# The Excavation at Sarakenos Cave in Boeotia, Greece

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# PREFACE

The area of Kopais with its high density of caves had long aroused my interest, especially three decades ago when I was serving as a permanent archaeologist at the Ephorate of Antiquities of Thebes. Caves located next to the National Road are visible to those who pass through this area, but it is obvious that with the presence of the lake in the past at the same level they could not have been used for habitation. However, there are caves at a higher level such as the Sarakenos Cave and some other smaller ones.

From the beginning of the 1990s our goal was to study the area of Kopais and excavate one important cave in the area. As an archaeologist in the Ephorate of Palaeoanthropology-Speleology of the Ministry of Culture I started working on a project in the Kopais Basin, the former Kopais Lake, with the aim of systematically surveying the karstic formations on the rocky cliffs around the entire basin. During this project, with a team of archaeologists and students who had worked with me at the Cyclops Cave on Youra Island, Northern Aegean, we located, recorded and mapped a large number of caves and rockshelters. The surface research in many of them was disappointing due to their use as a corral and the accumulation of thick deposits, while the most suitable for excavation proved to be the Sarakenos Cave.

At the same time, the surface research on the shores of the former lake revealed open air sites of the Neolithic period, while under the Sarakenos Cave at the level of the Kopais Basin were found the remains of piled Neolithic structures that had been built on the shores of the lake but were destroyed when the lake dried up at the end of the 19th century and began to be cultivated intensively. Similar Middle and Late Neolithic structures have been excavated in Dispilio of Kastoria (Chourmouziades 2002) and have also been found on the shores of the former Lake Xynias near the Domokos area (Sampson 1982).

The systematic excavation of the cave was part of the Kopais Project initiated in 1994 by the Ephorate of Speleology under the direction of the signatory, in order to establish a chronological sequence for the development of the cave and the acknowledgement of economic models in diverse periods. In 1996

the excavation continued and then stopped for two years. In 1999 and 2000 the excavation continued again and during these two years Trenches A, B and C went in depth and an extension of Trench B reached the bedrock revealing, in addition to Neolithic layers, layers of the Mesolithic and Palaeolithic. From 2004 this project was placed under the auspices of the University of the Aegean and continues to this day.

The research found a more or less dense use of the cave from the Palaeolithic period to the Bronze Age and especially during the Late Neolithic. From the beginning of the excavation, our expectations for the existence of pure layers of the Neolithic but also of the older phases (Palaeolithic, Mesolithic) were verified. The archaeological material of the cave was quite rich in all the phases of the Neolithic and most of the Bronze Age.

The excavations of the years 1994-2000 as well as the surface research in the caves of Kopais were published in one volume (Sampson 2008) while the excavation in the Palaeolithic and Mesolithic layers of Trench A made in collaboration with Polish archaeologists was published in a second volume in 2016.

Thanks are due to the archaeologists and students who have participated in the project as well as to Dr. Yiannis Maniatis, head of the Laboratory of Archaeometry of NCSR “Demokritos” for the C14 dating, the directors of the Ephorate of Thebes who facilitated the study of the material in the local museum and the directors of the Ephorate of Speleology for their interest and assistance. Last but not least, thanks are due to the Municipality of Akraefnion for its valuable assistance and mediation during our stay in the village as well as to the Larko Mining Company which every year offered accommodation to the numerous members of the excavations at its hostels in the village of Neo Kokkino. Special thanks to the Institute for Aegean Prehistory (INSTAP) for funding the research, the study of the findings in the museums of Athens and Thebes and the cost of printing two volumes for the final publication of the cave

# INTRODUCTION

Sarakenos Cave is the largest karstic formation in the area, located on the eastern side of the former Kopais Lake (Fig. 1), and today much higher than the level of the plain and above the road (Fig. 2). Like other sites in the area, the cave was used in the past as a sheep pen, hence significant amounts of dung cover the floor. Archaeological investigation of this cave began in the early 1970s under the direction of T. Spyropoulos (1973), and it yielded finds of different chronological periods, but apart from a brief report the publication of this material was, however, never realized.

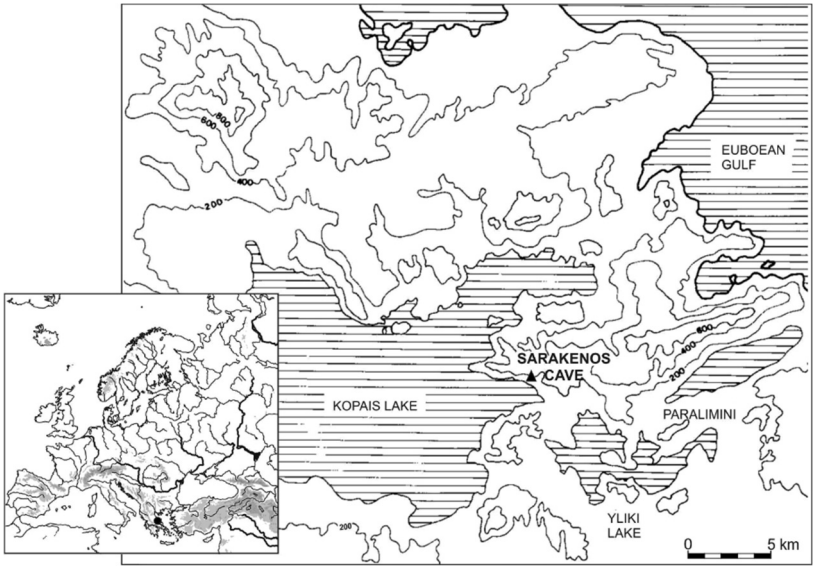


Fig. 1. The Kopais Lake and Lakes Yliki and Paralimni created after the drying of the latter

At the beginning of the 1970s a team of Italian geologists and speleologists surveyed and mapped many caves of the Kopais basin while pointing out the importance of the Sarakenos Cave. The results of their research were published in the proceedings of a local conference in Italy but were unknown

in Greece. We were informed of this research by chance at the end of 1990 after we had already started the surface research and excavations in the area.

Fig. 2. The location of the cave from the west

Today, the Sarakenos Cave proves to be the most important in central Greece and one of the three most important prehistoric caves in Greece. It is a large cave measuring about 3000 square metres, with a wide entrance (Fig. 3) which provides good light to the chamber, and has an excellent view toward the Kopais basin. Caves in Greece are generally used in the Neolithic period and mainly in its later phases, whereas they are used much less in the Bronze Age. In the southern Peloponnese many caves are inhabited in the Palaeolithic period and do not contain findings of later periods, but there are caves that have been used intensively in the Neolithic, such as the Alepotrypa cave in Mani.

Fig. 3. The entrance of Sarakenos Cave

In 1994 we started digging the cave systematically till 2000 and opened three trenches (A-C) (Fig. 4). A new round of excavations was begun by the Aegean University in 2004 and continues to this day. Trenches D, E, F, G and H were opened, while from 2010 all trenches were integrated and a large space of 300 square metres was created in the western and eastern parts of the cave (Fig. 5).

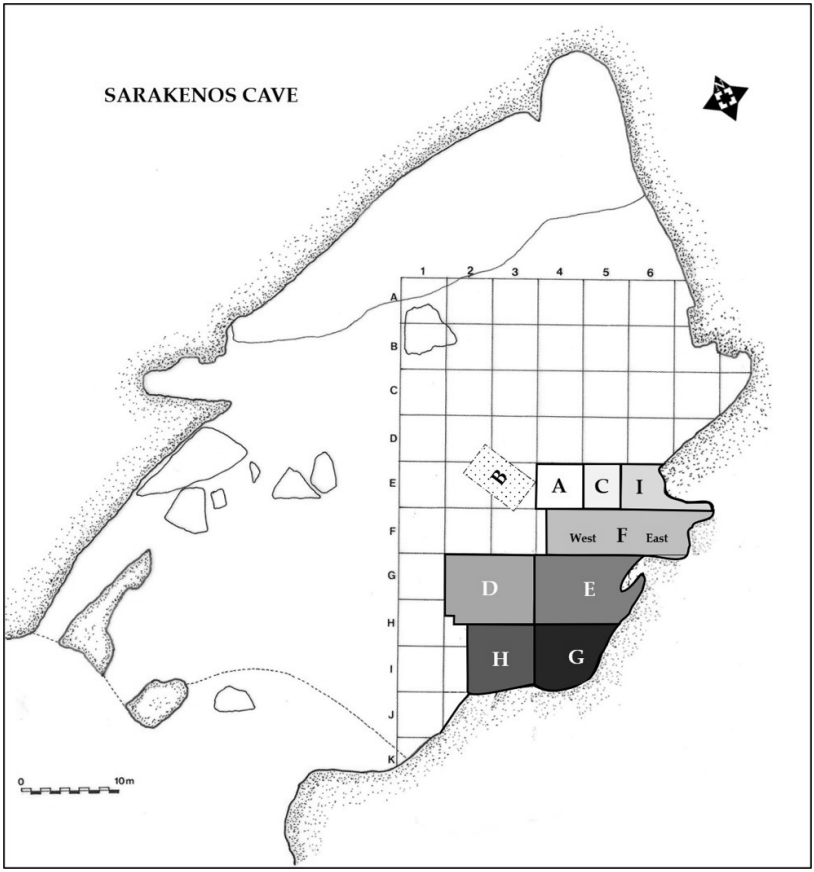


Fig. 4. Ground plan of the cave and the grid of the excavation

The peculiarity of Sarakenos is that it has a huge time span of tens of thousands of years, from the Middle Palaeolithic to the end of the Bronze Age with the depths of trenches ranging from 3 to 10 metres, solid sediments and very clear and undisturbed stratigraphy. The important

results of the excavation, the detailed study of stratigraphy and the dozens of absolute dates have made the cave a reference point for the prehistory of central Greece, especially for the sites of the Neolithic period that had been excavated in the past by old methods and where their date was indefinite.

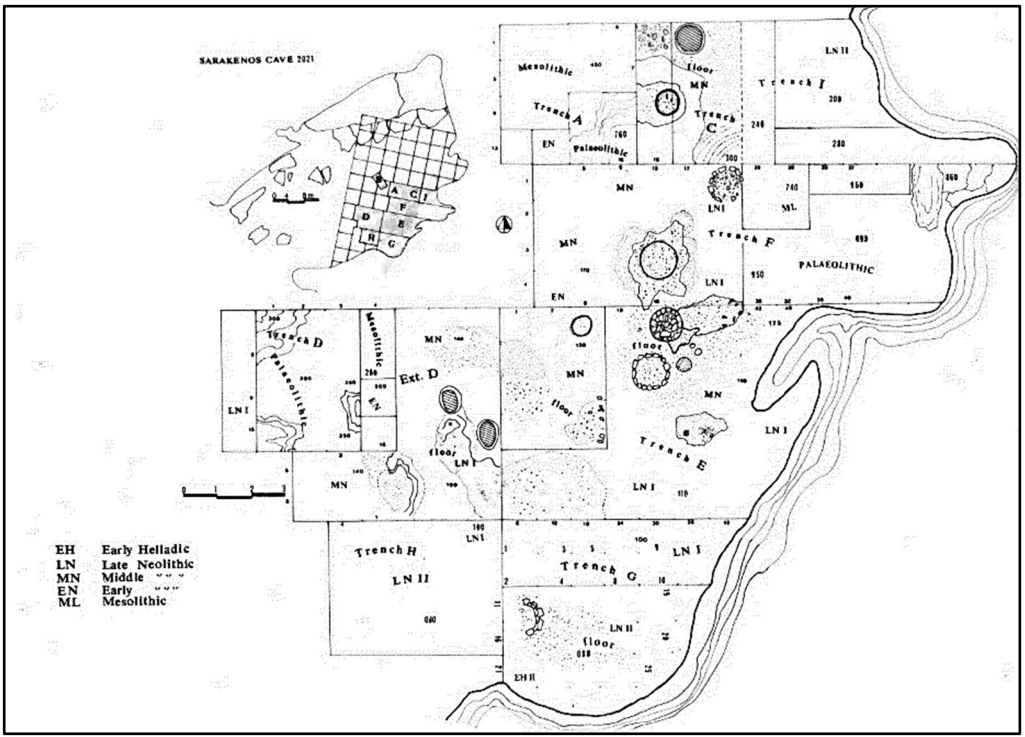


Fig. 5. Sarakenos. The groundplan of the excavation

The Theopetra Cave in Thessaly (Kyparissi-Apostolika 2000) with dimensions much smaller than the Sarakenos cave, has very similar sedimentation and in both, their occupation starts from the Middle Palaeolithic. In Theopetra, however, the sediments are quite to very disturbed due to the intense erosion by water, especially in the later Neolithic phases.

The excavation in Sarakenos is carried out in an extensive single area of 300 square metres and layers of different periods are excavated at the same time in a horizontal way, in contrast to other excavations in caves where the research areas are small and limited. What also stands out is the good preservation of the layers due to the cohesiveness of the soils, which very rarely happens in other prehistoric caves in Greece. The association of its layers with the general historical route of the area helps to restore and date the wider ecosystem. The research work of speleologists and palynologists in the area of Kopais has provided important work for the restoration of the palaeoenvironment, while the presence of pollen grains in the layers of the cave is in agreement with the pollen found in earlier boreholes in the plain.

While the excavation of the cave has theoretically been completed, in view of its future utilization and its return to the public, additional excavations will be carried out in order to reveal the natural floor of the cave in some of the trenches. It remains to be seen in the future, if there are older layers of habitation and if there are also the older phases of the Upper and Middle Palaeolithic here that have been identified so far in Trenches A and B.

To date, the chronological sequence of the site has been precisely determined with the excavations in different parts of the cave and the dozens of dates. At the same time, due to the illegal excavations that have been done in the past by residents of Boeotia to find treasures in the cave it has been observed that layers of at least the Neolithic period extend even to the deepest and darkest places. Only the Middle Palaeolithic has not given absolute dates due to the antiquity of the layers and the deterioration of the carbon samples. However, its lithic industry is characteristic and it is enough to identify this period, during which it seems that there is intense activity in caves, rock shelters and open-air sites in Boeotia and generally in most of Greece.

# CHAPTER I

# THE KOPAIS BASIN

Kopais is a natural basin at an altitude of 100 m in the northeast part of Boeotia created by tectonic activity some 10 million years ago (Fig. 1, 6). The area around the basin is a highly karstic landscape. Until the recent past, a big lake, differentiated from time to time by size, was covering the actual plain. The lake took its name from the ancient town Kopai (Homer, Iliad) that was situated near the deepest point of the lake (today's village Kastro). The name of the town comes from the ancient Greek word Kopai that means oars. The lake, now drained, occupied the deeper part of the basin in the southern part of the valleys of Chaeronea and Orchomenos and was formed by the water flowing down from Mount Chlomos in Locris, Mount Parnassos and Mount Helicon and was fed by the Kephissos, Melas, and Ercyna rivers as well as other smaller rivulets.


Fig. 6. Aerial photo of the Kopais basin

The Kephissos river runs through a large, fertile plain consisting of three smaller basins (Davleia, Amphicleia and Elateia) before ending in the southern part of the Kopais basin; and the Melas river runs eastward in the

northern section of the basin. The lake, having a maximum depth of some 3 m, covered an area of approximately 62,500 acres at its greatest, shrinking to some 37,500 acres during periods of drought.

The formation of the lake was the outcome of tectonic movements that took place during the Pleiocene and Pleistocene eras, and the dissolution of the calcareous rock caused by underground waters. From a geological point of view, the most prevalent rock is limestone, dating from the Mesozoic era (Papadopoulou-Vrynioti 1990, 115). In the past, the water from the lake would have been canalized towards the sea by means of an underground network of canals through the calcareous rock. Due to the progress of sedimentation, the lake was becoming very shallow and dry during the summer season, conveying a sense of seasonal differentiation between a lake and a swamp.

At the southern edges of the former lake ancient shores are preserved today (Fig. 7). Thin layers of gravel and sand several meters high can be seen and analyses of microorganisms and fossils could be made to date the fluctuations of the lake level. In the places I pointed out, the geologist of the "Demokritos" Nuclear Center, Dr. G. Basiakos collected many samples, but, unfortunately, the research did not proceed.

Fig. 7. Kopais Basin. Old shores of the lake

The Kopais basin was drained in the late 19th century and converted into the well-irrigated plain which is now one of central Greece's most fertile agricultural areas. From epigraphic evidence, it is known that drainage programs were undertaken in this area in Classical Greek and Roman times as well. The modern research of the Kopais has also revealed that the basin was drained in Mycenaean times (16-14th century BC), a project that is believed to have been carried out by the Minyans, the people of Orchomenos (Iakovidis 1989). It is possible that the first drainage works had taken place in the early 2nd millennium BC, with the aim of converting a portion of the lake into arable land.

Due to its importance as a natural karstic basin, Kopais has been the subject of extensive palaeoenvironmental studies since the 1970s, e.g., Greig and Turner, who have published detailed pollen diagrams (Greig and Turner 1974; Turner and Greig 1975). In 1983, two new cores were made that offered information on the vegetation from the Late Upper Palaeolithic onwards (Allen 1997). During the Final Palaeolithic period, the Kopais had vegetation typical of an open steppe and a dry and cold climate (*Artemisia, Graminae and Chenopods*). The Pleistocene-Holocene transition is recorded in the diagrams with the forest expansion (*Quercus, Juniperus, Pistacia, Ephedra*). At layers that correspond to 4000-3000 BC, the *Quercus* disappears, possibly due to deforestation. Analysis of the grain of the coring samples suggests that there was also a fluctuation in the lake levels during the Late Pleistocene and Early Holocene. There are also indications that the lake level dropped between 4000 BC and 2500 BC.

A survey by Canadian archaeologists in 1980 (Roland 1981) identified possible prehistoric habitats in the Boeotia and Fokida basins but did not go any further. Unidentified fragments of flint with a possible Palaeolithic origin were identified in a small cave in the area of Amfikleia near the village of Mariolata. Two other caves located in the NE part of Kopais, on the left side of the road to Chaeronea, presented a greater abundance of flint. One of them with dimensions of 3 x 6 m contains thin deposits and flint tools of an indefinite date. The other, located a short distance away, yielded similar material outside.

In the Kopais basin the highest concentration of caves is observed on its eastern side, where the karstification of the low limestone volumes of the Jurassic and Cretaceous period is huge. In the area south of Sarakenos Cave and between Akraefnion village and Aliartos we have explored and mapped some 23 caves, most of which are of low elevation, near the level of what once was the lakeshore (Figs. 8, 9). Neolithic pottery has been discovered in a

cave and in two nearby open-air locations. In the south and west parts of the basin, there are a few caves. In some of the rock shelters a few surface chipped flints dating probably to the Palaeolithic age have been found, and five Neolithic sites have been located in the eastern part of the valley. Some of the caves served as sinks channelling the lake water into other lower basins or to the sea, but it is possible that even the lower caves were used in times when the lake level was low. Their use today for animal stallion precludes any surface research.

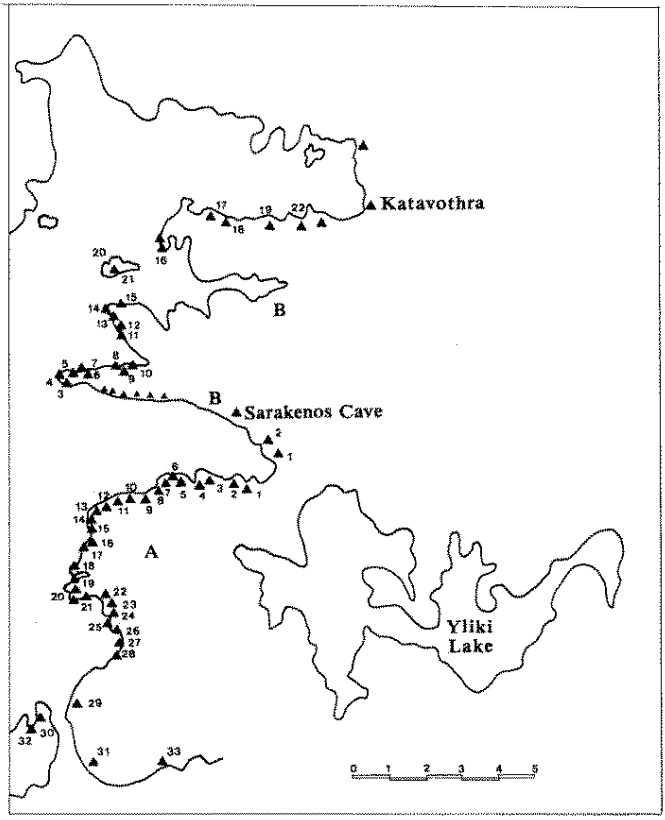


Fig. 8. Caves and rock shelters at the eastern edge of Kopais

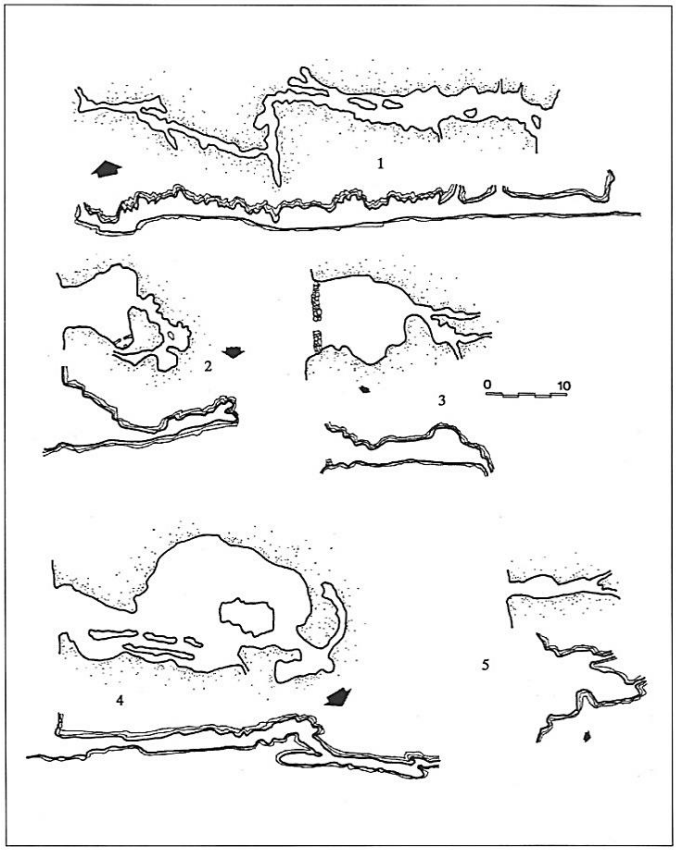


Fig. 9. Ground plans and sections of caves on the eastern edge of Kopais

In the southern and western parts of Kopais there are only a few caves and rock shelters; the most important rockshelter is Seidi, near Aliartos, which was excavated during World War II by German archaeologists and yielded a few stone tools of the early Upper Palaeolithic (Stampfuss 1942). However, the research that was done rather hastily and with old methods has deprived us of many elements that would concern the fauna and flora of the area and the palaeoeconomy of the period.

In the northeastern area of Kopais to the south and east of the Glas Mycenean fortification, we have recorded 10 caves and rock shelters, but without evidence of prehistoric occupation. Some of them were drainage channels

that led the overflowing waters of the lake to the sea. We have noticed that the presence or absence of prehistoric finds more often relates to the changing levels of the lake's water. If we take into account that during the Late Pleistocene and Early Holocene the lake was quite deep, we must assume that those caves found today at a low elevation right at the level of the present-day plain, must have been either unsuitable for occupation or used only occasionally during the low lake levels. Cave dwelling in the area would also depend on whether the drainage channels were operating or blocked.

To the west of Akraifnion village, where, apart from Sarakenos Cave, there are many small caves at a very low level we conducted an excavation in 2009 in the cave of Karteras (Fig. 10). The pottery found belonged to the Hellenistic, Roman and Byzantine times, while the drillings carried out by the geologist Dr. E. Kampouroglou did not progress to great depth due to the layers of sand from the shores of the lake. Prehistoric finds are likely to be much lower.

Fig. 10. The entrance of the Karteras Cave

On the northern side of Kopais, between the villages of Kastro and Pavlos, small caves are formed at low points at the level of the basin (Fig. 11). The most interesting is Baroutospilia Cave with dimensions of 27 x 8 m, located just 5 m higher than the plain. The research inside is problematic because today it is used as a corral but near its entrance were found artefacts of the Middle Palaeolithic (Roland 1981).

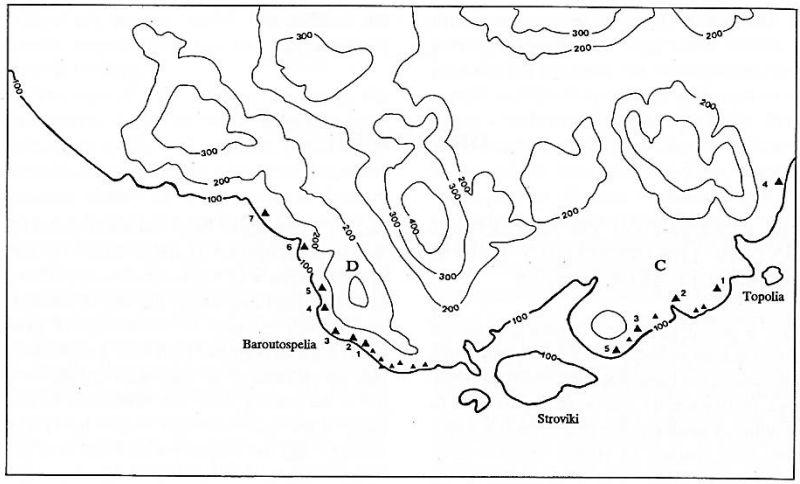


Fig. 11. Caves and rock shelters at the northern edge of Kopais

In contrast to the Neolithic period the habitation in caves and in open places seems to be dense in the area of Kopais. Intensive crops could be practised during periods when the lake was shallow. It is also very possible that in the Kopais area there were pile settlements, which has been proven in the lake of Kastoria (Chourmouziades 2002) and today's dried lake of Xynias in Fthiotis (Sampson 1982).

# CHAPTER II

# SARAKENOS I.
# THE MIDDLE PALAEOLITHIC

The presence of Neanderthals appears in the last layer of Trench A, which is 0.50-0.60 m thick (spits 62-67, depth 7.00-7.60 m), presses on the bedrock and has taken its strong inclination in two directions. The layer consists of black and brown loam with burn-through traces. The upper part with a thickness of 0.25-0.20 m is light brown, relatively dry and homogeneous while the bottom consists of overlapping layers of burnings with intermediate white or brown layers (Fig. 12, 13). On the southern side, the layers of the lower part are quite irregular and have a thickness of 0.35-0.40 m. In spit 63 the major part of the trench was occupied by the rock, tilted to the south and east (Fig. 14). This is why the layers of burnings at the eastern wall of the trench have an inclination to the south while the layers at the southern wall incline to the east.

Unfortunately, it was not possible to excavate the continuation of the MP layer which extends east and south of sq. 15, where it would logically have a greater thickness due to the slope of the bedrock. Although the MP layer contained many burns, and several charcoals were obtained, they did not give any absolute date. It is therefore certain that due to the antiquity of the layer the samples had undergone diagenesis, while the limited range of C14 was not able to give absolute dates.

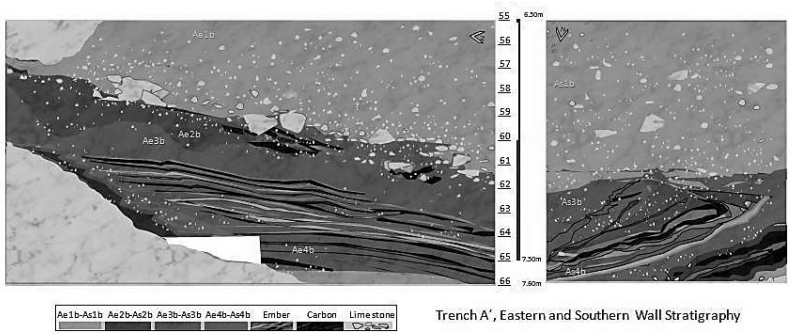


Fig. 12. Trench A, spit 65. Middle Palaeolithic layer at the eastern part of the trench

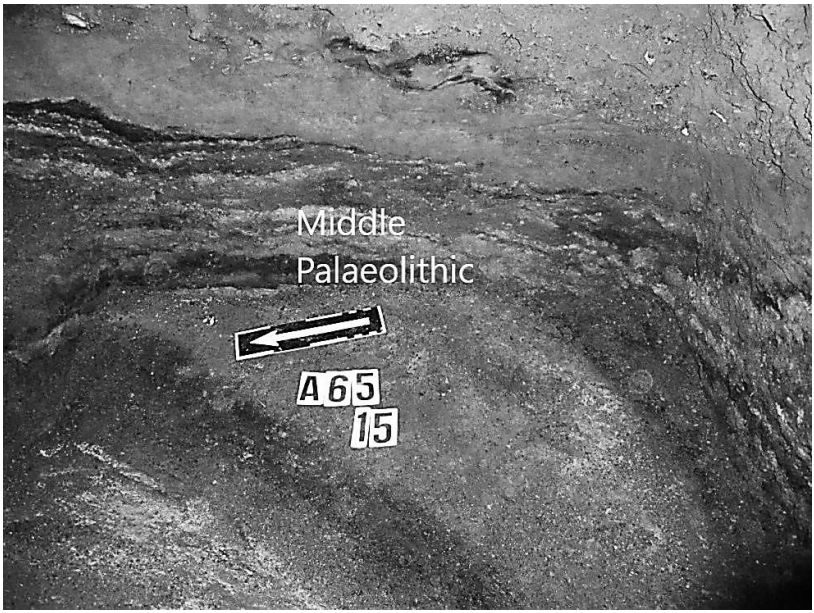


Fig. 13. Trench A. The Middle Palaeolithic layer at the northeastern part

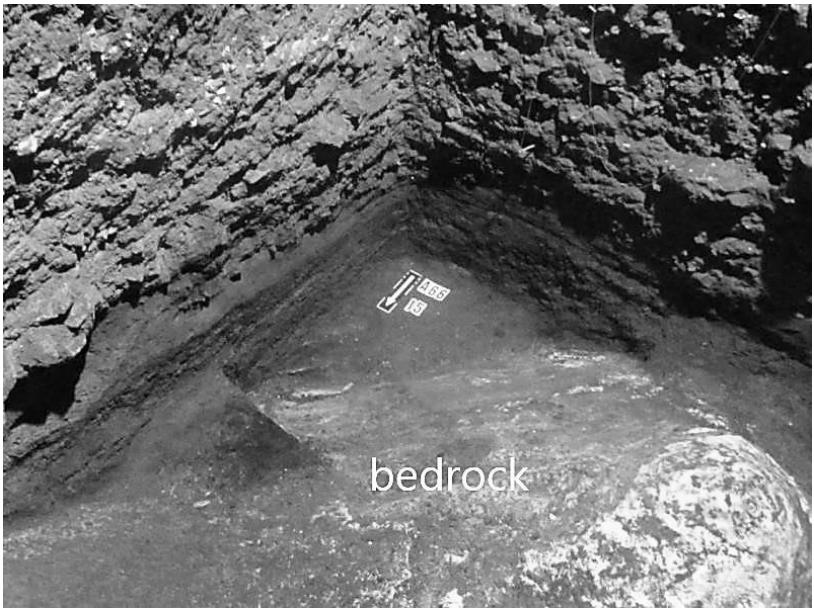


Fig. 14. Trench A. The southeast corner of Trench A and the bedrock

Although the several charcoal samples taken did not give an absolute date, the few typical tools of the Middle Palaeolithic (Fig. 15, 19) are sufficient to indicate the age of this layer: a. a burin on a flake with Levallois preparation from chocolate-coloured flint (sq. 15: 14), b. an atypical perforation on a flake detached from a double-platform core; reddish radiolarite (sq. 15: 15), c. a short flake with Levallois preparation and a single-blow butt from reddish radiolarite (15: 13), and d. a fragment of a flake from an indeterminate raw material (Kaczanowska et al. 2016, Pl. XV).

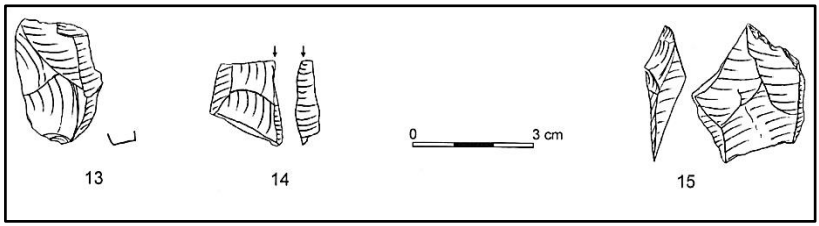


Fig. 15. Trench A. Middle Palaeolithic artefacts

The stratigraphy in Trench B is very different from that in Trench A (Figs. 16, 17). The Mesolithic and Final Palaeolithic layers were thinner than those in the other trenches (A, D, F). The oldest MP layer of Trench B (layer 14) found on the bedrock or on fallen rocks (Fig. 18) consisted of soft, light brown soil with small-sized gravel. At points, the soil turned light reddish-brown in colour, while at its lowest level, was formed a compact thin crust layer of stone debris and small-sized animal bones. From this layer, flint and radiolarite artefacts of the Middle Palaeolithic were collected. The *Levallois* peaks and scales from centripetal cores meet parallel to blades from bipolar cores and resemble the transitional lithic industry from layer VI of the Temnata Cave in Bulgaria (Kozlowski et al. 1992). However, it was impossible to get charcoal samples. If there were any, we would probably have the same problem as with the layer of Trench A where the samples were altered.

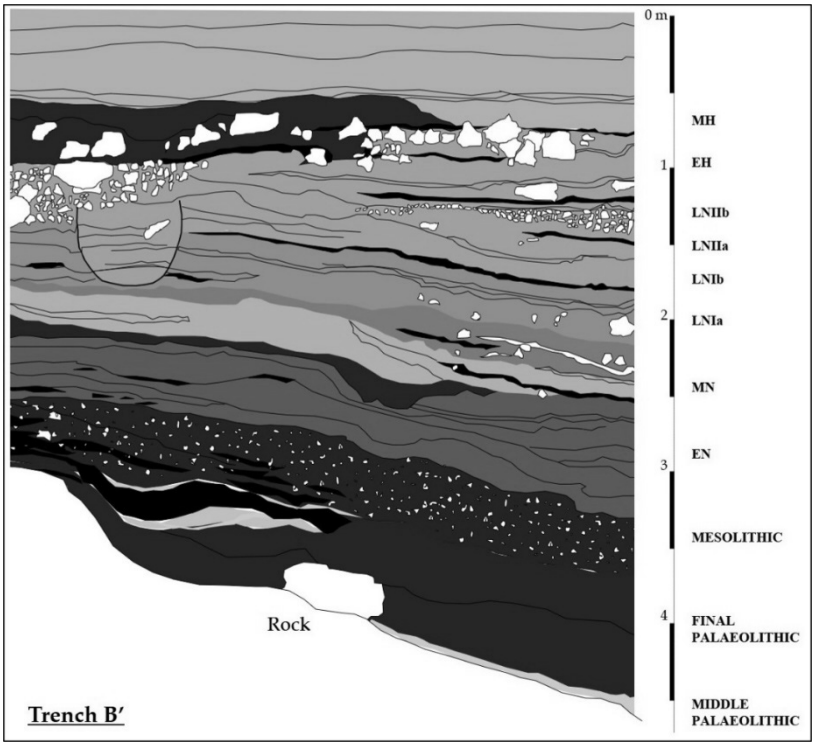


Fig. 16. The stratigraphy of Trench B

Fig. 17. View of Trench B from the south

This layer yielded 16 artefacts: an irregular Levallois point from radiolarite (Fig. 19: 162), a Levallois flake from flint with traces of cortex and a linear butt (163), a microblade with a cortical butt, a small flake from flint with a dihedral butt (164) and a distal fragment of a flake from radiolarite provenant probably from a Levallois core (165). From the same layer came three blades: one from grey flint extracted from a bipolar core, with a bilateral denticulated retouch on the proximal end (Fig. 19: 166), another blade from radiolarite with a retouch at one side bearing similarities with the blades of Kostenki (167) and part of a blade or a flake blade-like with a lateral abrupt retouch (168).

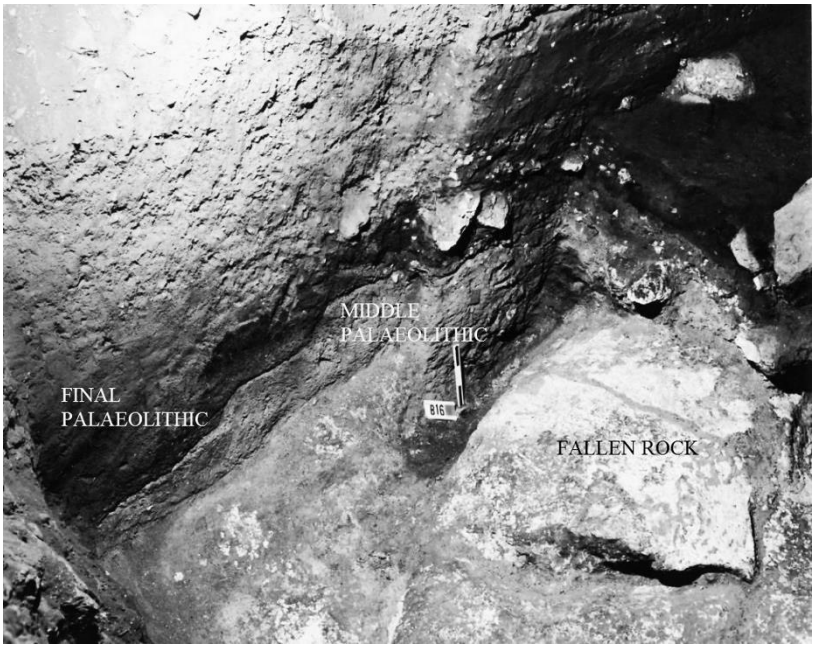


Fig. 18. Trench B. The fallen rocks and the MP layer

There was also a Levallois point with an inverse retouch on the base (169), an initial core on a plaquette bearing a negative of a cortical flake (170), three blades from radiolarite showing a Levallois preparation, of which one is entire (172) and two fragmented (171, 174), a small triangular bladelet from flint (173), a cortical blade from a bipolar core with a retouch on its edge (175) and a flake scraper from a discoid core with a deep retouch slightly denticulated (176).

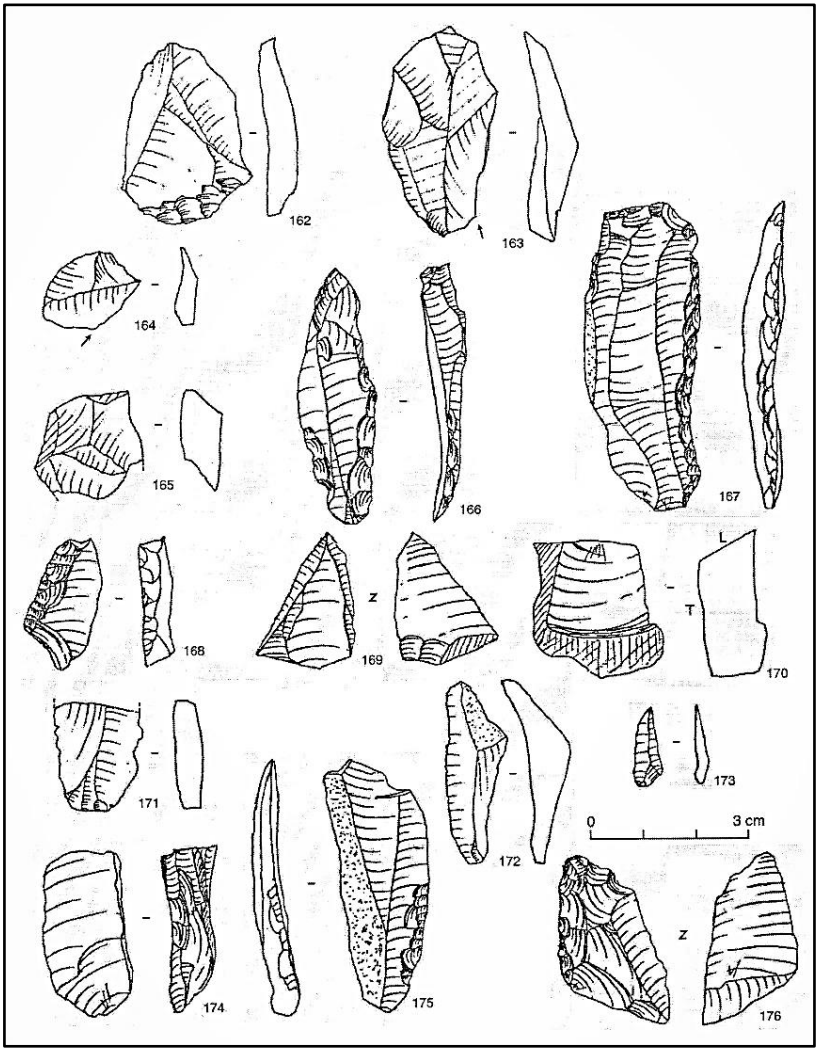


Fig. 19. Trench B. Lithic industry of the Middle Palaeolithic

Although the stone tools of the phase Sarakenos I from flint and radiolarite are few in number, they present typical characteristics of the Levalloisian typological tradition with a development to the blade bipolar transitional industries from the Middle to the Upper Palaeolithic, following the Levallois repetitive method (Kourtessi-Philippakis 2008). They present

common types with other stone lithic industries of Greece and the Balkans. These transitional industries, besides those in the Balkan peninsula (Drobniewitz et al. 2000), also occur in the Near East (Sorel and Ronen 2003).

It seems that the earliest users of the cave, who we may call Neanderthals, used specific areas and did not expand to its entire extent, while the remains left by their use are not the same. It turns out that the Palaeolithic man, when he first entered Sarakenos, found the natural rock uncovered, which had a smaller or a greater slope elsewhere. Completely different was the corresponding layer on the bedrock of Trench D which included a thin layer of combustion but did not give any date. In Trench D the MP phase was absent and it is probably located east of Trench D and probably in Trench E. It seems that the users of the cave in the different chronological phases extended to specially selected places. It would be important to know why the users of older chronological phases chose to use uncomfortable places on steeply sloping rocks.

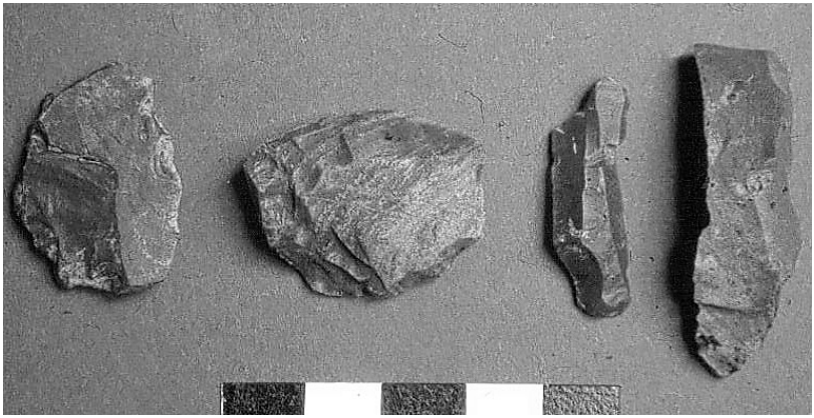

Fig. 20. Trench B. Middle Palaeolithic artefacts

# CHAPTER III

# SARAKENOS II.
# THE UPPER PALAEOLITHIC

The Upper Palaeolithic layer is distinguished by its lighter colour and stands out due to its dry texture. Obviously, this has to do with the period (16,000-15,000 BP) which is characterized by intense cold and dryness.

In Trench A (sqs. 10, 11, 14, and 15), after the layer of hard travertine the soil in spit 56 (depth 6.60 m) changed to dry and soft and contained a lot of bones of large animals and many flint artefacts. A hearth occurred in the NW corner of sq. 10 in spits 57 and 58 (Fig. 21) which in the next spit 59 moved towards the south and east. A sample taken from the above hearth gave the date 14,890±40 BP (16,520-16,380 BC).

Fig. 21. Trench A. Hearth in spits 57 and 58, sq. 10 (Upper Palaeolithic)