



KIIK-KOBA, LOWER LAYER TYPE INDUSTRIES IN THE CRIMEA

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ABSTRACT

Until recent times the "tayacoide" industrie of the Eem-aged lower layer of the cave site Kiik-Koba investigated by G.A. Bonch-Osmolovskiy in the years 1924-1926 was the unique one for the Crimean Middle Palaeolithic. Several new sites with similar inventory has been discovered during the last decade on the territory of the peninsula. These are Kabazi II, IV-th layer, Zalesnoye and Krasnyj Mak 1.

All the enumerated Crimean sites have produced similar inventories as to their main technological and typological characteristics, namely : highly pronounced trend to microlithism, absence of Levallois debitage, low indices of IF and I lam, prevalence of sidescrapers among flake tools, presence of certain number of bifacially worked forms, "irregular" character of flake tool preparing due to the wide use of alternate and ventral retouch, frequently non-modifying and marginal, as well as slightly denticulate retouch. Similar industries are known also on the territory of the European part of the former USSR and characterised by the same age and almost the same technology and typology. These are Betovo (Desna river, Russia), Velykyj Glybochok (Seret river, Ukraine), Mersyna, Vykhvatintsy, Starye Duruitory (Moldova). The spacial distribution of these sites points us in the searching for analogies on the territories of the Central Europe, and it is really possible to found the strikingly close technotypical affinities with the so called Taubachian of the Eemian age in this area. The term Taubachian seems to be more appropriate for the moment for the purposes of definition of the East European inventories under discussion. There are also certain differences both between Central and Eastern European inventories and between the inventories within the latter. These can probably lead to distinguishing of different facies of the Taubachian in the future..

Nevertheless, the main features are still stable and common : the connection with Neanderthal people, the same geochronological position, generally the same technological and typological characteristics, including fascinating trend to the microlithism and to the manufacture of non-standardised flake tools. This evidence can be engaged as sign of specific way of human adaptation during temperate episode of the last interglacial.

The cave site Kiik-Koba (Eastern Crimea) has been excavated by Gleb. A. Bonch-Osmolovskiy in early 20th, and produced besides the remains of two humans the vast collections of rocks and fauna. The lithic industry of the lower layer, which analogies were already seen by G.A. Bonch-Osmolovskiy in so called Tayacoid industries, was unique for the Crimea until recent times. Several new sites with similar inventory have been discovered during last decade. This makes it possible to return to the problem of so called "amorphous" (according to G.A.) industry of Kiik-Koba, lower layer.

LOCALISATION

Kiik-Koba, Kabazi II, Zalesnoye, Krasnyj Mak 1 are situated in the Second Ridge of the Crimean Mts. in the valleys of

following rivers, respectively : Zuya, Al'ma, Kokoozka, and Bel'bek. Thus, the sites are known both in the Eastern (Kiik-Koba) and South-Western Crimea. The main difference between these two areas consists in the belonging of named rivers to different sea basins. So the Zuya river belongs to the Azov sea basin, and other rivers belong to the Black sea basin. All the sites, excluding Krasnyj Mak 1, are cave sites. Kiik-Koba has been discovered and almost completely investigated by G.A. Bonch-Osmolovskiy in the years 1924-1926. About 70 square meters of the lower (6th) layer were investigated and 13 000 flints and 7,5 kg of splintered animal bones were collected. Other sites are in the preliminary stage of investigation. So, Kabazi II, discovered by the author and V.P. Chabay in 1982, have produced unusually powerful pack of sediments including several Middle Palaeolithic layers (Kolosov e.a., 1988,

1993). The layer with inventory under discussion was uncovered in 1988. Only 12 sq.m. has been excavated. Nevertheless, the stone artifact series is statistically considerable. Cave site Zalesnoye has been discovered by V. YU. Koen. The culture-bearing sediments were investigated by him on the little area (8 sq.m.) in the year 1984. The cultural layer was preliminary divided into two distinct horizons. Total number of stone artefacts not exceed 375 pcs. Artifacts of the open-air site Krasnyj Mak 1 has been collected by L.M. Tarasov (1987, 1988) in the years 1985-1986.

GEOLOGICAL AGE

According to geological data it is possible to indicate the Eem age for the lower layer of Kiik-Koba (Ivanova 1965, Velichko 1988). The fauna due to the lack of Boreal species and pollen-analysis because of double decrease of Arboreal pollen in the lower layer in comparison with upper one are indicate the sufficiently non-comfortable climate. This enables us to correlate the date and locate Kiik-Koba, lower either in the beginning of Early Würm or refer it to the one of the cool inter-Eem episodes. Kabaszi II, fourth layer belongs to the end of Eem (according to N.P. Gerasimenko, unpublished). The age of Zalesnoye and Krasnyj Mak 1 has not geological grounds. Absolute dates are absent for all the sites.

HUMAN REMAINS

The Kiik-Koba lower layer is the only Crimean site with the industry concerned with produced the human finds. The intentional burial of Adult man (?) has been accomplished in the artificially widened hollow of the cave floor. More later the burial was partly destroyed by a pit lowered from the upper layer which included so called Kiik-Kobian of presumably Brörup age. Bone remains of Kiik-Koba-1 (in situ are) : right shank, both feet; and additionally incisor and 18 bones of a hand) are defined as belonging to *Homo Neanderthalensis* (cf. Bopnch-Osmolovskij 1941, 1954, Yakimov and

Kharitonov 1979). Kiik-Koba 2 (child aged 5-8 months) is connected probably with the upper cultural layer, but precise data is absent and the strict position of this burial (?) is still unclear. Physical definition : *Homo Neanderthalensis* (cf. bonch-Osmolovskij 1941, 1954; Vlcek 1974, 1976; for detailed information see also Smirnov 1991).

FAUNA

The basical data is produced by Kiik-Koba, lower layer. There are *Bos/Bison*, *Saiga tatarica*, *Megaloceros giganteus*, *Cervus elaphus*, *Equus sp.*, *Equus (Asinus) hidruntinus*, *Canis lupus*, *Vulpes vulpes*, *Lepus sp.*, *Hyaena spelaea*, *Citellus rufescens* (according to A.A. Byalynickij-birulya, V.I. Gromov, V.I. Gromova). The state of preservation of Kabazi II, IV-th layer fauna is not fine. Only a few *Asinus/Equus* teeth are known among series of erroded splinters of animal bones. The lower horizon of cave site Zalesnoye contained some bones of *Saiga tatarica*.

STONE INDUSTRY

Detailed techno-typological description of Kiik-Koba, lower layer, has been proposed by G.A. Bonch-Osmolovskij (1940). Only part of primary collection is survived to our time and deposited mainly in the Archaeological Department of the Museum of Anthropology and Ethnography, St.-Petersbourg. Artifacts from Krasnyj Mak 1 are held in the Institute of Archaeology, Kiev.

Kiik-Koba, lower layer

The flints of sufficiently high quality were used for tool preparing. Unfortunately, the outcrops are not known so far, but it is clear that unworked pieces were small, and this finally led to micro-habitus of the inventory, where average dimension of flake constitutes only 20,6 mm. It must be stressed that people of lower and upper cultural layers of the site used different kinds of raw materials. Cores

are not numerous; there are radial and irregular forms. Debitage is completely non-Levallois. Certain signs of pontiniano technique are represented. The flakes were used as a common blanks for tool-making. Retouching is frequently dorsal, and typologically various : from scaly steep to ephemeral marginal. the main technical and typological indices are summarized in the Table 1. According to G.A. Bonch-Osmolovskij the layer produced 1, 189 tools. I have classified 350 artifacts (collection N 5391, AD MAE, St.-Petersbourg). There are numerous flakes with traces of using, flake tools, and bifacially worked pieces. Sidescrapers are predominate among flake tools : simple, double, and transverse forms are preponderant (about 3/4 of sidescrapers). Canted and convergent forms are represented as well (altogether up to 1/4 of sidescrapers). Pointed tools are not common; there is sufficient number of denticulates which significantly exceeded the notched tools. Atypical endscrapers and burins are represented as well. Bifacially worked tools include side-scrappers and point (several pieces are leaf-shaped).

Kabazi II, IV-th layer

Rich outcrops of different flints are known in the vicinity of the site. High quality raw materials were used for tool-making. Primary dimensions of natural pieces are not known because there are not specimens of initial stages of raw materials utilisation within the layer. The industry is striking microlithical and this feature dramatically distinguish the fourth layer against I, II and III layers of the same site with their numerous living floors and "normally" sized tools. Raw materials of the fourth layer are different by colouring as well.

Artifact series consists of 709 pcs. The only core is represented by fragment of radial piece. Debitage is absolutely non-Levallois. The flakes were preferable blanks for tool-making. Ventral, and alternatively retouched edges are predominate. Marginal, "non-modifying" retouch is common. The main technological indices are summarized in

Table 1. There are both bifaces and flake tools. Among the latter sidescrapers are very frequent forms. Simple, double, and transverse types are dominant among them (50%), convergent forms (convergent and canted pieces) constitute 1/3 of flake tools. Pointed tools are not frequent, and atypical. Denticulated and notches represented widely, up to 1/3 of tools. Fragments of bifacially worked tools, and the form close to biface knife are recovered as well.

Zalesnoye

The outcrops of flints are not known in the vicinity of the site. The deficit of raw materials can serve as possible explanation for micro-habitus of the inventory. It is really bewildering microindustry with average dimension of tool only somewhat more than 20 mm. The total number of artifacts reaches 375 pcs.

There are radial core, as well as reutilized Levallois (?) core. Debitage excluding this latter find produced no more evidence of Levallois technology. As common blanks the small sized flakes, sometimes even chips, has been used. The secondary working was carried out by retouching, generally very gentle, frequently marginal. Alternate, and/or ventral retouch was applied too often. The main technical and typological indices of Zalesnoye inventory are proposed in the Table 1. There are only flake tools, bifacially worked are absent. Sidescrapers are predominate again, but one- and two-edged forms constitute only 2/5 of total number of tools. Almost one half of sidescrapers represented by convergent forms. The tools with circularly retouched edges are represented as well. Their quota is slightly wider in this inventory than as in Kiik-Koba, lower layer and Kabazi II, IV-th layer. Notches are more frequent than denticulates; altogether up to 15%. Among Upper Palaeolithic types there are endscraper and trunkated blade.

Krasnyj Mak 1

The inventory can be characterised only according to the preliminary publications by L.M. Tarasov (1987, 1988).

Small sized flint pebbles from the bed of the river Bel'bek were used as a raw materials. Industry is characterised by prevalence of small tools (up to 4-5 cm). There are radial and crude protoprismatic cores. Flakes with flat platforms are predominated. Tools constitute slightly more than 10%; total number of artifacts - about 1000 pcs. Among tools sidescrapers, notches, denticulates, points are represented. Bifacially worked tools are known as well.

Typologically similar materials of Krasnyj Mak 2 less numerous, and cannot be analysed.

BONE INDUSTRY

Bone tools were discovered in the Kiik-Koba, lower layer. These are several retouchers prepared on splinters of long bones of animals. Similar tools became especially numerous and typical for certain variants of Crimean Middle Palaeolithic during Early Würm only. G.A. Bonch-Osmolovskiy noted also the series of bones with incisions and cuts appeared as a result of hunting bag processing.

GENERAL DESCRIPTION OF STONE INDUSTRY

Thus, Kiik-Koba, lower layer type industry has been existed in the Crimean peninsula during Eem interglacial, when the Crimea due to the high level of sea have transformed probably into isme. This specific micro-industry has been created by Neanderthals as it is shown by the burial Kiik-Koba 1.

The inventories can be generally described as microlithical, with a low number of cores (radial, irregular, more rare protoprismatic). Debitage is non-Levallois, IF moderate, Ilam is very low.

Quota of tools including used flakes is sufficiently high, as a rule. No-modifying, frequently marginal retouch is predominate. The section of surface for next retouching was not stable : alternatively worked edges and/or parts of the same edges are common. Morphologically the tools are very non-standartized. If it is true that the manufacturing of standartized flake tools is one of signs for Mousterian Times (widely speaking) so the Kiik-Koba, lower layer type industry can be regarded as late Acheulean.

Tool kit can be characterised by predominance of sidescrapers (IR about 70, IC up to 15). True pointed tools are not frequent, but convergent forms are very numerous at the same time (sometimes up to 50%). Denticulates and notches are well represented (about 15%), and this index will be even more higher if we take into account sidescrapers with slightly denticulate edges. Upper Palaeolithic types are representd (about 5,5%). All Crimean sites, excluding cave site Zlesnoye, produced bifacially worked tools, among which sidescrapers are predominate, and leaflike pcs, and biface-knives are known as well. Despite of common features, the inventories of the Crimean sites are not identical either due to incompleteness of the known archaeological series, or due to their probable facial differences.

Typological definition of flake tools of the indsutry under discussion is very difficult because of absolutely careless way of retouched edges manufacture. The method of distinct description of each single morphological element of tool applicated sometimes for the classification of similar industries (cf. : Valoch 1989; Korobkov and Mansurov 1972). Probably this method should be useful in the case of Crimean inventories, but I used another approach. I payed no attention to where retouch, details of edge profile, etc. By the other words, careless prepared and morphologically different working (retouched) edge is regarded as equal analogy of regularly retouched edge of "normal" Middle Palaeolithic flake tool.

The inventories of Kabazi II, IV-th layer, and Zalesnoye are published in the present article for the first time. Materials of Kiik-Koba, lower layer were published more than half century ago, so the literature about the site is essentially numerous (cf. on European languages, for example, Gabori 1976). Here I want to mention the notions by R.G. Klein (1970) and N.D. Praslov (1984) who explained the so called "amorphous" appearance of the inventory in terms of natural destroying of culture-bearing layer. The question needs in clarifying by geologists, but the fact must be stressed of the connection in the Kii-Koba, lower layer inventory of such features as microlithical habitus, orientation on small sized flake as a blank for tool manufacture, lack of standartized ("regularly" retouched) tools, diversity and irregularity of secondary working. All these features are reappeared again in the materials of Kabazi II, Zalesnoye, Krasnyj Mak 1. Thus, all these characteristics seem to be special traits witnessed for distinct way of cultural adaptation during the last interglacial. Similar evidence can also be found in the Eastern and Central Europe.

EVIDENCE OF INTERSTRATIFICATION

The Crimean sites have produced such data in two cases. Firstly, this is Kiik-Koba, lower layer covered by archaeologically sterile horizon and then by presumably Brörup culture-bearing layer with para-Micoquian inventory of so called Kiik-Kobian (Setpanchuk 1991, 1992). Another example is Kabazi II, IV-th layer which lies above weak evidence of inter-Riss Acheuleen industry and under two layers of Starosel'yan (Mousterian with leaf-point component) and Kabazian (Mousterian typique) layer between the two (Kolosov e.a. 1988, 1993).

ANALOGIES

There are several similar inventories on the territory of Eastern Europe (see Map) : Betovo on Desna river, Russia, Velykyj glybochok on the Seret river, Ukraine, Staryye Druityory, lower

layers, Mersyna, probably Vykhatintsy, lower layer, Moldova (Tarasov 1977, Sytnik 1992, Ketraru 1965, Ketraru and Anisyutkin 1967, Anisyutkin and Ketraru 1982). All these sites have a row of common features, namely micro-habitus, absence or low level of Levallois debitage, not numerous cores of discoidal and irregular series, absence of stable standartized flake tools, predominance of sidescrapers in the typological spectrum, prevalence of non-modifying, often alternate and light retouch, relative abundance of denticulates and notched pieces, presence of bifacially worked tools including leaf-like shapes. The brief description of open-air site Mersyna in Moldova can be proposed as example. The site is dated according to indirect data from the end of Riss up to Riss-Würm (Ketraru and Anisyutkin 1967). The industry characterised by following indices: mean average of flakes 39 mm, IL 1,9, IF 17,9, IFs 10,0, I lam 3,6. Irregular types are predominated among cores. Points are rare, sidescrapers and atypical endscrapers well represented, denticulates and notches are abundant. Several specific forms has been distinguished : so called Druityory type points, endscrapers with edge localised on the striking platform of flake, "cutters". There are bifacial tools as well. The inventories of other enumerated above sites are in different way close to the Mersyna inventory. The majority of sites have Riss-Würmian age. Inter-Riss age assumed sometimes for certain of Moldovian sites.

Spatial distribution of sites points at tangible trend to the West, to the territories of the Central Europe. the coincidence of the main technological and typological indices, the same geological age, adjacency of areals let us to compare East European sites with the Central European Taubachian (Valoch 1984; 1989a). The Taubachian is strikingly similar to above described industries in its main features. The tendance to microlithism, abundance of sidescrapers and denticulates/notches, the rare using of modifying retouch, as well as other more detailed techno-typological affinities can be engaged. The similarity of technological and typological indices can be

illustrated by comparison of Kulna 11 and Crimean inventories (table 2).

Geochronological position and connection with Neanderthal people coincides also for the East and Central European industries. It is possible to define the strictly described above Eemian inventories on the territory of the European part of the former USSR as belonging to the Taubachian. This term seems to be more appropriate for the moment (versus : Tayacian, Pre-Mousterian, Micro-Mousterian etc.). At the same time there are some differences between the East European and Central European Taubachian. There are some sufficiently important among them : presence of comparatively evolved bifacial component (including leaf-shaped pieces), more high sidescrapers quota, certain technological differences as well, for ex. negligible using of Levallois-technique, and at the same time more high indices of facetage. These differences can probably be regarded as permissible deviation in frames of the Central and Eastern Europe during the last

interglacial. It is possible also that these differences are the evidence of convergent development in similar direction. As to more ancient sites with compared inventories, they are not known on the territory of the Eastern Europe. If it is really true that microlithism of lithic industry is the stable in time sign of the same paleoethnological tradition, so it is possible to found akin analogies in Vertesszöllös (Kretzoi and Dobosi 1990) and Bilzingsleben (Mania and Weber 1986) and even to trace its origins up to microlithic traditions of Africa. But microlithism can also be no more than comparatively standartized result of adaptation to interglacials (or interstadials) with their temperate climate and abundant vegetation (cf. Svoboda 1987). In this case traced similarity is only formal. As to descendants of the industry concerned, some influences can be traced in the materials of Kiik-Kobian in the Crimea (Stepanchuk 1991) and in the Stinkovian (Mousterian rich in denticulates and leaf-shaped bifaces) in the Moldova (Anisutkine 1988).

TABLE 1
THE MAIN INDICES OF KIIK-KOBA, LOWER LAYER, KABAZI II,
V-th LAYER AND ZALESNOYE

	KIIK-KOBA	lower KABAZI II	ZALESNOYE
Radial cores	+	+	+
Irregular cores	+	-	-
Levallois cores	-	-	+ ?
IF large	35,2	19,5	30,3
IF strict	21,9	11,9	18,2
I lam	2,0	3,5	3,9
% of blades	?	1,97	0,53
ratio : flakes with radial (first figure) and (sub) parallel scars on the dorsal surfaces	1,2 : 1	1 : 2,3	1 : 2,5
The quota of well retouched pieces in the collection	?	15,37	12,8
The average dimensions of tools, mm	< 35	26,53	20,19
FLAKE TOOLS, including	96,16	96,34	100,0
pointed forms	7,0	8,2	6,3
sidescrapers	79,0	69,85	71,9
denticulates and notches	11,0	16,4	15,7
Upper Palaeolithic types	2,0	5,47	6,25
BIFACIAL TOOLS	3,84	3,66	-
Among flake tools :			
convergent forms	27,0	42,46	50,0
simple forms	63,0	57,34	50,0
different thinnings	-	-	6,25
alternate retouching	0,77	21,37	24,6
ventral retouching	3,87	25,95	17,5
dorsal retouching	93,2	52,67	57,9

TABLE 2

THE COMPARISON OF THE MAIN STATISTICAL, TECHNOLOGICAL AND
 TYPOLOGICAL INDICES OF KULNA 11 (after K. Valoch 1989),
 KABAZI II, IV-th LAYER, KIIK-KOBA, LOWER LAYER and ZALESNOYE

	KULNA 11	KABAZI II, IV	KIIK-KOBA lower	ZALESNOYE
The quota of cores	12,0	0,1	?	0,3
The quota of tools	6,12	15,37	?	12,8
The quota of blades	2,5	2,1	?	0,53
The average meaning of flake size, cm	3,24	2,65	?	2,02
Levallois cores	-	-	-	+ ?
Discoïdal cores	+	+	+	+
IL	1,44	-	-	-
IF	9,01	19,5	35,2	30,3
IFs	5,72	11,9	21,9	18,2
I lam	4,76	3,5	2,0	3,9
IR	41,91	65,75	79,0	71,9
IC	14,93	13,69	34,0	12,5
Denticulates/notches	31,83	16,43	11,0	15,7
Upper Palaeolithic types	6,83	4,1	2,0	6,25
IB	1,35	2,6	3,9	-
I	2,34	-	-	-
II	41,91	79,47	87,0	78,13
III	6,83	4,1	2,0	6,25
IV	31,83	16,43	11,0	15,7
Striking platforms :				
plain	52,17	15,09	41,9	23,52
cortical	24,78	10,37	4,8	3,9
linear, punctiform	14,04	44,33	18,1	17,64

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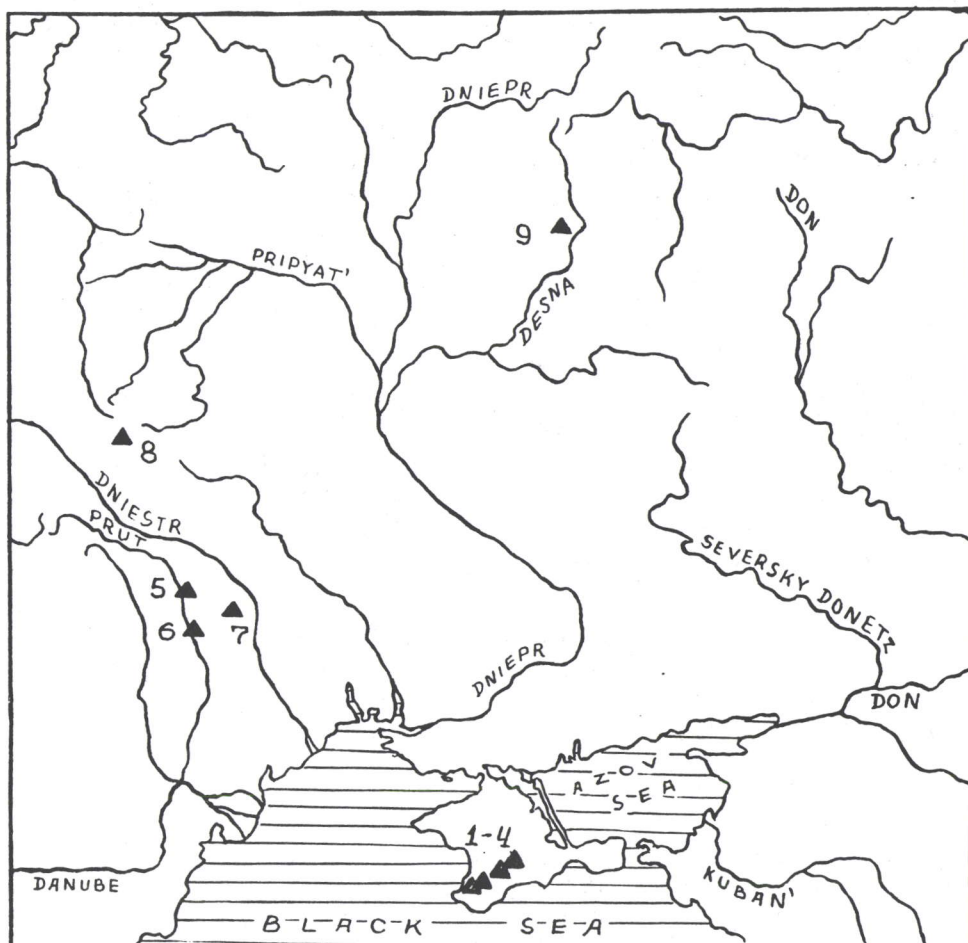


Figure 1: The map. The main sites of Eastern Taubachian.

1. Krasnyj Mak 1,
2. Zalesnoye,
3. Kabazi II, IV-th layer,
4. Kiik-Koba, lower layer,
5. Starye Duruitory,
6. Mersyna,
7. Vykhvatintsy,
8. Velykyi Glybochok,
9. Betovo.

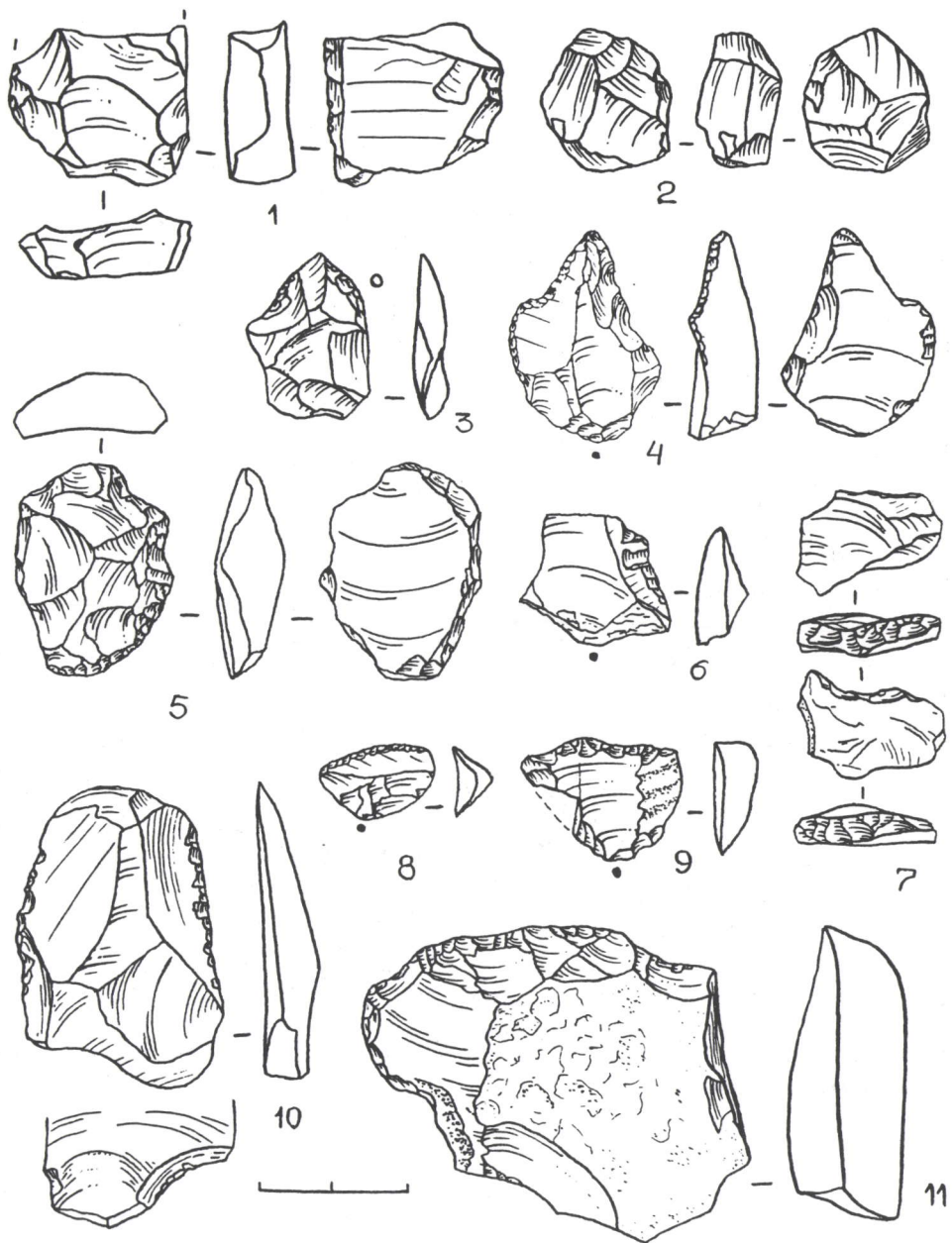


Figure 2 : Zalesnoye.

- 1, 2. Radial cores,
- 3, 4. Pointed tools,
5. Simple sidescraper, prepared on Levallois (?) core,
6. Simple sidescrapers,
7. Double sidescraper (biternally blunted piece),
8. Transverse sidescraper,
9. Simple canted sidescraper, broken,
10. Double sidescraper,
11. Simple canted sidescraper.

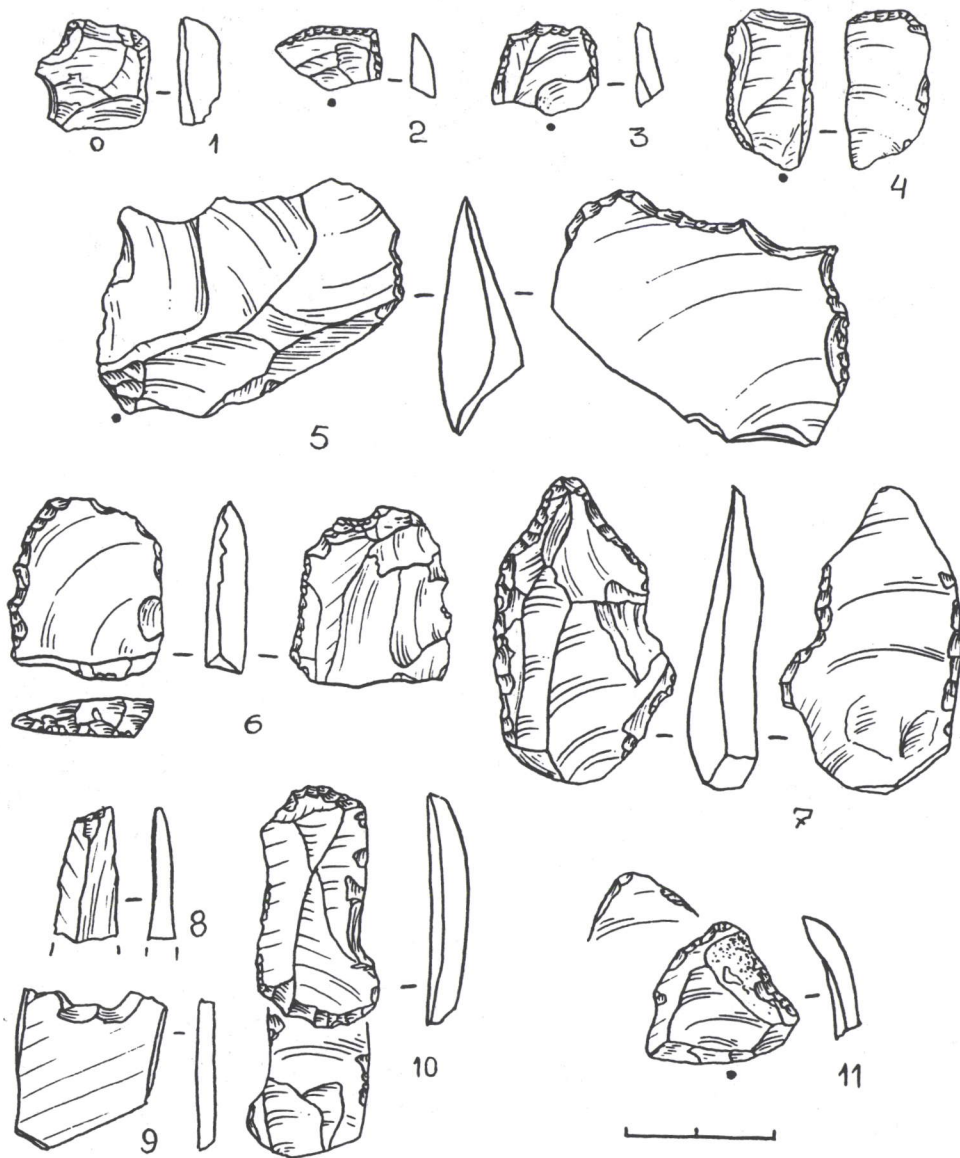


Figure 3 : Zalesnoye.

- 1, 2, 4. Simple canted side scrapers,
- 3, 5. Double canted side scrapers, 6. "Circularly" retouched side scraper,
- 7, 11. Convergent side scrapers,
- 8. Truncated blade, broken,
- 9. Notched tool,
- 10. Double endscraper with elements of basal ventral thinning.

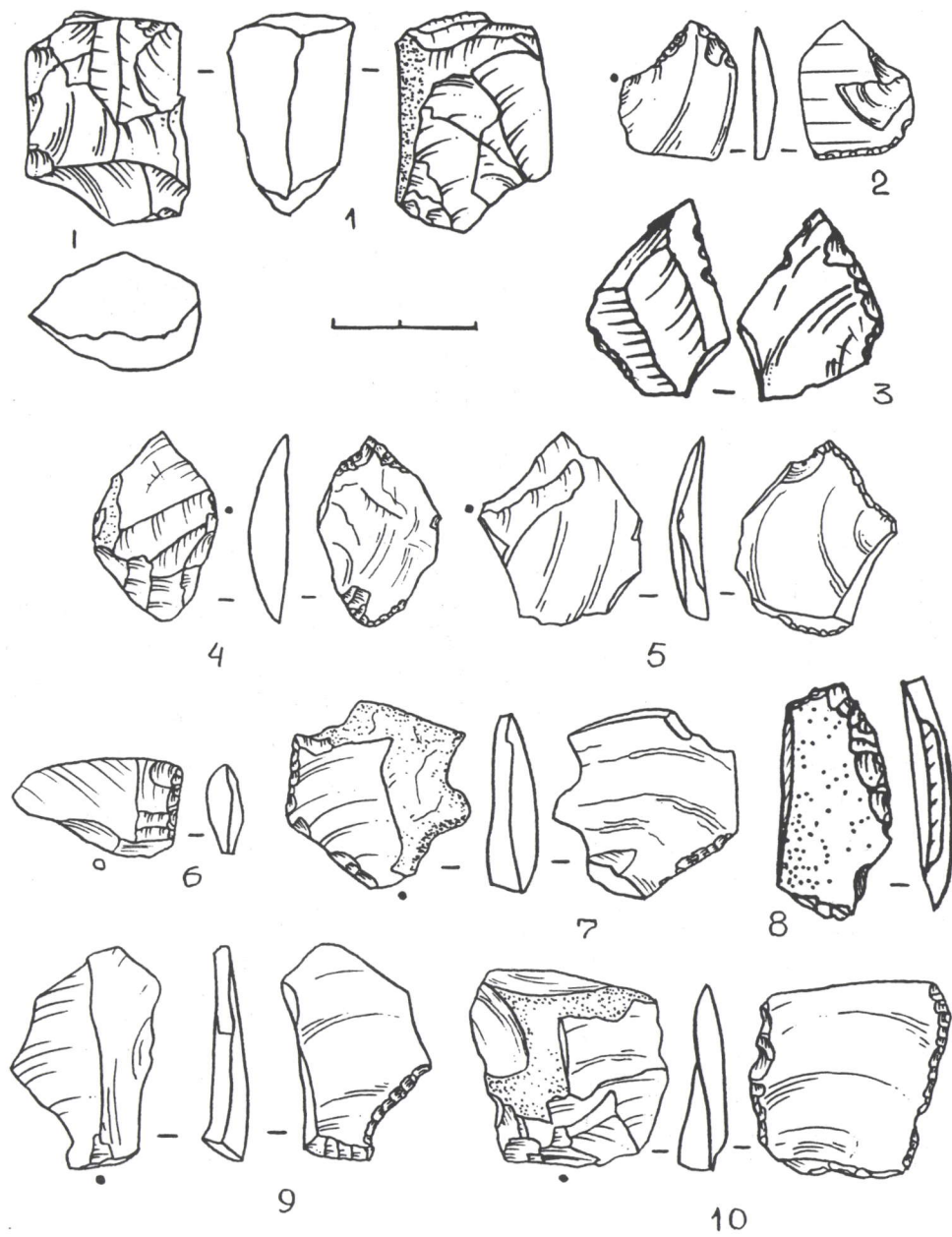


Figure 4 : Kabazi II, IV-th layer.

- 1. Radial core,
- 2-5. Different types of pointed tools,
- 6, 7, 9. Simple sidescrapers,
- 8. Flake knife,
- 10. Double sidescraper.

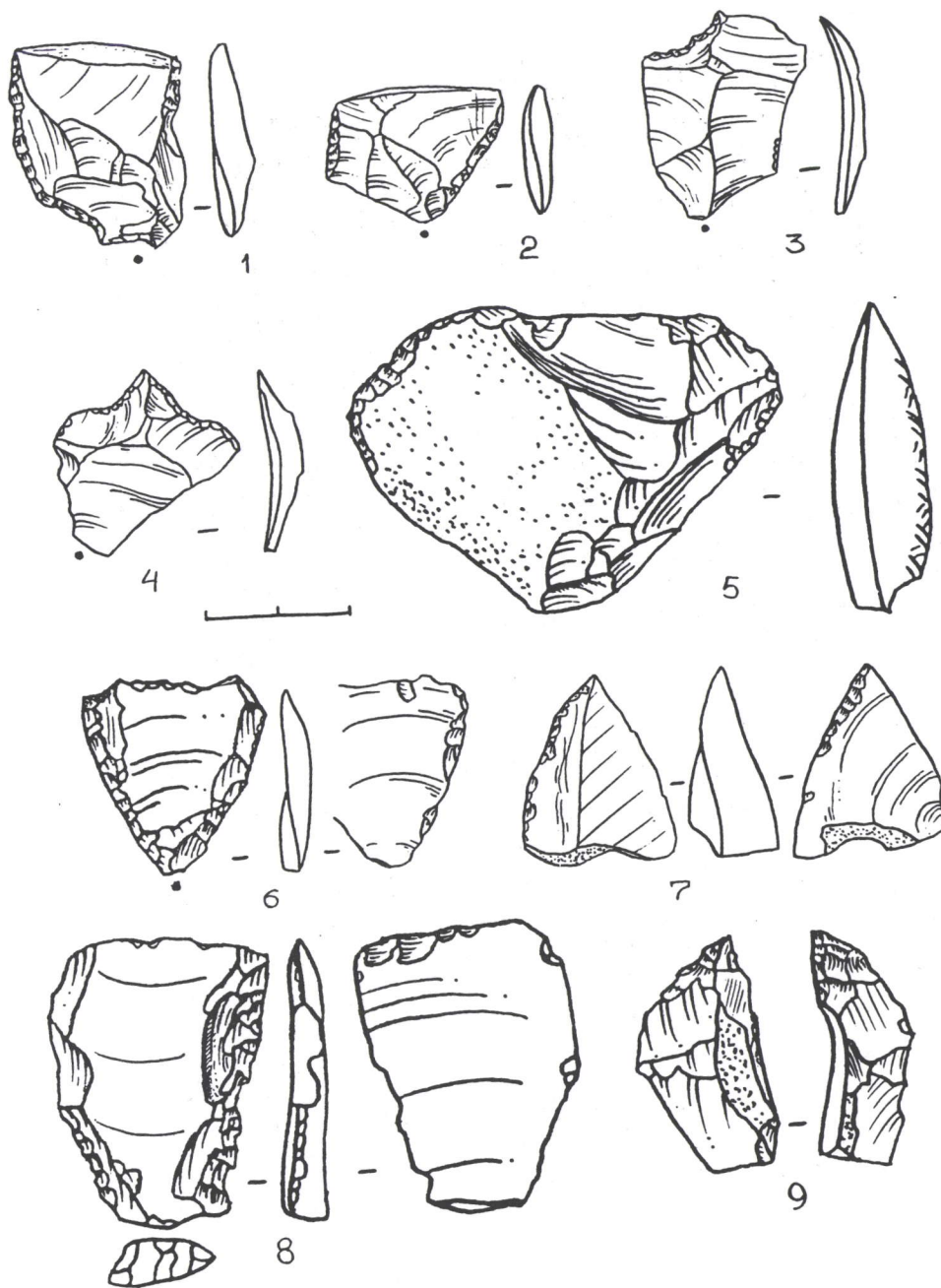


Figure 5 : Kabazi II, IV-th layer.

- | | |
|----------|-----------------------------|
| 1, 2. | Double sidescrapers, |
| 3. | Transverse sidescraper, |
| 4, 7, 9. | Pointed tools, |
| 5, 6, 8. | Double canted sidescrapers. |

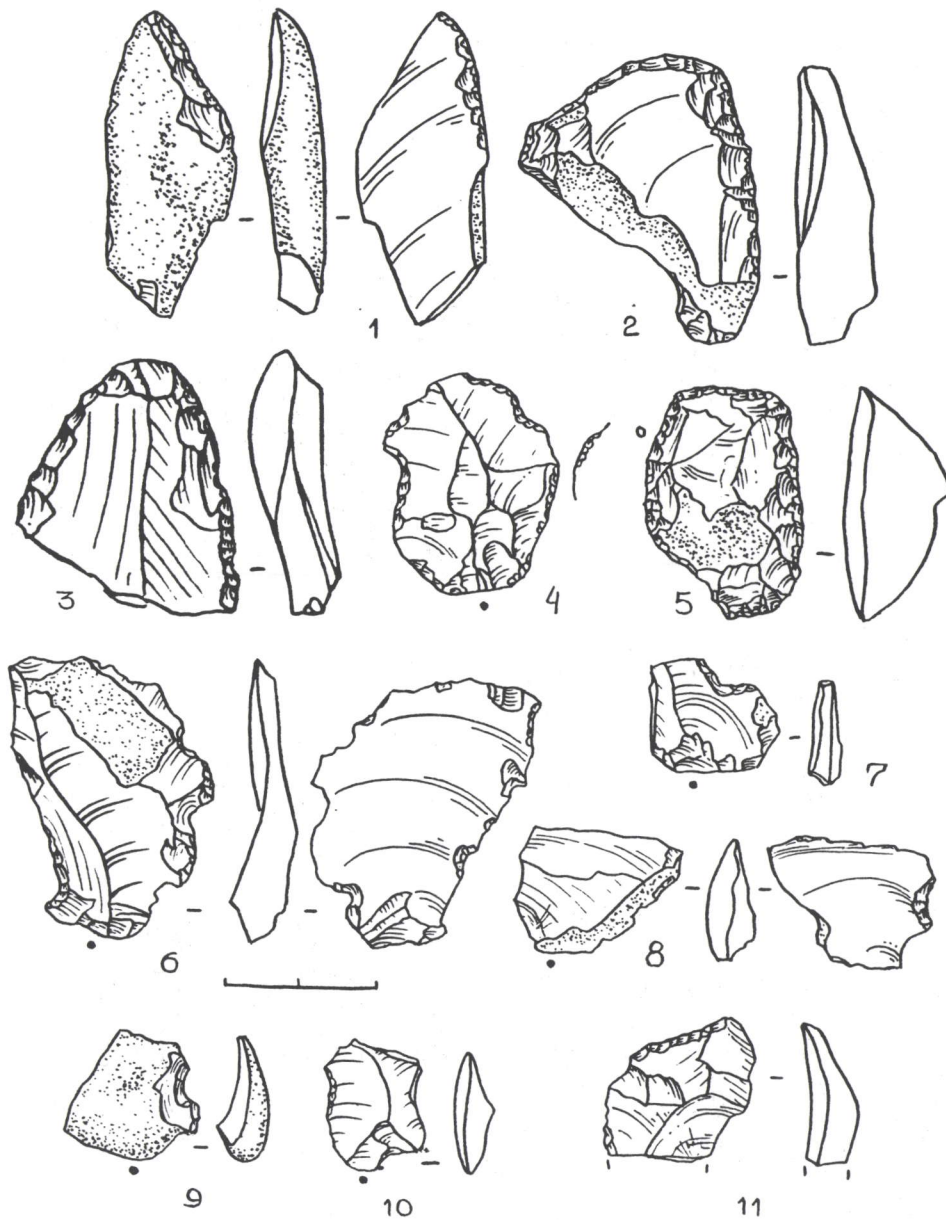


Figure 6 : Kabazi II, IV-th layer.

1. Convergent sidescraper,
- 2, 3. Convergent sidescrapers/endscrapers on flakes,
- 4, 5. "Circularly" retouched sidescrapers,
6. Denticulate,
- 7, 8, 9, 10. Notched tools,
11. Truncated piece, broken.

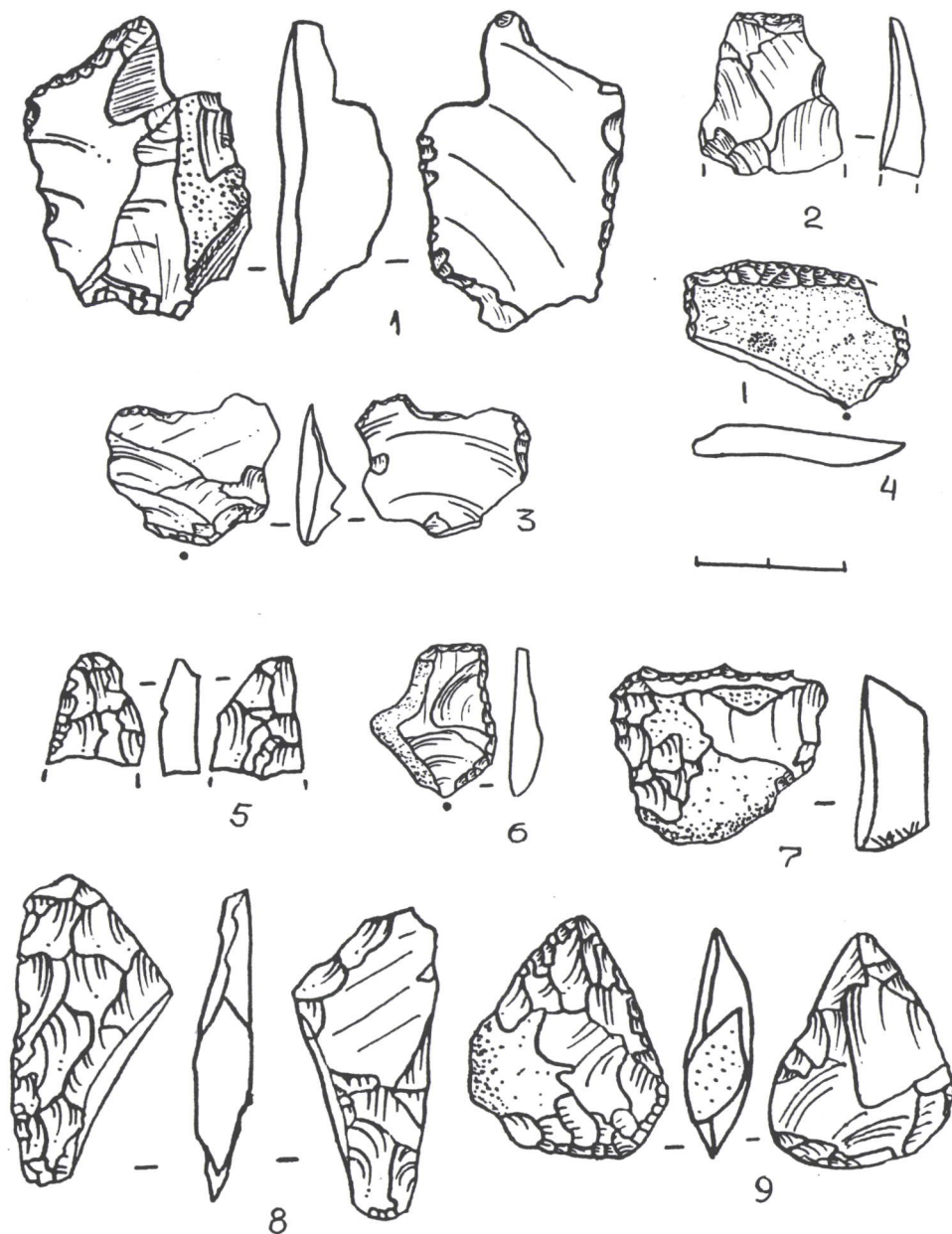


Figure 7 : Kabazi II, IV-th layer.

1. Canted form,
2. Truncated piece, broken,
- 3, 4. Double canted sidescrapers,
5. The piece of bifacially worked pointed tool,
- 6, 7. Simple canted sidescrapers,
- 8, 9. Bifacially worked knives.