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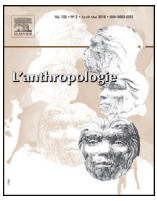

Original article

A new discovery of Neanderthal settlements in Turkey: Sürmecik open-air campsite in Western Anatolia

Une nouvelle découverte d'installation néandertalienne en Turquie : le camp de plein air Sürmecik en Anatolie occidentale

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ABSTRACT

Western Anatolia is the poorest region in terms of Turkey's Palaeolithic finds. In the past years, only a few Palaeolithic artefacts were known from the surface in the provinces of İzmir, Manisa, Kütahya and Afyonkarahisar in western Anatolia. After the fossil Homo erectus skull fragment was found in the travertine deposits in Kocabaş (Denizli) in 2002, the importance of the region more increased. After this important discovery, Dr. Kadriye Özçelik started a Palaeolithic survey in Denizli and found a large number of chipped stone tools from the Lower and Middle Palaeolithic periods. Nevertheless, the last important Palaeolithic discovery in the region was made in Sürmecik (Banaz-Uşak) in 2015. This is an open-air campsite belonging to the Middle Palaeolithic period. Here is also a mining area where a mining operation is conducted. The chipped stone artefacts of the Sürmecik Palaeolithic open-air campsite come from a clay layer between hematite and limonite deposits under a travertine layer of about 4.5–5 meters in thickness. Faunal remains represent mostly by equids species. All stages of Mousterian culture are clearly visible in this open-air

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campsite. Sürmecik is the richest middle Palaeolithic open-air campsite in Turkey. The 83,002 lithic pieces were collected in the excavations carried out in 2016 and 2017. It is thought that the lithic assemblage will exceed 100,000 with the ongoing studies. The group of bifacial leaf points in this collection is seen in Turkey for the first time. Four master thesis studies started on the lithic material of Sürmecik. It is planned to take some samples for dating analysis along with ongoing studies.

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Mots clés :
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Anatolie
Sürmecik
Homme de Néandertal
Moustérien
Pointe de feuille bifaciale

RÉSUMÉ

L'Anatolie occidentale est la région la plus pauvre en termes de découvertes paléolithiques en Turquie. Au cours des dernières années, seuls quelques artefacts paléolithiques étaient connus par des relevés de surface dans les provinces d'Izmir, Manisa, Kütahya et Afyonkarahisar en Anatolie occidentale. Après la découverte d'un fragment de crâne fossile d'*Homo erectus* dans les gisements de travertin à Kocabaş (Denizli) en 2002, l'importance de la région s'est accrue. À la suite de cette découverte notable, le Dr. Kadriye Özçelik a débuté une prospection sur le Paléolithique à Denizli et a trouvé un grand nombre d'outils en pierre taillée des périodes Paléolithique inférieure et moyen. Néanmoins, la dernière découverte Paléolithique importante de la région a été réalisée à Sürmecik (Banaz-Uşak) en 2015. Il s'agit d'un camp en plein air du Paléolithique moyen mais aussi d'une zone de production minière où une opération d'extraction a été menée. Les objets en pierre taillée du camp en plein air paléolithique de Sürmecik proviennent d'une couche d'argile située entre des dépôts d'hématite et de limonite sous une couche de travertin d'environ 4,5 à 5 mètres d'épaisseur. Les restes fauniques représentent principalement des espèces d'équidés. Toutes les étapes de la culture Moustérienne sont clairement visibles dans ce camp en plein air. Sürmecik est le camp en plein air le plus riche du Paléolithique moyen en Turquie. Au total, 83 002 pièces lithiques ont été collectées lors des fouilles effectuées en 2016 et 2017. Nous estimons que l'assemblage lithique dépassera les 100 000 pièces grâce aux études en cours. Le groupe de pointes de feuilles bifaciales de cette collection est inédit en Turquie. Trois études de master ont débuté sur le matériel lithique de Sürmecik. Il est prévu de prélever quelques échantillons pour une analyse de datation ainsi que des études en cours.

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1. Introduction

As is known to most researchers, Turkey is a large and important country located between three continents and at the crossroads of human migration out of Africa in the Palaeolithic Age. Turkey must be very rich in Palaeolithic chipped stone cultures due to this important position. The Palaeolithic research carried out in Turkey proves this situation. Today a lot of sites and artefacts belonging to the Lower, Middle and Upper Palaeolithic and Epi-Palaeolithic periods have known in Turkey[1]. In

[1] Kuhn, 2002; Taşkıran, 2016.

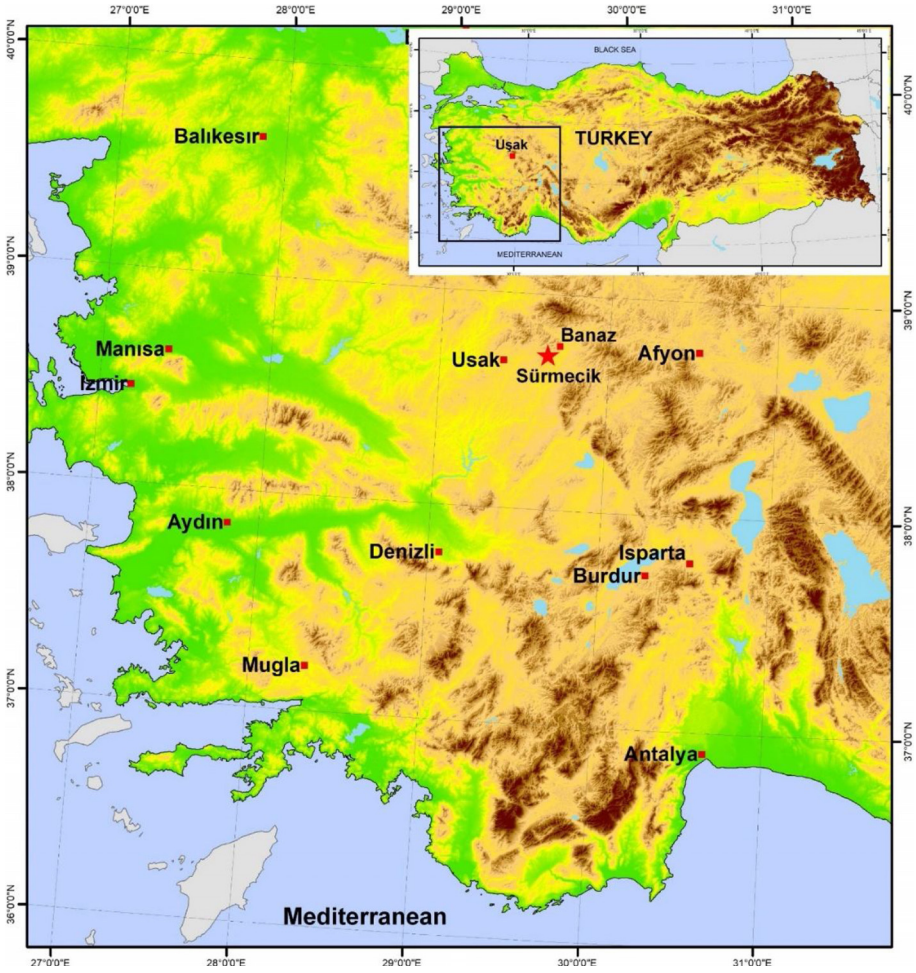

Fig. 1. Localisation of the Sürmecik in Turkey.
Localisation du Sürmecik en Turquie.

particular, there are rich Acheulean open-air sites in all regions except the Thracian part of Turkey[2]. The traces of Middle Palaeolithic Mousterian culture are also find in open-air settlements or in the cave sites of the Taurus-Zagros mountain system such as Karain[3]. However, the Upper Palaeolithic period is not well-known in Turkey. The traces of this period are only seen Karain cave B chamber in Antalya and Üçağızlı cave in Hatay in southern Turkey[4]. Despite this limited view of the Upper Palaeolithic period, the Epi-Palaeolithic period is quite rich. The microlithic finds of this period are found both in caves and open air-sites[5].

We are sure that there are much richer Palaeolithic settlements in Turkey. Unfortunately, in Turkey only a few people like us are working on Palaeolithic Archaeology, therefore Palaeolithic archaeology

[2] Taşkıran, 2008, 2018; Dinçer, 2016.
[3] Yalçınkaya and Özçelik, 2012; Özçelik, 2018.
[4] Özçelik, 2011; Minzoni-Déroche, 1992; Kuhn et al., 1999.
[5] Kartal, 2003, 2009; Taşkıran, 2016.

Fig. 2. Aerial photograph of the excavation area.
Photographie aérienne de la zone de fouille.

Table 1
Distribution of Lithic Assemblages.
Distribution des assemblages lithiques.

Groups	*n*	%
Debris	23.256	27.00
Chipping products	39.169	45.48
Cores	8.393	9.74
Biface	293	0.34
Chopper/chopping tools	207	0.24
Other tools	14,814	17.20
Total	86,132	100

in Turkey is not at the desired level. However, very important Palaeolithic discoveries have made in recent years in Turkey[6].

The western Anatolia and/or Aegean region, where takes place Sürmecik open-air site, was the poorest region of Turkey in terms of Palaeolithic finds until the 2000s. In the past years, only a few Palaeolithic artefacts were known from the surface in the provinces of İzmir[7] and Kütahya[8] in western Anatolia. This negative view of the region began to change in 2002 with the discovery of the fossil Homo erectus skull fragment found in the travertine quarries in Kocabaş in the Denizli Basin[9]. This fossil human remain is the first and oldest finds of the Aegean region as well as Anatolia and were dated to about 1.2 Ma.[10] After this important discovery, several chipped stone tools belonging to Lower and Middle Palaeolithic periods were found in Afyonkarahisar[11], Kütahya[12], Manisa[13] and İzmir[14] provinces and their surroundings. Additionally, Prof. Dr. Kadriye Özçelik started a Palaeolithic survey in Denizli province and found a large number of chipped stone tools from the Lower and Middle Palaeolithic periods[15]. It is especially important that the bifaces found during this survey supported the remains of *Homo erectus* Kocabaş in terms of material culture.

[6] Dinçer, 2015; Çilingiroğlu et al., 2016, 2018, 2020; Baykara et al., 2018; Kartal et al., 2018, 2019; Roosevelt et al., 2019; Atakuman et al., 2020.
[7] Kansu, 1963, 1969.
[8] Efe, 1990.
[9] Alçiçek, 2014.
[10] Lebatard et al., 2014.
[11] Taşkıran and Taşkıran, 2011.
[12] Dinçer, 2015.
[13] Maddy et al., 2015.
[14] Çilingiroğlu et al., 2016, 2018, 2020.
[15] Özçelik, 2017; Özçelik et al., 2016, 2017, 2019.

Table 2
Distribution of prepared cores.
Distribution des Nucléus préparés.

Prepared cores	*n*	%
Levallois	555	57.87
Discoidal	389	40.56
Pyramidal	9	0.94
Prismatic	6	0.63
Total	959	100

Table 3
Distribution of Tool Types.
Distribution des types d'outils.s.

Tool types	*n*	%
Denticulated	6320	42.66
Notched	2443	16.49
Retouched flake/blade	2076	14.01
Side scrapers	1854	12.52
Composite tools	338	2.28
Points	497	3.35
Rabots	684	4.62
End scraper	261	1.76
Perforators	82	0.55
Limaces	55	0.37
Backed blades	49	0.33
Others	155	1.05
Total	14,814	100

Nevertheless, the last and most important Palaeolithic discovery in the region in 2015 is the Sürmecik (Banaz-Uşak) Palaeolithic open-air campsite[16]. This Palaeolithic open-air campsite has brought a new perspective of the Palaeolithic cultures of Turkey and has led to the emergence of new Palaeolithic cultures in Turkey, the signs of which have been unknown until today.

1.1. The location of the Sürmecik campsite

Sürmecik campsite is located in Turkey's western Aegean region. It is 2.5 km southwest of Kızılcaören Village of Banaz District of Uşak Province (Fig. 1). It is about 500–600 m to the southwest of the Usak Ceramic Factory (Fig. 2). Because of the faults running in many directions, the area has very fractured structure. Due to this fractured structure, there is an intense flow of thermal water within the vicinity and the hot waters have formed travertine strata. These formations were deposited either in the form of travertine cones or travertine ridges.

It is understood that the top levels are strata of travertine (CaCO2) and the lower levels are layers of limonite and hematite when see the core samples taken from the many travertine cones in the region and inspection of the transverse sections of the travertine ridges[17]. In some places, the travertines' thickness reaches 5 metres. In the limonite deposits of the lower levels, again formed by the thermal waters, there is a 30 cm clay layer. The Palaeolithic chipped stone tools and the Pleistocene faunal remains discovered in this clay layer. The area where these chipped stone tools, bones and tooth remains found was probably an open-air campsite at the side of a small travertine lake or marsh inhabited by Neanderthal groups.

The area in question is also used by a mining company as a mine quarry where taken the additive materials for cement factory. Unfortunately, it is saddening that, as a result of the mineral extraction

[16] Söyler et al., 2018, 2019.
[17] Polat, 2018.

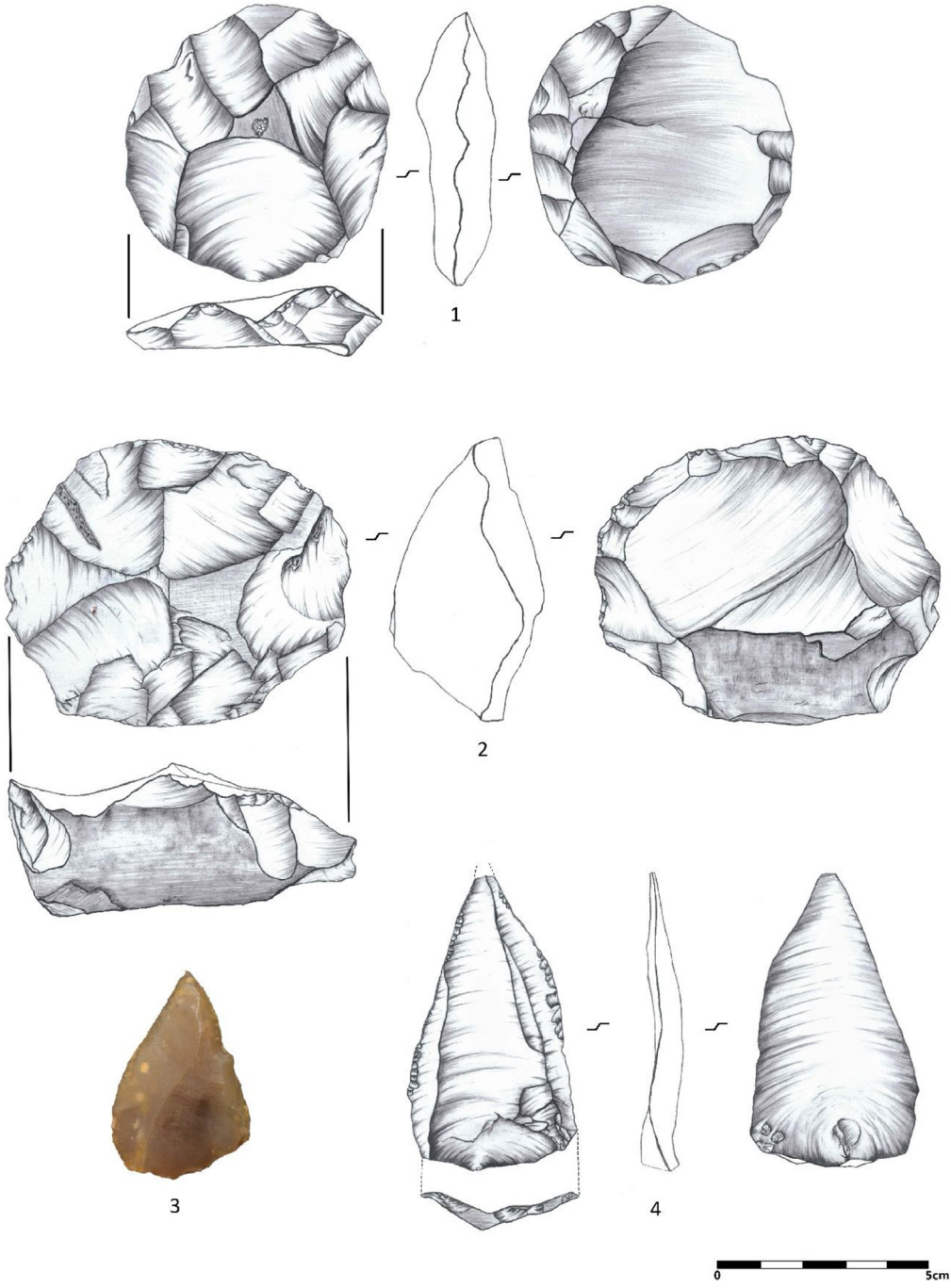

Fig. 3. Levallois cores (1, 2) and Levallois points (3, 4).
Nucléus Levallois (1, 2) et pointes Levallois (3, 4).

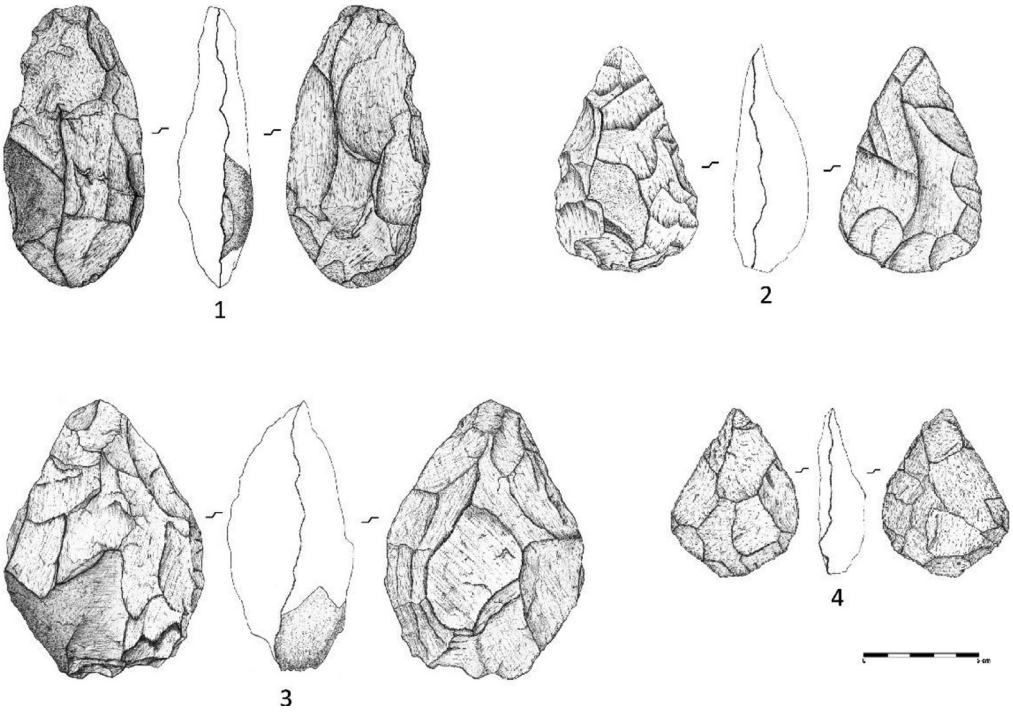

Fig. 4. Bifacial tools (handaxes).
Bifaces.

activities, the levels from which the Pleistocene faunal remains and Palaeolithic chipped stones were found were completely scattered all over the place. The artefacts lost their *in situ* positions and only remained scattered in the area. This has resulted in a number of problems with the planned geochronology and dating works for the area.

1.2. Sürmecik rescue excavations

The Banaz Sürmecik Palaeolithic rescue excavation carried out in 2016 and 2017 under the direction of the Uşak Museum Directorate. The 2018 excavations were planned to be carried out in September but could not be done due to the opening of the new Uşak Museum. Before the excavation started, a grid system was set up and 5×5 m trenches occured over an area of approximately 1250 m^2. All the deposit excavated from the squares in 2016 and 2017 was sieved with 1 cm sieves and with the help of a water tanker brought to the area; all of the chipped stone artefacts were washed. All of the material was marked and transferred to Ankara University Prehistoric Archaeology Laboratory for techno-typological analysis after initial classification at the excavation area.

1.3. Lithic artefacts

The assemblage of lithic artefacts recovered during the 2016 season consists of 51,115 pieces. A further 31,887 pieces were added to the collection in 2017. The large and small raw material examples and hammers which are except to these numbers, consist of the rest of the chipped stone industry. With the work we will continue in the field, the Sürmecik Palaeolithic collection is expected to exceed

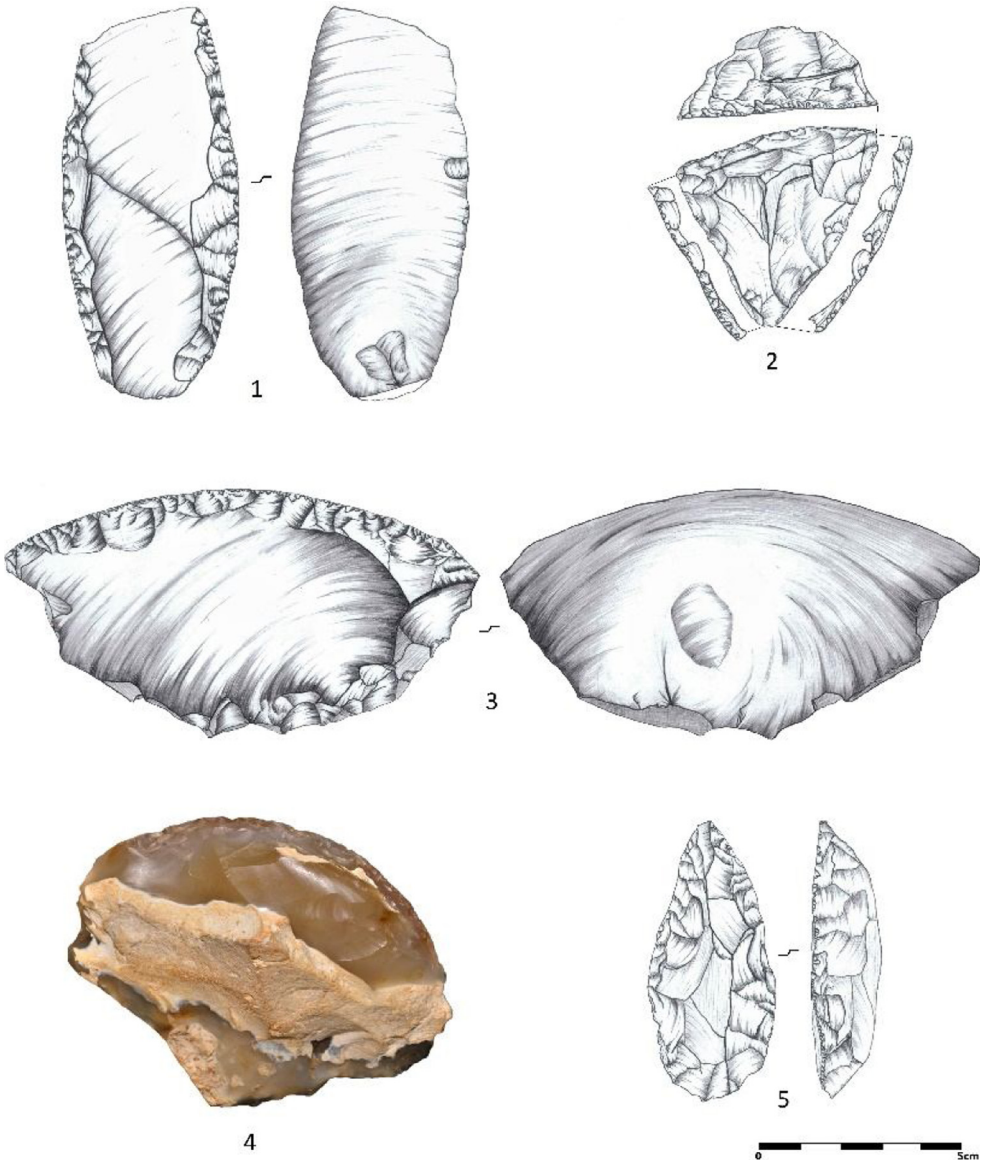

Fig. 5. Side scrapers: Double side scraper (1), Dejete side scraper (2), Tranversal side scraper (3), Transversal side scraper (4), Convergent side scraper (5).
Racloirs : Racloir double (1), Racloir déjeté (2), Racloir transversal (3), Racloir transversal (4), Racloir convergent (5).

100,000 pieces. Our first non-detailed observations on the Sürmecik chipped stone assemblage for the 2016 and 2017 excavation seasons are summarized in the tables below (See Tables 1–3).

It was observed that many types of rocks were used in the production of the chipped stone materials. Generally, flint, chalcedony and quartzite are preferred as raw materials but mica-schist and radiolarite are rarely used. Our preliminary work on the sourcing of these raw materials has shown that some of them can be found in close vicinity to the site. Survey that is more detailed is planned on the raw material sources.

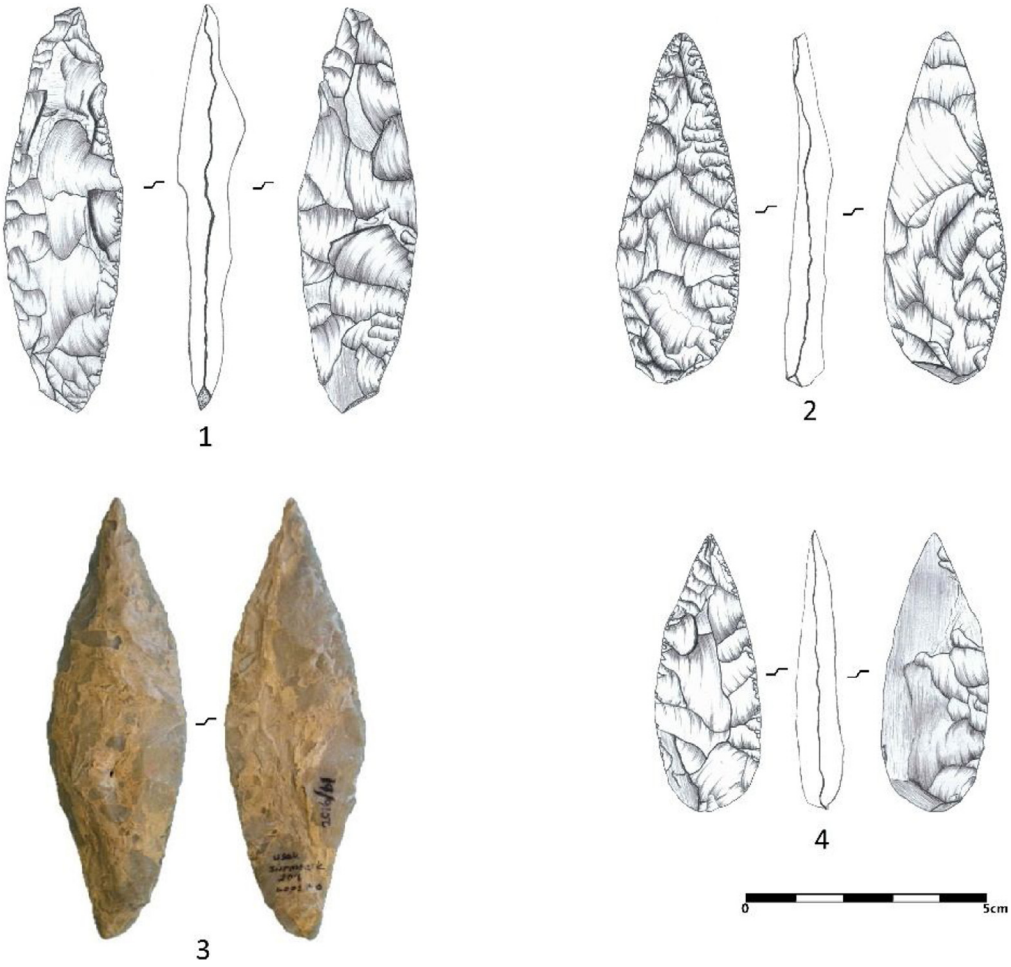

Fig. 6. Bifacial foliate points.
Pointes foliacées.

From the perspective of technology, the chipped stone assemblage includes a combination of pebble tools, bifaces and flake technologies. There are excellent examples of Levallois cores, flakes and points (Fig. 3: 1–4). From the perspective of the assemblage's technology, there is such an incredible variety of tool types that there is no other Palaeolithic open-air site with such diversity in Turkey.

The choppers and chopping tools (Fig. 4: 3) were mostly produced on various river pebbles. Bifacial tools (hand-axes) are many in number and of various types (Fig. 5: 1–4). They were generally made on flat and round pebbles of various types of quartzite but there are also examples made on flint and radiolarite flakes. Some of these were the partial bifaces. Generally, it is possible to talk of the triangular shaped and sharply pointed bifaces as homogenous.

Among the chipped stone tools various side-scrapers (Fig. 6: 1–5), particularly Quina type side scrapers (Fig. 6: 4), end scrapers, Levallois (Fig. 3: 3, 4) and Mousterian points (Fig. 4: 1), limaces, denticulate tools, carinated rabots (Fig. 4: 2) and until now in Anatolia unfamiliar bifacial foliated points are found (Fig. 7: 1–4). The typological and technological features of the tools indicate the Mousterian culture of the Middle Palaeolithic in which Homo Neanderthalensis lived. However, it is clear that there are different phases of the Mousterian Culture. It is understood that there are phases of

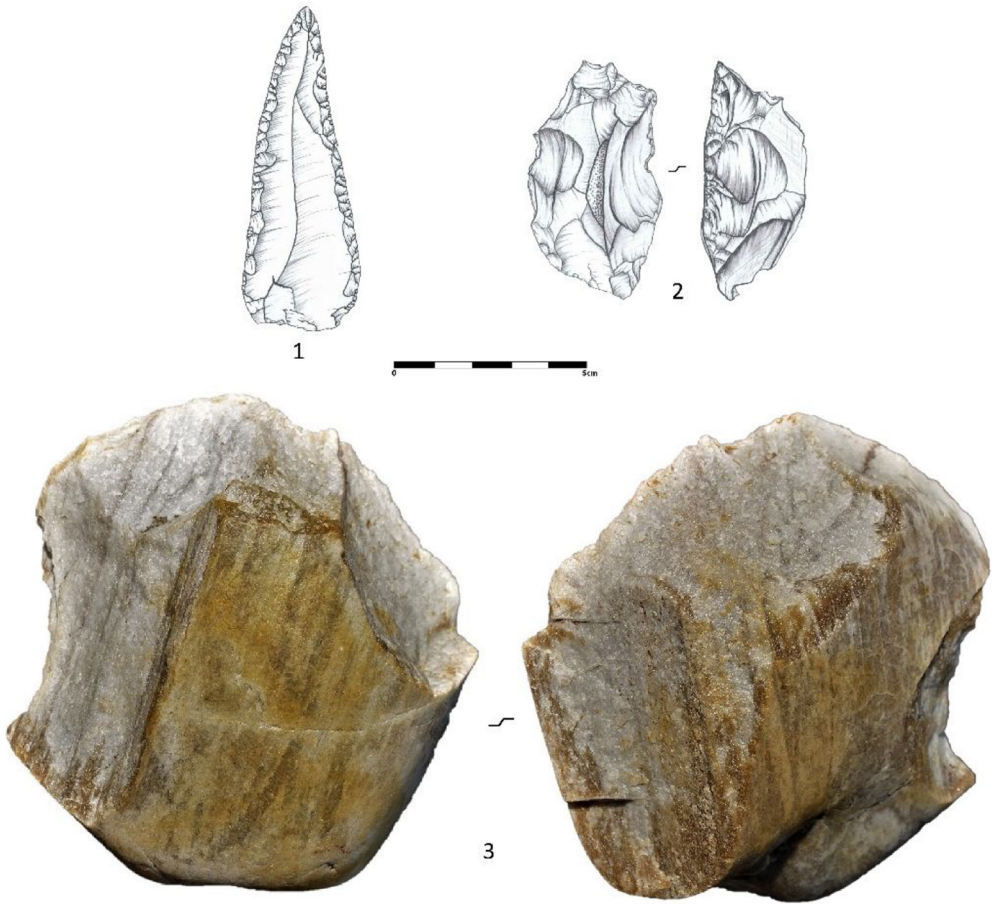

Fig. 7. Elongated Mousterian Point (1), Carinated Rabot (2), Chopping Tool (3).
Pointe moustérienne allongée (1), Rabot cariné (2), Chopping Tool (3).

a Classic Mousterian of various side scrapers, Mousterian points, Levallois flakes, points and cores, a Charentian and Quina type Mousterian of points, convex transversal side scrapers and denticulate tools on thick blank, and the (MTA) Mousterian Tradition Acheulian of the bifacial tools (hand-axes). The techno-typology analyses of the tools is only in its preliminary stages. Currently four master theses are being prepared on the subject.

Our preliminary observations, which made on lithic assemblage, are presented here by three tables. From the quantitative and qualitative point of view finds like pebble tools culture (choppers and chopping tools) and a very typical trihedral pick from the 2017 excavation season make it thinkable that there might have been life here in the Lower Palaeolithic period. This situation, which would mean accepting the presence here of more archaic human groups than the Neanderthals, will only become clear if it is possible to carry out absolute dating. It is planned to take different samples for absolute dating end of this year.

2. Discussion

The most reliable reference center for the Middle Paleolithic period of Anatolia is Karain cave. There are no bifacial foliate points in Mousterian of the Karain cave, which is a very long-term Paleolithic

sequence[18]. J.K. Kozlowski who is doyenne of Balkan prehistory, participated in the Karain Cave excavations and made comparisons between the Anatolian Middle Palaeolithic cultures and the Balkan Middle Palaeolithic cultures in 1990s[19]. Apart from one questionable leaf-shaped piece at Karain[20], Kozlowski stated that there is no Balkan Type Mousterian in Anatolia and that bifacial foliated points are not seen[21]. However, a large number of bifacial foliate points were found in the Sürmecik lithic assemblage (see Fig. 7: 1–4). After the discovery of the Sürmecik open-air campsite and the existence of bifacial foliate points, it is time to reconsider the views that there are no such points in Anatolia and/or that the origin of the bifacial foliate points is Central Europe[22]. Although there are not many examples of these points in Anatolia, this is the first time they have been found in such density in a settlement area. In addition, these points are not seen in Levant Mousterian[23]. Therefore, these pieces, which display excellent workmanship, may be an indication that the origin of the characteristic bifacial foliate points of the Central European Szélétien, and/or the industries of the transition from the Middle Palaeolithic to Upper Palaeolithic such as the Altmuhlian, Streletskian and Jerzmanowician, may be Anatolia. It is very important to reveal possible cultural interactions between Anatolia and Europe, and to prove that the technique observed in this geography in the Middle Palaeolithic period has progressed to Europe systematically.

3. Conclusion

The rescue excavations carried out in the Sürmecik locale are probably an open-air campsite set up at the edge of a marsh or lake formed by the thermal waters of the Palaeolithic periods. The finds from the Sürmecik Palaeolithic period rescue excavation constitute the richest assemblage of Palaeolithic period artefacts found to date in the Aegean Region. It is understood that the Neanderthal groups lived here uninterrupted for a long time in the Middle Palaeolithic period.

An open-air site at which all the phases of the Mousterian culture are found together, and exhibiting very characteristic and rich chipped stone material, was not known until now. This situation is a first not only for Banaz (Uşak) but also for the Aegean region in Anatolia. After the presence of bifacial foliated points in the Sürmecik chipped stone assemblage, it is necessary to make a more in depth analysis of the cultural interaction or relationship between Anatolia and the Balkans. The bifacial foliate points and Upper Palaeolithic elements do not exist together in Sürmecik. Therefore, it would be more appropriate to evaluate the Anatolian bifacial foliate points within the Middle Palaeolithic Mousterian rather than with the transition industries from the Middle Palaeolithic to the Upper Palaeolithic.

Alongside the chipped stone artefacts, fossil animal bones are seen. The majority of these are *equids* teeth. However, a much richer fauna may be encountered. Unworked raw material examples found in some density among the chipped stone assemblage, and especially number of large and small hammer stones on which there are very clear crushing marks from use, and knapping stone waste show that this area used both as a campsite and as a workshop area and/or atelier.

Acknowledgements

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[18] Otte et al., 1998.
[19] Yalçınkaya et al., 1993.
[20] Otte et al., 1999: 78, Fig. 3. 5-5.
[21] Yalçınkaya et al., 1993: 101–117; Kozlowski, 1992: 1.
[22] Otte, 2017.
[23] Shea, 2003: 331.

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