

# UNDERWATER ARCHAEOLOGY AT THE ISLAND OF CRETE



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## 1. Introduction

From being the birthplace of the Bronze-Age Minoan civilization, notorious for its maritime activity and long-distance sea-trade, to its transformation into the Roman province of *Creta et Cyrenaica* and to its conquer from the Venetians who occupied it for almost five centuries (13<sup>th</sup>-17<sup>th</sup> c. A.D.), the island of Crete has always represented a place of strategic importance; a nodal point for the sea-routes of the eastern Mediterranean Sea, as well as for those that interconnect it to the West. However apart from being a maritime crossroads, Crete presents also a very interesting coastal geomorphology, the evolution of which has been defined not only by the Sea Level Rise, but mostly by the high seismic activity of the island, as it is on the boundary between the African and the Eurasian tectonic plates. As a result the western half of the island presents a coastal uplift that varies from 2m to 9m, while the eastern half presents a subsidence which, as a rate, varies from site to site depending on the different local parameters (the tectonic movement patterns are neither regular nor symmetrical) (Pirazzoli *et al* 1982; Flemming 1978).

As a conclusion, the historical and the geomorphological characteristics of the island make it a stimulating case-study for the practice of both underwater and coastal archaeology. In this presentation we will focus on the evolution of the underwater archaeological research in Crete from the 19<sup>th</sup> century until today, aiming into increasing the knowledge about it. To this end we will present a recap of the most remarkable discoveries as well as a mention to the current state of research.



Fig. 5 (photo of the author)

## 5. Other coastal and underwater investigations

During the following decades there were conducted various inspections by the archaeologists of the local Ephorates of antiquities in order to monitor the areas where harbor or infrastructure works were planned, as well as surveys from foreign scholars, focused mostly on areas near the shoreline. The above investigations revealed submerged remains of coastal settlements, significant harbor works and other 'coast-related' structures such as the shipsheds at Siteia and Matala (NE and S. Crete respectively) (Davaras 1967; Blackman 1973), a Roman breakwater at Lassaia (S. Crete) (fig.5) (Blackman and Branigan 1975), a probably Minoan breakwater at Ai-Ghiannis at S. Crete (fig.6) (Hadjidaki 2004) and the remains of the Early Minoan IIB settlement (2550-2300 BC) of Spiliada Sisiou (Simosi 2003) at NE Crete, among many others.

In addition in 2007 a team from the Ephorate of Underwater Antiquities researched some underwater areas at NE Crete and located the scattered amphora cargo (Cretoise 2a, Tripolitaine I) of a 1<sup>st</sup> - 2<sup>nd</sup> c. AD shipwreck, (fig. 7) a wreck of an airplane from World War II and the remnants of a (probably modern) ship-shell (Preka-Alexandri *et al* 2007).

## 2. The coastal survey of the British School of Archaeology

In 1955 the British School of Archaeology in co-operation with the then Ephor of Antiquities Dr. N. Platon carried out a survey on several underwater and coastal areas along the Cretan shoreline (Leatham and Hood 1958/9). The campaign led to the exploration, identification and documentation of important archaeological sites (fig.1) such as; the partially submerged Roman harbor of Chersonissos (moles, fishtanks, quays, breakwaters, as well as remains of earlier harbor works of the Hellenistic or Classical period), the submerged isthmus of the Minoan settlement on Mochlos islet, the submerged remains of a presumably Roman waterfront near the settlement of Pseira (occupied both during Minoan and Roman periods) and finally the Roman shipwreck of Aghia Galini (in particular parts of its cargo such as pottery and pieces of lead).



Fig. 1: Map with the location of the surveyed sites by the British School of Archaeology (green dots) and by the team of Cousteau (blue dots).

## 3. Cousteau's survey

In 1975, J. Y. Cousteau and his research team, invited by the Greek National Tourism Organization and the Greek Ministry of Culture and Sciences, undertook a systematic survey of the majority of Cretan coastline and discovered a great number of underwater antiquities and ancient shipwrecks, results that, unfortunately, were never regularly published. Among the most important findings were the six shipwrecks near the islet of Dia, the French warship "La Therese" (fig.2) which sank in 1669 during the Siege of Candia off the port of Herakleion and the two shipwrecks at the Samonium promontory, (fig.1) at the north-eastern end of the island (Theodoulou 2011).



Fig. 2 (Anagnostopoulos & Lianos 2000)

## 6. The foundation of the non-independent Office of Underwater Antiquities at Crete

2010 was a turning point-year for the further exploration as well as protection of the underwater cultural heritage of Crete. The Greek Ephorate of Underwater Antiquities (responsible for the whole of the Greek state) activated a Non Independent Office at Crete, which since then is responsible for the underwater antiquities of the island. In the course of the past four years the personnel of the abovementioned Office, apart from the several archaeological inspections that carried out, conducted two large-scale surveys (in collaboration with the Woods Hole Oceanographic Institution) and also proceeded towards the realization of the digital map of Crete's underwater cultural heritage, which is still in preparation (Theodoulou *in press*). As far as the two surveys are concerned they were conducted with the purpose of locating, recording and mapping the underwater archaeological sites at the area between the port of Herakleion (N.Crete) and the islet of Dia, and at the area between the islet of Gramvousa and Rodopos peninsula, at the NW end of the island. During the first one there were discovered four anchorage sites and four shipwrecks, from which one with cargo of Cretan amphorae of the 1<sup>st</sup> c. A.D.,(fig.8) one with Late Roman amphorae of the 5th-7th c. A.D. and two with amphorae of the Early and Middle Byzantine period (Theodoulou *et al* *in press*). The second survey revealed five anchorage sites used from the Classical period until the present day and six shipwrecks. In particular three shipwrecks belong to the Roman period of which one with a cargo of stone blocks weighing more than a hundred tons, the second with a cargo of amphorae and utilitarian pottery and the third with a cargo of African amphorae, two with amphorae of the Middle Byzantine period and one with a cargo of unidentified perforated stones (fig.9). Furthermore there were located the remains of a modern metal shipwreck and of a 19th-century shipwreck, which could be attributed to the HMS Cambrian that sank while bombarding pirates in the castle of Gramvousa in January 1828 (Theodoulou *et al* *in press*).

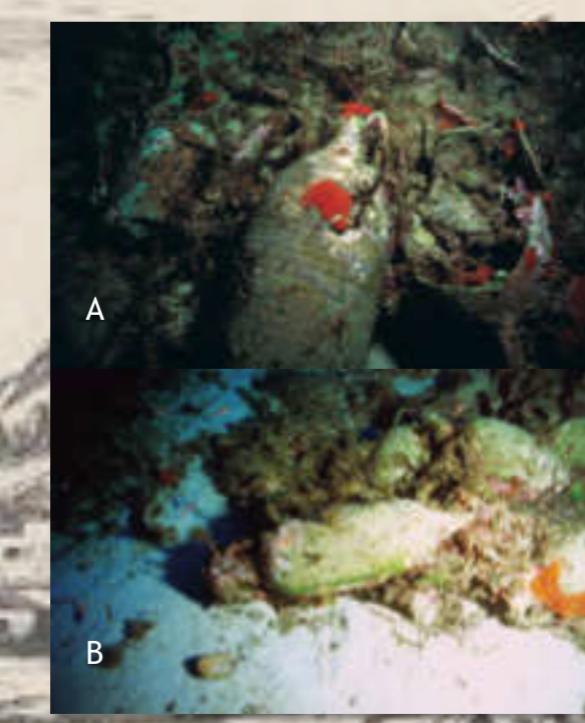


Fig. 7 A: Cretoise 2a, B: Tripolitaine I.

(Preka-Alexandri *et al* 2007)

B



Fig. 8 (@ Greek Ephorate of Underwater Antiquities)

## 4. The shipwreck of Pseira

In 2004, during underwater geophysical surveys, there was discovered the first Minoan shipwreck, dated at the Middle Minoan IIB period (1800-1700 B.C.) and located near the islet Pseira (NE Crete). For the following five years the archaeologist Dr. E. Hadjidaki and her team undertook the excavation of this unique find (fig.3). Its scattered cargo was composed mainly of amphorae, pithoid jars, beak-spouted jugs, wheel-made carinated cups and straight-sided cups, (fig.4) all dated to the Middle Minoan IIB period (Hadjidaki 2004). Unfortunately no remains of the ship's hull were preserved in the sea-bottom, depriving us of the opportunity to study the first exemplar of the notorious Minoan fleet. Despite that, the discovery of the shipwreck of Pseira remains the only direct material evidence of the extensive network of the Minoan maritime activities, which are retraced across the whole Eastern Mediterranean Sea.



Fig. 3 (Bonn-Muller 2010)



Fig. 4 (Bonn-Muller 2010)

## 7. Current state of research

The underwater cultural heritage of Crete stimulates the interest of many scholars who, as a part of their PhD dissertations, are studying various aspects of it such as the previously unpublished bronze artifacts of the shipwreck of Aghia Galini at South Crete (Brokalakis *in press*) which, as we mentioned above was discovered during the survey of the British School back in 1955 and the multidisciplinary approach concerning the evolution of the maritime cultural landscape of SE Crete (PhD dissertation in progress by the author), among others.



Fig. 9 (@ Greek Ephorate of Underwater Antiquities)

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