

A Preliminary Report on the excavation of an underwater site near AUB Beach Ain el Mreisseh, Beirut

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The finding of an underwater site in 2008, led to its excavation by the authors in 2013. The site contained a number of thick walled sherds, including one with a distinctive large handle. A number of these sherds were wedged under an ovoid stone anchor of a type typical of the Iron Age Levant. These artifacts, along with a section of a column indicated that the site was possible that of a wrecked ship. Excavation of the site revealed the place was more than an Iron Age date, and probably more likely an anchorage used in the various periods of the Beirut seafront.

During August 2013 an underwater archaeological excavation was conducted at Ain el Mreisseh, Beirut, in the vicinity of American University of Beirut Beach¹. The site was first brought to the attention of the authors in 2008 by a local sport diver as the place is widely known among the diver community and visited by them frequently. During this first exploratory dive, a significant number of artifacts, mostly ceramic sherds, a section of a stone column and a large stone anchor were visible, scattered over an area of approximately 50 square meters on the rocky and sandy sea bottom. It was postulated to be a possible Iron Age shipwreck site, perhaps dating to the 9th century BC. This date and hypothesis was derived from an ovoid stone anchor found in the site (**Fig. 1a and 1b**), which is reminiscent of Phoenician-age anchors (Toth, 2002), as well as from that of a sherd with a large handle (**Fig. 2**) that appears to have parallels to pottery styles dating to the Iron Age.

At the beginning of the project the site was found to have been looted. All the surface artifacts seen in 2008 except for the anchor had vanished. Excavation revealed, however, that much archaeological material lay beneath the sea floor.



Fig. 1A- The anchor, top view.



Fig. 1B- The anchor in profile.

Methodology, recording and documentation

The site (Fig. 3) lay in 13 to 14 meters of sea and approximately 200 meters from the coast. Due to the nature of the site and its close proximity to the public waterfront mechanical equipment such as a compressor for airlifting would have aroused too much attention from passers-by and divers. Thus, the simple yet practical method of hand-fanning was used as the sole excavation technique. While this methodology slowed progress considerably, no interference from sport divers or fishermen was experienced, thereby validating the approach.

Ahead of the excavation operations, the limits of the site were set and the surface material recorded. Position fixing was done by taking GPS co-ordinates, and transits were taken to establish the accurate site area. An initial six datum points, later expanded to nine, were inserted into the sea floor to set fixed points from which direct distance measurements would be taken for the mapping and recording of sondages and objects. All objects were measured from three of the control-points and the data transferred into Site Recorder 4, a GIS program on loan from the Institute of Nautical Archaeology (INA).

The site was divided into twelve sondages organically adapted to the natural rocky formations of the sea floor (Fig. 3). Artifacts were photographed underwater *in-situ* with a scale and north arrow and their depth recorded prior to their removal from the seabed. A number of artifacts were concreted into the rocky formations and needed to be chiseled out.

Upon their retrieval, artifacts were given accession numbers and recorded in the dive logs. They were then mechanically cleaned of concretions, desalinated, air dried, and photographed.

Scuba diving operations were led from the dive boat "Bismarck", a launch from Calypso Dive Center equipped with the necessary First-aid kit and O2 providers. There were two dives per day, each lasting approximately 50 minutes, with adequate surface time for dive safety, using both air and Nitrox mixes. The team of four people dived together at the same time as the site was shallow with clear visibility averaging



Fig. 2- Detail of the handle of sherd AM001.

5-8 meters with a light current, and the sondages were close to each other. Each team member kept a dive log that included dive operations, tasks and work goals, sketches, and results. Recording also involved a photo-mosaic of the site which was integrated into site recorder and used to draw the morphology of the sondages (Fig. 3).

Site Morphology and Stratigraphy

The site is located on a relatively-flat rocky platform consisting of pockets carved naturally into the platform that were filled with archaeological layers and sedimentation deposits. The most prominent objects visible on the surface of sea bottom were the stone anchor and the column.

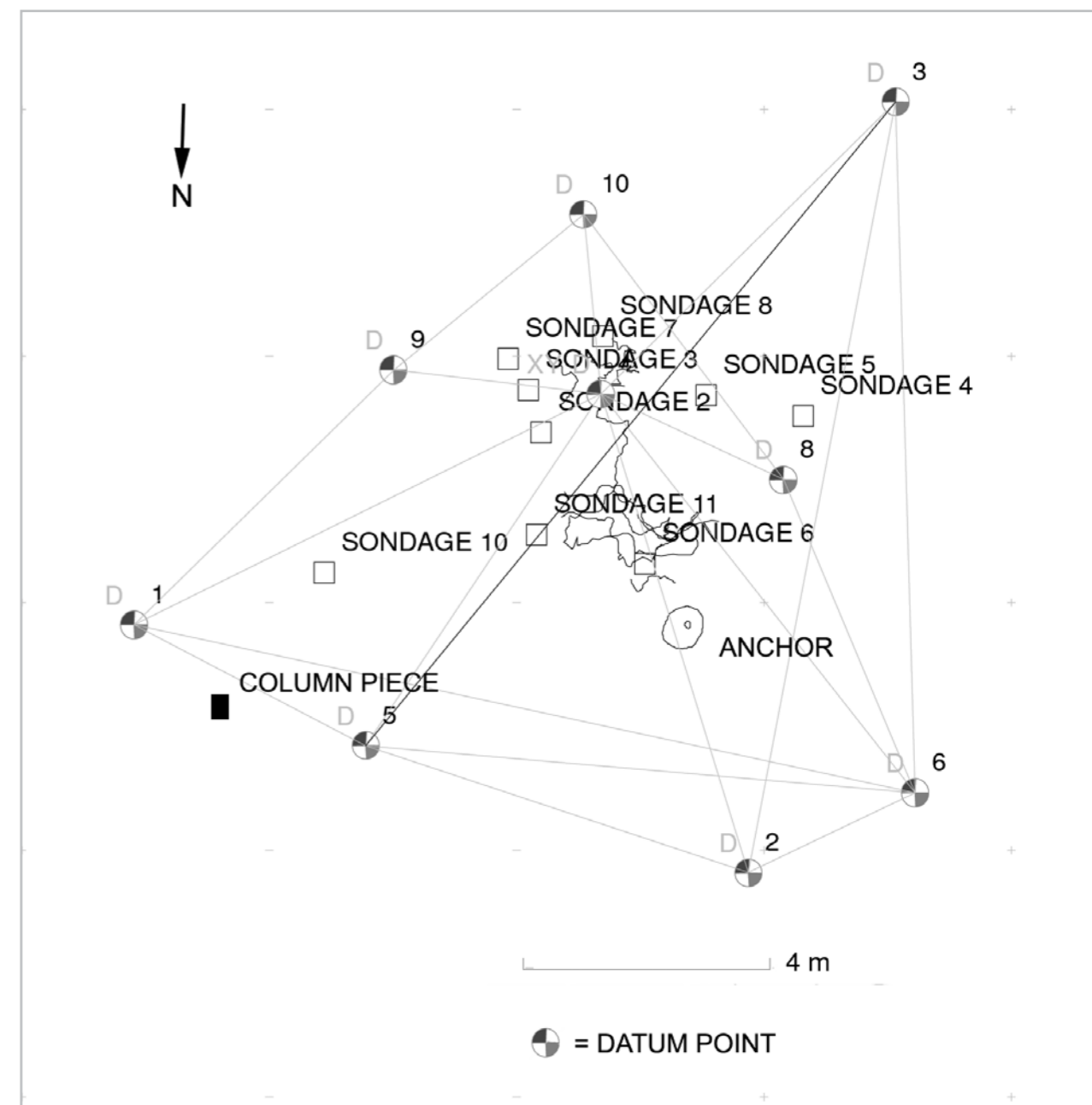


Fig. 3- The site plan showing the datum points, sondages, and the two major stone artifacts.

The site stratigraphy consisted of five strata of differing depths throughout the site although each layer was not present in each of the sondages. Stratigraphic interfaces could not be accurately discerned as the transitions from one stratum to the next were not clearly delineated. The surface layer (stratum I) consisted of loose sand underneath which was a blackish grey layer of sand mixed with decaying organics (stratum II). Beneath this was a layer of sand and pebbles (stratum III) where a number of sherds of differing ages were found. The next layer down (stratum IV) consisted of gray cobbles of varying sizes with more compacted sediments. These stones were mostly clean of marine growth indicating that they were quickly covered after deposition. Beneath the cobbles was a fine silt layer (stratum V) under which was bedrock. The team excavated between 40 to 70cm of sediments in the different sondages. The bedrock was reached in some of these whereas archaeological layers were still present in others, at the time of closing the project. As layers were removed from the surface down, the limits of the each sondage became narrower, rendering the removal of sediments difficult and tedious.

Field Conservation

All the ceramics were immersed in desalination baths and then carefully dried in the shade. No salt deposits were observed after drying. Organic concretions were mechanically cleaned. Except for the gluing of some sherds to form larger pieces, no other conservation measures were conducted during the field season. Some artifacts of wood and metal (lead, iron) were kept wet to avoid degradation. Two large stone objects—a column fragment of granite, and the stone anchor—required no conservation measures beyond surface cleaning.

Artifacts were handed to the Directorate General of Antiquities for storage at its depot in Tehouita, Beirut for future study. The stone anchor is stored in the archaeology laboratory in Fisk Hall on the campus of the American University of Beirut.

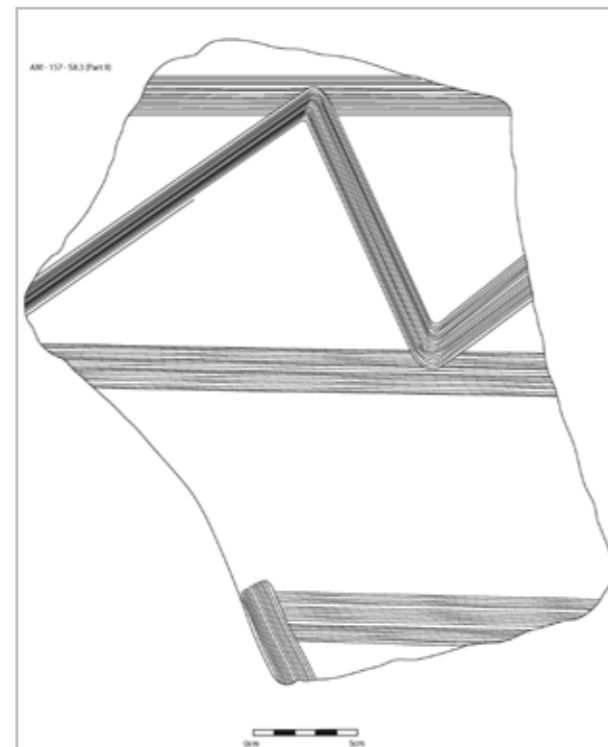
In post-season conservation, the metal objects were X-rayed at the Saint Joseph Medical Center in Beirut and were subsequently given to Isabelle Doumet-Skaiff for conservation at the DGA laboratory. They are still

undergoing desalination in distilled water at the time of the writing of this article. The foreseen treatment includes mechanical cleaning of the surface calcareous concretions of the pieces with a well-preserved metal core.

All the ceramic objects were professionally photographed on a white background and with a scale, using a Canon DSRL camera. Twenty-seven diagnostic sherds were drawn, and drawings were digitized using Adobe Illustrator.

The Artifacts

Over the course of the field season 265 ceramic sherds were excavated. The cultural origins for many of these need to be determined, but clearly there are a number of Byzantine, Roman, and Iron Age sherds. Most of the sherds are body segments, although a small number of rims and handles were found. Many of the sherds are plain, without decoration, but a number contain ribbing, rilling, or combing, with the ribbed sherds presumably Late Roman/Byzantine. One sherd (**Pl. 1**) decorated with combing in bands and a zig-zag



Pl. 1- The zig-zag design on a sherd.

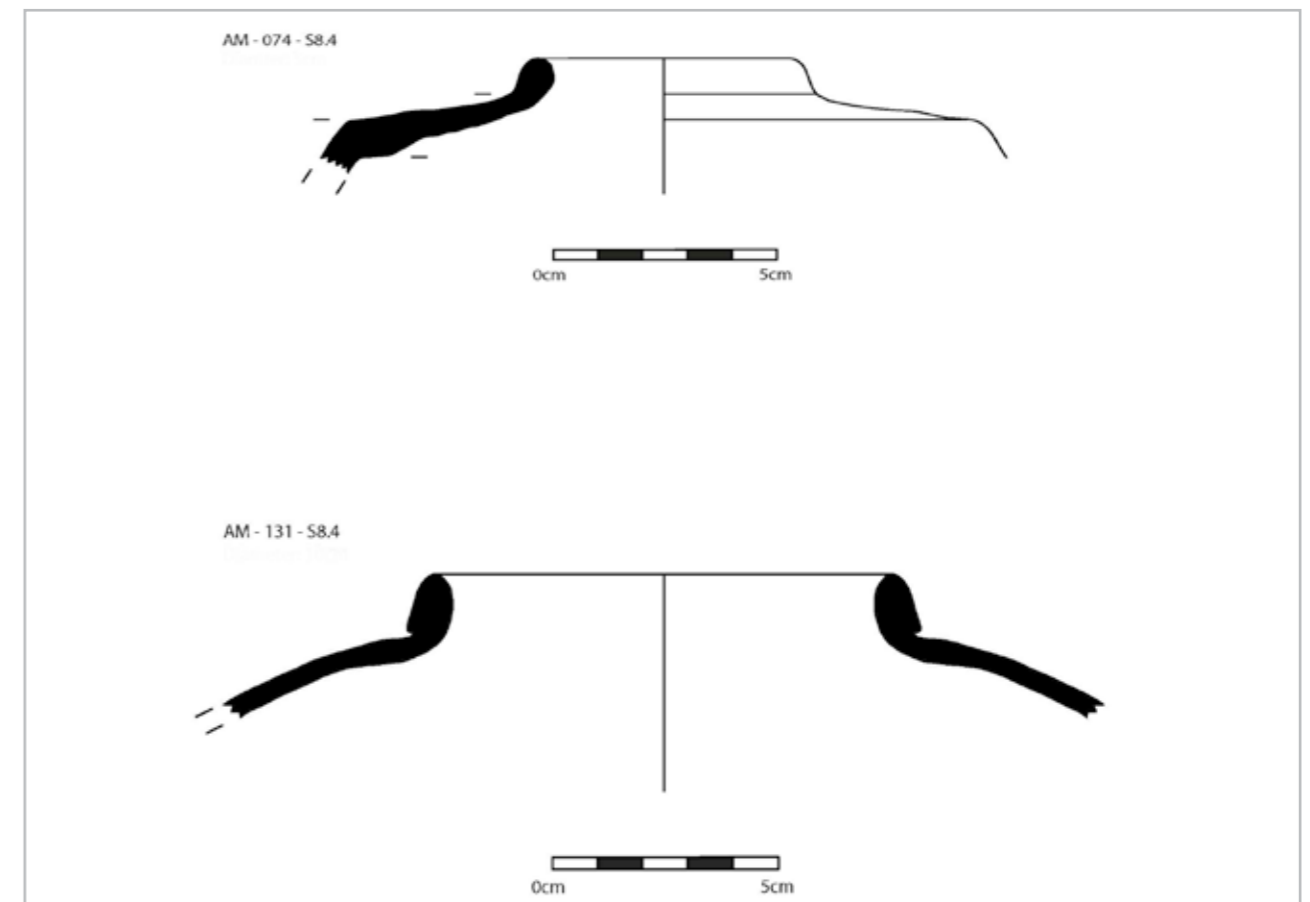
pattern has yet to be identified. Two sherds (**Pl. 2**) containing rims appear to date to the late Iron Age/Persian period.

The first artifact (**Fig. 2**) excavated is perhaps one of the most enigmatic. It is a sherd of a thick-walled vessel with a large handle. The inner surface of the sherd contains no wheeling marks and is irregular indicating that the vessel was hand-made and not thrown on a wheel. There were no decorations on the outer surface. The curvature of the piece indicates a large vessel perhaps 70 cm or more in diameter. Handles perhaps displaying an affinity are seen on Iron Age I (11th/10th century) pithoi from the Levant particularly from sites such as Megiddo (Arie, 2006: 285). It is possible that the sherd belongs to a pithos, or dolia if it is of a later date, or to a large amphora, but without other fragments of it, and pottery provenience analysis, a precise diagnostic of the vessel is as yet not possible.

Friable Sherds

Stratum V often contained a few sherds of the Iron Age as well as a number of a highly friable nature sometimes resting on bedrock, indicating their early deposition in the site. The friable sherds, only a few centimeters across, (**Fig. 4**) had a dark-brown fabric, and a number of these were covered with a whitish calcareous coating. The friable sherds tended to break apart upon exposure with a number quickly disintegrating into powder. Upon drying, however, the friable sherds became stable and harder. A few pieces with simple rims were found on the sherds, but no handles were found, nor were there any discernible decorations on the pieces.

The provenience of some of these friable sherds within the site is made clear from Sondage 8. A stack of body sherds seemingly of Roman or Byzantine



Pl. 2- The rim sherds tentatively identified as belonging to the Iron Age.



Fig.4- A highly friable sherd found in the deepest levels of the site.

origin was found in the southern end of Sondage 8 in stratum II and covered by a large coral head. Thus, they were in a sealed, undisturbed context. Below these sherds was the gray cobble layer (stratum IV), and underneath this was a small stack of the friable sherds resting on bedrock. It seems clear from this context that the friable sherds predate both the “Roman/Byzantine” ceramics and the cobble layer. Without distinctive features, the cultural identification and temporal context of the friable sherds cannot yet be determined, although they seem to be the remains of poorly-fired utilitarian ware.

Metal Artifacts

A small number of metal artifacts found include a small lead bar; a concreted object that may be a nail; and two pointed lead objects with a “cupric” point or nib inserted in their ends (Fig. 5). The two lead objects are tentatively identified as tools, i.e. shuttles, used to sew or repair fishing nets. A small folded lead rectangular sheet (Fig. 6) may be a fishing net sinker. A typology of stone and metal net sinkers from the Eastern Mediterranean has been compiled by Galili, *et al.* (2002), based on the finding of more than 1200 fishing net sinkers from the sea in the southern vicinity of Haifa (Galili *et al.* 2002: 184). These were divided into two main classes, L1 and L2, according to the manufacturing mode, which were also sub-divided into three sub-classes according to shape. An earlier typology of net sinkers had been compiled by Oleson (1994) who had established 12 types found at the Roman port of Caesarea Maritima. Hence, the net sinker from Ain el Mreisseh corresponds to Oleson’s type 12 and Galili, *et al.*’s type L2.3, which is also known as “folded rectangular lead sinker (FRLS)” (Galili *et al.* 2002: 187-188). Similar sinkers were found at the site Jiyeh, South Lebanon (Szulc-Kajak 2013) and at other Eastern Mediterranean sites such as at Uluburun (Pulak 1988; Pulak 2005: 65), Yassi Ada (Kuniholm 1982), Serçe Limanı (Van Doorninck 1997), Ashkelon (Galili *et al.* 2010), and Dor (Galili & Rosen 2008), to name a few.



Fig. 5- AM172.S10.6. A lead object with a cupric nib.

The aspects of lead sinkers have not substantially varied in the Eastern Mediterranean through time or cultural change since at least the Bronze Age, and thus their dating according to typology alone is challenging (Galili *et al.* 2002: 194). The net sinker from Ain el Mreisseh was found in Stratum V which contained ceramic sherds from the Iron Age period, but given the seeming amount of perturbation at the site, as mentioned, caution in assigning such a date is warranted.

Stone Objects

Notable stone artifacts include the anchor and the column segment, along with what appears to be a small stone fishing weight (Fig. 7). The stone anchor measured approximately 55cm x 24cm x 15cm and appeared to be limestone. The measurement and the specific density of material for limestone place the anchor in a range of 230 – 240 kg, which is too heavy to be moved easily, and possibly one of the reasons why it was still on site.

The column segment was 58cm x 39,5cm x 17cm and seemingly made from granite. Applying the same specific density calculation, but for granite, the weight of the object can be estimated at 180 kg. The surface of the column is without decoration or fluting. What original size of column the segment represents is not known.

The stone fishing weight is a flat, grey-colored stone approximately 5 cm. across with a hole near one corner. The hole is not natural and is clearly punched



Fig. 6- AM087.S.5 The lead net weight.

and not drilled as the hole shape is irregular with deep cratering on one side as befits such perforation. The small size of the object indicates it is a weight used in fishing. Whether it is for use on a net, along with other weights, or as a sinker for line fishing has not been determined. Numerous such weights have been found in archaeological circumstances in the Levant, reaching back at least as far as the pre-pottery neolithic as evidenced by the site Atlit-Yam (Galili, *et al.* 2013: 149; Galili, *et al.* 1993).

Analysis and Summary

Determining the nature of the site is difficult. It is clear that the site contains more than the expected Iron Age material, and that Iron Age artifacts for the 2013 season form only a small part of the assemblage.

The most-likely determination is that the site is an anchorage that remained popular over the centuries, although this remains to be seen by further study and future excavation. A wider survey of the Beirut waterfront is also warranted in order to attain a deeper appreciation of the ancient maritime cultural landscape. The mixing of ceramics from differing periods in the strata could be due to perturbation from sea life, storms, and anthropic activities as the area is a popular sports diving and fishing location.



Fig. 7- AM194.S9. A stone fishing weight.

Note

1- In addition to the authors, the team included Dorothy Chakra, Monica Jubaili, and captain Hussein al Hajj. We were assisted in raising the anchor and other unwieldy objects by the staff and associates of the Calypso Dive Club.

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