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Contents

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The Neolithic Cave Settlements of the Antalya Region in Southwestern Anatolia: A Comparative Perspective in Terms of Chipped Stone Assemblages

Gizem KARTAL*

Abstract

Located in southwest Anatolia, Antalya is a large city on the Mediterranean coast of Turkey, which contains numerous archaeological sites within its borders. Throughout human history, Antalya has hosted many cultures from the earliest phases to the modern civilizations. Today, Antalya continues to be a popular center for many domestic and foreign tourists with both its historical and resort appeal. The earliest findings regarding the prehistory of Antalya have been recovered in the caves situated to the north-northwest of the city, referred also as "the Western Taurus Caves". These include the caves at Suluin, Öküzini, and Karain. Current evidence suggests that human occupation continued in some of these caves during the period after the Pleistocene and in the Early Holocene. Within the scope of this study, the similarities or the differences in terms of technology and typology of the lithic industries will be discussed by reviewing the analytical studies performed on the chipped stone assemblages recovered from the caves inhabited during the Neolithic Period.

Keywords: Antalya, Neolithic period, cave settlement, chipped stone technology, chipped stone typology, microlithic tools, macrolithic tools

Öz

Antalya, Güneybatı Anadolu'da bulunan ve bünyesinde çok sayıda arkeolojik yerleşim yeri barındıran Türkiye'nin bir Akdeniz kıyısı şehridir. İnsanlığın ilk evrelerinden gelişmiş uygarlıklara kadar oldukça geniş bir tarih aralığında pek çok medeniyete ev sahipliği yapmıştır. Günümüzde de Antalya hem tarihi dokusu hem deniz turizmi ile hala yerli-yabancı birçok insanın uğrak yeri olmaya devam etmektedir. Antalya'nın tarih öncesine ilişkin en eski bulgular şehrin kuzey-kuzeybatısında yer alan ve Suluin, Öküzini ve Karain yerleşimlerini içeren "Batı Toros Mağaraları" olarak da isimlendirilen mağaralardan ele geçmiştir. Söz konusu bu mağaraların bazılarında Pleistosen sonrası / Erken Holosen Dönem'de de yerleşimin devam ettiği ve insanların bu mağaraları hala yaşam alanı olarak kullandığı anlaşılmıştır. Bu çalışma kapsamında Neolitik Çağ'da iskân görmüş mağaralardan ele geçen yotmataş buluntular üzerinde yapılan analiz çalışmalarından yola çıkılarak kullanılan teknolojik-tipolojik benzerlik ya da farklılıklar belirlenecektir.

Anahtar Kelimeler: Antalya, Neolitik Çağ, mağara yerleşimi, yontmataş teknolojisi, yontmataş tipolojisi, mikrolitik aletler, makrolitik aletler

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I would like to express my gratitude to Prof. Dr. D. Baird for the invitation to the University of Liverpool and the opportunity to give a presentation and review the literature there. I would also like to thank especially Dr. C. Middleton Baird who shared her knowledge with me during my visit like Prof. Dr. Baird. More than that, she has been a friend. I am grateful to Prof. Dr. M. Kartal and Dr. G. Mustafaoğlu for their efforts and support. Without them I would not have been able to grasp the opportunity. I would also like to thank Dr. C. Kabukçu, who has

Introduction

In Antalya, there are five cave settlements dated to the Pottery Neolithic Period. All of the well-defined Neolithic chipped stone industries of the region have been recovered together with Neolithic pottery. The findings detected at Antalya indicate that human communities had chosen caves as living spaces during the Neolithic Age and even in the subsequent periods as well. The chipped stone finds recovered from these caves can shed light upon the techno-cultural structure of the cave Neolithic.

Even though some of the previous excavations, such as at Beldibi and Belbaşı, are not well-documented, we have sufficient information regarding the chipped stone assemblages of the Karain, Öküzini, and Suluin Caves. In particular, the chipped stone finds uncovered from these three caves have been examined in detail by researchers within the context of doctoral dissertations. For this reason, the most comprehensive information concerning the Neolithic cave settlements of the region has been obtained from these three caves.

The Lakes region to the north of Antalya hosts the well-known Neolithic mound sites of Hacılar and Kuruçay. According to more traditionalist interpretations of Neolithic occupations of the region, the sites of the Lakes region are considered to be between "the core region of the Central Anatolian Neolithic" and the Western Anatolian Neolithic. The Neolithic cave settlements in Antalya are somewhat different than those Neolithic formations in the north. This is the main distinction between the Anatolian Neolithic and the coastal and/or inland Mediterranean Neolithic in the Antalya region. An additional difference is the fact that there is an absence of Pre-Pottery Neolithic findings in the Antalya region when compared to those of the Central Anatolian Neolithic. On the other hand, there are Late Epi-paleolithic assemblages in the region dating roughly back to a period between 20,000 BC and 10,000 BC.

Neolithic Cave Settlements in Antalya

Karain Cave

Located about 30 km north-northwest of Antalya, Karain is a well-documented cave site consisting of seven chambers named in alphabetical order from A to G. With an elevation of 450 m above sea level, Karain is situated on the eastern flank of Mount Şam and on a slope 150 m above a large plain[1]. The cave was discovered by Prof. Dr. İ. K. Kökten of Ankara University in 1946[2] and excavated under his direction between the years 1946 and 1973[3]. After Kökten's death in 1974, Prof. Dr. I. Yalçınkaya, also of Ankara University, continued the excavations between 1985 and 2014. Since 2015 the cave has been excavated under the direction of Prof. Dr. H. Taşkıran of Ankara University.

In Chamber B, two main sequences belonging to the Pleistocene and the Holocene have been detected. Represented by a mixture dating from the Medieval, Roman, and Early Bronze Ages, the uppermost levels in the Holocene sequence are named as H I, H II, and H III by the excavation team to express the Holocene levels geologically. Right below are the Chalcolithic

read and corrected this article, for her support and friendship. I would also like to express my sincere gratitude to Prof. Dr. H. Taşkıran, who has always provided his support. I thank him for permitting me to use the photographs in the excavation archives, both in the presentation and in this publication.

1 Yalçınkaya 1987, 21.

2 Kökten 1947, 232.

3 Kökten 1959; Kökten 1962; Kökten 1964.

levels designated as H IV. H V at the bottom of the Holocene layers exposes the Late Neolithic assemblages. Right below H V starts the Pleistocene sediments. A series of radiocarbon AMS dates has been derived from the Holocene levels of Chamber B. Accordingly, the Neolithic level H V has been dated between 7050-6250 BC and 6430-6090 BC cal.

Techno-typological analyzes have been performed on 6888 pieces of end- and by-products and 400 pieces of core and core fragments recovered from the Late Neolithic levels of Karain B[4]. In the chipped stone industry, there are 1165 pieces of identified tools in total, of which microliths are dominant. Of the tools, 765 fall into the microlithic category, mostly represented by non-geometric ones. The remaining 400 pieces are included in the non-microlithic tools such as end scrapers, notched tools, retouched blade-flakes, and sickle blades.

Three different raw materials are clearly distinguished in the chipped stone industry. Radiolarite, good-quality flint, and obsidian comprise 93%, 4%, and 3% of the overall industry, respectively. According to M. Pawlikowski, who researched the raw material sources of the region, the radiolarite of Karain is a local rock. Analyzes have revealed that there are two main radiolarite sources: the first is known as Kızılin Stream and 6 km from Karain Cave, while the second is Burhan Stream, about 10 km from the cave[5]. Some of the aforesaid radiolarite deposits can still be seen on the sections of the catchments. Due to its workability and abundance in the area, radiolarite was preferred in knapping in the region since the Paleolithic Period[6].

The chipped stone industry of H V is mainly represented by blade and bladelet products (Fig. 1). Generally, the flaking angles of the blades are at 90º, and the bulbs of percussion on the ventral faces are unclear. A great majority of the blade and bladelets demonstrate unipolar prismatic core knapping. While 53% of these have trapezoidal sections, the rest have triangular sections. It could be said that in the process of the knapping strategy, the desired products had been successfully knapped by both direct percussion and pressure flaking techniques. Considering the density of the end-products, flakes constitute the second largest group after the blade and bladelets. The third group refers to technological pieces, which are also flakes such as crested blades, plunging blades, core tablets, etc. When these three main groups are compared, we observed that the technological pieces are few in number.

Other than these three groups, the last group comprises cores and core fragments. A total of 404 cores and core fragments have been detected. Of these, 85% have been identified as prepared cores and the rest (15%) as unprepared. Among the prepared cores, unipolar prismatic ones predominate (Fig. 2). Following the predominant unipolar prismatic cores, bipolar prismatic cores, cross cores, and small exhausted cores have also been observed, albeit few in number. When the statistical inference of the knapping products of Karain Late Neolithic chipped stone industry is taken into account, it is understood that knapping for blade/bladelets was the main purpose of the chipped stone strategy.

As one of the main tool groups among the retouched pieces of Karain Neolithic, microliths can basically be categorized into three groups: non-geometric microliths, geometric microliths, and unidentified broken pieces. The common forms among the geometric types are crescent and triangle (Fig. 3) but fewer in number in comparison with non-geometric ones. There is a wide range of non-geometric microliths in the assemblage. Straight-backed bladelets are

4 Kartal 2013.

5 Pawlikowski 1995, 355; Pawlikowski 2002; Taşkıran 2007.

6 Kartal 2011; Yalçınkaya – Özçelik 2012; Yaman 2015.

observed as one of the most frequently encountered forms (Fig. 4). In addition to the backed bladelets, retouched bladelets, straight and/or obliquely truncated bladelets, backed pointed bladelets, and transversal arrow heads appear in the assemblage. Moreover, *microburin krukowski* pieces demonstrate the usage of microburin technique.

On the other hand, the most common forms among the non-microlithic tools are represented by retouched blades, retouched flakes, notched tools, and various end scrapers (Fig. 5). Among the retouched blades, partially retouched ones are higher in number. There is a wide variety of end scraper forms in the chipped stone assemblage of H V. The most common ones are the end scrapers on flakes and blades (Fig. 6). Additionally, some of them are double end scrapers both on flakes and blades. Further, small end scrapers, thumbnail end scrapers, and carinated end scrapers appear in the assemblage along with notched tools, truncated blades, denticulated tools, burins, sickle blades, piercers, and points.

Hacılar-type polychrome potsherds, bone tools, ground stone artefacts, ornamental objects, faunal, and botanical remains have been recovered from the Neolithic layers of Karain as well[7]. More rarely, human remains have also been recovered from the area[8]. At Karain, a total of 35 post holes have been identified in the Epi-paleolithic layers belonging to the Early Holocene Period. It is considered that these posts are related to the spatial organization of the settlement area[9]; however, no detailed study has yet been done in this regard. In the light of all the finds recovered, it is possible to say that the cave was used as a habitation site.

Öküzini Cave

Not far from Karain, another renowned cave site within the area is Öküzini. With an elevation of 305 m above sea level[10], Öküzini is located in the foothills of the Taurus Mountains and 5 m above the plain, which it overlooks. Sharing the same nature with Karain, the site was also discovered and excavated by Prof. Dr. İ. K. Kökten in the 1950s[11]. Kökten discovered the engraving of an ox on the cave's wall and thus named the cave after the engraving - Öküzini[12]. The renewed excavations performed at the site between the years of 1990 and 1999 were again conducted by Prof. Dr. I. Yalçınkaya. Öküzini is a karstic cave consisting of two big cavities. At the site, the excavations had been carried out in the cavity that opens to the entrance and sees the daylight.

The Neolithic layers of the cave display a time range of roughly 9,000 BC to 6,000 BC[13]. The Pre-Pottery Neolithic Period does not exist in Öküzini; hence, the C14 readings that come out as Pre-Pottery Neolithic Period indicate a partial contamination in the uppermost layers. However, when the grave goods recovered from the uppermost layers of the cave and the typological features of these finds are taken into account, these belong to the Late Neolithic and/or Pottery Neolithic Periods. As a matter of fact, C14 dates that date back to the Late

7 Yalçınkaya et al. 2013, 12; Yalçınkaya et al. 2014, 241; Yalçınkaya et al. 2015, 449.

8 Yalçınkaya et al. 2014, 241; Yalçınkaya et al. 2015, 449-450.

9 Yalçınkaya et al. 2015, 447-448.

10 Yalçınkaya 1992, 55.

11 Kökten 1959, 11-13; Kökten 1962.

12 Kökten 1962, 42. Öküz means ox in Turkish. For some unknown reason the engraving has disappeared. Only two imitations, copied by Kökten in 1950s, have survived: one is in the Anatolian Civilizations Museum in Ankara while the other is in the Antalya Archaeology Museum.

13 Kartal 2009, 108.

Neolithic Period have also been obtained. Four graves had been discovered *in situ* by Prof. Dr. I. Yalçınkaya and her team[14]. The cave had been used partly as a settlement and a burial ground. The human remains were studied by Prof. Dr. M. Özbek of Hacettepe University. As a result of his analyzes, it was learned that skeleton No. 1 belonged to a male who died at the age of 35-40; skeleton No. 2 belonged to a female who died at the age of 30-35; skeleton No. 3 also belonged to a female who died at the age of 19-20[15]. The fourth skeleton probably belonged to a female who died at age 17 or 18[16]. Özbek has pointed out that no obvious pathological lesion or traumatic injury was observed on the crania of skeletons No. 1, 2, and 4; however, on skeleton No. 3 some lesions were present. These lesions may have been due to anemia caused by iron deficiencies[17].

It is apparent that the uppermost Epi-paleolithic layers were disturbed heavily by the burial pits dating to the Late Neolithic Period. The materials recovered from the graves are a mixture of different periods. The areas other than the burial ground are less affected compared to the graves, therefore the density of the mixture is lesser there too. The chipped stone industry of Öküzini was studied by Prof. Dr. M. Kartal[18] and Dr. B. Kösem[19], both of Ankara University. According to them, among the chipped stone industry items, crescents are the predominant ones in these uppermost layers. Following the crescents, isosceles triangles, trapezes, backed bladelets (Fig. 7), transversal arrow heads, several kinds of end scrapers, drills, etc. appear in these layers. There is only one sickle blade recovered from these Neolithic levels[20]. The source analysis reveals that all of the obsidian at Öküzini had come from sources in East Göllü Dağ and Nenezi Dağ. Additionally, it has been pointed that the obsidian assemblage comprises a tiny proportion (0.1%) of the overall chipped stone in Neolithic Öküzini. However, obsidian is found both in larger quantities and sizes at contemporary settlements in Southwest Anatolia such as Hacılar, which are located further away from these sources when compared to Öküzini. It has also been suggested that access to obsidian was based on more complex factors than distance alone[21].

In addition to the chipped stone industry, dark burnished pottery with light-colored decorative stripes on the rims was also produced at the settlement.

Suluin Cave

Suluin is the third well-excavated and well-documented cave site in Antalya. Located 32 km north-northwest of Antalya, Suluin is 1 km away from Karain and only 125 m away from Öküzini[22]. Accordingly, these three settlements share the same natural environment. The cave was also discovered by Prof. Dr. Kökten in 1956. The excavations were continued by Prof. Dr. Taşkıran between 2007 and 2014. There is an active lake at the far end of the cave. It appears that the Neolithic deposition of the cave started after the collapse of the cave's roof. The

14 Özbek 2002, 353; Kartal – Erek 2002.

15 Özbek 2002, 354.

16 Özbek 2002, 355.

17 Özbek 2002, 357.

18 Kartal 2002.

19 Kösem 2002.

20 Kartal 2002; Kösem 2002.

21 Carter et al. 2011, 138-139.

22 Taşkıran – Aksu 2009, 90.

earliest and latest radiocarbon readings obtained from Suluin's Neolithic layers display a time range of 6,000 BC to 5,770 BC cal[23].

The chipped stone assemblage of Suluin were studied in a doctoral dissertation by Dr. Z. Taşkıran of the Anatolian Civilizations Museum[24]. With a total of 4214 items, the chipped stone finds of Suluin have been classified into four main categories: non-retouched pieces, cores/core fragments, macroliths, and microliths. The number of macrolithic tools in the assemblage is higher than that of microlithic tools[25]. In the production of lithic tools, the primary raw material is radiolarite. The fact that radiolarite was predominantly used as a raw material is a common characteristic for Karain, Suluin, and Öküzini. In terms of raw material preferences, flint and obsidian rank as secondary and tertiary at Suluin, as also observed at Karain and Öküzini[26].

As in Karain, the chipped stone industry is represented as well by blade and bladelet products[27] (Fig. 8). The total number of blades and bladelets is more than half of all knapping products[28]. Of these, 53% have trapezoidal sections while the rest 47% have triangular sections[29]. A great majority of the blades and bladelets have been removed from unipolar prismatic cores[30]. By-products such as crested blades, plunging blades, and core tablets also appear in the assemblage displaying the technological features of the industry. Among these pieces, the core tablets are prominent[31].

Regarding the cores, 66% of these have been identified as prepared and the rest (34%) as unprepared. Unipolar and bipolar cores are high in number (Fig. 9). There are also bullet cores displaying pressure technique. In addition to these, discoid cores, micro cores, and amorphous cores also appear in the assemblage[32].

As opposed to Karain, 82% of the tools are composed of non-microlithic tools while the rest (18%) are microlithic tools. End scrapers, denticulated and notched tools, retouched flakes, retouched blades, truncated and backed blades are among the frequently encountered tool types (Fig. 10). Except for the broken and unidentified microliths, there are basically two main groups of microliths at Suluin. The first -geometric microliths- consists mostly of crescents, trapezes, and triangles; the second -non-geometric microliths- includes generally retouched, truncated, and backed bladelets along with micro points[33].

Among the microliths of Suluin, the most remarkable tool form is the transversal arrow head (Figs. 11-12). Transversal arrow heads comprise 46% of the overall non-geometric microliths group and 85% of the points group[34]. As raw materials, both radiolarite and flint were used in

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23 Taşkıran et al. 2014, 564.

24 Taşkıran 2014.

25 Taşkıran 2014, 45.

26 Taşkıran 2014, 46.

27 Taşkıran 2014, 406.

28 Taşkıran 2014, 118.

29 The ratios correspond to those of Karain; see Taşkıran 2014, 121.

30 Taşkıran 2014, 122.

31 Taşkıran 2014, 50-51.

32 Taşkıran 2014, 408.

33 Taşkıran 2014, 410.

34 Taşkıran 2014, 343.

the production of the transversal arrow heads. Conversely, there is only one example made of obsidian[35]. In the production, blades, bladelets, and flakes were used as blanks[36]. When the blank is a blade or bladelet, the production techniques exhibit truncation on the longitudinal axis. Only some of them bear ventral retouch. On the other hand, when the blank is a flake, such pieces bear marginal retouch on both faces. However, some have an invasive retouch on both faces as well. Studies point out that Suluin Cave is identified as the only settlement which possesses the largest collection of transversal arrow heads within the geography of the Near East, Mediterranean Basin, and Anatolia[37].

Other finds recovered at Suluin include potsherds, bone tools, ornamental objects, and faunal and botanical remains. Three areas with different sizes have been detected in the cave and named Rooms A, B, and C[38]. In Room B, a compressed floor was discovered with small limestones and potsherds[39]. In Rooms A and C, perforated and unperforated clay plaques belonging to storage containers -either sun-dried or underfired- have been recovered. Additionally, clay fragments with branch marks uncovered at the site have an important place in Suluin architecture. It has been suggested that these pieces evidence roofing of the structures by way of covering with wooden beams or branches and then plastering with clay[40].

Beldibi Rock Shelter

Located 24 km southwest of Antalya, the Beldibi Rock Shelter was discovered by Prof. Dr. E. Y. Bostancı of Ankara University in 1956[41].

The undermost three levels (F, E, and D) had been dated to the Upper Paleolithic, Layers C and B to the Epi-paleolithic, and Layer A to the Neolithic by Bostancı[42]. Beginning from Level B, ceramic and chipped stone artefacts have been recovered. The pottery is coarse and heavy with a dark burnished surface. Yakar has noted Mellaart's observation that the pottery uncovered at Beldibi is quite similar to that found in the earliest phases of Çatalhöyük[43]. It is quite difficult to identify the finds belonging to Level B, since there is a hiatus between Layers C and B. In Level B, despite the presence of this hiatus, artefacts demonstrating the continuity of Epi-paleolithic technology in the chipped stone industry -represented by microliths, microburins, crescents, tanged points, sickle blades, trapezes, backed blades, and points- have been recovered[44]. Yakar point outs that considering the ceramic finds, it would be rather difficult to speak of a relationship between the settlements of the Konya Plain and the settlements of this region in the Neolithic Period. However, the few obsidian finds recovered at Beldibi could indicate a connection to Central Anatolia[45].

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35 Taşkıran 2014, 344.

36 Taşkıran 2014, 344.

37 Taşkıran 2014, 415.

38 Taşkıran – Aksu 2011, 38; Taşkıran et al. 2011, 429.

39 Taşkıran et al. 2011, 429-430.

40 Taşkıran et al. 2012, 4.

41 Bostancı 1959; Yakar 1991, 122.

42 Bostancı 1959; Yakar 1991.

43 Yakar 1991, 122-123.

44 Bostancı 1959, 146; Yakar 1991, 123.

45 Yakar 1991, 123.

Belbaşı Rock Shelter

Located 24 km southwest of Antalya as well, the Belbaşı Rock Shelter was discovered in 1959 by Prof. Dr. Bostancı also[46].

Three main levels were identified at Belbaşı. Neolithic and Chalcolithic pottery were recovered as a mixture in the uppermost layer above the Epi-paleolithic Period. Ceramic pieces unearthed in this uppermost level are coarse, sand-tempered, and red-colored. These pieces bear a resemblance to some of the sherds recovered at the Beldibi Rock Shelter[47]. It is mentioned that crescents, blades, and microburins were uncovered in the layer belonging to the Neolithic Period[48].

Conclusion

According to the data obtained, it is suggested that the caves, which are located in Antalya and include artefacts dated to the Neolithic, were used as habitation sites. As seen in the examples of the Karain and Suluin Caves, arrangements were made inside the caves for living spaces, and wooden architectural elements had begun to be used at these sites in the Neolithic Period. In the example of Öküzini, the cave had been used as a burial ground for a few persons as well as a living space. The finds used in daily life together with the chipped stone industry items strongly indicate that these caves were inhabited. Furthermore, the caves had been used both as living spaces and chipped stone production areas. A publication evaluating radiocarbon dates obtained from the Lakes Region concluded that Pottery Neolithic settlements located both in the Lakes Region and Southwestern Anatolia provided a date of 6,400 BC as the earliest[49]. In this case, it is evident that the caves located in Antalya had been inhabited earlier. Thus, these caves had been occupied roughly between the beginning of the 8th millennium and the beginning of the 7th millennium in the Neolithic Period.

The people who lived in these caves had intensively used chipped stone tools in their daily activities. When the chipped stone tools are reviewed, the use of microlithic production technology is noteworthy. The chipped stone tools identified at Karain Cave are mostly microlithic. Likewise, a large assemblage of microlithic artefacts has been found in the upper layers of Öküzini Cave. In Suluin Cave, although microliths are fewer in number than macroliths, the microlithic tradition is present through a number of transversal arrow heads that draw attention. The chipped stone industries of the Beldibi and Belbaşı Rock Shelters also contain microliths, and these artefacts represent the continuity of Epi-paleolithic technology. If the technological and typological characteristics of these microliths are set aside, it may be suggested that microlithic tool production is a technological tradition practiced in the cave settlements during the Neolithic Period. On the other hand, considering the production processes and the typological features of the microliths at Karain, Öküzini, and Suluin, these had been produced as a result of notably similar techno-typological practices. However, it must be mentioned that Karain and Suluin chipped stone assemblages are different from each other in terms of quality. In fact, the ceramic artefacts of both caves show different characteristics as well. For now, the reasons behind these techonological differences are still under investigation. Regarding the microliths

46 Bostancı 1962; Yakar 1991, 122.

47 Yakar 1991, 123.

48 Bostancı 1962, 235; Yakar 1991, 122.

49 Thissen 2010, 277.

recovered at the Beldibi and Belbaşı Rock Shelters, we unfortunately do not have information apart from the limited number of drawings and the typological definitions given in the publications. Even though we do not have sufficient information regarding numerical amounts, the microliths that appear in the chipped stone industry had been produced and used by the Neolithic people living in these caves. If it were possible to reevaluate the Neolithic findings of Beldibi and Belbaşı, more comprehensive analyses and better comparisons in regard to a more scientific approach could have been made. Sadly, due to the old storage conditions, all these collections have gotten mixed and lost their stratigraphic positions. The fact that there is no equally sufficient data from each of the cave sites to make comparisons is indeed a compelling circumstance. However, the chipped stone assemblages recovered in Karain, Öküzini, and Suluin -the three major caves in which detailed excavations have been performed using almost the same techniques- present information about the chipped stone technology of the Neolithic Period. So these could surely be taken as a reference.

We think that the main reason for the similarities among the Neolithic cave sites of Antalya regarding the chipped stone industries is their geographical locations. These caves located in the Western Taurus share the same ecosystem. We may also say that this ecosystem forced people into producing the same or nearly similar material culture. Additionally, the fact that the same types of raw materials were used in the chipped stone technology caused a similar development in the knapping processes. This also gave rise to a technology for the chipped stone industry different than the one used in other Neolithic settlements.

A large number of blade-bladelets and blade-bladelet cores indicate the presence of blade production technology in the industries of Karain, Suluin, and Öküzini. The blades and the cores from they had been removed are not very long. This could both be associated with the size of the raw material nodules and an outcome of a technological practice performed deliberately. We may say that both cases reflect the technological knapping strategy from the previous period. When the microlithic and non-microlithic tools of the Neolithic cave sites are taken into account, the chipped stone industry of the Neolithic period does not differ much from the technology of the Epi-paleolithic Period. The geometric tools, which appear fewer in number in the Epi-paleolithic of Karain as isosceles and equilateral triangles[50], are also few in the Late Neolithic chipped stone industry and represented by crescents, triangles, and trapezes. In the Epi-paleolithic layers of Öküzini Cave, an industry in which non-geometric microliths also predominate has been observed[51].

Among the chipped stone industries of the Lakes Region Neolithic sites located near Antalya, only Hacılar[52] and Suberde[53] is known to have a tradition of microlithic technology. In this case, it is possible to say that the microlithic tradition used during the Neolithic Period pertains to the cave settlements, particularly the Western Taurus caves. Additionally, microlithic production technology continued in the chipped stone industry belonging to the Chalcolithic

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50 Özçelik 2011, 218.

51 Kartal 2003, 40, 41; Kartal 2011, 173.

52 At Hacılar, micro blades made of flint were recovered. These micro blades were taken when the raw material was prepared for the micro-points, which were produced from parts of the micro blades and formed by direct retouches to the ventral face. These micro-points are also thought to have been used as arrow or spearheads; see Mellaart 1970, 155.

53 Tools and tool pieces in microlithic sizes were recovered at Suberde and, significantly, geometric ones appearing as triangles and crescents were among them; see Bordaz 1969, 54.

Period, located above the Neolithic layers at Karain Cave[54] as well. In this sense, it is possible to say that this tradition had started in the Epi-paleolithic and even in the Late Upper Paleolithic Periods and continued during the Neolithic and even the Chalcolithic Periods. It was adopted as a technology which could be used, even in the changing conditions of these eras. It is known that microliths were used in hunting activities. Natural resources in the region may have forced the people to live like hunter-gatherers, just like in the Epi-paleolithic. In particular, as a result of the studies that will be performed on the faunal remains recovered at the Suluin and Karain Caves, the areas of microlith use and the reasons for its preference will definitely be explained much better. At the same time, when the botanical and faunal studies shed light on whether or not they were producer-societies, information concerning the techno-economical conditions of these people will also be obtained and better inferences will be made.

[54] Kartal 2013; Kartal 2015a; Kartal 2015b.

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Fig. 1
Karain Cave
Blades-Bladelets
(Karain Cave
Excavation Archives)

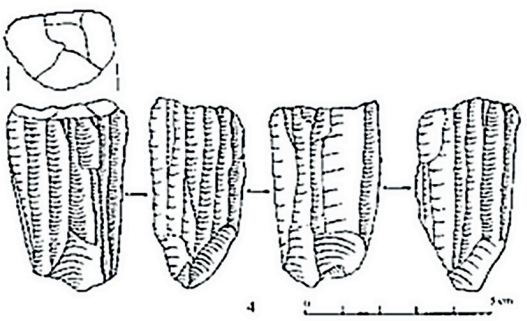

Fig. 2
Karain Cave Unipolar
Prismatic Core
(Karain Cave
Excavation Archives)

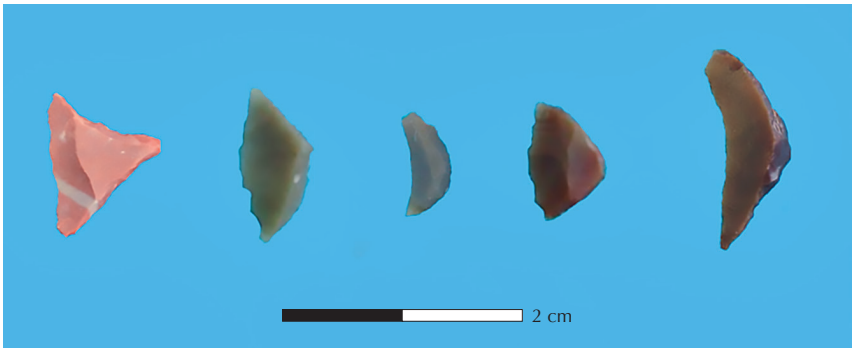

Fig. 3
Karain Cave
Geometric Microliths
(Karain Cave
Excavation Archives)

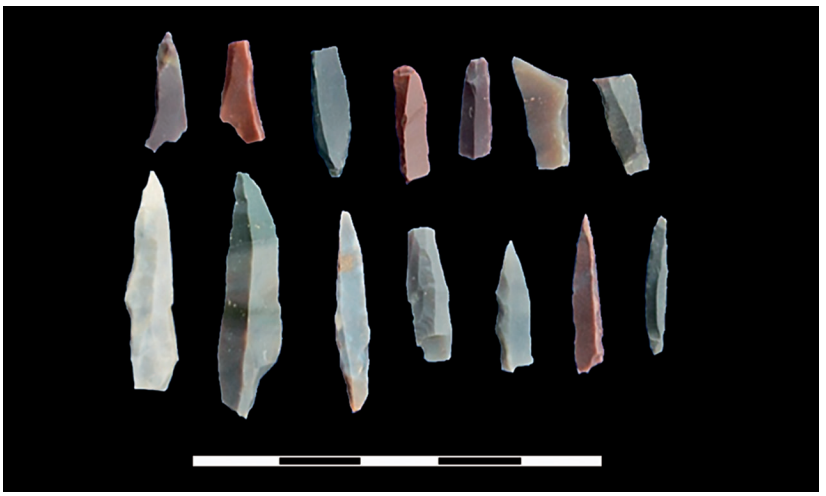

Fig. 4
Karain Cave
Non-Geometric
Microliths
(Karain Cave
Excavation Archives)

Fig. 5
Karain Cave End
Scrapers, Retouched
Blades, and Notched
Tools (Karain Cave
Excavation Archives)

Fig. 6
Karain Cave End
Scrapers (Karain Cave
Excavation Archives)

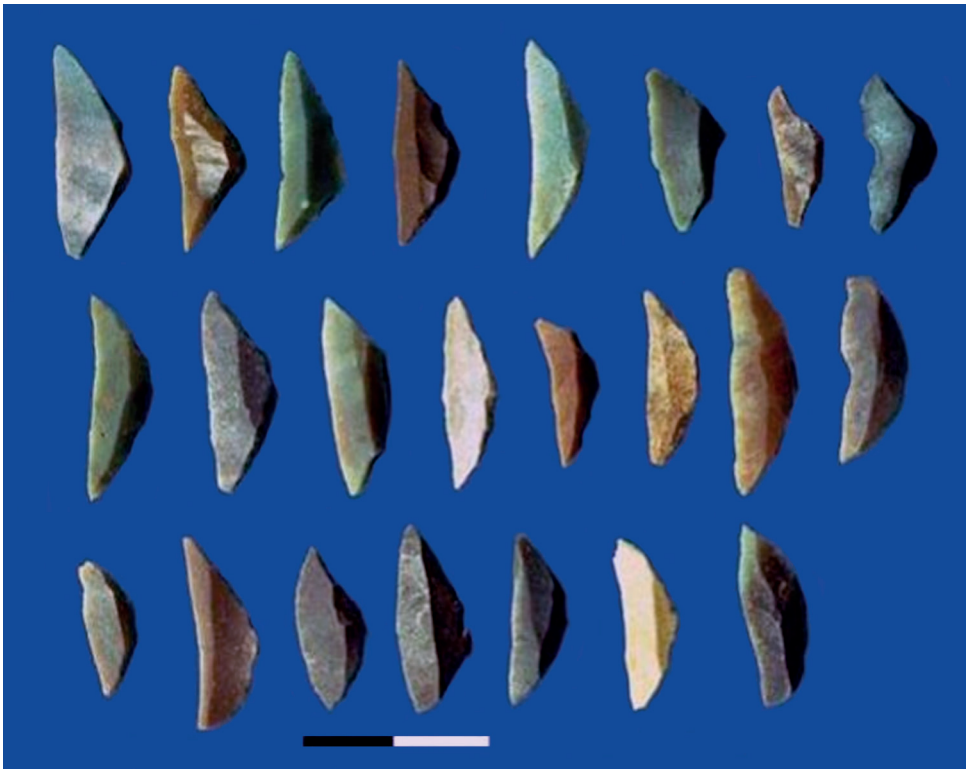

Fig. 7 Öküzini Cave Microliths (Öküzini Cave Excavation Archives)

Fig. 8 Suluin Cave Blades-Bladelets (Suluin Cave Excavation Archives)

Fig. 9
Suluin Cave Unipolar
Prismatic Core
(Suluin Cave Excavation Archives)

Fig. 10
Suluin Cave Retouched
Blades and End Scrapers
(Suluin Cave Excavation Archives)

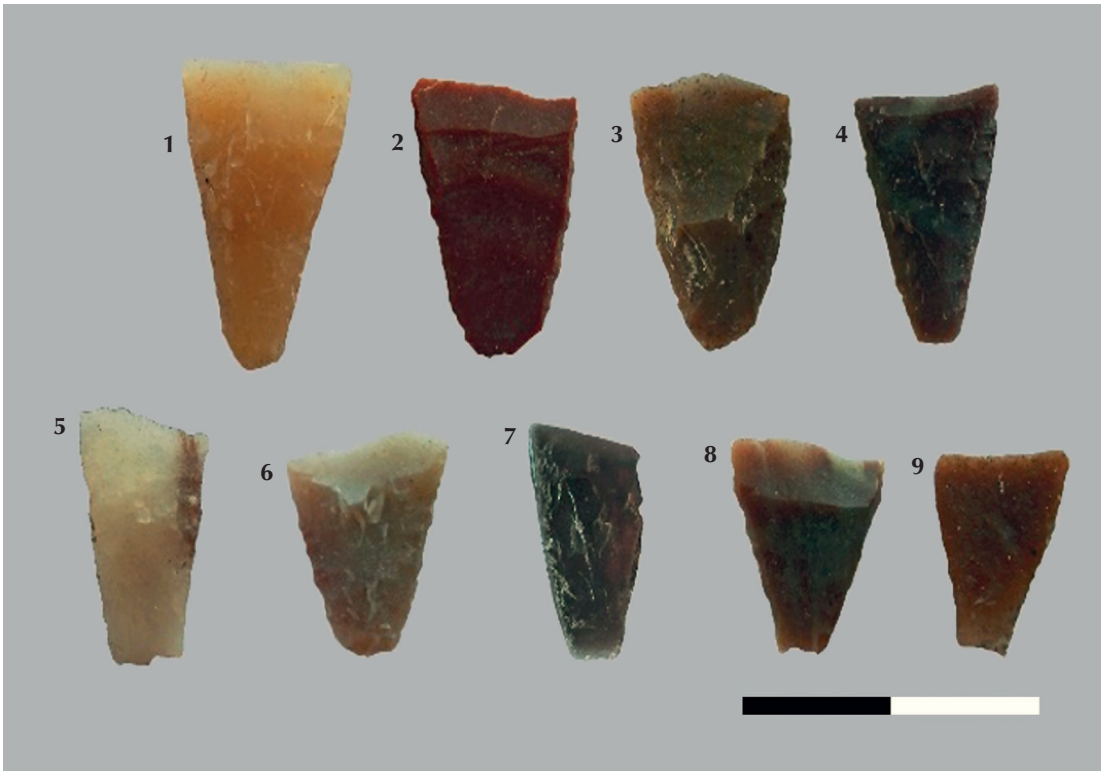

Fig. 11 Suluin Cave Transversal Arrow Heads (Suluin Cave Excavation Archives)

Fig. 12 Suluin Cave Transversal Arrow Heads
(Suluin Cave Excavation Archives)