

BEFORE THE NEOLITHIZATION: CAUSES OF MESOLITHIC DIVERSITY IN THE SOUTHERN BALKANS

MAŁGORZATA KACZANOWSKA–JANUSZ K. KOZŁOWSKI

Jagellonian University,
ul. Gołębia 24, 31007 Kraków, Poland
janusz.kozlowski@uj.edu.pl, malgorzatakacz@wp.pl

Abstract: The Balkans, particularly southern and central, were sparsely populated in the Mesolithic and the occupation networks in that period were discontinuous and highly diversified, contrasting with the density and homogeneity of the Early Neolithic. The aim of this paper is to describe the environmental conditions of the Mesolithic sites in relation to Early Holocene climatic fluctuations and to discuss the causes of specificity and diversity of culture and behaviour at this period.

Some general trends are observable in the adaptation to Early Holocene environments (trends in faunal exploitation; for ex. shift from high ranked large game to low ranked small animals) but also particular adaptations to local conditions (technological changes due to difficulties in access to better quality lithic raw materials, adaptations to coastal or to terrestrial resources reflecting the unique features of site use, etc).

The diversity of the Mesolithic is also reflected in cultural taxonomy: in some sequences continuity of the Balkan Epigravettian techno-morphological tradition can be seen as opposed, in other sequences, to highly isolated groups with technology and tool morphology adapted to local raw materials and specific activities. The Balkan Mesolithic was not completely cut-off from the Western Mediterranean techno-morphological influences (particularly in Southern Greece) and from the Anatolian lithic traditions (seen only in the Northern Aegean). A more intensive network of marine contacts is confirmed by obsidian circulation in the Aegean Basin.

Keywords: Mesolithic, Epipalaeolithic/Final Palaeolithic, Early Holocene, taxonomy, human adaptations

INTRODUCTION

Among the several tens of Mesolithic sites recorded in the Southern Balkans (*Fig. 1*) only seven have been systematically excavated and radiometrically dated to the Early Holocene (*Fig. 2*): namely the Franchthi Cave,¹ Klissoura Cave I,² Cyclops Cave on Gioura Island,³ Maroulas on Kythnos,⁴ Kerame on Ikaria,⁵ Sidari on Korfu,⁶ Theopetra Cave.⁷ Other sites are surface collections that are difficult to define as Mesolithic because the taxonomic diversity of Mesolithic industries is considerable.

The most important concentrations of sites assigned to the Mesolithic are known from the region of Kandia in Argolide (Western Peloponnese)⁸ at several locations, namely: the coast of Thilia between Meganisi and Lefkas⁹ and in the Kokytos river valley in Tesprotia¹⁰

In the territory of the Central-western Balkans (the Odmut Cave in Montenegro¹¹) only few Mesolithic sites have been registered, while in the Central-eastern Balkans settlement from this period is virtually absent. It is

¹ PERLÈS 1987.

² KOZŁOWSKI–STINER 2010.

³ SAMPSON 2008; SAMPSON 2011.

⁴ SAMPSON *et al.* 2010.

⁵ SAMPSON *et al.* 2012.

⁶ SORDINAS 1969; SORDINAS 2003; BERGER *et al.* 2007.

⁷ KYPARISSI–APOSTOLIKA 2000.

⁸ RUNNELS *et al.* 2005.

⁹ GALANIDOU 2011

¹⁰ TOURLOUKIS–PALLI 2009, FORSEN 2011.

¹¹ KOZŁOWSKI *et al.* 1994.

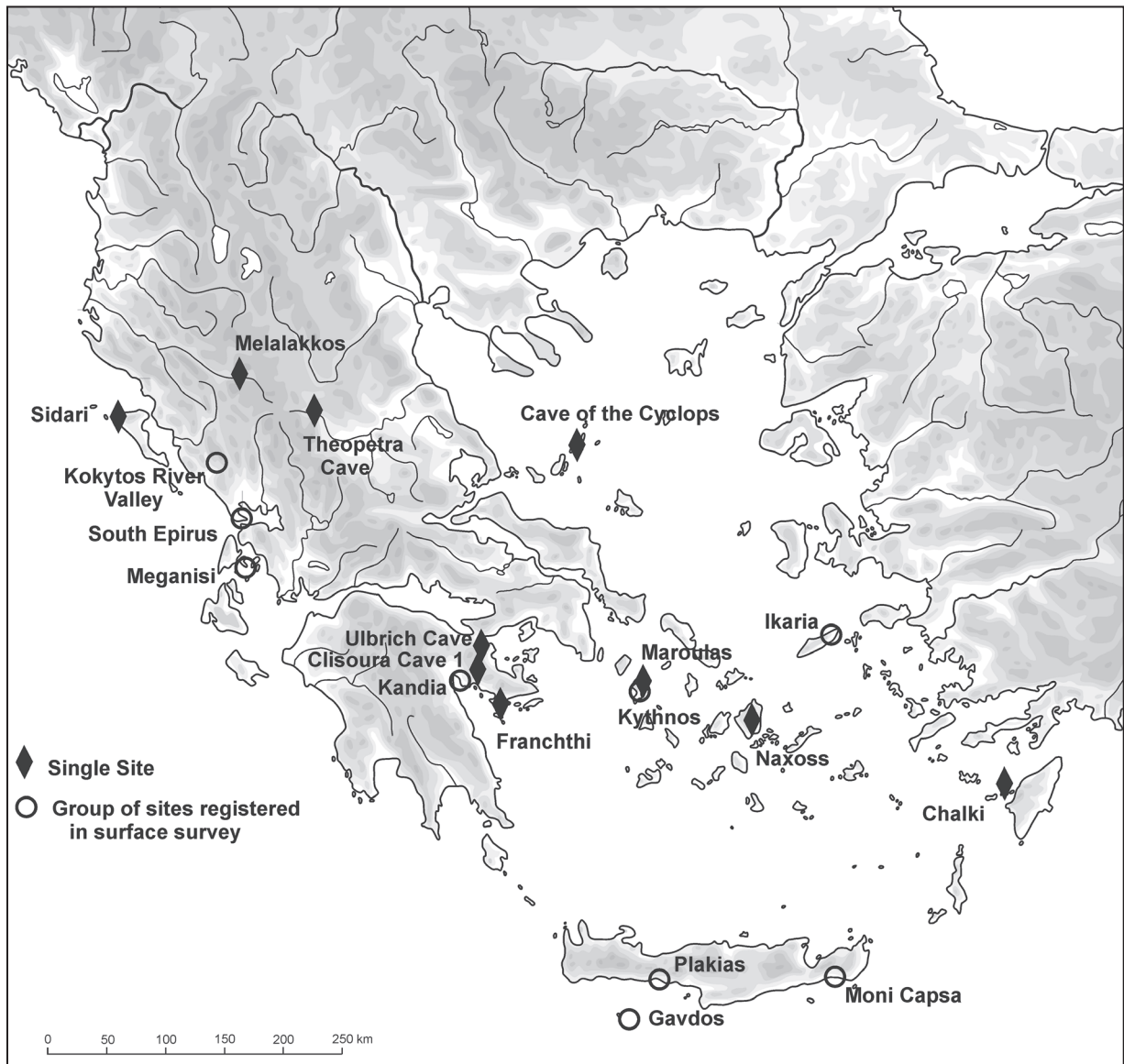


Fig. 1. Mesolithic sites in Greece

only in the Northern Balkans that major concentrations of Mesolithic sites were discovered in Croatia and Slovenia and in the region of the Iron Gate.

In this work we shall focus first of all on the sites in the Southern Balkans.

SEQUENCES AND DATING OF THE MESOLITHIC

Most cave sites are multilayer occupations where Mesolithic sequences were registered sometimes in between Neolithic and Late Palaeolithic layers (Sarakenos, Franchthi, Theopetra), or overlying Late Palaeolithic layers (Klissoura, Cave 1). It should be emphasized that a chronological hiatus – of as much as several thousand years – occurs between the Late Palaeolithic and the Mesolithic (Klissoura, Cave 1, Sarakenos, Franchthi). This hiatus can be correlated with the discontinuity of techno-morphological features of lithic assemblages (e.g. in the Sarakenos Cave) or with the continuity of Epigravettian traits (e.g. in the Klissoura Cave 1).

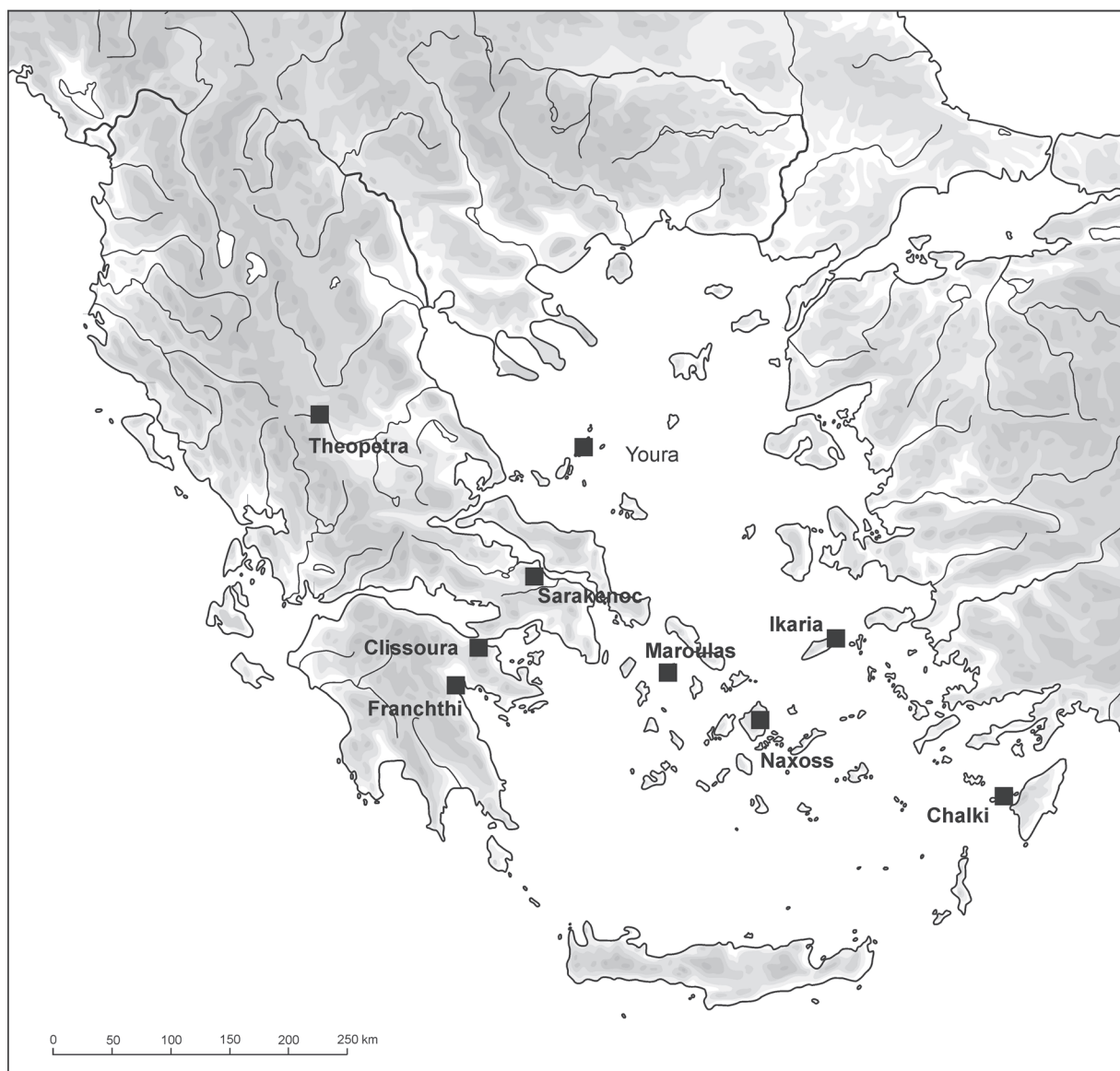


Fig. 2. Systematically explored and dated sites in Greece

Most Mesolithic sites provided a series of radiometric (mainly AMS) data (Fig. 3) in the interval between the beginning of the Holocene [on charcoals $9\,440 \pm 40$ BP = $8\,771$ – $8\,642$ cal BC – Maroulas;¹² $9\,430 \pm 160$ BP = $8\,580$ – $8\,526$ cal BC – Franchthi, Phase VII¹³ and the period after the Early Holocene Event [$8\,190 \pm 80$ BP = $7\,429$ – $6\,829$ cal BC – Franchthi, Phase IX; $7\,960 \pm 40$ BP = $7\,028$ – $6\,778$ cal BC – Sarakenos, layer 4,¹⁴ Some dates for the Mesolithic are even younger ($7\,670 \pm 120$ BP = $6\,549$ cal BC – Sidari¹⁵). The dates between $8\,240$ and $7\,611$ BP are contemporaneous with the dates for the Early Neolithic sites in the Eastern Balkans¹⁶ (Fig. 4).

¹² FACORELLIS *et al.* 2010.

¹³ PERLÈS 2001.

¹⁴ SAMPSON *et al.* 2008; KACZANOWSKA *et al.* 2016

¹⁵ BERGER *et al.* 2007.

¹⁶ PERLÈS 2001.

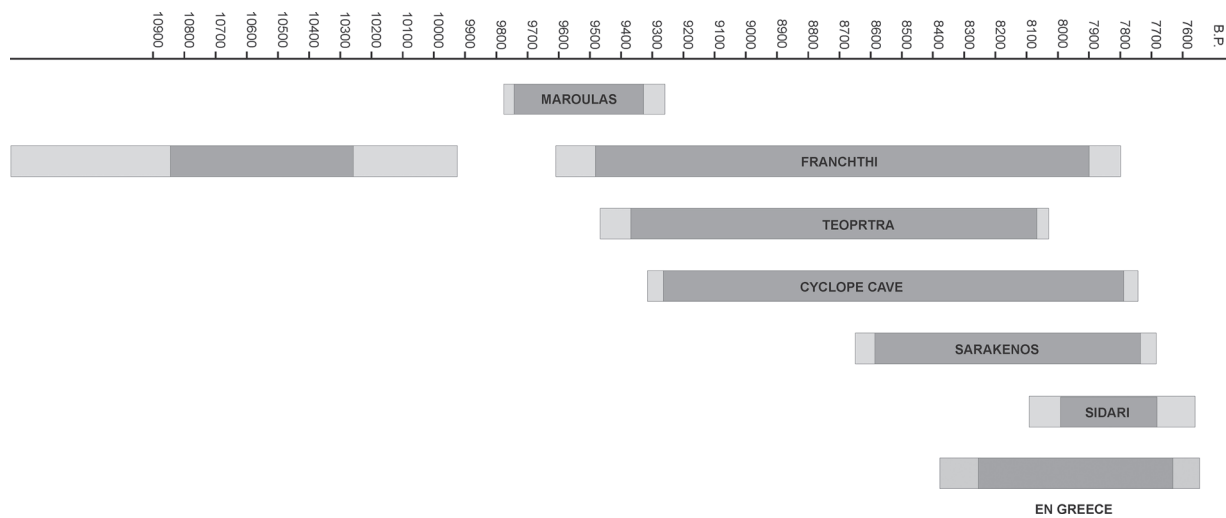


Fig. 3. Radiometric dates for Mesolithic sites in the Southern Balkans

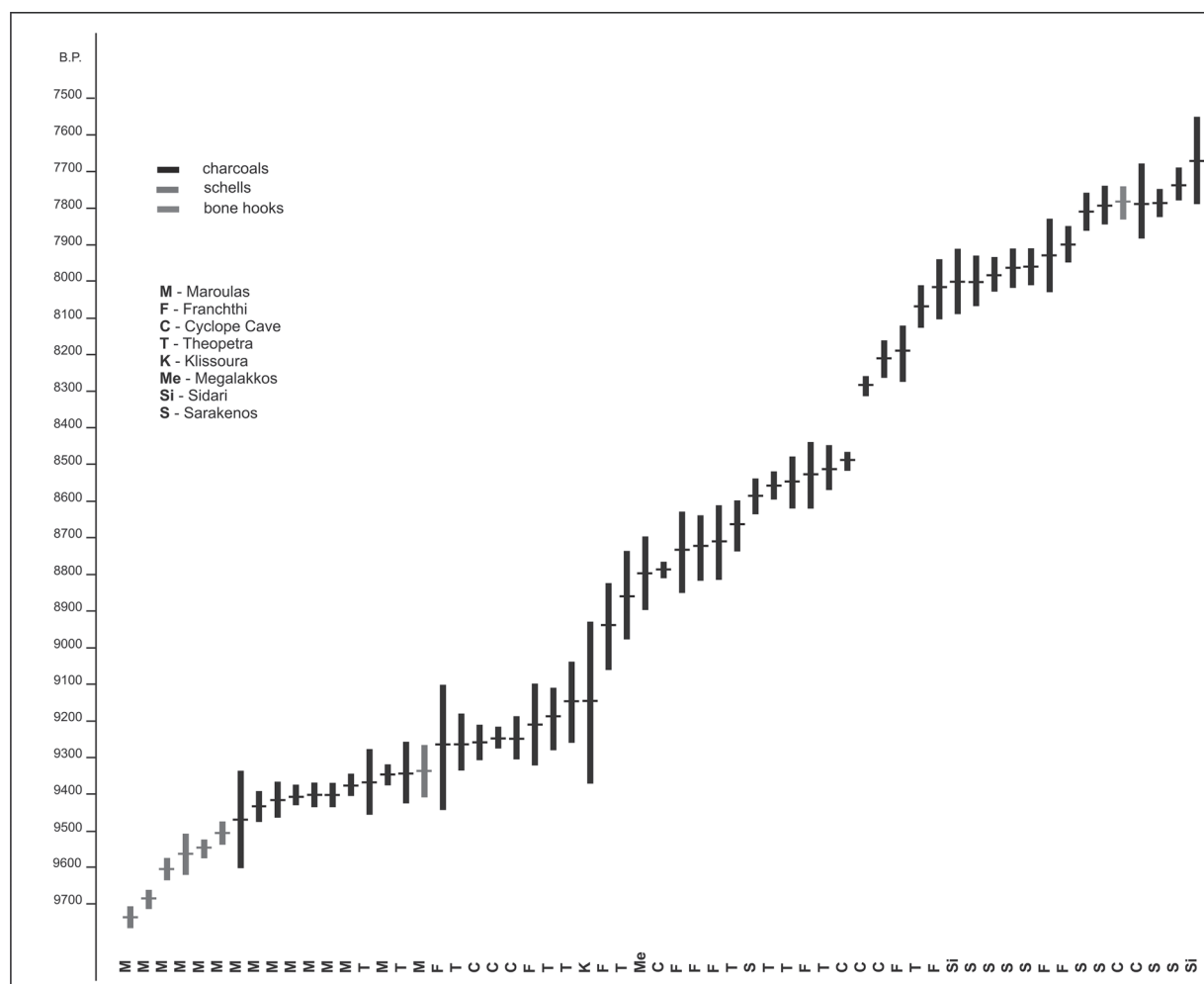


Fig. 4. Radiometric chronology of the Epipalaeolithic/Mesolithic, Initial and Early Neolithic in the Eastern Balkans

ENVIRONMENTAL CONTEXTS OF THE MESOLITHIC

The differing environmental systems resulted in different ways of adaptations of subsistence economy to local conditions. In the effect, we can see a number of parallel adaptation systems of subsistence economy, that exploit different resources of the environment.

The systems of adaptation of Mesolithic groups to local environments are reflected in the location of sites, methods of food procurement, periods of site occupation, camp organization, system of lithic raw materials procurement, methods of blank production, tool types and tool use (tool functions).

In the Southern Balkans at least three types of environments can be seen that involved different adaptations, namely: the system associated with intracontinental sites, the littoral system and the insular system.

INTRACONTINENTAL ADAPTATIONS

The sequences representing intracontinental adaptations are known from the Klissoura Cave 1 (*Fig. 5*) where an Epigravettian (layer II) and a Mesolithic (layers 5a,5,3) sequence was registered.¹⁷ Unlike in the Upper Palaeolithic (Gravettian layer III' and Aurignacian layers below) this sequence shows a distinct domination of small, fast moving animals (birds, hare), followed by medium size ungulates (Ibex, fallow deer), and large ungulates (*Equus hydruntinus*, red deer, wild pig) come third (*Fig. 6*).¹⁸



Fig. 5. Klissoura, Cave I. View of the Cave

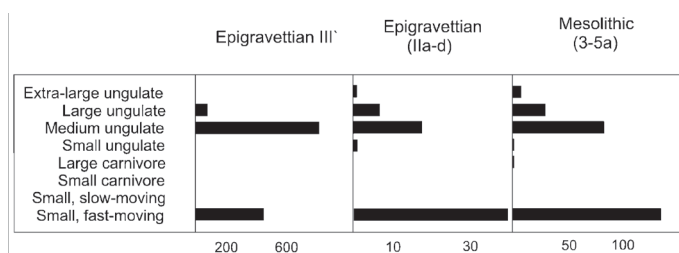


Fig. 6. Klissoura, Cave I. Faunal composition of Epigravettian (III', IIa-d) and Mesolithic layers (3-5a) (according to B. M. Starkovich)

¹⁷ KOZLOWSKI-STINER 2010.

¹⁸ STARKOVICH 2014.

The lithic industry from Klissoura Cave 1 layers 5a and 3 continue Epipalaeolithic (Epigravettian) traditions (*Fig. 7*). Index of microlithis is high; the most important group are simple backed blades and weakly arched backed pieces. Besides backed tools geometric forms also occur (rectangles and obtuse triangles) and two types of points on blades, with inverse proximal retouch and small “needle” points, present also in Sauveterrian sites in Italy (Romagnano III¹⁹). However, in Cave I at Klissoura microburin technique was not applied.

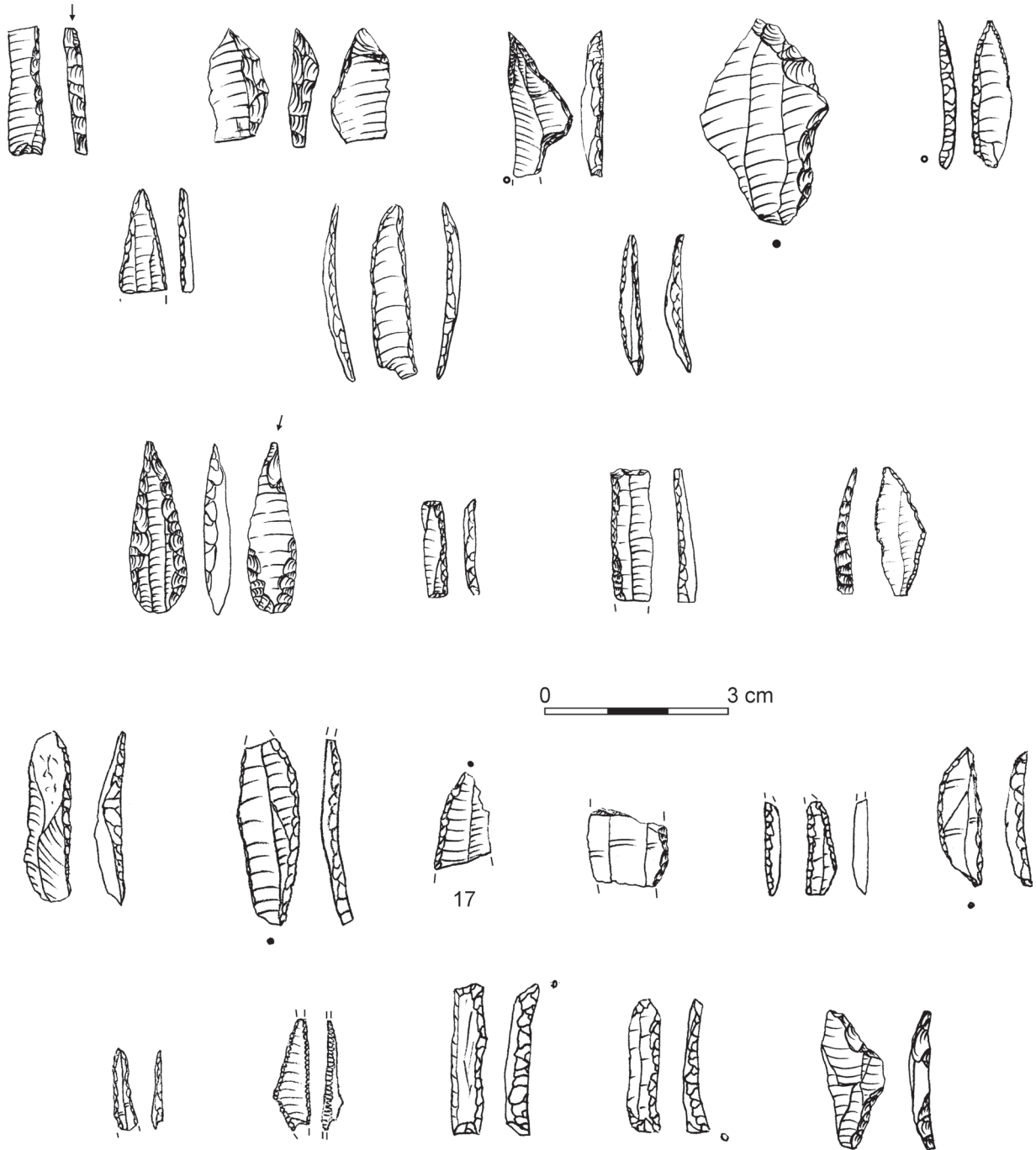


Fig. 7. Klissoura Cave I. Mesolithic artefacts from layers 5a and 3

¹⁹ BROGLIO–KOZŁOWSKI 1983.

The industries from the Mesolithic sequence at Klissoura I differ from those recorded in the litoral site in the Franchthi Cave (lithic phases VII–X²⁰) with their microlithic and geometrical components and in other open air sites in Argolid.²¹

Intracontinental adaptations are also represented in a high-lying site of the Sarakenos Cave (*Fig. 8, Fig. 9*) above the basin of Kopaisi Lake (Beotia).²²

In the Mesolithic layer 4 in the Sarakenos Cave small birds predominate (especially starling and pigeon), mostly as a result of owl eating²³ in association with only single remains of large mammals. The total isolation of Mesolithic groups (notably in layer 4) is seen in the use of, nearly exclusively, local, low quality raw materials (limestone, less often sandstone and quartz). Extralocal raw materials (radiolarite and black flint) are represented by single pieces. This necessitated the use of flake techniques, denticulated-notched or chopper-type tools (*Fig. 10*), while blade or microflake technologies were absent. In all likelihood, the role of wooden tools was more important. Moreover, micromorphological analyses shows that large quantities of green parts of plants were brought to the cave.

LITORAL ADAPTATIONS IN THE EASTERN PELOPONNESE

They are represented by the sequence of phases VII–X in the Franchthi Cave (*Fig. 11*) where essential changes can be seen in the processes of adaptation between the Early and the Middle Holocene.²⁴

Phase VII is dominated by medium-size ungulates (Cervids, Caprids) and fruits: pistaccio nuts, plum, pear and sea shells (*Cyclopus neritea*). A radical change takes place in phase VIII with the re-orientation of subsistence economy on marine resources. In this layer tuna remains are most numerous, while bones of fallow-deer and wild pig are few. Tuna-fishing is registered in phase IX; tuna remains occur together with some plant macroremains which include wild oat and, possibly, domesticated cereals. It is only in phase X that first species of – unquestionably – domesticated plants and animals appear.

The lithic industry in the Franchthi sequence indicates a hiatus between phase VI (Epipalaeolithic) with micro-backed pieces and microburin technique and phase VII where flake technique is most important. It is as late as phase VIII that trapezes and backed bladelets appear, and in phase IX flake technique re-appears and *flèches tranchantes* that evidence contacts with the Central Mediterranean region (*Fig. 12*).

INSULAR ADAPTATIONS IN THE AEGEAN SEA

These adaptations are represented by the proto-settlement at Maroulas (on the Kythnos island)²⁵ (*Fig. 13*) and the site in the Cyclops Cave on the Gioura island (Northern Sporades).²⁶ Mesolithic sites are also known from other Aegean islands, mainly from Ikaria,²⁷ Naxos (Stelida),²⁸ Roos²⁹ and Chalki (surface finds by A. Sampson).

The site of Maroulas is characterized, first of all, by the exploitation of marine resources (fishing – medium size migrating fishes such as tuna and mackerel, also near shore fish such as eel, sea bram, and scorio fish), and land foraging (snail – mostly *Helix* collecting). Remains of young pigs, hare, fox and marten suggest that these animals could have been imported to the island; however pig domestication is not unlikely. The role of plant food is confirmed by sophisticated grinding equipment. The site shows an all-year-round occupation documented by bones of birds migrating in various seasons of the year. The presence of more than 30 round stone dwelling structures documents a more stable multiphase occupation of the site (*Fig. 14, Fig. 15*). Burials underneath the floors of dwellings and between dwellings contained contracted skeletons (*Fig. 16*). Moreover in some dwellings human bones were discovered.

The chipped stone industry from Maroulas and other sites on the Aegean islands was based on local raw materials (mainly quartz) used in the production of flake tools (*Fig. 17*). In all Mesolithic sites on the Aegean Islands

²⁰ PERLÈS 1990.

²¹ RUNNELS 2009.

²² SAMPSON *et al.* 2009; KACZANOWSKA *et al.* 2016.

²³ BOCHENSKI *et al.* 2017.

²⁴ PERLÈS 1990.

²⁵ SAMPSON *et al.* 2010.

²⁶ SAMPSON 2008.

²⁷ SAMPSON *et al.* 2012.

²⁸ CARTER *et al.* 2014.

²⁹ KACZANOWSKA–KOZŁOWSKI 2014.



Fig. 8. Sarakenos Cave. View of the Cave



Fig. 9. Sarakenos Cave. Stratigraphic sequence: Mesolithic (layer 4), Initial Neolithic (layer 3) and Early Neolithic (layer 2)

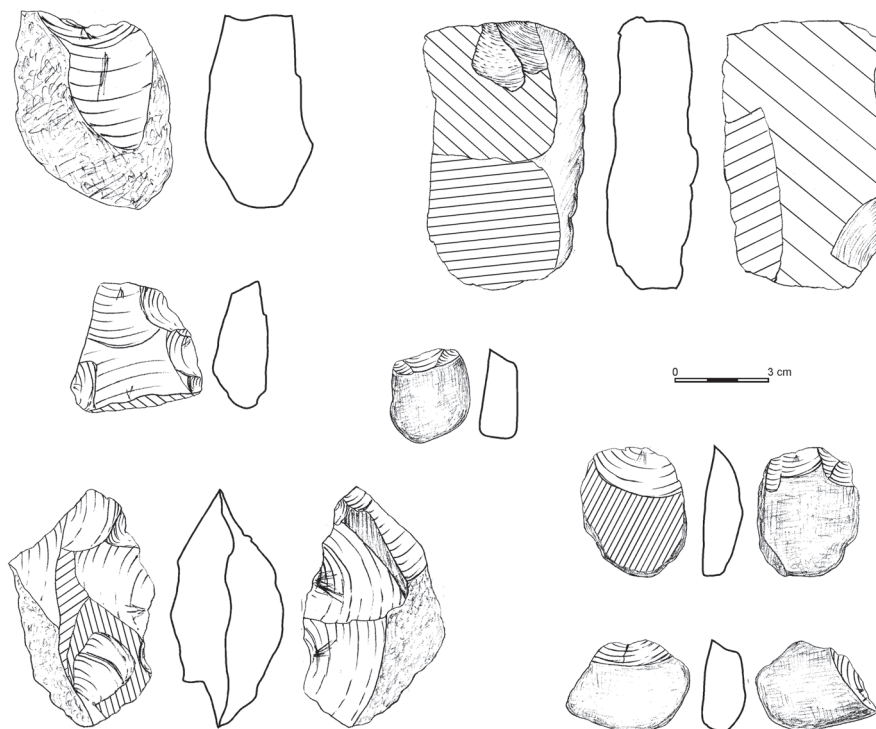


Fig. 10. Sarakenos Cave. Cores and macrotools from layer 4



Fig. 11. Franchthi Cave. View of the Cave

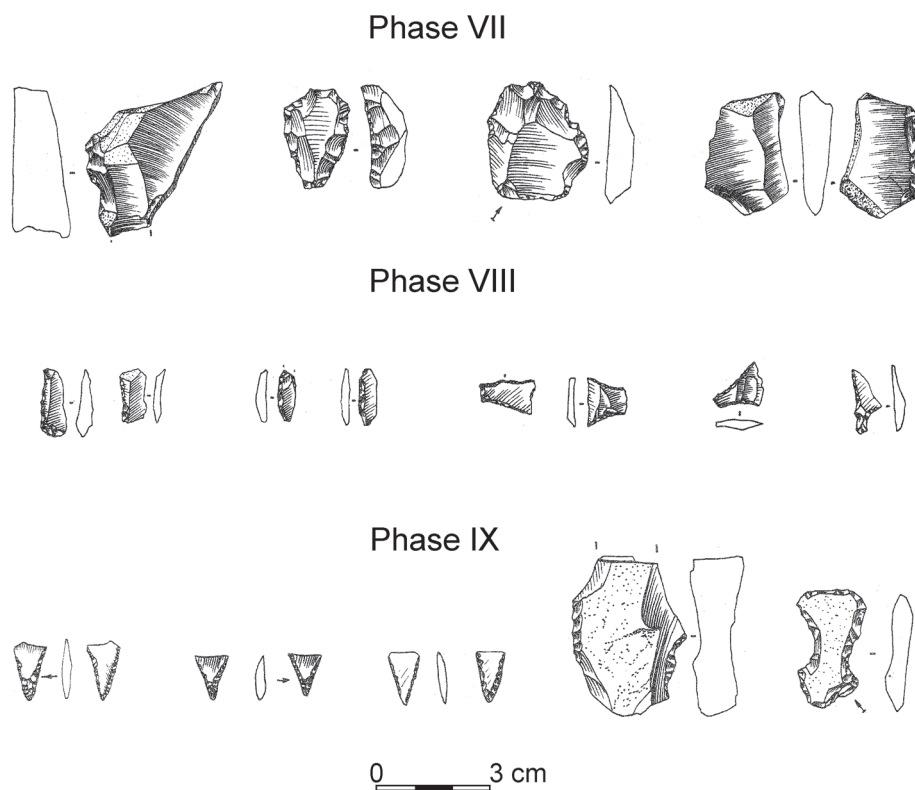


Fig. 12. Franchthi Cave. Implements from Lithic Phases VII–IX (according to C. Perlès)



Fig. 13. Maroulas on Kythnos island. View of the site

the presence of obsidian from Melos and from Ghiali documented the systematic marine contacts across the Aegean Sea. Obsidian was used for manufacture of various types of tools (backed pieces, geometric inserts, perforators, truncations – *Fig. 17*).

Fishing played a major role also on other islands, for example on the Northern Sporades. In the Cyclops Cave on the island of Gioura bone hooks (*Fig. 18*) and numerous fish bones (Sparidae family) were found.³⁰ Moreover bones of goat in the early phase of domestication were also found.³¹

MODELS OF ADAPTATION TO ENVIRONMENTAL CONDITIONS IN THE EARLY/MIDDLE HOLOCENE OF THE SOUTHERN BALKANS

Pre-Neolithic culture units in the Aegean Sea Basin represent three models that have been distinguished on the basis of environmental conditions, economy, and the occurrence of a diversity of traditions and cultural influences (*Fig. 19*).

1. An intracontinental model that functioned in the territories from the Peloponnese as far as Beotia, characterized by the continuity of local Epipalaeolithic (Epigravettian) traditions on which are superimposed Sauveterrian impacts of the Early Mesolithic of the Central Mediterranean zone. However, some groups of hunters-gatherers exhibit features of isolation such as the exploitation of low-quality lithic materials. The economy of these groups consisted in the hunting of small and medium size mammals. Some groups, notably in the territory of Beotia, persisted until the arrival of the first Neolithic settlers and, in time, adopted from them elements of food-producing economy (first of all stock-breeding).

2. A littoral model known from the coast of the Peloponnese. At the boundary between the Epipalaeolithic and the Mesolithic cultural discontinuity has been registered, and Epipalaeolithic bladelet industries were replaced

³⁰ MYLONA 2003.

³¹ TRANTALIDOU 2003; TRANTALIDOU 2008.

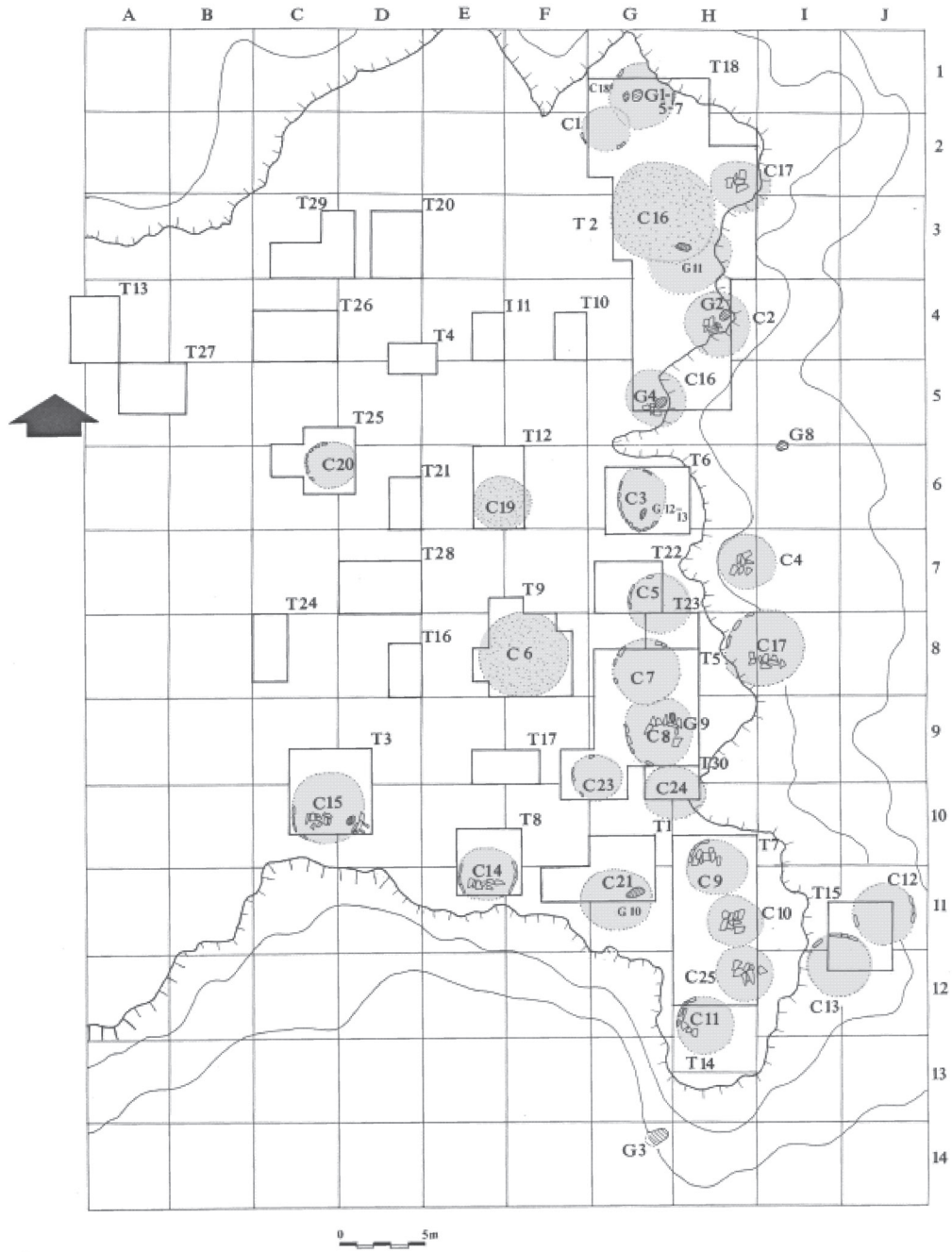


Fig. 14. Maroulas on Kythnos island. Map of the site with stone dwellings



Fig. 15. Maroulas on Kythnos island. Round stone structure with pavement (Feature C3)

by Early Mesolithic flake industries. In subsistence economy the role of hunting became smaller, while fishing, especially tuna fishing in the Late Mesolithic gained in importance. The groups inhabiting littoral zones adopted, moreover, some components of the Neolithic package which encouraged some authors³² to assign these groups the “initial Neolithic”. Besides contact with groups that mastered food-producing economy, in lithics, appeared elements that indicate contacts with the Western Mediterranean Late Mesolithic (e.g. *flèches tranchantes*).

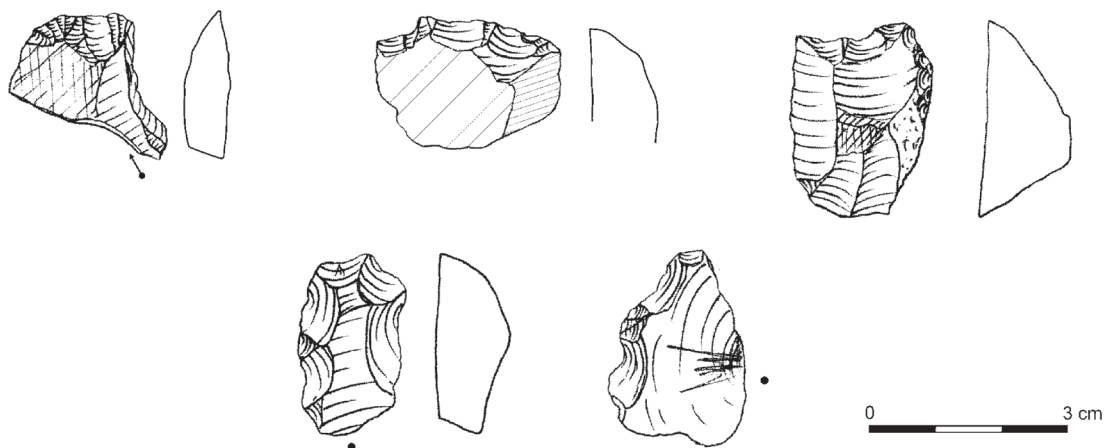
3. The insular model is represented on the islands of the Aegean Sea that in the Mesolithic were fairly intensively settled. The setting of the Aegean islands (Kythnos, Ikaria, Naxos, Chalki, Youra) was stimulated by the development of seafaring from continental Greece. The long-distance contacts across the sea are documented by the distribution of obsidian from the islands of Melos and Ghiali. These contacts could have reached the eastern part of the Mediterranean Sea basin contributed to the transmission of elements of the Pre-ceramic Neolithic (stone architecture, burials underneath house floors, grinding stone equipment) as early as the first half of the IXth millennium BC. The presence of pig and goat could evidence the incipients of food producing economy in addition to fishing and land snails collecting. In all likelihood interaction must have taken place between the littoral and the insular model.

³² PERLÈS 2001.



Fig. 16. Maroulas on Kythnos island. Burial 24 in dwelling structure C22

Quartz



Obsidian

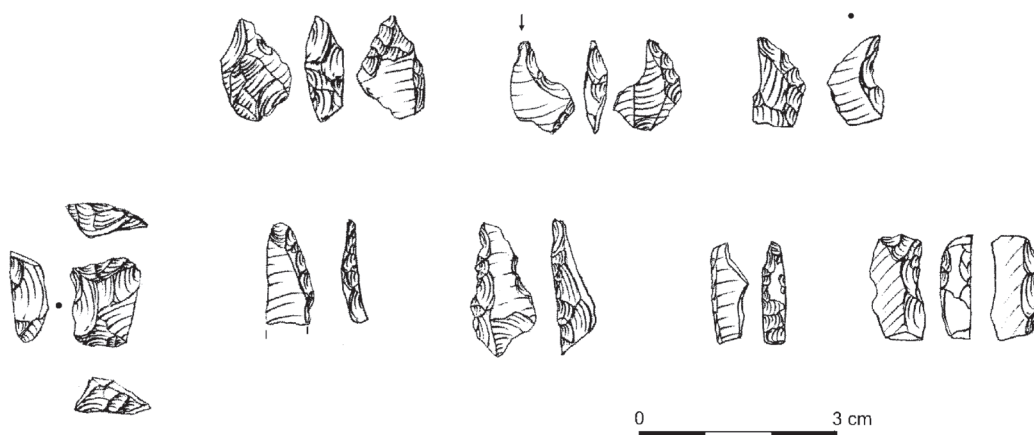


Fig. 17. Maroulas on Kythnos island. Implements from quartz and obsidian

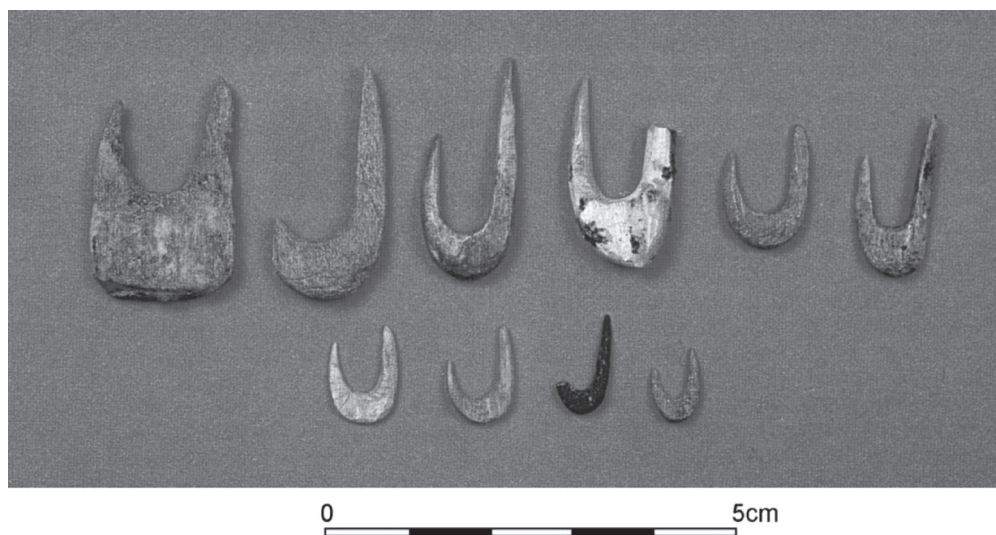


Fig. 18. Cyclops Cave on Gioura island. Bone hooks (according to A. Sampson)

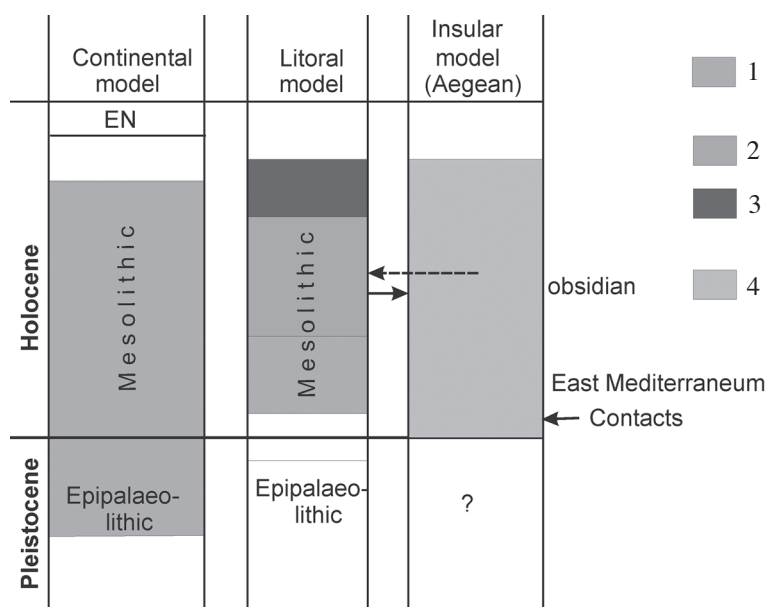


Fig. 19. Subsistence economy in intracontinental, litoral and insular models. 1: hunting on small/medium size mammals; 2: fishing; 3: elements of the Neolithic package; 4: fishing, snail gathering and incipient food producing

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