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Πρακτικά της 3ης Συνάντησης
Ρέθυμνο, 5-8 Δεκεμβρίου 2013

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The excavation at Mesolithic Damnoni in the Agios Vassilios Region: A new chronological/cultural period on Crete[1]

Thomas Strasser, Eleni Panagopoulou, Panayiotis Karkanas, †Chad DiGregorio, Miriam Clinton, Nicholas Thompson, Epaminondas Kapranos & Sarah Murray

Damnoni cave is a Mesolithic site located on the southwest side of Crete, in the Rethymnon district (fig. 1). The site was found by a targeted survey method used with success in the Kandia region of the East Peloponnese (Runnels *et al.* 2005; Runnels 2009). In this method, Mesolithic sites are located by exploring coastal areas with abundant fresh water, south-facing limestone caves, and nearby coasts with very steep bathymetry (fig. 2) (i.e., the underwater topography). While the importance of factors like fresh water may be obvious, the final factor is especially important; if the bathymetry is gradual, the Mesolithic sites would have been closer to the modern shore and inundated by the ever-rising sea levels since the last glacial maximum. At Damnoni, however, the subduction of the African tectonic plate under the European forces the White Mountains of west Crete dramatically up. Consequently, the bathymetric drop-off is 100 meters within a short distance from the shore at Damnoni. The region around Plakias, and specifically around the Damnoni Bay, fits all the environmental criteria for a Mesolithic site, and, in fact, the Plakias Mesolithic Survey discovered early Holocene tools in front of the cave in 2008 (Strasser *et al.* 2010). The survey, having met with such extraordinary success, moved on to the excavation phase in 2011. This paper presents the excavation method and the preliminary results of both the 2011 and 2013 field seasons.[2]

After the first season of the survey in 2008, we revisited the various sites discovered in the survey with the possibility of an excavation in mind. Dr. Panayiotis Karkanas, the project's geoarchaeologist, felt that Damnoni 3 was the only site that was well enough preserved for a fruitful excavation. The site was covered with dense vegetation (primarily *Euphorbia dendroides*) that not only concealed many of the surface artifacts, but also indicated fairly good soil preservation (fig. 3). The primary goal of the 2011 season was to find stratified deposits of Mesolithic tools in the talus outside of the cave, though test trenches were also inside it. A 1 x 1 m. grid was laid out in an area with

1 The excavation at Damnoni was conducted under the auspices of the Ephoreia of Speleology-Palaeoanthropology of Southern Greece, the 25th Ephorate of Prehistoric and Classical Antiquities (West Crete) and the American School of Classical Studies in Athens; and with the financial support of the Archaeological Institute of America, the Institute for Aegean Prehistory, the Loeb Classical Foundation, and Providence College.

2 This is Damnoni 3 in Strasser *et al.* 2010.

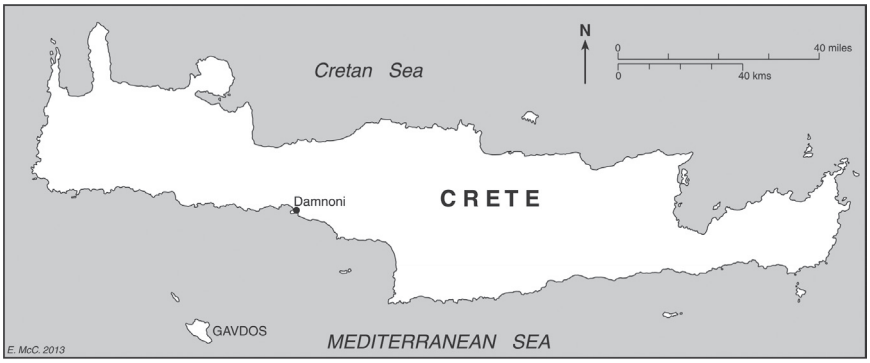

Fig. 1 : The location of Damnoni cave on Crete (Map by E. McClellen).

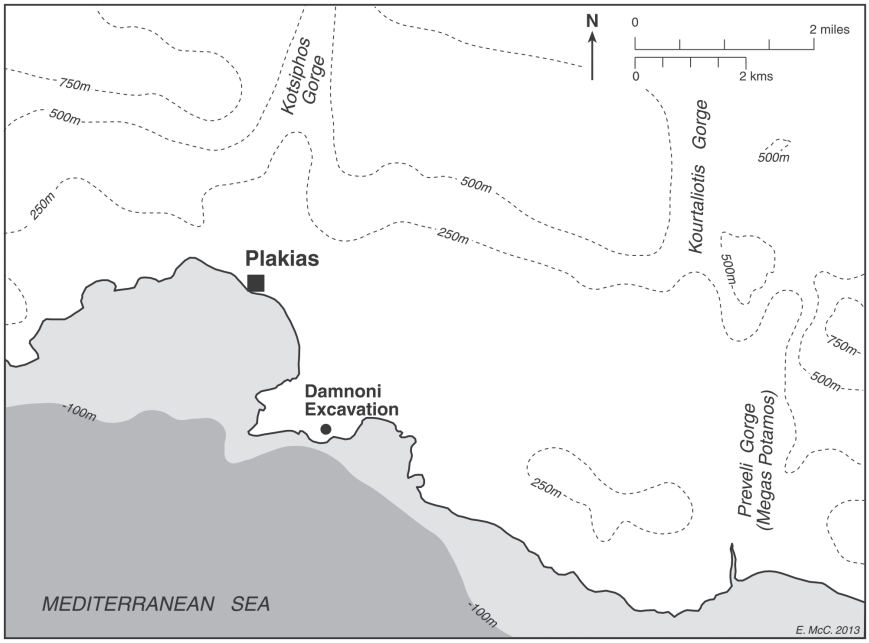

Fig. 2 : The location of the archaeological site and the steep bathymetry immediately off-coast (Map by E. McClellen).

good preservation of the original sediments. We excavated thirty-five 1 x 1 m. trenches, checker-boarding the site to learn its extent (fig. 4). Near the end of the 2011 season, many of the excavated squares were connected to get a cross-section along cardinal points and to better understand the nature of the strata as cultural lenses (fig. 5). All soil was either dry sieved or floated. The topsoil (Stratum 1) was dry sieved, and all subsequent strata (Strata 2 and 3) were 75% dry sieved and 25% floated. The dry sieve had a <.5 cm. mesh, so

Fig. 3 : A view of the cave (in the middle) from the south. A small area immediately in front of the cave has been denuded of vegetation, but the adjacent areas provide an idea of the dense foliage surrounding the cave (Photograph by K. Waltz).

there was very thorough recovery. If an important find was discovered, 100% of the remaining soil was floated. The small trench size and the intensity of the sieving regimen made for sufficiently fine-grained recovery technique for this first excavated Mesolithic site on Crete.

The most important discovery of the 2011 excavation – stratified Mesolithic stone tools – was made on the first day of excavation (fig. 6). Although the lithics from the excavation of Damnoni are under analysis, it is possible to present some preliminary observations. They are of the microlithic industry typical of the Mesolithic period in the Aegean basin. The majority of the raw material was a local massive quartz, crystal quartz, but also red, gray and black local cherts were found (fig. 7).

The context for the cultural strata was established, and each was distinct in both color and texture.[3]

Stratum 1 is the topsoil of varying depth, between 5 and 15 centimeters. This stratum is a sandy-silt topsoil that is rich in organic matter and occasionally has a granular soil structure. It is normally loose and light grey to reddish brown soil. Very small sherds (usually less than a centimeter in size) were found in this and subsequent strata.

3 The stratigraphy proved fairly uniform for the talus area in front of the cave, although it was different in the cave itself.

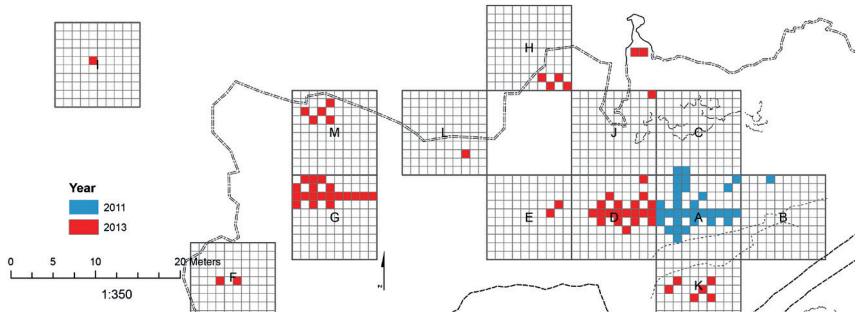

Fig. 4 : A plan of the trenches excavated in 2011 and 2013. The test trenches in the cave are in two most northern ones (Plan by M. Clinton).

Fig. 5 : Area A from the north, showing connected 1 x 1 m. trenches to form a north-south and east-west cross-section (Photograph by T. Strasser).

Stratum 2 is the subsequent stratum of 5 to 20 centimeters in thickness. It is reddish yellow in color and is a clay-rich sandy layer. Its structure is the result of wind-blown sands, and is therefore identified as an aeolian sediment. This stratum contains the majority of Mesolithic artifacts.

Stratum 3 is a light red paleosol and varies in thickness from a few centimeters to a meter. It is a sandy clay paleosol with many rocks that is probably a B-horizon (i.e., subsoil that has been leached). Mesolithic artifacts were found

in its top 4 centimeters. Below that, the stratum quickly became sterile of artifacts. In one trench we excavated another meter, sieving all soil, and found no artifacts.

Lithics were encountered in all three strata. The excavation in 2011 recovered over 2300 lithic artifacts. The highest frequency of material was recovered from Stratum 2 and the interface of Strata 2 and 3. This supports the conclusion that the palaeosol (Stratum 3) represents the active soil layer that comprised the surface of the slope during its occupation in the Mesolithic period.

Fig. 6 : Dr. Karkanas pointing out the three strata (Photograph by T. Strasser).

In 2013, we returned to the site for a second season of excavation. The finds were quite dramatic, shedding much new light on the early prehistory of Crete. One focus of the season was to establish the extent of the site. An additional seventy 1 x 1 m. squares were excavated. Two areas were found to be of interest. The first is the continuation of the area excavated in the 2011 season, where we excavated Block D, adjacent to the west of Block A. Block D, represents the western extent of this specific artifact density, an area of around a 20 x 20 m. By contrast, Block G is currently only about 15 x 10 m. in area (fig. 4). The stratigraphy also changed in this part of the site. Stratum 3 is usually sterile of artifacts elsewhere in the site, but here that stratum seems richer in artifacts. The small size of both artifact concentrations (Blocks A/D and Block G) may be due to the erosion of the site since the early Holocene, and soil analyses continue.

Another primary goal in 2013 was to learn whether the stone tool assemblage from 2011 was representative of the site as a whole, and it was not.

Fig. 7 : Crystal and massive quartz artifacts, including one of gray chert (Photograph by N. Thompson).

Fig. 8 : Some of the Mesolithic chert stone tools found in 2013. The patinated tool is on lower right (Photo by N. Thompson).

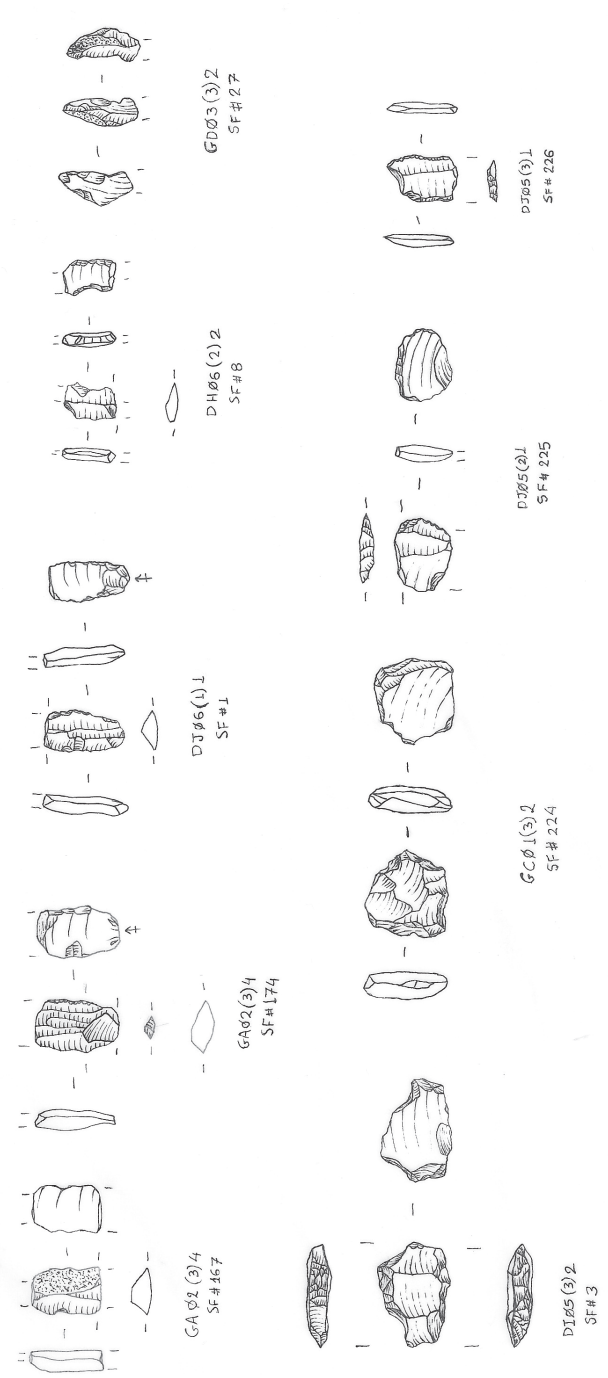

Fig. 9 : Drawing of obsidian microlithic artifacts (Drawings by C. Papoulia).

Despite its size, Block G had the richest deposits of artifacts, including many chert tools of a new material (fig. 8). The excavation continued to find tools of quartz, as well as red, black and grey cherts that are normal for the region. More unusual was the appearance of a few artifacts made of honey flint, blue cherts and other multicolored cherts. These will be informative for indications of regional exploitation. Many of these tools are typical Mesolithic microliths. Particularly interesting was a patinated side scraper, which deserves greater study (fig. 8, SF 105).

Without question, however, the most salient discovery of 2013 was the obsidian (fig. 9). Only 10 pieces were found. Some were *in situ*, some were found in the dry sieve, and two appeared during flotation. The analysis of these tools is still in progress. All ten pieces are tools. Many are typical Mesolithic microliths. All came from closed, stratified contexts. Presumably the obsidian is Melian. Future analysis should indicate which source they come from – Sta Nychia or Demenegaki. With no evidence for debitage, it seems reasonable to conclude that the obsidian tools were not made at site. Preliminary conjecture suggests that a Down-the-Line trade mechanism brought them to Damnoni, which could conceivably have represented, in fact, the end of the line. Most importantly, it is now a certainty that the Cretan Mesolithic culture was involved in a larger trade network that is also evidenced by sites like Franchthi (Perlès 1990) and Maroulas (Sampson *et al.* 2010) and elsewhere (Kaczanowska & Kozlowski 2013; Sampson 2008). The next few years of study of the obsidian should prove very informative.

Additional Environmental Studies

The aeolian sands and terra rossa soils that comprise Strata 2 and 3 do not preserve organics for significant environmental analyses or any Carbon-14 dates. Some pollen samples were taken, and Dr. Matthieu Ghilardi[4] analyzed them, but there was not a significant amount preserved. There is evidence for pine, fruits and mushrooms.

A 2 x 1 m. test trench was placed in the cave in 2011 (fig. 4), where a Bronze Age fire pit was found. In 2013 the Bronze Age component was completed, and the trench was excavated to a depth of over 1.5 m. We stopped at this point because we encountered large, unmovable rocks that do not seem to be bedrock, but too little is exposed to be certain. No other artifacts were found in this trench, but a small number of bones were preserved. Near the bottom of the trench one fossilized long bone was discovered that awaits further analysis.

Conclusions

The Damnoni excavation revealed a new culture to Crete, one whose lithic assemblage will be paramount in future discoveries of Mesolithic sites by surface reconnaissance. The excavation is probably exploring the exiguous remnants of a larger site that was perhaps located in a cave, which has suffered

4 Chargé de Recherches 2e classe CNRS, UMR 7330 CEREGE.

roof collapse. The cautionary tale is that the site is quite small, has most likely suffered much erosion over the last 10,000 years, and was only discovered because of the survey method and a road cut on its edge. Nevertheless, now that a type assemblage is known for Crete, as well as the environmental criteria that can be used for the discovery of their location, future research should provide additional evidence for this period on the island. It is hoped that larger and better-preserved sites will be found in order to shed greater light on this early Holocene culture.

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ΑΡΧΑΙΟΛΟΓΙΚΟ ΕΡΓΟ ΚΡΗΤΗΣ 3

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