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SUNA & İNAN KIRAÇ RESEARCH INSTITUTE ON MEDITERRANEAN CIVILIZATIONS

ADALYA

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İçindekiler

Prof. Dr. CEVDET BAYBURTLUOĞLU
(1934-2013)

"…Yaşamınızı arkeolojiye bağladınız. Arkeolojiyi içten gelen duygularla sevdiniz ve onu Türk kamuoyuna sevdirdiniz. Örnek bir bilim adamı olarak Türk arkeolojisinde seçkin bir yeriniz vardır. Sevecen bir hoca, özverili bir kazı yönetmeni, barışı, dostluğu yaşatan bir aydın olarak hizmet görüyorsunuz. Sizin bundan sonra Türkiye ve dünya arkeolojisiyle turizmine olan büyük hizmetlerinizi başarıyla sürdüreceğiniz inancındayım. Sizi sevgiyle, saygıyla selamlarım.[*]"

Ord. Prof. Dr. Ekrem Akurgal
İzmir, 2001.

"…You have dedicated your life to archaeology. You have loved archaeology with the most sincere of feelings and made society love it. You have a special elite place among Turkish archaeological academia. You have been serving as a role model for the embracing teacher, the self-sacrificing excavation director and the enlightened person reviving peace and friendship. I believe that you will continue your great services to Turkish and world tourism and to archaeology. I salute you with love and respect."*

Ord. Prof. Dr. Ekrem Akurgal
İzmir, 2001.

Adalya'nın bu sayısı, bir vefa ve saygı gereği Bilim Danışma Kurulu üyemiz, AKMED Kütüphanesinin nazik ve cömert bağışçısı Cevdet Bayburtluoğlu'nun aziz hatırasına armağandır.

This issue of ADALYA is dedicated, in fidelity and respect, to the dear memory of Cevdet Bayburtluoğlu, a generous and kind donor to the Library and member of the Academic Advisory Board of AKMED.

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* E. Akurgal, "Cevdet Bayburtluoğlu'nun Anadolu Arkeolojisine Katkıları", in: C. Özgünel et al. (eds.), Cevdet Bayburtluoğlu İçin Yazılar – Essays in Honour of Cevdet Bayburtluoğlu (2001) 1.

ADALYA XVII, 2014

The Epipalaeolithic Site of Ouriakos on the Island of Lemnos and its Place in the Late Pleistocene Peopling of the East Mediterranean Region

Nikos EFSTRATIOU* – Paolo BIAGI** – Elisabetta STARNINI***

Introduction

Until a few yeas ago Lemnos, the eighth largest Greek island and located in the north-eastern Aegean Sea between Mount Athos, Samothrace, Imbros and Lesbos (Fig. 1), was known mainly for the Bronze Age settlement of Poliòchni[1] and the archaic and classical city of Hephaestia[2] and its sanctuary, the Kavirion. The island extends over an area of 478 sq. km. At present its shortest distance from the mainland coast of northwestern Anatolia is ca. 62 km. Although of volcanic origin[3], some areas of the island consist of depressions covered with Holocene alluvium, sometimes spotted with shallow salt basins and lagoons, which are common along the north-eastern coast and the innermost part of Moudros Bay[4].

The island is well known for the exploitation and trade of "Lemnian Earth" that took place from the Bronze Age to Venetian times[5], and the prehistoric village of Poliòchni, which until a few years ago was thought to represent the earliest occupation of the island. Excavations

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1 Bernabò Brea 1964; Bernabò Brea 1976.

2 Messineo 2001; Greco - Papi 2009; Ficuciello 2010a; Ficuciello 2010b.

3 Maravelis - Zelilidis 2012; Panagopoulos et al. 2011.

4 see for instance IGME 1993; Innocenti et al. 2009; Pavlopoulos et al. 2013.

5 Hall - Photos-Jones 2008; Photos-Jones - Hall 2011.

carried out at the site by L. Bernabò Brea[6] brought to light a complex sequence of superimposed settlements that could be related to those of the same age excavated in north-western Anatolia, notably Troy[7].

More recent explorations and discoveries have revealed the presence of several other important prehistoric sites[8], among which are Trochalià, Vriòkastron, Axiès/Axia, Mikrò Kastelli, Hephaestia, and Bronze Age villages with characteristics similar to those of Poliòchni, at Myrina, for example[9], and Koukonisi[10], as well as others located along other shores of the island. They reflect the important role played by Lemnos during the Bronze Age in this part of the Aegean world, most probably because of its strategic location controlling the Dardanelles[11].

In one of her recent papers H. Dawson considering eastern, central and western Mediterranean island "colonization" suggested the 12th millennium cal B.C. as a hypothetical date for the earliest settling of Lemnos[12]. Recent research on the Palaeolithic and Mesolithic in the Aegean[13] has shown that some of the present-day islands started to be settled well before the Bronze Age. Consequently, the chance discovery of an Epipalaeolithic site at Ouriakos, along the south-eastern coast of the island near Fyssini, a few kilometres south of Poliòchni, was no surprise. Nevertheless, the new site showed a few unexpected characteristics, among which are its extent, chronology within the Late Pleistocene/Early Holocene peopling of the north-eastern Aegean, and the so far unique techno-typological traits of the chipped stone assemblage.

Other questions that immediately arose concern the location of the lithic raw material outcrops exploited by the Ouriakos hunter-gatherers, in the wider framework of the reconstruction of the paleolandscape surrounding the site.

The last question was relatively easy to answer with the aid of ethnographic sources. During the Byzantine period the island was the main provider of wheat for Constantinople, and its agricultural character based on the cultivation of wheat, barley, sesame, lentils, and another pulse species as well as Cyprus vetch (*Lathyrus ochrus* (L.) D.CA.) remained strong even after its incorporation into Greece in the early 20th century and until the 1950s when thousands of its inhabitants emigrated abroad[14]. Traditional threshing sledges[15], some of which are on display in the Folklore Museum of Portianou, were produced until recently in the village of Agìa Sophìa with lithic inserts obtained from a local raw material outcrop still known to the old local inhabitants. A brief survey made at Kalogiros, in the upper Havouli Valley, confirmed that this was one of the hydrothermal siliceous rocks exploited in prehistory. This evidence is supported not only by the volcanic lithological characteristics of the local resources[16], but also by the recovery of prehistoric chipped stone tools a few dozen metres from the outcrop.

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6 Bernabò Brea 1964; Bernabò Brea 1976.

7 Easton - Weninger 1993; Weninger 2009a.

8 Boulotis 2011, fig. 1a.

9 Dova 1997; Archontidou - Kokkinoforou 2004.

10 Boulotis 2009; Boulotis 2010.

11 Privitera 2005, 228.

12 Dawson 2011, tab. 2.2.

13 See, for instance, Kourtessi-Philippakis 1999; Kozłowski 2005; Kozłowski 2007; Sampson et al. 2005; Sampson et al. 2009; Sampson et al. 2010; Broodbank 2006; Galanidou et al. 2013.

14 Enepedikis 1997.

15 Ataman 1992; Skakun 2006.

16 Innocenti et al. 2009.

The Site

The site of Ouriakos was discovered in 2006 along the south-eastern Louri coast of Fyssini in the Moudros municipality[17]. The site was uncovered by chance during the construction of a car park close to the beach (Figs. 2 and 3) when part of a sand dune sealing the archaeological deposit was removed. The site, partially located on a Pleistocene calcarenitic marine terrace gently sloping toward the sea, at an altitude of some 10 m., is delimited by two seasonal streams, the western of which gave the name to the site (*rhyaki*/stream in Greek; Fig. 4). Along its western profile a buried, dark clayey palaeosol, partly developed above the calcarenite deposit (Fig. 5) shows evidence of chipped stone artefacts at its top, later sealed by a sand dune[18].

Systematic collections made in 2008-2010 on the exposed surface (Fig. 6), and the excavations that followed in 2009-2013, showed that the site extends over at least 1500 m.^{2} on both sides of the Ouriakos stream[19].

The first excavation trench was opened in the central part of the marine terrace affected by parking earthworks, where the chipped stone assemblage is contained in a sandy layer some 10-20 cm. thick, just above the calcarenite erosional surface (Fig. 7). Given that the above deposit did not yield any evidence of charcoal or fireplaces, one point to investigate in the future concerns the study of the post-depositional processes that may have affected charcoalified material and introduced bias into the archaeological record[20].

However, the lowermost part of the deposit yielded a few small, unidentifiable mammal bones, heavily weathered or rounded, a single burnt sample of which was AMS-dated to 10,390±45 uncal BP/10,437-10,198 cal BC at 2σ (GrA-53229) employing the structural carbonate method[21], after unsuccessful attempts to date collagen extracted from another bone sample[22]. The result suggests that the site was settled during an advanced period of the Younger Dryas cold oscillation (ca. 10,900-10,000 uncal BP)[23].

In 2012 a test trench in an undisturbed area of the terrace, close to the edge of the western bank of the Ouriakos stream, revealed an archaeological horizon *in situ* at a depth of some 1.40 m., just below the sand dune, at the top of the above-mentioned buried soil. A few chipped stone artefacts were recovered from this layer, among which is one microlithic lunate (Fig. 8). Unfortunately the soil conditions did not favour the preservation of organic material, with the exception of a few badly preserved bone specimens, land snails, small lumps of ochre and very few marine shells[24].

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17 Efstratiou - Kiriakou 2011; Efstratiou et al. 2013.

18 Efstratiou et al. 2013.

19 A full account of the excavation and its material will be presented at a later date since the dig is still in progress.

20 Braadbaart et al. 2009.

21 Bones that have been heated in excess of 600° C for sufficient time usually burn away all of the fats, proteins and collagen and are not suitable for traditional radiocarbon dating. In the absence of any charred collagen, a method is now available for dating the carbonate fraction in cremated bones based on structural carbonate. When bones are heated to above 600° C, the osteocalcin (apatite) in the bone is converted to structural carbonate. This bone carbonate can now be dated. The structural carbonate is very resistant to change and not easily contaminated once cremation has occurred, therefore it has been shown to be a good substance for reliable AMS dating. The method was published and accepted in 2000 at the 17th International Radiocarbon conference. Studies indicate good agreement between bone carbonate in highly heated bones with associated charcoal. This method should only be attempted in the absence of collagen or charred collagen (see Lanting et al. 2001).

22 J. van der Plicht, personal communication, 2012.

23 Lowe et al. 2001, tab. 3.

24 They are represented by a few pierced *Cyclope neritea* (Linneus, 1758) specimens, one worn, polished fragment of

The Excavations

The archaeological exploration of the site began in 2008 with a systematic collection of surface finds within a grid measuring 14x23 m., subdivided into units of 1x1 m., labeled with alphabetic letters and Arabic numbers, which in turn were subdivided into 4 quadrats (I-II-III-IV) of 50x50 cm. each (Fig. 6). The main grid (Sector I) was positioned in the centre of the area, rich in chipped stone artefacts, exposed after the removal of the sand dune for the car park construction.

The surface collection continued also during the two following years (2009-2010). The sand deposit covering the bedrock, some 15-20 cm. thick in most squares, was then removed by trowel in arbitrary spits 3-5 cm. thick. The positions of both chipped stones and bones were recorded according to three coordinates, while the soil was water-sieved in order to improve the recovery of the microlithic artefacts.

Other test squares were opened to the west, along the bank of the Ouriakos stream (Squares Q29, R29 (Sector II)), and also Trench 1 (Sector III) (Fig. 4). Further systematic excavations were carried out between 2009 and 2013. The research is still under way.

The Chipped Stone Assemblage

The chipped stone assemblage from Ouriakos is manufactured primarily from varicoloured hydrothermal rocks (chalcedony/opal/jasper) and small or middle-sized radiolarite and chert pebbles[25]. The surveys made in the area around the site revealed that the nearest sources of both the above raw materials are located 1) in the lower Havouli Valley (Fig. 9), some 8 km. north-west of the site[26], as the crow flies, where conglomerates containing radiolarite and chert pebbles crop out from the river terraces, and 2) along the eastern slope of Kalogiros in the upper part of the same valley, where a rich deposit of striped, varicoloured chalcedony/opal/jasper seams crops out from the volcanic formations (Fig. 10).

A sample of 9131 chipped stone artefacts has been analyzed by two of the authors (P. B. and E. S.) during three study seasons at the Myrina Museum (2011-2013). Although both the above raw materials were utilized, it was observed that the radiolarite and chert artefacts are in a better state of preservation, while those made from hydrothermal rocks are heavily weathered and patinated due to post-depositional processes in an alkaline environment that affects silica preservation[27]. Nevertheless, a rapid evaluation[28] of a few specimens for use-wear analysis has shown that the assemblage still holds potential and is suitable for a traceological study (Fig. 11). Moreover, many lithic artefacts (2688: 29.44% of the total assemblage) and bone fragments show contact with fire, although so far no *in situ* fireplace or charcoal fragments have been found in the archaeological deposit.

Antalis sp. and one complete *Cerithium vulgare*, which was AMS dated to 31,960+220/-200 uncal BP (GrA-53223), indicating that the fossil gastropod had been collected from a Pleistocene deposit. Most probably all the marine shells were used as ornaments, a practice well known from Upper Palaeolithic sites in the Greek mainland: see Kotjabopoulou - Adam 2004, 41.

25 The raw materials have been identified by M. Brandl of Arbeitsgruppe Quartärarchäologie OREA, Institut für Orientalische und Europäische Archäologie,Österreichische Akademie der Wissenschaften, Vienna.

26 That is within the foraging radius of a community of hunter-gatherers; see Binford 1982, 7.

27 Sheppard - Pavlish 1992.

28 The chipped stone artefacts have been examined under a microscope by B. A. Voytek of the University of California, Berkeley with many thanks.

The tools were manufactured in the settlement area, as suggested by the great number of cores (232), debitage and waste flakes, crested blades (206), tablets (17) and by-products derived from core preparation and successive production stages, plunging blades for instance (12).

Typological Characteristics

The assemblage presented in this paper comes from the excavation carried out in squares D-E-F-G/9 and D-E-F-G-H/10 (Figs. 4, 6; Tab. 1). It has been analyzed following the typological method of G. Laplace for the tools[29], A. Broglio and S. K. Kozłowski for the cores[30], and M.-L. Inizan et al. for the technological aspects[31]. Following the stratigraphic sequence revealed by the excavations, on present evidence the assemblage is considered to belong to a homogeneous cultural aspect, even though it is not possible to say whether the site represents a single habitation episode or, more likely, repeated (seasonal?) occupations.

The lithics were recovered by both visual, dry and water sieving using a 2 mm. mesh, which led to their almost complete recovery, debitage and shatters included. As mentioned above, the studied assemblage consists of 9131 artefacts among which are 196 tools. They include 7 burins and 3 burin spalls, 34 end-scrapers, 5 truncations, 2 becs (?), 21 backed bladelets and points (plus 6 fragments), 115 geometric microliths among which are 114 lunates and 1 scalene triangle, 3 retouched bladelets, 2 side scrapers, and 1 probable *pièce écaillée* (Fig. 12; Tab. 2). The retouched tools represent 2.15% of the total assemblage.

There are 232 cores (2.54% of the total assemblage; Fig. 13). They are mostly small, exhausted, with one single, inclined striking platform with one or more preparation removals. However, some specimens have two opposed platforms. They have either been turned upside down during their exploitation (Fig. 13, nos. 6, 8) or show the employment of the anvil technology. There are two basic core-types. The first is subconical or prismatic or polyhedric: all the hydrothermal rocks specimens belong to this type. The second is on small, rounded pebbles (Fig. 13, nos. 3, 4, 7): all the radiolarite and chert samples belong to this class. They are characterized by one single, prepared striking platform with one flaking/debitage face opposed to the cortical surface, often showing parallel, narrow microbladelet detachments. Probably the cores have been struck either by direct, soft hammer percussion, or indirect punch percussion[32] in order to obtain small and thick scalene triangular cross-section microbladelets, from which microlithic lunates were later retouched (Fig. 14). The core-exploitation usually ended with the detachment of laminar flakelets that may have been used for the production of end scrapers.

Several crested blades (Fig. 16, nos. 35-41), *corniches*, *tablettes* and plunging microbladelets testify to the preparation, curation and maintenance of the core striking platforms and debitage face. There are 212 crested blades, mainly partial and unilateral (2.32% of the total assemblage). The cores: crested blades ratio is almost equal to 1:1 (1.09:0.91).

The burin technique is represented by 7 burins (Fig. 15, nos. 2-8), 3 burin spalls and 1 probable core-burin (Fig. 15, no. 1).

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29 Laplace 1964.

30 Broglio - Kozłowski 1983.

31 Inizan et al. 1992.

32 Inizan et al. 1992.

The end scrapers (34: 17.35%) are atypical and irregular. They consist of both long (Fig. 15, nos. 9-14) and short forms (Fig. 15, nos. 15-18), and 1 circular specimen (Fig. 15, no. 19). They were obtained from bladelets and small, sometimes thick flakes. One long specimen is on a crested bladelet (Fig. 15, no. 9), 1 is double (Fig. 15, no. 13) and 1 has been used for scraping hard material (Fig. 15, no. 14).

The geometrics are represented by lunates (Fig. 16, nos. 1-26) and 1 atypical scalene triangle (Fig. 16, no. 27). There are 114 microlithic lunates (1.25% of the total assemblage, 58.16% of the tools). 41 are complete (35.96%), 73 broken (64.03%) and 54 burnt (47.44%). The unburnt specimens (60) have been obtained from radiolarite and chert (13: 11.43%), and hydrothermal rocks (47: 41.22%) by abrupt, continuous, bipolar retouch. They never show any complementary retouch on the chord. Their length varies from 12 to 22 mm., although many (31 out of 41) fall between 15 and 18.5 mm. (Fig. 17), and are mainly 2.3-3.5 mm. thick (34 out of 41; Fig. 18). These data suggest the systematic production of one well-defined, standardised type of lunate insert following the *chaîne operatoire*[33] reported above, without employing the microburin technique[34]. This fact is most probably due to the unique type of blanks with scalene triangular cross-section produced for their manufacture.

Other abrupt retouch tools (27) are represented by 7 backed points (Fig. 16, nos. 40, 41), 12 backed bladelets (Fig. 16, nos. 38, 39), 1 backed and truncated bladelet, and 6 fragments, mainly obtained by abrupt, bipolar, unilateral retouch.

The presence of small raw material blocks, chunks, many cores, technical pieces and debitage products show that the tools were produced locally, employing a great quantity of raw material brought into the site from the easily accessible outcrops of the Havouli Valley. The high number of tested nodules, blocks, and cores with just one or a few removals, and discarded by-products indicates the low technological quality of the raw material utilized and the great quantity necessary for obtaining suitable blanks to be later shaped into tools. Moreover, the presence of millimetric shatters recovered by wet sieving indicates minimal post-depositional disturbance of the anthropogenic deposit as well as on-site production.

The typological characteristics of the assemblage show that the production of geometric inserts (lunates) played a primary role among the activities of the Ouriakos hunter-gatherers and suggest the site's high specialization, possibly a residential camp[35] that was occupied for short periods by groups of the same cultural aspect during a well-defined moment of the Younger Dryas.

Discussion

The discovery of the Epipalaeolithic site of Ouriakos, besides retro-dating much earlier than previously thought the human presence on the island, is of fundamental importance for the study of the relationships between the Balkans and Anatolia at the end of the Pleistocene[36]. During that period the landscape surrounding the site was very different from that of the

33 Inizan et al. 1992.

34 It is interesting to note that the geometric microliths of the Kebaran A assemblages of the Levant - although chronologically slightly earlier than those from the site presented in this paper (Goring-Morris - Belfer-Cohen 2011, tab. 1) - in which lunates recur in varying percentages up to 40%, sometimes obtained with bipolar retouch, are not manufactured with the microburin technique. See Bar Yosef 1976, 100; Shilmelmitz et al. 2004.

35 Binford 1983.

36 Kozłowski - Kaczanowska 2004.

present, given that Lemnos was most probably not an island, but a peninsula of the mainland, i.e. Anatolia, and the campsite was located close to good freshwater resources, relatively far (3-5 km) from the Aegean seashore. The relatively shallow bathymetric contours[37] support this hypothesis, although we are well aware that a detailed palaeogeographic reconstruction is needed for the relatively brief, cold period of the Younger Dryas, during which important environmental and cultural changes took place all over the east Mediterranean region[38] that indicate the climatic instability of the Late Glacial/deglaciation period, and indicate rapid drops in temperature linked with the above event[39].

The cultural relationships with Anatolia and the Levant are indicated mainly by the presence of many microlithic lunates that are the most characteristic tool of the Ouriakos specialized chipped stone assemblage. Although this specific geometric type has a long tradition throughout the Upper Palaeolithic[40], they vary in shape, size, retouch and technology of manufacture according to their cultural affiliation, chronology, area of production, function and hafting characteristics[41].

Apart from the Levant[42], their presence in the eastern Mediterranean is reported from the Epipalaeolithic layers of Direkli Cave[43], in the Kahramanmaraş province of south-east Anatolia[44]. Layer 7 of this cave, which is rich in microlithic lunates obtained with abrupt, deep, direct retouch, has been radiocarbon dated to 10,480±60 uncal BP (Beta-276742) from charcoal[45]. Other sites in the Gulf of Antalya and its interior[46] yielded similar chipped stone assemblages. The most important site of this region is Öküzini Cave near Karain, where different types of microlithic lunates are reported throughout a long sequence of at least 6000 years to finally disappear around the beginning of the Holocene[47].

The Ouriakos chipped stone industry can be compared to those from layers Ia1-Ia2 of Öküzini, recently attributed to the Antalyan facies of the Aegean Epigravettian[48]. These layers, radiocarbon-dated to the Younger Dryas cold oscillation (OxA-5213: 10,150±90 and RT-1441: 10,440±115 uncal BP, both from charcoal)[49], yielded a lithic assemblages with different types of lunates obtained from microbladelets of triangular cross-section with the microburin technique. They are made mainly by abrupt, deep, direct retouch. Only 18% of the tools from the entire cave sequence have been produced by bipolar retouch[50]. Various types of short and long endscrapers are also characteristic[51]. Unfortunately, the measurements of the individual lunates

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37 Perissoriatis - Conispoliatis 2003.

38 Baruch - Bottema 1991; Belfer-Cohen - Bar-Yosef 2000; Valla 2000; Lowe et al. 2001; Weninger 2009b.

39 Kouli et al. 2012, 124, fig. 4.

40 See, for instance, Bibikov et al. 1994 for the northern Black Sea coast of Crimea; Hovers - Marder 1991; Goring-Morris 2009; Neeley 2010 for the Levant.

41 See, for instance, Nushniy 1992; Yaroshevich et al. 2010.

42 For summary views, see Bar Yosef 1976; Goring-Morris 1995; Yaroshevich 2006.

43 For the Epipalaeolithic, and the meaning of the term in Anatolia, see Atıcı 2011.

44 Erek 2010; Erek 2011; Erek 2012.

45 Arbuckle - Erek 2012, 695.

46 Bostancı 1968; Albrecht 1998; Atıcı 2009.

47 López Bayón et al. 2002, tab. 1; Kartal 2002.

48 Kaczanowska - Kozłowski 2013, 18.

49 López Bayón et al. 2002, tab. 1.

50 Kartal 2003, fig. 5.

51 Léotard - López Bayón 2002.

from this cave have not been published, but the average length from the entire sequence is 17.3 mm.[52].

The discovery of an Epipalaeolithic, Younger Dryas site along the southeastern coast of Lemnos contributes to the interpretation of the environmental and cultural changes that took place in the north-eastern Aegean Sea between the end of the Pleistocene and the onset of the Holocene. Its presence is particularly important given the absence of other sites of this period in the entire Aegean region.

The finds from Ouriakos reaffirm the idea recently put forward by C. M. Erek of a coastal spread originating in the Levant, moving along the coast of south Anatolia, by communities of hunter-gatherers whose tool-kit is characterized by lunate microliths[53]. According to the results of the analysis of the chipped stones from layers II and Ia2 of Öküzini, the above assemblages show contacts between a local group "tenant ses modes de fonctionnement d'une longue evolution interne et une population extérieure aux habitudes résolument différentes"[54], which makes their provenance even more intriguing.

The sequences from the Direkli and Öküzini caves reveal periods of Younger Dryas occupation chronologically and culturally comparable to that of Ouriakos. The lithic assemblages from the above sites are characterized by the same classes of tools, among which are microlithic lunates, and different types of end scrapers and bladelets detached from subconical/subpyramidal cores. Differences can be observed in the manufacturing technique of the lunates from the three sites. This fact might be due to the different lithology of the raw material employed for their manufacture[55], function, hafting and hunting methods[56] and location variability and chronological discrepancies between the above three sites, which are the most important localities of the Younger Dryas so far excavated in a wide territory of the north-eastern Mediterranean region[57].

52 Kartal 2002, tab. 21.

53 Erek 2012, pl. 1.

54 Léotard - López Bayón 2002, 136.

55 See, for instance, Lengyel 2009.

56 Yaroshevich et al. 2010.

57 A few other sites are reported by M. Kartal 2009, fig. 15; Kartal 2011, fig. 1.

Bibliography and Abbreviations

Albrecht 1998 G. Albrecht, "Preliminary Results of the Excavations in the Karain B Cave near Antalya/Turkey: The Upper Palaeolithic Assemblages and the Upper Pleistocene Climatic Development", Paléorient 14.2, 1998, 211-222.

Arbuckle – Erek 2012 B. S. Arbuckle – M. Erek, "Late Epipaleolithic Hunters of the Central Taurus: Faunal Remains From Direkli Cave, Kahramanmaraş, Turkey", International Journal of Osteoarchaeology 22, 2012, 694-707.

Archontidou – Kokkinoforou 2004
A. Archontidou – M. Kokkinoforou, Myrina in the Early Bronze Age (2004).

Ataman 1992 K. Ataman, "Threshing sledges and archaeology", in: P. C. Anderson (ed.), Préhistoire de l'Agriculture: Nouvelles Approches Expérimentales et Ethnographiques (1992) 305-319.

Atıcı 2009 L. Atıcı, "Specialisation & diversification: Animal exploitation strategies in the terminal Pleistocene, Mediterranean Turkey", Before Farming 3, 2009, 1-17.

Atıcı 2011 L. Atıcı, "Epipalaeolithic Archaeology in Turkey", in: H. Taşkıran – M. Kartal – K. Özçelik – M. B. Kösem – G. Kartal (eds.), Studies in Honour of Işın Yalçınkaya (2011) 27-46.

Bar Yosef 1976 O. Bar Yosef, "A note on the geometric Kebaran A", Unione Internationale des Sciences Préhistoriques et Protohistoriques, IX^{e} Congrès (1976) 78-105.

Baruch – Bottema 1991
U. Baruch – S. Bottema, "Palynological Evidence for Climatic Changes in the Levant ca. 17,000-9,000 B.P.", in: O. Bar-Yosef – F. R. Valla (eds.), The Natufian Culture in the Levant (1991) 11-26.

Belfer-Cohen – Bar-Yosef 2000
A. Belfer-Cohen – O. Bar-Yosef, "Early Sedentism in the Near East. A Bumpy Ride to Village Life", in: I. Kuijt (ed.), Life in Neolithic Farming Comunities Social Organization, Identità and Differentiation (2000) 19-37.

Bernabò Brea 1964 L. Bernabò Brea, Poliochni. Città preistorica nell'isola di Lemno I (1-2). Monografie della Scuola Archeologica di Atene e delle Missioni Italiane in Oriente I (1964).

Bernabò Brea 1976 L. Bernabò Brea, Poliochni. Città preistorica nell'isola di Lemno II. Monografie della Scuola Archeologica di Atene e delle Missioni Italiane in Oriente I (1976).

Bibikov et al. 1994 N. Bibikov – V. N. Stanko – V. Y. Koen, The Final Palaeolithic and Mesolithic of the Crimean Mountains, Vest' (1994; in Russian).

Binford 1982 L. R. Binford, "The Archaeology of Place", Journal of Anthropological Archaeology 1.1, 1982, 5-31.

Binford 1983 L. R. Binford, "Long-term Land-Use Patterning: Some Implications for Archaeology", in: L. R. Binford (ed.), Working at Archaeology (1983) 379-386.

Bostancı 1968 E. Bostancı, "The Mesolithic of Beldibi and Belbaşı and the Relation with the other Findings in Anatolia", Anthropoloji 3, 1968, 55-147.

Boulotis 2009 C. Boulotis, "Koukonisi on Lemnos: Reflections on the Minoan and Minoanising evidence", in: C. F. Macdonald – E. Hallager – W.-D. Niemeier (eds.), The Minoans in the Central, Eastern and Northern Aegean - New Evidence (2009) 175-218.

Boulotis 2010 C. Boulotis, "Koukonisi (Lemnos), un site portuaire florissant du Bronze Moyen et du début du Bronze Récent dans le Nord de l'Égée", in: A. Philippa-Touchais – G. Touchais – S. Voutsaki – J. Wright (eds.), Mesohelladika: La Grèce Continentale au Bronze Moyen, BCH Supplément 52 (2010) 891-907.

Boulotis 2011 C. Boulotis, "Ψήφος ημιτελής: What is revealed through the study of a small artefact from the Bronze Age settlement of Koukonisi on Lemnos", Anáskamma 5, 2011, 13-31 (in Greek).

Braadbaart et al. 2009 F. Braadbaart – I. Poole – A. A. van Brussel, "Preservation potential of charcoal in alkaline environments: an experimental approach and implications for the archaeological record", Journal of Archaeological Science 36, 2009, 1672-1679.

Broglio – Kozłowski 1983 A. Broglio – S. K. Kozłowski, "Tipologia ed evoluzione delle industrie mesolitiche di Romagnano III", Preistoria Alpina 19, 1983, 93-148.

Broodbank 2006 C. Broodbank, "The Origins and Development of Mediterranean Maritime Activity", Journal of Mediterranean Archaeology 19.2, 2006, 199-230.

Dawson 2011 H. Dawson, "Island colonisation: settling the Neolithic question", in: N. Phoca-Cosmetatou (ed.), The first Mediterranean islanders: Initial occupation and survival strategies (2011) 31-53.

Dova 1997 A. Dova, "Μύρινα Λήμνου: οι αρχαιότερες φάσεις του προϊστορικού οικισμού", in: C. Doumas – V. La Rosa (eds.), Poliochni e l'antica Età del Bronzo nell'Egeo settentrionale (1997) 282-296 (in Greek).

Easton – Weninger 1993 D. Easton – B. Weninger, "Troia VI Lower town - quadrats I8 and K8: a test for dating pottery seriation", Studia Troica 3, 1993, 45-96.

Efstratiou – Kiriakou 2011 N. Efstratiou – D. Kiriakou, "Following the traces of the last hunter-gatherers of east Mediterranean", Anáskamma 5, 2011, 53-74 (in Greek).

Efstratiou et al. 2013 N. Efstratiou – P. Biagi – P. Karkanas – E. Starnini, "A late Palaeolithic Site at Ouriakos (Island of Limnos, Greece) in the north-eastern Aegean Sea", Antiquity Project Gallery 87, 335, 2013, http://antiquity.ac.uk/projgall/efstratiou335/.

Enepekidis 1997 P. Enepekidis, Archipelagos: Imvros-Tenedos-Lemnos-Lesbos-Chios-Samos-Patmos: 1800-1923 (1997; in Greek).

Erek 2010 C. M. Erek, "A New Epi-Paleolithic Site in Northeast Mediterranean Region: Direkli Cave (Kahramanmaraş, Turkey)", Adalya XIII, 2010, 1-17.

Erek 2011 C. M. Erek, "Kahramanmaraş İli Prehistoryası", in: H. Taşkıran – M. Kartal – K. Özçelik – M. B. Kösem – G. Kartal (eds.), Studies in Honour of Işın Yalçınkaya (2011) 113-126.

Erek 2012 C. M. Erek, "Güneybatı Asya Ekoloj Nişi Direkli Mağarası Epi-Paleolitik Buluntularının Değerlendirilmesi", Anadolu 38, 2012, 53-66.

Ficuciello 2010a L. Ficuciello, "Lemno in Età Arcaica", Annuario della Scuola Archeologica Italiana di Atene, LXXXV (3), Series III, 2010, 39-84.

Ficuciello 2010b L. Ficuciello, "Lemno dai Tirreni agli Ateniesi problemi Storici, Archeologici, Topografici e Linguistici. Annuario della Scuola Archeologica Italiana di Atene, LXXXV (3), Series III, 2010, 149-168.

Galanidou et al. 2013 N. Galanidou – J. Cole – G. Iliopoulos – J. McNabb, "East meets West: the Middle Pleistocene site of Radafnidia on Lesvos, Greece", Antiquity Project Gallery 87 (336) 2013, http://antiquity.ac.uk/projgall/galanidou336/.

Goring-Morris 1995 N. Goring-Morris, "Complex Hunter/Gatherers at the End of the Palaeolithic (20,000-10,000 BP)"; in: T. E. Levy (ed.), The Archaeology of Society in the Holy Land (1995) 141-168.

Goring-Morris 2009 N. Goring-Morris, "Two Kebaran occupations near Nahal Soreq, and the reconstruction of group ranges in the Early Epipalaeolithic of the Israeli Littoral", Eurasian Prehistory 6.1-2, 2009, 75-98.

Goring-Morris – Belfer-Cohen 2011
N. Goring-Morris – A. Belfer-Cohen, "Neolithization Processes in the Levant. The Outer Envelope", Current Anthropology 52, Supp. 4, 2011, S195-S208.

Greco – Papi 2009 E. Greco – E. Papi (eds.), Hephaestia 2000-2006. Ricerche e scavi della Scuola Archeologica Italiana di Atene in collaborazione con il Dipartimento di Archeologia e Storia delle Arti dell'Università di Siena, Tekmeria 6 (2009).

Hall – Photo-Jones 2008
A. J. Hall – E. Photo-Jones, "Accessing past beliefs and practices: the case of Lemnian Earth", Archaeometry 50.6, 2008, 1034-1049.

Hovers – Marder 1991 E. Hovers – O. Marder, "Typo-Chronology and Absolute Dating of the Kebaran Complex: Implications from the Second Season of Excavation at Urkan E-Rub IIA", Journal of the Israel Prehistoric Society 24, 1991, 34-58.

IGME (Institute of Geology and Mineral Exploration) 1993
IGME, Geological Map of Greece: 1:50.000 Lemnos Island (1993).

Inizan et al. 1992 M.-L. Inizan – H. Roche – J. Tixier, Technology of Knapped Stone (1992).

Innocenti et al. 2009 F. Innocenti – P. Manetti – R. Mazzuoli – P. Pertusati – M. Fytikas – N. Kolios – G. E. Vougioukalakis – N. Androulakakis – S. Critelli – L. Caracciolo, "Geological Map (Scale 1:50,000) of Limnos Island (Greece): Explanatory Notes", Acta Vulcanologica 20.21, 2009, 87-97.

Kaczanowska – Kozłowski 2013
M. Kaczanowska – J. K. Kozłowski, "Mesolithic Obsidian Networks in the Aegean", in: E. Starnini (ed.), Unconformist Archaeology. Papers in honour of Paolo Biagi, BAR International Series 2528, 2013, 17-26.

Kartal 2002 M. Kartal, "The microliths of Öküzini Cave", in: I. Yalçınkaya – M. Otte – J. Kozłowski – O. Bar-Yosef (eds.), La Grotte d'Öküzini: évolution du Paléolithique Final du sud-ouest de l'Anatolie, ERAUL 96 (2002) 235-252.

Kartal 2003 M. Kartal, "Anatolian Epi-Palaeolithic Period Assemblages: Problems, Suggestions, Evaluations and Various Approaches", Anadolu 24, 2003, 45-62.

Kartal 2009 M. Kartal, Konar-Göçerlikten Yerleşik Yaşama Geçiş Epi-Paleolitik Dönem Türkiye'de Son Avcı-Toplayıcılar (2009).

Kartal 2011 M. Kartal, "Epi-Palaeolithic - Early Neolithic Findings in Northern and Midwestern Turkey and Knapped Stone Comparisons with Southwest Anatolia", in: H. Taşkıran – M. Kartal – K. Özçelik – M. B. Kösem – G. Kartal (eds.), Studies in Honour of Işın Yalçınkaya (2011) 153-166.

Kotjabopoulou – Adam 2004
E. Kotjabopoulou – E. Adam, "People, Mobility and Ornaments in Upper Palaeolithic Epirus, NW Greece", in: M. Otte (ed.), La Spiritualité, ERAUL 106 (2004) 37-53.

Kouli et al. 2012 K. Kouli – A. Gogou – I. Bouloubassi – M. V. Triantaphyllou – Chr. Ioakim – G. Katsouras – G. Roussakis – V. Lykousis, "Late postglacial paleoenvironmental change in the northeastern Mediterranean region: Combined palynological and molecular biomarker evidence", Quaternary International 261, 2012, 118-127.

Kourtessi-Philippakis 1999
G. Kourtessi-Philippakis, "The Lower and Middle Palaeolithic in the Ionian Islands: new finds", in: G. N. Bailey – E. Adam – E. Panagopoulou – C. Perlès – K. Zachos

(eds.), The Palaeolithic Archaeology of Greece and Adjacent Areas", BSA Studies 3 (1999) 282-287.

Kozłowski 2005 J. K. Kozłowski, "Paléolithique supérieur et Mésolithique en Méditerranée: cadre culturel", L'Anthropologie 109.3, 2005, 520-540.

Kozłowski 2007 J. K. Kozłowski, "Western Anatolia, the Aegean Basin and the Balkans in the Neolithisation of Europe", in: M. Spataro – P. Biagi (eds.), A Short Walk Through the Balkans: the First Farmers of the Carpathian Basin and Adjacent Regions, Quaderno 12, 2007, 39-52.

Kozłowski – Kaczanowska 2004
J. K. Kozłowski – M. Kaczanowska, "Gravettian/Epigravettian Sequences in the Balkans and Anatolia", Mediterranean Archaeology and Archaeometry 4.1, 2004, 5-18.

Lanting et al. 2001 J. N. Lanting – A. T. Aerts-Bijma – J. van der Plicht, "Dating of cremated bones", Radiocarbon 43.2A, 2001, 249-254.

Laplace 1964 G. Laplace, Essay de typologie systématique, Annali dell'Università di Ferrara. Sezione XV, Paleontologia Umana e Paletnologia. Supplemento II al vol. I. (1964).

Lengyel 2009 G. Lengyel, "Lithic economy of the Upper Palaeolithic and Epipalaeolithic of Raqefet cave", Human Evolution 24.1, 2009, 27-41.

Léotard - López Bayón 2002
J.-M. Léotard – I. López Bayón, "La Grotte d'Öküzini: Etude du matériel lithique", in: I. Yalçınkaya – M. Otte – J. Kozłowski – O. Bar-Yosef (eds.), La Grotte d'Öküzini: évolution du Paléolithique Final du sud-ouest de l'Anatolie, ERAUL 96 (2002) 109-234.

López Bayón et al. 2002
I. López Bayón – J.-M. Léotard – M. Kartal – P. Noiret, "La Grotte d'Öküzini: Etude du matériel lithique", in: I. Yalçınkaya – M. Otte – J. Kozłowski – O. Bar-Yosef (eds.), La Grotte d'Öküzini: évolution du Paléolithique Final du sud-ouest de l'Anatolie, ERAUL 96 (2002) 49-73.

Lowe et al. 2001 J. J. Lowe – W. Z. Hoek – INTIMATE group, "Inter-regional correlation of palaeoclimatic records for the Last Glacial-Interglacial Transition: a protocol for improved precision recommended by the INTIMATE project group", Quaternary Science Reviews 20, 2001, 1175-1187.

Maravelis – Zelilidis 2012
A. Maravelis – A. Zelilidis, "Porosità-Permeability and Textural Parameters of the Palaeogene Forearc Sedimentary Fill on Lemnos Island", Turkish Journal of Earth Sciences 21, 2012, 415-438.

Messineo 2001 G. Messineo, Efestia: Scavi Adriani 1928-1930 (2001).

Neeley 2010 M. P. Neeley, "TBAS 102: A Late Natufian Site in West-Central Jordan", Neo-Lithics 1.10, 2010, 86-91.

Nushniy 1992 D. Y. Nushniy, Development of the Microlithic Technique in the Stone Age (1992; in Ukrainian).

Panagopoulos et al. 2011
G. Panagopoulos – P. Giannoulopoulos – D. Panagiotaras, "Groundwater hydrochemistry of the volcanic aquifers of Limnos Island, Greece", in: N. Lambrakis – G. Stounaras – K. Katsanou (eds.), Advances in the Research of Aquatic Environment 2 (2011) 471-478.

Pavlopoulos et al. 2013 K. Pavlopoulos – E. Fouache – M. Sidiropoulou – M. Triantaphyllou – K. Vouvalidis – G. Syrides – A. Gonnet – E. Greco, "Palaeoenvironmental evolution and sea-level changes in the coastal area of NE Lemnos Island (Greece) during the Holocene", Quaternary International 308-309, 2013, 80-88.

Perissoriatis – Conispoliatis 2003 C. Perissoriatis – N. Conispoliatis, "The impacts of sea-level changes during latest Pleistocene and Holocene times on the morphology of the Ionian and Aegean seas (SE Alpine Europe)", Marine Geology 196, 2003, 145-156.

Photo-Jones – Hall 2011 E. Photo-Jones – A. J. Hall, Lemnian Earth and the earths of the Aegean: an archaeological guide to medicines, pigments and washing powders (2011).

Privitera 2005 S. Privitera, "Hephaestia on Lemnos and the Mycenean presence in the islands of the northeastern Aegean", in: R. Laffineur – E. Greco (eds.), Emporia. Aegeans in the Central and Eastern Mediterranean, Aegaeum 25 (2005) 227-236.

Sampson et al. 2005 A. Sampson – J. K. Kozłowski – M. Kaczanowska, "New Contributions to the Early Settlement of the Aegean Islands", Rocznik Polskiej Akademii Umiejętności 2003-2004, 2005, 272-284.

Sampson et al. 2009 A. Sampson – M. Kaczanowska – J. K. Kozłowski, "The first Mesolithic site in the eastern part of the Aegean basin: excavations into the site Kerame I on the Island of Ikaria in 2008", Rocznik Polskiej Akademii Umiejętności 2008, 2009, 321-329.

Sampson et al. 2010 A. Sampson – M. Kaczanowska – J. K. Kozłowski (eds.), The Prehistory of the Island of Kythnos (Cyclades, Greece) and the Mesolithic Settlement at Maroulas (2010).

Sheppard – Pavlish 1992 P. J. Sheppard – L. A. Pavlish, "Weathering of archaeological cherts: a case study from the Solomon Islands", Geoarchaeology 7.1, 192, 41-53.

Shilmelmitz et al. 2004 R. Shilmelmitz – R. Barkai – A. Gopher, "The Geometric Kebaran Microlithic Assemblage of Ain Miri, Northern Israel", Paléorient 30.2, 2004, 127-140.

Skakun 2006 N. N. Skakun, Tools and Economy of the Eneolithic Farmers of South-eastern Europe (Based on the Materials of the Varna Culture) (2006; in Russian).

Valla 2000 F. Valla, "La Sédentarisation au Proche Orient: La Culture Natoufienne", in: J. Guilaine (ed.), Premiers Paysans du Monde. Naissance des agricultures (2011) 13-30.

Weninger 2009a B. Weninger, "Pottery Seriation Dating at Troia in the Middle and Late Bronze Age Based on the Cincinnati Classification System", Studia Troica 18, 2009, 135-162.

Weninger 2009b B. Weninger, "Yarmounkian Rubble Slides. Evidence for Early Holocene Rapid Climatic Change in Southern Jordan", Neo-Lithics 1.9, 2009, 5-11.

Yaroshevich 2006 A. Yaroshevich, "Techno-Morphological Aspects of Microlithic Projectile Implements: Examples from the Levantine Geometric Kebaran and the East European Epigravettian", Archaeology, Ethnology & Anthropology of Eurasia 28.4, 2006, 8-17.

Yaroshevich et al. 2010 A. Yaroshevich – D. Kaufman – D. Nuzhnyy – O. Bar-Yosef – M. Weinstein-Evron, "Design and performance of microlith implemented projectiles during the Middle and the Late Epipaleolithic of the Levant: experimental and archaeological evidence", Journal of Archaeological Science 37, 2010, 368-388.

Özet

Lemnos Adası Ouriakos Epipaleolitik Yerleşimi ve Doğu Akdeniz'in Geç Pleistosen Dönemde İskan Edilmesi Sürecindeki Yeri

Birkaç yıl öncesine kadar Lemnos (Limni) Adası, önemli Arkaik ve Klasik ören yerleri, Venedik dönemine kadar devam eden "Lemnos Kili" üretimi ve ticareti, kuzeybatı Anadolu'daki yerleşimlerle kıyaslanabilen ve karmaşık katmanlı Tunç Çağı Poliokhni yerleşimi ile tanınırdı. Yakın zamanda keşfedilen, Poliokhni'dekine benzer, örneğin Myrina ve Koukonisi'dekiler ve adanın çeşitli sahillerindekiler gibi kimi Tunç Çağı yerleşimleri, Lemnos'un muhtemelen Hellespontos'un kontrolüyle ilgili olarak Ege dünyasının Tunç Çağı'nda rolünün önemine işaret etmektedir.

Poliokhni'nin birkaç kilometre güneyinde, adanın güneydoğu sahilinde Epipaleolitik döneme tarihlenen bir yerleşimin keşfi sürpriz değildi. Halbuki bu yeni yerleşim beklenmedik kimi özellikler arz eder: Örneğin, uzamı, bölgenin Geç Pleistosen/Erken Holosen dönemde insan iskanı sürecindeki kronolojik konumu, ve yüzeyinden toplanan yontma taş objelerin tipolojik özellikleri. Hemen akla gelen yeni sorular, avcı-toplayıcı grupların hammadde çıkardığı alanların saptanmasıyla ilgilidir çünkü günümüzde yerleşim yeri denizden sadece birkaç metre mesafededir ve yerleşimin canlı olduğu dönemdeki çevresinin rekonstrüksiyonu bağlamında düşünülmelidir.

Ouriakos yerleşimi, Moudros Belediyesi sınırları dâhilinde Fyssini'nin Louri kumsalında 2006 yılında keşfedildi. Adanın yüzey alanı 478 km^2 olup anakaradan, yani kuzeybatı Anadolu'dan 62 km mesafededir. Adada bazı yerler, adanın kuzeydoğu kısımlarında ve Moudros Körfezi'nin en iç kısımlarında tipik şekilde görüldüğü üzere, sığ tuz havuzlarıyla tanınan Holosen alüvyonla örtülü çöküntü alanlar içerdiğinden arkeolojik sitler nispeten kısıtlı bir alanda yer alır.

Yerleşim, plaj yakınında park alanı inşaatı sırasında bir kumul kaldırılınca arkeolojik malzemenin ortaya çıkmasıyla saptanmıştır. Kısmen, mevcut deniz seviyesinin 10 m üzerindeki Pleistosen kalkarenit denizel teras üzerine oturmaktadır. Bu alanı iki yandan sınırlayan mevsimsel akan iki dereden batıdaki, alana adını vermektedir. Ouriakos Çayı'nın batı yakasındaki profilde koyu killi paleo-toprak katmanı görülür ki, bu katman kısmen kalkarenit dolgu üzerinde gelişmiş olup üstünde yontma taş aletlere ait kanıtlar bulunur; daha sonra kumul ile örtülmüştür.

2008-2010 yıllarında yüzeyden toplanan arkeolojik malzemeden ve 2009 yılından itibaren bunu izleyen kazılardan örenin batıdaki Ouriakos Çayı'nın iki yakasında 1500 m^{2}lik alana yayıldığı anlaşılmıştır. Park yeri inşaatı nedeniyle kazılar öncelikle denizel teras kısmında başlatılmış ve erozyonlu kalkarenit rölyef üzerinde 10-20 cm kalınlığında kumlu bir katman içinde yontma taş malzeme varlığı saptanmıştır. Aynı dolgunun alt kısmından gelen ve tanımlanamayan birkaç

kemik kalıntısı, yanık bir örneğin radyokarbon yöntemiyle analiz edilmesiyle GÖ 10390±45 (kalibre edilmemiş) ve MÖ 10437-10198 (kalibre edilmiş) (GrA-53229) şeklinde tarihlenmiştir. Böylece sitin Younger Dryas soğuk salınımının (yak. GÖ 11900-10000 kalibresiz) ileri bir evresinde iskan edildiği anlaşılmıştır. 2012 yılında çayın kenarına yakın bir noktada terasın sağlam bir kısmında açılan deneme açmasında, yukarıda sözü edilen paleo-toprak katmanının üzerinde, fakat kumulun altında, yontma taş malzemenin *in situ* bulunduğu sağlam bir tabaka açığa çıkartılmıştır.

Ouriakos yontma taş malzemesi çoğunlukla limnik/hidrokuvars, kalsedon, opal ve çeşitli renklerde jasper çakıllarından üretilmiştir. Yapılan sistematik yüzey araştırmalarında en yakın hammadde kaynaklarının 7 km kadar kuzeybatıdaki, nehir teraslarından çıkıntı yapan jasper çakılları içeren konglomeraların bulunduğu Kavouli Vadisi'nde yer aldığı saptanmıştır. Yine aynı vadinin yukarı kesimlerinde, Kalogiros'un doğu yamacındaki volkanik formasyonlardan çıkıntı yapan çeşitli renklerde limnik/hidrokuvars, kalsedon ve opal kaynağı bulunur.

İki çalışma sezonunda yaklaşık 8000 yontmataş parça incelenmiştir. Her iki hammaddenin de kullanıldığı bu eserler arasında jasper kalıntıların daha iyi korunmuş olduğu ve hidrotermal kayalardan imal edilenlerin ise ileri derecede aşınmış ve patinalı olduğu görülmüştür. Bu bozunumun sebebi, üretim sonrası silikanın korunmasını olumsuz etkileyen tuzlu ortama maruz kalmalarıdır. Üstelik, şimdiye kadar hiç bir *in situ* ocak saptanmamış olmasına karşın çok sayıda litik ve kemik malzeme üzerinde ateş ile temas izleri görülmektedir. Yerleşim dâhilinde saptanan çok miktarda çekirdek, yongalama ürünleri, yonga artığı, sırtlı dilgi ve çekirdek hazırlama parçaları ve izleyen aşamalarda ortaya çıkan yan ürünler sayesinde aletlerin yerleşim içinde imal edildiği anlaşılmıştır.

Ouriakos yontma taş endüstrisi, Antalya'nın kuzeyindeki Öküzini Mağarası'nın Ia1 ve Ia2 tabakalarıyla karşılaştırılabilir. Söz konusu tabakalarda odunkömüründen radyokarbon yöntemiyle Younger Dryas'a (GÖ kalibre edilmemiş OxA-5213: 10150±90 ve RT-1441: 10440±115) tarihlenen çift kutuplu yarımaylar ve çok çeşitli ön kazıyıcı içeren yontma taş aletler ele geçmiştir. Ouriakos'ta ele geçen yontma taş bulgulardan, özellikle muhtemelen mızrak uçları ve post yüzmek için kullanılan ön kazıyıcıların yontulması sırasında ortaya çıkan çok sayıda mikrolit yarımay biçimli yongalardan anlaşıldığı üzere yerleşimin sakinlerinin birincil uğraşı, avcılık idi.

Kuzeydoğu Ege Denizi bölgesinde, benzerlerinin bilinmediği bir Geç Paleolitik, Younger Dryas yerleşiminin Lemnos Adası'nda saptanması, Pleistosen sonunda bu bölgede yaşanan gelişmelerin anlaşılması açısından çok önemlidir.

Epipaleolitik döneme ait Fyssini-Ouriakos yerleşiminin keşfi, Geç Glasiyal Maksimum döneminin sonunda Balkanlar ve Anadolu arasındaki ilişkiler açısından çok temel öneme sahiptir. Söz konusu dönemde Lemnos hâlâ Anadolu'ya fiziksel olarak bağlıydı ve henüz adaya dönüşmemişti. Nispeten düşük derinlik eğrileri bu savı destekler görünmektedir ancak çok ayrıntılı paleo-coğrafya incelemelerinin yapılması gerektiği de açıktır. Anadolu dünyasıyla sıkı kültürel ilişkiler özellikle yontma taş aletlerin ana karakteristiği olarak yarımay biçimli yongaların görülmesinden anlaşılmaktadır. Bu yongaların bazı yerleşimlerde Üst Paleolitik katmanlarda görülmesi oldukça önem arz eder. Direkli ve Öküzini Mağaraları'nda ortaya çıkan bu yongalar Fyssini-Ouriakos'ta çift kutuplu yongalama ve daha küçük ebatlarıyla dikkat çeker ve söz konusu Ouriakos malzemesinin kronolojik açıdan daha yeni olması anlamına gelebilir.

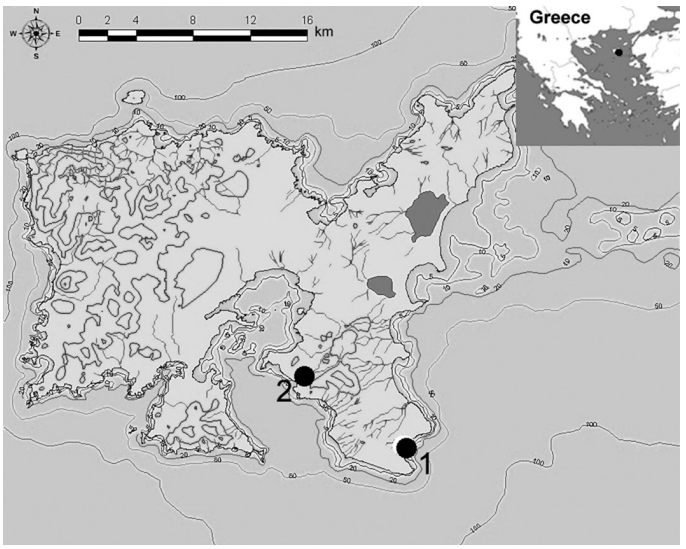

Fig. 1
Lemnos: location of Ouriakos Epipalaeolithic site (1) and Havouli Valley (2), and position of the island in the north-eastern Aegean Sea (from Efstratiou et al. 2013, fig. 1).

Fig. 2
Ouriakos: site location along the present-day south-eastern Louri coast of Lemnos, from the south-west (photograph by P. Biagi).

Fig. 3
Ouriakos: the site terrace from the south-west, from the western bank of the Ouriakos stream (photograph by P. Biagi).

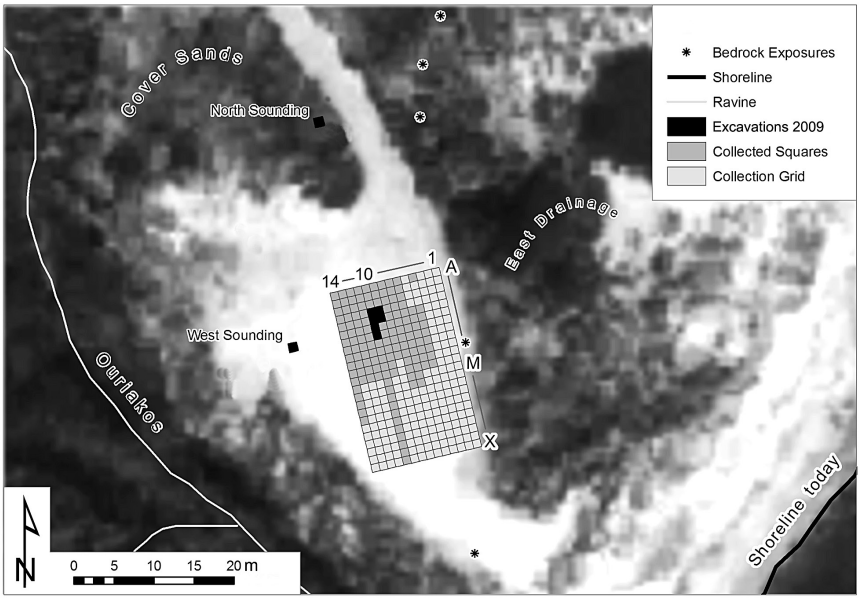

Fig. 4
Ouriakos: location of the main excavation grid (Sector I) and test trenches to the west (Sector II). Excavated squares refer to the 2009 fieldwork season (map prepared by M. Katsianis and S. Tsipidis).

Fig. 5
Ouriakos: section through the deposits of the western bank of the Ouriakos stream with the buried soil clearly visible beneath the Holocene sand cover (photograph by P. Biagi).

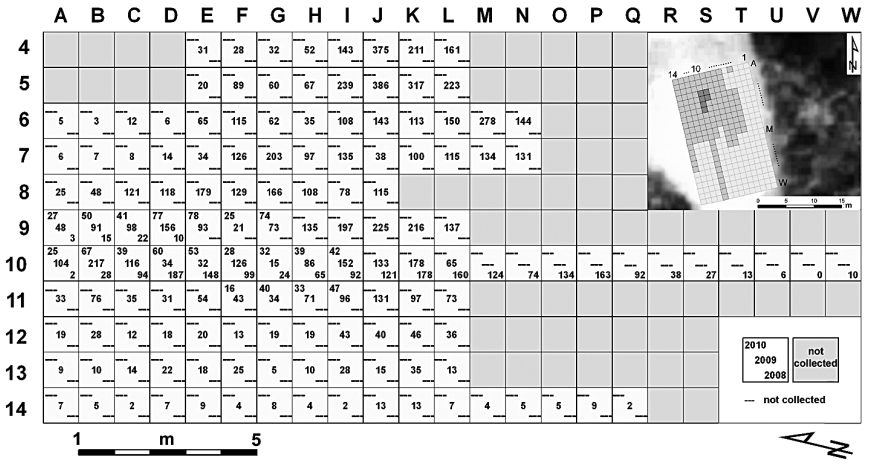

Fig. 6
Ouriakos: results of the surface collections made in 2008, 2009 and 2010 with the number of chipped stones recovered from the different squares (map prepared by M. Katsianis and S. Tsipidis).

Fig. 7 Ouriakos: 2009 excavation trench opened in the central part of the calcarenite terrace with lithic artefacts marked by blue dots (photograph by P. Biagi).

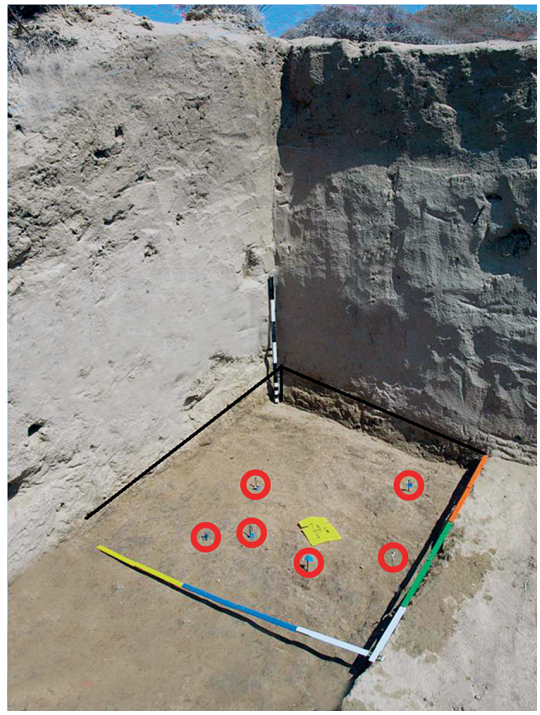

Fig. 8 Ouriakos: the trench opened in 2012 along the western bank of the Ouriakos stream. The Epipalaeolithic layer lies some 1.40 m. below the present-day surface, covered by a sand dune. The chipped stone artefacts *in situ* are marked by circles (from Efstratiou et al. 2013, fig. 6, with variations).

Fig. 9 The Havouli Valley from the chalcedony/opal/jasper outcrop (left); the gravel quarry located on the Pleistocene river terrace along the eastern side of the valley and pebbles from the sedimentary deposit (right) (photographs by P. Biagi and E. Starnini).

Fig. 10 Havouli Valley: chalcedony/opal/jasper outcrop of Kalogiros in the upper part of the valley, from the road (left); closer views of the outcrop (right) (photographs by P. Biagi).

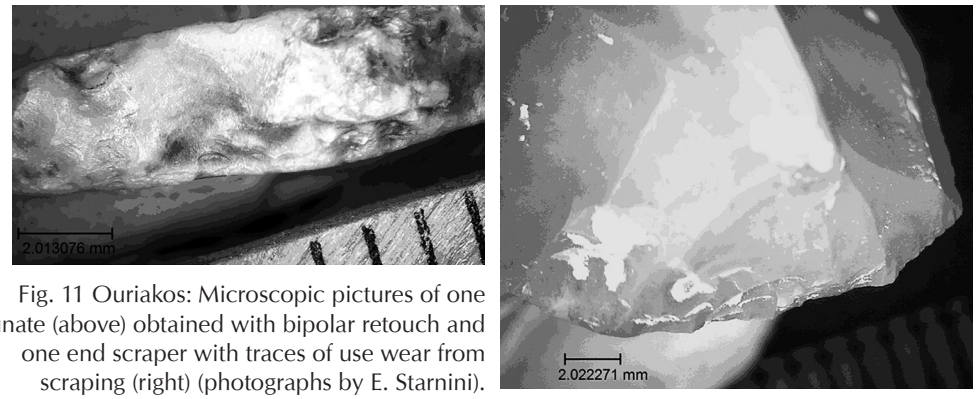

Fig. 11 Ouriakos: Microscopic pictures of one lunate (above) obtained with bipolar retouch and one end scraper with traces of use wear from scraping (right) (photographs by E. Starnini).

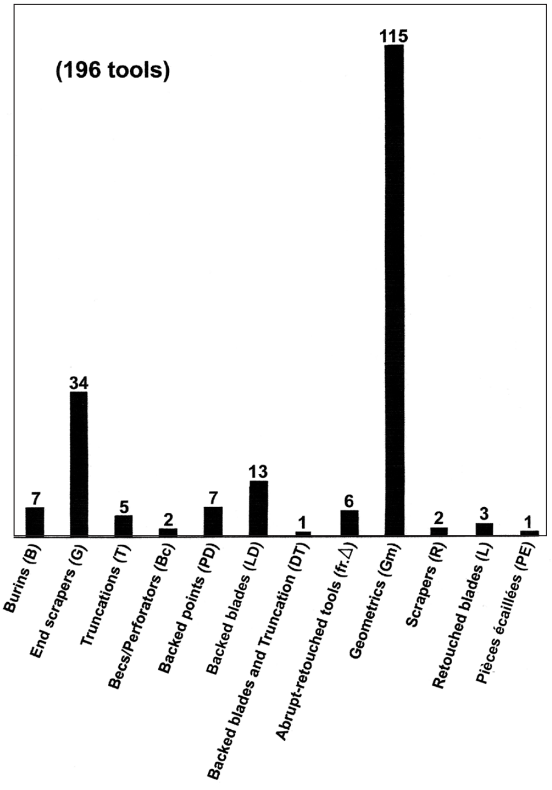

Fig. 12
Ouriakos: Number histograms of the chipped stone tools (drawing by E. Starnini)

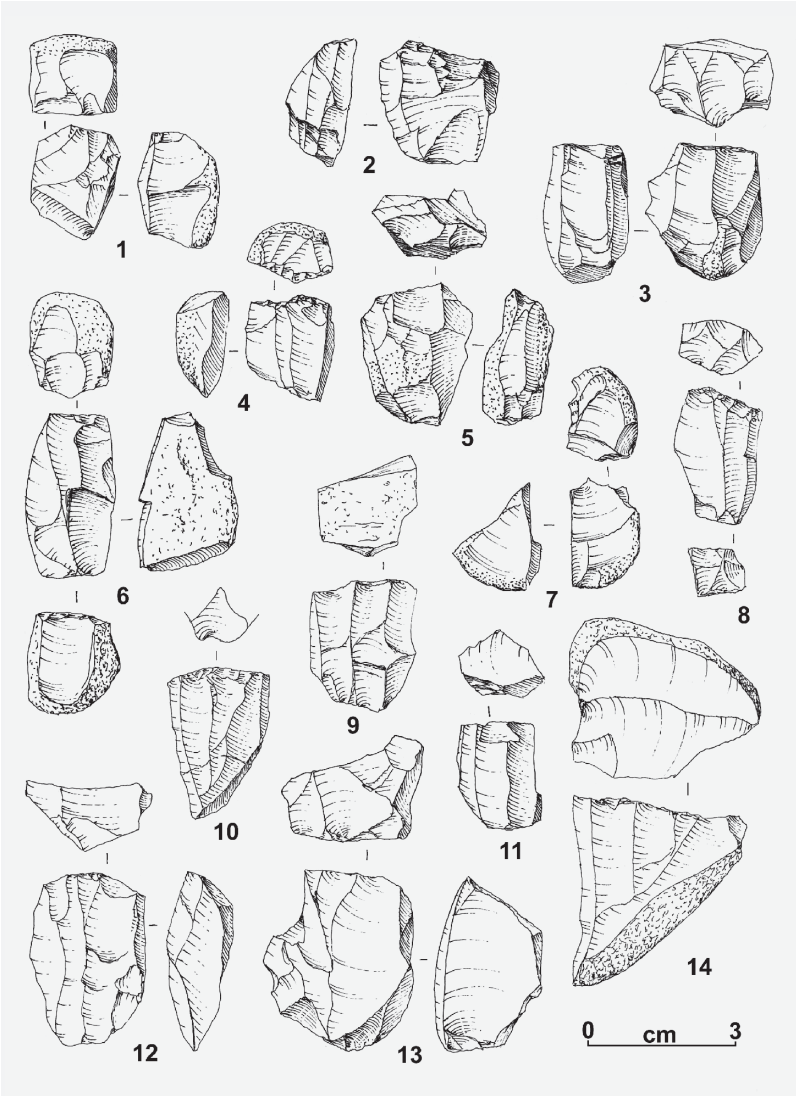

Fig. 13
Ouriakos: microlithic cores. Nos. 1, 4, 7, from radiolarite and chert pebbles; nos. 2, 3, 5, 8-12, from chalcedony/opal/jasper; nos. 6, 13, 14, burnt (nos. 1, 13: square E9, spit 1; nos. 2, 6: square E10, spit 4; no. 3: square D9, spit 3; no. 4: square D10, spit 8; no. 5: square E10, spit 6; no. 7: square G10, spit 4; no. 8: square G28, spit 7; no. 9: square G20, spit 7B; no. 10: square G20, spit 5; no. 11: square E10, spit 3; no. 12: square E9, spit 5; no. 14: square G29, spit 11 (drawings by P. Biagi, inking G. Almerigogna).

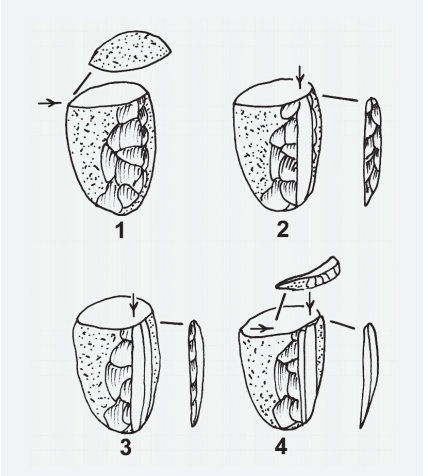

Fig. 14
Ouriakos: Reconstruction of the *chaîne operatoire* for the scalene triangle cross-section microbladelets production. Reduction sequence of the cores from radiolarite and chert pebbles for the production of microbladelets with scalene-triangular cross-section for the lunates manufacture: 1) opening of the striking platform, 2) opening of the flaking surface with the removal of a crested bladelet, 3) removal of a unilateral crested bladelet, 4) production of triangular cross-section bladelets and rejuvenation of the striking platform *corniche* (drawing by E. Starnini).

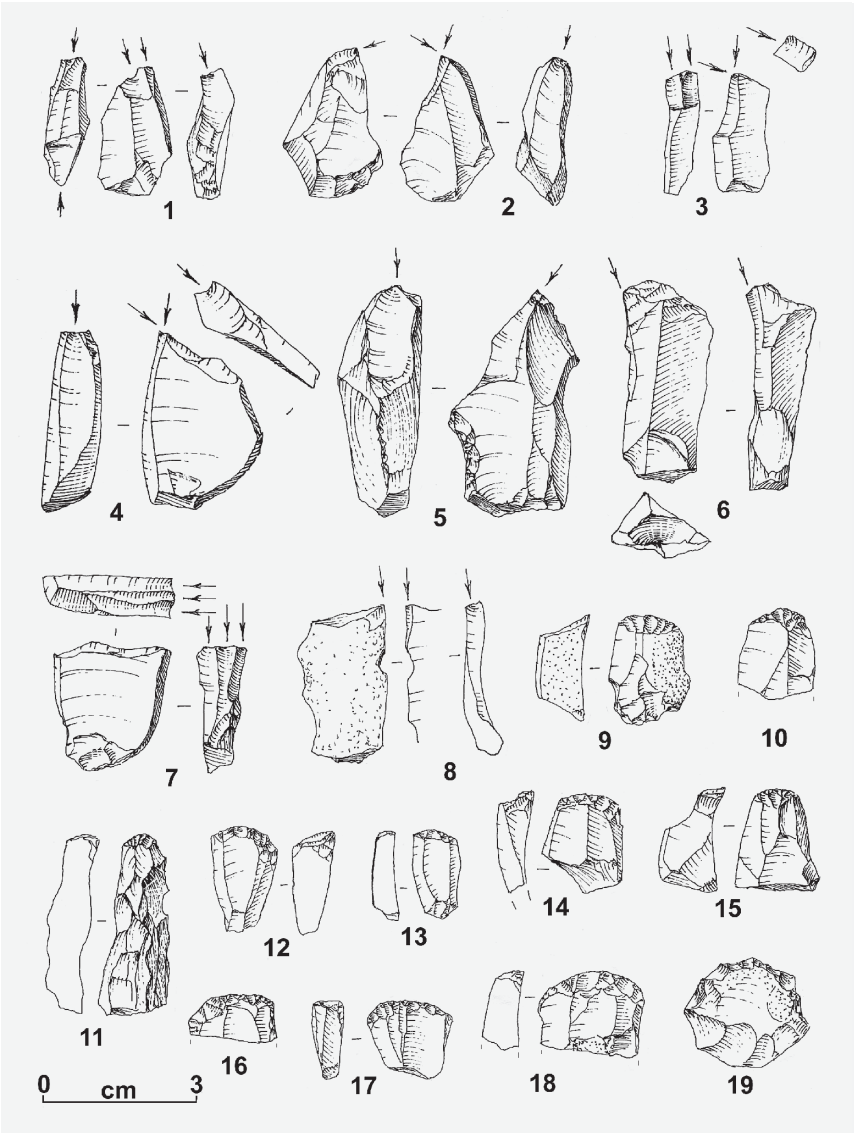

Fig. 15 Ouriakos: characteristic elements of the chipped stone assemblage. Nos. 1-8: burins and core-burins; nos. 9-19: end scrapers (no. 1: square F10; nos. 2, 5, 6: square E10, spit 6; no. 3: square E9, spit 1; no. 4: surface collection; no. 7: square E10, spit 3; nos. 8, 10: square D10, spit 4; no. 9: square F10, spit 4; no. 11: square E9, spit 2; no. 12: square E9, spit 7; no. 13: square E9, spit 4; no. 14: square D10, spit 13; no. 15: square E10, spit 7; no. 16: square E9, spit 5; no. 17: square G10, spit 5; no. 18: square D10, spit 12; no. 19: square E9, spit 3) (drawings by P. Biagi, inking by G. Almerigogna).

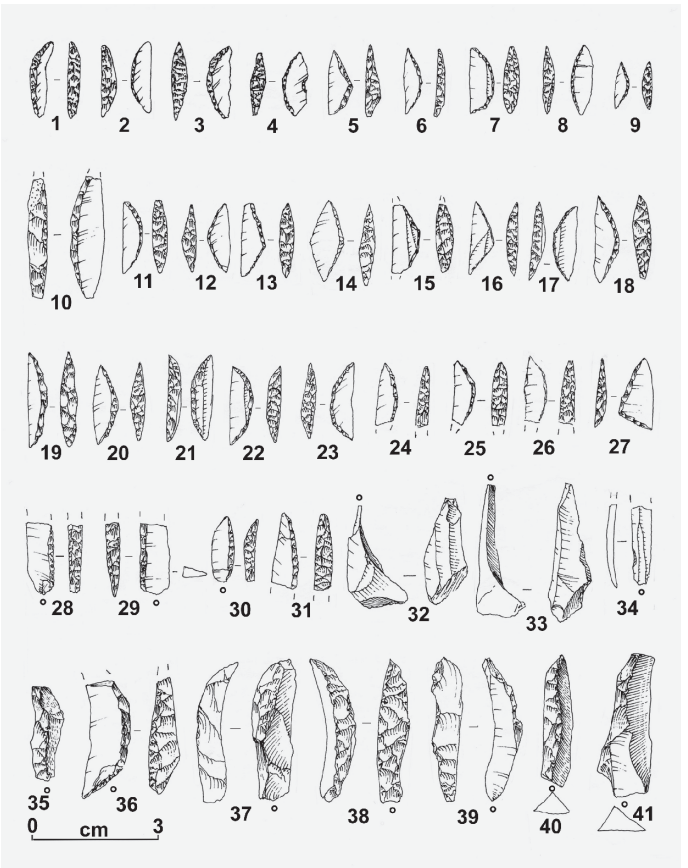

Fig. 16
Ouriakos: characteristic elements of the chipped stone assemblage. Nos. 1-26, microlithic lunates; no. 27, triangle; nos. 28, 29, backed blades; nos. 30, 31, backed points; nos. 32, 33, plunging blades/core tip rejuvenation flakes; no. 34, unretouched narrow bladelet; nos. 35-41, crested blades and *corniches* (nos. 1-4, 31: surface collection; nos. 5, 10, 15, 25, 27, 28: square F10, spit 1; nos. 6, 30: square E10, spit 6; nos. 7, 11: square E10, spit 7; no. 8: square F9, spit 8; no. 9: square F10, spit 4; nos. 12, 13: square E10, spit 4; nos. 14, 20: square D10, spit 13; no. 16: square E9, spit 6; no. 17: square D9, spit 1; no. 18: square F10; no. 19: square E9, spit 3; no. 21: square F9, spit 4; nos. 22, 39: square E9, spit 7; no. 23, 38: square D10, spit 7; no. 26: square E10, spit 9; nos. 29, 41: square E10, spit 3; no. 32: square E9, spit 2; no. 33: square G10, spit 3; no. 34: square F9, spit 1; no. 35: square E9, spit 3; no. 36: square E10, spit 9; no. 37: square D10, spit 13; no. 40: square F10, spit 2) (drawings by P. Biagi, inking by G. Almerigogna).

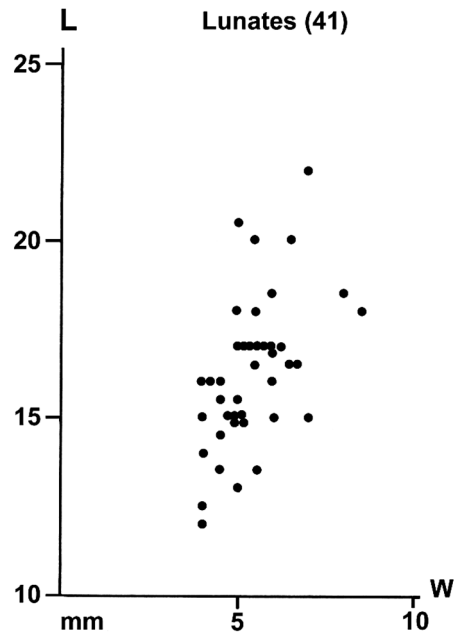

Fig. 17 Ouriakos: length/width diagram of the microlithic lunates (drawing by P. Biagi).

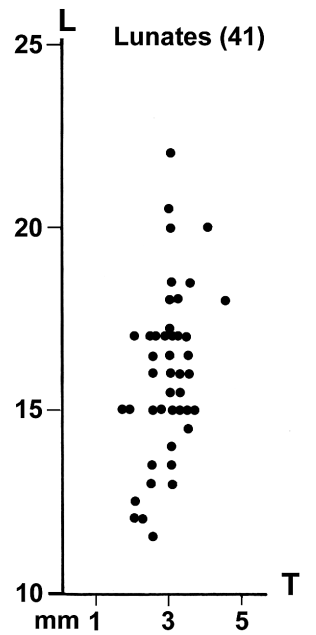

Fig. 18 Ouriakos: length/thickness diagram of the microlithic lunates (drawing by P. Biagi).

Tab. 1

Square	Sector	Spits
D 9	I	1-2-3-4
D 10	I	1-2-3-4-5-6-7-8-9-10-11-12-13
E 9	I	surface collection, quadrats I-II-III-IV
E 9	I	1-2-3-4-5-6-7-8
E 10	I	1-2-3-4-5-6-7-8
F 9	I	1-2-3-4-5-6-7-8
F 10	I	1-2-3-4-5-6
G 9	I	1-2
G 10	I	1-3-4-5-6-7-8
G 20	II	1-2-3-4-5-6-7-8-9
G 28	II	1-5-6-7-8-9
G 29	II	1-2-3-4-5-6-7-8-9-10-11
H 10	I	1-2
Q 29	II	2-4-6-7-8-9
Q 30	II	9
Z 10	I	1
Trench I	III	2-3-4-5-6-7

Ouriakos chipped stone tools: excavation squares considered for the present study.

Tab. 2

Tool Typology (Laplace 1964)	Number of pieces
Burins (B)	7
End scrapers (G)	34
Truncations (T)	5
Becs/perforators (Bc)	2 (? atypical)
Backed points (PD)	7
Backed blades (LD)	13
Backed blade and truncation (DT)	1
Fragments of abrupt-retouched instruments (fr Δ)	6
Geometrics (Gm)	115
Side scrapers (R)	2
Simple-retouched blades (L)	3
Pièces écaillées (E)	1
Total number of retouched tools	**196**

Ouriakos: list of the retouched tools from the studied assemblage.