Mezmaiskaya

Two articles by Golovanova *et al.* (1998, 1999) describe the site in fair detail, and it is also mentioned in more general surveys (Baryshnikov and Hoffecker, 1994; Golovanova and Doronichev, 2003). The DNA analysis is reported by Ovchinnikov *et al.* (2000).

Mezmaiskaya cave is situated at a height of 1310 metres above sea level on the right bank of the Sukhoi Kurdzhips, some 150 metres above the river bed. It was excavated by Golovanova in 1987-1992, as shown in the attached plan of the cave (Golovanova *et al.*, 1998, Fig. 4). The cave is 35 metres in length and about 25 metres in width at the entrance. Two longitudinal stratigraphic profiles complement each other, in that F-D shows the lower layers whereas Z-X does not, but the latter does indicate where the human skeletal remains were found (Golovanova *et al.*, 1998, Fig. 5; Golovanova *et al.*, 1999, Fig. 2).

Stratigraphy

The layer succession is described as follows, from top to bottom.

1. Dark grey sandy loam with weathered rubble. Holocene. There is a stratigraphic hiatus at the base, marked by signs of erosion. Up to 0.6 m.
1A-1B-1C. Light brown loam with a little rubble, not present in all parts of the cave. Up to 0.5 m. Layer 1A produced some Gravette points, whereas layer 1C is said to have "typical Early Upper Palaeolithic" artefacts. There is an AMS date from 1C on wood charcoal of 32,010±250 BP (Beta-113536).
2. Yellowish brown clay with weathered rubble, not present in all parts of the cave. Up to 0.5 m. The first Mousterian artefacts, said to be re-deposited. Radiocarbon date on bone 32,230±720 BP (LE-4735).
2A. Brownish violet clay with corroded rubble, not present in all parts of the cave. Up to 0.4 m. Mousterian. There are two radiocarbon dates on burned bone, 35,760±400 (Beta-53896/CAMS-2999) and 36,280±540 BP (Beta-53897/ETH-9817).
2B-1. Yellow clay, re-deposited, not present in all parts of the cave. Up to 0.2 m.
2B-2. Dark brown clay, discordant with the layers beneath. Up to 0.2 m.
2B-3. Dark yellow clay, with a considerable amount of rubble. Up to 0.5 m.
2B-4. Brown clay, with much corroded rubble. Up to 0.5 m.
Layers 2B 1-4 are all said to have Mousterian artefacts, and 24 human cranial fragments were found here in square N-19. The age at death of this individual has been determined as from 1 to 2 years. For 2B (not subdivided) there is a radiocarbon date on bone of 40,660±1600 BP (LE-3599).
3. Clay with occasional angular rocks. 0.6 m. Mousterian bone and stone tools.
Layers 2 through to 3 produced a good deal of phosphate and organic material, which is taken as a sign of human activity. There is a radiocarbon date on bone for layer 3 of >45,000 BP (LE-3841).
In 1993 in square M-26 the skeleton of an infant was found at the base of layer 3. This is near the cave entrance, not at a great depth, at a point where layer 1 lies unconformably above layer 3. It is supposed that this was an intentional burial, although no trace of a burial pit was found. There is no further sign of human habitation below this point.

4. A rockfall horizon with light yellow clay in the interstices. A reddish-yellow zone at the base of this layer may reflect a forest soil formation during the preceding stage.
5. Yellowish-brown clay, with a considerable amount of rubble. Phosphate content much reduced. Up to 0.4 m.
6. Compact light yellow clay and calcareous sand but no rubble. 0.1 m.
7. Compact brown clay, with no rubble, but some animal bones. Dug to a depth of 0.4 m.

The Neanderthal infant

The partial skeleton found at the base of layer 3 was well preserved. The remains included 14 dental crowns derived from deciduous teeth, and the age at death of the infant has been determined as from a foetus of 7 months to a neonate of 2 months. On morphological grounds it was said to be "an archaic human with clear affinities to the Neaderthals of Western and Central Europe" (Golovanova *et al.*, 1999). Mt DNA analysis has been undertaken using one of the child's ribs. The DNA extraction was carried out in two independent laboratories, Glasgow and Stockholm. The DNA sequence was shown to be similar to that previously obtained for the Neanderthal type specimen from Feldhofer cave, and phylogenetic analysis placed "the two Neanderthals … together in a clade that is distinct from modern humans" (Ovchinnikov *et al.*, 2000). The high collagen yield made it possible to obtain an AMS date on this bone of 29,195±965 BP (Ua-14512). In remarking upon the difference between this date and the two previously obtained dates for layers 2B and 3, Ovchinnikov and his colleagues state that "the value obtained from the bone itself rather than from associated material" should be regarded as more reliable. They also state that, "The most likely reason for the discrepancy is the incorrect identification of the poorly defined layers in this area of the cave" (Ovchinnikov *et al.*, 2000: 491). Since Golovanova, the excavator, was not a co-author of their paper, it is not known what her standpoint on this matter would be.

Archaeology

There is no detailed information on the two variants of the Upper Palaeolithic from layers 1A and 1C. Attention has centred on the Middle Palaeolithic from layers 2, 2A, 2B 1-4, and 3 (Golovanova *et al.*, 1999, Table 2). The industry from layers 2 and 2A is regarded as an equivalent of the "Gubs Mousterian culture" as recognised at Monasheskaya, Barakaevskaya, and Gubs Rockshelter No. 1. The industry from layers 2B and 3 has a considerable number of bifacial tools, including characteristic Micoquian types, and is claimed by Golovanova and Doronichev to form a constituent part of the East European Micoquian. Much use was made of rather poor quality local flint, but some better quality flint was evidently brought from the river Pshekha, and there was a little obsidian and sandstone.

Fauna

The occurrence of medium-sized and large mammal remains from the 1987-1989 excavations (layers 1-7) is recorded in Golovanova *et al.*, 1999 (Table 3). This table is based on identifiable bones, but it should be noted that rather more than half the total found in the cave could not in fact be identified, due to fragmentation. The importance of Bison priscus (Steppe bison), Capra caucasica (Caucasian goat), and

Ovis orientalis (Asiatic mouflon), is clear, and as Baryshnikov points out this is partly a reflection of the high mountain environment rather than dietary preference as such. Nonetheless, all the larger species are regarded as the result of human hunting activities. The environmental interpretation is borne out by the identified bird bones. These include Pyrrhocorax pyrrhocorax and graculus, presently characteristic of the Alpine belt in the Caucasus.

The results for the small mammals have not been tabulated, but some of the species present have been listed. These also include Alpine indicators such as Marmota palaeocaucasica, Prometheomys sp., Chionomys nivalis, Spalax, Cricetus, Cricetulus, Spermophilus sp., and Microtis arvalis. There are rare forest species, Apodemus sp., Chionomys roberti, and Pitymys sp. These are largely confined to layer 5, and indicate a warm environment at that time. By contrast, there is a predominance of Alpine forms in layer 4, 2A, and 2. The small mammal fauna in layers 3 and 2B is mixed, and therefore presumably indicates at least a more temperate environment.

Palynology

Some palynological results (no doubt from Levkovskaya) have been indicated in Golovanova *et al.* (1998) but they have not been quantified or tabulated. 8 samples were taken from layers 1, 2, 2A, and 2B 1-4.

In all samples, NAP was predominant. 55 taxa were identified, including: Amaranthus, Apiaceae (3 species), Brassicaceae, Butomus, Campanula, Caryophyllaceae, Dipsacaceae, Ephedra, Erythronium, Fabaceae (5 species, including rifolium), Geranium, Helianthemum, Iridaceae, Lamiaceae, Liliaceae (including Colchicum), Lythraceae, Lathreae, Malvaceae, Myriophyllum, Papaveraceae (Papaver cf. lapponicum), Polygonaceae (including Rumex), Polygonum (2 species), Fagopyrum, Pirolaceae, Thalictrum, Pollictrum, Polemonium, Rhododendron, Rosaceae (including Potentilla), Plantago, and 16 UID. In addition, the following were present: Carex, Gramineae, horsetail, green mosses, Sphagnum, ferns, Pteridium, Botrychium, and Ophioglossum; plus Asteraceae, Artemisia, Chenopodiaceae, and Cichoriaceae.

In general, AP was low (<22%), reaching 30.3% only in layer 2A. In general, for layer 2, the following species are mentioned: oak, maple, dogwood, elm, yew, willow, alder, beech, hornbeam, birch, walnut, pine, and fir. In layer 1, Picea appears for the first time. This is the dominant tree in the cave surroundings today. Also in layer 1 are found: fir, pine, juniper, alder, oak, elm, and Rosaceae.

It is claimed that some changes over time can be observed, although it was xerophil steppes that were predominant throughout. Layer 2A is different from the others in having a relatively high percentage of Carex, as well as underdeveloped and dwarf pollens indicative of lowered temperatures. The (paradoxical?) AP maximum in this layer is explained by the “less acid” climate or by the expansion of open spaces around the cave. On the basis of modern analogies, it is supposed that pollen transported from lower down may well have accumulated in such areas (Golovanova *et al.*, 1998: 62).

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Captions

Plan of Mezmaiskaya cave. 1: rock. 2: stalagmites. 3: stones. 4: 1988 excavations. 5: 1987 test pit. 6: 1987 excavations. 7: 1990 excavations. 8: 1991-1992 excavations. 9: 1993 N1 excavations. 12: grid squares. 13: surface measurements. 14: datum point. [10, 11 not listed] (After Golovanova *et al.*, 1998, Fig. 4).

Stratigraphy of Mezmaiskaya cave. A: Longitudinal profile of the cave with excavation limits. B: Longitudinal cross-section F-D. 1: rock. 2: uncemented sedimentation. 3: excavation limits. 4: data measuring points. 5: relative height above river Sukhoi Kurdzhips. 6: boundary of layers. 7: "0" datum. 8: gravel and boulders. 9: charcoal. 10: weathered limestone debris. 11: krotovinas. 12: reworked part of layer (After Golovanova *et al.*, 1998, Fig. 5).

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