

Dana Island Shipyard and Underwater Research of the Cilicia Coast 2017

Hakan Öñiz

Two different studies have been carried out on the coast of Cilicia with the permission of the General Directorate of Cultural Heritage and Museums of Turkey in 2017. The first one is archaeological surface research, drawing works and plant cleaning operations on Dana Island, which is at the center of Rough Cilicia (Cilicia Trachaea). In situ presence of at least 274 slipways from different periods was discovered on the Island in 2015 and 2016. During the 2017 project, many buildings behind of the slipways such as workshops, houses, fortification walls, about 270 cisterns, possible temples and churches have been identified. The second study is a systematic underwater survey from the west of Rough Cilicia to the middle of Plain Cilicia (Cilicia Pedias). Because of the known past of the Cilician region with thousands of years of historical background, finding the shipwrecks and other sunken remains are not surprising. An underwater survey of 2017 also has resulted in discovering a total of 20 unknown ancient shipwrecks and other archaeological remains.

Dana Island Shipyard

Dana Island is a small island in the east of the Rough Cilicia region – Silifke of Mersin – of Turkey. It is located 2,300 meters from the shores of the mainland, 2,700 meters in length, 900 meters in width and 202 meters in height (Map 1). The region of the island has been subjected to international politics and trade since Bronze Age because of both the cedar trees in the Taurus mountains and iron ore deposits in the Gazipaşa and Anamur regions. In situ presence of many slipways from different periods were discovered in 2015 and a number of 276 (fig. 1) seen and drawn in 2016. In 2017, the same team carried out a surface survey, plant cleaning and drawing studies on the island.

The slipways are classified according to their visible physical characteristics. Although it is not possible to date each of these exactly, their proximity to the shore and the natural damage that they were exposed to can give an idea of which slipways were built at an earlier date. The slipways of Dana Island are mainly rock-cut style. The front parts of some slipways disappeared as a result of erosion; the back parts towards the mainland remained intact. Some grass marks and other signs also indicate possible slipways which are completely covered by earth and vegetations. There are also some unstudied rock-cut constructions behind of big slipways that probably indicate special places for their service boats. Some part of slipways also had fallen to the sea due to earthquakes. Most of the slipways were built and placed side by side (fig. 2). Most of these were probably enclosed by combined roof systems. Some of the postholes around some slipways attest also the possibility of the wooden roof system. However some of them seem roofless without the ship's protection



Map 1: Research Area.

from sun and rain. Portable tents and other organic solutions may have been used. In some slipways, there are slots, in which stanchions, used for fitting and balancing the beached ship, were fixed. In some slipways, there are slot grooves that allow the ship or the cradle to slide and to be fixed after sliding (fig. 3). Also, in some of the slipways, there are bollards and tying stones that will allow the ship to stand tied to the land or stand firm when beaching. In addition, on the side parts of some slipways, there are special bollards that stopped the ship from sliding backwards, keeping the rope firm and tight while the ships were hauled with the help of animals (fig. 4).

A great number of different building remains mainly covered by vegetation and earth have been found behind the slipways. Among the surviving structures are at least six churches, houses, villas, a Roman bath, more than 250 cisterns, various workshops/mills. The number of the buildings show that a remarkable amount of population must have lived and worked on the Island. 274 slipways and connected workshops indicate a presence of a great shipyard and also presence of the population as workers, soldiers, rulers and perhaps families. The majority of the groups of buildings, which could not be identified yet, dated to the 4th century BC up to the 4th century AD. Masonry techniques that can be dated to the Bronze Age and the Iron Age have been seen in some structures whose function has not been fully understood yet. Some images on the walls of few structures prove the Crusaders' presence on the island.

About 274 slipways and other buildings behind them attest the existence of a very important shipyard and can be named as Neoria/Neoroion in the general explanations of the ancient terms such as *Neosoikos*,¹ *Neoria*,² *Neoroion*, *Naustathomos*,³ *Naupegeia*,⁴ and *Skeuaothekai*.⁵ Dana Island is probably the biggest archaeologically-proven shipyard within the entire Levant. There were many reasons for choosing this location as a shipyard.

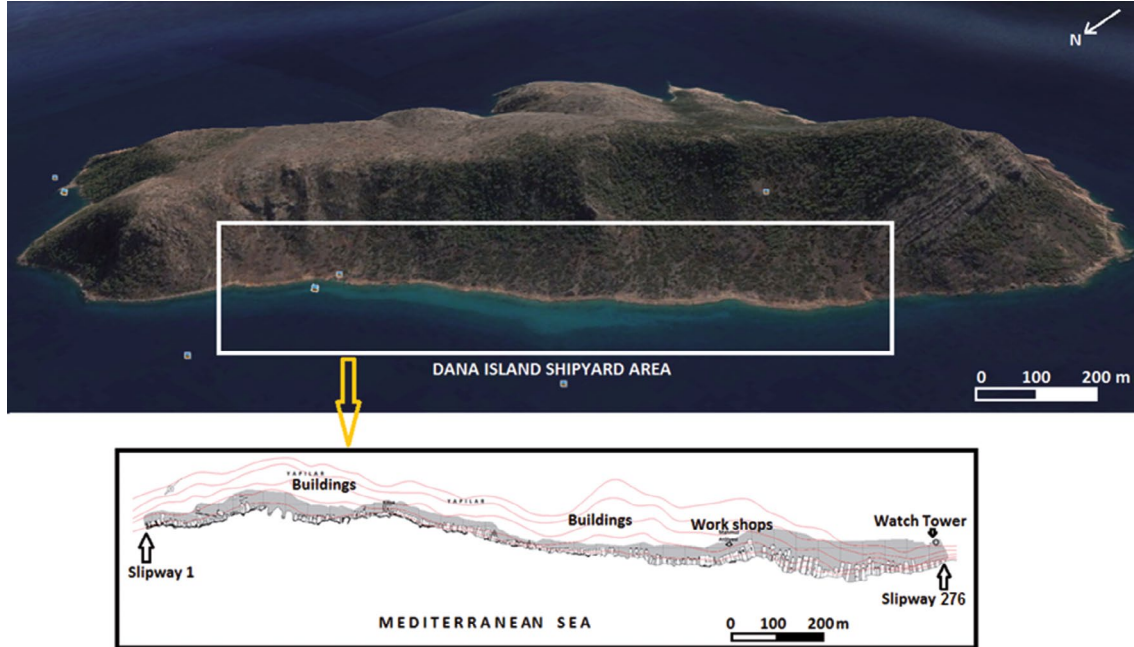


Fig. 1: Drawing of Slipways.

– The necessary wood resources for shipbuilding are very close to the island. It is known that Rough Cilicia was rich in timber, which is important for shipbuilding.⁶ Rich sources of cedar trees on Taurus Mountains have been known since the Bronze Age. There are also plenty of pine species such as black pine, calabrian pine, and white pine, oak and sandalwood trees in the region.

– The position as an island is important to a shipyard because islands are safer places for the military shipyards. For harbouring wooden ships such as bireme and penteonters, which have a high cost of construction and maintenance, and their security, it is necessary for shipyards to have a specialized headquarters infrastructure and firewalls.⁷ The majority of the slipways comprised wooden roofs⁸ and piers and could easily set fire to all the shipyards and the ships. The shipyards built on the island should have been more secure than those set up on the mainland against raids that might come from land.

– Safe shelter position is also important for the ships which came to shipyard to wait for their landing operations. The northwest of the island is a safe harbour usually for all seasons. Many shipyards such as Tunisia-Carthage⁹ and Rhodes-Eulimna¹⁰ were built in the inner parts of a natural bay.

– The north of the island had natural slopes for landing, which were suitable for ramps from the sea to the land. During beaching, this incline would have ensured that ships have been hauled in such a balanced way that their own weight would not have damaged them.¹¹ The incline of Dana Island slipways varies between 3% and 15% depending on the length of the slipways.



Fig. 2: Slipways side by side.



Fig. 3: Slot for cradle and hole to fix it.



Fig. 4: A Special bollard.



Map 2: Underwater Research Locations and Dana Island.

– This part of the island is suitable for cutting rock formations. Limestone as the main rock led to have suitable slope with the rock-cut process when necessary. Some structures and the cisterns behind the slipways were also shaped by being rock-cut.

– The island offers easy an approach possibilities for ships. In the northwest of the island, ships can approach the shore directly from the open sea without any obstacles.

Among the finds brought to light during the works, most of which belonged to ships, there were lead, copper and bronze pieces, and numerous iron and bronze nails, iron carpentry materials, coins, most of which attributable to periods from 4th Century BC to 6th century AD and many ceramic remains from Iron Age to Byzantine times. Few stone, obsidian and flint tools probably not related to the use of shipyards can be related to hunters from possibly Neolithic, Chalcolithic and Bronze Age.

Underwater Survey

Cilicia Region, known for its intense maritime trade, naval battles, and pirate activities from Bronze Age to Ottoman periods is now home to many wrecks and archaeological remains. The studies and archaeological activities performed in and around the region in recent years are prominent. These underwater archaeological explorations also contribute to the



Fig. 5: Grinding stones from a shipwreck.

establishment of an underwater cultural heritage inventory. In the summer of 2017 many shipwrecks, harbours and other remains have been found and listed below.

The Selçuk 1 Scientific Research Ship was used during the underwater research project. The ship contained remote operating devices, side scan sonars, chirp sub bottom profiler, dual beam sonars, underwater communication systems, magnetometers, drones and other research devices such as SCUBA equipments and cameras. A total of 35 underwater archaeologists and archaeology students including master students from UNESCO UniTwin Network Universities did work during the project. Islands, natural harbours, entrances to the rivers, capes and dangerous reefs were scanned by SCUBA diving devices including normal sea-scooters. Deepwater sites, which are far from the coastline have been researched by sonars and ROVs.

In the Cilicia Pedias region, Mezitli, Yenişehir, Akdeniz, Tarsus; in Rough Cilicia region, Erdemli, Silifke, Gülnar and Aydıncık coasts of Mersin and Gazipaşa of the Antalya coasts were the subject of studies in 2017 (Map 2).[^] About 14 shipwrecks from different periods have been found in 2017 along this coastline. Also 14 stone anchors which are usually dated to Bronze Age, stone and lead stocks, which are dated to 8th–4th century BC, iron anchors from Roman and Byzantine periods were found along the same coastline.

Mezitli coastline: Visibility of the waters of this coastline was not good in the summer season because of the alluvial fillings from Seyhan and Ceyhan rivers and of the wind direction and its waves. Standard diving methods were not used because of this reason. Sonar studies have been carried out by Selcuk 1 Research Ship in deep waters and by boat in shallow waters. No archaeological objects have been found.

Yenişehir, Akdeniz and Tarsus coastline: This coastline is just next to Mezitli and visibility was under the same conditions. The coastline has been scanned by sonars of the ship. No archaeological objects have been found due to deposits of the rivers from Cukurova that have filled almost all of the Mersin Bay.

Tarsus Karaduvar: Traces of an unknown harbour have been detected along this coastline. The harbour has no in situ position because of man-made fillings from the neighbouring factories and infrastructure works. It was probably established at the entrance of a small river. The coastline has a rich archaeological ceramic remains from the 3th century BC to the 5th century AD.

Erdemli Kızkalesi (Corycus) coastline: Visibility in the sea is better when approached from east to the west. The coastline has been surveyed by diving methods and also by sonar devices. Deep off the coastline is a sandy bottom filled by local rivers. Archeological objects from the bottom of the Roman Corycus harbour could not be seen because of the aboved mentioned reason. An excavation is needed to see the ancient layer.

Silifke Narlıkuyu Eastern Cape: This sheltered site is a natural harbour. A group of balast stones has been found at the deep of the harbour. It probably belongs to a sunken ship which had no cargo. No other archaeological remains have been found by SCUBA diving or sonar methods.

Silifke Narlıkuyu Western Cape: This sheltered site is close to the dominated wind of the region from the western direction. Two shipwrecks and other amphora remains have been found between 12–18 meters depth in this natural harbour and they are dated to the 4th–5th century AD and 11th–12th century AD.

Silifke Mavikent: This coastline is just opposite Dana Island. Some broken amphorae and other ceramic sherds have been found at 5–7 meters depth and they probably belong to a shipwreck. Type of the amphorae is Cilicia Type 6b (LR1b) and dated to the 5th–6th century AD.

Silifke Taşucu – Liman Kalesi Bay: One shipwreck with undatable amphora sherds at 2–3 meters depth has been found here. The ship probably sunk because of heavy storms along the shallow-rocky coast of this bay. Two Roman iron anchors and at least 10 amphorae also have been found from 10 to 25 meters off the south coast of the bay. Some of these remains also belong to a shipwreck dated to the 5th–6th century BC.

Gülнар Beşparmak Island and Akkuyu Cape: These sites are of notable archaeological importance because of at least 11 detected shipwrecks from the 5th century BC to the 7th century AD found between 3 to 20 meters (fig. 5). 7 stone anchors (fig. 6) from these sites can be dated to the Bronze Age and 3 stone stocks of wooden anchors can be dated to the 8th–5th centuries BC because of their typological characteristics.

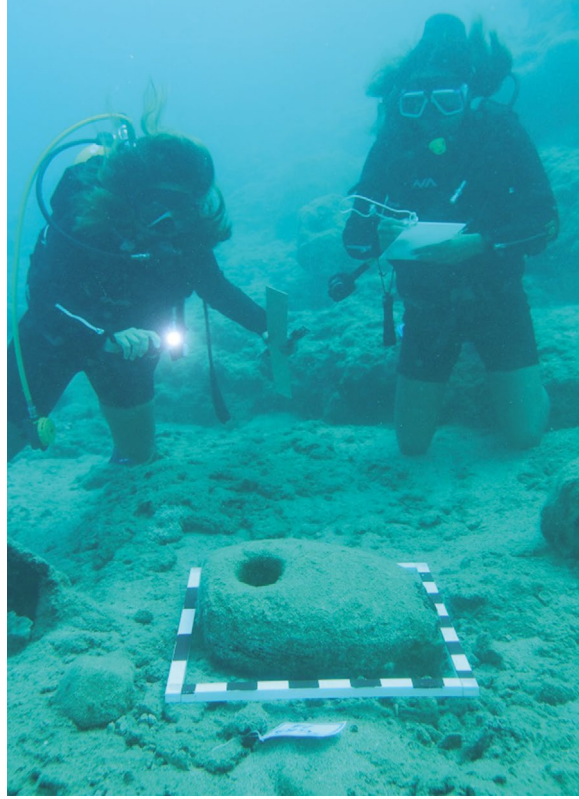


Fig. 6: A stone anchor.

Aydincık Sancak Cape: Strong currents off this cape create serious risk to ships even during modern times. This dangerous situation sent 3 ships into the deep. 2 amphorae and one plate wrecks are between 22 to 45 meters. Many of the amphorae of the wrecks can be seen with their unbroken forms.

Gazipaşa Kaladran: Kaladran is a wide bay between Anamur and Gazipaşa and a sheltered site during the dominating western wind/waves. One amphora wreck with Ganos amphorae is dated to the 11th–12th centuries AD.

In total 20 shipwrecks have been found along this coastline in 2017. Underwater surveys will be continued in the next years.

Notes

¹ The term of Neosoikos means slipways whose tops were covered, a generic term used in the 5th century BC and mentioned by Thukidites and Heredotus. Blackman 2013a, 16.

² It is thought that the term of Neoria is the name given to the whole area where the triremes are beached and re-launched and was used by Lycurgus and Andocides. Blackman 2013a, 16.

³ *Neoroion* or *Naustathomos* are military shipyards with all necessary infrastructure.

⁴ The shipbuilding areas distinct from the ship havens. Baika 2013a, 210.

⁵ Ship equipment stored areas. Baika 2013a, 210.

⁶ Durukan 2005, 7; Kurt 2015, 305.

⁷ Baika 2013a, 210.

⁸ Wooden ships must be protected from sunlight and rain during the time they are on land. The wood, which gets swollen and expands when it gets wet and contracts when it dries out, will cause the nails to stretch and the caulking between planks to loosen.

⁹ Gerding 2013, 308.

¹⁰ Baika 2013b, 340.

¹¹ Rankov 2013, 119.

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Fig. 1: by Günay Dönmez. – Fig. 2: Drone photo by Günay Dönmez. – Figs. 3–6: by Hakan Öniz.

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