THE KIIK-KOBA CULTURE AND SOME QUESTIONS OF THE CRIMEAN MIDDLE PALAEOLITHIC STUDY

SUMMARY: At least four late Middle Palaeolithic (Mousterian — in terms of former Soviet scholars) cultures and some distinct types of sites are currently known on the territory of the Crimea peninsula. The lithic industries of related cultures well demonstrate the varying degree of differences in both tool typology and technology. The most original industry is represented by the Kiik-Koba upper layer and two layers of Prolom I. Characteristic features of this industry enable us to define it as "Para-Micoquien" and to emphasize its originality in the Crimea and surrounding areas. The data concerning the location of sites with Kiik-Koba industry, stratigraphy, planigraphy, econiche, game hunting specialization, stone inventories, and other specific cultural evidence are reviewed in this paper.


In the former Soviet palaeolithic studies there are various approaches to spatial classification of Palaeolithic sites. The terms "culture", "cultural region", "region", "zone", "province", "variant", "facies", "type", "way of development", and "line of development" have been suggested by different scholars (Boriskovski 1964 & 1984, Zamysnin 1951, Gladilin 1976, Grigor’ev 1968, Lyubin 1977). Duality of both tasks and results is a concomitant feature of systematization and classification on vast territories. The purely ancillary aspect and the interpretative aspect of such operations are distinguished. The presence of the former manifests itself when a large number of sites are divided according to their signs of similar features. The latter predominates when any particular type of social relations is considered within the groups of sites obtained. All the above mentioned concepts reflect, to a certain extent, such duality, some of them being initially focused only on the ancillary role.

The concept "archaeological culture" (Anisyatkin 1977, Gladilin 1976, Grigor’ev 1968, Kolosov 1979, Lyubin 1977, Praslov 1968) is a basic instrument with the help of which the search for distinctive elements of sociocultural processes of the Middle Palaeolithic Period is carried out within the framework of individual regions. The concept of culture is also characterized by interpenetration of two conceptual levels, i.e. classificatory and interpretative. The definition of culture suggested by V. N. Gladilin (Gladilin 1976) is the most convenient in terms of classification. The definition proposed by V. P. Lyubin (Lyubin 1977) reveals the specificity of the concept in the sociocultural sense, having an interpretative content. The term "Middle Palaeolithic Culture" (or "Mousterian Culture" in the former Soviet literature) is under...
stood to refer to a real existence of specific units or communities of the prehistoric sociocultural development. At the same time, distinct traces were left by these units in various aspects of prehistoric man's activities. Typological ranking of such social units remains problematic.

The paper submitted here is intended to present a survey of the Kik-Koba Middle Palaeolithic Culture in the East Crimea, Ukraine. It includes materials of two cave sites: well known Kik-Koba and Prolem I.

**HISTORY OF INVESTIGATIONS**

The cave site Kik-Koba was discovered in 1924 and 1925, while Prolem I was explored by G. A. Bonch-Osmolovsky with the participation of E. V. Zhirov, A. S. Trusova, N. L. Ernst, F. A. Dvoichenko, V. I. Gronov, and others (Bonch-Osmolovsky 1936). Excavations uncovered two rich Palaeolithic levels and revealed remains of two individuals of the Neanderthal Man. With the exception of control sections, the whole site was fully excavated under the rock shelter, on the ground in front of the cave, and also by means of a trench on the slope. The results of field investigations and laboratory treatment of cave material were presented in detail by G. A. Bonch-Osmolovsky in a number of papers and monographs (Bonch-Osmolovsky 1934, 1940, 1941 & 1954). The discovery of Kik-Koba provided documentary evidence in support of K. S. Merkulov's data about the Crimea settlement in the Quaternary. Purposeful search for new Palaeolithic sites was started.

The cave site Prolem I was discovered by Ya. G. Kolosov in 1973 and investigated by him in the years 1973, 1974, and 1977. Geologist V. P. Dushenski participated in the excavations. The sediments of the cave were completely investigated, and trenches were made in the depth of the cave and on the slope. Numerous remains of the activity of the Neanderthals were uncovered in two layers of the site. Several special publications were devoted to the findings of this cave site (Kolosov, 1978, 1979; Stepanchuk, in press).

**SITES LOCATION**

Both the sites are situated in the East Crimea, in the zone where rivers made their bed between the rocks of the Crimean mountains foothills. In accordance with a current geographical subdivision, Kik-Koba (44° 58' of the Northern Latitude, 34° 20' of the Eastern Longitude) lies within the boundaries of the South foothill valley-cuesta region, and Prolem I (45° 07' of the Northern Latitude, 34° 42' of the Eastern Longitude) belongs to the North foothill cuesta region.

The cave Kik-Koba is situated in the valley of the river Zarya, 20 km southwest of Belogorsk, in the system of the river Salgir.

The shelter with two tunnel-like passages is located on the right side of a canyon in a Jurassic limestone wall. The dimensions of the main cave are as follows: 9 m in height, 11 m in width, and 9 m in depth. It is exposed to the south-east, the height above the river level being 130 m.

The cave Prolem I is situated on the left slope of the river Kuchuk-Karasu valley (also the river Salgir system), 10 km north-east of Belogorsk. The shelter with a south-east exposure is connected with nummulitic limestone of the Middle Eocene age. The cave consists of two chambers having formed a single cavity in the ancient times. The large chamber is 4 m high, 5 m long, and 7 m wide, the smaller one is 1.5 m, 5.0 m, and 2.5 m, respectively. The cave height above the water level is 12 m.

**STRATIGRAPHY AND PLANOGRAFHY**

According to G. A. Bonch-Osmolovsky, differences were found in sediments on the ground, slope, and tunnel-like passages. During the site excavations twelve stratigraphic layers (including local horizons) were distinguished. General stratigraphic situation can be described in the following way: The set of morphologically similar bright yellow loamy soils is covered with the upper contemporary layer of hearth. Differences between the loamy soils manifest the tendency towards almost stable increase of the number of gravels in the direction to the thickness surface. The thicknesses are divided by two Palaeolithic cultural layers. Cave sediments contain traces of two-fold inundation. The material mentioned in the present paper comes from the upper cultural layer. Thorough examinations carried out by G. A. Bonch-Osmolovsky enabled him to determine such features of the cultural layer as, for example, the outline of the dwelling space, the presence of hearties (?) inside it, the occurrence of utility pits, and burial evidence. The sharp interruption of cultural remains allows the existence of a building construction to be assumed along the eastern, and possibly also along the southern boundaries of the dwelling place (Lyubin, 1969). At first G. A. Bonch-Osmolovsky presumed that there was a relation between the remains of the adult Neanderthal Man and the lower (Tayacian) cultural layer. Later he asserted the existence of the burial to the period of the upper cultural layer. It was mainly due to his false assumption of a more ancient age of the lower layer. Factual data make it necessary to adopt the initial dating (Gladilin 1979). Stratigraphic circumstances of the infant's burial (?) are less questionable. However, it seems that attributing this burial to the upper layer was also expressed (Smirnov Yu. 1987, 1991).

Ya. G. Kolosov and V. P. Dushenski discovered 7 lithological horizons in the sediment sequence of the cave Prolem I. The set of sediments can be subdivided into two separate parts, i.e., the upper one with large quantities of limestone debris, and the lower one containing nummulitic sands with a small amount of debris. On the excavated area, the upper part of the sand is cemented with a thin carbonate crust. Lime- stone slabs — the remains of the cave roof — were fixed on a separate part of the area. They also divided the lower and upper parts of the sediments. Cultural remains of Middle Palaeolithic were discovered both in the humus loam soil with debris (the upper layer) and in the layer of nummulitic sand (the lower layer). The only unquestionable object of the site — the hearth — was situated in the lower layer. Palaeolithic findings were almost completely absent under the rock shelter inside the cave. This area was cleared from sediments in the Middle Ages.

**FAUNA AND ECONOMIC**

Faunistic data make it possible to carry out an analysis aimed at two objectives: a) to clarify the specificity of hunting activities, and b) to ascertain the features of econiche which was characterized by the established species pattern. Only game species were taken into account in the assessment of hunting activities. In the Kik-Koba upper layer, 63.5 per cent of game animals are represented by the giant deer, horse, and saiga. The remaining 34.5 per cent are made up of eight species, and namely the mammoth, ass, bison, wooly rhinoceros, red deer, bear, wild boar, and ram. Apparent disproportion in the species distribution was found out also in the cave site Prolem I. Thus, 54.6 per cent of the total number of animals are represented by the saiga and giant deer. The remaining 45.4 per cent are constituted by the red deer, reindeer, wild horse, mammoth, and bison. Specificity of the share of dominating species was confirmed by its comparison with seventeen faunistic complexes belonging to different cultural traditions. Unobjectionable correlation between the specificity of the tool set and the faunistic list was assessed, and, in this case, fauna composition establishes the character of hunting activity. This conclusion is being proved by analogical observations carried out for the Ak-Kaysa Middle Palaeolithic culture (Kolosov 1983, 1986) and for the South-West Crimea sites (Chaboy 1990).

The Kik-Koba upper layer and both layers of the Prolem I cave were characterized by the occurrence of the giant deer, saiga, and horse. This particular trait,
on the one hand, manifests undoubted resemblance of the sites. On the other hand, it reveals distinctive differences from other, in the broad sense synchronous, Crimean sites. Explanation of the specificity of the game species list may be found in the particular orientation of hunting activities. Such phenomenon may be indicated at the beginning of specialization in hunting activities.

The study on palaeobiography of Europe during the last glaciation (Mudl 1985) was made use of as a basis for the determination of fundamental features of the site eocene. All species having relatively limited area were considered. Several indexes were calculated which made it possible to clarify the balance of various natural zones, such as tundras; subarctic forests, including taiga; arctic steppes, forest-steppes, steppes; temperate forests, meadows. Such balance makes it possible to draw conclusions about the most probable zone which may be characterized by the faunistic composition revealed.

The Kik-Koba upper layer fauna list makes it possible to arrive at a conclusion that the site was located in the zone of temperate forest-steppes characterized by developed forest communities. This conclusion, as a whole, is confirmed by flora evidence (samples of charcoal, palynological analysis – Gummerman 1934, Lyulin 1971).

Materials from Prolem I, taken as a whole, may fix a colder and drier forest-steppes, the forest fauna component being less developed than that in the Kik-Koba region at the time of the upper layer sedimentation. More detailed specification of the fauna list for the upper layer of Prolem I makes it possible to come to the conclusion about the climate worsening in comparison with conditions of the lower layer of Prolem I.

**CHRONOLOGY**

Direct data for the clarification of the exact chronological position are missing both for Kik-Koba and for Prolem I. Under such circumstances, the data of relative chronology acquire decisive significance. Stratigraphical, palaeoecological, and palaeobotanical data can be made use of. Indices of collagen heating, determined according to I. G. Dolidzicko's method, serve as an important support. Palaeoecological-archaeological method of relative dating, suggested by Yu. G. Kolosov, can be regarded as an essential correlator. The role of a traditional techno-typological method is still of weight.

Completely different geological dating was suggested by various investigators for the Kik-Koba upper layer, ranging from the end of the Mindel-Riss up to the Early Würm (Bonch-Osmolovski 1934, 1946, Gronov 1945, Ivanova 1965). The Early Würm age is the most unanimously accepted dating at present (Velichko et al. 1969, Ivanova 1983, Kolosov 1985, Gladilin 1976, Velichko 1988). Coming out of specific lithological features, there are grounds for sharing the view of V. N. Gladilin that the layer is related to a warm period within the Early Würm (Gladilin 1971). Palaeoecological and palaeobotanical findings are not in contradiction to the above mentioned dating. It is possible to assume the Brörup age of the Kik-Koba upper layer.

The layers of Prolem I were attributed to the middle and late Würm I by Yu. G. Kolosov (Kolosov 1983). The following facts are essential to determine the chronological position of the site, based on collagen heating and techno-typology give evidence of a certain divergence between Prolem I and the Kik-Koba upper layer. Lithology and fauna record fix
obvious climatic changes. Thus, the Prolem I lower layer manifests climatic conditions that were relatively favourable, but, at the same time, colder than in the Klik-Koba layer. The Prolem I upper layer is characterized by further deterioration of the climate. In view of this, it is possible to place the cultural layers of Prolem I into the Wurm I/II. Such dating can be confirmed using the method proposed by M. N. Grischenko (Grischenko 1971). This method consists in inversion of collagen indicators into absolute dates through drawing a curve of relationship between these indexes. The absolute date of Prolem I cultural layers can be determined. Obtained collagen dates (42,800 and 42,300 years) generally correspond to the Wurm I/II, which includes Moesoehord and Hengelo interstadials. There is no doubt that these dates are not so reliable as, for example, C-14 dating. At the same time, however, these dates may serve as auxiliary indications when chronological position of sites is being determined.

STONE INDUSTRY

General characteristics

The Klik-Koba upper layer (21 cores, 615 finished tools) is characterized by predominance of radial cuts (67.3 per cent of cores). There are irregular and protractive cores (9.1 per cent) and one Levallois core. IF strict is 21.9. IF large is 41.9. I lam is 315. Index of bifacially worked tools is 14. Secondary working was carried out by retouching, and, sometimes, by the burin spall technique. Dorsal, semidorsal, and flat, often deep, scalar retouching predominates. Core-like thinning is widely spread. Alternative retouching occurs quite frequently. On the other hand, bifacial retouching is rare. Bifacially worked tools, as a rule, possess flat-convex cutting edges. Retouching on such tools is placed mainly on the convex surface. Typological structure of flake tools is as follows:

- 38.9 per cent of tools represented by points, more than half of which are bifacially worked tools;
- 32.5 per cent of tools represented by side scrapers, among which there are numerous canting and longitudinal retouched tools;
- 4.7 per cent of flake knives;
- 2.3 per cent of tools of Upper Palaeolithic types;
- 10.2 per cent of notched and denticulate tools, which are quite numerous;
- 3.6 per cent of flake tools — with core-like ventral thinning;
- 4.2 per cent of tools characterized by alternatively retouched edges.

Among bifacially worked tools, points (45.4 per cent) are dominated, followed by side scrapers (41.9 per cent) and backed knives (5.8 per cent). Subtriangular and almond-shaped tools are widespread among bifacially worked tools. Almost one third of flake tools are also of subtriangular shape. Sublaurel and subconical bivalve tools represent most numerous types. The specificity of the industry lies in the prevalence of pointed tools, large proportion of canting forms, presence of distinctive uni- or bifacially worked triangular side scrapers/points. A great typological variability of flake tools may be regarded as a specific feature of the Klik-Koba upper layer industry. The level of decorative retouch of tools is relatively high. General microtchological character of the inventory is typical, too. Bone, stone and flint retouchers, the fragment of a bone awl and a stone find of different types were also discovered in the Klik-Koba upper layer.

The Prolem I lower layer (25 cores, 318 tools) demonstrates the abundance of radial cores (71.4 per cent). Irregular (19 per cent) and protractive (9.5 per cent) cores are well represented. IF strict is 25.7. IF large is 39.5. I lam is 124. Index of bifacially worked tools is 14.8. Retouch on tools has basically modifying, dorsal, flat or semidorsal, rarely abrupt. Artifacts with deep, scalar retouch and ventral thinning are frequent. Bifacially worked tools have, as a rule, flat-convex cutting and retouch on them is often connected with a more convex surface of a tool. Typological structure of flake tools is characterized by a high proportion of points (35 per cent), almost 57 per cent of which being canted forms. Index of side scrapers is 29.2 per cent, canted and simple side scrapers practically one half of all the side scrapers, respectively. Index of knives is relatively high — 14 per cent. Upper Palaeolithic types make up 3 per cent of all tools. The Klik-Koba upper layer to the Prolem I upper layer, the following changes can be recorded: decrease of total share of faceted striking platforms, and, simultaneously, increase of IF strict. The volume of radial knapping is reduced but the number of protractive cores and blanks is higher in Prolem I. Levallois cores still appear. The number of tools with ventral thinning is growing, while alternative retouching is being sub- significantly reduced. As a result, the industry becomes more numerous. The number of side scrapers, notched and denticulate flakes is lowered, the total share of canted points and side scrapers falls markedly. As the same, Upper Palaeolithic types and flake knives increase in number. The tendency of asymmetrical tools preparation, as well as production of considerably retouched, sharp edges, can be also well traced. The above mentioned changes are neither abrupt nor uneven, but they are unquestionable and more significant in bifacially worked from the Klik-Koba upper layer to the Prolem I lower layer.

The changes given above make it possible to distinguish two signs of the development of Klik-Koba industry. To the first (early) stage, the Klik-Koba upper layer can be attributed. Both layers of Prolem I belong to the second stage. This conclusion is partly confirmed by the first stage of development of the industry. Secondly, the results of the above mentioned canteens concerning detection of certain grounds for the differences in the chronological position of the sites concerned.

In general, the Klik-Koba industry is characterized by the following features. The basic principle of knowledge in the Klik-Koba industry is not numerous. Wastes of bifacial tools manufacturing were often used as blanks for making flake tools. IF strict is 25.0. IF large is nearly 40.0. I lam is nearly 10.9. The meter of bifacially worked knives and blanks was frequently adopted (15 per cent of tools). The main distinctions of the tool set consist in its typological, variability and high index of bifacially worked tools. Thus, nearly 40 per cent of flake tools and approximately 50 per cent of bifacially worked tools are represented by the types of different points. There are 30 and 40 per cent of side scrapers, respectively. Flake knives make up nearly 10 per cent and bifacially worked backed knives about 5 per cent. Average index of denticulate and notched flakes is not high. The index of Upper Palaeolithic types (end scrapers, burins, and pogoqui) is about 2 per cent. The specificity of the Klik-Koba industry can be seen in the following:

The high percentage of flake points, where 60 per cent are canted forms; large quantities of tools with ventral thinnings and backs; the predominance of subtriangular and almond-shape pieces among bifacially worked tools, and subtriangular, trapezoidal and segmental shapes among flake tools. The high degree of typological variability and microthilism of the inventory are typical, too.

Technical and typological indices of the assemblages compared are very similar, but taken as a whole the Prolem I layer is more advanced. As a rule, the Klik-Koba upper layer to the Prolem I upper layer, the following changes can be recorded: decrease of the total share of faceted striking platforms, and, simultaneously, increase of IF strict. The volume of radial knapping is reduced but the number of protractive cores and blanks is higher in Prolem I. Levallois cores still appear. The number of tools with ventral thinning is growing, while alternative retouching is being substantially reduced. As a result, the industry becomes more numerous. The number of side scrapers, notched and denticulate flakes is lowered, the total share of canted points and side scrapers falls markedly. As the same, Upper Palaeolithic types and flake knives increase in number. The tendency of asymmetrical tools preparation, as well as production of considerably retouched, sharp edges, can be also well traced. The above mentioned changes are neither abrupt nor uneven, but they are unquestionable and more significant in bifacially worked from the Klik-Koba upper layer to the Prolem I lower layer. Points occur the first place among flake tools (36.3 per cent). Out of the number of points, the proportion of canted forms is 55.9 per cent. Side scrapers make up 28.9 per cent. There is a large number of simple (27.1) and canted (25.8 per cent) tools within the class of side scrapers. Backed knives on flakes form 11.6 per cent. Notched tools are missing, the proportion of denticulate pieces is 5.1 per cent. Total index of the Upper Palaeolithic types is 4 per cent. Total index of various thinning on flake tools is 7.6 per cent. Index of alternative retouching is 1.1 per cent. Points (35.7) predominates among bifacially worked tools. Points are followed by scrapers (14.3 per cent), then by spear points and backed knives with 6.3 per cent each. Subtriangular forms make up the leading place in the distribution of tools according to shapes. The share of segmental tools is sufficiently high. Quite a large proportion is represented by other symmetrical and asymmetrical forms. Among the forms of the industry the following: high proportion of points in both flake and bifacially worked tools, constantly large number of canted forms among flake tools, high index of core-like thinnings on the ventral side of flake tools, high occurrence of backed forms, varied typology of side scrapers and points, and general microthilism of the industry. There are findings of flint, stone, and bone retouchers and hammerstones in the upper layer. The object (?) of a cave bear ear bone was also discovered.

INTERNAL SIMILARITIES AND DIVERSITIES OF KIK-KOBA INDUSTRY

Two major conclusions can be drawn on the basis of comparison of the sites material. Firstly, assemblages of various sites are undoubtly very similar to one another, and sometimes even identical. This conclusion results from techno-typological analysis and it is also confirmed by the application of related index ranges. Remarkably high degree of correspondence between assemblages makes it possible to suppose the existence of original Klik-Koba industry. Secondly, the abovementioned canteens refferences between these assemblages which give evidence of continuous evolutionary changes.

FIGURE 5. Kiiš-Koba, upper layer. Different canted points on flake (1–21).
FIGURE 6. Kik-Koba, upper layer. Bifacially worked points of different types (1—10) and backed knives (2, 3).

FIGURE 7. Prolom 1, different caused points on flake. Lower layer (9—20), upper layer (1—8).
FIGURE 10. Prodom 1, lower layer. Different carved points on flakes.

FIGURE 11. Prodom 1, lower layer. Bifacially worked spearheads (1, 2), points (3, 5) and sidescrapers (4, 6).
TABLE 1. Some main technical and typological indices of Kik-Koba (KKh), Starosele (Sts), Ak-Kaya (AKK), Kabazi (KKh) and GABO industries (average means).

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<th>KKh</th>
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<th>Sts</th>
<th>Khz</th>
<th>GABO</th>
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<td>Radiate and irregular</td>
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<td>32.5</td>
<td>27.5</td>
<td>17.6</td>
<td>87.6</td>
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<tr>
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<td>63.9</td>
<td>71.5</td>
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<td>43.0</td>
<td>41.6</td>
<td>55.4</td>
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<tr>
<td>If entire</td>
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<td>26.7</td>
<td>19.6</td>
<td>31.3</td>
<td>30.0</td>
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<tr>
<td>I narrow</td>
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<td>6.3</td>
<td>16.3</td>
<td>25.5</td>
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<td>77.6</td>
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<td>61.0</td>
<td>56.7</td>
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<td>Upper</td>
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<td>9.2</td>
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<tr>
<td>spearheads</td>
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<td>21.4</td>
<td>-</td>
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<td>38.3</td>
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<td>backed knives</td>
<td>8.7</td>
<td>58.9</td>
<td>4.6</td>
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<td>6.5</td>
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KIK-KOBA INDUSTRY WITHIN THE FRAMEWORK OF CRIMEAN MIDDLE PALEOLITHIC

Comparison with a number of the most typical sites that represent all techno-typological facies of the Crimean Middle Paleolithic was carried out (Table 1). Thirteen Middle Paleolithic complexes were included. They represent three distinct industries, which are, to a varying degree, homogeneous. They are as follows:

- Ak-Kaya industry (or cultural tradition) (Zaskalnaya V, the second and the fourth layers; Zaskalnaya VI, the second and the third layers); Starosele industry (Starosele, the lower and upper layers; Kabazi I, the first layer; Kabazi V, the first layer); Kabazi industry (Kabazi II, some horizons of the second layer; Kabazi I; Bakhchisarai, the third layer), and a distinct type of site (Gabo cave site).

Synthesis of typological characteristics of the complexes mentioned above enables two important conclusions to be drawn. Firstly, all levels of inner correlation is fixed in the typological structure of assemblages which belong to the Kik-Koba, Ak-Kaya, and Kabazi industries. Secondly, the highest degree of techno-typological differences between individual industries is fixed for the Kik-Koba industry. Then, it is followed by Ak-Kaya, Kabazi, and Starosele industries, in correlation with the level of differences. Gabo site occupies a special place owing to its unusually large number of denticulate and notched flakes. Other traits of the Gabo site assemblage enable certain parallels to be found in Starosele industry.

EXTRA-INDUSTRIAL SPECIFICITY OF SITES WITH KIK-KOBA TYPE INDUSTRY

The following features can be mentioned: limitation of the territory where such sites were found (the river Salgir basin, the East Crimea); specialisation of hunting activities (predominating species are: the giant deer, saiga tatarica, and wild horse); presence (7) of burial places (the infant Kik-Koba II); intensive use of bones and pebbles in life activities (there are large series of hammer stones, retouchers, anvils as well as single awls, and polishing); occurrence of non-utilitarian bone artefacts (the cave bear bone pendant from the Prokom I upper layer); specialisation in the supply of stone raw materials which reflects an original tradition of ignorance of a particular kind of raw materials (Prokom I, both layers: practically absolute neglect of cherts, which are abundant in the vicinity of the site); evidence of complex constructions on the sites (the Kik-Koba upper layer). All the specific features mentioned above indicate various life activities of people who lived in Kik-Koba and Prokom I cave sites. Strictly speaking, these data are incomplete and scrappy. Nevertheless, they are sufficiently clear and original in their composition to establish extra-industrial individuality of the sites with the Kik-Koba type of industry. Special comparison was carried out which revealed substantially high degree of differences between the sites of the Kik-Koba industry and those of other industries in terms of their extra-industrial characteristics.

Thus, the Kik-Koba industry sites well demonstrate high degree of similarity both in technology and typology as well as in extra-industrial features. This fact makes it possible to confirm the objectivity of the real existence of a distinctive Kik-Koba culture of the Middle Paleolithic (Kik-Koba), in accordance with the definition of culture that was made by former Soviet archaeologists (Glazhilin 1976, Lyubin 1977).

QUESTIONS OF KIK-KOBA MIDDLE PALEOLITHIC CULTURE ORIGIN, CONTACTS AND EVOLUTION

Pre-Würmian sites on surrounding territories do not give a better possibility of finding a supposed ancestor than the search among the Crimean sites of corresponding age. Several types of sites of Acheulean age are known in the Crimea. They are as follows: Tayasian (Kik-Koba, the lower layer; Kabazi II, the fourth layer; Zalesnok), Clactonian (7) (Chernaya Terya; Prokom, the high terrace), true Acheulean (numerous sites discovered by A. A. Shelepinsky, the East and South-West Crimea; Zaskalnaya IX, reuti-
lized flints from Zaskal'nya sites). The sites discovered by A. A. Shchepetski (the Boddarch Acheulian culture at Gladinli and A. A. Shche-
petski) can be the first candidates for a Kik-Koba industry ancestor as well as the ancestor of other Crimean Middle Palaeolithic assemblages with bifacially worked tools. The inventories of the culture of both sites do not appear to be too homogeneous, neither in time nor in space. Certain correlation can be traced be-	ween the Boddarch and Alca Koba industry and Toga sites. It applies, particularly, to the high percentage of denticulate and notched flakes, developed alternative retouching, simple, and bifacially worked leaf-like tools. The principle of ascertainment was also adopted for the determination of a supposed ancestor. Hypothetically modelled ancestral industry is characterized by the following features: low lam and IF strick; small number of bifacially worked tools; relatively large number of denticulate and notched tools; very large (relatively) number of tools with alternative retouching; high typological variability both among bifacially worked and among flake tools. The analysis of these features can be found in inventories of the true Acheulian as well as in Tayacian complexes. Consequently, as it can be seen, the search for the ancestor of the Kik-Koba industry among existing sites of the peninsula and the use of the ascendant method makes it possible to see probable origin of Kik-Koba culture in the sincrithium of true Acheulian and Tayacian traditions. The influence of the former was considerably more vigorous.

Findings of objects which were made according to two different models and cultural traditions in the context of another cultural tradition may serve as unobtrusive evidence of intercultural contacts. Speci-
ficity of the Kik-Koba tool set is manifested especially in the original composition of common types, and therefore, to trace contacts of the Kik-Koba culture is a very difficult task. Apparently, Zaskal'nya, the fourth layer, may serve as an example of such contacts. The fourth layer inventory, most of all, has the appearance of being in industry, at the same time, however, there are many differences in tool composition as in the case of Acheulian tool sets of Crimean Peninsula. It may be said, in a broad sense, that there is an affinity between the Middle Palaeolithic of the Crimea and the Russian Plain (Gladinli 1969, 1976, Lyubina 1971, Prazov 1984, Fomin 1959, 1977). Some materials from Middle Deepr and Katerinyevka of Orel, Il'ikya I and II, etc.) manifest a more detailed simi-
larities (Bodysansky 1960, Smirnov 1973, Zamatin 1954, Prazov 1977). The concept of such analogies are not clear at present. It is equally possible to assume both independent but concurrent evolution of Acheulian and certain Acheulian ancestor with following parallel development.

KIK-KOBA KULTURA I MICHOJNEN

G. A. Bondch-Osmolowski compared the Kik-Koba upper layer inventory with inventories of Okinnik, Klauenessische, Kost, and La Micoque. This comparison remains to be valid even at present. The above-mentioned notches, as well as many others of such bifacial tool hunting activity is taken into account (the concept argued by Yu. G. Kolesov - Kolosov).

The second (late) stage of the Kik-Koba culture directly precedes the time of wide spreading of Upper

PALAEOLITHIC INDUSTRIES. It requires the search for typo-

erologically similar inventories among early Upper Pa-

laceolithic sites. In the Crimea, only Syzran I, the lower layer, has a series of survival Middle Palaeolithic tools. This inventory may be deduced from each variant of the Crimean Middle Palaeolithic with bifa-

cially worked tools, including the Kik-Koba industry. The survey of Upper Palaeolithic cultures of the European part of the former Soviet Union leads to the conclusion that the main typological series of the Kik-Koba industry and archaic tools of Kostenki-Strelcekaya culture (Bader 1978, Matyukin 1990, Anisutkin 1990) are only confined to the correspondence of triangular bifacially worked points, but, in addition to it, they also consist in a number of other signs, such as: the presence of points of "poliar leaf" type, some other types of bifacially worked tools, similar forms of flake tools, wide spreading of ventral thinning, etc. However, the degree of revealed similarity is not sufficient to assert that there is a cognate relationship between the complexes in question. At the same time, the state-

ment about southern Middle Palaeolithic roots of Kostenki-Strelcekaya culture (Rogacchen 1957, Bader 1978, Amirkhanov et al. 1980) receives new confirma-

tion. Therefore, it is possible to suggest two hypoth-

oses in order to account for the supposed evolution of the Kik-Koba culture in the time which is close to the Hegelio interstadial, and namely: evolutionary transi-
tion into the Early Middle Palaeolithic and migration to remote territories.

The data concerning typologically similar Middle Palaeolithic and Kik-Koba tool inventories in the Crimea and the Russian Plain (Gladinli 1969, 1976, Lyubina 1971, Prazov 1984, Fomin 1959, 1977). Some materials from Middle Deepr and Katerinyevka of Orel, Il'ikya I and II, etc.) manifest a more detailed simi-
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REFERENCES

Overview of the inventory of the Kik-Koba culture (Bosinski 1967, Chmielwski

1969, Gabor 1976, Valoch 1988). Russian Plain sites with the tradition of bifacial working of tools find, on the one hand, analogies in European sites, and, on the other hand, in Crimean sites. These sites, along with Romanian sites, are linked together by some investi-
gators and referred to as East Micouqien. Both these regions of Micouqien extension are identical in their basic char-
acteristics, i.e. they are not monolithic but multiformal in the cultural sense and they are found within the same chronological framework. The technique of bi-
facial working of tools and a series of technical and typological correlations may serve as connecting ele-
ments. There are not enough data to talk about the so called Micouqien in the inventories of the Crimean bifacial Middle Palaeolithic. In particular, in the Kik-Koba-East Micouqien relations, the precursors of Bockstein, Klaunensi-
sche, and Königsau types are found: "Halfkei-

"Faustkeileblatter", "Faustkelle type x", and "Blatts spitzen". Typological similarity, which is well traced for numerous sites on a broad territory, may be explained by means of a whole spectrum of various causes, for example, migrations, parallel development from a genetically related line of, possibly, con-

viroverted. The Ak-Kaya industry is closer to the Micouqien complex, presumably owing to its emergence from Acheulian traditions. The influence of the former was considerably more vigorous.

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