

4. THE LATE PALAEOLITHIC IN MOLDAVIA (1991-1995)

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The Late Palaeolithic studies in Moldavia during the period 1991-1995 covered several aspects: a) field survey; b) study of materials, analysis and publication; and c) data selection processing on the basis of samples, related to interdisciplinary investigations.

Scientist of the Moldavian Academy of Sciences, as well as foreign experts took part in these activities.

FIELD SURVEYS

During 1991-1995 field surveys were conducted only on the multi-layer site of Cosoutsy, limited surveys were also conducted in the caves of Brinzeni I and Ciuntu (BORZIAC, ALLSWORTH-JONES and CHETRARU 1996, 32).

The multi-layer Palaeolithic site of Cosoutsy was discovered in 1978 (BORZIAC 1985, 3-14) and excavated under the leadership of I. Borziac in 1981-1991. The site yielded 21 late Palaeolithic cultural layers, bedded in late quaternary deposits of the second terrace on the right Dniester bank. During 11 field seasons the remains of more than 20 habitation complexes, more than 35 simple and composite hearths located either inside or outside the dwellings, more 100 small stone workshops, more than 70 thousand flint artefacts, including numerous tools, more than 300 bone, horn and tusk implements, more than 50 objects connected with the imitative art activities of ancient man, and adornments were found on the site. A child's grave was discovered within the site. After 1991, the geological, palaeobotanical and palaeozoological surveys were carried out on the site, but they were not fulfilled to the necessary degree. We made 16 radiocarbon assays, which allow us to date the site within 22-12 thousand years B.C.

Globally, the site material allows us to attribute it completely to the Gravettian culture. The rich cultural layers with their good preservation, allows us to consider the site as one the most important late Palaeolithic stations in Europe. During 1992-1993 no works were carried on the spot due to the lack of financing.

In this context, INTAS was involved in funding the study on the basis of the corresponding agreement and the specialists of the Belgian Institute of Natural Sciences (under the leadership of P. Haesaerts) and of the Liege University Prehistory Department (under the leadership of M. Otte) were

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included into the research team. The site surveys continued in 1994 and 1995 with the help of the INTAS funding and with an extensive participation of the Belgian researchers. The goal is to continue the interdisciplinary study in the site's lower layers on a new methodological basis, making use of the above Belgian institutions' laboratory facilities. The final aim of the co-operation between Moldavian and Belgian specialists is a monographic publication, describing all study results related to this important prehistoric European site.

In 1991, the field surveys were carried on the multi-layer Gravettian site of Cosoutsy, on a very limited scale, however. The 4th cultural layer was investigated on an area of 30 m² where the remains of a surface circular dwelling with a diameter of 4,5 m and a hearth in the center were uncovered. Scarce archaeological and palaeontological materials, including 300 flint articles, among which 62 were working tools and several bone tools, were obtained.

In 1994, the main investigation concentrated on the complex study of the geology and sedimentology of the deposits, including the cultural layers, and on selection of samples for radiocarbon dating, palynological, malacofaunal and archaeological study of layers 4, 5, 6a, 6b, 6c, 6d, 7, 8, 9 and 10.

GEOLOGICAL SURVEYS

In 1994, deep pits reaching the terrace base were opened on the site, and the old profiles were cleaned. The total thickness of the investigated deposits is equal to 18,5 m. The deposit's strata shows more than 65 lithological late quaternary subdivisions which fall into 12-14 paleoclimatic complete or reduced cycles, reflecting the multi-complexity of the climatic evolution and the whole natural process at the post-glacial stage. For the first time, the correlation and the particularities of the cultural layers within certain subdivisions of the revealed paleoclimatic cycles were determined on the basis of the microstratigraphic methodology: 2 samples of rock (altogether more than 140), necessary to study the sedimentology and composition of the site deposits were selected from the selected lithological horizons. The geological surveys were carried out by a research team under the leadership of P. Haesaerts.

RADIOMETRIC INVESTIGATION

In order to continue the study of the site's chronology, 40 samples of charcoal necessary to determine the chronology of the cultural layers, were collected from various layers of the site. The charcoal samples were processed at the Groningen laboratory. The surveys were carried out by F. Damblon under the leadership of P. Haesaerts.

ANTHRACOLOGICAL INVESTIGATIONS

In 1994-1995 for the first time, 50 charcoal samples were taken from this site in order to determine the tree species that were common to the site

environments and were used as fuel by its ancient inhabitants. The samples have been chosen and are currently being studied by F. Damblon in the laboratory of the Belgian Royal Institute of Natural Sciences under the leadership of P. Haesaerts.

ARCHAEOZOOLOGICAL INVESTIGATIONS

The fauna of layers 4-10, obtained within the last 2 years, has been studied to continue the investigation of the mammalian fauna of the various site layers. It is revealed that *Rangifer tarandus* L., making up more than 70% of the osteological materials, dominates in the fauna of most layers. The faunal remains of *Bison priscus* Boj. and *Equus Latipes* Gr. are of a subordinate significance. The definitions were made by A. David and Th. Obada, the archaeological surveys were carried out by I. López Bayón. More than 2,000 bones and bone fragments have been studied on the whole.

In the process of these activities, more than 40 samples were selected to study surface molluscs. According to the preliminary data, the molluscan fauna from the site deposits reflects the post-glacial cold-loving complex of such fossils. The investigations were carried out by A. Prepelitsa in the laboratory of the Institute of Zoology attached to the Academy of Sciences of the Republic Moldova.

PALAEOBOTANICAL INVESTIGATIONS

36 soil samples were taken from the lower lithological layers of the site within the above period to continue the study of the pollen and spores from the site deposits. The complete diagram of the sporopollen analysis of the site deposits has been received at present. This work was carried out by S. Medianik and C. Mihailesko in the laboratory of the Institute of Geography attached to the Academy of Sciences of the Republic Moldova.

ARCHAEOLOGICAL SURVEYS

In 1994, layer 4 of the site within an area of 42 m² was surveyed to continue the work carried out in 1991. The layer was bedded in loess, dressed with fine-grained quartz sand, at the depth of 9,12-9,35 m. Within the surveyed area, the remains of an habitation complex were uncovered (n.6 for this layer). It was round, with a diameter of 3,2-3,5 m and contained a hearth in its centre. The correlation between the borders of the complex and the cultural layer surrounding it was determined by more abundant cultural remains within the limits of the complex, and by clays and sandstone distinguishing the margins. The hearth had a diameter of 0,95-1,05 m and was in the central part of the complex. It represented a spot of fired soil, mixed with ash and small bones and its surface varied from 7 to 13 cm thick. About 550 flint articles and faunal remains (mostly of reindeer), a borer made of tubular bone, and a hoe fragment made of reindeer horn with an incised scratched design on its external side were

found in this area. The flint articles (557 pieces) are represented by debitage and 26 tools, including 16 burins, 3 backed blades, 2 scrapers and retouched blades.

Layer 5 was studied within an area of 12 m². We found hearth remains, 71 flint articles, including a burin and a fragment of a retouched blade.

Layers 6a, 6b, 6c, 6d, 7, 8, 9 and 10 were surveyed within an area of 12 m². Besides these layers were studied within an area of 2,5 m² in the deep open test pit. Each of them yielded a certain amount of flint material and animal bones. Hearths remains were uncovered twice (layers 6 a and 8). Among other finds, we should mention 3 fragments of spear points made on mammoth tusks (layer 6c) and 2 fragments of spear points made on reindeer horn (layer 7) which were found in the deep open test pit; a shingle with ornamentation on both flat surfaces was uncovered in layer 7 as well.

In 1995, deep test pits reaching the terrace base were excavated on the site (18,5 m deep) within an area of 8 m². Layers 6a, 6b, 6c, 6d, 7, 8, 9 and 10 were surveyed within same area. We collected additional archaeological materials and faunal remains. The aim of digging the test pits is to clarify the site stratigraphy and to obtain archaeological materials from the lower layers of the site. In general, the bedding of the layers, including the cultural ones confirmed the previous observations.

In the same year, layer 4 has been surveyed within an area of 52 m² and its study has been accomplished within an area of 134 m² as a whole. Additionally, layer 5 has been studied within an area of 22 m². A sandstone shingle with ornamentation on its surfaces, and other archaeological materials, which supplement those found in the previous years, have been uncovered in layer 4 alongside usual materials.

The archaeological surveys of the site were carried out in 1994-1995 under the leadership of I. Borziac and M. Otte. S. Covalenko, V. Chirica, I. López Bayón, P. Noiret, Th. Obada and V. Ancion took part in the excavation and in the processing of the materials.

During the 2 years following the resumption of excavations at Cosoutsy, we have succeeded in advancing considerably the site survey process.

CONCLUSIONS

As we have already remarked, the site of Cosoutsy is one of the most important archaeological sites of the European Palaeolithic. The full-fledged interdisciplinary surveys were resumed on the site owing to the financial and professional assistance granted by the INTAS contract. Within two years, we obtained an enormous amount of material which is currently being analyzed. The results of this research is without doubt anticipated by many specialists and will be a landmark in the study of the multi-layer Palaeolithic Dniester sites.

Many scientific problems related to the cultural attribution and chronology of the site have already become clear now, but there remains further investigations, connected mainly with the typology of the finds, correlation between various layers, determination of cultural ties and correlation with other contemporary sites located on the East of the Carpathian Mountains, as well as within a vaster geographic space. A particularly important goal is a more extensive study of the site's lower layers, which have not yielded enough archaeological materials at this point to allow complete analysis and comparison. This is why we consider that the survey of the site has not been fully accomplished, even at this stage.

In 1993, limited surveys were carried on the Late Palaeolithic sites in the caves of Brinzeni I and Ciuntu in order to study their geology, stratigraphy and to select samples for radiocarbon dating.

The excavation pits made during the last years were renewed, and the bones samples for radiocarbon and paramagnetic resonance were collected.

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RADIOCARBON DATA FOR UPPER PALAEOLITHIC OF MOLDOVA (1991-1995)

1991 Site Cosautsy	Upper Palaeolithic. (Gravettien)		
Layer	6a	AR-1231	18 140 ± 165 (charcoal wood)
	6c	AR-1232	18 935 ± 160 (charcoal wood)
1992 Site Climautsy II	Upper Palaeolithic. (Late Aurignacien)		
Layer	I.	LU-2481	20 350 ± 230 (bone)
Layer	II.	LU-2351	24 840 ± 410 (bone)
1993 Site Brinzeni I	Ancien Upper Palaeolithic (?)		
Layer	III	OxA-4118	19 220 ± 180 (tooth)
		OxA-4119	22 530 ± 250 (tooth)
		OxA-4120	14 700 ± 130 (bone)
		OxA-4121	22 330 ± 230 (bone)
		OxA-4122	26 600 ± 370 (bone)
		OxA-4123	16 600 ± 160 (tooth)
		OxA-4124	26 200 ± 360 (bone)
1995		Lv.-2186	21 680 ± 270 (bone)
1993 Site Ciuntu	Upper Palaeolithic (Gravettien)		
		OxA-4125	18 510 ± 200 (bone)
		OxA-4426	21 000 ± 220 (horse tooth)
		OxA-4774	22 100 ± 220 (long bone)