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Maritime Archaeology Periodical



TINA TURKISH UNDERWATER ARCHAEOLOGY FOUNDATION

FOUNDATION

Founded by a group of maritime-lover businessmen in 1999.

SCOPE

- ❖ To make the international society and scientists familiar with our abundant archaeological cultural heritage in Turkey and its seas. With this idea in mind, to make national and international publications, and organize conferences, panels, seminars, forums, symposiums, workshops, fairs, festivities, exhibitions, and artistic activities such as festivals, excursions and meetings.
- ❖ To support local and international scientific institutions, museums, and universities involved in activities of surveys, excavations, conservations and exhibitions under the approval and inspection of the Turkish Ministry of Culture and Tourism.
- ❖ To perform underwater surveys and excavations in our seas using scientific methods and current technological facilities under the approval and inspection of the Turkish Ministry of Culture and Tourism.
- ❖ To identify the archaeological artifacts lying underwater, reporting their whereabouts to relevant authorities for protection.
- ❖ To seek cooperation with the museums and institutions involved in the field and support their activities. To ensure enhancement of such museums and cultural activities, and take necessary steps to provide opportunities for new initiatives.
- ❖ To take necessary measures to prevent the pollution of our seas which becomes increasingly harder to fight back, ensure that such measures are taken, and cooperate with other institutions in this sense.
- ❖ To contribute to the educational and training institutions dealing with our scopes, and provide scholarships for dedicated students.

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PRESENTATION

UNRAVELING THE GLOBAL MARITIME HISTORY IS A SERVICE OF UTMOST SIGNIFICANCE FOR THE HISTORY OF HUMANITY

Being surrounded by sea on three sides, Turkey is one of the countries that possesses the richest underwater archaeological cultural heritage. It has always been a focus of interest by its archaeological assets, particularly the cultural heritage in the field of underwater archaeology. The most tangible evidence on this interest is the history of underwater archaeological explorations exceeding more than fifty years, and variety and quality of revealed findings. The most ancient underwater archaeological findings, unparalleled artefacts exhibited in museums, and abundant maritime history prove that it is one of the most important centers in the world. Unquestionably, behind this archaeological wealth there are world-renown competent scientists.

TINA (Turkish Foundation for Underwater Archaeology), reaching almost 15 years from the date of its foundation, aims to elucidate the world's maritime history and publicize the scientific studies in this field by publishing the works of scientists from all over the world working in the field of "underwater archaeology".

We hope that continuity and effectiveness of our journal will contribute to the targeted service initiative.

Oğuz Aydemir

*TINA Turkish Foundation for Underwater Archaeology
Chairman of the Board*

EDITOR

Greetings to everyone from the first issue of TINA Maritime Archaeological Periodical.

An excavation performed at Cape Gelidonya on the southern coast of Turkey 54 years ago helped us better imagine the advancement of humankind throughout the history. Being aware of the fact that it is possible to perform an archaeological excavation under the water similar to the land archaeology, the team carried out excavation of the world's oldest known shipwreck at that time. As of now, archaeologists around the world keep exploring the maritime history both underwater and on land.

Archaeological excavations performed throughout the years revealed Turkey's significant role in the world's maritime history. And in 1999 TINA (Turkish Underwater Archaeological Foundation) was established. The objective is to inform the world society and scientists about the abundant archaeological cultural heritage in Turkey and its seas.

TINA Maritime Archaeological Periodical

TINA Maritime Archaeological Periodical is a periodical which aims to provide scientific contribution through presenting information on the "maritime archaeological activities" performed around the entire world.

Our goal is to create a magazine that discusses the works of maritime archaeologists working at every corner of the globe. Our pages will cover maritime archaeological excavations, scientific projects, news, conferences held in this line of work, university programmes and scientific education in the field as well as the new technologies. Of course, this will become true with you, our colleagues. We invite you to the magazine that will be enriched in coverage with your contributions.

Chief Editor, Publisher

Mehmet Bezdán

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***THE BREAKWATER OF THE
ANCIENT HARBOR OF SIDE***



* H A K A N Ö N İ Z

The ancient harbor of Side has been examined as part of the Archaeological Underwater Research on the Coast of Antalya project launched in 2009, and resumed in 2012 with contributions from the Turkish Underwater Archaeology Foundation, the support by G,ner Kozdere, the director of Side Museum, and Professor Hüseyin Sabri Alanyalı", director of Side excavations. During the project, we identified 28 sarcophagi dating to the 3rd or 4th AD, and three stelae dating between the 4th to 3rd century BC, about 50 m off the western breakwater of the Harbor of Side. The land excavations at Side yielded sections of fortifications and wall constructions dating to the mid-4th century AD. Breakwaters appear to have been repaired during these construction works of walls re-using sarcophagi and stelae from the necropolis area as embankment material.

SIDE AND THE SEA:

A variety of coins, minted in Side, may indicate how the sea was embraced. Dolphins were depicted on many coins with a pomegranate, a symbol which gave its name to the city. For instance, one particular mint dating to the 5th or 4th century BC has a depiction of a dolphin facing left with a pomegranate resting upon it on the reverse side of the coin (Fig. 1). Another coin has a pomegranate on the obverse side and a dolphin

on the reverse side, while another coin depicts a pomegranate on the obverse side, and a dolphin and a human eye on the reverse side. The use of dolphins and sea motifs on coins minted at Side began during the 5th century BC and appears to have continued until 4th century AD. Another example dating to a period between 211 and 217 AD has the depiction of a sailing vessel on the reverse side (Fig. 2), and another one dating to the Period of Constantine (330 to 337 AD) has a depiction of the Emperor and Victoria, the oarswoman on a ship on reverse side. Themes related to the sea and the seamanship are not limited with these specimens¹. Possibly the best representation of a local sea theme can be seen on a coin with a depiction of the Side harbor dating to the Roman period (Fig. 3). The harbor on this coin is in the form of a circle enclosed by buildings similar to the mosaic with a depiction of the Kelenderis harbor². Based on the iconography of the coin, the harbor has a single entrance at the center from seaward.

¹ Assemblage from the excavations at Side currently conducted under the direction of Professor Hüseyin Sabri Alanyalı contributes to the research. Associate Professor Ahmet Tolga Tek and Side Museum Directorate are currently conducting invaluable work on coins.

² The mosaic found during excavations conducted under the direction of Professor Levent Zoroğlu in 1989, in the ancient city of Kelenderis situated at Mersin-Aydıncık was dated to early Byzantine period. Excavations continue at Kelenderis in the area where the mosaic was found and other areas. (ZOROĞLU 2006, 17.)



Fig.1: Coin of Side dated to between the 5th and 4th centuries BC (ATLAN 1967: 64, Lev. X)



Fig.2: Coin of Side dated to the 3rd century AD (ATLAN 1976:Fig. 178)



Fig.3: Coin of Side dated to Roman Period (MANSEL 1967, Fig. 32)



Fig.4: Animation of the Ancient City of Side (MANSEL 1963: 1)

THE HARBOR AND BREAKWATERS OF SIDE:

Founded on a peninsula, Side is protected from winds coming from the east. From the west the harbor only suffers winds that blow in counter direction. Thus, unlike many cities built on peninsulas or tombolos, this city is not in the form of a natural harbor. Therefore, a port for wharfing in winter, and additionally a quay were built to the northeast of the city during the ancient period. The harbor was built on a natural form by creating a breakwater embankment. Since the natural form to the south end of the peninsula itself alone did not provide a safe haven harbor, the breakwater was probably built together with the city. The two breakwaters to the east and west together composed the main harbor. There is also a small shed built as an extension of the east breakwater located to the east of the main harbor. A

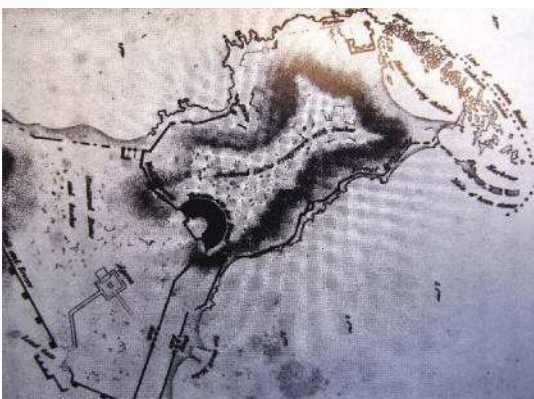


Fig.6: Map of Side, by Beaufort (MANSEL 1963: 41)

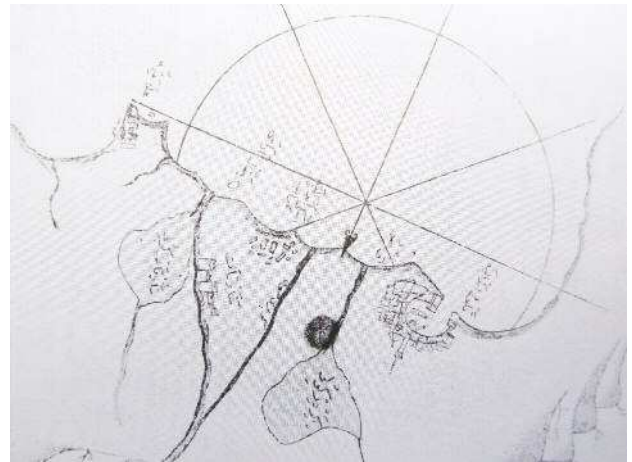


Fig.5: Harbor of Side, by Piri Reis

passage between the main harbor and the shed was apparently available during several periods. Arif Müfit Mansel described the harbor in 1963 as *itriangularî*³, and his depictions of the city have an almost triangular form (Fig. 4). However, the above mentioned coin depicts the harbor as circular, as does the 16th century map of Evliya Çelebi⁴ (Fig. 5). On Beaufort's map⁵ from 1811-1812, the harbor has a deformed circular shape.

³MANSEL 1967, 24.

⁴Piri Reis map does not include the Side peninsula, therefore the drawing depicting the form of the harbor maybe misleading.

⁵Francis Beaufort (1774-1857) was an admiral in Britain's Royal Navy, he is the creator of wind force scale known as "Beaufort Scale". He has been assigned the duty of performing the survey and measurements of Karaman Province, - which used to be the the southern coastline back then, between 1811 - 1812, in the mean time he had the chance to make the drawings of some ancient settlements. (PULTAR 2013, web.)

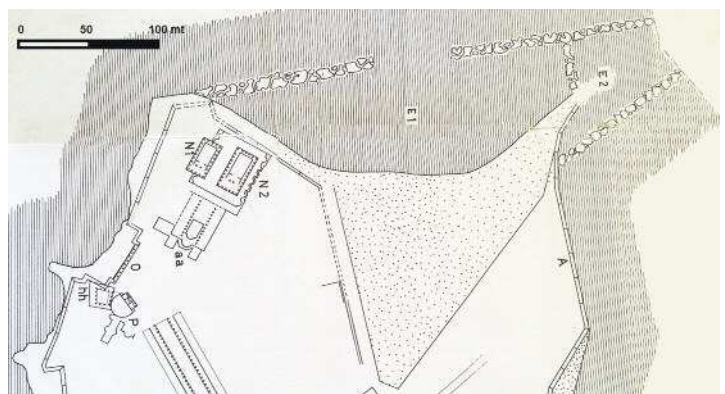


Fig.7: Plan of the Harbor of Side ordered by Mansel (MANSEL 1963: Plan)



Fig.8: Photograph of the Harbor of Side, 1963 (MANSEL 1963)

Breakwaters on this drawing appear nearly rectangular with rounded corner (**Fig. 6**). Both the plan drawn by Mansel (**Fig. 7**) and the photograph taken the same year (**Fig. 8**) indicate that the breakwater has almost flattened. The Harbor drawings by Paul Knoblauch in his book published in 1977⁶ look similar to Mansel's plan⁷. Both the flattened form of the structure on the surface and partly circular form of the breakwater's embankment under the water are visible in the aerial photographs taken before construction of the modern breakwater. It is likely that the harbor of Side was fortified with construction of new walls, probably around the mid-4th century AD. More construction occurred during the 5th century. Among the additions was a basilica adjacent to the Temples of Apollo and Athena⁸.

⁶ A very nice book about the Harbor of Side was prepared by Paul Knoblauch. The book documents the condition of the harbor particularly before the recent reconstruction in 2007. There are also detailed records in the archives of the Museum of Side. The inspiring drawings of the harbor in the book (Fig.5, 54) suggests multiple reconstruction works on the breakwaters over the centuries. However, our research revealed some differences – probably due to the tides – between the present breakwaters and the harbor drawing #5.

⁷ KNOBLAUCH 1977: Fig. 82, 83, 85.

⁸ ALANYALI 2011, 111



Fig.9: Sarcophagi examples outside the Breakwater of Side (Photography: Hakan Öniz)

Excavations have also revealed renovations from the 6th and 7th century in the city. The most recent reconstruction in the harbor of Side was completed in January 2007, with fill from the harbor being removed and dumped to the open sea during the reconstruction process.

The underwater excavations yielded 28 sarcophagi (Fig. 9, 10) and three stelae (Fig. 11) dispersed parallel to the ancient breakwater, approximately 50 m off the modern breakwater. Some of the sarcophagi have been broken and all are filled with large stones and rocks. Several shipwrecks have been found with cargo of sarcophagi from different regions of the Mediterranean Sea, mainly from Croatia. Although the submerged sarcophagi at Side were initially thought to be part of a shipwreck, their dispersion in a straight line of approximately 130 meters parallel to the western breakwater suggests that they were parts of embankments. The stelae that belong to the 4th to 3rd centuries BC uncovered within the same fill with these sarcophagi dating to the 3rd and 4th centuries have eliminated

the possibility of a cargo shipwreck for now. We believe that under the sand and embankment, there should be more sarcophagi lying dispersed in an area of approximately 3 to 6 m and stelae uncovered at a depth of 4 meters. It is very likely that the above mentioned

sarcophagi and stelae were carried from the necropolis near and outside of the city walls or from another location in the city.

Available pictures, maps, drawings, photographs and underwater excavations suggest that the breakwater has undergone multiple restorations over the past two thousand years. The main reason for these restorations is damage caused by wave action. In winter, the height

of waves reaches to 8 m, resulting in strong forces acting on the breakwater structure from the open sea. The pressure might have caused sliding and collapse of the eastern and western breakwaters of the circular harbor towards northeast into the harbor during the Roman period. The second reason is the sinking of the heavy breakwater embankment made of irregular and large blocks of stones into the sand dune in the course of time. Certainly, earthquake is also another important factor. The embankment which collapsed into the harbor within centuries probably caused the harbor to have become smaller. The sliding appears to be 50 meters in average. In this case, the harbor of Side probably had a size of approximately 26000 m² during the Roman period, which means that the area lost due to sliding, should be around

9000 m². The exact number of stelae and sarcophagi uncovered during the survey can only be confirmed by an underwater excavation. Their original location will only be understood in coming years during the excavations at Side.



Fig.10: Funerary stele outside the Breakwater of Side (Photography: Hakan Öviz)

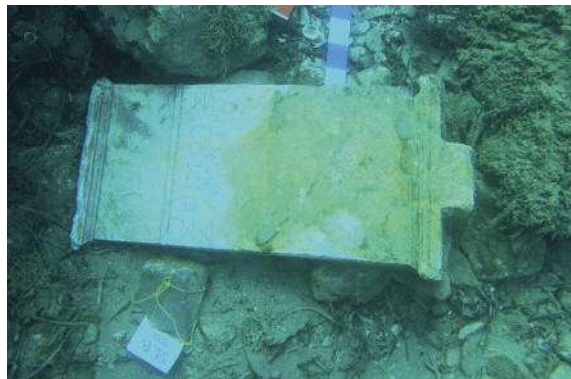


Fig.11: One of the Grave Stelae

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