

THE AGE OF UPPER PALEOLITHIC SITES IN THE MIDDLE DNEIPER RIVER BASIN OF EASTERN EUROPE

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ABSTRACT. This paper discusses the comparative chronology of Upper Paleolithic sites in the Middle Dnieper River basin, based on archaeological and radiocarbon evidence. Three chronological periods of the development of the Upper Paleolithic are distinguished in this area. According to the data obtained, the third period is similar to the European Magdalenian, yet its economies were different. The base of the subsistence economy for Dnieperian hunters was the procurement of mammoth, while reindeer was the most important for the subsistence of European Magdalenian. The abundance of mammoths and the raw material in the form of mammoth tusks made a deep impact on both the economy and material culture of the hunters in the Dnieper River basin. The ^{14}C dates confirm the chronological subdivision.

INTRODUCTION

From the character and peculiarities in the development of material culture during the Upper Paleolithic (UP), six major regions may be distinguished in eastern Europe. These are the Caucasus, Crimea, the Northern Black Sea and the Asov Sea areas, the basins of the Middle Dniestr, the Middle Dnieper, and the Middle Doñ (Rogachev 1969) Rivers. Among these, the Middle Dnieper basin takes a special position. It includes several geographically distinct areas, with the varying concentration of Upper Paleolithic sites: the Desna River basin (particularly rich in UP sites), as well as the Upper and Middle Dnieper River basins. The Seim River basin occupies a transition position between the Dnieper and the Desna River basins. In this article we consider the position of the Upper Paleolithic sites located in the Middle Dnieper River basin in the framework of UP cultures of eastern Europe. Our main focus is the chronological position of the sites on the base of stratigraphy, archaeology, and the radiocarbon data.

RESULTS

Figure 1 shows the location of the UP sites under discussion. The majority have been studied in detail. Over the last few years a considerable number of ^{14}C dates became available for UP sites in eastern Europe, including more than 90 ^{14}C measurements for the sites discussed here (Synitsyn et al. 1997) and shown in Table 1. The ^{14}C data set allows one to define the chronological position of UP sites on the ^{14}C time scale and to correlate them with environmental conditions. Paleoclimatic investigations (Velichko et al. 1997) enable one to distinguish three major periods of environmental changes for the central and northern regions of the East European Plain. The first period corresponds to the final stage of the Bryansk Interstadial (25,000–22,000 BP). The Khotylevo-2, Novgorod-Severski, Berdyzh, and Yurovichi sites belong to just this period.

The sites belonging to the second period correspond to the Last Glacial Maximum (LGM) (21,000–17,000 BP); their very existence proves that despite the maximum cooling, the population did not abandon this territory. The sites of Pushkary-1, the Pogon, and the Eliseevichi-1 can be reliably attributed to this chronological period.

The distribution of ^{14}C dates for the Eliseevichi site, 17,000–12,000 BP, allowed Grekhova (Velichko et al. 1997) to assume that this site was repeatedly occupied during the course of several millennia. Archaeological evidence indicates a remarkable similarity of the artifacts found in different

parts of this site. According to archaeological evidence, the Eliseevichi-1 site occupies a transitional position between the second and third periods.

The third stage corresponds to the recession of the Valdai Glacial (16,000–12,000 BP) and features the maximum intensity of Upper Paleolithic settlement in the Dnieper River basin. This was reflected in the increased number of sites found along the tributaries of the Dnieper River and the Desna River; its tributary Sudost' is particularly rich in sites. A remarkably dense cluster includes the sites of Timonovka, Yudinovo, Mezin, Dobranichevka, Kirillovskoe, and Mezhirichi (Figure 1).

At all these sites the procurement of mammoths lay at the basis of the foraging subsistence economy. A detailed analysis of dwellings built from mammoth bones proves that they were used as part of long-term occupations. One may assume that these settlements consisted of several nuclear blood-related families, and their foraging-type activities resulted in a depletion of food resources within the area of exploitation. The material culture at the site of Yudinovo indicates the multi-faceted human activities performed there. The rich stone inventory shows that the primary splitting of the lithic raw material was performed outside the site, while the refitting of the blanks and actual tool making (the end scrapers and burins being prevailed) were carried out inside the habitation area. The collection of implements made out of mammoth tusks is extremely large and varied, reflecting all the stages in the treatment of this material, ranging from initial blanks to the accomplished tools and ornaments.

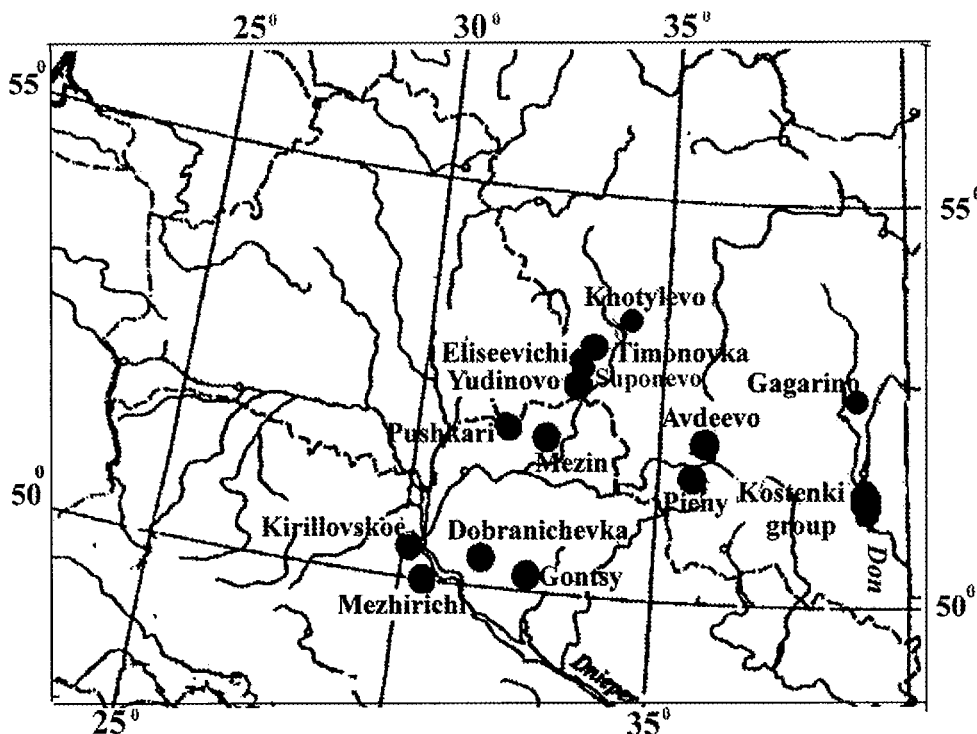


Figure 1 Location of Upper Paleolithic sites in the Middle Dnieper River basin and adjacent regions

Table 1 ^{14}C dates for UP sites in the Middle Dnieper River basin

Nr	Lab code	^{14}C age (BP)	Material dated
<i>Khotylevo-2, 53°12'N, 34°19'E</i>			
	GrN-21899	24,220 ± 110	Bone
	IGAN-73	24,960 ± 400	Mammoth tooth
	GrN-22216	23,870 ± 160	Bone
	LU-359	23,660 ± 270	Mammoth tooth
	GIN-8497a	23,300 ± 300	Mammoth tooth
	GIN-8406	22,700 ± 200	Mammoth tooth
	GIN-8496	22,660 ± 120	Mammoth tooth
	GIN-8495	21,720 ± 170	Mammoth tooth
	GIN-8486	21,680 ± 150	Burned bone
	GIN-8497	21,170 ± 260	Mammoth tooth
<i>Eliseevichi-1, 53°13'N, 33°44'E</i>			
	LE-450	20,570 ± 430	Charcoal
	LU-360	17,340 ± 170	Mammoth tooth
	GIN-4138	16,850 ± 120	Mammoth tooth
	QC-889	15,600 ± 1350	Burned bone
	GIN-4136	14,590 ± 140	Mammoth tooth
	GIN-4186	14,590 ± 140	Mammoth tooth
	LU-126	14,470 ± 100	Mammoth tooth
	GIN-5475	14,240 ± 120	Burned bone
	GIN-4139	14,100 ± 400	Tooth
	GIN-4135	14,080 ± 70	Burned bone
	GIN-4137	12,630 ± 360	Mammoth tooth
<i>Eliseevichi-2, 53°13'N, 33°44'E</i>			
	IGAN-556	15,620 ± 200	Mammoth tooth
<i>Yudinovo, 52°40'N, 33°14'E</i>			
	LE-3301	15,790 ± 320	Bone
	LU-127	15,660 ± 180	Mammoth bone
	LE-3302	14,980 ± 110	Mammoth tooth
	LE-3835	14,870 ± 150	Mammoth tooth
	GIN-5588	14,500 ± 200	Burned bone
	AA-4803	14,470 ± 160	Burned bone
	AA-4801	14,470 ± 160	Bone
	GIN-5661	14,610 ± 60	Burned bone
	AA-4802	14,650 ± 105	Bone
	ISGS-2084	14,300 ± 110	Burned bone
	ISGS-2085	13,980 ± 110	Mammoth bone
	LU-103	13,830 ± 850	Burned bone
	LU-153	13,650 ± 200	Burned bone
	Le-3303	13,380 ± 160	Bone
	OxA-695	13,300 ± 200	Burned bone, organic fraction
	LE-3401	12,980 ± 320	Burned bone
	OxA-696	12,300 ± 200	Burned bone, inorganic fraction

Table 1 ^{14}C dates for UP sites in the Middle Dnieper River basin (*Continued*)

Nr	Lab code	^{14}C age (BP)	Material dated
<i>Timonovka-1, 53°11'N, 34°22'E</i>			
	GIN-2003	15,300 ± 700	Burned bone
	LU-358	15,110 ± 530	Mammoth bone
	GIN-8413	14,750 ± 120	Mammoth tooth
	GIN-8414	14,530 ± 120	Mammoth tooth
	IGAN-86	12,200 ± 300	Mammoth bone
<i>Suponevo, 53°11'N, 34°23'E</i>			
	GIN-3719	14,260 ± 120	Mammoth tooth
	GIN-7729a	13,920 ± 140	Mammoth bone
	GIN-3381	13,500 ± 100	Mammoth tooth
<i>Gontsy, 49°59'N, 33°00'E</i>			
	OxA-717	14,600 ± 200	Mammoth tooth
	OxA-5932	14,550 ± 150	Bone
	OxA-5933	14,400 ± 110	Bone
	ISGS-1739	14,350 ± 190	Burned bone
	GIN-8410	13,700 ± 100	Burned bone
	QC-898	13,400 ± 180	Mammoth tooth
	ISGS-1740	13,200 ± 270	Burned bone
<i>Dobranichevka, 50°10'N, 31°44'E</i>			
	OxA-700	12,700 ± 200	Mammoth tooth
<i>Kirillovskoe, 50°22'N, 30°32'E</i>			
	OxA-718	19,200 ± 250	Mammoth tooth
<i>Mezhirichi, 49°43'N, 31°25'E</i>			
	Ki-1058	19,280 ± 600	Bone
	Ki-1057	19,100 ± 500	Bone
	Ki-1056	18,470 ± 550	Burned bone
	Ki-1055	18,020 ± 600	Mammoth tooth
	Ki-1054	17,855 ± 950	Burned bone
	QC-900	15,245 ± 1080	Mammoth tooth
	GIN-2593	14,700 ± 500	Mammoth tooth
	GIN-2595	14,500 ± 300	Burned bone
	AA-1317	14,420 ± 190	Mammoth tooth
	OxA-712	14,400 ± 250	Mammoth tooth
	QC-897	14,320 ± 270	Mammoth tooth
	GIN-2596	14,300 ± 300	Burned bone
	OxA-709	12,900 ± 200	Mammoth tooth
	GIN-2597	11,700 ± 800	Burned bone
<i>Mezin, 51°42'N, 33°09'E</i>			
	Ki-1053	29,700 ± 800	Shell
	Ki-1052	29,100 ± 700	Shell
	Ki-1051	27,500 ± 800	Mammoth tooth
	OxA-719	15,100 ± 200	Mammoth tooth

Table 1 ^{14}C dates for UP sites in the Middle Dnieper River basin (Continued)

Nr	Lab code	^{14}C age (BP)	Material dated
<i>Pienny-1, 51°02'N, 35°50'E</i>			
	Le-1434	23,100 ± 280	Bone
<i>Pienny-2, 51°02'N, 35°50'E</i>			
	GIN-8409	17,640 ± 130	Rhinoceros bone
	GIN-8408	17,570 ± 120	Reindeer bone
	GIN-8408a	17,200 ± 300	Mammoth bone
	GIN-8409a	16,600 ± 180	Bison bone
<i>Avdeevo, 51°41'N, 36°03'E</i>			
	GIN-7729	23,400 ± 700	Mammoth tooth
	GIN-1571g	22,700 ± 700	Burned bone
	GIN-1969	22,400 ± 500	Burned bone
	GIN-1970	22,200 ± 700	Burned bone
	GIN-4693	21,600 ± 400	Burned bone
	GIN-1569	21,200 ± 200	Burned bone
	GIN-2535	21,100 ± 800	Burned bone
	GIN-1748	21,000 ± 200	Burned bone
	GIN-1747	20,800 ± 200	Burned bone
	GIN-6594	20,100 ± 400	Burned bone
	GIN-6593	20,100 ± 200	Burned bone
	GIN-6592	20,100 ± 300	Burned bone
	GIN-1746	20,100 ± 500	Burned bone
	GIN-1570	19,800 ± 1200	Charcoal
	GIN-7727	19,500 ± 500	Mammoth tooth
	QC-887	18,500 ± 2100	Bone
	GIN-1571b	17,200 ± 1800	Burned bone
	QC-621	16,960 ± 420	Mammoth bone
	QC-886	16,565 ± 270	Mammoth bone
	IGAN-78	13,900 ± 200	Mammoth tooth
	IGAN-151	11,950 ± 310	Mammoth tooth

Two types of sites in the third period varied by their location. The sites of the first type were located on higher terraces and on watersheds near the outcrops of flint, which was the principle raw material used for manufacturing the tools. The sites of Timonovka and Kirillovskaya represent this type.

The second type is associated with the first terrace of small tributaries of the Dnieper River. These sites were well protected from floods, while the swampy floodplain nearby was supposedly the main hunting ground for procuring the herd animals (Velichko et al. 1997). These sites were located at a greater distance from the sources of the raw material, yet their position seems to be advantageous for hunting activities. The Yudinovo site belongs apparently to the latter group. The siliceous raw material was possibly imported to the Yudinovo site from another site, Chulatovo-2. The typological analysis of the archaeological materials shows a close similarity between the inventories of the Timonovka and the Bugorsk sites. This allows us to attribute these sites to a distinct archaeological culture which belonged to a "Middle Dnieperian ethno-cultural community". Two archaeological cultures can be tentatively identified in this area: the Mezin-Suponevo and the Mezhirichi-Dobranichevka. An abundance of artifacts made out of mammoth tusks, the richness of bone and antler

industry, as well as developed geometrical ornaments and other features of material culture, together with their chronological position, allow us to conclude that these sites belong to the European Magdalenian culture.

DISCUSSION

The comparison of two centers of the Upper Paleolithic on the Russian Plain featuring similar ecological conditions: the Middle/Upper Dnieper basin, on one hand, and the Middle Don, on the other, show significant differences which do not allow us to consider them as forming single cultural entity. One can conclude that these centers had different trajectories in their development. In the Dnieper basin, where several Mousterian sites are known, the sites belonging to the initial stage of Upper Paleolithic are absent. By contrast, in the Don basin the Mousterian sites are lacking, while early UP sites older than 26,000 BP are well represented.

Earlier UP sites in the Dnieper basin, such as Khotylevo-2 and Berdyzh, are in general terms related to the Kostenki-Avdeevo culture, which had wide contacts with the Upper Paleolithic of eastern Europe. The analysis of the stone and bone and antler inventory reveals various traditions in them. Female figurines from the Khotylevo-2 site show stylistic similarities to those from the Gagarino site, yet clear distinctions from those of Kostenki-1 and Avdeevo. As for ornamental items they were poorly represented in the Don River basin. Specifically, intricately ornamented tusk tips, characteristic of the Khotylevo site, were unknown there. It should be also noted that the complex mammoth-bone dwellings of the Kostenki-1 and Avdeevo types, were not encountered at the sites of the Dnieper basin. The ¹⁴C dates for the Khotylevo and the Avdeevo sites are shown in Figure 2. The initial stage in the occupation of the Avdeevo site occurred later than that of the Khotylevo site, but the duration of the Avdeevo occupation was much longer.

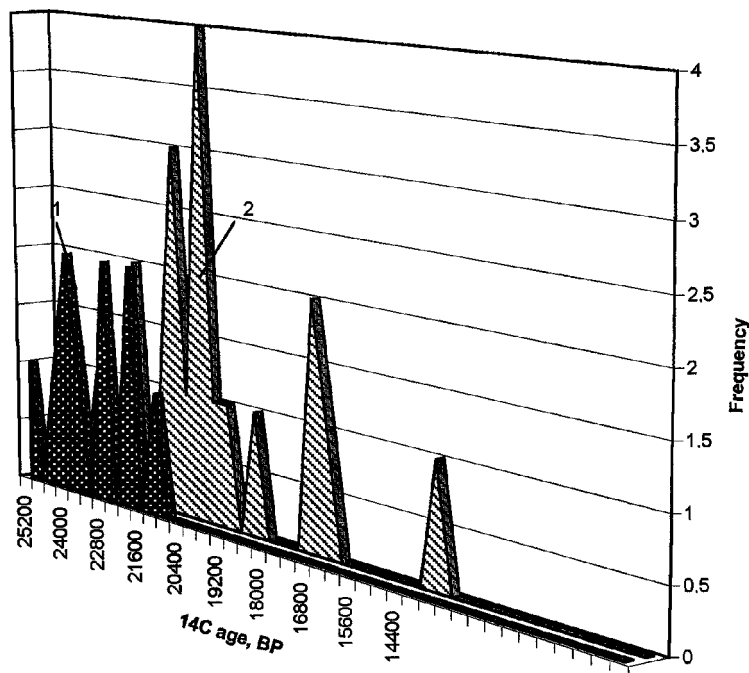


Figure 2 Histogram of the distribution of ¹⁴C ages for the Khotylevo (1) and Avdeevo (2) sites

The sparse sites in the Dnieper River basin belonging to the second stage do not have analogies in the material culture of synchronous sites in the Don. Two sites of the Kostenki group: Kostenki-2 and Kostenki-11, include the remains of circular dwellings made from mammoth bones. Such dwellings are unknown at the Dnieper sites of the same age.

Sites belonging to the third chronological period of the Middle Dnieper River basin (from Mezherichi in the south up to Timonovkain the north; see Figure 1) demonstrate a rather dense occupation of that region during 16,000–12,000 BP. The distribution of ^{14}C dates for these sites forms a dense cluster, indicative of settlements virtually coexisting with each other (see Figure 3 and Table 1). Contrary to this, the sites in the Middle Don basin belonging to this period are less known. On this ground, it had been suggested that during the Glacial recession this territory was no longer occupied by UP population. We do not share this view. In the Middle Don River basin isolated Upper Paleolithic sites are known that show cultural peculiarities due to local development.

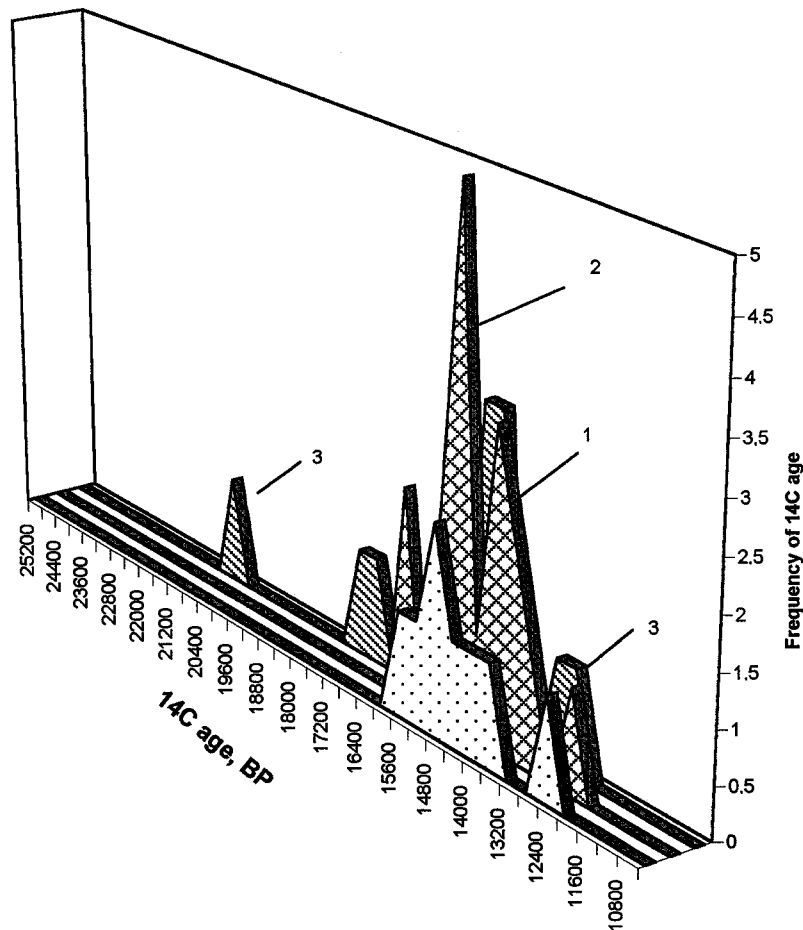


Figure 3 Histogram of the distribution of ^{14}C ages for Upper Paleolithic sites in the Middle Dnieper River basin: Suponevo and Timonovka sites (1), Yudinovo site (2), and Eliseevichi-1 and Eliseevichi-2 sites (3)

The higher sites of that period, located in the Upper Dnieper basin, demonstrate a rich bone-and-antler inventory including hunting weapons, hammers and skillfully carved personal adornments. This rich assortment of artifacts is totally lacking at the Don sites. The stylized female figurines from Mezin and Mezhirichi, both belonging to the final UP stage, are quite distinct from realistic specimens, found at Kostenki sites. The bird effigies are commonly represented in the Paleolithic art in the Dnieper basin. There are realistic images of birds (as at the Yudinovo site), as well as complex images compositions including a female and a bird (at the Mezin site). Complex geometrical ornaments are unknown at UP sites of the third stage (16,000–12,000 BP) in the Don River basin. In contrast to that this kind of ornament is very common at the sites in the Dnieper basin: in the form of triangles, rhombs, and polygons. This proves that different cultural and technical traditions simultaneously occurred in the Don and Dnieper during the entire Upper Paleolithic epoch.

CONCLUSION

Three chronological periods of the development of the Upper Paleolithic are noteworthy in the Middle Dnieper River basin by both in the elements of material culture and ^{14}C dating. The third period is the most remarkable. It represents an ethnocultural community similar to the European Magdalenian complexes. The differences between them consist in the subsistence economy: the Dnieperian hunters based their economy on the procurement of mammoth, while reindeer was the most important for European Magdalenian hunters. The abundance of mammoth, along with availability of excellent raw material such as mammoth tusks, made an impact on both the economy and material culture of the hunters in the Dnieper basin. The ^{14}C dates confirm the chronological subdivision suggested by archaeologists.

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