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Marsa Bagoush Research Project, Egypt

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The ancient site of *Zygris* (present Marsa Bagoush) was a well-known natural anchorage along the Egyptian Mediterranean coast, at least as early as the Hellenistic period. Evidence for maritime activities in *Zygris* extends until the 19th century. This project aims to carry out the first systematic archaeological investigation of the site. The remains of at least three shipwrecks have been discovered so far making the site one of the richest underwater archaeological finds along the northwest coast of Egypt.

Key words
Marsa Bagoush, Survey, Anchorage, Roman, Egypt, Amphora

The site of Marsa Bagoush

The northern coast of Egypt was one of the main maritime routes in the Mediterranean at least as early as the Bronze Age. Accordingly, plenty of archaeological and textual evidence indicate that ancient seagoing vessels sailed along the Egyptian northern coast particularly during the Hellenistic and Roman

periods (Daszewski, 1990; Majcherek & El-Shennawi, 1992; White & White, 1996; White, 2002; Robinson & Wilson 2011). Moreover, Hellenistic and Roman coastal towns were established along Egypt's northwestern coast and were mentioned by ancient authors such as *Strabo* in the 1st century BC and *Claudius Ptolemaeus* in the 2nd century AD, who made a list of the main towns and harbour sites between Alexandria and Marsa Matrouh (ancient *Paraetonium*). Among the harbour towns that were mentioned by Claudius Ptolemaeus is the ancient town of *Zygris* known at present as Marsa Bagoush (Ball, 1942: 104-5,131-6) on the northwest coast of Egypt.

In 2015, the Centre for Maritime Archaeology and Underwater Cultural Heritage at Alexandria University, with the kind support of the Honor Frost Foundation, started its underwater survey at the site of Marsa Bagoush along the north coast of Egypt. Three fieldwork seasons have been conducted so far resulting in the discovery of evidence for at least three shipwrecks from the Hellenistic, Roman and Islamic periods.

The ongoing project aims to conduct a visual survey of the site, recoding all archaeological remains using photogrammetry techniques. It also aims to carry out excavations in the areas that contain concentrations of archaeological remains within the site of Marsa Bagoush. Moreover, during the project, ceramic and wooden samples from the discovered material will be raised for analysis and dating. The project ultimately aims to develop a management plan for the site so it could be utilised as a field school for underwater archaeology.

Marsa Bagoush is a natural anchorage located 250km west of Alexandria (31°10'46.30"N 27°40'4.65"E). It takes the form of a bay about 900m EW x 300m NS, with a maximum depth of 12m (Fig. 1). The small bay is well protected by a rocky headland that projects from its eastern end and by a series of submerged reefs that reduces wave action inside the bay. This made the place suitable for ancient ships seeking protection during their voyage along the northwest coast of Egypt. However, the existence of submerged reefs at the entrance of the bay close to the water surface represents a hazard for ships entering the bay during rough seas. Hence, entering the bay is through four deep passages between the submerged rocks. These passages from west to east are 80m, 50m, 130m and 120m wide respectively.

In 1861, as part of a coastal survey of North Africa, the British Royal Navy surveyed the site of Marsa Bagoush and published the first map of the site (Fig. 2). However, the first mention of archaeological remains from the site of Marsa Bagoush was in a note published in the *International Journal of Nautical Archaeology* in 1996 (Abdel Aleem, 1996). In that note, the late Egyptian Oceanographer Anwar Abdel Aleem wrote about a discovery that he made accidently in 1968 in the bay of Bagoush, which he believed

to be the remains of an ancient shipwreck. In 1996 the Institute of Nautical Archaeology (INA) conducted a limited survey of the site where few intact early Roman amphorae were located. However, no further exploration of the site was made, until the rediscovery of the site in 2010 by a team from Alexandria University.

In June 2010, underwater archaeological remains from what is believed to be an ancient shipwreck were accidently discovered at Marsa Bagoush by a group of researchers from Alexandria University. However, actual investigation of the site did not start until 2015 when the Alexandria Centre for Maritime Archaeology and Underwater Cultural Heritage started its systematic survey of the site (Fig. 3).

The Survey

During the survey, at least three separate clusters of ceramics were discovered along the northern edge of the bay. They extend from east to west and measure 100 x 200m, 50 x 50m and 100 x 50m respectively (Fig. 4). Each of the clusters consists mainly of concreted broken amphorae in addition to other materials such as glass, wood and glazed pottery. However, it has been noted that the three main clusters of remains are located directly to the south of the series of submerged rocks that delineate that entrance. The existence of the rocks to the north of the archaeological remains was probably the reason for protecting them against the violent wave action and hence prevented the remains from being dispersed all over the bay.

The remains of at least 150 amphorae were recorded during the survey. However, a closer look at those submerged remains revealed that the majority (*c.*110 amphorae) belonged to the early Roman period, which indicates the existence of at least one shipwreck of that date. The early Roman amphorae were mainly of two types: the Amphore Égyptienne 3 (AE3) and the Amphore Égyptienne 4 (AE4). Both types were produced extensively during the Roman period in the Mareotic region west of Alexandria (Empereur, 1993: 46; Scillano & Sibella, 1994: 87; Empereur & Picon, 1998: 77; Tomber & Williams, 2000: 43-52; Senol, 2003: 195-7). In addition to the amphora, several wooden fragments were found including a number of frames and what appears to be part of a yard as well as several ceramic roof tiles. The rest of the discovered remains date back to the Late Roman/Islamic period. That included Islamic glazed ceramic objects, two large intact storage jars, and two four-armed grapnel anchors (Fig 5). That indicated the existence of a second shipwreck inside the bay. Moreover, the survey extended outside the bay to the north of the rocky headland that delimits the eastern side of the bay. Evidence for concreted Hellenistic Egyptian amphora were found which implies the existence of a third shipwreck.

The seabed and the concentration of archaeological remains were modeled using photogrammetry techniques. The 3D representations are used for the study of the site formation processes and the distribution of artefacts. Moreover, a collection of 40 diagnostic amphora fragments was raised to the surface for study. The collection was chosen to cover all types of amphora found inside and outside the bay. The collection was then cleaned, documented, photographed, and placed back underwater in a deeper site outside the bay (Fig. 6).

Based on the initial study of the amphora collection, the dating of amphora ranges from the 3rd century BC (Zenon amphora from Knidos), until the 6th century AD (Late Roman 4 from Gaza). Accordingly, this is an indication that the site was a well-known anchorage during the Hellenistic and Roman periods. On the other hand, ceramic samples from what appears to be an Islamic medieval shipwreck were collected for more precise dating. However, initial study of some ceramic objects indicates a date from the 12th–14th centuries AD. Yet, more studies are to be carried out before a precise date and origin could be identified.

On the other hand, according to the *Stadiasmus Maris Magni*, an ancient Roman periplus detailing the ports ancient sailors encounter on the shores of the Mediterranean, the site of Zygris (Marsa Bagoush), was an anchorage site with access to fresh water (Beresford, 2012: 193). Hence, a preliminary survey was carried out on-land to the south of the shoreline with the aim of locating evidence for the existence of an ancient water source. The survey resulted in discovering a series of interconnected rock-cut cisterns *c.*400m south of the shoreline, probably dating to the Roman period (Fig. 7). The cisterns were at a depth of 4m below ground level, while their depth was *c.*2m. They ranged in length from 11m to 40m. It was noted that the cisterns still held water, which is currently being used by the locals for irrigation. A 3D photogrammetry model of one of the cistern systems was developed and in the coming seasons the cisterns will be scanned using a laser scanner to develop an accurate plan of their design and extent.

Extending the survey southwards, it was noted that several areas were covered with ceramic sherds. Moreover, further to the south, at a distance of *c.*2km from the coastline a typical Hellenistic/Early Roman rock-cut tomb was found. The tomb contained eight rock-cut burial *loculi*. The existence of tombs indicates the possible existence of a residential area in the region probably in the vicinity of the fresh-water springs.

Another indication for the significance of the Marsa Bagoush site was the discovery of several WWII fortifications *c.*780m south of the coastline. The buildings were associated with an airplane runway, of which remains can still be seen.

Initial research revealed that the site of Marsa Bagoush was a major transit camp for the Royal Air Force during WWII, and in 1941 it was the base of No. 113 Squadron RAF. Probably this was also associated with the existence of fresh-water sources in Bagoush.

Future work

During the coming season, excavation of some silted spots inside the bay will be conducted using water dredges in order to expose and record the buried remains. Moreover, fabric analyses of ceramic samples will be carried out to determine clay type and possible origin. Also, wooden samples will be collected for dendrochronological dating. More exploration of the deeper water outside the bay between 15m and 25m will be also carried out. Finally, a management plan of the site will be developed with the objective of preserving its remains *in situ* and utilizing the site as a training facility for underwater archaeology.

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Figures

Figure 1: The site of Marsa Bagoush (Ancient *Zygris*). (Google Earth)

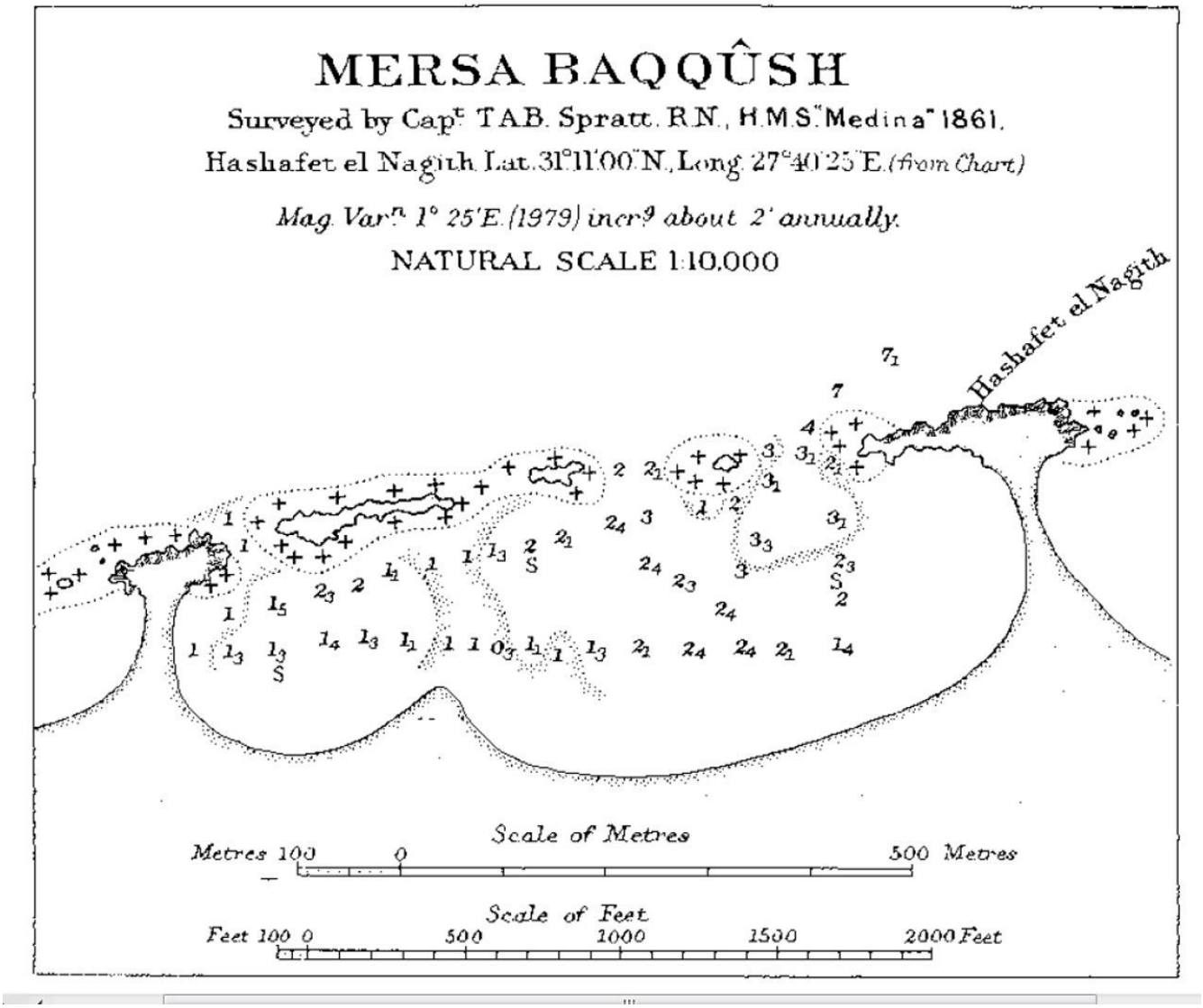

Figure 2: A map of Marsa Bagoush produced by the British Navy in 1861. (The Alexandria Library)

Figure 3: Amphora remains discovered at Marsa Bagoush. (CMAUCH)

Figure 4: Several clusters of ceramics were discovered along the northern edge of the bay. (Google Earth).

Figure 5: One of two grapnel anchors discovered in the site. (CMAUCH)

Figure 6: Amphora samples raised for the site. (CMAUCH)

Figure 7: One of the cisterns discovered during the survey. (CMAUCH)

Figure 8: A Roman Tomb discovered during the surrey. (CMAUCH)