

Jane C. Waldbaum Archaeological Field School Scholarship Field Report

Due to the extreme generosity of the Archaeological Institute of America in awarding me a Jane C. Waldbaum Archaeological Field School Scholarship, I was able to participate in an archaeological excavation at the ancient city of Aeclanum and an underwater site survey at the sunken port of Portus Iulius this past summer in Italy. Attending these field schools allowed me to combine my education in classical archaeology with hands-on experiential learning in the field, and was the culmination of a lifelong dream to excavate on a classical archaeological site.

Aeclanum demonstrates settlement as far back as the third millennium by the Gaudio Culture. Located on the Via Appia in ancient Hirpinia, it encompasses an area of approximately 18 to 22 hectares, and is believed to have been founded in the fourth or third century BCE by the Hirpini, a tribe of the Samnite people. Following the establishment of a colony at Malventum in 268 BCE, Aeclanum possibly became the most important Hirpinian settlement, and following the Roman social war when Aeclanum became a Roman municipium, receiving Roman citizenship. After Hadrian turned Aeclanum into a colony in 120 CE, the city and the surrounding area continued to expand, only declining after the earthquakes in 346 CE and 375 CE and the later eruption of Mount Vesuvius in 476 CE. Following these events, the city demonstrated slower growth, but still became a Christian bishopric in the fifth century, which lasted until the seventh century. The appointment of the bishopric demonstrates how important Aeclanum was to the region, as Beneventum was only 15 miles away containing a seat of papal power. It was the invasion of Constantine II in 662 CE from which the city never recovered, shrinking into a small town named Quintodecimum, disappearing altogether by the eleventh century CE.

In 2016, a survey of existing topography and a mapping of pre-existing structures were carried out to determine the focus for future excavations. With the use of ground penetrating radar (GPR), the possible locations of the forum and theatre developed along with further data on the road network. In 2017 the first full season occurred at the site, resulting in the discovery of the forum and the first century CE theatre, believed to be the first Hirpinian theatre ever discovered. In 2018, focus turned to the theatre and the baths using excavation, survey and photogrammetry, continuation of GPR examination and geophysical survey of the urban centre, excavation of the Via Appia and excavation of a trench which demonstrated three unknown possibilities on GPR. Further, a project to 3D render the villas using photogrammetry was started.

Aeclanum is divided broadly into two categories based upon excavation date, 1960's versus current, where the previously excavated areas are open to the public, while the four trench locations currently undergoing excavation are closed to visitors (trench in Italian 'saggio').

Saggio 2: The bath complex

Saggio 5: The theatre

Saggio 11: Located between the forum and a Roman road

Saggio 12: The Via Appia

I was assigned to Saggio 11, a trench selected based on GPR which indicated the existence of three possible features. There were many different context layers I worked in, which exposed me to differentiating and excavating various stratigraphy layers, learning what a cut line was and how to work through layers of information to arrive at a determination of where one stratigraphy layer ended and a new one began. Initially I was assigned to remove what was believed to have been a robber's fill of material situated on top of one of the GPR targets. The material was rubble fill and all the finds recovered were small scattered ceramic, bone and marble fragments, consistent with the hypothesis it was frequently robbed and re-filled. As time progressed, I moved to other areas within the trench, removing different stratigraphy layers to determine the overall picture of what was occurring. Over the two weeks, extensive ceramic, bone and marble fragments were uncovered, along with 3 loom weights, the handle of an amphora with some of its rim still attached and charcoal deposits. During the excavation period, I had been exposed to extensive photogrammetry training, pottery washing and basic pottery education, extensive trench excavation and small finds sorting and exposure to botanical flotation and sorting of the recovered materials.

Prior to participating, I had developed training goals or aims for each field school regarding specific outcomes I had hoped to obtain by the end of their programs. With the completion of the programs, an assessment of the hypotheses can be made.

From Aeclanum:

1. My first goal was to "perform a site survey using various tools including a walking survey, GIS map reading, a total station and the GPR. Included with the various survey tools is an ability to allow interpretation and analysis of the data from the various survey techniques to determine the appropriate locations to carry out an excavation."

As the site was now in the excavation stage, a walking survey was not able to be fulfilled, but the other goals were met. I had been able to use a total station to plot data points from the site and transfer the data to a GIS program and was provided with basic instruction in the reading and interpretation of the GIS maps for the trench I had been working in and the site overall. Further, I had extensive photogrammetry instruction which was an invaluable learning experience.

Regarding GPR use, there were no further assessments carried out at the site, but working at the trench was the best example of GPR data assessment. Although the GPR data indicated three possible changes at my trench location, the fact that the biggest location turned out to be a stone robber's fill is the best

demonstration that GPR can only provide information of changes in the ground and even to an expert reading the data, the results can turn up negative.

2. My second goal was to “properly carry out an excavation in a trench and process the resultant finds, including the recording of all activities in the trench and finds from the trench.”

The field school taught me how to properly work in a trench and to use the various tools available. By the end of the period, I was able to record data on their respective recording sheets, and measure, photograph and draw out a scale map of the trench as well as take elevations using a theodolite and total station.

3. My third goal was to “examine ceramics using textual resources to identify and catalogue ceramic finds.”

This was unable to be fulfilled. By the end of the period, I was more familiar with different pottery types due to handling them for labeling and washing, but the period I was there was not setup for identifying and cataloguing ceramic finds. Taking a pottery specific course would be better suited for this goal.

Portus Iulius and Baiae were the focus of the second portion of the field study. All the dives for field work were carried out at Portus Iulius while two dives for educational purposes were undertaken under the direction of a local archaeologist at Baiae.

Baiae and Portus Iulius are located within the Baiae Underwater Park, a marine protected area in the Phlegraean fields, and range from 2 to 12 meters below sea level due to the oscillating actions of bradyseism. These oscillations are extremely site specific, to the degree that Baiae and the Via Herculanea are found approximately 6 meters below sea level, whereas a site three miles away has not changed its level since 37 BCE. This movement and morphology of the land is due to the area being located within the Campi Flegrei caldera (CF caldera), an active volcanic district. Combined with gradual sinking, sea level rise has added coastline loss of several meters over the last 2000 years.

Portus Iulius, constructed around 37 BCE to meet the demands of war, was only in operation for 25 years. Baiae on the other hand, was known since antiquity as a region of luxury and of vice to be avoided and for its hot springs, which were thought to have curative effects. Settled by the Greeks in the 8th century BCE, it served as a centre for mysterious religions by the 6th century BCE.

Excavations have been occurring at Baiae since the discovery of marbles in the 1920's and has been a major area for research in Italian underwater archaeology, such when the method of dividing an area into a grid pattern was first used first here in the 1950's and more recently between 2011 and 2013, with a study using laser scanners documenting the restoration within the underwater park.

By designating the area an archaeological park, the ability to dedicate resources for park management while providing protection, enhancement and conservation of the site and public education can occur. Encompassing 176.6 hectares, the park became a reality in 1994 with the suspension of commercial port activities. In 1996, personal pleasure crafts were prohibited and a final cessation of activity occurred in 2001. This was extremely important due to the shallow depth of the sites involved. By opening the park to the dive companies and for education, there has been an increased engagement in site protection and preservation, as previously the site suffered from destruction and theft from visitors; now the dive companies are protecting the site.

In summary of my time at the field school, I was able to gain exposure and familiarity in working underwater at a site that, due to its shallow nature, presented unique challenges. Doing a line survey underwater (whether using a rope to assist in maintaining a line or maintaining a line without a rope) looking for objects that look different from the surrounding territory and investigating them further, is similar to how I would imagine a walking survey on land would be. By investigating the little details that do not seem to belong is how I was able to locate wooden barrel remnants and timbers, as they stood apart from the surrounding environment.

Having experience with photogrammetry on land was invaluable for recording images underwater. As I was aware of the photography requirements, I was able to record the photographs while dealing with the shallow environment and the complications provided without the need to communicate complicated information underwater. Taking photos while compensating for the strong wave action and currents allowed me to improve my photographic techniques while simultaneously improving my ability to maintain my positioning.

Following all measurements and photographs, we re-buried the objects under a layer of the seafloor. The simple technique of covering the wooden pieces of lumber and barrels, tesserae and tile follows the recommended practice for the preservation of underwater materials, which is based on the premise that *in situ* protection of underwater sites should be the primary option over activities directed towards research. This is based on the concept that certain environments are capable of slowing deterioration. This practice has been stated by the United Nations as Rule 1 under general principles concerning activities directed at underwater cultural heritage, stating that the protection of underwater cultural heritage through *in situ* preservation shall be considered as the first option. Using reburial as the means of preservation is based on the idea that by replicating the original burial site, the material will continue to be preserved, protected from human and natural activity.

An extremely positive aspect of the underwater portion was the integration of excursions to local archaeological sites. It is one thing to excavate on land or in water, but it is another to work in the morning and then tour a historical site in the afternoon, viewing

artifacts, landscapes and buildings which make up the local history. This allows for a greater holistic experience compared to only participating in underwater or land activities.

From the field school for Portus Iulius, my goals were as follows:

1. My first goal was to “expand on the site survey techniques from Aeclanum and transfer them to the underwater world, learning how to reconstruct the data onto maps and diagrams while taking account for spatial distortions underwater and reading and interpreting sonar data.”

This goal for the most part not able to be completed. We were taught how to carry out a line survey both with and without a rope line while looking for objects and specific rooms, but did not transfer the data onto maps and diagrams. Further, the chance to learn how to deal with spatial distortions did not occur, as we did not use sonar to locate objects.

2. My second goal was to “expand on the site excavation techniques from Aeclanum and apply them in the underwater locations, learning about the different techniques required for the preservation of artifacts and ecofacts recovered underwater and handling underwater specific tools and equipment.”

This goal was successful. I was able to carry out basic excavations of tile and wooden artefacts using wave action created from body motion to remove the sediment from the objects without the risk of damage. Following measurements and photography of the objects, I learnt about basic preservation techniques, as we re-covered the objects completely with the sea floor sediment. The objects used for measuring and photography are not any different than those used on land. The only added difficulty is dealing with the wave and current action when trying to move about to place the tools or to take photographs. Further research on the preservation of underwater artifacts has resulted in a much greater understanding and degree of knowledge about the preservation of underwater objects and supports the work done at Portus Iulius.

3. My third goal was to “expand on the ceramic identification knowledge gained from Aeclanum, enhancing the ability to classify ceramics and apply relative dating techniques on the finds.”

This was not able to be fulfilled, as in the end we were not collecting, looking for, or examining any ceramic material. As the focus of the week was strictly to carry out surveys to locate wooden objects, the ability to work with ceramics was nil.

I cannot thank the Archaeological Institute of America for awarding me a Jane C. Waldbaum Archaeological Field School Scholarship enough for allowing me the opportunity to attend the field schools this past summer. Having the opportunity to attend these field schools was an invaluable experience that would not have been able to occur without their generous

support. Besides the archaeology related experience gained, the time spent working in Italy side by side with the other students and volunteers exposed me to the greater international community, and daily discussions with the students from all over the world helped educate and inform me of other cultures and values that I would not have been exposed to. Finally, due to living in a small community with the daily exploring and dining put and about in the community, I was exposed to and immersed in local cultures and values that I would not have otherwise been able to experience.