Epipalaeolithic/ Mesolithic, Neolithic Periods Chipped-Stone Assemblages from Southern Bulgaria and Northwest Turkey: Similarities and Differences

Epipaleolitik/Mezolitik, Neolitik Devirler Doğu Bulgaristan ile Türkiye'nin Kuzey-Batısındaki Yontma Taş Buluntu Toplulukları: Benzerlikler ve Ayrılıklar

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Bu yazıda Güney Bulgaristan'da ve Türkiye'nin Avrupa bölgesinde ele geçen Epipaleolitik ve Neolitik dönemlere ait yontma taş buluntu toplulukları anlatılmaktadır.Bu bölgelerdeki yontma taş buluntu toplulukları arasındaki benzerlik ve ayrılıkların incelenmesi, yapım teknolojisinde ve bir ölçüye kadar da tip ayırımında bir boşluk bulunduğuna işaret etmektedir. Neolitik Devre ait en erken yontma taş topluluğuna uygulanan makro-teknoloji, bu bölge için tipik bir kültürel ve kronolojik göstergeyi oluşturmaktadır.

1. Introduction

The region under study includes Thrace (located in southern Bulgaria and European Turkey), the Marmara region, and part of western Anatolia. In this paper only Epipalaeolithic and Neolithic chipped stone assemblages are analysed. The chipped-stone collections from the Greek part of Thrace go beyond the scope of the present study and are not considered, despite the fact that they play an important role in the process of Greek Neolithisation. Nevertheless, the region "around the Sea of Marmara played a significant role in the diffusion of economic patterns, technologies, art form between Anatolia and the Balkans". (J.Yakar 1991,225; I.Gatsov 1998,1- 28.).

1.1 The Bulgarian Evidence

From a typological perspective, some of the chipped stone collections from Bulgaria have been assigned to the Epipalaeolithic / Mesolithic period. These are lithic materials from the northern Bulgarian Black Sea coast that were collected within the Dikilitash area. In addition, the present study includes

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the Neolithic chipped stone assemblages from southern Bulgaria, from sites situated between the Black Sea, the southern Bulgarian border, the Rhodopes mountains, and the Sofia lowlands.

1.2. The Evidence from Northwestern Turkey

The chipped stone assemblages presented below come from northwestern Turkey and include the Turkish portion of Trace as well as part of northwestern Anatolia - especially the portion projecting into the Marmara region east of the Meriç/Evros river. Two Neolithic settlements have been reviewed in this paper: Aşağıpınar, on the outskirts of the modern town of Kırklareli, and Hoca Çeşme - in the delta area of the Meriç/Evros river. In addition, from western Anatolia, the Neolithic site of Ilıpınar (near Orhangazi) - close to lake Iznik - has been included.

1.3. Epi-Palaeolithic Sites in the Black Sea Region

The chipped-stone assemblages from Dikilitash region on the Bulgarian Black Sea coast were collected from the surface of 11 sites by the Bulgarian archaeologist Ara Margos. Within this region, specific locations with high concentration of artifacts were defined as sites. Material was collected over a period of more than 20 years between 1960 and 1980.

Along the Turkish coast of the Black Sea, several sites were explored by M. Özdoğan from Istanbul University. In the beginning of 1970s, he investigated the European and the Asian shores of the Black Sea and collected chipped-stone materials identified as Middle, Late, and Epipalaeolithic from the surfaces of fossilized sand dunes; Epipalaeolithic assemblages were defined based on differences in typology and patina.

2. The Pleistocene/Holocene Transition

2.1. Chipped stone collections from Dikilitash on the northern Bulgarian Black Sea coast

Over 12,000 chipped stone artifacts were gathered from the surface of sites by A. Margos; they include flakes, blades, bladelets, approximately 350 cores, and 430 microlithes. The occurrence of splintered pieces, mainly flakes with two-sided splinter retouch, represents the principal technology of the assemblage. To the group of microlithic tools belong bladelets with steep retouch (dominant), bladelets with transversal and oblique truncations, and less numerous geometrical microlithes - such as segments, triangles, and trapezes. (I.Gatsov 1984, 135 - 150; I,Gatsov 1985, 471 - 474).

2.2. Chipped stone collections from Ağaçlı, Gümüşdere and Domalı, Turkish Black Sea coast

The exploitation of single platform cores, including conical and sub-conical cores for blades and bladelets, is the most common technological feature for the sites mentioned above. The group of retouched tools comprise micro end scrapers (where length is less than 25mm), perforators, blades with marginal retouch, as well as backed pieces (I.Gatsov - M. Özdoğan 1994, 97 - 120).

2.3. Similarities and Differences between Bulgarian and Turkish Chipstone Assemblages

It should be stressed that the Bulgarian and Turkish Pleistocene/Holocene chipped stone assemblages were deposited under similar conditions. All Bulgarian as well as Turkish collections were gathered from places with high artifact densities, and in both areas the material was found on the surface of fossilized sand dunes. These assemblages are considered proof of a single local culture at the time of the Pleistocene/Holocene transition. In both cases there is a technological gap between the aforementioned assemblages and those from the early

Neolithic (discussed below). That is why the Epipalaeolithic chipped-stone assemblages from this part of the Black Sea coast do not, apparently, continue into the earliest Neolithic assemblages of Thrace (at least not for the chipped-stone collections presented below).

From a typological point of view similarities can be found in the microlithic character of both industries: The presence of micro-tools, such as micro end-scrapers with rounded and semi rounded fronts, backed pieces, retouched bladelets, segments as well as blade perforators, notched tools, and splintered pieces. But these types appear regularly in the periods under study. More important are the differences in core processing techniques.

A completely different type of core exploitation has been identified that divides the Turkish from the Bulgarian Epipalaeolithic assemblages. The techniques in Dikilitash are dominated by cores with changed orientation followed by "plate" cores. Most are specimens with evidence of a "multi-changed" knapping direction, and are in their final stage of exploitation.

With these informations in mind the above mentioned technological and typological features constitute the eastern border of the Epi- Tardi-Gravetian tradition of the Iron Gate region of the Danube between the IX and VIII millennium BC.

As for the Turkish collection, the fact can be stressed that the type of core reduction is typical for the local Epipalaeolithic cultures in the adjacent areas of the Black Sea coast. The assemblages from Ağaçlı, Gümüşdere, and Domalı could indicate an Epipalaeolithic substratum in the research area.

Different core reduction techniques demonstrate a significant gap between both areas. While the Dikilitash materials seem to be related to the Epi- Tardi-Gravetian industry of the Iron Gate region, the collections from the Turkish Black Sea coast (both the European and the Asian sites) are likely linked to local Epipalaeolithic cultures (V. Koen, 1991).

3.The Early Neolithic Period Sites in South and Southwest Bulgaria and Northwest Turkey

3.1. South and Southwest Bulgaria

Both in South and Southwest Bulgaria, the earliest Neolithic chipped stone assemblages come from the phase of white-painted pottery (V. Nikolov 1996, 1 -8; V. Nikolov, 1998a, 1999), mainly known from Karanovo excavation.

The initial research of Karanovo was led by G.Il. Georgiev and it is currently being excavated by a Bulgarian/Austrian team under the direction of V. Nikolov and S. Hiller since 1988. The following observations are based on the material obtained from their fieldwork.

Azmak is another important Neolithic and Chalcolithic site that was excavated by G. Il. Georgiev, and is the only site within the region that was completely excavated. The early Neolithic sites near the Rakitovo and Eleshnitsa villages were excavated respectively by A. Raduncheva and V. Macanova (1974 - 1975) and by A. Raduncheva and V. Nikolov (1983 - 1985). The early Neolithic site of Cavdar was excavated by G.Il. Gergiev and K. Kanchev between 1964 and 1980. Unfortunately a very small part of the chipped-stone assemblage was preserved. Research at Galabnik started in 1979 by Mikhail Tchokhadzhiev. In 1980 a Bulgarian - Slovak team led by J. Pavuk returned to Galabnik to continue the research. Pernik, another site in the Museum District of the town of Pernik, was the location of rescue excavations in 1975 and 1976. Slatina, located in Sofia, was partly excavated by B. Nikolov between 1985 and 1998. Captain Dimitrievo is the most recently excavated and published Neolithic/Chalcolithic settlement; work there was conducted by V. Nikolov between 1998 and 1999.

3.2. Eastern Thrace and Southern Marmara Region

Hoca Çeşme was excavated by M. Özdoğan between 1990 and 1992; (M.Özdoğan 1998, 63 - 92) it is located near the Meriç delta approximately 5 km inland from the Aegean coast. Another site Aşağıpınar is located to the south of Kırklareli, not far away from the Turkish Bulgarian border. Research at the site continues and, in this study, the chipped-stone materials from periods III and IV are considered. To date, the approximate synchronization with Karanovo (South Bulgaria) is as follows: AP6 - KII, AP5 - KII/III, AP4 - KIII, AP3 - Early KIV, AP2-Late KIV, AP1 - Late KIV (N.Benecke 1998, 172 - 179; Y.Boyadziev 1995, 149 - 191; H.Parzinger - M.Özdoğan 1995, 5 - 29; M.Özdoğan, - H. Parzinger - N. Karul 1997, 2 - 11).

3.3. Western Anatolia

The Neolithic settlement of Ilıpınar is located in the plain of Lake Iznik, approximately 2 km west of the lake and 1.5 km south of Orhangazi; research there started in 1987, led by J. Roodenberg (J. Roodenberg - L. Thissen - H. Buitenhuis 1989/90, 61 - 144; J. Roodenberg 1995:1987 - 91).

3.4. Chipped-stone assemblages from South and Southeast Bulgaria

To date the first Neolithic collections have come from the Karanovo I and Karanovo II settlements (I.Gatsov and V. Kurcatov 1997: 213 - 227), Tell Azmak (chipped stone assemblage from the Early Neolithic layer; I.Gatsov, M. Gurova 1988: 7 - 21), the site of Rakitovo (V. Macanova, A. Raduncheva 1995: 114 -125), and the site of Eleshnitsa (V.Nikolov, K. Maslarov.1987).

Galabnik I, Pernik, Chavdar, Slatina V - IV (V. Nikolov 1992, 5 - 163) Kovatchevo, and the Early Neolithic layer at Capitan Dimitrievo are the further reflections of the same tradition. Based on our current understanding of sites in the study area this technology ends in the Middle Neolithic period (Gatsov, 1999:115 -123). (Fig. 1.1, 2 Karanovo; 3,4 Azmak; 7,8 - Pernik; Fig.2.4 - 7 Chavdar, Fig.3. 4 - 6 - Chavdar; Fig.2. 8 - 11 Capitan Dimitrievo).

The most important feature of the Earliest Neolithic chipped stone industry is the manufacturing of macro-blades. The characteristic technological features of the blank are its regular shape, mostly trapezoidal section, uni-directional dorsal pattern, and butts formed by a single blow. As for the dorsal pattern, it can be stressed that the pattern is dominated by specimens detached from a single platform core. Most of the blades are related to the same advanced stage of core reduction and show the same knapping technique - usually by pressure. This assumption is supported by the shape of the butt, bulb, as well as by the parallel scar left on the dorsal face.

The size of intact specimens, such as unretouched blades and retouched blade tools, suggests that the necessary length of cores was at least 120 mm. The blades are made out of yellow, reddish-yellow, and yellow brown raw materials -sometimes possessing spots, and are all very good for knapping.

The other interesting feature of the earliest flint assemblages in Bulgarian Thrace is the total lack of cores. Cores are missing from all sites, including the Early Neolithic layers of Azmak - the only site to be totally excavated; other early Neolithic sites in south and southwest

Bulgaria have only been partially excavated. Macro-blade cores have not been registered at Azmak or at any of the other the sites. In addition, a very low frequency of trimming flakes, blades, tablets, plunging blades, and cortical specimens were found within excavated areas.

These observations have led to the conclusion that core preparation, as well as core reduction, took place off site - suggesting

that macroblade production occurred off site, or at least away from the excavated portions of the sites in question. On the other hand, the supposed heavy weight of these macro-cores makes their transportation illogical. It is more likely that the initial core preparation and blade detachment occurred in areas close to the flint source.

As for blade tools, the fact should be stressed that they show marked typological uniformity. Most of the tools were made from blades. To the blade-retouched tools belong blades with high semi-steep, slightly undulated retouch, including specimens with retouched rounded fronts (type Karanovo I-II).

Perforators - another type of blade tool - usually occur with high retouch on the edges that forms more-or-less well-defined points. The other typological groups consist of blades with marginal or micro- retouch, and continuous or partial retouch, as well as blade end-scrapers and truncations. As a rule, most of the specimens have retouch on the edge. Retouched tools on flakes and splintered pieces occur rarely. Specimens with abrupt and denticulate retouch are *de facto* missing.

Blades with high semi-steep and steep retouch are the most typical, and form the best diagnostic feature of the Early Neolithic flint assemblages. The presence of this type of retouch can be explained as an attempt on the part of the knapper to reduce the blade's width. This can be seen by comparing the mean value and standard deviation of unretouched and retouched (with high retouch) blades. In this case the mean value of the unretouched blades' width (including blade fragments) is markedly higher.

To date the raw material sources and the workshops for macroblade production have not been found, because research specifically addressing these problems has not been conducted. Bearing in mind that large quantities of artifacts were made repeatedly from one and the same kind of yellow, reddish yellow, or yellow brown flint raw materials (especially at Karanovo and Azmak) suggests that the raw material sources and core reduction workshops were situated somewhere in Upper Trace. Unfortunately, their exact location is still open to debate. The other problem is connected with location of tool manufacturing. Here, the lack of seaving sediments prevents the examination of on-site activities (I. Gatsov 1993).

3.5. Technological - typological features of the Neolithic chipped-stone assemblages from eastern Thrace and the southern Marmara region

3.5.1. Hoca Çeşme

Four habitation phases have been distinguished, but because the chipped stone analyses are not finished I shall focus on their most important features.

First, the very low quality of the raw material is evident. In all phases the raw material samples consist of microcrystaline quartz and chert of a local origin. The low quality of the materials determined decisively the technological and typological parameters of the assemblagesunder study. It is not by mere chance variation that the frequency of blades and blade fragments is approximately 10% and that of the retouched tools with respect to the entire quantity of chipped stone artifacts is 6%; there were more than 3000 blades and blade pieces.

The major typological groups include mostly retouched flakes (specimens with partial, marginal, and micro retouche on both sides), followed by flake end-scrapers, and by blade fragments with marginal and micro retouch - with or without notches.

Up to now the Hoca Çeşme type of raw material procurement strategy is similar to that of the Koprivetz site in northeastern Bulgaria. The last was ascribed to the period of the Monochrome Neolithic. At Kopri-

vetz, raw materials were of local origin that do not possess good qualities for knapping (T. Tsonev 2000). The assemblages are mostly represented by flakes and flake tools. As a rule the size of specimens - unretouched and retouched - are bigger than those from Hoca Çeşme. However, the important relation is the similarity of raw materials that have imparted similar characteristics for the two flake industries.

Another interesting feature of the Hoca Çeşme assemblages is the presence of cores with multi-directional knapping and core-derived products, such as cortical and trimming flakes that suggest that core exploitation occurred somewhere in the vicinity of the area under study.

Among the blades and blade fragments in the Hoca Çeşme chipped-stone assemblages are a few blades made from yellow flint similar to those mentioned above from Bulgarian Thrace. These blades have been registered in phase II of Hoca Çeşme, which chronologically fits with the Early Neolithic period in Upper Thrace. These blades have the same types of high undulated semi-steep and steep retouch, as well as a similar size to the blades known from the south Bulgarian Early Neolithic. Undoubtedly, they were imported from Upper Thrace. The base for this assertion comes from a corresponding lack of cores, trimming flakes, or blades, as well as a lack of fragments and chips from the same type of raw material. Thus, the material from Hoca Çeşme, with the exception of these few blades, differs completely from the Turkish Epipalaeolithic collection as well as from the Early Neolithic assemblages belonging to the horizon of white-painted pottery.

Only two similar features have been noticed. First, there is a link between blades - which might be considered as evidence of exchange patterns in Upper Thrace. (Fig.1. 5, 6, Fig.2. 1 - 3 Hoca Çeşme). The second similarity is the total lack of flint cores from the region of Thrace; their length should be at least 12 -15 cm.

3.5.2. Aşağıpınar

First, the fact should be mentioned that the material from Periods 3 and 4 of this site correspond chronologically with the Middle Neolithic of the region. The most interesting feature is the presence of numerous micro-tools. To date, of the more than 6000 specimens, approximately 2000 are micro-tools, and include micro end-scrapers (with lengths no greater than 25mm), bladelets with retouch, segments, retouched truncations, and especially micro-perforators.

Special attention has been attracted to micro-perforators and micro-alternated perforators. These tools have a length usually between 12 and 22 mm (a rare some are between 23 and 25 mm). Items with lengths less than 11 mm have not been recorded (I. Gatsov 1998, 1 - 6).

Most of the micro perforators and micro-alternated perforators were made from chert - usually from striped brown, black, or gray raw material. This strong connection between shape and raw material fits with their functional purpose. The micro-perforators and micro-alternated perforators were used for malachite bead manufacturing (S. Calley, S. Grace 1988, 69 - 89).

Micro-alternated perforators have been found in large quantities in the region. It is worth noting the presence of semi-finished malachite beads. Undoubtedly this implies the existence of a workshop for bead production during Periods III and IV (Fig.3. 7 - 19).

The relatively high frequency of cores and especially of 'plate' cores shows that core processing took place on spot of the excavated area. From a technological point of view, core reduction was defined as the exploitation of cores whose narrow or narrowest sides were utilized as blade detaching surfaces. As a rule, cores were shaped from small nodules or concretions whose length reached a maximum 7cm. Cores in diffe-

rent stage of reduction as well as the high frequency of trimming flakes and blades, cortical flakes, and waste support the inference that knapping occurred on the spot. Changes in tool morphology and the type of core-reduction sequence do not show any considerable differences (i.e., remain constant) in the period under analysis.

In all, flint assemblages - the major typological group not yet described - consist of flake end-scrapers, blade perforators and alternated perforators, blade with marginal and micro continuous and partial retouch, retouched flakes, splintered pieces, and blade truncations.

With the exception of micro-end scrapers and segments, which have been recorded as single items at some sites in the Neolithic assemblages of southern Bulgaria, the other technological features (such as core reduction, micro perforators, and alternated perforators) are different.

Some similarities are evident from singularly occurring retouched blades at Aşağıpınar. The type of retouch and the size of the specimens suggest expectations from earlier finds at this site.

3.5.3. Ilıpınar

The analysis of the chipped stone assemblages from this very important site is not finished. At present, materials form the earlier X and IX Phases are better studied. The first results from the technological and typological analyses show a marked difference between the Ilıpınar Early Neolithic materials and those from Early Neolithic sites in Thrace. The raw materials reveal a large diversity of flint and even the presence of obsidian. Flint varieties have a local origin, while obsidian evidently has been impacted.

The earliest assemblages from phases X and IX consist of big unretouched flakes and flake tools - mainly different types of end-scrapers (Fig.2.11) and retouched flakes. The cores, for this type of blank were not found in the excavated area. The size of blanks and the complete retouched tools suggest the existence of cores whose length should be at least 15cm.

A second *chaine opératoire* seems to be represented in a small quantity of single platform cores with semi-round or flat striking surfaces that are in an advanced or final stage of core exploitation for blades (Fig.3. 1,2,3). These blades were used without secondary modification (personal information of Dr. M. Gurova, Archaeological Institute; Gatsov, Gurova, 2000) or were retouched with marginal or micro retouch. As a rule, this type of retouch cannot significantly change the morphology of blanks.

A third *chaine opératoire* is linked to obsidian core processing, which took place on the spot - within the excavated area. This suggestion is made based on the presence of single cores, trimming blades, and plunging blades (M. Özdoğan 1994., 423 - 431).

As a whole, the chipped stone assemblages from phase X and IX of Ilıpınar show a significant discrepancy with the Neolithic assemblages from eastern and Upper Thrace.

4. Discussion

The analyses of the similarities and differences between the these various assemblages leads to the following conclusions. First, there is a gap in the technology and to a certain extent in the typology - especially the presence and absence of geometrical microlithes - between the Bulgarian and Turkish Epipalaeolithic assemblages.

In spite of similar Paleo-Environmental conditions both assemblages are distinguished by completely different core processing techniques. In order to present better explanatory models of this gap, other sites that have clear stratigraphy are needed as

well as different types of interdisciplinary research. Last but not the least are the technological and typological differences between the Bulgarian and Turkish Epipalaeolithic collections and the Early Neolithic collections (as described above).

Differences can be clearly detected in the complete opposite use of raw material types and the totally different character of core reduction sequences. The occurrence of blade macro technology - the most characteristic feature of chipped stone assemblages from Upper Thrace in the early Neolithic white-painted pottery horizon - is absolutely new in the area. Also, the technology and typology between the Epipalaeolithic Black Sea collections are completely different compared to that from Hoca Çeşme.

At the present stage of our study of Early Neolithic assemblages in Thrace some similarities can be detected in the few blade items of Hoca Çeşme II. Blade morphometry and raw material type are similar to the Early Neolithic assemblages in Upper Thrace. All other technological and typological features, including the various types of raw material differ between the two regions.

From a technological and typological point of view, features of the chipped stone assemblage of Neolithic Thrace and Ilıpınar (phases X and IX) are completely different.

The Middle Neolithic assemblages from Bulgarian Thrace have not yet been published. However, the first results from research in eastern Thrace have recently been published; interesting results have been obtained from the aforementioned Neolithic site of Aşağıpınar. In all assemblages a very high degree of microlitisation was observed—especially the occurrence of micro perforators and micro-alternated perforators. Until now, these perferator types have not been found in Upper Thrace. In addition, the similarity of raw materials (i.e., that which was used for manufacturing perforators) has not been recorded in Thrace. To a certain extent, some similarities are indicated in the single occurrence of retouched blade items, which are more-or-less similar to those from Upper Thrace.

Another difference appears to be the lack of trapezes and triangular pieces at Aşağıpınar. A small number of trapezes have been recorded from the Middle and Late Neolithic settlements of southern Bulgaria. Functional requirements may explain this phenomenon. On the one hand, micro perforators and micro-alternated perforators were necessary components of bead manufacture, while trapezes served as hunting weapons (Lichardus *et al.* 2000, in press).

In conclusion, it should be stressed that macro-blade technology is a cultural and chronological marker typical of the region's Earliest Neolithic assemblages. On the other hand, the presence of micro-tools is probably related to functional requirements and may represent a response to environmental possibilities.

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BIBLIOGRAPY:

BENECKE, N., 1998.
"Animal remains from the Neolithic and Bronze Age Settlements at Kırklareli(Turkish Thrace)". Eds. H. BUITENHUIS, L.BARTOSIEWICH, , A.M. CHYKE..*Archaeology of the Near East.* ARC - publications 18, III, Groeningen: 172 - 179.

BOYADZIEV, Y. 1995.
"Chronology of Prehistoric Cultures in Bulgaria", Eds., D. BAILEY, I. PANAYOTOV, *Prehistoric Bulgaria.* Monographs in World Archaeology, N 22, Prehistory Press: 149-191.

CALLEY,S., S. GRACE, 1988.
Technology and Function of Micro - borers from Kumartepe(Turkey).- BAR S411: 69 - 89.

GATSOV, I. 1984.
Technology and Typology of Cores from the Collection "Pobiti Kamani", Dikilitash, Bulgaria. Archaeologia Interregionalis, Krakow, 135 - 150.

GATSOV, I. 1985.
"Early Holocene Flint Assemblages form the Bulgarian Black Sea Coast". Ed. C. BONSAL, *The Mesolithic in Europe.*, Edinburgh, 471 - 474.

GATSOV, I. 1993.
Neolithic Chipped Stone Assemblages in Western Bulgaria, Krakow.

GATSOV, I. 1998.
"Aşağıpınar - techno - typological analysis of the chipped stone material", *Archaeologia Bulgarica*, 3: 1 - 6.

GATSOV, I. 1999.
"Chipped stone assemblages from Neolithic and Chalcolithic Settlement 'Capitan Dimitrievo' " , Ed., NIKOLOV, V., *Selisna mogila " Capitan Dimitrievo"*, Razkopki 1998 - 1999,115 -123..

GATSOV, I. 2000.
Chipped Stone Assemblages From South And South - West Bulgaria And North - West Turkey. (Epipalaeolithic/ Mesolithic, Neolithic Periods) Bar, International Series 854,Oxford, pp.1 -28

GATSOV, I., M. GUROVA.1988.
"Izsledvane na kremachnite artefakti ot rannoneolithnia plast na Azmashkata selishna mogila kraj Stara Zagora" *Izvestia na Museite ot Jugoiztochna Balgaria*,19, 7 -21.

GATSOV,I., M. GUROVA, 2000.
"Neolithic chipped stone assemblages from Ilıpınar(phase X and IX), West Anatolia, Turkey." *Anatolica*(in print)

GATSOV,I., V. KURCATOV.1997.
"Neolithische Feursteinartefakte".Eds. S.HILLER, V.NIKOLOV, *Karanovo, Die Ausgrabungen im Sudsektor 1984 - 1992:*, Salzburg, 213 - 227

GATSOV, I., M. ÖZDOĞAN. 1994.
"Some Epi - palaeolithic sites from NW Turkey. Ağaçlı, Domali, Gümüşdere", *Anatolica* XX:
97 - 120.

KOEN, V. 1991.
Finalnii paleolit gornogo Krima. Kiev. Avtoreferat.
LICHARDUS, J., I. GATSOV, M. GUROVA, I. ILIEV, 2000.
"Geometric microlithes from the Middle Neolithic site Drama - Gerena (South Bulgaria) and the problem of Mesolithic tradition in South-Eastern Europe." *Eurazia Antiqua.*

MACANOVA V., A. RADUNCHEVA 1995.
"Neolitho seloshte pri grad Rakitovo, ". *Slaveevi gori* I, 114 -125.

NIKOLOV. V. 1992.
"Rannoneolitho gilishte od Slatina", *Razkopki i prouchvabia*, XXV, 5 - 163

NIKOLOV, V. 1996.
"Jugozapaden variant na Kultura Karanovo I", *Archeologia*, 2-3, 1 -8.

NIKOLOV, V. 1999.
Proucvania varhu neolitnata keramika v Trakia, Sofia.

NIKOLOV, V., K. MASLAROV.1987.
Drevni selishta kraj Eleshnitsa, Sofia Pres.

ÖZDOĞAN, M., 1994.
"Obsidian in Anatolia: An Archaeological perspective on status of research", *Archaeometry:* 423 - 431.

ÖZDOĞAN, M., 1998.
"Recent excavations in Eastern Thrace and Contact between the Prehistoric Cultures of Anatolia and Balkans"/abstract in English/, *TUBA - AR*, 1: 63- 92.

ÖZDOĞAN, M.- H. PARZINGER - N. KARUL, 1997.
"Kırklareli Kazıları (Aşağıpınar ve Kanlıgeçit Höyükleri)", *Arkeoloji ve Sanat* 19. 77: 2 - 11.

PARZINGER, H. - M. ÖZDOĞAN, 1995.
"Die Ausgrabungen in Kırklareli (Turkish - Thrakien) und ihre Bedeutung fuer die Kulturbeziehungen zwischen Anatolien und dem Balkan vom Neolithikum bis zur Fruehbronzezeit",
Bericht der Roemisch-Germanischen Kommission 76, 5 - 29.

ROODENBERG, J., 1995.
The Ilıpınar Excavations I. Five Seasons on Fieldwork in NW Anatolia, 1987 - 91. Istanbul.

ROODENBERG, J. - L. THISSEN - H. BUITENHUIS, 1989/90.
"Preliminary report on the archeological investigations at Ilıpınar in NW Anatolia", *Anatolica*, 16,61-144.

TSONEV, T., 2000 "Knapping Technology vs. Pattern of Raw Material Supply (On the example of early Neolithic flint assemblages from the Orlovets and Koprivets sites, northern Bulgaria".
Ed., L. NIKOLOVA, *Technology, Style and Society.* BAR International Series 854, 29-35.

YAKAR, J., 1991.
Prehistoric Anatolia. The Neolithic Transformation and the Early Neolithic Period. Monograph Series of the Institute of Archaeology. Tel Aviv University, p.225

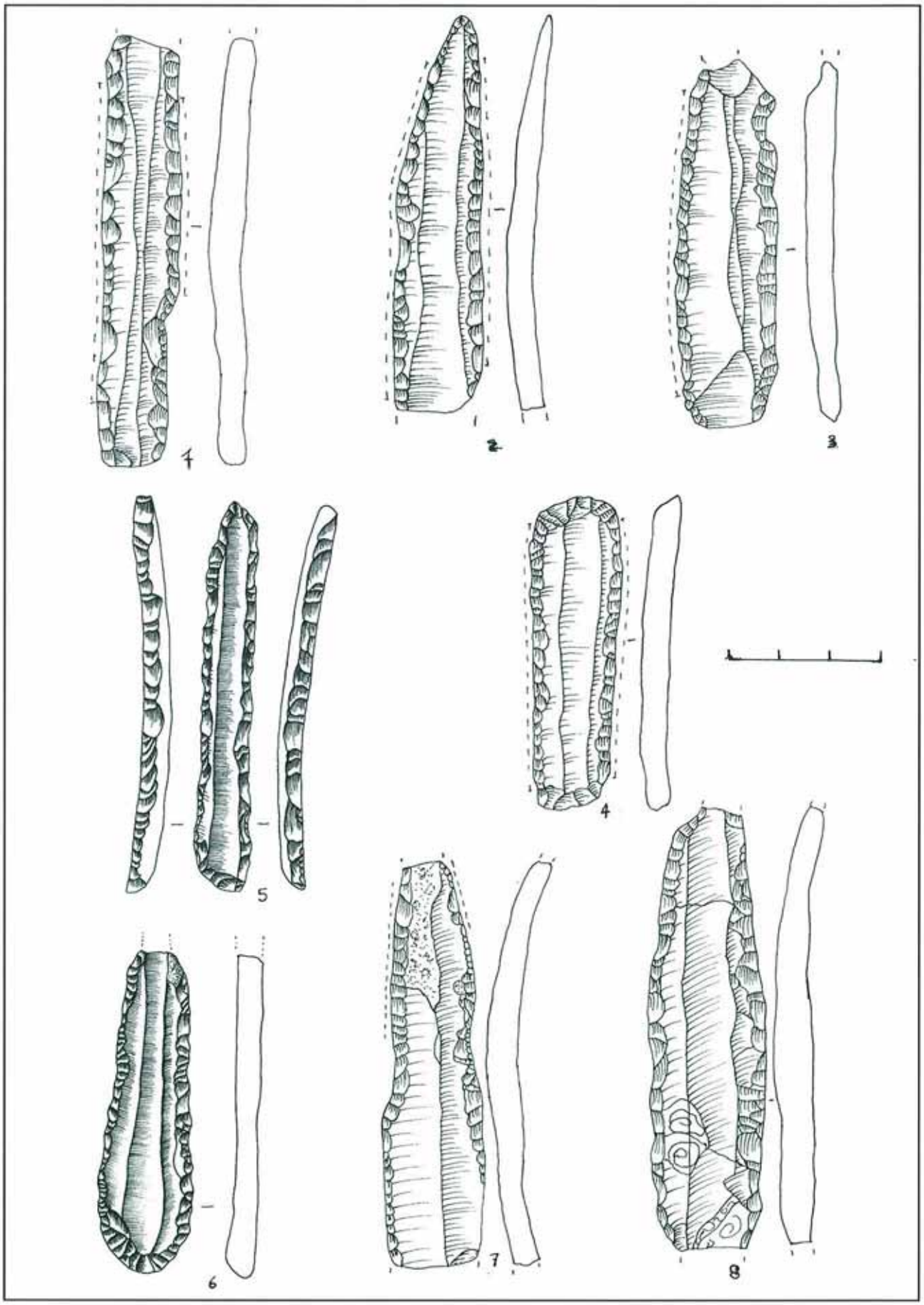

Fig.1 – Retouched tools: 1,2 Karanovo; 3,4 Azmak; 5,6, Hoca Çeşme; 7,8 – Pernik;

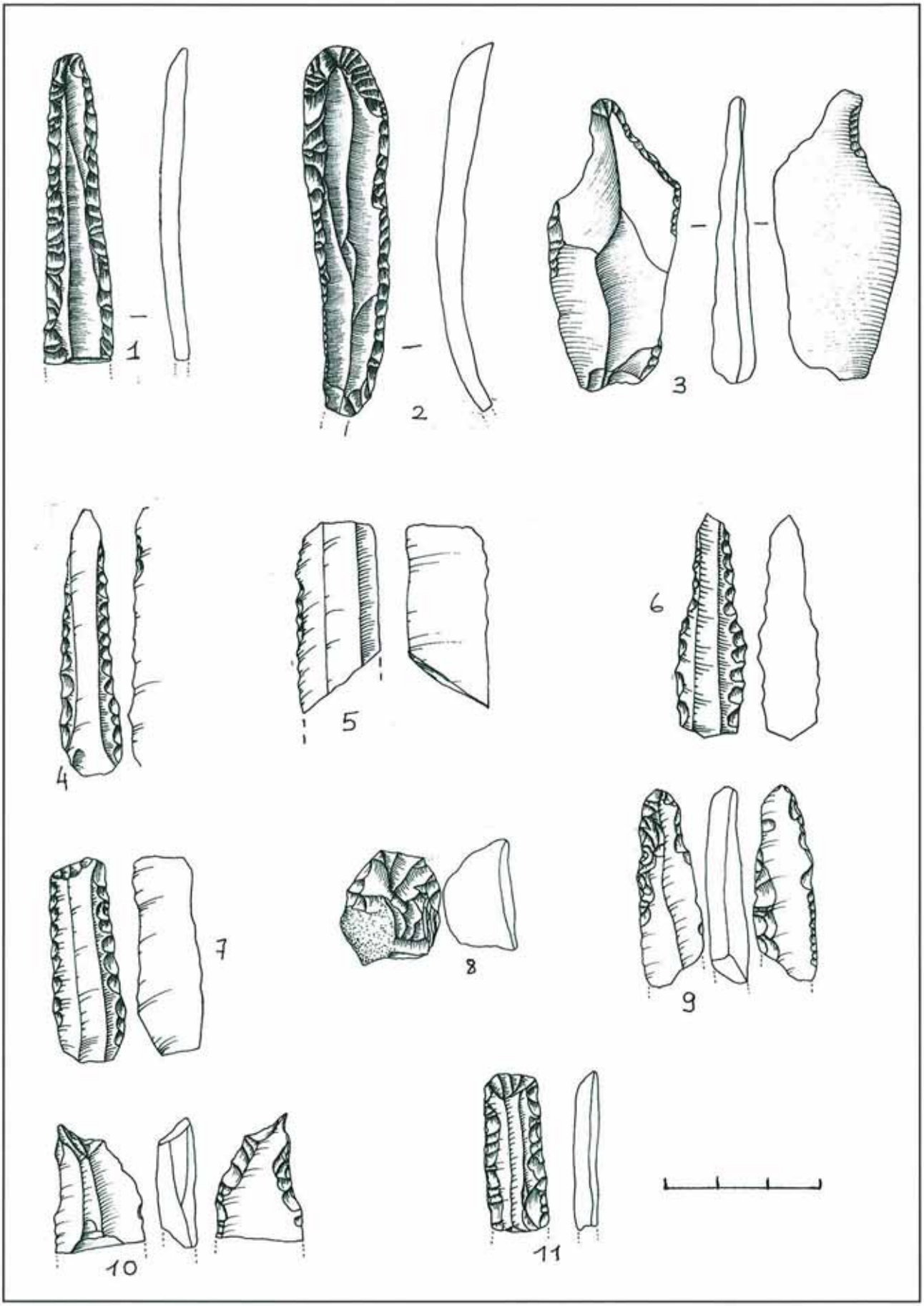

Fig.2 – Retouched tools: 1 – 3 Hoca Çeşme; 4 – 7 Chavdar; 8 – 11 Capitan Dimitrievo;

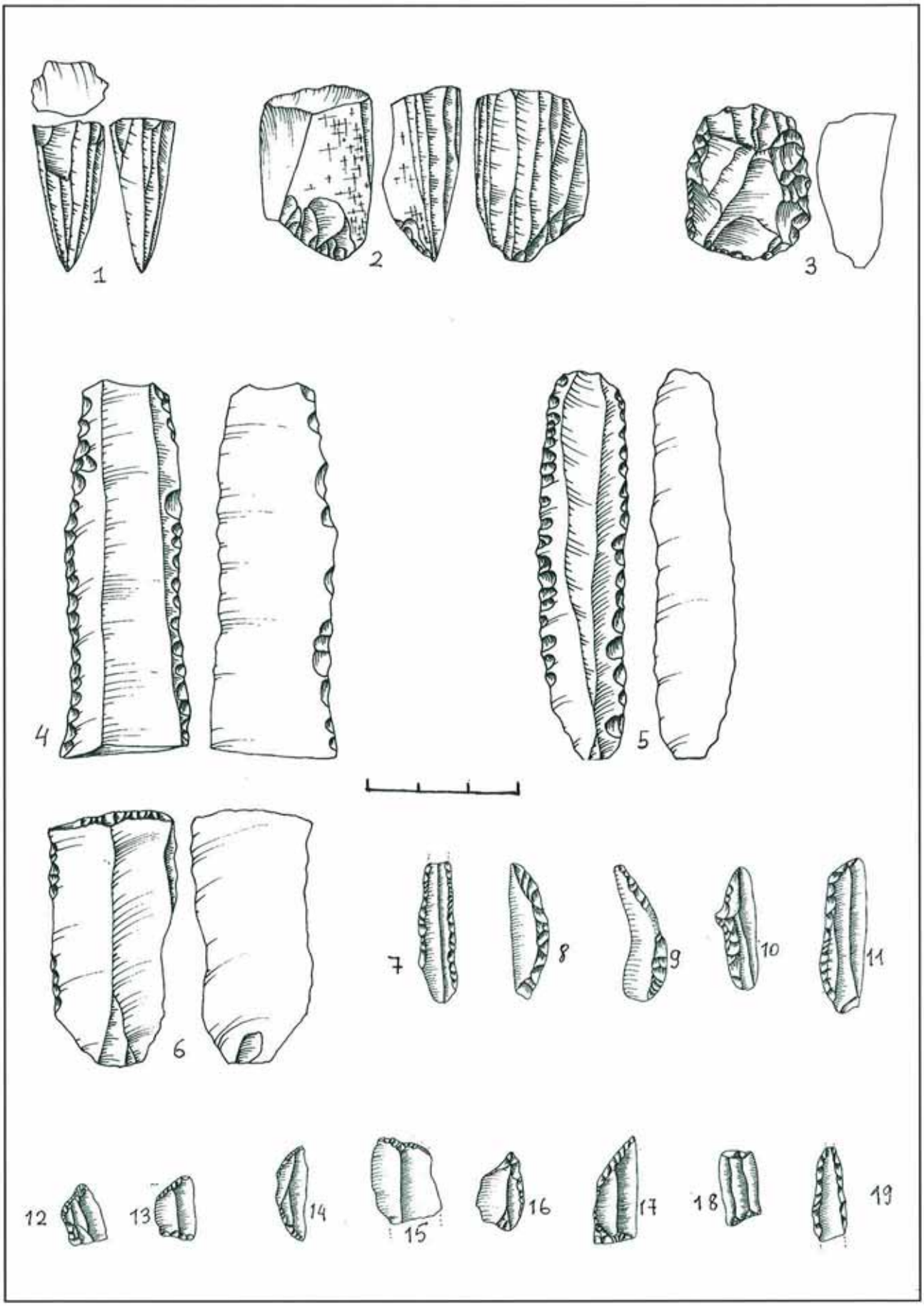

Fig.3 – Retouched tools: core 1 – 3 Ilıpınar; 4 - 6 Chavdar; 7 - 19 Aşağıpınar;