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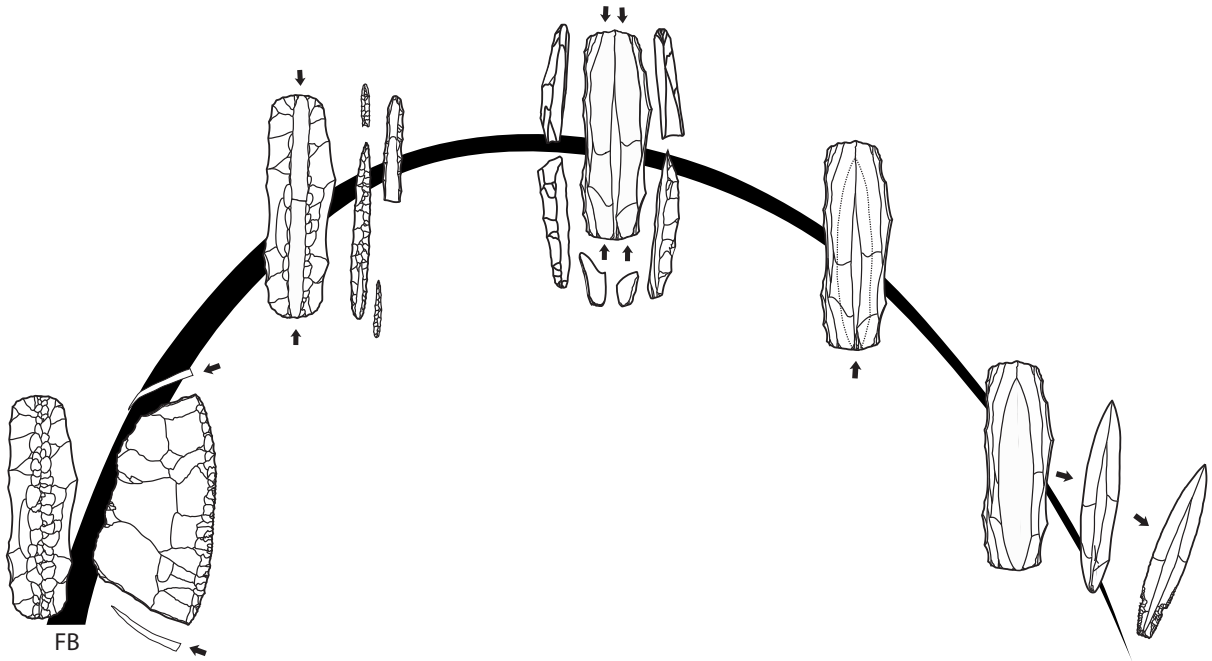

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This volume is dedicated to the late
Nikolaï Ottovitch Bader, Nur Balkan-Atlı, Edgar Peltenburg and Klaus Schmit

The opportunity to hear about ongoing field-work and new discoveries in parts of the Middle East—in spite of the devastation occurring elsewhere. Like our recently departed colleagues, whom we miss, we are united by a passion for prehistory. The PPN8 participants expressed this passion by reaching across ideological boundaries to share data, debate concepts and join in reveries that allow us to preserve the best of what makes the Near East so special to all of us.

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The obsidian industry of Pre-Pottery Neolithic levels at Tepecik-Çiftlik, central Anatolia

Semra Balcı

Abstract

Tepecik-Çiftlik, located in the Niğde district of central Anatolia, is a mound settlement inhabited from the Pre-Pottery Neolithic to the Early Chalcolithic period. Excavations and research at the site since 2000 onwards have revealed numerous data all attesting to the site's importance in understanding prehistoric cultures of Central Anatolia. Such an understanding could be accomplished by studying various aspects of the site in detail. Among these aspects, the chipped stone industry, showing a clear abundance of obsidian from nearby sources, would notably contribute to our understanding of the prehistoric communities of the region. This chapter presents insights into the obsidian industry from the Pre-Pottery Neolithic levels at Tepecik-Çiftlik based on raw material classifications and typological and technological analyses. Macroscopic raw material classifications revealed that the obsidian was procured from Göllüdağ (Kayırlı, Kömürcü) and Nenezi sources. Obsidian was brought to the site as blocks or large flakes, and the data suggest that knapping was conducted on site. However, it is also understood that in some cases the obsidian was knapped at the workshops such as Kayırlı-Bitlikeler and Kömürcü-Kaletepe located at nearby volcanoes; and some pieces related to this production were also brought to the site for further use. Technological aspects of the studied material reveal that the industry showed a predominance of flakes, while both flakes and blades were produced on site.

Introduction

Tepecik-Çiftlik is a mound settlement in the province of Niğde in southwestern Cappadocia, central Anatolia. The landscape around the site is characterised by volcanic activities that took place during the Pleistocene and Early Holocene. Andesitic and basaltic lava, tufa and ignimbrite formations in the region, which is also known as volcanic Cappadocia, are derived from this volcanic structure (Toprak *et al.* 2008). Mountainous areas such as the Keçiboyduran Dağ (2727m asl), Melendiz Dağ (2963m asl) and Göllüdağ (2143m asl) were formed by the volcanic activities, while the rivers flowing from the mountains created alluvial plains. The Çiftlik is one such plain, located 1500m asl, to the north of the Melendiz and the Keçiboyduran mountains (Altın 2010; Kuzucuoğlu *et al.* 2013). Tepecik-Çiftlik is located in this plain watered by the streams of the Melendiz River flowing from the Melendiz Mountains (**Fig. 1**). The abundance of water sources and volcanic raw materials such as obsidian, basalt and andesite motivated the early Neolithic communities to settle in this favourable region. The effect of raw material availability on the socio-cultural life of the early sedentary communities is reflected by the presence of numerous chipped stone tools made from obsidian and ground stone tools made from basalt and andesite within the archaeological contexts.

The Pre-Pottery Neolithic period, namely the beginnings of the Neolithic way of life, was a process of profound cultural changes. Detailed research focusing on understanding this process in central Anatolia conducted on a few key sites has revealed that the early Neolithic period in the region was characterised by internal developments. Central Anatolia consists of two different sub-regions in terms of geological, geographic and climatic characteristics, namely, the Cappadocia region and the Konya Plain. The Pre-Pottery Neolithic period in the Cappadocia region is most extensively known from Aşıklı Höyük (Esin & Harmankaya 1999; Özbaşaran 2013) dated from the 9th to 8th millennia BC (8500–7400 cal. BC). The uppermost level at Aşıklı was destroyed due to later agricultural activities; therefore, the late 8th millennium BC is not extensively known from the site. However, Musular, a satellite site of Aşıklı, yielded data of the 8th millennium BC way of life in the region filling this gap (Özbaşaran 2007). Thus, the period starting from the mid-9th millennium BC to the mid-8th millennium BC can be tracked continuously from Aşıklı and Musular, while the succeeding millennia are better known from sites such as Can Hasan III (French *et al.* 1972), Suberde (Bordaz 1969) and Çatalhöyük East (Mellaart 1967; Hodder 2012) in the Konya Plain. Within this framework, especially

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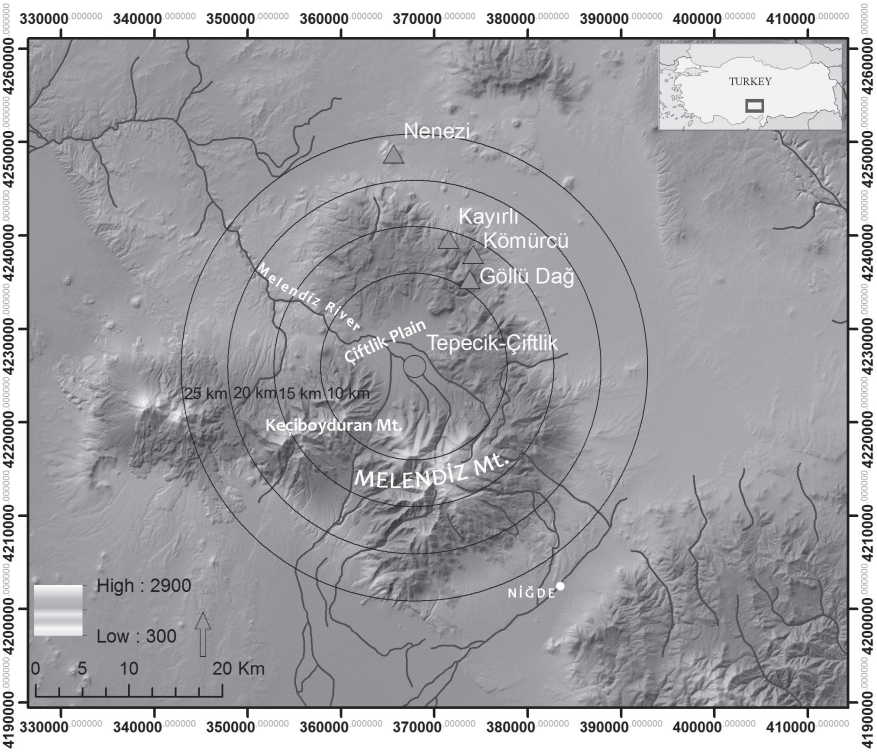

Figure 1. Location of Tepecik-Çiftlik (© GeoMapApp, prepared by Y. Gökhan Çakan)

due to its uninterrupted settlement sequence from the Pre-Pottery Neolithic period onwards, Tepecik-Çiftlik in the Cappadocia region is of importance for understanding the prehistoric chronology of central Anatolia.

This chapter focuses on the obsidian assemblage from the Pre-Pottery Neolithic levels at Tepecik-Çiftlik. The obsidian finds were subjected to raw material classifications and technological and typological analyses. With the aim of contributing to our knowledge on aspects of the early Neolithic period in the region, the material was evaluated in order to understand the relationship mechanisms between the site, nearby obsidian sources (**Fig. 2**) and the obsidian workshops. However, it is of importance to note that the results presented here are preliminary and based on data coming from a small, limited excavation area. Future excavation and research on the Pre-Pottery Neolithic levels of the site would produce further information on the beginnings of the Neolithic way of life at Tepecik-Çiftlik.

Tepecik-Çiftlik mound

Research and excavations at Tepecik-Çiftlik were initiated in 2000 by Erhan Bıçakçı. Ongoing research revealed that the site was occupied between 8000 and 6000 cal. BC, from the Pre-Pottery Neolithic to the end of the Early Chalcolithic period (Bıçakçı *et al.* 2017). The excavations so far have been focused on the Early Chalcolithic and Pottery Neolithic levels, while the Pre-Pottery Neolithic period is known only from a sounding area.

The mound is 300x170m in diameter (3.5ha). Within the excavated area of 1750m^2, Pre-Pottery Neolithic levels are known only from a 4.00x2.00m sounding in the western quarter of trench 16K (**Fig. 3**). This sounding was excavated with the aim of understanding the earlier occupation levels at the site. It reaches about 7.30m below the summit of the mound (Bıçakçı *et al.* 2012; Çakan 2013) and is dated to 8000–7500 cal. BC (Bıçakçı *et al.* 2017). No architectural remains were found within this limited excavation area.

On the other hand, settlement pattern and architectural characteristics of the Pottery Neolithic period at the site are better known from the large excavation areas. The buildings of the Pottery Neolithic period were single-roomed, characterised by *kerpiç* walls built on stone foundations. Through time, more rooms were added to these buildings. The settlement pattern consists of building groups, passages/streets between single buildings and open areas (Çakan 2013). Among the prominent finds, which were mostly found in the open areas, are tools made from obsidian, various stone types and animal bone.

The obsidian industry of Tepecik-Çiftlik from the Pottery Neolithic levels

The chipped stone industry of Tepecik-Çiftlik shows a clear dominance of obsidian, with the presence of

Figure 2. Göllüdağ from Tepecik-Çiftlik (archive of Tepecik-Çiftlik excavation)

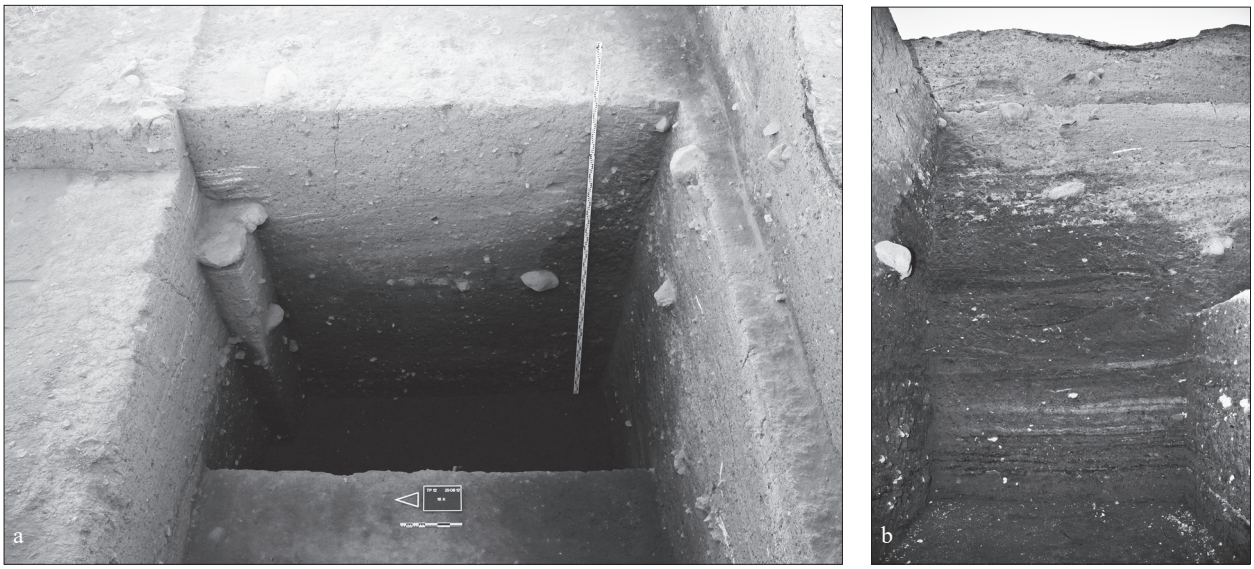

Figure 3. a–b. Trench 16K (sounding area) (archive of Tepecik-Çiftlik excavation)

small amounts of flint and quartz. The location of the settlement, near the Göllüdağ and Nenezi obsidian sources, allowed the inhabitants to procure and use this raw material in abundance. Macroscopic observations suggest that the obsidian was procured mainly from Göllüdağ and less frequently from Nenezi. Göllüdağ is located 10–14km from the site, while Nenezi Dağ is about 23km away in a straight line (Balcı 2016) (**Figs 1–2**). Production debris indicates that the obsidian was brought to the site as blocks or large flakes and knapped on site with a stone hammer using the direct percussion technique.

The industry is characterised by flake and blade productions. Flake cores and also a few exhausted blade cores are evidenced; however, no large blade cores were found so far (Balcı 2016). Among the obsidian tools are end-scrapers on flakes, burins on flakes, various retouched flakes and blades, burins on blades, arrowheads and projectile points, borers and bifacially retouched pieces. The points, which are numerous within the assemblage, have various forms and sizes. Among these are the oval or leaf-shaped points that have been retouched on either one or both sides, and the tanged points. Some are products of a

well-controlled, specialised production process, while some are comparatively more crudely made (Bıçakçı *et al.* 2012). Numerous points belonging to different stages of production, such as preforms and unfinished examples, were also found. The majority of the finished points have oblique parallel retouch made by pressure. Among the tanged points, some were made on bipolar blades. These adhere closely to the Byblos point type.

Like other finds, obsidian artefacts were found mostly in open areas. An *in situ* cluster of tools and objects from a possible knapping spot in Level 3, dating to the Pottery Neolithic period, includes obsidians, hammerstones, bone and antler tools, a perforated stone object and an unfinished celt. Macroscopic colour and texture classification of the obsidians from this area suggest that they belong to the Göllüdağ, Kayırlı source. Through technological analyses, bidirectional blades with regular profiles and also core preparation and renewal pieces that belong to this production were identified (Balcı 2016). These pieces closely resemble the naviform technology. They are not as standard and smooth as the examples known from the Kaletepe workshop, but they are more similar to the naviform artefacts from the Kayırlı workshop (Balcı 2013).

In addition to the open areas, obsidian artefacts were also found inside buildings. In Level 4, dating to the Pottery Neolithic period, a cluster of finds consisting of 21 daggers, points and a stone stamp seal was found at the southeastern corner of Building AK. Each point from this cluster has an average length of 12cm (Bıçakçı *et al.* 2012), while the longest is 25cm and, thus, is clearly defined as a dagger. Some of them have retouch on both sides, while some have been only shaped on one side. There are also examples with both sides completely retouched or retouched completely on only one side, while the other side was retouched only half way towards the centre of the tool. The tanged point was retouched on its sides with an abrupt retouch while both proximal and distal ends and ventral face present invasive retouch.

Technological and typological analyses of the obsidians from the Pre-Pottery Neolithic levels

Technological characteristics

Except for one artefact, the chipped stone assemblage from the Pre-Pottery Neolithic levels at Tepecik-Çiftlik were all made from obsidian. Technological and typological analyses have been carried out on 1019 pieces (**Table 1**). According to the macroscopic observations, the obsidian assemblage is predominantly from Göllüdağ (96%) with a few finds from Nenezi (2%) and other sources that could not be identified (2%) (**Table 2**). Göllüdağ offers three major veins of obsidian in Kayırlı, Kömürcü and Bozköy (Poidevin 1998). According to the macroscopic colour and texture classifications, Göllüdağ obsidian within the assemblage is either shiny, generally transparent and light grey (similar to the Kayırlı obsidians) or dark grey to black coloured and generally opaque (similar to the Kömürcü obsidians). Thus, inhabitants of Tepecik-Çiftlik mainly preferred the Kayırlı and Kömürcü sources.

	PPN	
Obsidian Technological List	N	%
Laminar flake cores	7	0.69
Flake cores	33	3.24
Amorph cores	17	1.67
Crested flakes	20	1.96
Tablets	6	0.59
Débitage surface correction flakes	15	1.47
Crested blades with one side	5	0.49
Crested blades with two sides	5	0.49
Lateral blade with frontal removals	59	5.79
Lateral blade with frontal posterior removals	18	1.77
Lateral blades with natural surface	44	4.32
Central blades unidirectional	17	1.67
Central blades bidirectional	47	4.61
Unidentified blades	5	0.49
Upsilon blade	1	0.1
Aimed blade	1	0.1
Thick flakes (with natural surface)	141	13.84
Thick flakes (without natural surface)	92	9.03
Thin flakes (with natural surface)	111	10.89
Thin flakes (without natural surface)	212	20.8
Shaping flake	7	0.69
Thick flake fragments	76	7.46
Kalın yonga par.	43	4.22
Burin spalls	8	0.79
Chips	3	0.29
Small flakes <2 cm	8	0.79
Chunks/Debris	1	0.1
Unidentified pieces	17	1.67
Total	1019	100

Table 1. Technological list of obsidian artefacts

Obsidian Sources	N	%
Göllüdağ	970	96
Nenezi	24	2
Others	25	2

Table 2. The percentage of the obsidian sources

Technological analyses indicate the existence of at least two different *chaînes opératoires*: the first one is the production of flakes from flake cores, and the second is the bidirectional blade production by direct percussion. However, no cores belonging to the second method of production were found.

Just as in the rest of the settlement corpus, the majority of cores from the sounding area are multidirectional flake cores (3.24%) (**Fig. 4.1–2**). A few bidirectional laminar and flake cores are also present (0.69%) (**Fig. 4.3**, **Table 1**). Crests on the dorsal sides of these cores suggest that they could be exhausted bidirectional blade cores. Even though the settlement was near the obsidian sources and would have allowed the inhabitants to procure obsidian in abundance, yet the cores are generally found in an exhausted state. It is, therefore, difficult to explain why they tended to use the cores until they were knapped all over and too small to be used.

Among the chipped stone artefacts diagnostic of blade production at the site crested blades (**Fig. 4.4–6**), debitage surface correction blades, lateral blades (**Fig. 4.24–29**) and central blades (**Fig. 4.17–22**) were present. The crested blade, crested flake and flake-shaping fragments (**Fig. 4.10–16**) show us that the cores were firstly prepared and then knapped for blade production (**Table 1**). Renewal pieces, such as core tablets (**Fig. 4.13**, **23**) and debitage surface correction flakes, are also evident. Some of the central blades are upsilon blades (**Fig. 4.18**), which bear negatives of the prior blade reductions on their ventral faces (**Fig. 4.19–22**).

Tool types

Tools were made on either flakes or blades, with blades (47%) being most numerous (**Table 3**). The most common tools were the retouched blades (21%) and retouched flakes (15%) (**Table 4**). Some use traces could be observed macroscopically on some of the blades (23%) and flakes (13%); however, this preliminary observation requires a microscopic examination. The second most prominent groups within the retouched tools are the oval points (10%), followed by burins (8%) (**Fig. 5.1–2**, **Table 4**). Points and burins were shaped on both blades and flakes. Less common tools were end-scrapers on flakes (4%) (**Fig. 8.9**), splintered pieces (3%) (**Fig. 8.3–5**, **8**), bifacial tools (2%) (**Fig. 8.1**) and borers (1%) (**Table 4**). Some tools also have use traces on their edges or surfaces. Among these, there is a bifacial tool with concavities formed due to heavy use concentrated especially at the distal end (**Fig. 8.1**). In another example, a similar concavity was formed on the distal end of a flake, suggesting intensive use (**Fig. 8.2**). It is of interest that the distal end of the latter flake has abrasion marks and use traces concentrated on both sides of the abrasion marks.

Oval points were shaped mostly by pressure retouch or, rarely, by abrupt retouch (**Fig. 5.4**). As with the Pottery Neolithic levels, there are unfinished examples of pressure retouched oval points, alongside the finished ones. Dorsal faces of the finished examples shaped by pressure often have a small bit of flaking on the stem tip of the ventral face. These examples, in which the entire surface was pressure retouched, were intrusive, belonging, instead, to the Pottery Neolithic levels and were not identified in the Pre-Pottery Neolithic levels. In some examples, a controlled and smooth pressure retouch is evident (**Fig. 5.3**), and they could be defined as specialised products.

The points include complete (**Fig. 5.4**, **6**) and broken examples. Some of the broken points have impact fractures. Several studies on the impact fracture patterns have compared the archaeological material with experimental points (Ficher *et al.* 1984; Ataman 1986). In identifying the impact fractures on the Tepecik-Çiftlik points, we benefited from the terminology generated by Ficher *et al.* (1984: 23). Based on the examples identified in such studies, we can say that some points from Tepecik-Çiftlik were used for hunting. For example, the left edge of a completely pressure retouched oval point shows a spin-off fracture caused possibly by hitting an object (**Fig. 5.5**). In another example, where pressure retouch was applied on the ventral face, a snap fracture (step terminating bending fracture, 2D) was observed on the upper end (**Fig. 5.7**). A step terminating bending fracture was also attested on the upper end of another point (2C) (**Fig. 5.3**). The fractures on the lower ends of these points were possibly caused by their hafting.

Unfinished points are also attested within the assemblage. One blank, possibly related to a bidirectional blade reduction, shows removals on its ventral face. However, its thickness (44x32x12mm) could indicate the contrary. If it is a blade, it would be a large one, belonging to a production different than the majority of blades from this level. The blade was pressure retouched on its distal left edge, proximal end and proximal right edge. In fact, three-quarters of the dorsal face was pressure retouched, but, for some reason, its production was not completed. Another unfinished piece was initially shaped on a blade. This blade with frontal removals and a natural surface was found as a mesial piece (**Fig. 5.9**). The crudely made retouch is continuous on the right edge, while it is partial on the left. This retouch may be related to the initial stages of point production or it could reflect the failed attempt of an amateur knapper. Some blades with pressure retouch could also be pieces reflecting the initial stages of point production for which the process initiated with partial retouch

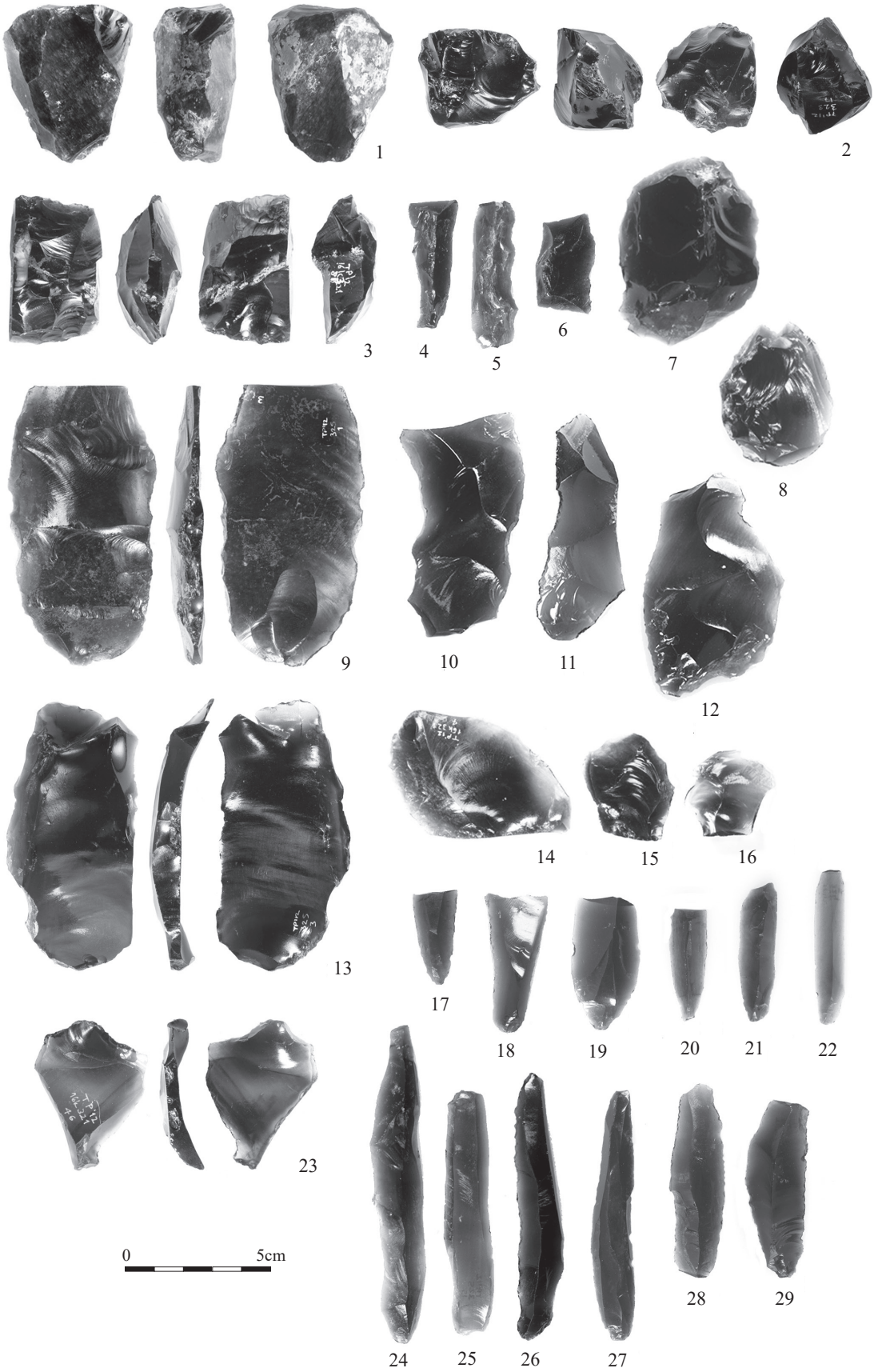

Figure 4. Obsidian artefacts (photos by Y. Gökhan Çakan)

PPN Obsidian Tools	N	%
on flakes	61	39
on blades	75	47
on blades/ flakes	22	14

Table 3. The percentage of obsidian tools on blanks

of a piece was, however, left unfinished (**Fig. 5.12**, **14**, **15**). Furthermore, pressure retouch applied all along the left edge of a large flake indicates that oval points were also shaped on flakes (**Fig. 8.7**).

One incised oval point stands out within the assemblage (**Fig. 6**). It closely resembles the pressure retouched oval points first defined at Can Hasan III. The point, which measures 48.8x18.2x5.4cm, has a completely pressure retouched ventral face except for a small area and exhibits a fluting fracture on its distal

PPPN Obsidian Tools	N	%
Biface tools	3	2
Arrowheads	15	10
Borers	2	1
Endscrapers	7	4
Splinter pieces	4	3
Burins	13	8
Retouched blades	33	21
Retouched flakes	24	15
Used blades	37	23
Used flakes	20	13

Table 4. Obsidian tools

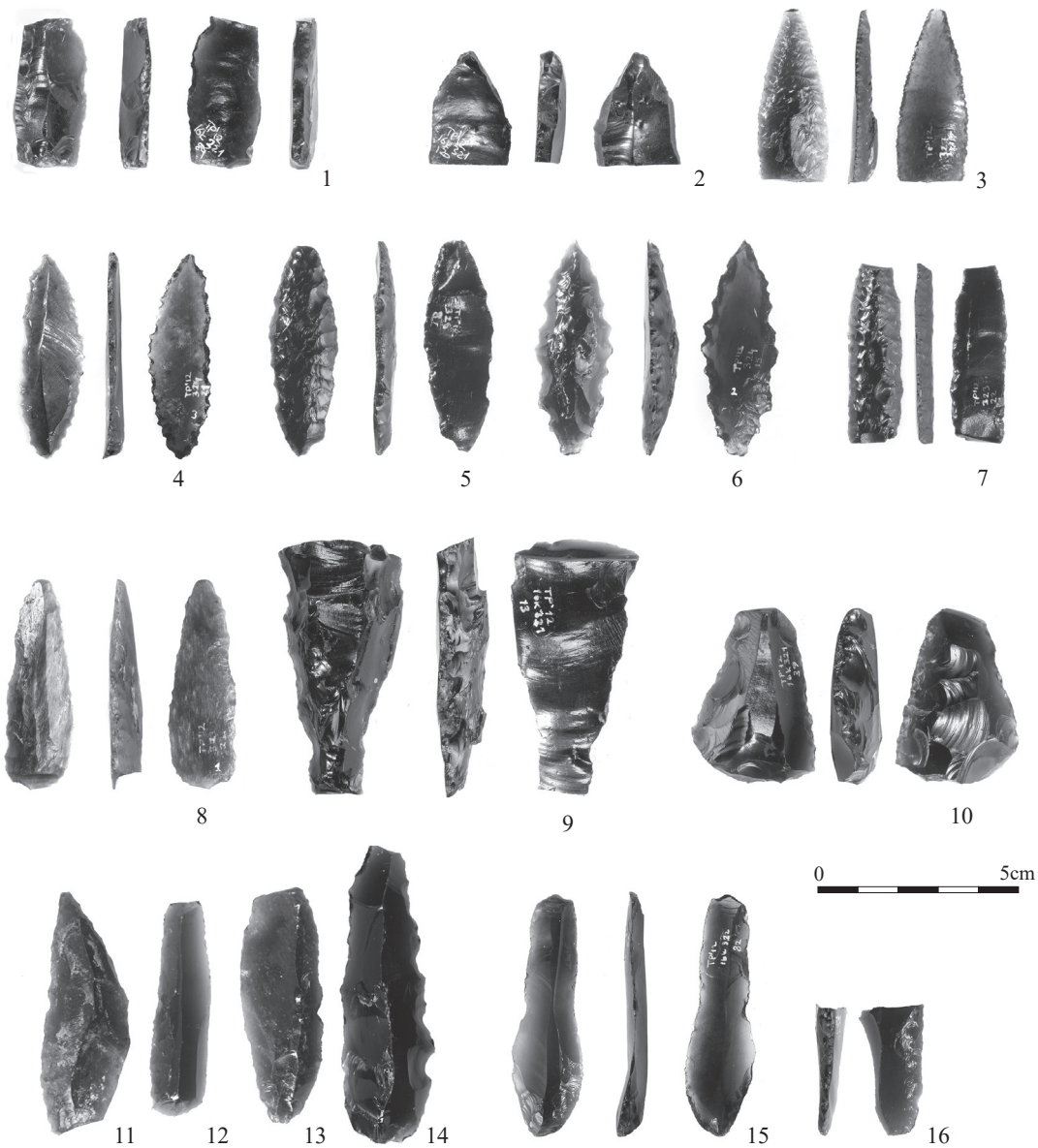

Figure 5. Obsidian tools: 1–2. Burins, 3–8. Oval points, 9–16. Pressure retouched blades (photos by Y. Gökhan Çakan)

Figure 6. Obsidian incised oval point (photo by Y. Gökhan Çakan)

end. Small flake reductions on the proximal end of the dorsal face suggest that it was possibly used in a haft. The incisions are located on the ventral face, where no further reductions were made. They resemble the letter 'A' with two intersecting lines and a third line below their point of connection.

Discussion

Obsidian sources

Tepecik-Çiftlik is a Cappadocian settlement that stands out because of its rich obsidian industry. Preliminary observations suggest that starting from the Pre-Pottery Neolithic, the inhabitants of Tepecik-Çiftlik specifically preferred the obsidian sources from the Göllüdağ, in the vicinity of the settlement. It is also understood that obsidian was procured from the Nenezi Dağ sources, although less frequently probably because they were two times further from the settlement. Although, for the time being, there is no absolute dating from the Pre-Pottery Neolithic period of Tepecik-Çiftlik, these layers were dated to the beginning to middle of the 8th millennium based on relative chronology documented elsewhere (Bıçakçı *et al.* 2017). It is of interest that at Aşıklı Höyük, obsidian was also procured from the same sources (Gratuze *et al.* 1994; Gratuze & Boucetta 2006) yielding the same frequencies (97% and 3%) during Level 2 dated to the 8th millennium BC (Yıldırım-Balcı 2011). Furthermore, the Aşıklı type of bidirectional core found at the Kayırlı-Bitlikeler workshop at Göllüdağ (Balkan-Atlı & Cauvin 1998), and the presence of pieces belonging to the Kayırlı bidirectional blade reductions (similar to naviform) set forth new questions regarding the operation of relationships between the sources, workshops and settlements. The use of similar sources with similar frequencies and the presence of similar technologies suggest several possibilities. Firstly, it is reasonable to suggest that the inhabitants of Aşıklı and Tepecik-Çiftlik possibly interacted at the sources, since they tended to use the same sources and workshops. This

Figure 7. Flint borer (photo by Y. Gökhan Çakan)

interaction should have had cultural manifestations. However, in order to identify and interpret these reflections in the archaeological record, more data are needed. Another point of discussion is that the local populations in the region specifically preferred the Göllüdağ obsidian. It is possible that factors beyond proximity to the source were relevant, such as the physical properties of the Göllüdağ obsidian with its shiny appearance and homogenous structure, that was preferred for knapping. However, alongside the abundant high-quality obsidian from Göllüdağ, obsidian with comparably more moderate quality was also knapped at the site.

Technological characteristics

Technological characteristics suggest that the Tepecik-Çiftlik Pre-Pottery Neolithic chipped stone industry was largely flake-based, while both flakes and blades were produced by direct percussion. The abundant flake cores and production debitage confirms that knapping was conducted on site. However, the regular blades related to bidirectional blade cores known from the later Pottery Neolithic levels at the site were not attested in the Pre-Pottery period. It is known that the chipped stone industry of Pre-Pottery Neolithic Aşıklı was blade-based. Although it is of interest that the dominance of blades from the 9th to the 8th millennium BC at Aşıklı changed slightly when the flake cores became more numerous during Level 2-B in the mid-8th millennium BC (Yıldırım-Balcı 2011: table 3), we need more data to be able to interpret and compare these two industries.

Among the obsidian finds from Tepecik-Çiftlik, core examples that were interpreted as laminar-flake cores due to their latest reductions could be exhausted bidirectional blade cores, since they also adhere closely to the bidirectional cores with a dorsal crest.

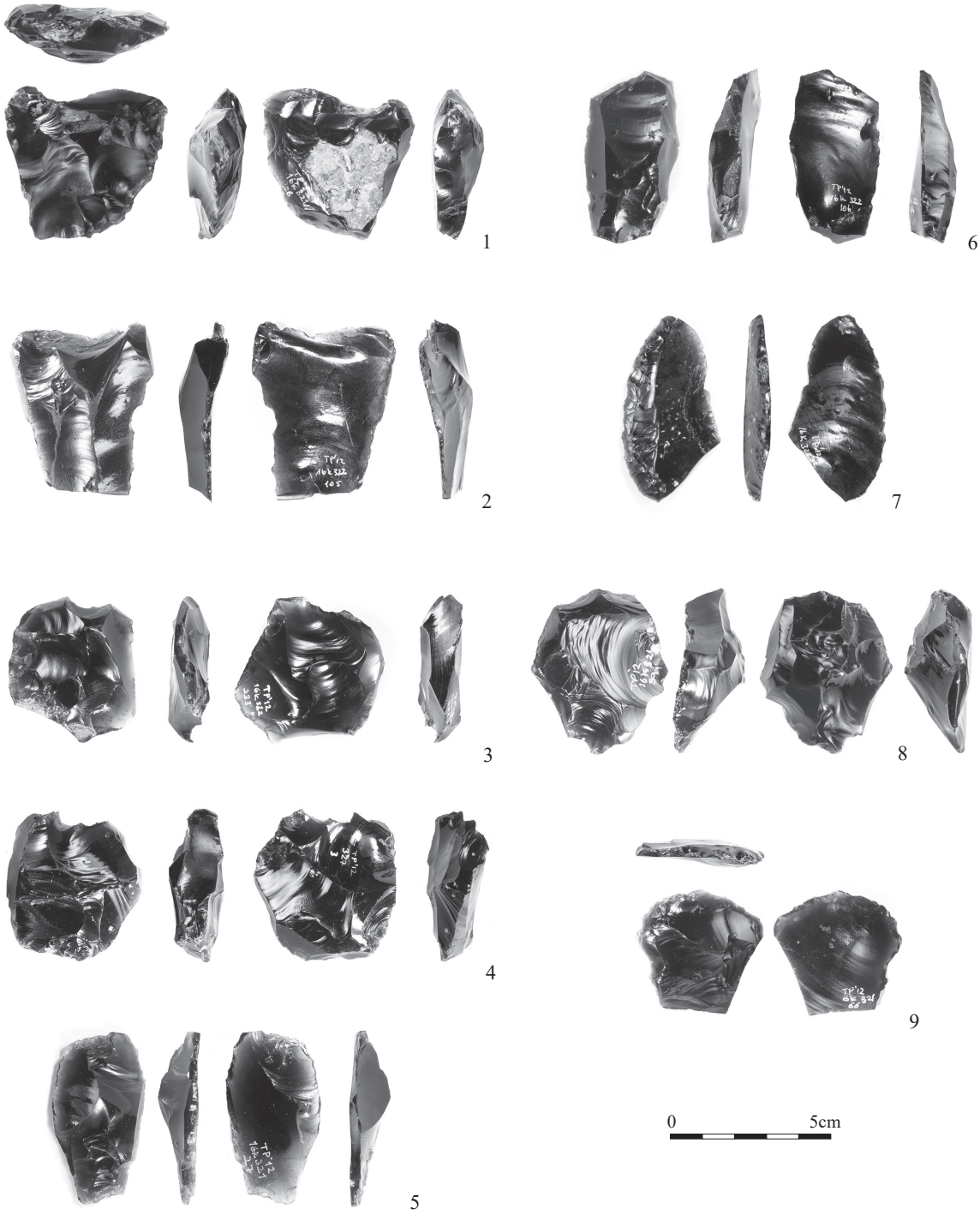

Figure 8. Obsidian tools: 1. Bifacial tool, 2. Used flake, 3–5, 8. Splintered pieces on flakes, 6. Retouched flake, 7. Pressure retouched flake, 9. Scraper on flake (photos by Y. Gökhan Çakan)

The presence of crested blades and lateral blades with frontal and posterior removals within the core preparation blades suggests similarities to Aşıklı where knapping of the block or large flake was initiated after a preparation process. When we compare the central blades from these two settlements, it could be said that the Pre-Pottery Neolithic chipped stone industry of Tepecik-Çiftlik has several similarities with the upper levels (mid-8th millennium BC) of Aşıklı Höyük. Among these similarities is the dominance of bidirectional central blades in comparison to unidirectional blades. In addition, the negatives of the anterior blade removals had straighter profiles and axial arises during this period at Tepecik, comparing well with the earlier levels at Aşıklı Höyük.

The regular blades from Aşıklı (Balcı 2010: fig. 4) may come from Kayırlı workshops. Such artefacts might have been brought from the Kayırlı-Bitlikeler

workshop to the site. This is suggested by the similarities in raw material and technology (Balcı 2010). However, the cores used in their production were absent both at Aşıklı and Tepecik-Çiftlik, suggesting that the inhabitants of both sites collected such artefacts from the workshop debris. Another possibility is that the inhabitants of Tepecik-Çiftlik could have knapped the material at this workshop and brought only finished products to the site for use. Therefore, it can be concluded that the inhabitants of Tepecik-Çiftlik brought material to the site from the source both as blocks and big flakes, and from the workshop as already knapped blades. The lack of sufficient blade cores at the site indicates that they were knapped at the workshop, while, in contrast, tools made on flakes were produced on site. The presence of high-quality pressure retouched points may suggest that at least some of the knappers who produced blades at the workshops were from Tepecik-Çiftlik. Another possibility is the presence of non-local artisans who resided at the workshops for a limited span of time, maybe during certain seasons (Binder 2002; Balkan-Atlı 2003).

Typological characteristics

Typological characteristics of the material from the Pre-Pottery Neolithic levels at Tepecik-Çiftlik indicate that points are the most frequent tool type after the retouched blades and flakes. Pressure retouched oval points like those from Tepecik-Çiftlik are also known amongst the surface material of Aşıklı Höyük (Yıldırım 2011), Musular (Kayacan 2003, 2018), Yellibelen, Sırçantepe (Balkan-Atlı *et al.* 2001) and Göllüdağ (Balkan-Atlı & Binder 2000; Balkan-Atlı *et al.* 2008) in the Cappadocia region, and from Can Hasan III (Ataman 1986, 1988) and Sancak (Baird *et al.* 2012) in the Konya Plain. Such examples were also found at Karabatak, Sapmazköy, Has Süleyman and Tavşancık located around the Salt Lake (Erdoğu & Kayacan 2004; Erdoğu & Fazlıoğlu 2006).

The incised pressure retouched oval point from Tepecik-Çiftlik is also of importance. Similar points were first defined at Can Hasan III where numerous examples were collected. Other single examples are known from the Karabatak locality at Göllüdağ (Balkan-Atlı *et al.* 2008) and the upper levels of the Kömürcü-Kaletepe workshop (Balkan-Atlı & Binder 2000). Among the 35 incised points from Can Hasan III, only four are from Level 2, a disturbed context dating to the latest levels at the site, while the rest were recovered from the topsoil. These points are generally small, 3–4cm in length and usually about 5mm thick (Ataman 1986). The example from Tepecik-Çiftlik is similar in size to the examples from Can Hasan III. Ataman (1986) suggests that incisions on obsidian should have been made with a tool, possibly a burin or a piercer, with a blunt point made from a material that is harder than obsidian, such as flint or chert. Here, it is of interest to note that a flint borer made on a bidirectional blade (**Fig. 7**) was found among the material from the same fill with the incised point. The retouch was alternating on the proximal end of the borer and continued on both lateral edges to the distal end. Of course, there is no direct evidence to suggest that this flint borer was used to make the incisions on the point. Future microscopic analyses on these two specimens may reveal further insights into this issue. The incisions on the Can Hasan III points are similar to each other (mostly triangles and groups of angled lines, with two examples that resemble a tree or a plant depiction), but none are exactly alike (Ataman 1986). The meaning and function of these markings could be related to decorative preferences, reflections of ownership, identities or they might have had ritualistic functions possibly related to hunting. However, more contextual and cross-cultural data are necessary to be able to interpret the meanings behind the incised points.

As mentioned above, the Pre-Pottery Neolithic levels at the site were excavated in a very limited area. Despite this, the data from the chipped stone industry have generated new research questions. Future excavations of the Pre-Pottery Neolithic levels across a more extensive area should reveal defined contexts permitting contextual analysis of the chipped stone finds. Furthermore, future studies on chipped stone finds from the earliest levels at Tepecik-Çiftlik should provide more insights into the cultural networks of the early Neolithic inhabitants in the region.

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