a deteriorated state. Neither engravings nor markings are seen on the surface of the anchor due to extreme levels of corrosion and marine growth. The Dandi Beach, Malwan is a protected marine sanctuary and is closely monitored by the Mangrove Foundation of Sindhudurg, therefore, prolonged diving is not permissible.

#### **A Comparative Study of Anchors**

Different types of stone anchors have been recorded during underwater and nearshore zone explorations along the east and west coasts of India (Fig. 5). Besides, other types of stone anchors, namely the ring stone anchor from the Vengurla waters, exhibit close similarities to ring stone anchors found in Dwarka, Somnath, Sunchi Reef of Goa, and other sites in India in terms of their size and shape. In Dwarka and Somnath waters, 25 ring stone anchors have been discovered and studied in detail (Gaur *et al.* 2002a; Gaur *et al.* 2002b). Even the underwater exploration at 8 m water depth outside the breakwater of the port area of Kollam (Quilon), Kerala, revealed a ring stone anchor (Annual Report 2014-15). The state of the anchor is good; it is lying on the seabed. Further, ring stone anchors are found on Minicoy Island, which are made of coral, as it is readily available (Tripathi 2009). A suitably sized coral block is selected, and then shaped with a wide hole in the centre in which a wooden stick is inserted. Similarly, in the Maldives, ring stone anchors made of corals were used by fishermen. In Divehi, the local language of the Maldives, ring stone anchors are known as *fanaa*. These anchors are fashioned in the form of a slightly concave disc with a 40–50 cm diameter. Except for Minicoy and the Maldives, the ring stone anchors reported from the rest of India are made of either basalt or limestone and sandstone. Moreover, ring stone anchors have also been reported from Galle Harbour in Sri Lanka (Souter 1998) and Oman (Vosmer 1999). Since the ring stone anchor of Vengurla is encrusted with marine growth, it is difficult to remove it from underwater for further study. None of the ring stone anchors of India were found in a datable context; therefore, it is difficult to date them precisely. However, these anchors could be dated to the Medieval to late Medieval period. In the case of the ring stone anchor from the Vengurla waters, it could be dated to the late Medieval period because Vengurla served as a port during the 17th century CE. While two fluked iron anchors with typological features correspond to the 18th and 19th centuries CE. The Europeans introduced the Admiralty Long Shank type iron anchor in Indian waters, and this anchor bears resemblance to iron



Fig. 5: Stone anchor sites in India, (updated after Triпати 2014)

anchors displayed at the ASI Museum, Old Goa, Goa; the Goa State Museum, Panaji (Triпати *et al.* 2003) and the State Museum, Egmore, Chennai ( Triпати *et al.* 2020). Information about various iron anchors with two arms or flukes have been found along the west and east coast of India (Athiyaman and Jayakumar 2004). The four fluked iron anchors belong to the modern period. Providing two additional flukes suggests advancement in the anchor design and provided for added security to the vessel in rough sea conditions. However, further study can bring more information on this.

#### Dating of the Anchors

Most of the stone anchors in India have been discovered without much archaeological context or associated

findings. The absence of direct evidence, such as pottery, coins, inscriptions, etc., close to the stone anchors makes it difficult to date them precisely; however, such findings are taken into account to date the anchors. In India, there are very few sites where the dating of stone anchors has been correlated with archaeological evidence. For instance, in Dabhol, Maharashtra, stone anchors were found along with wooden flukes, and their radiocarbon dates show that the flukes are  $590 \pm 90$  and  $600 \pm 70$  years old, thus confirming that Indo-Arabian types of stone anchors used in Indian waters 500 to 600 years Before Present (Gaur *et al.* 2009). This is the first instance in India where stone anchors were found along with wooden flukes. The finding of the Arabic inscription on the lintel of the Hydross Palli Mosque in Kannur datable to the 13th and 14th centuries CE can be

associated with the date of the stone anchor found at the entrance of the Mosque (Sila Tripathi *et al.* 2005).

### Discussions and Conclusion

Ports, ships, shipbuilding, and anchors are the main components of maritime history, which provide evidence of maritime trade and contacts. With respect to southern Maharashtra, Vijaydurg (Byzantine) and Malwan (Aurannoboas) were the minor ports. Schoff (1912) refers to Aurannoboas, which McCrindle (1879) identifies with modern Malwan. These minor ports had direct contact with Sopara and Kalyan, which were under the sovereignty of the Mauryans and the Satavahanas and extended to the present boundary of Goa. Malwan and Vijaydurg lost their status after the end of Satavahana power until they were absorbed into the empire of Shivaji Maharaj. Limited archaeological evidence of the Early Historic period has been recorded from this region; however, underwater explorations revealed one ring stone anchor, one iron anchor off Vengurla waters, and one more long-shanked iron anchor from the near-shore zone of Malwan. The occurrence of stone and iron anchors within proximity suggests that Vengurla Island was utilised for maritime activities for an extended period. However, a detailed salvage and sample collection is required for further studies to uncover more information on past maritime activities associated with Vengurla. Certainly, it is unknown when the particular type of ring stone anchors was introduced and how long they were in use. However, the evolutionary development of stone anchors can be traced from their shape, size, and weight. But the approximate date of the metal anchors can be determined once those are salvaged and studied further. It can be suggested that the Vengurla region has seen significant events that have changed the course of history. The rocky island groups form a formidable natural defence against harsh weather and enemy vessels.

In India, composite, Indo-Arabian, single-hole, and ring stone types of stone anchors have been discovered along the east and west coasts of India (Tripathi 2014). Composite and Indo-Arabian types of stone anchors are more common than ring stone and single-hole stone anchors. The distinctive feature of the ring stone type of anchor is that these are circular, have a flat base, taper upward to a certain height, and have a wide hole. In shape, they appear like mushrooms. Except for one or two sites, these ring stone anchors have been reported along with either composite or Indo-Arabian types of stone anchors. The use of ring stone anchors in Minicoy Island and the Maldives is exceptional because of the non availability of stone and the nature of the topography of the region.

An intensive search along the coast of Maharashtra would reveal a large number of antiquities, including shipwrecks and stone and iron anchors of historical

importance, which can help us connect the puzzle of our maritime history.

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