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MIDDLE PALEOLITHIC INDUSTRIES OF THE EASTERN CRIMEA : INTERPRETATIONS OF THEIR VARIABILITY

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No sociocultural groups I knew of from the ethnogrpahic record distinguished themselves from their neighbors by making different proportions of the same kinds of tools those neighbors made" (Reeman 1992 : 114).

It is important to bear in mind when interpreting lithic remains that flint knapping is a reduction process" (Dibble 1987 : 35).

In the eastern part of the Crimea (north-eastern part of first and second ridges of the Crimean mountains, which mainly connect with rivers of Azov sea) materials of a number of multilayer stratified sites dating to the first half of Last (Würm) Glacial were subdivided in two Middle paleolithic type industries based on traditional techno-typological criteria - the so-called Ak-Kaya and Kiik-Koba cultures (KOLOSOV, 1971, 1972, 1979a, 1979b, 1983, 1986; KOLOSOV, STEPANCHUCK, CHABAI, 1993; GLADINLIN, 1976, 1985; STEPANCHUCK, 1991 (fig. 1).

Both these industries were characterized by clear traditions of bifacial tool treatment and similar tool types; their differences are mainly based on different proportion of small and large sized tools (less than 5 cm and more than 5 cm), uni-bifacial backed knives, convergent tools (points and side-scrapers) and types among them. Accordingly, it was underlined that Ak-Kaya type (sites of Zaskalnaya III, V, VI; Ak-Kaya III; Krasnaya Balka; Sary Kaya I; Prolom II and also, obviously, volchy Grot, lower layer; Chokurcha I, upper and middle layers) is characterized by a predominace of large sized tools and different backed knives (fig. 2-4); for Kiik-Koba type (Kiik-Koba, upper layer; Prolom I; obviously, Volchy Grot, middle layer and Chokurcha I, lower layer) the main characteristics are a predominance of small sized tools and a large number of tools with convergently retouched edges (points and side-scrapers), among which the leading position consists of déjeté, rectangular, trapzeoidal and triangular forms (fig. 5-6). Some interesting ideas were also proposed about the beginning of hunting specialization : for the human communties of the Ak-Kaya type hunting was oriented on mamloth (KOLOSOV, 1986); for human communities of the Kiik-Koba type, on giant deer, saiga and horse (STEPANCHUK, 1991).

This subdivision of eastern crimean industries into two cultural entities (cultures) was mainly based on the well-known and widely used, traditional cultural-ethnithic approach as an explanation of Middle Paleolithic industrial variability. This approach is usually called the "Bordian method".

It is, however, possible to explain these techno-typological differences of the eastern crimean bifacial industries in a different way.

It seems that for this purpose, it is necessary to engage and to anlyze some additional data on the types of industries and sites under discussion which are usually rarely paid to serious attention in the processes of traditional studies of these Middle Paleolithic complexes.

The following factors helps provide more detailed understanding of the named sites and associated industries in the eastern Crimea :

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1) availability to high quality flint sources for human communities of each site;

2) intensity, duration and character of the Middle Paleolithic occupation (a kind of activity) on a site : thickness of the cultural layers; average quantity of faunal remains-bone and flint artifacts per $1m^3$ of excavated areas; peculiarities of animal species list and their characteristics; presence of fireplaces and their features; finds of human burials; traces of dwelling constructions;

3) peculiarities of flint utilization : dependence of tool forms from blank shapes which were obtained during both primary flaking of cores and production of bifacial tools; selction for tool production of different sized blanks; possibilities of multiple utilization and reutilization of cores and tools taking into account situations of scarcity-abundance of high quality flint sources near to the sites and, accordingly, quite great variability in their size, final shapes and degrees of exhaustion and secondary treatment on different sites and their cultural layers;

4) topographic situations of sites and their position to different types of landscapes and zones of the Crimean mountains;

5) period of human occupation on a site - Interstadial or Stadial environments during the Last Glacial time, as well as seasonnality within a general period.

It should be noted that, nowadays, these as well a similar factors for the interpretation of Middle Paleolithic industrial variability in Western Europe and Middle East have been elaborated upon by N. Rolland and H. Dibble (ROLLAND, 1981, 1988; DIBBLE, 1984a, 1987, 1988, 1991a; ROLLAND, DIBBLE, 1990; DIBBLE, ROLLAND, 1992).

Combining analysis of these factors with traditional techno-typological data of flint industries allows us to reconsider the idea of discrete cutlures of the so-called Ak-Kaya and Kiik-Koba industries of the eastern crimea.

Site mapping of Kiik-Koba and Ak-Kaya type (first of all, Kiik-Koba, upper layer and Prolom I) are situated quite far away from outcrops of high quality flint nodules and slabs (7-15km straight distance), while sites of Ak-Kaya type and among them, first of all, Ak-Kaya and Zaskalnaya, are found within 0,5 to 2 km of high quality flint sources. The site situations of Kiik-Koba and Ak-Kaya cultures, as regards distance from high quality flint outcrops, could be the cause of some particular variability of flint utilization of Middle Paleolithic communities of these sites.

With common high indicies of intensity and duration of human occupations for sites of Kiik-Koba and Ak-Kaya cultures, some levels of these indicies usually higher for complexes of Kiik-Koba culture.

Comprehensive data on scarcity - abundance fo flint and its availability to the people of Kiik-Koba and Ak-Kaya cultures, as well as the intensity, duration and character of different occupations (a kind of activity) allows us to judge its influence on the proportions and significance of some tool types in different assemblages, some of their common techno-typological indicies, and artifact size.

How do these factors influence morphological and techno-typological characteristics of flint industries ?

First, it is always necessary to remember that both of the Middle Paleoltihic cultures of the eastern Crimea are characterized by the production of numerous bifacial tools (backed knives, side-scrapers and points). Because of this predominance of bifacial tool production, mainly on flint slabs, the usual primary ("core-like") flaking played only a minor role in these industries. Accordingly, it did not produce many blanks for subsequent unifacial tool production. Therefore, bifacial shaping and thinning flakes had the predominant position among the blanks in the assemblages. Along with this, bifacial shapping and thinning flakes are characterized by a predominance (till 50 %) of rectangular and trapezoidal (expanding towards the distal end) forms (e.g. fig. 4 : 5-7). It is these shapes variations, that are usual for the Middle and Early Upper Paleolithic industries. Analysis of unifacial and partly-bifacial flake tools from the Kiik-Koba and Ak-Kaya cultures allows us to suggest that the higher proportions of complex tool forms (with more than one edge retouched and among them convergent) déjeté

and rectangular, trapezoidal and triangular types) in the Kiik-Koba type can be explained as greater then in the Ak-Kaya type by processes of reutilization and retouching of the flake tools. This was connected with a paucity of flint near their sites and the other factors of occupational duration. In these secondary treatment processes of the unifacial and partly-bifacial tools, it is possible to define two reduction sequences (similar to Dibble's constructions) :

1) a simple-double-convergent (déjeté-rectangular) trapezoidal/triangular and;

2) the simple transversal-déjeté-rectangular) trapezoidal/triangular. However, these reduction sequences do not correspond in detail to the Dibble's interpretative system of side-scraper variability and utilization. It means that, according to H. Dibble, the transformation of simple tool types into complex ones was due to a major change of form through retouch, as well as reducing tool size. It seems that there were different kinds of tool utilization in the Kiik-Koba and Ak-Kaya industries. Secondary treatment of unifacial and partly-bifacial tools was mainly along edges of tool blanks. Along with this, the retouching processes did not radically change blank shapes and this was so even in those cases when retouch was not light scalariform or parallel but even distributed scalariform and very steep (semi-Quina and Quina). According to the predominance among standartized blanks pieces with rectangular and trapezoidal shapes, the most heavily retouched tools are represented by déjeté (semi-rectangular and semi-trapezoidal), and rectangular (trapezoidal) triangular side-scrapers and points. In the processes of retouching, tool size usually was not significantly reducted and this was so because the retouch followed the natural blank edges. Therefore, it seems unlikely that the presence of a number of déjeté, rectangular, trapzoidal and traingular types among the unifacial and partly-bifacial tools in Ak-Kaya culture and their predominance in Kiik-Koba culture can be explained by different specific cultural traditions (fig. 4 and 6).

It is more likely that this typological situation should ber understand as the consequences of the specific value of bifacial tool production in these industries and by the resulting of prevailance among the flakes-blanks of rectangular and trapezoidal forms. At the same time, there was a different pattern of retouching and reutilization for the same pieces which can be explained by the differential scarcity/abundance of high quality flints around sites, as well as by factors of intensity, duration and the character of the occuaptions specific sites.

Different proportions of various assymetrical backed knives in the Ak-Kaya and Kiik-Koba cultures also can be interpreted in terms of different degrees of reutilization and retouching. Study of bifacial tools of these cutlures allows us to build the following "chaîne opératoire" of their production : flint slabs to different types of backed knives to side-scrapers and points, which are completely treated by retouch along all edges and, thus, without any of the so-called "accomodational" backs. This bifacial tool production "chaîne opératoire" and, along with those factors of scarcity/abundance of high quality flint sources, as well as different variables of intensity, duration and character of occupation of the sites, explain the higher proportions of backed knives in the Ak-Kaya and their lower representation in the Kiik-Koba (fig. 2-3, 5).

The small size of many flint artifacts in the Kiik-Koba in comparison to the size of flints (mainly, large and medium) in the Ak-Kaya also can be understand from the perspective of the obvious scarcity of high quality flints and the occupational circumstances of intensity and duration of the Middle Paleolithic people at the sites of the Kiik-Koba industry. Problems of flints scarcity lead to a much higher intensity of flint utilization in the Kiik-Koba culture. At the same time, the factors of intensity and significant occupational duration forsed these people to use almost all flakes and blades with a size more than 4 cm as blanks in tool production. Even many with a size of 2-4 cm were used. Naturally, this maximal selection of almost all sized flakes and blades for tool production results in a "microindustry" character for both retouched pieces and the flint, in general. the selection for blank retouching starting with large sized flakes and blades in the Middle Paleolithic industries is known and has been often mentioned in the archaeological literature (e.g., ROLLAND, 1981 : 25; GENESTE, 1985; DIBBLE, 1987 : 115, 1991B : 248; FREEMAN,

1991 : 105; DIBBLE, HOLDAWAY, 1993 : 77). Here, for this article, it is especially important to mention that this situation of blank selection for retouching also has been emphasized in analysis of Early and Middle Paleolithic "micro-industries" of Central Europe (WEBER, 1982) and for the Ak-Kaya and Kiik-Koba industries of the Crimea, as well (STEPANCHUK, CHABAI, 1986). Consequently, we can definitely assume that the "micro-size" of the Kiik-Koba industries does not reflect any specific cultural tradition. The main reason of this "micro-size" of the Kiik-Koba industries does not reflect any specific cultural tradition. the main reason of this "micro-size" is a great degree of flint reutilization connected with circumstances of flint scarcity and occupational intensity/duration of their sites.

It seems that it is also useful to add one more point here. the predominance of radial cores in Kiik-Koba (there is a prevailance of parallel cores in Ak-Kaya type industry) should again be considered not as a cultural peculiarity but as a reflection of the same occurrence of greater flint utilization. In this particular case, cores were used maximally for blank production and, accordingly, with a great reduction in cores size. Similar examples of changes in primary flaking methods, from parallel to radial, and in core morphology with size decreasing are also known for some Middle Paleolithic industries : for instance, Zobishte, in Bosnia (BAUMLER, 1988), in the Zagros Mousterian of Iraq and Iran (AKAZAWA, 1975; DIBBLE, 1984B, 1991B; DIBBLE, HOLDAWAY, 1993; BAYMLER, SEPTH, 1993).

We can propose an alternative explanation that that proposed by Yu. G. Kolosov and V.N. Stepanchuk that differences in Ak-Kaya and Kiik-Koba faunal assemblages mean different hunting orientations for people of these cultures, as well as a beginning of hunting specialization during the Middle Paleolithic. First of all, the majority of sites were long-term base camps and, therefore, it is not unusual to find a wide spectrum of hunted animals there. Also, there is no obvious predominance of one species of large herbivore over tothers. The various "main species of hunting specialization" are present in all sites of these two cultures : of course, with some different proportions. We can also quite definetely add that, for example, giant deer as not a herd animal occupying humied places such as meadow areas near forests and forest's edges (plaeontologist V.I. Svistun, personal communication) and could not have been an important object of Kiik-Koba hunting specialization. It could not have been linked with such steppe animals as saiga and hourse which all are claimed as specialized perspecies (V.N. Stepanchuk's point of view). Sites, as well, were situated in different landscapes of the Crimean mountains. In different landscapes and ecozones were different dominant species of herd and no-herd animals. There were also, without question, climatic changes in periods of various Stadials and Interstadials of first half of Last Glacial period had an influence on species presentation. Thus, all data do not provide us with an opportunity to say much about different hunting orientations or specializations in the Ak-Kaya and Kiik-Koba cultures. The long-term occupational character of many sites itself led to a non-specialized, wide range of hunting activity. In this case, faunal lists for sites were dependent upon many natural factors, rather than human ones.

We cannot completely exclude a situation in which there is a predominance of one herd species at one site or a cultural layer of a site. We should note the Ak-Kaya type site of Sary-Kaya I with a predominace of hourse. It, however, does not mean yet that Sary-Kaya I site provides an example of real hunting specialization during the Middle Paleolithic. There is a more suitable interpretation for the Sary-Kaya I fauna and sites like it. They may be "killing/butchering sites" - short-term hunting camps - "stallites" of long-term base camps like Zaskalnaya V and VI, layers 2 and 3.

It is important to note that all the above discussed non-traditional interpretations of the reasons for differences were mainly based on data from the so-called typical complexes of Ak-Kaya (Zaskalnaya V and VI, layers 2 and 3) and Kiik-Koba (Kiik-Koba, upper layer and Prolom I) cultures (fig. 2-6). These mentioned sites are like etallon sites for the supporters of the bipartate cultural division of the Middle Paleolithic industries of the eastern Crimea. The using of data to generate such a clear dichotomy for these two bifacial industries was specially selected for the purposes of this paper. It really shows that when taking into

account additional data, even these seemed to point to sharp differences but do not relate to cultural-ethnical explanations. They do relate best with the so-called "subjective" moments in the life of the Middle Paleolithic industries of the eastern Crimea. The using of data to generate such a clear dichotomy for these two bifacial industries was specially selected for the purposes of this paper. It really shows that when taking into account additional data, even these seemed to point to sharp differences but do not relate to cultural-ethnical explanations. They do relate best with the so-called "subjective" moments in the life of the Middle Paleolithic human communities, as well as with some natural-geographical factors.

Along with this, these "moments and factors" help to look at on some peculiar, non-standart manifestations of these two industries at some sites in a different, new way.

Let us use one example.

Using factors of scarcity/abundance of high quality flint outcrops near to the sites and the intensity/duration of human occupations at sites allow us to propose an explanation of the presence some so-called "kiik-kobanian" typological characteristics (quite high proportions of small-sized pieces and déjeté, rectangular, trapezoidal and triangular forms among unifacial and partly-bifacial side-scrapers and points) in several complexes of Ak-Kaya type industry at Zaskalnaya V and VI sites. An analysis of these factors do not correspond to some already made assumptions.

Here, first of all, we should mention the following main hypothesis. Yu. G. Kolosov (1979a, 1983, 1986) considered such complexes as representatives of the Ak-Kaya industry with just some small typological variations. V.N. Gladilin (1985) included them into the Kiik-Koba type industry and, based on this, concluded that there was an interstratification of Ak-Kaya and Kiik-Koba types at Zaskalnaya V and VI. V.N. Stepanchuk (1991) considered their typological peculiarities as the result of some contacts and mutual influences of Ak-Kaya and Kiik-Koba human communities and, accordingly, of their different traditions flint utilization.

Opposite to the opinions, it seems that the main reasons which had great influence on the typolocial features at several layers of the Zaskalnaya sites were factors of intensity and duration of human occuaption. It is woth noting that even the proximity of high quality flint outcrops did not affect the high degree of treatment and exhaustion of flint artifacts, reutilization and multiple retouching of many tools, in some cases. Therefore, there is quite a high percentage of complex tools on flakes for several layers of Zaskalnaya V and VI sites. It is not unusual, by the way, that the most "kiik-kobanian" industry among the Ak-Kaya and Zaskalnaya sites (according to "micro-sized" flints and techno-typological indices) is the assemblage of Zaskalnaya V, layer 4, which clearly displays the most developed intensity and duration of occupation among all the Zaskalnaya and Ak-Kaya site occupations.

So, all traditional and non-traditional analytic methods for investigating the Middle Paleolithic bifacial industries of the eastern Crimea let us propose the following conclusions :

1. The typological subdivision of the flint tool assemblages into two types industries which automatically implies the existence of two cultural traditions seems to be too simple.

2. It is possible, with emphasing of using no-traditional methods, to propose the presence of only one Middle Paleolithic cultural tradition with bifacial tool treatment. Because of the many "non-cultural-ethnithic" reasons presented above, this cultural tradition was manifested in its industrial aspects in several variations.

It was seen in the following site types :

a) long-term base camps near to the flint sources - Zaskalnaya V and VI, layers 2 and 3;

b) long-term base camps near to the flint sources and with very high indications of human occupation intensity and duration - Zalskalnaya V, layer 4;

c) long-term base sites far away from high quality flint outcrops - Kiik-Koba,

upper layer; Prolom I; Volchy Grot, middle layer; Chokurcha I, lower layer;

d) short-term special hunting camps ("killing/butchering sites") - "satellites" of long-term base sites - Sary-Kaya I.

Such a variety of site types, morphological features and techno-typological characteristics of the flint industries means a flexible and complex adaptation system "radiating one") of human (Neanderthal) communities of this Middle Paleolithic cultural tradition.

It is needs to be noted, finally, that in this paper presents only a general scheme ("a skeletoon") of non-traditional interpretation to explain the reasons for differences between Middle Paleolithic eastern Crimean industries. Presentation of more complete data, using some more additional information from already known sites as well as from new sites (new excavations of Buran-Kaya III site and re-excavations of Chokurcha I site) and their absolute dating is a goal of further studies and is central to understanding this variability on a more detailed level.

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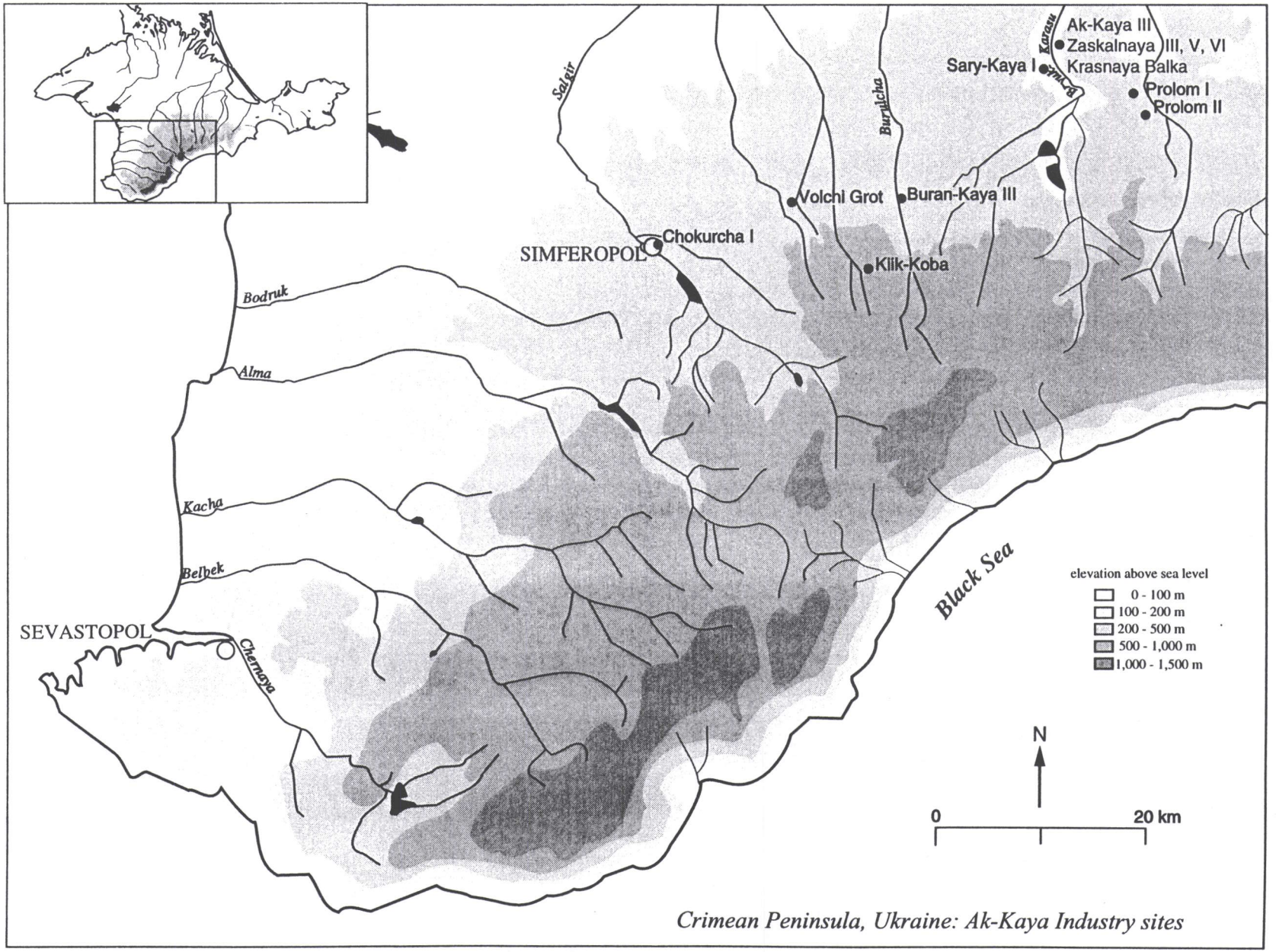

Figure 1. Map of the Crimea, showing the sites location of Ak-Kaya and Kiik-Koba Middle Paleolithic type industries.

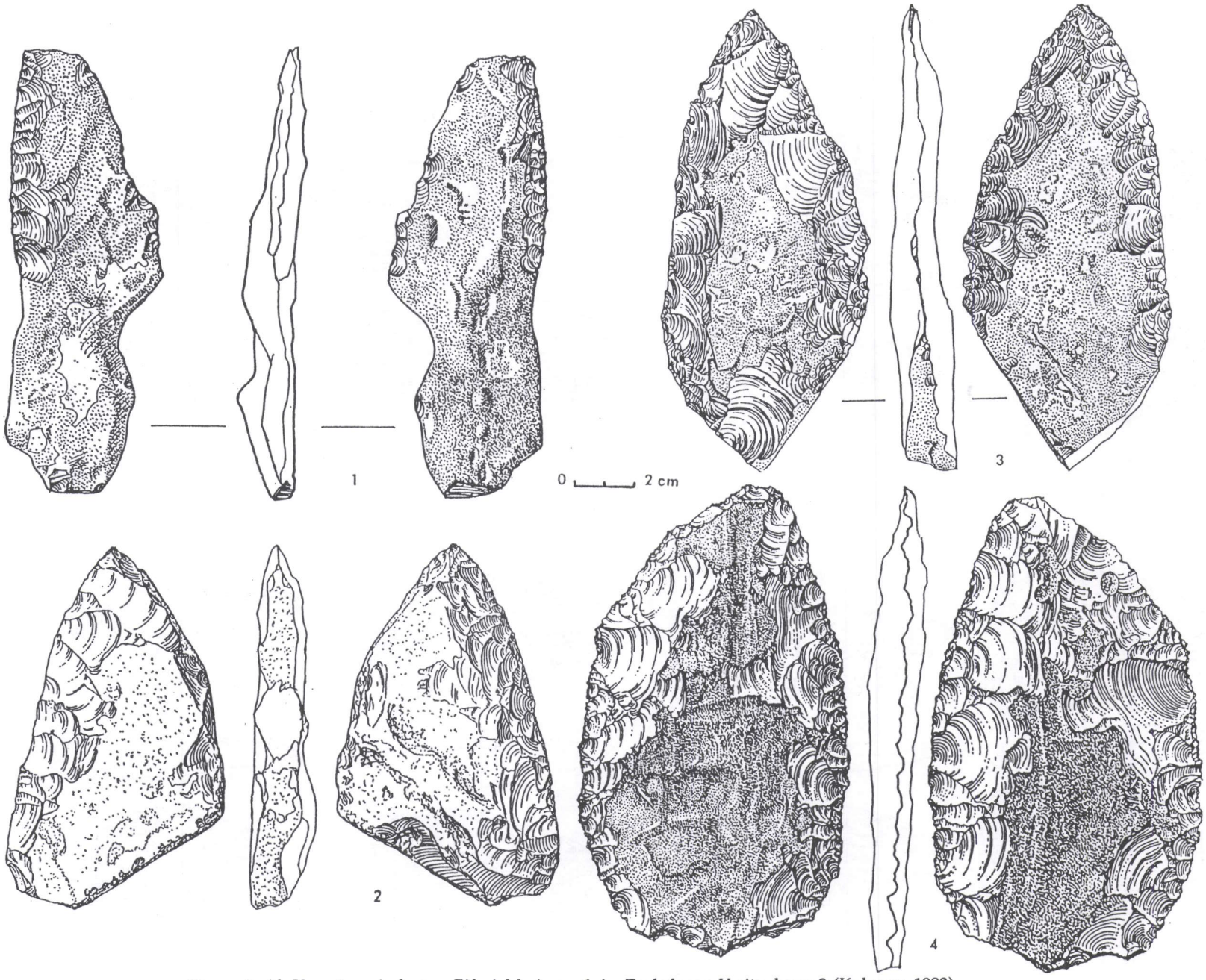

Figure 2. Ak-Kaya type industry. Bifacial knives : 1-4 - Zaskalnaya V site, layer 2 (Kolosov, 1983).

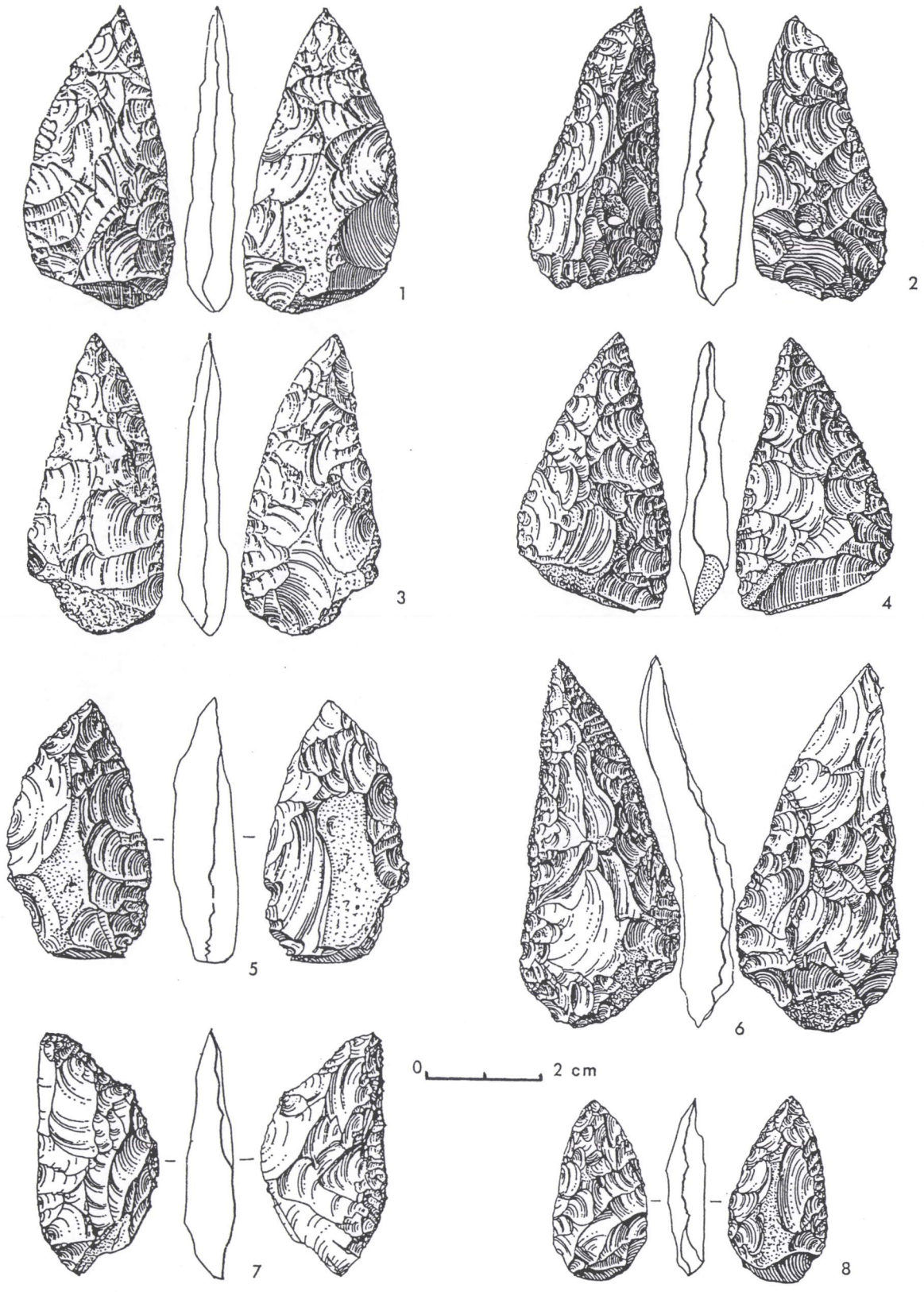

Figure 3. Ak-Kaya type industry. Bifacial points and side-scrapers : 1-8 - Zaskalnaya V site, layer 3 (Kolosov, 1983).

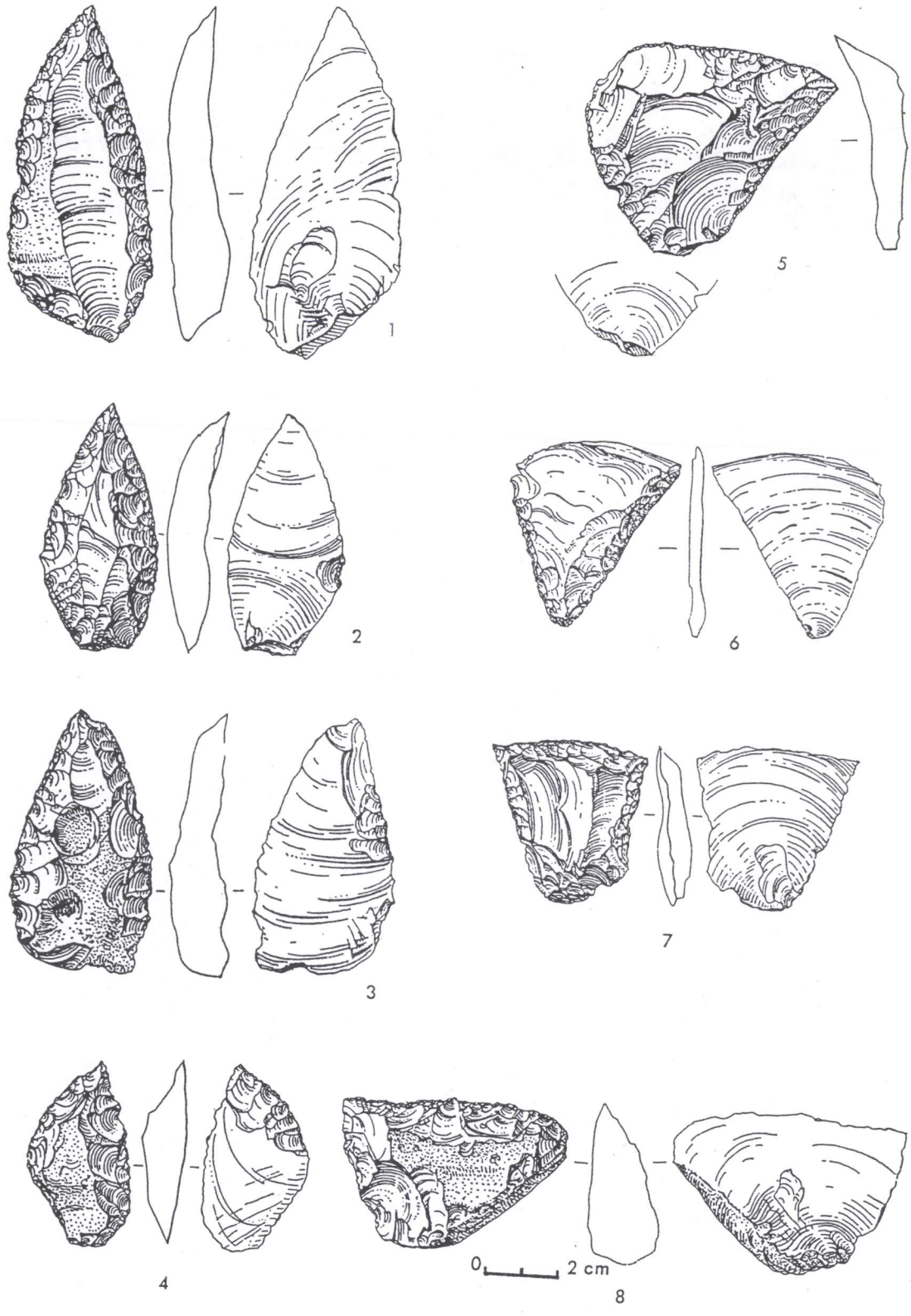

Figure 4. Ak-Kaya type industry. Bifacial points and side-scrapers : 1-8 - Zaskalnaya V site, layer 3 (Kolosov, 1983).

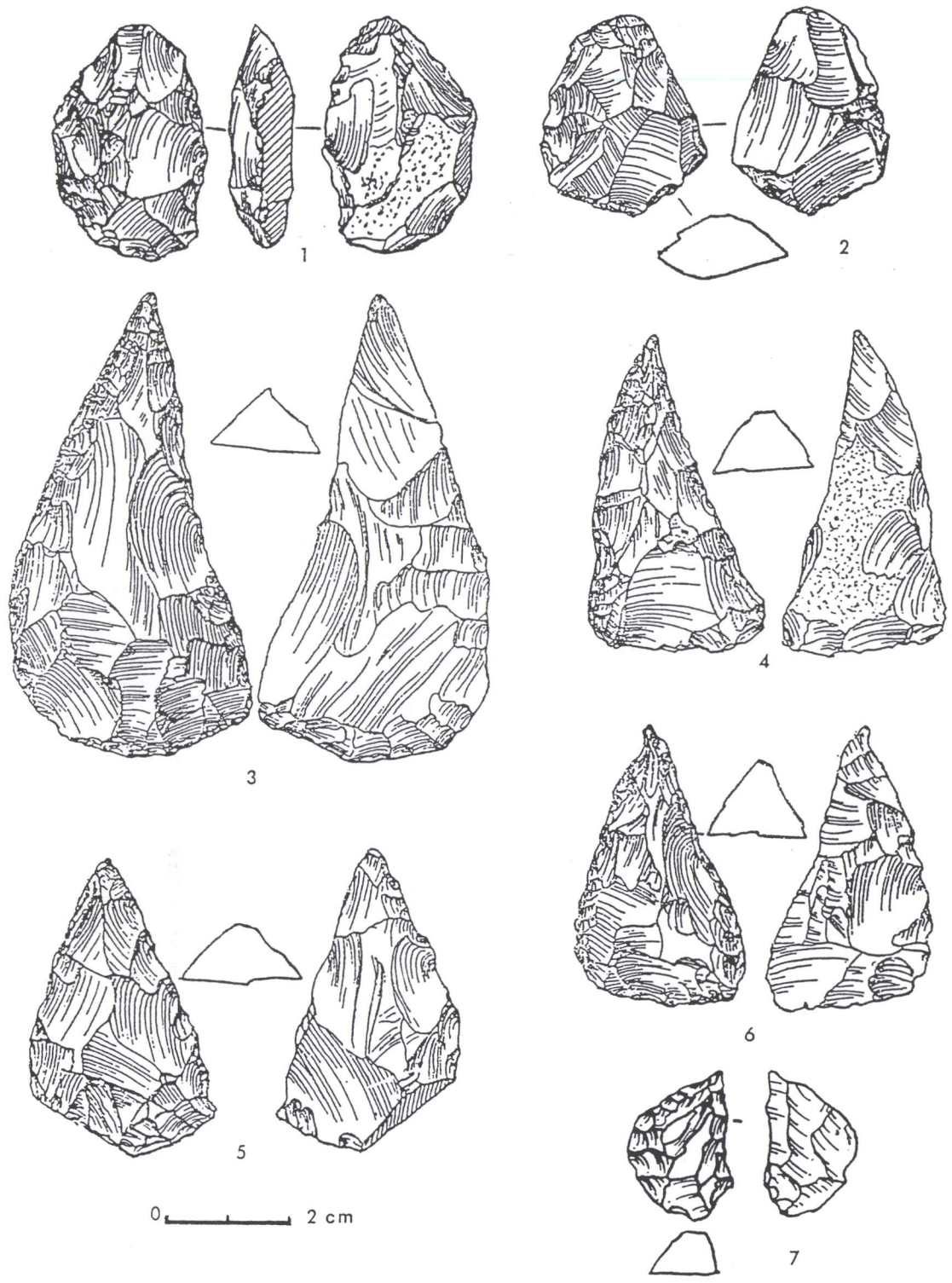

Figure 5. Kiik-Koba type industry. Bifacial knives : 1-2 and Bifacial points and side-scrapers : 3-7 - Kiik-Koba site, upper layer (Bronch-Osmolobsky, 1940).

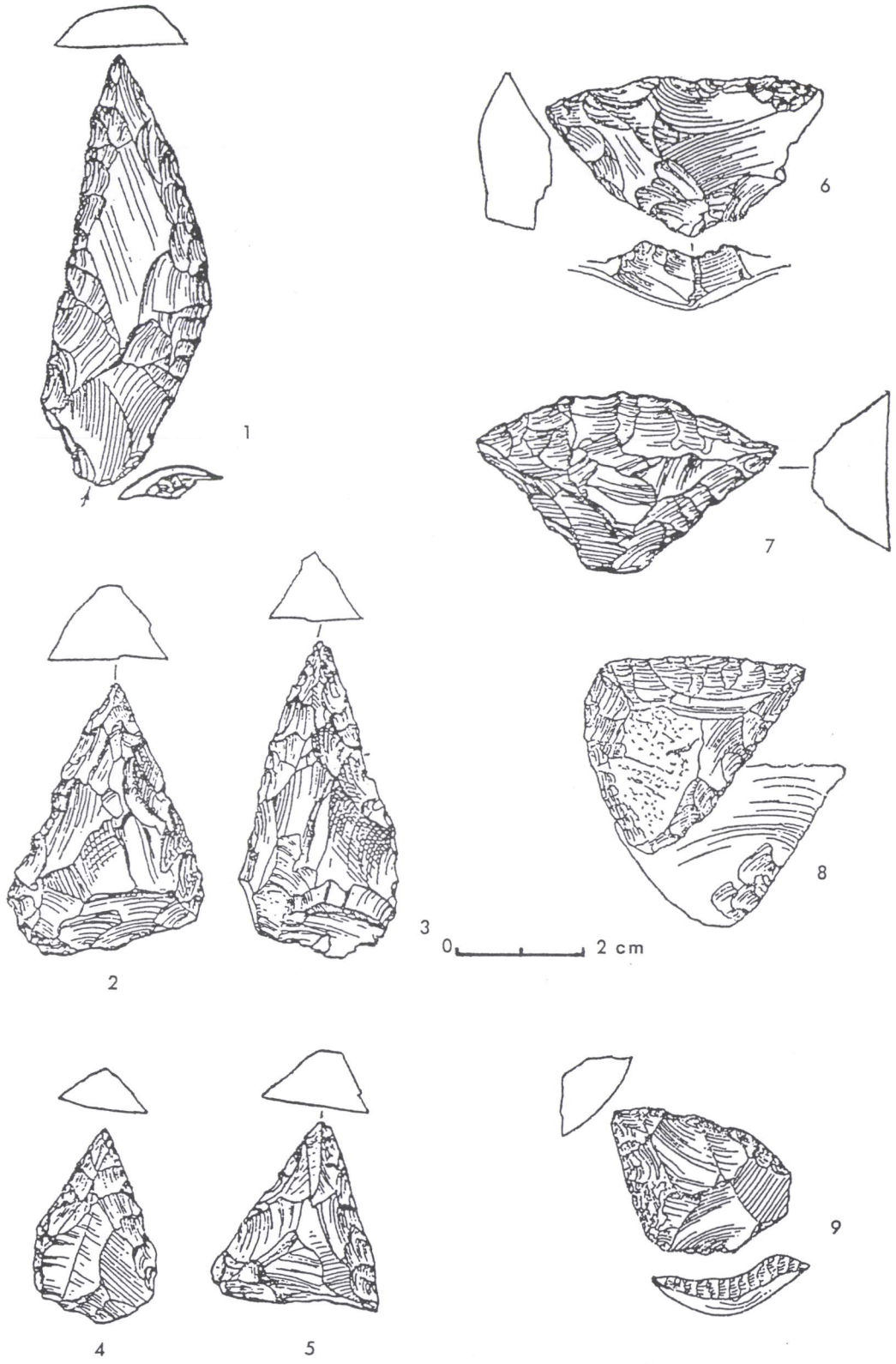

Figure 6. Kiik-Koba type industry. Unifacial points and side-scrapers : 1-9 - Kiik-Koba site, upper layer (Bonch-Osmolovsky, 1940).