Abstract of the session:

**Middle/Upper Palaeolithic Transitional Time in Eurasia:**
Cultural-historical, Anthropological, Palaeoecological and Adaptation Processes of the Span 50-30 kyr BP.

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The Stone Age hunters and gatherers did not know modern borders in their migrations around Eurasia (even in the beginning of the 20th century the hunters of Taymir peninsula reached the Kola peninsula during one season migrations following their reindeer herds). So the complicated cultural-historical processes of the time of appearance of most ancient Upper Palaeolithic industries in Eurasia and beginning of the Epoch of Homo sapiens sapiens could be understood only as a result of comparing archaeological, anthropological and palaeoenvironmental patterns of many regions of Eurasia.

There were two most important goals for organization of this session.

**The goal 1:** The session will allow us to look at the complicated archaeological and anthropological processes of the Middle/Upper Palaeolithic transition time from the point of view of the materials on the Western and Eastern parts of Eurasia. This goal will be achieved if all abstracts with the new information on eastern regions will be published by EAA.

This aspect of the discussions will be very important for Palaeolithic archaeology because during the last time especially sensational information on the Middle/Upper Palaeolithic transitional time appeared in the eastern regions of the Eurasia.

New data were recently published [Kozłowski, 1982; "Temnata cave", 2000; Derevianko, Shunkov, 2001; "Palaeolithic of Altai" (Derevianko et al.), 2001; Derevianko, 2007; "Science" from 12.01.07: Hoffecker et al.;] about the very early (50-45 kyr BP) appearance of the most ancient Initial or Early Upper Palaeolithic sites in Eurasia and their locations in the non-western parts of the Eurasian continent: in Bulgaria (Temnata and Basho Kiro sites), Kostenki-Borshevo region of Russian plain (basin of Don river) and Altai (Denisova cave site, layer with anthropological remains of Homo sapiens sapiens and AMS date about 49 kyr BP). The most ancient transitional Middle/Upper Palaeolithic industries connected with Homo sapiens sapiens are found in Uzbekistan (in the grotto Obi-Rakhmat) in the layer with AMS dating of approximately 49 kyr BP ["Grot", 2004; Derevianko et al., 2001; Krivoshapkin, Brantingham, 2004; Derevianko, 2007]. But in Italy the transitional Middle/Early Upper Palaeolithic cultures (Uluzzo and others) have non-calibrated AMS C14 dates approximately 36 kyr BP and the most ancient Protoaurignacian sites – about 34-32.9 kyr BP [see: the abstract of P.Gambassini and A.M.Ronchitelli in the volume of the present conference].Shatelperron and Aurignacian cultures of the Western Europe are of the same age (see the scheme of the palynological correlation of tens of sites from
The layers of volcanic ash present at the top of the Protoaurignacian sites in Italy, but not necessary from the single explosion [see the report of P.Gambassini and A.M.Ronchielli in the present volume]. The Protoaurignacian sites of France are synchronous to Lashamp excursion (according to the scheme of Renault-Miskowski, 1998)

The goal 2: The session will allow us to discuss the role of some palaeoenvironmental factors in the complicated cultural-historical and anthropological processes of the Middle/Upper Palaeolithic transition time. The archaeologists don't usually write about the important role of the ecological factors in the cultural and technological transformations which sometimes are even called the "Upper Palaeolithic revolution". But during last years appeared the information from many regions of the world about existence of the extremely dry and very cold climatic oscillation with abrupt transition to it within the span 50-30 kyr BP. It is the HE4 event. It was discovered by many scientists in marine, glacial, cave, lake and other types of the sediments [Bond et al., 1993; Broecker, 1994; Thouveny et al., 2004; Mayewski et al., 1994; Bond et Lotti, 1995; Watts et al., 1996; Cortijo et al., 1997; Vidal et al., 1997; Paterne et al., 1999; Cacho et al., 1999; Schulz et al., 1998; Li et al., 2001; Voelker et al., 2002; Fedele et al., 2003]. It could have influenced on complicated cultural-historical, technological, migration and other processes of many regions of Eurasia. But it was not differentiated yet in Palaeolithic layers of most sites of Eurasia, especially in eastern regions, though the cold and dry pattern were reconstructed for some of them. So some reports of our session will concern the problems of discovering of HE4 event in Middle Palaeolithic or Early Upper Palaeolithic layers of Carpathians, Caucasus, Early Upper Palaeolithic sites from Kostenki-Borshevo region of Russian plain, some sediments from the basins of Dniestr and Yenisei rivers [the reports of Haesaerts et al., Hum et al., Levkovskaya, Lubin et al; Levkovskaya, Hoffecker et al.]

Lately appeared the new hypotheses [Fedele et al., 2004] that the palaeoenvironmental catastrophe is the cause of the lacuna between the time of appearance of Homo sapiens sapiens and disappearance of Neanderthals in the end of Middle Palaeolithic and the beginning of the Upper Palaeolithic Epoch. The authors of this hypotheses write that the Campanian Ignimbrite (CI) eruption was synchronous to the HE4 event and partly to excursion Lashamp [Fedele et al., 2003, Fig.4: p.309; Fig.6: p.312; Fig.8: p.315] and it was "one of the contributing factors to the cultural differentiation in Western Eurasia which is called the Upper Palaeolithic" [Fedele et al., 2003, p.319].

The session will allow to discuss the last hypotheses from the point of view of the mentioned above materials on the eastern part of Eurasia where the Early Upper Palaeolithic began about 50 kyr BP – approximately 10000 years earlier than the Campanian Ignimbrite.

This session focuses on the discussion of the following most important Palaeolithic archaeology problems:

- What were the specific features of regional or general cultural-historical processes during the beginning of the Upper Palaeolithic – Homo sapiens sapiens Epoch?
- When and where appeared the first Upper Palaeolithic sites in Eurasia?
- What was the role of Neanderthals or Homo sapiens sapiens in the complicated cultural-historical processes of the Middle/Upper Palaeolithic transition time in different regions of Eurasia?
- How changed the life strategy and adaptation processes of Neanderthals and Homo sapiens sapiens in different palaeoenvironmental conditions?

These problems are traditional for Palaeolithic archaeology. But they will be discussed at the session on the basis of new materials. It is planned to discuss at the session the patterns from many regions of Eurasia of the span 50-35 kyr BP. The session will allow us to compare the Middle Palaeolithic, transitional Middle/Upper Palaeolithic, Initial Early Palaeolithic and most ancient Early Palaeolithic industries or palaeoenvironments of southern and northern Italy, Carpathians and Transcarpathians, northwestern and Colchis areas of Caucasus, basins of Dniestr, Don and Yenisei rivers, Altai, Uzbekistan, to discuss the problems of their correlations, chronology and connections of them with Neanderthals or Homo sapiens sapiens.
The following groups of the problems will be discussed at the session (on the bases of 17 published abstracts and some reports):
- Archaeological problems;
- Anthropological problems;
- Chronological problems;
- Palaeoenvironmental problems;
- Adaptation and life strategies problems;
- Methodical problems.

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FROM LATE MIDDLE TO EARLY UPPER PALAEOLITHIC IN SOUTHERN ITALY

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The evolute phase of Mousterian in Southern Italy is represented by recurrent Levallois industries, with prevalent unipolar modality, whose goal was to obtain tendentially laminar, flat blanks. Among the sites with main evidence of this situation we can consider the high levels of Poggio Shelter at Marina di Camerota (Salerno), with industry dated about 43 Ky BP (TL), Castelcivita Cave (Salerno) dated around 40 Ky BP ($^{14}$C) and Oscurussuito Shelter of Ginosa (Taranto) whose upper level dates of 38,5 Ky BP (AMS $^{14}$C). In the three cases Mousterian industry has a majority of side-scrapers, also on blade, with a good percent of retouched points.

At Castelcivita, above the Mousterian level, lie Uluzzian strata, with abundant splintered pieces, typical backed semilunar shapes and $^{14}$C dates around 33 Kyr BP. Following the dates it would be some millenniums between the two occupations of the site. The age of early Uluzzian, according to recent AMS $^{14}$C dates made on the eponymous site of Cavallo Cave at Uluzzo of Nardò (Lecce), is to put around 36 Kyr BP, therefore a little more recent than the age of evolute Mousterian. The maker of the Uluzzian is very probably Neanderthal man, judging by the rare human findings (teeth) of Cavallo cave. As regards stratigraphical situation and human type involved, the Uluzzian is one of “Transitional” technocomplexes of Europe.

The following complexes, stratigraphically over the Uluzzian, are to attribute to Protoaurignacian with Dufour bladelets: among the most important we can cite Castelcivita and Paglicci cave (Foggia), with dates of beginning respectively about 32,9 and 34 Kyr BP ($^{14}$C). In both sites these complexes have local and diversified evolution. The end of these evolution could be represented respectively by the open air site of Serino, dated around 31 Kyr BP ($^{14}$C) and the level 24A1 of Paglicci (29,3 Kyr BP). All these sites present, on their top, tephra levels not necessarily from a single explosion.
These data will be critically examined, together with their interaction with a paleoenvironment changing both in time and dependently from the articulate geography of the Italian peninsula.
THE LITHIC INDUSTRY OF GROTTA LA FABBRICA (TUSCANY, ITALY): A CONTINUES SEQUENCE THROUGH MIDDLE AND EARLY UPPER PALAEOLITHIC

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The stratigraphical sequence of Grotta della Fabbrica (Tuscany, Italy) is characterized by a late Middle Palaeolithic layer, a “transitional” one (referred to the Uluzzian) and an Early Upper Palaeolithic (Aurignacian) and represent the only documentation so far known in Central and Northern Italy of the Neanderthal-Anatomically Modern Human substitution. This paper draws on the results of the study of layer 1, referable to a Typical Mousterian of non-Levallois facies (sensu Bordes), examined through raw material acquisition and use, techno-typological analysis and also through the comparison made with the overlying Uluzzian layer 2. The authors try to underline the similarities and the differences between these two lithic assemblages and to give a broader picture of the Late Musterian and “transitional” industries in Central Italy, linking the new available data with the ongoing debate about the Middle-Upper Palaeolithic transition.
ARCHAEOLOGY-PALAEOBOTANY-PALYNOLOGY DATABASE ON THE NEANDERTHAL EPOCH OF CAUCASUS AND RUSSIAN PLAIN: HE4 EVENT AND VARIATIONS OF ITS PALAEOENVIRONMENTS, INDUSTRIES AND TYPES OF ADAPTATIONS OF NEANDERTHALS

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Some materials of the palaeobotany-archaeology database [Stepanov, Levkovskaya et al., 2001] of the Middle Palaeolithic and Upper Palaeolithic sites of the former USSR area will be presented at the session. The Middle Palaeolithic archaeological complexes which are most accurately connected with pollen zones and are synchronous to the HE4 event at Caucasus and Russian plain will be discussed. Archaeological complexes, published by archaeologists V.P.Lubin, S.A.Kulakov, E.A.Beliaeva, L.V.Golovanova, D.A.Tchistyakov, N.K.Anisutkin, L.B.Vishniatsky and P.E.Nechoroshev will be demonstrated for sites: Malaya Voronzovskaya, Akhstyr, Kepshinskaya (Black sea area of Caucasus), Matouzka, Barakaevskaya, Monasheskaya and Mezmajskaya (north-western Caucasus), Korolevo 1 (Transcarpathians), Molodova V, Stinka, Betovo, Shliakh (from the basins of Danube, Desna and Don). Palaeoenvironmental reconstructions for the layers with anthropological finds of Neanderthals in Caucasian cave sites Barakaevskaya, Monasheskaya and Mezmajskaya will be compared. Specific features of adaptations to extremely dry and cold conditions of H4 event will be discussed.

References:
4. Levkovskaya G.M., 2006: "Specific features of characteristics of six late Pleistocene interstadials and seven stadials of the area of cave site Matouzka (northern Caucasus)". // In: "La grotte de Matouzka". St.Petersburg, p.54-71;
PALAEOENVIRONMENT AND CHRONOLOGY OF THE MIDDLE / UPPER PALAEOLITHIC TRANSITION IN THE EURASIAN LOESS DOMAIN, FROM DANUBE TO YENISEI: COMPARISON WITH THE MARINE AND GREENLAND RECORDS

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During the last decade multidisciplinary investigations were devoted to complementary long loess successions with pluristratified Middle and Early Upper Palaeolithic settlements rich in charcoal, from the Middle Danube Basin (Willendorf and Stranka Skala), the East Carpathian Area (Molodova and Mitoc) and Central Russia (Kostienki). This approach has provided a high resolution climatic sequence with a strong chronological framework back to 50 ka uncal BP set up on large series of radiocarbon dates. It confirms the predominance of highly unstable, but reproducible environmental conditions during the middle pleniglacial, together with the development of a large set of Palaeolithic occurrences ranging from Late Mousterian to Early Gravettian, including Bohunician, initial Upper Palaeolithic Szeletian, Stretleskaian, Gorodtsovian and Early Aurignacian.

The degree of resolution of the middle pleniglacial loess succession was further improved at Kurtak (Central Siberia) with a remarkable semi-continuous pedosedimentary and palynological record well dated from 26 ka to 42,5 ka BP on wood remains and charcoal. In this way, the integrated Eurasian loess sequence could be compared by proxy-correlation with the climatic signal recognized in the fluctuations of $^{18}O$ in the Greenland ice cores. This approach also led to compare the atmospheric radiocarbon ages of the loess sequence with the ice-varve calendar chronology and with the corrected chronology based on paired $^{14}C$ and U/Th dates via the climatic signal of the marine sequences.

Moreover, the integrated Eurasian loess sequence is also of importance for what concerns the chronostratigraphic approach of the Kostienki sequence which records one of the most detailed pedosedimentary and archaeological succession for the middle pleniglacial in Central Russia. In particular, the sections open at Markina Gora in August 2004, for which 15 complementary radiocarbon dates were produced on charcoal from the lower half of the sequence, allow a new insight on the chronological background of the volcanic and palaeomagnetic markers recorded in the Kostienki Area respectively ascribed to the Campanian Ignimbrite and the Laschamp excursion.
UPPER PALAEOLITHIC ENVIRONMENTAL CHANGES IN THE CARPATHIAN BASIN

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Several Upper Würmian and Late Glacial loess profiles from the areas of Transdanubia, NE Hungary and the southern and central parts of the Great Hungarian Plain have been subjected to detailed scientific investigations. Despite the similar rhythm and characteristics of the alternating warmings and coolings during the Upper Würmian in the different studied areas, significant differences can be observed in the sedimentological and geochemical composition of the sediments and in the general character of the mollusc faunas of these regions.

A very similar paleobiogeographic setting must have developed in the Carpathian Basin during the Pleistocene as observable today, seen in the continuously alternating expansion and retreat of the faunal elements, belonging to different fauna circles and characterized by differing ecological needs, in accordance with the changes in the certain climatic effects. Consequently, the coolings and warmings, as well as the alternation of drier and more humid periods must have triggered a cyclical expansion and retreat of these fauna elements from and into the refugia areas within the whole basin.

The changes in the Quaternary mollusk fauna well correspond to the former transformations in the environment, primarily seen in the alteration of the climatic conditions, and thus are well suited for capturing these paleoenvironmental changes.

Thanks to the unique climatic endowments of the Carpathian Basin, as well as the vicinity of the Balkanic refugia areas, plus the presence of refugia preserving Central European woodland dweller mollusk elements, and the observable expansions of the fauna from these relict centers during favourable paleoecological conditions, the relatively short-term climatic and environmental changes can all be easily assessed via studying the mollusk fauna of the loess sequences in the basin. Considering the observed history of the mollusk fauna for the past 30,000 years, we can say, that the major faunal turnovers appeared in iterating periods of 1000-2000 years, enabling a description of the paleoenvironmental conditions of loess formation at a better temporal resolution.

With the help of radiocarbon dates at hand, detailed comparative paleoecological-paleobiographic maps could have been prepared for the studies area of the Carpathian Basin, depicting the distribution areas and dominances of the individual mollusk taxa. With the help of these paleobiographic maps, the migration paths a distribution areas and limits of the stratigraphically and paleoecologically different mollusc taxa could have been determined, reflecting the distributions of the individual paleoecological and paleovegetational zones, and as such the individual climatic effects as well.
Due to the dating uncertainties around this time period of the Middle to Upper Palaeolithic transition, it is imperative to identify secure stratigraphic and chronological markers, the Campanian Ignimbrite being one such key marker. The aim of our research programme is to use it, and other tephras, to link a series of sites chronologically and stratigraphically, so as to test the timing of archaeological and environmental change in a broad regional timescale.

Through the use of microtephra extraction techniques, the aim is to broaden the zone where we can trace the Campanian Ignimbrite and other tephras into archaeological and environmental records. Changes in the faunal spectra during this period and people’s responses to climatic events can be discussed in more detail once such a more secure chronology is obtained.

This paper will review the chronological needs for such a programme of research, report on the progress of tracing microtephra on archaeological sites, predict regions where we would expect the Campanian Ignimbrite to be present and discuss the results of our ongoing research on a number of Italian sites.
APPEARANCE OF MODERN HUMANS AND MODERN BEHAVIOR IN CENTRAL ASIA: CASE-STUDY OF OBI-RAKHMAT ROCKSHELTER, UZBEKISTAN

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In process of an intensification of Paleolithic researches outside the Europe, dominated over last quarter of the last century in prehistoric archaeology the harmonious scheme of dependence of change of type of material culture from evolution of physical characteristics and mental abilities of ancient humans has lost the universality. New data force a scientific world to bring remarkable corrective amendments in the developed concepts. So, if earlier appearance of anatomically modern humans directly connected with an epoch of transition from Middle to Upper Paleolithic, now available data confidently specify that, on the one hand, the modern human anatomy has appeared much earlier, and on the other hand, a number of the main cultural attributes of Upper Paleolithic is fixed in archeological complexes of a much greater antiquity. As the transition from Middle to Upper Paleolithic in territory of Eurasia is characterized by significant structural change of culture of ancient humans, in last researches the term «modern human behavior» is entered. This concept combines such elements, as transition to prevalence of the seasonally-focused purposely-planned hunting activity (unlike domination of scavenging human activity in Middle Paleolithic), settling of regions with harsh environments (high mountains, deserts and tundra landscapes); expansion of an exchange between different populations; regular manufacture of tools from not stone raw material; prevalence economically more effective blade technology; expansion of artefactual repertoire in connection with its standardization and strengthening of functional specialization; the expressed display of spatially-structural perception of habitable space (including allocation of functional zones within settlements, complication of hearths, etc.); increase of mobility level of the groups, connected, probably, with the advent of more complex social hierarchies; mass occurrence of symbolical and ritual activity.

The purpose of the given presentation is an attempt of revealing of conformity of the Paleolithic industry of Obi-Rakhmat rockshelter with the attributes of "modern behavioral complex" for definition of competency of reference Obi-Rakhmat industry to "Transitional" or "Initial Upper Paleolithic" complexes of Eurasia, and also the analysis of recovered in 2003 paleoanthropological material which is throwing light on the physical nature of manufacturers of the Transitional industries and appearance of modern humans in Eurasia.

The Obi-Rakhmat archaeological materials are unique (Derevianko, 2007, p.35-37) because it has yielded a clear stratigraphic sequence of 21 lithological layers that comprise 20 culture-bearing horizons and 36 horizons of human habitation of chronological interval 90000-30000 years ago (Suleimanov, 1972; Grot, 2004; Derevianko et al., 2001; Krivoshapkin et al., 2003; Krivoshapkin, Brantingham, 2004). Palaeoanthropological remains recovered from layer 16 provide the most important evidence on emergence of Homo sapiens sapiens in Uzbekistan. The suggested interpretation showed a combination of traits of Neanderthal and physically modern humans. The industry from Obi-Rakhmat layer 16 demonstrates continuity in development illustrating a gradual transition from the Midde to Upper Palaeolithic.
The transition to the Upper Paleolithic in the Altai occurred around 50 – 40 ka ago in the form of a gradual transformation of local Middle Paleolithic traditions. Two major trends have been established within this evolutionary process: the Kara-Bom and the Ust-Karakol. The Kara-Bom trend is mostly blade-based and can be interpreted as a continuation of development of the Kara-Bom Middle Paleolithic technocomplex. Employed techniques were mostly aimed at recurrent production of large elongate spalls. However, a micro-blade reduction technique was also employed. Tools on laminar blanks are especially characteristic of the Kara-Bom toolkit.

On the other hand, the early Upper Paleolithic industries belonging to the Ust-Karakol trend demonstrate prismatic, pyramidal and narrow-face reduction strategies, including one aimed at micro-blade production. Aurignacian-like tools and bifacially worked foliate points represent the diagnostic tool categories of the Ust-Karakol toolkit. Numerous implements and ornaments made of bone, mammoth tusks, animal teeth, ostrich egg shell, mollusk shell and gemstones within the collections represent another important feature of the Ust-Karakol trend.

Anthropological remains of Homo sapiens sapiens were found in Denisova cave in Upper Palaeolithic layer 11 [Derevianko, 2007].

The tooth of Homo sapiens sapiens was found in Denisova cave site in the archaeological layer 12 [Derevianko et al., 1970, p.13]. The Upper Palaeolithic industries were registered in this cave since the layer 11. Layer 11 has the C14 AMS date 48650±2380 years BP (KIA 25285 SP553/D19) [Derevianko, 2007, p.12].
SOME DISCUSSION PROBLEMS OF ARCHAEOLOGY, CHRONOLOGY AND CLIMATIC STRATIGRAPHY OF THE EARLY UPPER PALAEOLITHIC SITES OF THE KOSTENKI REGION

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Kostenki-Borshevo region of Russian plain is located in the basin of Don river. The early Upper Palaeolithic sites are found in it under the horizon of volcanic ash which correlates with Campanian Ignimbrite (CI) in Italy [Melekeszey et al., 1984; Pyle et al., 2005]. The age of CI tephra (Y5 in marine sediments) is approximately 39300-40000 years BP according to the last data [Fedele et al., 2003].

The first part of the report concerns the problems of dating of archaeological layers of Kostenki-Borshevo region under the volcanic ash.

**The problems with using of radiocarbon dating.** The archaeological layer directly in tephra of Kostenki 14 site has the non-calibrated radiocarbon dates of charcoal: 32420±440/420 (GrA-18053) and of the bone: 20640±170/160 (GrA-18230) [Sinitzin, Hoffecker, 2006, p.169] years BP. The calendar age of the first date after its calibration is: 37300±600 - 36800±400 cal.years [Pyle et al., 2005; Hoffecker, in press].

Different explanations of these non-agreements of the dating of Kostenki 14 layer in tephra based on CI tephrochronology (about 40000 years BP) and radiocarbon method (about 33000 years BP, non-calibrated) are discussed. The first, stratigraphical explanation is based on comparing of the geological data on the layer in tephra of K14 and layer V of Borshevo 5 site with radiocarbon dating about 33000 years BP as well [Lisizin, 2005]. The layer V of Borshevo 5 is lying about 5 cm above the tephra horizon. So the lacuna could exist between the time of appearance in the region of the tephra about 40000 BP and time of existence of the Upper Palaeolithic Borshevo 5 site approximately 33000 years BP. The lacuna could exist in Kostenki 14 as well.

The second (cosmogenic) explanation is based on the hypotheses about the synchronization of the CI-eruption and the palaeomagnetic excursion Lashamp [Fedele et al., 2003]. The large quantity of different cosmogenic nucleides (including C14) appeared in the stratosphere of the Earth during the excursion Lashamp with low level of magnetic intensity. As a result of this fact very young C14 dates appeared (for the time of CI and excursion Lashamp). So it's important to calibrate the very young dates of the layer in tephra (for identification of their calendar ages).

**Some results of using IRSL/OSL method.** 15 IRSL/OSL dates were obtained for Kostenki 12 by S.Forman in the laboratory of USA. According to this data the age of the new archaeological layer V of Kostenki 12 (Middle or Early Palaeolithic ?) is about 44150-44650 years BP and the dates about 43470-50120 are obtained just under the new Upper Palaeolithic layer IV of Kostenki-Streletz culture. These dates are in the excellent agree with the ages of the rapid climatic oscillations which were reconstructed for this site on the basis of pollen method [Levkovskaya, Hoffecker et al., 2003].

**Some problems with using of palaeomagnetic method for dating of Kostenki sediments.**

The position of palaeomagnetic excursion Lashamp (approximately 41000 years BP, by Guillou, 2002) is not clear in Kostenki 14 site because [see the abstract of G.Pospelova in the present volume] "the paleomagnetists write about possible excursion in the layers 18-19 [Gernik, Guskov, 2002, Fig 1, p.247-248] which are mineral sediments [Sinitsyn, 2002, table 2, p.235] but according to the
archaeologist A.A. Sinitsyn the Laschamp-Kargapolovo excursion was found in the soil - in the horizon 22 [Sinitsyn, 2002, table 2, p.235]. Paleomagnetic researches of Kostenki 14 and Kostenki 1 were carried out later by Norwegian palaeomagnetist R.Løvlie [Løvlie, 2006, p.135]. He didn't find any evidences of the excursion in both sections

The result of palaeomagnetic research of Kostenki 12 site showed [Pospelova, 2005] that the sample from the archaeological layer III (the soil A just under the horizon with tephra) showed the opposite direction. The cause of the appearance of these two anomalies is not clear yet. The palaeomagnetic zones of Kostenki 12 are well-correlated with pollen zones of this site [Pospelova, 2005; Levkovskaya, Hoffecker et al., 2005]. But the excursion Laschamp-Kargapolovo was not registered in the sediments of the same site from the catena zone. This zone is characterized by alternation of the palaeosoils and the flood terrace water sediments (opposite to the section with the excellent-developed soils where this excursion was found). Thus the problem of position of excursion Laschamp-Kargapolovo in the Kostenki-Borshovo region needs later researches.

Pollen correlations of Palaeolithic layers of Kostenki-Borshovo region. Pollen data were obtained by different palynologists (M.P.Gritchouk, V.P.Gritchouk, R.V.Fedorova, E.S.Maliasova, E.A.Spiridonova, V.A.Pisareva and G.M.Levkovskaya) for the sites Kostenki 1,6,11,12,14,17,21 and for the stratigraphical bore peat. It's very difficult to correlate the published pollen diagrams of the Kostenki region because there is a lot of lacunas in the sediments of the sections of this region. For example, the palynological data published for very important site Kostenki 14 [Spiridonova, 2002] is not usable for palaeoenvironmental reconstructions and correlations of four Early Upper Palaeolithic layers under the tephra. Even the most ancient Upper Palaeolithic layer 4b of this section has three characteristics: on different pages of the same publication is registered the domination of Picea or Pinus or Betula [see: Spiridonova, 2002, pp.239,244,246].

But only recently appeared in Kostenki the section with excellent stratigraphy (with four soils under the tephra horizon) which allow to solve some problems of climatic stratigraphy of the most ancient Streletz Early Upper Palaeolithic culture of the region. This is the Kostenki 12 section.

The new pollen data on Kostenki 12 and the results of generalization of pollen data published by different palynologists [Levkovskaya, Hoffecker et al., 2005] showed that the Kostenki ancient Streletz and Spizin culture existed in different palaeoenvironments.

The first phase of Strelets culture (layer IV of Kostenki 12) was connected with the megastage of the elm forests on flood-terrace refuge of Kostenki 12. It was the warm oscillation 12 of GISP2 scale – interstadial Moershoofd [Levkovskaya, Hoffecker et al.,2005]. Layer III Streletz culture began to form just after the end of Moershoofd. It formed during the first phase of the long Picea megastages and during cold phase just before and after it. Three phytophases were reconstructed for the Streletz culture at first: 1. cold steppe; 2. northern taiga (beginning of the Spruce megastage); 3. forest tundra. The Spizins culture was correlated with the megastage of the spruce forests (data on Kostenki 17, after Fedorova, 1963).

Some intercontinental correlations of the sites of Kostenki region with best dated pollen standards (lake Monticchio in Italy with 14 horizons of tephra, Dzigutski peat bog in Abhazia with many C14 dates) and some best dated δ18O or δ13C scales.

Different isotope scales and pollen standards published by many scientists [Dansgaard at al., 1993; Johnsen et al., 2001; Genty et al., 2003; Watts et al., 1996; Allen, Huntley, 2000; Allen et al., 2000; Arslanov, Gey, 1987] are used for correlations (Greenland GISP2, GRIP δ18O scales, Villars cave δ13C scale; pollen diagrams of lake Monticchio in Italy with 14 horizons of tephras; pollen diagram of Dzigutski peat bog in Abhazia with 7 C14 dating from 47000 to 35000 years BP, etc.). The correlations showed that the most ancient Palaeolithic layers of the Kostenki region (Mousterian or Upper Palaeolithic layer V of Kostenki 12) and the earliest layer of Upper Palaeolithic Strelets culture (layer IV of Kostenki 12) formed during interstadial Moershoofd. It was the warmest oscillation 12 of isotope stage 3. Its age is 45500 (46800?)-42300 years BP (according to δ13C Villars cave scale [Genty et al., 2003]) or about 45000-43000 cal.years (after δ18O GISP2 scale, Johnsen et al., 2001).
Layers V and IV of Kostenki 12 are the most ancient Upper Palaeolithic sites in Europe [see: "Science" from 12.01.07]. The Spizin culture which was connected with the Picea megastage formed just before interstadial Hengelo [according to R.V.Fedorova's pollen data; Fedorova, 1963]. Data on Kostenki 14 shows [Levkovskaya et al., 1983; Spiridonova, 2002; non-published data of G.Levkovskaya and V.Pisareva] that four archaeological layers under the tephra formed at this site during the Picea megastage. So they are younger than the layer IV of Streletz culture of Kostenki 12.

Discussion of the material culture complexes. The specific features of the archaeological complexes of the both Early Upper Palaeolithic cultures of the Kostenki-Borshevo region (Streletz and Spizin) will be discussed in the second part of the present report. The Early Palaeolithic archaeological complexes of Kostenki 1,12,14 and 17 are compared.
TIME OF HE4 EVENT IN KOSTENKI-BORSHEVO REGION
(ARCHAEOLOGICAL, PALAEOENVIRONMENTAL AND ADAPTATION PROCESSES).


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There were two abrupt climatic transitions to very cold and extremely dry climate phases in Kostenki region between 45000-35000 BP according to the new pollen data on Kostenki 12 site [Levkovskaya, Hoffecker et al., 2005] and on the bore pit from the Borshevo 5 site. What of it correlates to HE4 event?

Archaeological layer III of Kostenki-Strelezki culture has radiocarbon non-calibrated dating 36280±360/350 (GrA-5551). The calendar age of this dating after calibration [by Fairbanks et al., 2005] curve is 41535±225 cal.yrs. Layer III began to form at Kostenki 12 after the very warm interstadial (phase of domination of Ulmus forests at flood-terrace, δ18O GISP2 isotope oscillation 12) during the first extremely dry phase with the domination of underdeveloped non-arboreal pollen grains and bones of horses in the palaeozoogical complex. But it formed during 3 phytophases: 1) cold and dry, 2) at the beginning of interstadial or interphasial with coniferous forests on the flood-terrace, 3) cold, wet. Later there was an interruption in sedimentation only after which formed a layer with volcanic ash. The last layer with the microlenses of volcanic ash is characterized by the domination of underdeveloped pollen grains of Chenopodiceae which are indicators of the geobotanical crisis of the HE4 time. It has the erosion contact with the layer under it (the layer III of Streletz culture). Such contact is an indicator of low level of basis of erosion of relief during very dry climatic oscillation. The reconstruction showed that the adaptation processes during the time of the formation of layer III of Kostenki-Strelizki culture changed very rapidly (data on Kostenki 12).

Thus the HE4 event corresponds to the second cold and very dry climate phase (with abrupt transition to it) of Kostenki 12. The HE4 event at first is identified in the continental part of Eastern Europe, in the area of present forest steppe zone of the Russian plain. It was discovered at Kostenki 12 in the sediments with microlenses of Campanian Ignimbrite (Cl=Y5) tephra, the age of which is 39300 years BP [by Fedele, Giaccio, Isaia, 2003]

The problems of intercontinental or regional correlations of two distinct Kostenki abrupt extremal cryoarid climatic phases within the span 50000-40000 years BP with the following items of correlations are viewed: 1. with the published European pollen standard [Watts et al., 1996, 2000; Allen et al., 2000] of Monticchio lake in Italy with 14 horizons of buried volcanic ashes; 2. with the Upper Palaeolithic
layers of Kostenki 12 and Kostenki 17 sites, which are the most ancient Upper Palaeolithic sites in Europe [see: "Science" from 12.01.07] and 3. with the palaeomagnetic excursion Laschamp (approximately 40.4±2.0 ka [Guillou et al., 2004]). But the palynological data published for very important Palaeolithic site Kostenki 14 [Spiridonova, 2002] is not usable for palaeoenvironmental reconstructions and correlations, because the most ancient Upper Palaeolithic layer 4b of this section has three different characteristics: on different pages of the same publication was registered domination of Picea or Pinus or Betula [see: Spiridonova, 2002, p. 239, 244, 246]. Cultural layer of Spizinskaya culture of Kostenki 17 is younger than HE4 event but the layer III of Strelets culture of Kostenki 12 is more ancient than this event. The Spizin culture layer of Kostenki 17 corresponds to the coniferous megastage of Kostenki flood-terrace refugium, but the Streletz culture layer IV of Kostenki 12 - to the "Ulmus" megastage of it.

References:


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The chronology of archeological layers in the Kostenki-Borschevo region remains a serious and riddle question. The absolute chronology methods are not applicable for all the cases, so one has to use the paleomagnetic and magnetic studies of rocks which can supply with additional knowledge on the age of the sediments. Geomagnetic excursion Laschamp-Kargapolovo is the best time-marker for the Upper Palaeolithic. This excursion has the global character because it was discovered in different regions of the Earth in the volcanic lavas [Bonhommet and Babkine, 1967], continental loesses [Kulikova and Pospelova, 1979; Pospelova et al., 1998] and marine or ocean sediments. Three similar geomagnetic characteristics of the excursion were obtained near Kargapolovo village (Siberia) in three sections. Radiocarbon dating of wood 38800 ± 550 years BP (SOAN-25) was obtained in Kargapolovo within the layer with excursion, 0.38 cm. above the excursion [Kulikova, Pospelova. 1976,1979; Petrova, Pospelova, 1990; Pospelova, 2002]. The average age of the excursion is about 42000 years according the recent data [Guillou et al., 2004; Leduc et al., 2006]. The duration of excursion corresponds to the few thousand years that permits to register its signature in the excavation not by single point but on the few stratigraphic levels to which even some pollen zones could correspond. As example some pollen zones correspond to it at the best stratified section Yangiyul [Pospelova, Levkovskaya, Pilipenko, 2002]

The excursion Laschamp-Kargapolovo is registered (similar to other excursions) on the low intensity background of geomagnetic field (according the data obtained in the session-pipe hole Yangiyul-Uzbekistan). The background level had the value only 0.30-0.25 relatively to the present intensity of geomagnetic field [Pospelova and Scharonova, 1999]. The comparison of pollen data with the variation of geomagnetic field intensity in this session shows that the maximal values of geomagnetic field intensity fit with the period of cold climate but the minimal values correspond to the rather warm interstadial [Pospelova, Levkovskaya, Pilipenko, 2000]. The start and the end of the excursion corresponds to the very cold oscillations. During excursion Laschamp the lowering of the geomagnetic field intensity also was registered.

Some results of using magnetic data for paleoclimatic reconstruction. Some types of deposits of Kostenki-Borschevo region are possible to use for paleoclimatic reconstructions. Data on Kostenki 12 site show that the dynamics of the scalar magnetic characteristics of the rocks (SMChR) are indicators of the paleoclimate change. The magnetic zones were reconstructed on the bases of SMChR for the sediments of Kostenki 12. They were correlated with pollen zones [Levkovskaya, Hoffecker et al., 2005]. Magnetic zones with high SMChR correlate with very warm oscillations (thermomers), but magnetic zones with lower SMChR - with cryomers.

Some problems with identification of the deposits of excursion Laschamp-Kargapolovo in Kostenki-Borschevo region. The possible climatostratigraphical position of Laschamp-Kargapolovo in Kostenki-Borschevo region is the following: it is lying below the horizon with the volcanic ash of CI=Y5 stage of eruption about 38-40 kyr BP in Italy [Pyle et al., 2005].

Kostenki 12. The samples for paleomagnetic researches were gathered from 2 sections of Kostenki 12. Seven samples were collected by G.Levkovskaya, part of them from the fresh session with
the best stratigraphy. The soils in this session did not change from solifluction and other processes. Two samples showed anomaly direction of magnetization when the staged thermally demagnetization up to a temperature of 600-680°C have been applied. One sample collected from 12-th humus lithological horizon (palaeosoil A, archaeological layer III), showed the opposite direction; it is lying just under the lithological horizon 11 with microremains of volcanic ash. The other samples have the direction close to the modern geomagnetic field [Pospelova, 2005]. The second anomalous sample corresponds to the sediments above and below the archaeological layer IV. They were discovered in 2002 in the palaeosoils catena zone. This zone characterized by alternation of the palaeosoils and flood terrace water sediments. The interpretation of the appearance in Kostenki 12 of two levels with the magnetic anomalies is not clear now. 450 samples were collected from the excavations of 2003 year at Kostenki 12. They did not give the positive results. They were gathered from the buried flood terrace sediments that were synchronous to the lying “in situ” palaeosoils presented in the first type of the section.

**Kostenki 14.** Evidences of the excursion Laschamp were found in one sample collected between the archaeological layers IVa and IVb [Sinitsyn et al., 2004]. But the stratigraphic position of this sample is not clear now because the paleomagnetists write about possible excursion in the layers 18-19 [Gernik, Guskov, 2002, Fig 1, p.247-248] which are mineral sediments [Sinitsyn, 2002, table 2, p.235] but according to the archaeologist A.A. Sinitsyn the Laschamp-Kargapolovo excursion was found in the soil - in the horizon 22 [Sinitsyn, 2002, table 2, p.235]. Paleomagnetic researches of Kostenki 14 and Kostenki 1 were carried out later by Norwegian palaeomagnetist R. Lövlie [Lövlie, 2006, p.135]. He didn't find any evidences of the excursion in both sections.

**Kostenki 17.** E.R. Guskova found the evidences of the excursion Laschamp-Kargapolovo at the level of the archaeological layer II and just under it [Sinitsyn, 2005].

The researches in Kostenki showed that the best results were obtained in fresh section of Kostenki 12 with non-water type of the sediments. Different secondary processes (weathering, solifluction, complicated paleohydrological processes in the flood terrace, ancient human’s activity, etc.) could be the cause of disappearance of the slides of paleomagnetic excursion. Except for this different methods of collection of the samples used by paleomagnetists in Kostenki region could be the causes of the objective or non-objective results of the paleomagnetic researches. Some scientists collected the samples in the test-tubes. As a result of pressing of the test tubes into the layers the disturbances of the loose sediments (loesses, sandy loams, etc.) could appear and the pieces of such sediments could change their ancient magnetic orientation. We study only the blocks of the sediments (5x5x5 cm³) which we cut out from the layers during the expeditions.

The signature of geomagnetic excursion is registered best when the samples are collected from the recent deep excavation. This signature could disappear due to the mentioned above reasons in the excavations of the sites that existed at the open air for some years. The best excursion results have been obtained from the core drilled wells or from the session-pipe hole [Pospelova, Larionova, 1973; Pospelova et al.,1998].

This review shows that it is very important to organize the very new detailed palaeomagnetic researches in Kostenki-Borschevo region and parallel with the pollen studying.

**References:**


18
NEW RESEARCHES OF THE KOSTENKI FAUNAL COMPLEXES OF THE DEPOSITS BELOW THE CAMPANIAN IGNIMBRITE (CI) Y5 TEPHRA (K 6, K 12, K 17 SITES)

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Kostenki is one of the most famous Russian Upper Paleolithic key geoarchaeological regions. It is located on the west bank of the Don River (Voronezh district). Deposits below CI tephra are dated between 45,000 to 42,000 years ago and contain the signs of the human activity, reflecting the localities very early in the Upper Palaeolithic. Boriskovskii (in 1953-1955), Efimenko (in 1935), and Rogachev (in 1953-55; 1957-1958; 1963) distinguished below Y5 (CI) tephra bone- and artefact-bearing horizons in Kostenki 6, Kostenki 12, Kostenki 17 sites. About 560 indeterminate pieces of the mammal bones (stored in Zoological Institute RAS, St.-Petersburg, Russia) were recovered during the excavations. The original complete collection was looked over and recalculated. Here, the results of the examination of the fossil bones from collections of K 6, K 12 (Layer III), and K 17 (Layer II) are presented.

The landscape around Kostenki hunter’s camps likely corresponded to tundra-steppe or forest-steppe since the mammals adapted to the dry and cold climate. Horse dominates the K 6 fauna - 66.7% bones were identified to this animal. It was the main food source of site dwellers. Other species such as mammoth (8.8%), reindeer (8.8%), wolf (6.9%), bison (4.6%), hare (1.9%), polar fox (0.9%), red deer (0.9%), woolly rhinoceros (0.5%) are present. This fossil assemblage is very similar with K 12 (III) one, where horse also dominates (70.0%), the mammoth (9.0%) occupies the second place, and reindeer (8.4%) – the third. Wolf (6.0%), red deer (2.4%), hare (2.4%), polar fox (0.6%), woolly rhinoceros (0.6%), ground squirrel (0.6%) are present. On the contrary, wolf (70%) dominates the K 17 (II) fauna. It was the primary game for the hunters. Other species such as horse (11.7%), bison (6.7%), reindeer (6.1%), mammoth (5.0%), wolverine (0.5%) are not so abundant.

K 17 (II) site is radically different also by the skeletal part representation of the mammals from the K 6, K 12 (III) sites. Two complete wolf skeletons were found in K 17 (II). Man may have been hunted carnivores for skin. On the contrary, only isolated fragments of wolf legs are represented in K 6, K 12 (III) fossil assemblages. All parts of the horse carcass, including low, medium and high food utility cuts, are represented in K 6, K 12 (III), suggesting, that the whole animals was brought to the sites for butchering, where used totally. The skull fragments are predominated. On the contrary, the horse skull fragments are absent in K 17 (II), and the front leg bones are predominated – 80.0%. These high food utility cuts may have been transported as carcass portions to the K 17 (II) settlement.

The result is not in contradiction to archaeology data. Deposits below the CI tephra at Kostenki yielded several artifact assemblages, which are assigned to the local early Upper Palaeolithic Strelet's (K 6, K 12 (III)), and Spitsin (K 17 (II)) cultures.
LATE PLEISTOCENE STRATIGRAPHY MARKERS AND CHRONOLOGY OF PALAEOLITHIC IN THE UPPER DON BASIN (RUSSIA)

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I. One of the most complicated problems in the basin of the upper Don river is the correlation of stratigraphy sequences and absolute chronology of Paleolithic sites habitation levels. II. The Kostenki-Borschevo group of 26 sites (including multilayer ones) yielded data on radiocarbon and paleomagnetic dating as well as on palynology and tephra-chronology. Six multilayer sites with uniform formation of stratigraphy depositions (Kostenki 1, Kostenki 11, Kostenki 12, Kostenki 14, Kostenki 17 and Borschevo 5) allow framing of the substantive periodization for archaeological assemblages. III. The earliest finds of the initial Upper Paleolithic are deposited in diluvium loams characterized with interstadial palynology spectrum. These are overlaid with the lower humus bed thought to be the first stratigraphy marker for the multilayer sequences. IV. Above the lower humus bed is deposited the layer of loam with the seam of volcanic ash which is regarded as a marker not only for the local sites but also for the Russian plain as a whole. Spread of the volcanic ash fallen down 38-37 kyr BP is traced from Italy [Melekesz et al., 1984; Pyle et al., 2005] to the very south of Russia. This volcanic ash is recognized in seven sites including two - Kostenki 14 and Borschevo 5 - where archaeological finds were directly overlayered with the tephra. The volcanic ash is especially important marker for dividing the assemblages transitional from the Initial Upper Paleolithic to the typical Early Upper Paleolithic. V. General stratigraphic sequence is complemented by the upper humus bed, which was deposited over the loam with the ash. According to the absolute dates 32-26 kyr BP comprised in the upper humus bed are habitations of the early Upper Paleolithic. VI. These are overlaid with cultural layers dated by the middle and the late Upper Paleolithic comprised in the suite of surface loess loams complicated with series of paleosoils. Among those the well defined stratigraphic marker named Gmelin paleosoil 22/21 kyr BP cuts the Gravettian episode industries from the latest ones. VII. The correlation of the records under 4 stratigraphy markers (upper and lower humus beds, tephra and Gmelin paleosoil) allows to even discrepancies of the different dating methods. Based on the comprehensive chronology of the multilayer sites the ranging of the Middle/Upper Paleolithic in the upper Don basin is postulated. VIII. One of the recently discovered sites Borshevo 5 being excavated for the last 2 years yielded new stratigraphic and radiocarbon data to make the absolute chronology more precise. Currently the excavations and the testpitting are under way but the results obtained by now allow to distinguish the age according the chronostratigraphical markers.

The upper Gravettian cultural layer deposited in Gmelin paleosoil obtained C-14 dates 17-22 kyr. The estimated age for this settlement may fall in the terms 22-21 kyr BP. The second cultural layer recognized as the kill-site of the hunters for horses is deposited in the upper covering division of the upper humus bed and may be dated at least 28-30 kyr BP. The third cultural layer is synchronous with the deposition of the volcanic ash Y5 being occurred with the upper contact of the ash. The finds of mammoth bones in the lower humus bed in a testpit at the depth of 5 m under the modern surface may indicate the forth cultural layer remains thought to be as old as about 40 kyr BP. Cultural layers of Borschevo 5 are in good correlation with data of the multi-layered sites Kostenki 12 and Kostenki 14. The well stratified structure of Kostenki-Borschevo settlements illustrate in detail the geological and human history of the Upper Paleolithic in the South-East of the Russian Plain.
FINAL PALAEOLITHIC BLADELET ASSEMBLAGES
IN THE MIDDLE YENISEI AREA.

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The research was supported by the Russian Foundation for Basic Research: grant N 05-06-80329a (project of G.M. Levkovskaya)

Bladelet assemblages – assemblages of less 5 cm length flakes. In the 1970es-1980es a number of sites with bladelet assemblages were discovered in the Middle Yenisey area, including Afanasjeva Gora, Tarachikha (layer 2), Novoselovo 13 (layer 2, 3), and Shlenka. All of them are believed to date from the early Sartan period. Since 1998 some more sites with bladelet assemblages have been found in the Derbinsky gulf area (Blizniy Log, Konzyl, Maltat). However, the latter group is dated to the late Sartan time (Akimova et all, 2005). Both groups share some types of stone tools, as well as some technological and metrical characteristics:

— prevalence of various types of prismatic shingle cores;
— presence of disc cores and cone-shaped cores similar to high scrapers;
— most flakes are less than 5 cm long;
— more than 60% of all of tools are on blades;
— typical are blades with marginal retouch, short endscrapers with marginal retouch, round endscrapers and high endscrapers;
— presence of microblades;
— presence of burins;
— prevalence of dorsal, marginal, semi-abrupt retouch;

The Derbinsky gulf sites show also some similarities with the Kokorevo assemblages:

— presence of endscrapers on blades;
— presence of chisel-like tools;
— presence of points;

It appears that in the Middle Yenisey area the sites with bladelet assemblages existed during the whole of the Sartan period, and therefore they should not be considered transitional. There seems to be an association between bladelet assemblages and mammoth fauna throughout Siberia. In addition, one can note that the sites with bladelet assemblages show no signs of long-term structures (dwellings, storage pits), which may be indicative of the short-term character of their occupation.
A QUANTITATIVE APPROACH TO THE STUDY OF CULTURAL DYNAMICS IN THE MIDDLE AND EARLY UPPER PALAEOLITHIC

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This paper introduces a simple method designed to evaluate the general degree of “advancement” of stone/bone industries of the Middle and early Upper Paleolithic by calculating what the author calls the MP/UP index. The Middle and Upper Paleolithic are regarded as two ideal polar extremities each characterized by a number of polar attribute states. The real MP and UP industries form a continuum of states between the two ideal poles and the position of any assemblage on this scale can be expressed in quantitative terms. Since this approach was described and tried for the first time (Vishnyatsky 2002), it has been applied by different authors to a number of MP and early UP assemblages from West and Central Asia (Vishnyatsky 2004), South Siberia (Rybin 2003), and East Europe (Anisyutkin 2005). In the present paper the author starts with the description of the method itself and then gives several examples, illustrating how and for which purposes it can be used.
The ideas of the unilinear evolution of hominids accompanied by sociocultural evolution, that dominated anthropological thought some 100 years, now seem to be hopelessly obsolete. The analysis of new data, including first of all the materials obtained in the last 10 years in East Europe and Mountain Altai, shows the variability of the Early Upper Paleolithic formation processes in different parts of the Old World. The present analysis is based not on some a priori sociological scheme, but on the principles of the concrete-historical approach. According to this approach the objects under study should be considered in their concrete spatial, chronological and sociocultural frames. The main conclusions can be formulated as follows:

1) The classical unilinear evolutionary model of transition does not work in any of the regions under consideration. It appears that in those regions, where one can observe a gradual transformation of the Middle Paleolithic technologies and tool forms into the Upper Paleolithic ones (as is the case in the Near East and Altai), this process was not accompanied by biological changes. Judging on the available data, some of the local Middle Paleolithic traditions were associated with early Homo sapiens. In addition, even in these regions of Eurasia the mass production of formal bone tools and material symbols started abruptly in the very beginning of the Upper Paleolithic (for instance, the lower part of layer 11 of Denisova Cave in Altai). This allows to speak about a revolutionary leap that took place some 50-45 kyr ago.

2) In Europe the formation of the Upper Paleolithic mainly followed the acculturation scenario. Due to the influence of the new coming populations who brought a developed Upper Paleolithic culture, a part of the local Neanderthals changed their traditions and, probably, behaviors, which is reflected in the appearance of the so called “symbiotic” (archaic) cultures. This process started 50-40 kyr ago and occurred particularly intensively in the outlying parts of the Neanderthal world (for instance, in the Middle Don region, where the oldest of the East European Upper Paleolithic assemblages have been found, and in the north-east of the Russian Plain). The process of acculturation was accompanied by the process of assimilation of a part of European Neanderthals by newly arriving Homo sapiens. However, the latter assertion needs to be confirmed by additional skeletal evidence.

3) In the areas densely populated by the Neanderthals, where the latter were strong enough to withstand the newcomers, the process of cultural transition was delayed. In some cases (Crimea, Iberian peninsula) the Middle Paleolithic traditions had persisted rather long, until they disappeared some 28-20 kyr ago, without leaving a trace in local Upper Paleolithic cultures. In these situations one can speak about replacement.

4) Two facts are worthy of special note:
   a) not a single region of Europe shows a gradual transformation of the local Mousterian into the local Upper Paleolithic. Quite the reverse, some early Middle Paleolithic industries seem to have more Upper Paleolithic characteristics than the late ones.
   b) the oldest “developed” Upper Paleolithic industries (Spitsynian, Kostenki 14/IVb, Aurignacian 0, etc.) are clearly of different cultural affiliation, and at the same time they share something what I define through the term “Auringnacoidness”.

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These two facts allow one to suppose that the oldest “developed” Upper Paleolithic cultures of Europe have some common base, which had been formed probably beyond our continent and much earlier than 50-45 kyr ago. The search for this hypothetical base is now one of the most important tasks faced by Paleolithic archaeology.

5) Thus, the historical sense of the concept of the early stage of the Upper Paleolithic seems to be adequate to the process of formation of the Upper Paleolithic culture proper. This process was not unilinear and followed different scenario. It cannot be explained as an adaptation to some environmental changes. Rather it should be understood in terms of sociocultural adaptation resulting from interactions of human groups with different social and cultural traditions (developed Upper Paleolithic, symbiotic cultures, surviving Mousterian). The completion of this process if marked by the total or nearly total disappearance of both Mousterian and symbiotic cultures. Purely Upper Paleolithic sociocultural characteristics come to be absolutely predominant. The early Upper Paleolithic ends and the middle part of the Upper Paleolithic begins. In different parts of Eurasia the dates for this boundary range from 28 to 22-20 kyr ago.
CONTRIBUTION TO THE KNOWLEDGE OF THE INITIAL UPPER PALAEOLITHIC (TIME AND PLACE OF APPEARANCE IN EUROPE).

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program of Prezidium of Russian Academy of Science "Adaptation of ethnic groups and cultures to environmental, social and technogenic changes and transformation" (project of M.V.Anikovich).

The Initial Upper Palaeolithic appears in Europe about 43000 BP during Middle Wurm (OIS 3). It immediately preceded Interstacial Hengelo.

The earliest complexes were founded at Balkan Peninsula (cave sites Bacho Kiro and Temnata), Mediterranean seashores of Spain, Italy and France, as well as at the centre of Russian Plain. In the latter case we mean the last discoveries at Kostenki site. It is revealed a cultural layer (Kostenki 14/IVb) with tools and ornamentations of typical Upper Paleolithic design. These artefacts are dated the absolute dating over 40000 BP.

All these earliest complexes have not cultural and genetic interrelationships with Regional Mousterian.

At the present time we have not reliable data about place of Initial Upper Palaeolithic origin. Existing hypotheses are not confirmed with reliable data up to now.