

Biriuchya Balka

The initial information which we had available concerning this group of sites was contained in A.E. Matiukhin's article in *L'Anthropologie* (1998), and the first summary was written on that basis. This data base was supplemented and modified thanks to information received in the field in 2004. In the first place, two new sections at Biriuchya Balka 2 and 1a were prepared and drawn by Matiukhin, and the samples taken were recorded by reference to these new sections. Secondly, he gave us details of 6 new AMS dates for the sites, and the text of a manuscript by Guskova and Iosifidi in which their reasons for detecting the Kargapolovo excursion at Biriuchya Balka 2 were explained (see below). In addition, we have now received copies of some more recent articles by Matiukhin (2002, 2003, 2004 a and b) which add significantly to the published information about these sites. The communication which he gave to the Kostenki conference in 2004 mentioned the radiocarbon dates and their context. The section of Biriuchya Balka 2 which he published in 2002 (in ed. Sinitsyn et al., Figure 2, p. 85) indicated the position of the archaeological horizons in relation to the identified geological layers. [The only confusing point here being that archaeological horizon 3a is placed in geological layer 5 rather than 3, though elsewhere it is said or implied that it is in layer 3 above archaeological horizon 3]. The revised account below takes account of all this information as far as possible.

Biriuchya Balka (Konstantinov region, Rostov district, near the village of Kremenskoi) is a ravine on the left (east) bank of the Severskii Donets River, along which until recently a stream did flow. 8 sites have been investigated over a distance of about 2.5 km on the left (south) side of this ravine (*L'Anthropologie* 1998 Fig. 2: the numbering of the sites on the map does not correspond to the numbers used by the excavator A.E. Matiukhin, thus for example map numbered site 6 = excavated site 2). In general, the deposits are said to consist of marl overlain by loamy layers 6-13 m thick. The first site was discovered in 1976 by N.D. Praslov, the remainder have been investigated by Matiukhin in 1987-1993 and 1997. The principal site, and that which has been reported in most detail, is Biriuchya 2 (*L'Anthropologie* 1998 Fig. 3). The geology of this section, and also Biriuchya 2b (5 on the map), has been studied by S.V. Khrutskii (Voronezh State University of Agronomy), but details of his study are not currently available. The palynology of the upper part of the section has also been studied by G.M. Levkovskaya (St Petersburg Institute of Archaeology). She identified 9 palynological horizons, but again her report is not currently available; the summary of her work given by Matiukhin is not complete, and the correlation with his layers is not entirely clear.

Biriuchya Balka 2 Stratigraphy

The site has been excavated over an area of 70 square metres. The stratigraphic succession in the eastern section as described by Matiukhin (1998) was as follows. His layer numbering has been observed. The total thickness of deposits was about 9.5 metres. In terms of the measurements written at the side of the section, it extended from 300 to 1250 cm, which implies that zero is situated at a point somewhere higher up. In his account published in 1998, there were said to be 5 Upper Palaeolithic levels and 5 Middle Palaeolithic levels, but this has since been revised (see below). The radiocarbon dates and information about the archaeological levels subsequently published by Matiukhin is included in this description.

- (1) Present day soil. Neolithic. Archaeological level 1.
- (2) Light brown loam (suglinok). Upper Palaeolithic level 2. The Upper Palaeolithic level contains a few animal bones but no traces of hearths. There are some burnt flints. Some also have traces of polishing (due to natural factors). Pollen predominantly NAP, indicative of steppe conditions.
- (3) Brownish loam, irregular lower boundary, implied solifluction. Industry is described as Upper Palaeolithic, one of the richest horizons, 10-15 cm thick. As already mentioned, the levels here should be 3a and 3. Some artefacts are patinated on one side only, some pseudo-retouch. Pollen said to indicate two phases, moving from predominantly AP (same species as in layer 6, plus birch) to predominantly NAP, grasses and shrubs. There are two AMS dates with indicated depths, one on charcoal of 26630 ± 230 uncal BP (Beta-183588) from a depth of 444 cm associated with archaeological horizon 3a, and one on bone of 31560 ± 200 uncal BP (Beta-183589) from a depth of 540 cm associated with archaeological horizon 3. There is also mention of a third AMS date on bone from layer 3 of 26390 ± 200 uncal BP (Beta-177776), though no detailed provenance is recorded (Matiukhin 2004b).
- (4) Yellowish loam.
- (5) Yellowish loam. Industry is Upper Palaeolithic, possibly with two subdivisions [as already mentioned, these were referred to as levels 3 a and b in 2002]. No indication concerning what the lenses in this layer might represent. Pollen predominantly NAP.
- (6) Brownish grey loam. Archaeological level 3v. In 1998, this was said to be Upper Palaeolithic, one of the richest horizons, and the first at this particular site. Artefacts show some signs of rolling, with pseudo-retouch. Nonetheless, Matiukhin states that (in general) there has been no significant movement of artefacts at Biriuchya Balka, and that this has been demonstrated by refitting. Fossil soil, slightly displaced, was said to equate with the Bryansk interstadial (27-30 kyrs BP), although it is not clear whether this identification would now be maintained in view of the radiocarbon dates and the reclassification which the industry has undergone. Pollen is predominantly AP, with deciduous species, including elm, alder, and hazel. In 2002, Matiukhin listed 7177 artefacts from level 3v (2002, Table 3.5) of which 44 were tools, but he stated that “the cultural appurtenance of this industry remains unclear in view of the absence of diagnostic forms, in particular complete bifacial projectile points” (2002, 97). In 2004, he was prepared to list it as a Mousterian level with a question mark (2004b, 112).
- (7) Brown loam. Archaeological levels 4' and 4. Both Middle Palaeolithic. There is an AMS date (Beta-183590) on bone of 40750 ± 970 uncal BP at a depth of 860 cm from zero, which (in terms of the depths written at the side of the section) should correspond to the top of this layer and is said to be associated with level 4'. The archaeological levels contain some animal bone fragments (almost entirely bison) and traces of hearths.

(8) Very thin lenses of humic clay, within (7), said to represent a partially displaced fossil soil. A supposedly ‘too young’ ¹⁴C date on bone of 30330 ± 360 uncal BP (Beta-183591) has come from a depth of 1050 cm in this layer.

(9) and (11) Marshy alluvial deposits, with intercalated limestone rubble horizons (10) and (12). Three Middle Palaeolithic levels were identified in layers 9, 10, and 11, labelled 5, 5b, and 5v. In layer 10, Middle Palaeolithic level 5b is 70-80 cm thick, and contains some traces of hearths. The artefacts here and in the level beneath are slightly worn. Both contain some Levallois flakes. There is a palaeomagnetic reading at a depth of 1190 cm from zero, which (in terms of the depths written at the side of the section) corresponds to layer 11 (Middle Palaeolithic level 5v). The reading corresponds to Kargapolovo and is estimated at 46 kyrs BP (see report by Guskova and Iosifidi, below).

(13) Marl (weathered limestone) bedrock.

Revised Biriuchya Balka 2 stratigraphy based on 2004 excavations

See the new section from 2004 (figure **). Layers (1) to (7) and (9) remain as before, including layer (6) which is thought to represent a fossil soil horizon. Layer (8) is much more substantial. Rather than being lenses of a partially displaced fossil soil it is now thought to be an in situ fossil soil. The new layer (10) takes in what were previously layers 10, 11 and 12. The line of rubble in the new section is thought to equate with the previous layer 12, hence upper 10 (2004) equates with layers 10 and 11 (*L'Anthropologie*) whilst lower 10 (2004) has no direct comparable deposit in the previously published section. The situation can be summarised as follows:

<i>L'Anthropologie</i> article	2004 section
1: Present day soil. Arch horizon 1	1: Present day soil
2: Light brown loam, Upper Palaeolithic horizon 2	2: Brownish-grey loam, Upper Palaeolithic horizon 2
3: Brown loam, rich Upper Palaeolithic horizons 3a and 3	3: Light brown loam, rich Upper Palaeolithic horizons 3a and 3
4: Yellowish loam	4: Yellowish loam
5: Yellowish loam, Upper Palaeolithic – possibly two divisions	5: Yellowish brown loam colluvium
6: Brownish grey loam, fossil soil, Upper Palaeolithic horizon 3v	6: Brownish grey loam, fossil soil, Middle Palaeolithic (?) horizon 3v
7: Brown loam, two Middle Palaeolithic horizons, 4' and 4	7: Brown loam, two Middle Palaeolithic horizons towards base
8: Very thin humic clay lenses	8: Humified loam soil, Middle Palaeolithic horizon
9: Alluvium, Middle Palaeolithic horizon 5	9: Grey alluvium, Middle Palaeolithic horizon
10: Rubble, Middle Palaeolithic horizon 5b	10 Upper: Greenish alluvium with Middle Palaeolithic tools
11: Alluvium, Middle Palaeolithic horizon 5v	
	Limestone Rubble lens in layer 10

12: Limestone Rubble	10 Lower: Greenish alluvium with Middle Palaeolithic tools
13: Marl (weathered limestone) bedrock	Not observed

Biriuchya Balka 1a

Mapped site 3. In 1998, no detailed description of stratigraphy. Section 10 metres thick. Upper deposits similar to Biriuchya 2 in general. Five Upper Palaeolithic levels in layers 5, 6, and 8. Some traces of pseudo-retouch. Not much fauna, but there is mention of a bison mandible at one point. No marshy alluvial unit at the base. But there is a yellow and brown clayey soil with a marl crust covering Middle Palaeolithic artefacts. These constitute two levels in two layers. Level 4 (layer 16) is in situ. Level 5 (layer 18) has been displaced in limestone rubble.

Revised Biriuchya Balka 1a stratigraphy based on 2004 excavations

See the section drawing from 2004 (figure **). The description of the sequence, following indications by Matiukhin, is as follows.

- (1) Recent soil
- (2) Brownish grey loam
- (3) Light brown loam, Upper Palaeolithic horizon with a supposedly 'too old' AMS date on bone of 36000 ± 280 uncal BP (Beta-183587) at a depth of 376 cm.
- (4) Yellowish loam, sterile layer
- (5) Light brown loam, sterile layer
- (6) Brown loam, below 900 cm a few Middle Palaeolithic stone tools are encountered.
- (7) Limestone rubble layer, within layer 6, with large nodules of black flint. Matiukhin thinks that this correlates with the upper rubble layer at Biriuchya Balka 2 (layer 10 in *L'Anthropologie* article). Associated with a small collection of fresh non-weathered Middle Palaeolithic stone tools.

Some more details were given of the archaeological succession by Matiukhin (2004b). There were said to be six Upper Palaeolithic horizons and three Middle Palaeolithic. Upper Palaeolithic layers 3 and 3a respectively contained more than 10,000 and more than 15,000 artefacts, though the proportion of tools as at Biriuchya Balka 2 was small. Matiukhin stated that he no longer linked the Upper Palaeolithic at these sites with the Streletskaya culture (as at Kostenki) but considered them to be part of a more general (probably convergent) phenomenon.

Biriuchya Balka 1b

Mapped site 2. No detailed description of stratigraphy, said to be similar to 1a. 16 square metres excavated. Upper Palaeolithic level situated in layer 7, 2.8 metres from the surface, at the top of a brownish clayey fossil soil. Traces of hearths. Many burnt flints.

Biriuchya Balka 1v

Mapped site 1. Excavated to 7 metres depth without reaching bedrock (L'Anthropologie 1998, section at Fig. 12). 18 square metres excavated. Section shows seven layers, no detailed description, said to be similar to the preceding. Layer 6 is a fossil soil, equated with Bryansk. The lower boundary is uneven; sand, gravel, and pebbles indicate some displacement. Layer 7 is a brown loam, containing Upper Palaeolithic artefacts. Since this level is below the fossil soil, it is considered to be older than the earliest Upper Palaeolithic in layer 6 (?) at Biriuchya Balka 2, and therefore the oldest at this group of sites as a whole. Some of the tools are patinated on one side only, and there is some polishing (due to natural causes) and some pseudo-retouch. There are many burnt flints.

Other sites

Site 1 (mapped 4) was the one excavated by Praslov in 1976. Three sparse Upper Palaeolithic levels were found. Site 2a (mapped 7) has one Upper Palaeolithic and one Middle Palaeolithic level. Site 2b (mapped 5) has a 13 metre thick profile, with 8 archaeological levels, 6 Upper Palaeolithic and 2 Middle Palaeolithic. This is the second profile that has been studied by S.V. Khrutskii. Site 3 (mapped 8; the only one not in the side of the ravine) was excavated by means of three test pits, in an endeavour to find the source of the raw material used at the sites. One Upper Palaeolithic and one Middle Palaeolithic level.

General characterisation of the sites

All of the localities are regarded as workshop rather than habitation sites, despite the fact that the local flint is of rather poor quality. Finished tools account for only 1% of the inventory. In so far as cultural affinities can be discerned, the presence of triangular shaped points originally suggested a comparison between the Upper Palaeolithic assemblages and the Streletskaia culture. This was first suggested by Matiukhin for Biriuchya Balka sites 2 and 1v at least, although he left the question open for sites 1a and 1b, and, as mentioned above, he has now become more sceptical about this anyway. No specific comparisons are made with regard to the Middle Palaeolithic, although the presence of the Levallois technique is noteworthy.

Comments

From the archaeological point of view, it is important that we have superposition of Upper and Middle Palaeolithic at these sites (Biriuchya Balka 2, 1a, 2a, 2b, and 3). This is not so common in the Russian plain. At Kostenki for example there is no Middle Palaeolithic, and the majority of the cave sites we are dealing with in the Caucasus and the Crimea contain only Middle Palaeolithic deposits. It is a weakness, as the excavator says, that so little has yet been done at these sites from a geological or palaeoenvironmental point of view. It is obviously important that we should try to get a date for the basal deposits with Middle Palaeolithic levels, but a date for the initial Upper Palaeolithic would also be useful. The supposed Bryansk fossil soil seems to be a significant stratigraphic marker at two sites (Biriuchya Balka 2 and 1v) at least, and the earliest Upper Palaeolithic here marks a *terminus ante quem* for our study.

First version 12 June 2004; final revision 26 August 2005.