

Underwater Archeological investigation of Bushehr coastlines in Persian Gulf

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Abstract:

When the Research Department of the University of Medical Sciences of Bushehr was studying marine biomedicine around the Bushehr peninsula they inadvertently discovered some pottery fragments. They then reported it to the Bushehr province Cultural Heritage organization. In the summer of 2016, the underwater archaeology group of the Iranian Center for Archaeological Research (ICAR) surveyed the Bushehr coastlines for a month. During this field research, we identified and recorded the distribution of Sassanid pottery over approximately one kilometer square in the seabed around the Bushehr peninsula. Based on findings of pottery assemblages consisting of fragments of food storage vessels, Torpedo amphora, and turquoise ceramic glaze; it was assessed that this archaeological site represents the cargo of a shipwreck which sank in shallow water near the coastline. Over time, the cargo then spread across the seabed. We can observe the shipwreck processing in this case. At the first season of this field research, we could not identify the remains of the shipwreck hull but lots of fragments of torpedo shaped ceramic vessels were recored. Relative dating proved that all of the ceramic findings are related to the Sassanid era (224 to 651 CE). The quantity of sherds found proved that this is in fact a shipwreck site.

Identification of the archaeological sites with torpedo shaped ceramic vessels distributed around the Persian Gulf indicate that regional maritime trade was widespread, in particular the Sassanid wine trade, and that seafaring practices were occurring in one of the ancient canals of Indian ocean. In this article, we explain about underwater archaeological investigations of Bushehr coastlines and outstanding ceramic findings including torpedo shaped ceramic vessels and turquoise

ceramic glaze wares that were used in maritime trade in the Persian Gulf during the Sassanid and early Islamic periods..

Keywords: Persian Gulf, underwater archaeology, Bushehr port, Sassanid era, torpedo – shaped ceramic and turquoise ceramic glaze.

1. Introduction

The Persian Gulf (also Persian Sea), is a crossroad connecting all civilizations, which is also a place of shipwrecks. Over recent years and as a consequence of underwater archaeological investigations in the northern shores of the Persian Gulf, a number of historical areas and wrecked ships have been identified (Tofighian, 2014, 2014a, 2014b, 2016, 2017). Bushehr Port is one of those underwater archaeological areas in which historical ships have wrecked. This area has a special significance for researchers. During the field study, a number of dragon-shaped jars, pottery containers, glazed pottery parts, and a stone anchor were found. This underwater area, which was first identified by researchers of the Marine Medical Center affiliated to the Bushehr University of Medical Sciences, is within 500 meters of the shoreline of Bushehr Port and from the Customs wharf to the building of Bushehr City Council. The site covers a spread of pottery containers at a depth between 3 to 6 meters. Before starting underwater investigations, the objects found were documented by the Marine Medical Center affiliated to Bushehr University of Medical Sciences. Given that some part of the explored pottery containers had been identified by researchers of the Marine Medical Center, no information of exact location of the underwater objects was at hand, but big jars for water and food storage informed the researchers that a ship had wrecked on the seabed. Only does the diversity of the explored containers and their abundance show the existence of a large and important underwater archaeological site. In addition, big jars of water and

food storage signify the existence of a shipwreck in the seabed. The efforts exerted by a group conducting underwater investigations and explorations were successful in spite of difficult conditions caused by insufficient underwater visibility and significant destruction having imposed to the underwater area. As a result, underwater archaeologists succeeded to explore a number of dragon-shaped jars and turquoise glazed pottery in the seabed .

2. The research area

Bushehr Port is the capital of Bushehr Province, one of the Iranian southern provinces. "Nadir Shah Afshar" re-boomed the current Bushehr port in 1736. The name of this port was "Rishahr" in the ancient times. The foundation and construction of this port date back to "Ardeshir" I of the Sassanid. The resources referring to "Ardeshir" the Unifier mention a port called "Bokht Ardeshir". Those resources, along with other documents, show the significance of the Persian Gulf for the early Sassanid kings. The significance of Bushehr Port was so great that "Bokht Ardeshir" was connected by a road to Kazeroun and Shiraz through which exported goods were transported to other areas. But the current Bushehr Port with a history of 300 years was founded by Abu Mahiri, the son of Shaikh Nasser Khan Al-Mazkur (the shipmaster of Nadir Shah and the founder of Al-Mazkur dynasty) in 1735. The reason for the foundation of this city was that Nadir Shah wanted to construct a port in the south of Iran and establish navy. This port became so prosperous that was considered as rival to Basra (Fig. 1 & 2) Traces and works dating back to pre-history (such as "Tal sabz or Tal Pitel", the Elamite period (Lian), and the Sassanid and Islamic periods can be observed in Bushehr Peninsula. The Castle and Port of "Rishahr", the Sassanid Cemetery in "Shoghab", and the Sassanid "Hezar Mardan" Port are some of the monuments in this

area. The underwater ancient area studied in the present research is located at a distance of 500 meters from the shoreline of Bushehr Port and between the customs dock and the building of Bushehr City Council. This area is located at a depth of three to six meters under the sea covering an area about 700 meters along the shore and an approximate width of two hundred and fifty meters on the sandy bed of shallow body of water of Bushehr Peninsula. This area has been severely destroyed because of its proximity to the shore and the expansion of customs docks on the one hand and military maneuvers on the other hand .



*Fig.1 Location of Bushehr and the surrounding archaeological site.
(Tofighian, 2016)*



Fig.2: Location of the Underwater Archaeological site (Tofighian, 2016)

3. Methodology

The explored underwater objects are the most important instruments for underwater investigations (Maarleveld, 1987: 35). But in investigating shores of Bushehr Port, lowest light and water clarity was available for divers. The area for investigations identified by the research team of the Marine Medical Center (Fig. 3) was drawn on a base map. This area with seven hundred meters long and two hundred and fifty meters wide was investigated. To begin underwater investigations, the team had to identify the starting and ending points on the seabed. With regard to permanent water movements, identification of the points were possible only via a few floating watermarks attached to heavy weights. The starting point of the investigation was recorded by GPS on a boat and the first buoy was fixed

in the area. To start underwater investigations, the two following methods were employed:



Fig.3: The underwater archaeological team. (Tofighian, 2016)

1 .The beginning and the end of the area was determined by two buoys (watermarks). Then, the investigators started searching along the rope and after finishing this search round, the two buoys were displaced in the width direction of the area and the other part of the seabed as searched .

2 .Appropriate spots of the study area were recorded by buoys and GPS. Then, a rope was fastened to a buoy and divers started searching around this point in circularly. After completing each round, the radius of this circle got opener and a larger area was investigated. With regard to severe underwater streams, diving was impossible without the rope and buoys. In the second method, the second part of the area was conducted and all investigated spots were recorded via GPS and drawn on the basemap .

In modern methods, the seabed are scanned via devices and techniques such as Sonar; then the obtained pictures are interpreted on a monitor via which underwater topologies and cultural phenomena are identified.

Nowadays, Iranian archaeologists have no access to efficient and advanced underwater equipment .

For better understanding of the conditions of the shores of the study area and the possibility of identifying the potential shipwreck with regard to the shallow body of water, the investigators imaged the study area employing a quadcopter. Imaging from a low height in the shallow shores of the area and with regard to possible penumbras can be effective on identifying the traces of docks and debris of historical harbors. Thus the investigators tried to identify possible evidence and historical findings via the quadcopter. However, the taken pictures were not effective on underwater archaeological investigations in Bushehr shores. In addition, the study area was investigated via the Sonar Scanner Finger Feeder installed on a boat. But due to smoothness of sandy shallow seabed in Bushehr shores, the pictures obtained from Sonar were not effective. Therefore, the only possible method for investigating those shores was that professional divers search the seabed with under the supervision of the Marine Medical Center of Bushehr. This method was also conducted with difficulties .

4. Findings

The results obtained from survey investigations of the dispersion of broken and intact pottery as well as the stone anchor indicate the existence of an area belonging to a shipwreck in the shallow part of Bushehr Peninsula. The objects were obtained in different time intervals and no unity was found among them. The dragon-shaped pottery containers were in fact middle-sized jars with horizontal handles and a number of turquoise glazed jars as well as a number of small deposited containers made dating the site possible (Fig. 4-6)



Fig. 4 (left): The remains of torpedo amphorae in shallow water around the southern of Bushehr Peninsula. (Tofighian, 2016)



Fig. 5 (below): The remains of second torpedo amphorae in shallow water around the southern of of Bushehr Peninsula. (Tofighian, 2016)



Fig 6 (above): Glazed pottery, recovered from the southern coast of busher. (Tofighian, 2016)

Dragon-shaped pottery jars dated back to late Parthian period to Sassanid period as well as the two first centuries of the Islamic period in maritime trading of the Persian Gulf for shipping valuable liquids such as olive oil, salty fish, wine, and seeds from Iranian ports to Arabian ports of the Persian Gulf, the Indian subcontinent, East Asian and East Africa with bitumen-painted inside surfaces for making them water-resistant. In addition, turquoise and green glazed pottery, as the most significant pottery of the Sassanid period, were observed among the explored objects which in addition to historical Iranian ports and areas of the Persian Gulf, have been found Arabic shores, East Africa, Indian subcontinent, and East Asia. It shows the expansion of the trading network of the Sassanid era in the Persian Gulf .

One of the most important findings obtained from archaeological investigations in the shallow bodies of water in Bushehr Peninsula was a piece of oval rock with three holes (Fig.7). Unfortunately, no trace of a shipwreck was observed. Thus only its severely destructed and sporadic shipments were identified. Doing complementary investigations can significantly contribute to better understanding of the real nature of this underwater area .



Fig .7: A stone anchor with three holes from Bushehr. (Tofighian, 2016)

Analysis and comparison of the pottery explored from the underwater area in Bushehr Port

A large variety of pottery related to the Sassanid period were identified in the areas around the shores of the Persian Gulf. The most important explored pottery were the elegant orange painted pottery (Namard), grey small pottery, kneading pottery, big ornate jars and jugs for water and food storage, and more frequently, dragon-shaped and glazed pottery. Pottery with honeycomb decorations are other types of the Sassanid pottery observed frequently in Siraf, but dating those pottery has been doubted by a number of archaeologists (Simpson, 1992: 296 .(

In archaeological investigations and identifications of the shores of Bushehr Port, three intact dragon-shaped jars with bitumen glaze inside them and a more number of broken pieces of dragon-shaped jars were explored. In this investigation, a number of glazed pottery containers dating back to the Sassanid era were explored as well. Dragon-shaped

pottery explored in Bushehr Port are comparable with the instances obtained from the Sassanid areas of the northern and southern shores of the Persian Gulf. In addition, the number of Monochrome glazed pottery containers can be observed among the underwater findings of shores of Bushehr Port. This type of Sassanid pottery is comparable with a lot of pottery obtained from Sassanid areas of the Persian Gulf as well as other areas summarily discussed as follows.

4.1 Dragon-shaped pottery

One of the most important findings of the studies conducted on the pottery is that all pottery obtained from northern and southern shores of the Persian Gulf, the Indian subcontinent, and East Africa have been originally Iranian. This pottery is mainly dragon-shaped (Simpson, 1992: 291). The clay of those pottery in which bind materials such as abundant sand and fine dense sand grains are used are yellow or fallow. The external surface of containers are decorated and the inside surface is bitumen-glazed (Connan et al. 1998). Another main characteristic of this pottery type is its coils, cylindrical body without a neck, and a long and hollow insole (Adamz, 1970: 100). This pottery type is also called Torpedo Fuse Point. The bottom of this dish is called Spizfuss (Finster & Schmidt, 1976: 92)

All in all, dragon-shaped jars (Torpedo) refer to those jars that have sharp bases and relatively open mouths. They were appropriate for carrying liquids in maritime trading. Those jars were made in different dimensions. Their inside surfaces were all bitumen-glazed in order that nothing can penetrate into the containers and spoil liquids. The arrangement of amphora were very easy because of sharpness of their bases, openness of their mouths, and the lack of necks in such a way that they did not shake by ships' shaking. According to archaeological studies, dragon-shaped jars in the Persian Gulf date backs the early Parthian period to the early

Sassanid period and the two first Islamic period (about one thousand years) (Simpson, 1992: 291)

This pottery has been identified in most parts of northern and southern ports in the Persian Gulf as well as trans-coastal areas such as areas in "Bandar Rig", "Mahrouyan", "Siniz", "Hezar Mardan", "Gurestan Shoghab", "Rishahr", and southern shores of Bushehr Peninsula such as areas of "Jalali", "Siraf", historical shop of Siraf, and Nay "Band" Bay. In addition, some samples in trans-coastal areas such as Shush, Mianab Plain of Shushtar, Galalak of Shushtar, a sample in Museum of Ancient Iran, two samples in the Museum of London, and other samples of dragon-shaped jars are comparable to those explored from underwater areas of Bushehr Peninsula (Tofighian, 2014). In southern shores of the Persian Gulf such as areas of Maliha, Eddor, Sohar, Jazirat al-Ghanam, Qana in Yemen, Kush and Al-Qosur in Kuwait, East Africa, and Indian sub-continent, dragon-shaped jars were explored (Tofighian, 2014).

4.2 Turquoise monochrome glazed pottery

Well-baked glazed pottery with pepper paste and cream color made of binders of sand and better glaze is one of the main characteristics of the Sassanid pottery mainly made in Mesopotamia and Khuzestan (Mason & Keal 1991: 52). Glazed pottery of the Sassanid period, particularly turquoise pottery, are mostly observed in the Persian Gulf ports of the Sassanid and early Islamic periods. In "Mahrouyan" (Tofighian & Esmaeili, 2010: 275), the area of "Jaborj" near "Genaveh Port", "Rishahr", "Najiram (Bataneh)" (Tofighian, 2009), Siraf and a number of areas in "Hormozgan" such as "Ramchah", "Rigo", and "Soza" in "Qeshm" Island (Khosrowzadeh, 2006), instances of the Sassanid turquoise pottery were explored. In shores of the Persian Gulf, East Africa, and East Asia, some instances of monochrome glazed pottery have been explored. They can

be comparable with the glaze pottery explored in underwater areas of Bushehr Port .

5. Conclusion

By doing underwater archaeological investigations and explorations of shores of Bushehr Peninsula, the following results were obtained: in shallow water in opposite Bushehr Port, an ancient site at a depth of 3 to 6 meters was identified. During investigations and with regard to exploration of dragon-shaped jars used for carrying wine, it was identified that the site is probably the place of an ancient shipwreck .

In addition, investigations conducted on the broken and intact pottery as well as a stone anchor, the following results were obtained:

a .Three intact dragon-shaped jars in different sizes in which were bitumen-glazed were explored. In addition, more numbers of broken pieces of dragon-shaped jars indicate a large number of jars in the explored area. In fact, the large number of dragon-shaped jars in those shores have been explored by local fishers. This jars can belong to the identified ancient area in Bushehr Peninsula .

b. A big glazed jar with turquoise green, some smaller jars mainly with pale glaze, and some unglazed small to moderate jars with four handles were explored .

c. A large number of broken and deposited pieces were also explored. The diverse shapes of those broken jars show the abundance of pottery containers in that historical wrecked ship.

d. A stone anchor with three holes on its body were explored as well. This anchor remained in the seabed because of its high weight and big size .

According to initial studies on the pieces of explored pottery, especially turquoise green dragon-shaped ones rooted in the Sassanid period, dating this area may refer to the Sassanid and early Islamic periods.

According to the evidence obtained from the stone anchor, small and moderate containers for food and water storage, and identification of a diverse number of dragon-shaped jars, the explored area may belong to maritime a cargo ship having been wrecked in that site. A large number of the jars were arranged in the cargo carrying valuable liquids such as oils and wine from Iranian ports to other destinations. Better understanding of this area and access to their real identity require more field studies in future .

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