

Zaskal'naya V

This site is one of several in the Krasnaya Balka (Red Ravine) excavated by Yu. G. Kolosov. His basic account is contained in his book on the Belogorsk region (1983) supplemented by what is said about the site in Kolosov *et al.* (1993). Two later accounts (Kolosov and Stepanchuk, 1998, 2002) are summarized and critically evaluated by V.P. Chabai (2004). Kolosov himself summarized the palynological results, but they were also published separately by Z. P. Gubonina (1985), and they are considered to be quite crucial by Chabai in terms of the likely overall chronology for the site.

Site situation and stratigraphy

Krasnaya Balka is a V-shaped ravine cut like a wedge into the Ak-Kaya (White Cliff) massif, 7 kilometres north of Belogorsk, on the eastern bank of the river Biyuk Karasu. On the north eastern side of the ravine there is a cliff some 15 metres high, beneath which several palaeolithic sites have been discovered, including Zaskal'naya (Behind the Cliff) V. Kolosov ascertained that these sites, now in the open air, are in fact collapsed caves, some 60 metres above the present course of the river. The ravine is now dry, but in Kolosov's opinion it probably contained a watercourse during the Pleistocene.

Excavations at Zaskal'naya V commenced in 1969 with a test pit at the foot of the cliff and continued intermittently until 1981 (Kolosov, 1983). Apart from the main excavation a "trench" was opened at a distance of 15 metres down the slope, reaching a maximum extent of 43 m² (Kolosov *et al.*, 1993). In 1993-1994 Kolosov re-examined the eastern section in the main excavation, no doubt in part in connection with the collection of samples for ESR dating at that time, and in 1997 this section was re-examined for a third time (Kolosov and Stepanchuk, 2002; Chabai, 2004, 91-93). In addition, a further site was identified 15 metres down the slope from the main excavation, and given the name of "Alyoshin Grot" (Cave) (Kolosov and Stepanchuk, 1998, 2002; Chabai, 2004, 46-49). The most widely known and first published stratigraphy for the main excavation was established by the geologist V.P. Dushevskii in 1970 for the south section at the site (Kolosov, 1983, Fig. 7). Also published were the eastern and western sections (Kolosov, 1983, Figs. 8 and 10). These sections are reproduced by Chabai (2004, Fig. III-6, C, A, and B respectively). Chabai also reproduces the 1997 version of the eastern section as established by Kolosov and Stepanchuk (Chabai, 2004, Fig. III-6, D). It should be noted that in Dushevskii's first version, the lowest cultural layer present is layer IV. The lowermost layers V, VI, and VII, and the thin horizon of layer IA, were not discovered or detected until later, and are shown in the drawing of the western section.

The stratigraphy, as originally established by Kolosov and Dushevskii (Kolosov, 1983, 20-23), was described as follows in terms of lithological and cultural layers (in Arabic and Roman numerals respectively).

1. Dark grey/black topsoil. up to 15 cm depth.
2. Light grey limestone rubble forming a breccia. 15-35 cm.

3. Light grey nummulitic limestone rubble. 35-75 cm, with wedges reaching into the layer beneath.
4. Light yellow limestone sand with black root traces. 0.75-1.6 metres.
Contains cultural layers I and (as was later ascertained) IA. Layer I was 15 cm thick, in places disturbed by the wedges from above. Layer IA was 2-4 cm thick.
5. Analogous to the preceding but lighter in colour. 1.6-2.25 metres.
6. Dark brown to grey limestone sand, sharply distinct from the layers above and below, due to anthropogenic factors. 2.25-2.40 metres.
Equivalent to cultural layer II, 30-40 cm thick.
7. Dark brown lens, possibly a buried soil, identified by Kolosov as equivalent to Brorup. 2.40-2.45 metres.
8. Light yellow/grey limestone sand. 2.45-2.70 metres.
Contains cultural layer III, 20-30 cm thick.
9. Analogous to the preceding but lighter in colour. 2.70-3.0 metres.
10. Limestone sand, containing brown to black cultural layer IV, which is apparently identical to it. 3.0-3.5 metres.
11. Nummulitic limestone bedrock.

The lower part of the sequence, as it appeared in the western section, was not described in such detail, but was included in the general archaeological account (Kolosov, 1983, 95-108). Cultural layer V yellowish-grey in colour (10 cm thick) appeared directly below cultural layer IV, and cultural layer VI dark brown in colour (15 cm thick) appeared directly below that. Cultural layer VII was distinguished by a slight brown tinge and was separated from the layer above by archaeologically sterile greenish glauconitic sand (15-20 cm thick). The main concentration of finds occurred some 16 cm above bedrock.

According to Chabai's summary (2004, 91) Kolosov's account of the stratigraphy in 1993-1994 was much simplified. Lithological layers 4-6 and 8-10 were treated together as light yellow detrital sand, occurring beneath the dark grey/black humus and limestone rubble of layers 1-3. Layer 7 preserved its distinctiveness.

Chabai has also summarized the latest version of the stratigraphy given by Kolosov and Stepanchuk (2004, 91-93). As can be seen from Chabai's Fig. III-6 D, the lithology is divided into four major units A-D. A is humified loam with limestone rubble and B is light greyish loam with limestone rubble. These layers correspond approximately to layers 1 and 2 in the original account. D glauconite sand with cultural layer V at the base corresponds approximately to the same cultural layer as previously described. The remainder of the deposits come under the heading C, which is subdivided into C1-10 and intermediate deposits C3/4, C4/5, C5/6, C6/7, C8/9, and C9/10. The latter (stippled in the drawing) all correspond to "basal" detrital sediments. Cultural layer I corresponds to C1, cultural layer 1A corresponds to C4, cultural layer II corresponds to C8 (itself subdivided into three), cultural layer III corresponds to C9, and cultural layer IV corresponds to C10. In Chabai's view, this way of looking at the deposits confirms the hypothesis that the cultural layers can in no way be regarded as homogeneous, rather they are a sequence of palimpsests. The lower part of the sequence (embracing cultural layers II-V) witnesses an accumulation of cultural material which builds up more rapidly than the natural

deposits, whereas in the upper part (embracing cultural layers I and IA) the reverse is the case.

The stratigraphy of the “trench” and “Alyoshin Grot” have been described in less detail. The “trench” according to Kolosov (1983, 108-112) contained two dark brown layers with cultural material at depths of 1.1 and 1.6 metres respectively. According to Dushevskii, they were contained within a light yellow loam matrix with limestone rubble. A light brown rubble and humus horizon was on the surface, and at the base there was a heavy red-brown loam on bedrock. There was an abundant fauna (Kolosov, 1983, Fig. 23) and it was here in 1971 and 1977 in the lower cultural layer that two Neanderthal skeletal fragments were found: an occipital bone and part of a first left metacarpal. According to E.I. Danilova, they belonged to a female not more than 25 or 26 years old.

The situation at “Alyoshin Grot” as investigated by Kolosov and Stepanchuk is summarized by Chabai (2004, 17-19, 46-49, Fig. I-5C). According to him, an area of 4 square metres was excavated. There are four principal lithological layers as follows.

1. Light yellow and dark grey loams with limestone rubble and lenses of clay and glauconite sand.
2. Large limestone blocks constituting a rock fall horizon.
3. Greenish grey glauconite sand 1.70-2.20 metres thick, with lenses of clayey loam and horizons of eroded limestone. This layer also contains four archaeological horizons, all of which are at a pronounced sloping angle.
4. Layered chalk eroded from bedrock.

Chabai rejects the claim that this is a “cave”. Rather he regards it as a colluvial deposit containing material derived from cultural layers II-VII as shown in the main excavation up the slope. If so, then the situation here presumably is analogous to that revealed in the “trench”.

Archaeological characteristics

The technical and typological characteristics of the stone industries recovered from the cultural layers in the main excavation at the site were summarized by Kolosov, and their principal features may be illustrated as follows (data from Kolosov, 1983, table 6, 38-42, and Kolosov *et al.*, 1993, 73-77).

layers	tools	cores	IL	bifacial forms	sidescrapers	knives
I	241	34	0.4	22.2	26.2	16.5
IA	14	8				
II	1418	157	5.1	21.4	48.6	20.0
III	682	37	1.7	24.5	32.6	20.1
IV	1046	71	0.2	16.8	30.1	16.3
V	205	8	1.0	27.0	31.5	14.0
VI	247	97	-	23.0	36.8	21.2
VII	40	16	2.5	21.0	35.0	5.0

The totals for the tools include both complete and broken pieces as listed by Kolosov. The cores include all pre-cores and fragmentary cores as well as complete pieces. IL is the Levallois technical index, again according to the indications given by Kolosov, as are the totals for bifacially worked tools and sidescrapers. The knives include both unifacial and bifacial pieces. The grand total of all the tools from the main excavation comes to 3893 and the corresponding figure for the cores is 428. There were of course many more unretouched flakes and other debitage products. Kolosov regarded the entire inventory as representative of the Ak-Kaya culture, although he recognized that broadly speaking it could be regarded as Micoquian. He drew attention to the existence of specific forms such as knives of Klausennische, Bockstein, and Prondnik type, such as exist at Central European Micoquian sites. Raw material was abundantly available locally, and the degree of cortical retention on the blanks (often up to 50%) shows that the inhabitants were not parsimonious in their use of it. The numerous hearths suggested to Kolosov that this was a long lasting settlement site.

Chabai takes a somewhat different view. He does not deny that Zaskal'naya V (and the other sites in the vicinity) are indeed representative of an Ak-Kaya facies of the Micoquian, but he does not think that these sites are as monolithic as they have commonly been presented. The cultural layers are too thick to have been homogeneous, and they constituted palimpsests in which he detects the presence of other variants of the Crimean middle palaeolithic as well. Thus, Levallois elements typical of the Western Crimean Mousterian are detected in cultural layers II and III at Zaskal'naya V and at "Alyoshin Grot" (Chabai, 2004, 33, 76-78, 109-138) and the Starosel'e facies makes its appearance at Zaskal'naya V cultural layers I and IV (Chabai, 2004, 165-166). He considers that the comparisons to Central Europe have been somewhat over-emphasized and that "there are no reasons" to regard Central Europe as "a core region for Micoquian diffusion to the east" (Chabai, 2004, 304).

Fauna

The fauna from the main excavation was identified by K.V. Kapelist, and was shown in Table 2, Kolosov (1983) page 28, reproduced here. Totals are for cultural layers I-VII in the format NISP/MNI. The table is reproduced as printed, and there are one or two points that should be noted. The Equus total for layer III should read 20/1. The Bison priscus total for layer VI evidently should read 6/1. "CK." for Vulpes vulpes in layer VI means that one complete skeleton was found here. The fauna is clearly dominated by mammoth, horse, and saiga, indicating the predominance of anthropogenic factors, and there were large numbers of unidentified bones.

Dating

Chabai (2004, Table I-4) quotes some ESR (LU) results for cultural layers II, II, and IV at Zaskal'naya V as presented by C. McKinney and J. Rink to the 61st Annual Meeting of the Society of American Archaeology in 1996, but apparently not otherwise published. All the dates are on teeth and are as follows.

Layer II	41,800 +/- 3,100
Layer III	32,000 +/- 2,100
Layer IV	32,400 +/- 3,400

As Chabai says, there is a stratigraphic inversion here which is scarcely credible. In addition, he reports that Kolosov obtained a radiocarbon date of >50,000 BP on 1 kg of burnt bone from layer II (for which no laboratory number was given). From “Alyoshin Grot”, as reported by Chabai, Kolosov and Stepanchuk (2002) obtained a radiocarbon date of 35,910 +1,050/ -1,000 BP (GrA-13914) from a stratigraphic situation which he regards as comparable to cultural layer II at the main site. Overall, Chabai does not regard these results as satisfactory. He prefers to rely on the pollen analytical results presented by Gubonina (1985) and the chronological equivalents for the various phases recognized at the site by Gerasimenko.

Pollen analysis

In September 1978 a joint Franco-Soviet symposium took place at Ak-Kaya with the participation among others of Prof Henri de Lumley (Kolosov, 1983, fig. 4). In preparation for this event, a team led by A.A. Velichko took samples in 1977 from various places at Zaskal'naya V. In particular Z.P. Gubonina took samples for pollen analysis from the north-eastern wall of the main excavation (Gubonina, 1985, Fig. 1). Velichko cleaned up the section in two parts, A on the left with stratigraphic layers 1-6, and B on the right with stratigraphic layers 7-9. Both are shown on the left hand side of Gubonina's stratigraphic diagram. Cultural layers I-V appear in this diagram as before, but it should be noted that Velichko's numbering of the stratigraphic layers provides yet another variation on the theme. The sample numbers are listed at appropriate places down the column. It should be noted that Gubonina's samples from stratigraphic layer 4 and cultural layer IV produced no pollen. On the basis of the samples that did produce pollen, she proposed a division of the sequence into three pollen zones labeled a-c from the base, in all of which NAP was predominant.

Zone a, corresponding to stratigraphic layer 9 and cultural layer V (sample 10). NAP varia predominant, Artemisia and Chenopodiaceae not more than 30%. Relatively high AP with Pinus, Carpinus betulus, and Rhamnus. Carpinus is sufficiently common to exclude the hypothesis of long distance transport. In general, a wooded steppe, the woods consisting mainly of Carpinus.

Zone b, corresponding to stratigraphic layers 4 (lower part) and 5-8, as well as cultural layers II, III, and IV (samples 18 and 21). Sample 7 was taken immediately above cultural layer IV. NAP markedly predominant, in some cases constituting >90% of the pollen sum. In general, there was a big increase in Artemisia and Chenopodiaceae. AP, attention was drawn to the presence of Betula and Fagus orientalis. In Gubonina's view, the composition of sample 7 indicated a clear “rebound” effect after the human occupation of cultural layer IV, with a sharp increase in Chenopodiaceae, particularly the pioneer species of Chenopodium album. In general, a virtually treeless steppe is indicated.

Zone c, corresponding to stratigraphic layer 4 (upper part) and cultural layer I (sample 11). NAP marked by a sharp decrease in *Artemisia* and *Chenopodiaceae* and an increase in *varia*. Note the presence of *Polypodiaceae*, indicative of nearby woods. AP includes *Pinus*, *Betula*, and *Alnus incana*. This again is a wooded steppe.

Kolosov (1983, Table 3) includes a list of species, which must come from Gubonina, although it does not appear in her (later) article. Data is given only for samples 11, 18, 21, and 10. There are some misprints, and (by reference to Gubonina, 1985) possibly some mistakes as well.

Gubonina tried various other ways of analyzing the data, for example a consideration of the ecology of some of the plants represented by pollen at Zaskal'naya V (Gubonina, 1985, page 99). Various ecological zones are listed. She drew attention to the presence in cultural layer III of *Kochia prostrata* (a steppe indicator) together with *Betula* (a glacial relict in the Crimea). Both *Chenopodium botrys* and *Plantago lanceolata* could be regarded as weeds accompanying man.

As another experiment, she considered the climatic tolerances of selected species at the site to which was added *Genista albigia*, not actually found in the deposits, but thought to have been present in the Crimea at the time (Gubonina, 1985, page 101). On this basis, she worked out what the July temperatures will have been in cultural layer V (21°C), the point above cultural layer IV and cultural layer III (22°C), and cultural layer I (16-19°C). She concluded that the climatic variations indicated were comparatively minor, suitable to a zone of moderate aridity.

Gubonina's results have been reconsidered by Chabai in the light of the sequence established by Gerasimenko at Kabazi II (Chabai, 2004, 17-19). In his view, cultural layer V corresponds to the Krutitsa interstadial recognized at Kabazi, which is the equivalent of Brorup-Amersfoort. Alternatively this is called by Gerasimenko Priluki pl b2 or pollen zone VI at that site. Cultural layer III corresponds to pollen zone VII, otherwise known as the Udai (or Khotylevo) stadial. Cultural layer II is also characterized by cold dry steppe conditions, and in Chabai's opinion it could well correspond to Hengelo-Denekamp (Arcy). In that case, the fossil soil recognized by Kolosov in stratigraphic layer 7 would correspond to Hengelo (not Brorup). Cultural layer I, with some climatic amelioration, would then equate to Bryansk. In Chabai's view, this story is at least consistent, unlike the radiocarbon and ESR dates.

References

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P. Allsworth-Jones
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