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4. Looking for the earliest occupants of the Aegean - Paleolithic excavations at Rodafnidia, Lisvori, Lesvos

Rodafnidia at Lisvori, Lesvos is an extensive, open-air site spanning the Middle and the Lower Paleolithic Era. It is being systematically excavated by the University of Crete and an international work group of archaeologists and geoscientists (fig. 1). The site is situated by the Lisvori Thermal Springs and extends on a spur of a low hill delimited by two streams which meet in the northwest of the site and flow into the Gulf of Kalloni. The site is located in a landscape sculpted by volcanic activity and is endowed with ignimbrites (fig. 2) and fossiliferous cherts. The toponym Rodafnidia refers to the oleanders which used to grow until recently in the area where an olive grove stretches now, segmented into small properties. In the first excavation season, August and September 2012, ten excavation pits (1 m. x 1 m.) were opened at a distance of 20 metres from each other, and three larger pits were opened in between (11 x 1 - 3 x 1 m., 7.5 x 1 - 3 x 1 m. and 7 x 1 - 3 x 1 m.), at the highest point of the hill, along two neighbouring fields in north-west axis. Excavations reached a maximum depth of 2.8 m. and brought to light lithic industry deriving from Middle Pleistocene fluvio-lacustrine deposits.

The excavation unveiled Acheulean bifaces, handaxes and cleavers, as well as other tools typical of the era. Handaxes (fig. 3 and 4), the symmetric almond-shaped bifacial tools retouched on large flakes or specially shaped cobbles, have been uncovered in great numbers at Rodafnidia. Similar tools have been uncovered in Paleolithic sites in Europe, Asia, and Africa. Cleavers (fig. 5), the bifacial



Fig. 1. Panoramic view of the 2012 excavation

tools retouched on flakes (the cleaver flakes) with a distinctive transverse cutting edge that is formed by the joint between the ventral and distal faces of the cleaver flake, are the first finds of this kind in Greece indicating that hominins in northeast Aegean were part of a common techno-cultural tradition that spreads from Europe to India, but is mostly found in Africa. Thus, Rodafnidia is instrumental to the understanding of the dispersals and adaptations of our ancestral species at the easternmost edge of Europe, which simultaneously forms the western frontier of Asia.

Who were the earliest occupants of the Aegean? Were they *Homo erectus*, *Homo heidelbergensis*, *Homo neanderthalensis* or another species? Was it one or more species which succeeded each other at Rodafnidia, or did they coexist for some time? This remains unknown. It should, however, be noted that these hominins knapped and used bifaces. Few sites in mainland Greece (near the banks of Louros river in Epirus, and near Siatista in west Macedonia) as well as the island of Lefkas have produced similar tool types, yet nowhere are they found over such a wide area and in such quantities as at Rodafnidia, Lesvos. Excavation finds connect the early archaeology of Greece to global research on human origins and evolution, as well as the hominin expansion 'Out of Africa' into Eurasia and vice versa in the Lower Paleolithic Era, and 'Out of Europe' into the Levant in the Middle Paleolithic Era.

Geological samples have already been taken for laboratory analyses aiming to the absolute dating of exca-vated layers (e.g. Optically Stimulated Luminescence, Palaeomagnetism), as well as relative dating (e.g. stratigraphy determination, identification of microfauna fossils). Through an interdisciplinary scientific approach we try to understand both the natural and cultural inputs to site formation processes, the spatial dis-tribution of finds and its role in the wider network of Paleolithic settlement in Lesvos and northeast Mediter-ranean.

The quantity and density of surface and subsoil finds at Rodafnidia indicate that hominin groups often re-turned to the wetlands lying at the fringes of Kalloni Gulf. What attracted hominins there? Besides the high-quality lithic raw material and the thermal springs, which was a landmark, there must have been a large body of fresh water which created the right conditions for their survival. The hypothesis we are investigating is whether and, if so, when during the Pleistocene Era, the impressive basin of Kalloni Gulf, which today contains sea water, turned into a large lake attracting animals and hominins. Hominin groups arrived to Lesvos by walking over a strip of land in the east part of the island (Asia is only 20 km away today across the strait of Mytilene) in glacial periods, when ocean water was locked up in glaciers and sea level dropped. The study of bathymetric maps of this narrow and relatively smooth strait proves that a 50-meter drop in sea level would be enough to connect Lesvos to west Asia. On the basis of hominin responses to landscape and coastline changes in north east Aegean, our investigation on Lesvos opens a window onto the ancient history of climate change.



Fig. 2. Rodafnidia – view from the south.
A. The olive grove
B. Ignimbrites delimiting the low hill



Fig.3. Rodafnidia. Acheulean handaxe

The scientific team is staffed by experts: Dr Giorgos Iliopoulos, Lecturer in Geology – Stratigraphy at the University of Patras; Dr Geoffrey King, Director of Geological Research at the Institut de Physique du Globe, France; Dr John McNabb, Associate Professor of Archaeology at the University of Southampton, UK; Dr Nikos Zouros, Associate Professor of Geography at the University of the Aegean, Dr Andreas Magkanas and Dr Athanasios Katerinopoulos, Professors of Geology – Mineralogy at the University of Athens; Chronis Tzedakis, Professor of Geography at the University College London, UK; Dr James Cole, Lecturer at the University of Oxford, UK; Dr Katerina Vasileiadou, Palaeontology curator at the Natural History Museum of the Petrified Forest at Sigri, Lesvos; Dr Andrew Chamberlain, professor of Biological Anthropology at the University of Manchester, UK; Dr Constantinos Athanassas, Archaeometry Laboratory at De-mokritos NCSR; Dr Mimi Hill and Mr Neil Suttie, Palaeomagnetism Unit at the University of Liverpool, UK. During the course of the excavation, a group of undergraduate and postgraduate students from the Universities of Crete, York and Leuven were trained in archaeological field methods.

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Fig. 4. Acheulean bifacially worked tools



Fig. 5. Rodafnidia, large cleaver flake (a) and two cleavers (β, γ)