Matuzka

The best known description of Matuzka no doubt is by Golovanova *et al*. in "*L'Anthropologie*" (1990). The site was discovered in 1985, and this article summarises the results of the excavations conducted there between 1985 and 1987. There is a later account by Golovanova *et al.* in "Rossiiskaya Arkheologiya" (1995) which carries the story on to include the excavations of 1988 and 1989. Some further details are added in this article, but for the most part it repeats the information contained in the earlier account. A few more recent details are given in the general survey by Golovanova and Doronichev (2003).

The site is on the right bank of the river Matuzka, a tributary of the river Pshekha, in the north-western Caucasus. It is 70 metres above the river and at a height of 720 metres above sea level (the figure given in Golovanova *et al.* 1995; the figure of 1200 metres mentioned in Golovanova *et al.* 1990 evidently refers to the height of the Lagonakskii plateau, on the edge of which the cave is situated). The cave faces south-south-west, is 35 metres wide at the entrance, and 40 metres from front to back (Golovanova *et al.* 1990, Fig. 3). Nesmeyanov estimates that the cave may first have been formed in the limestone plateau about 150-130,000 years ago. Successive rockfalls at the entrance have created a situation such that the lower layers in the cave tend to slope upwards in that direction, although the present ground surface has the opposite tendency, in that there are two levels, of which the outer one is lower than the inner one. 12 square metres were excavated in 1985-87, an area which was approximately doubled in 1988-89, by extending the trench out towards the entrance (Golovanova *et al.*, 1995, Fig. 2). Golovanova *et al.* (1990, Figs. 4 and 6) show the transverse profile X-Z at the back of the cave, and the longitudinal profile Z-γ, with layers 1-7 clearly marked. An extended longitudinal profile Z-Z' (Golovanova *et al.*, 1995, Fig. 6) shows newly discovered layers (8a and 8) at the base near the entrance. But in general the first published profiles are the most detailed and complete.

Stratigraphy

The stratigraphic succession is described in terms of three or four major divisions, numbered from the top down in the first account and from the bottom up in the second (the layer numbering has remained constant, counting from the top).

I.
1. Grey-black sandy soil, with some sharp-edged rubble. Mediaeval ceramics. 15-30 cm.
2. Dark-brown sandy soil, some stones covered with a yellowish crust. Maikop eneolithic. 1-17 cm.
These layers both belong to the late Holocene. There is clearly a big stratigraphic gap between them and the layers immediately beneath.

II.
3a. Yellowish-orange clayey soil, many medium and small sized stones. The fauna is already Pleistocene, including Ursus deningeri kudarensis. Up to 31 cm.
3b. Yellowish clayey soil, many stones with a yellow crust. The first Mousterian artefacts. 20-60 cm.

3c. Brown clayey soil, a few small sharp-edged stones with a brown crust. Up to 27 cm.
4a. Bright yellow sandy soil, compact in the upper part, with many small sharp-edged stones. Many large and medium stones in the middle and lower part, representing a rockfall horizon. Up to 80 cm.
4b. Brown clayey soil, a few small and medium stones, and fragments of fallen stalactites. In the southern part of the section, nearer to the entrance, there are many ashy lenses, and the soil becomes grey. Up to 35 cm. This layer has a radiocarbon date of 34,200±1410 BP (LU-3692).
4c. Brown clayey soil, with many large and small boulders, showing signs of rolling. Up to 20 cm.
4d. Stones, boulders, and rubble, with signs of rolling. Fine grey-brown sandy soil, very loose. The lower surfaces of the stones are commonly covered with a yellow or white crust. 10-80 cm.
There is an uneven boundary to the layer beneath, indicative of another stratigraphic hiatus. Note the tongue of material which pushes into these deposits from below (shown between d and γ on the longitudinal profile).

III.
5. Bright yellow clayey soil, with a great deal of sharp-edged rubble and boulders, though some have porous or altered surfaces. 20-70 cm.
5a. Reddish-brown clayey soil with sharp-edged medium and small sized rubble. 10 cm.
5b. A lens of yellow clayey soil with much sharp-edged rubble.
6. Reddish-brown clayey soil, compact, with medium and small sized rubble, as well as very large boulders indicative of a rockfall horizon. Some of the rocks are covered with black crusts, which may be phosphatic concretions. 55 cm-1 metre.

IV.
7. Yellow clayey soil with a few heavily weathered medium and large sized stones. Some have black possibly phosphatic crusts. 90-95 cm.
8a. Reddish-orange clayey soil with a little rubble. 10-15 cm.
8. A horizon of unknown thickness (at least 2 metres) with enormous limestone blocks. Bedrock.

Archaeology and Anthropology

Three different kinds of Middle Palaeolithic industry have been defined.

Layers 3b and 4a. A Levallois blade industry with some denticulates. Compared with the assemblages in the Khosta area (or, Khostinian).
Layers 4b and 4c. A Typical Mousterian, non-Levallois, with predominant sidescrapers and Mousterian points. Compared with the Gubs culture (or, now Micoquian, according to Golovanova and Doronichev). No cores, reflecting the fact that there were no nearby raw material sources, and reinforcing the suggestion that this was a hunting camp rather than a habitation site.
Layers 5, 5a, 6, and 7. Better defined in 1995 than in 1990 because the number of artefacts has increased to 127, but still not placed into any known regional category. Different from the later industries, in that there are two worked-out cores, as well as sidescrapers, endscrapers, unfinished leafpoints, and two choppers. 46.5% of the

collection consists of flakes, and there are some pebbles which may have served as hammerstones.

A tooth has been found in layer 5b. This is a lingual fragment of an upper right lateral incisor, characterised by A.A. Zubov as typical for H. sapiens neanderthalensis.

Fauna

Described by G.F. Baryshnikov (1990, Table 1 and Figure 10). The listed mammals belong to 7 orders and 40 species. The small animal bones are regarded as having come from owl pellets, whereas the large animal bones (with NISP/MNI) are regarded as "kitchen debris". In general, both steppe and forest-steppe species are present. Cave bear (Ursus deningeri kudarensis) is clearly predominant among the large mammals (86.5%). This type of cave bear is common in the Transcaucasus, but this is the first time it has been met with in an archaeological context in the North Caucasus. The quantitative study of the molars indicates that there were many old individuals, suggesting that this was basically a cave bear den, visited by people at irregular intervals. Cave bears have also been found in abundance at Malaya Vorontsovskaya and Akhshtyr, whereas at Il'skaya, Monasheskaya, and Barakaevskaya, they are rare or absent, being replaced by bison.

In general, it is said that the mammals from the upper layers compare with those from Kudaro I layer 3, and are indicative of a dry period. Chionomys gud is said to be an archaic species (as known at Treugol'naya cave in Karachaevo-Cherkessk) and the antiquity of the basal layers is confirmed by the finding of Dicerorhinus remains in layer 6. A more detailed environmental and chronological scheme is suggested by the study of the teeth of the small mammals (1990, Fig. 10). On this basis, a sequence of 11 faunal phases has been worked out. A mountain meadow environment is suggested for phases 11, 8, and 5; a mountain steppe environment for phases 8, 5, and 4; and a mountain forest environment for phases 8 and 7. There is a general tendency for the climate to become more arid over time. Phase 1 at the base (with Apodemus and Dryomys) is generally warm. This conclusion is supported by the finding in layer 7 of a large marmot, and also of warmth loving bats (identified by B. Voloshina): Rhinologhus ferrumeginum and Miniopterus schreiberi. Baryshnikov concludes that layer 7 (or at least its lower part) may well date back to the last interglacial.

Other, non-mammal, fauna have briefly been mentioned. Amphibians and reptiles have been found in all layers, particularly Bufo sp. and Lacerta sp. In layers 5-7 there were some salmon vertebrae fragments. The birds belong almost exclusively to small members of the sparrow family.

Palynology

In 1986 Levkovskaya took 17 samples from the site, and it seems that these provided the basis for both published accounts (1990 and 1995). A further 100 samples were taken in 1988. In the first version (1990, Table 2) Levkovskaya suggested that there were 14 phytophases at the site, layer 6 corresponding to phase 1. In the second version (1995, Table 2) it was suggested that there were 15 such phases, since layer 7 at the base now corresponded to phase 1, all other numbers being thus

affected. The second system of numeration will be adopted here. The layers were also grouped into four major divisions, corresponding to those mentioned above, but starting from the base up.

At the present time, the cave is in an area of broad leafed woods, which include exotics such as Buxus colchica, Ilex colchica, Rucus, and Philithes scolopendrium. Conifers, including Pinus sylvestris, occur only on steep slopes above the cave.

I.
Layer 7. Phytophase 1. Some indicators of lower mountain belt, including Corylus and Quercus, plus Anagramma Link and exotics (UID). NAP Ericaceae and Poaceae. Agreement with the faunal record that this may equate with the last interglacial.

II.
Layer 6. Phytophase 2. AP 43%, NAP 57%. AP includes Buxus, Ulmus carpinifolia, Alnus. NAP mesophyte varia: Iris, Plantago, Utricularia, Fabaceae, Lamiaceae, Polygonum, Cariophyllaceae; on dry slopes Artemisia, Chenopodiaceae, Plumbago. Warm forest-steppe.
Layer 5b, 5a. no pollen.
Layer 5. Phytophases 3 and 4.
3: AP 54%, NAP 45%. Forests similar to the preceding, Ulmus carpinifolia, Alnus, Corylus, a little Buxus. NAP mesophyte varia, dominant Chenopodiaceae. Drier, but still a warm forest-steppe.
4: AP 23%, NAP 76%. Ulmus carpinifolia, Alnus, Populus. Exotics Juglans and Zelkova, their last occurrence in the sequence. NAP: varia. Much chemical decomposition of pollens, an indication of percolating mineralised water. Steppe.

III.
Layers 4d, 4c. Phytophase 5. AP 61% (bottom) 45% (top) NAP 24% (bottom) 35% (top). Dominant Pinus sylvestris, no Abies or Picea, rare Fagus. NAP mesophyte varia. Polypodiaceae. High mountain forests, drier and colder than at present. No signs of chemical decomposition of pollens.
Layer 4b. Phytophase 6. AP 37% NAP 44%. Quercus, Ulmus, Alnus, Abies, Pinus. NAP includes steppe elements. Mixed forest-steppe.
Layer 4a (lower part). Phytophase 7. AP 61% NAP 26%. Pinus, Betula, Alnus, Carpinus. NAP open spaces dominated by Poaceae. Almost all pollen grains covered by colloids. Cold, high mountain forests.
Layer 4a (mid part). Phytophase 8. pollen rare.
Layers 4a/3c. Phytophase 9. AP 86% NAP 3%. Broad leafed forests including Ulmus and Alnus. A short lived warm episode with higher temperatures at the contact of the two layers.

Layer 3c. Phytophase 10. no pollen.
Layer 3b. Phytophase 11. AP 30% NAP 70%. Pinus, Alnus. NAP mesophyte varia, Polemoniaceae. Equivalent to the lower part of the Sub-Alpine belt.
Layer 3a. Phytophase 12. pollen and spores rare. Ephedra (also Woodsia alpina) an indication that there was an absence of soil on the mountain slopes. Alpine belt.
Layers 3/2. Phytophase 13. AP 31% NAP 36%. AP pollens underdeveloped. On the forest margin in the Sub-Alpine belt.

IV.
Layer 2. Phytophase 14. AP 47% NAP 30%. Tilia and other deciduous trees, some Abies. Broad leafed forests characteristic of the lower mountain slopes.
Layer 1. Phytophase 15. AP 66% NAP 20%. Alnus, Corylus, Carpinus, Fagus, Quercus. Broad leafed forests similar to the present.

Some dating implications are discussed. The upper part of layer 5 at Matuzka (with Juglans and Zelkova) (Phytophase 4) is compared to the crust which seals the Mousterian deposits at Barakaevskaya. Exotics disappeared after this time, so (it is considered) it may correspond to a cold snap at the end of "Würm 1". There are said to be alternative dates for this episode of 72-58 ka or 57-50 ka years ago, so that may not be too helpful. Liubin considers that the crust corresponds to Brörup. There is apparently a Th/U date of 44,000 for layer 3 at Kudaro I which is compared to the upper Mousterian layers at Matuzka on faunal grounds. In Levkovskaya's opinion, the pollen data for Matuzka also support a possible correlation between layer 3b and/or 3a (Phytophases 11 and 12) with Kudaro I layer 3. The hiatus between layers 3a and 2 means that there is no equivalent to the Upper Palaeolithic at this site, and thus to the deposits with a very dry cold environment which were identified by Levkovskaya at Gubs Rockshelter No. 1. In sum, it is considered that layers 3 and 4 at Matuzka may date from about 25 (?) to c. 60-70 ka years ago, and that layers 5, 6, and (at least) the upper part of 7 may date from c. 60-70 ka to 100-120 ka years ago.

Comparison with Levkovskaya's Atlas

The diagram in the Atlas lists 36 samples, so clearly some have been added, presumably from the 1988 batch. There are also now 20 pollen zones, numbered from the top down, and 9 thermomers as well as stress zones A-D. Since the stratigraphic layers have not changed, it should not be difficult to work out the relationship between the new scheme and the published one. We have no information on the Blake palaeomagnetic episode, identified by Pospelova in layer 7, and an enquiry should be made about that.

References

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Captions

1. Plan of the site. Scale in metres. Key: 1: 1985 excavations; 2: 1986 excavations; 3: 1987 excavations; 4: edge of upper level in the cave; 5: rock fall; 6: drip line; 7: surface level elevations. (1990, Fig. 3).

2. Transverse section XZ at back of cave. Key: 1: boundary between layers. 2: lower boundary. 3: layer numbering. 4: ashy levels. 5: lenses of burnt earth. 6: blue colouration in 3c. 7: stones. (1990, Fig. 4).

3. Longitudinal section Zγ. Key: 1 boundary between layers. 2: layer numbering. 3: ashy levels. 4: stones. 5: section numbering. 6: lower boundary. (1990, Fig. 6).

4. Mammal species and numbers (for hunted species NISP/MNI) per layer. (1990, Table 1).

5. Small mammal remains from Matuzka, relative numbers of teeth per layer, with faunal phases 1-11. (1990, Fig. 10).

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