EARLY PALAEOLITHIC ASSEMBLAGES IN TRAVERTINE, SOUTHERN KAZAKHSTAN (A VARIATION OF AN ADAPTATION MODEL)

ABSTRACT: Palaeolithic sites occurring in travertine and recorded in the piedmont zone of Central Asia as well as in some other regions of Eurasia, probably represent a specific adaptation by ancient humans to the local environment. The industrial complexes at the sites have a distinctive micro-industrial character that may be used as evidence that a major area of identical Early Palaeolithic cultures existed on the vast continent of Eurasia.

KEY WORDS: Kazakhstan – Travertine Palaeolithic – Micro-Industries

A series of Palaeolithic sites of specific character located near ascent springs (fountains) have been discovered in western Central Asia (Uzbekistan, Kazakhstan). Katur Bulak, Kulpulak, Koshkurgan I, II, Shoktas I–III sites should be mentioned as examples. Proceeding from this situation, all these multi-layered sites may be defined as "fountainal". These sites can be distinguished by the presence or absence of travertine formations. Following V.A. Ranov who suggested the term "loess Palaeolithic" for the specific Early Palaeolithic sites recorded in loess sections of Tajikistan, the term "travertine Palaeolithic" should probably be applied to the sites located in travertine (Koshkurgan, Shoktas), especially as sites of this kind are known in some other regions as well. Vértesszöllös in Hungary (Kretzoi, Dobosi 1990), Bilzingaleben in Germany (Manis, Weber 1986) and Isenna La Pineta in Italy should be mentioned among these.

The presence of the "fountainal" sites in Central Asia and some other regions supposedly serves as evidence of specific environmental conditions, under which activities of Early Palaeolithic people in the zone of piedmont plains were concentrated near sources of freshwater.

The Kulbulak site, located in the Akhangar River Basin (Uzbekistan) and during two decades investigated by M. R. Kasyrov, is one of the well-known sites of this kind. The extent of the deposits containing archeological remains is 8 m. Forty-nine cultural layers have been identified within them: Acheulian (II–XXIV), Mousterian (XXIII–IV) and Late Palaeolithic (III–I) culture bearing horizons. The earliest strata are referred to Q1. Two important points stressed by M.R. Kasyrov should be noted: 1) the specific character of the Kulbulak industry, if compared with the known Acheulian and Mousterian collections of western Central Asia and Kazakhstan, which are reflected by terms "notched/denticulated complexes" and the "Tayacian forms"; 2) the stable character of the Kulbulak industry through the time, that is, in terms of industry, Acheulian and Mousterian layers demonstrate one and the same line of evolution.

The industrial complexes obtained at Koshkurgan I, II and Shoktas I–III sites exhibit some similarities to the Kulbulak collections by many parameters, though there are some manifestations of their specific character too.

Presently, in the Koshkurgan region, on the area of
about one hundred square kilometers, seven springs surrounded by travertine have been found: three loci near the village of Koshkurgan, three loci near the village of Shoktas and one locus north of Kotbyulak village. The sites are situated in the Turkistan Region of the Chirchik Province, the Republic of Kazakhstan, on the piedmont plain, between the south-western slope of the Karatau range (the south-western margin of the Tien Shan) and the Syr Darya River. This region is characterised by the arid conditions of central Asia that are determined by the proximity of the Kyzyl Kum desert. The relief of the piedmont plain of the Karatau range (elevation 450–250 meters above sea level) is of denudation/accumulative character, with weathered surface and isolated erosion remnants of Cretaceous and Neogene rocks at watersheds and Quaternary/Holocene accumulations in local depressions (Figure 1).

Summing up the geomorphological observations, the region under study may be subdivided into two complexes of morphological features. The first one is a complex of arid/demolition low hills of the Karatau range and small knolls of penoubled heights formed by the desquamation processes of areal and linear drift, as well as by deflation and erosion caused by the seasonal river system. A complex of denudation/accumulative inclined piedmont plain belongs to the second complex of morphological features. Closer to the mountains, pebble and loam accumulations resulting from snow-melt and warm summer rains occur. Non-laminar and non-graded horizons of debris with pebbles, breccia and fine colloid outcrops or overarch them. In some places they are cut down by erosional processes with subsequent deposition of well-rounded


pebbles, gravel or sand of the channel facies. Off the
mountains, the sediments are getting more and more fine
grained, up to loamy. In some places they are overlain by
morphological features of the aeolian loess cover controlled by
very abundant vegetation. Proluvial sediments of seasonal watercourses, in addition to piedmont detritus,
are mixed with abundant redeposited aeolian material and
accumulations of perennial springs fed by groundwater.
Filtration abilities of proluvial sediments are so little that
even in small drainage basins the preluvium is of large
extent often facially passing into lacustrine deposits.
Finally, the calmer and longer is the seasonal or annual
drainage of piedmont rivers and springs, the more evident
are the traits of typical alluvial morphological features.

In the course of the investigations at Koshkurgan I site,
two perpendicular profiles have been made, with one of
them crossing the travertine ring (Figure 2). In the
profiles, streities of bluish-greyish-grey colour occur.
They are non-laminar, often with stains of iron hydroxides.
This layer was deposited due to the activity of the ascension
spring (griffon). It is overlain by the lower portion of
travertine. Travertines differ by mechanical characteristics
(firmness of cementation). In their lower part, they are
weakly cemented, though firmly cemented areas are
present. The process of their accumulation proceeded with
short intervals, which is proved by the presence of a bed
composed of clay and sand. This bed was formed when
the griffons, due to some slackening of their activity,
brought out clay material and probably pushed out below
the ground level, and thus the acting griffons became small
reservoirs.

Six stages of travertine formation have been tentatively
identified in the ascension spring of Koshkurgan. In all
appearances, there was an earlier stage during which a
travertine of different kind was formed. This travertine
comprises early Pleistocene fauna and artifacts. Several
travertine samples with travertine of quite different
appearance come from a sand lens. Bones and artifacts
are incorporated into these travertine samples. If the more
recent travertine was formed due to precipitation of
carbonates from water solution, the artifacts bearing
travertine was formed by impregnation of sandy/loamy

Early Palaeolithic Assemblages in Travertine, Southern Kazakhstan (A Variant of an Adaptation Model)


FIGURE 15. Shoktsu I. Lithic inventory from horizons 20-26, sections 1 and 2.

FIGURE 17. Shletts 1. Lithic inventory, sections 14 and 15, depth 400-420 cm. Tools.
FIGURE 18. Shokta 1. Lithic inventory, sections 14 and 15, depth 420-440 cm.

FIGURE 20. Shoktan I. Lithic inventory, sections 23 and 24, a horizon between two kinds of travertine.

FIGURE 21. Shoktan II. Lithic inventory, Core.

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1. Bitlinglchen
2. Vieresztöiti
3. Kohkurgan
4. Skokias
5. Kalteliak
6. Kuldara
7. Karatuu
8. Likhori
9. Xiaoshanliang
10. Dongguttu
11. Bahadun
12. Zamaru
13. Takamur
14. Kamakamori
15. Nokhurne

FIGURE 25. The locations of the main complexes of microindustry.

deposits by carbonate. Judging by the samples, this travertine layer in the griffon crater was destroyed by some chemical/physical processes. It is quite probable that intact spots of the old culture-bearing travertine have been preserved outside the griffon crater. Further investigations are required to record them.

Four bone samples from the sand lens have been dated by the EPR method at the Institute of Chemical Kinetics and Combustion of the Siberian Branch, Russian Academy of Sciences: 501 ± 23, 487 ± 20, 470 ± 35, 427 ± 48 ky. These dates are in line with the faunal complex identified on the basis of palaeontological remains. The so-called Kohkurgan Fauna Complex (analogous to the Taraspol Fauna Complex of East Europe) is referred to the Early Pleistocene (Mindel period). The main species of the Kohkurgan Complex that were recorded in the ascension spring are as follows: Canis lupus, Archeolacodon cf. Wusti, Equus caballus cf. mosbachensis Reich, Equus hydruntinus Reg., Dicerorhinus kirchenbergensis Jaeg., Elasmothereium sibiricum Fisch, Paracamelus gigas Schloss., Cervus sp., Bison schoetenschai Boj., Gazella sp., Ovis cf. ammon, Stenoceras sp. There is high probability that artifacts and bones are synchronous and belong to one and the same archaeological complex, especially as there are artifacts found cemented with animal bones.

Lithic artifacts revealed in the course of investigations number nearly five thousand. They represent an impressive technical hypertypological complex (Figures 3–7). This complex seems to be rather homogeneous by all main characteristics: raw material, preservation of surfaces, typology, system of primary flaking and technology of secondary treatment. Materials of various kinds were used, but mainly veined quartz, coarse-grained sandstone of grey colour, quartzite, flint, calc-sandstone and fossil wood. Nearly 70% of the artifacts were made of veined quartz and coarse-grained sandstone of the Creteaceous age. These materials were used in the state of lumps or clasts. The rest of the rocks were mainly used in the state of small pebbles from destroyed breccias of the Creteaceous age. On the whole, the industry is of micro lithic appearance; the mean size of the tools is 3–5 cm. However this is mainly determined by the technological tradition rather than by the size of the raw material. Strategy of flake production is similar to Levallois technique, though undoubtedly with many distinctive traits of its own. This method of core reduction may be defined as "the Kohkurgan variant of
Lithic artifacts are often made of obsidian, chert, and other materials. The techniques used to shape these artifacts include flaking, percussion, and grinding. These methods can be distinguished based on the presence of cortex, the thickness of the artifact, and the angle of the flakes. The study of lithic artifacts can provide important insights into the technology and social organization of past societies.

In some cases, lithic artifacts are found in association with other types of artifacts, such as metal objects, ceramics, and textiles. The presence of these artifacts can help to identify the context in which they were used, and can provide information about the social and economic activities of the people who used them.

The study of lithic artifacts is a key component of archaeological research, and is often used to reconstruct the social and economic activities of past societies. The analysis of these artifacts can provide valuable insights into the technology and social organization of past communities, and can help to better understand the development of human societies over time.


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