



# The most ancient sites of Kostenki in the context of the Initial Upper Paleolithic of northern Eurasia

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**ABSTRACT** The aim of the paper is to discuss the taxonomic position of the assemblages from the lowermost cultural layers of Markina gora (Kostenki 14). The radiocarbon dates of 36-37 kyr BP would seem to be the minimum age of the assemblages recovered therein, because the stratigraphic, palynological and paleomagnetic evidence suggest an earlier chronology. The “Early Upper Paleolithic” is a binomial system where one component is represented by the cross-continental Aurignacian and the other by a series of local transitional cultures. However, the material under consideration, together with the assemblage from the cultural layer II of Kostenki 17 (Spitsynian), does not fit into this model. They seem to represent isolated phenomena, both without

ancestors or successors, and provide unusual “advanced” elements of material culture: bone tools in the first case, ornaments in the second. Thus, and in accordance with the dating evidence, it seems preferable to think of these assemblages as a manifestation of a more ancient system of relations than to try to force them into that binomial system. These two assemblages would thus belong in the “Initial Upper Paleolithic” of Europe and the Near East or in its northern Asian equivalent, the Kara-Bom “stratum”. The “Initial Upper Paleolithic” as a cross-continental horizon appears to be a real unit of the division of the Upper Paleolithic into periods, given that its composition and structural relationships differ from the traditional “Early Upper Paleolithic”.

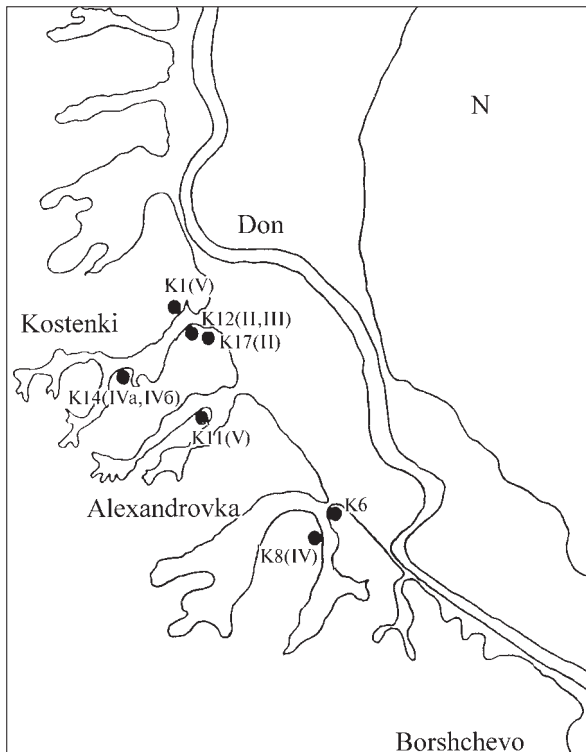
## Introduction

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The excavations of 1998-2001 at the site of Kostenki 14 (Markina gora) (Voronezh region, Russia) provided evidence of new, previously unknown, archeological assemblages of the most ancient stage of the Upper Paleolithic of eastern Europe.

Four cultural layers were identified under the chronological marker represented by the volcanic ashes which separate the sites belonging to the chronological groups I (ancient) and II (middle) of the Kostenki complex (Rogachev, 1957; Praslov and Rogachev, 1982). A cultural layer covered by deposits of volcanic ash was first discovered at Markina gora in 2000 (Sintsyn, 2003).

Comparative-analytic studies carried out in the 1980s indicated that the origin of the Kostenki tephra is related to the catastrophic eruption of Campi Flegrei in Italy, with an estimated age of 35 kyr BP (Melekestsev et al., 1984). Until 2001, this was considered as a minimum age for the sites in chronological group I (Fig. 1). A date of 32 420/+440/-420 BP (GrA-18053) for the cultural layer in the volcanic ash at Markina gora complicated the issue, as the ashes of central Europe dated at 32 kyr BP are distinct from the Kostenki ones in chemical structure and thought to be more recent (Pawlikowski, 1992). Three eruptions identified in the Phlegrean Fields volcanic system dated to 32, 35, and 38 kyr BP (Lefèvre and



Gillot, 1994; see also Mussi, 1999), are possible sources for the Kostenki ash. The ca.32 kyr BP result cited above conforms well to the general sequence of 50 absolute dates available for the eight cultural layers at Markina gora (Sinitsyn et al., 2002; Haesaerts et al., 2002). An age of ca.38 kyr BP would conform well with the stratigraphic, palynological and paleomagnetic evidence (Spiridonova, 2002; Gernik and Guskova, 2002). The discrepancy between the two possible chronologies (long and short) for the lower part of the site's sequence is the main problem affecting the current study.

FIG. 1 – Kostenki-Borshchevo area. Sites of chronological group I (ancient) (33-40 kyr BP).

### Markina gora (Kostenki 14), lower cultural layers

A separate paper (Sinitsyn, 2002) deals with the description of the series of cultural layers situated beneath the volcanic ash. A brief account is supplied below, and the radiocarbon dates for those layers (probably minimum ages only) are given in Table 1.

- Cultural layer IVa is contained in the paleosol deposits and is radiocarbon dated to 33-35 kyr BP. A huge concentration of horse bones (more than 50 individuals) in association with a few lithic artifacts suggests primary butchering activities and an interpretation of the place as a location where animals were slaughtered in the wake of a collective hunt.
- A small number of bone fragments and stone artifacts were recovered in a level (“hs” — horizon in the soil) contained in the 2 m thick stratified colluvial sediments below the volcanic ashes paleosol. A paleomagnetic excursion identified with Laschamp (i.e., perhaps as early as ca.44-46 kyr BP) was identified in this soil and is one of the main arguments supporting a long chronology for the lower part of the site's sequence (Gernik and Guskova, 2002).
- A complete mammoth skeleton (“hm” — horizon of the mammoth) was also identified in this stratified colluvium. The absence of cultural remains in association with the skeleton indicates that this is a paleontological context, not an archeological one.
- The lowermost cultural layers are represented by units “hh” (horizon of the hearth) and IVb, which are currently interpreted, respectively, as the remains of an *in situ* settlement and as an accumulation of redeposited material in the bed of a small stream running at the bottom of the slope.

**TABLE 1.**

Chronometric results for the lower cultural layers of Markina gora (Kostenki 14) (Sinitsyn et al., 2002a, 2002b; Haesaerts et al., 2003).

Layer	Result BP	Material
horizon in ashes	20 640/+170/-160 (GrA-18230)	bone
	32 420/+440/-420 (GrA-18053)	charcoal
IVa	27 400±5500 (LE-5271)	bone
	29 700±400 (GIN-8025)	bone
	32 060±260 (OxA-9567)	charcoal
	32 180/+450/-420 (GrA-13293)	charcoal
	33 280/+650/-600 (GrN-22277)	charcoal
	33 200/+510/-480 (GrA-13301)	charcoal
horizon in soil	20 890±280 (GrA-18231)	bone
	34 550/+610/-560 (GrA-13297)	charcoal
IVb	32 600±280 (OxA-9568)	charcoal
	35 280±330 (OxA-9569)	charcoal
	34 940/+ 630/-590 (GrA-13302)	charcoal
	36 040±250 (GrA-15957)	charcoal
	36 540/+270/-260 (GrA-15961)	charcoal
	horizon of hearth	35 330/+240/-230 (GrA-15958)
35 870±250 (GrA-15962)		charcoal
36 320/+ 270/-260 (GrA-15956)		charcoal
36 010/+250/-240 (GrA-15965)		charcoal
37 240/+430/-400 (GrA-10948)		charcoal
34 300±2900 (UIC-749)		IRSL
44 900±3800 (UIC-748)		IRSL

In contrast with the overlying cultural layers, IVb provided a large artifact assemblage, for the most part recovered in the natural cavities and the depression corresponding to the bed of the ancient stream. Lithic technology is characterized by the production of middle sized blades using the unipolar parallel method. The typological composition of the flint inventory features a typical Upper Paleolithic tool-kit (endscrapers, burins, splintered pieces) combined with bifacial, mainly oval tools with a convex-flat profile (Fig. 2).

An impressive bone assemblage — mattocks made on antler, bone, and mammoth tusk (Fig. 3, no. 3-7) — is also present. The head of a female figurine made on mammoth tusk (Fig. 3, no. 8) is the most ancient, well dated manifestation of sculptural art in the Paleolithic of eastern Europe.

A pendant with two incised holes made on the shell of a Columbellidae of the tropical group of sea gastropods (according to Prof. J. I. Starobogatov, ZIN RAS) (Fig. 3, no. 9) provides other kinds of information. Since the modern distribution of this mollusk is restricted to the Mediterranean basin, we seem to have here important evidence of the connections and, probably, of the origins of the population that used these shells as beads for necklaces.

The tooth of a modern human provides evidence pertaining to the anthropological affinities of the makers of this assemblage. According to Prof. A. A. Zubov (IAE RAS), one particular feature of its morphology — the presence of a deflective wrinkle — is diagnostic. This feature occurs in 70-80% of mongoloids but in only 5-6% of Europeans (and mainly among Finns and Lapps).

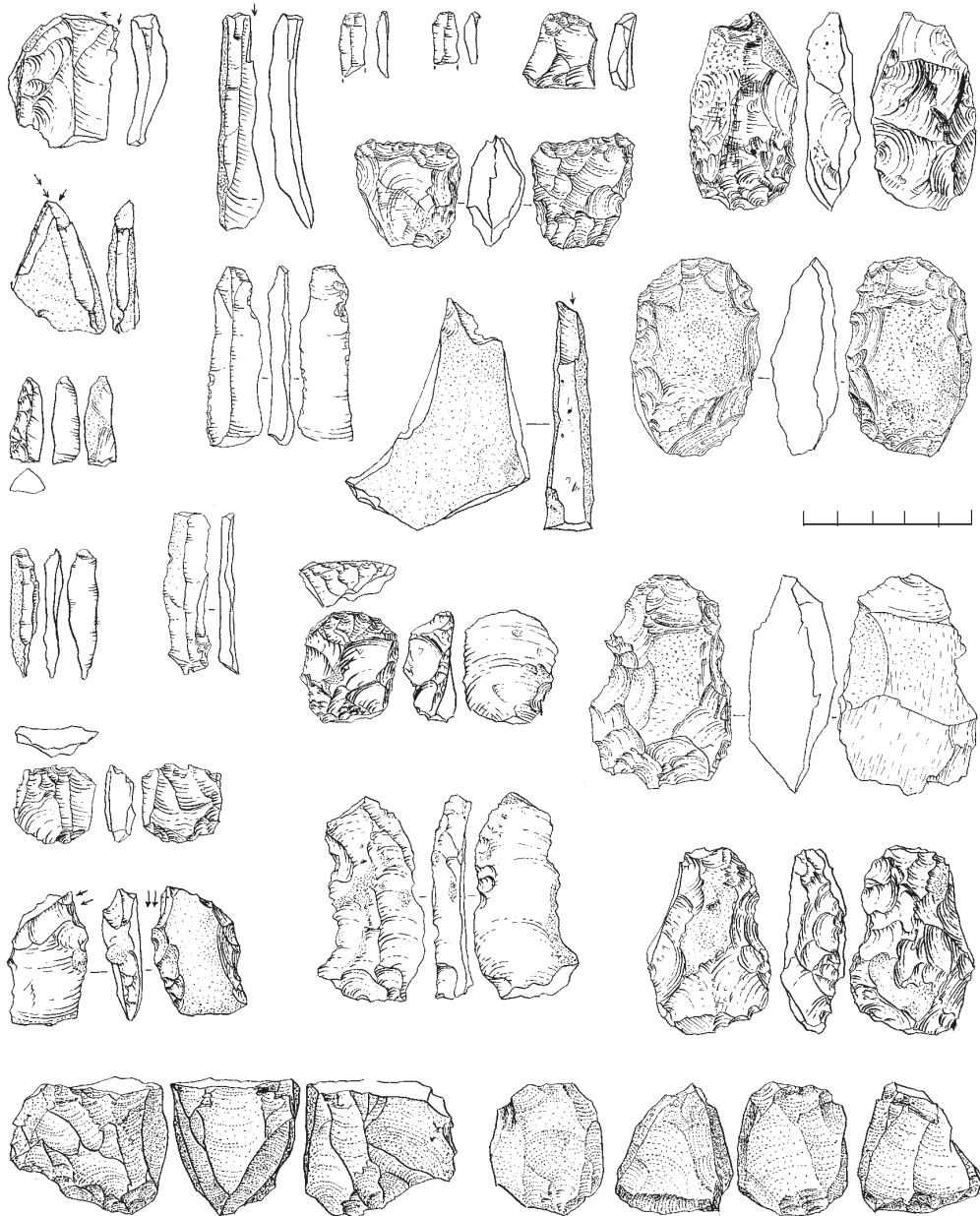


FIG. 2 – Kostenki 14 (Markina gora). Cultural layer IVb. Lithic assemblage.

In sum, both the lithic and the bone industries, as well as the ornaments from the lowermost cultural layers (IVb and the “horizon of the hearth”) seem to correspond to a new, previously unknown cultural complex.

### The wider Kostenki context

The earliest chronological group of the Kostenki model (group I) is not as well known as the others because of the large depth at which the cultural layers are buried. With the exception of Kostenki 6, all the occurrences are in sites with multiple layers where they correspond to the base of the succession. According to the stratigraphic, palynological and

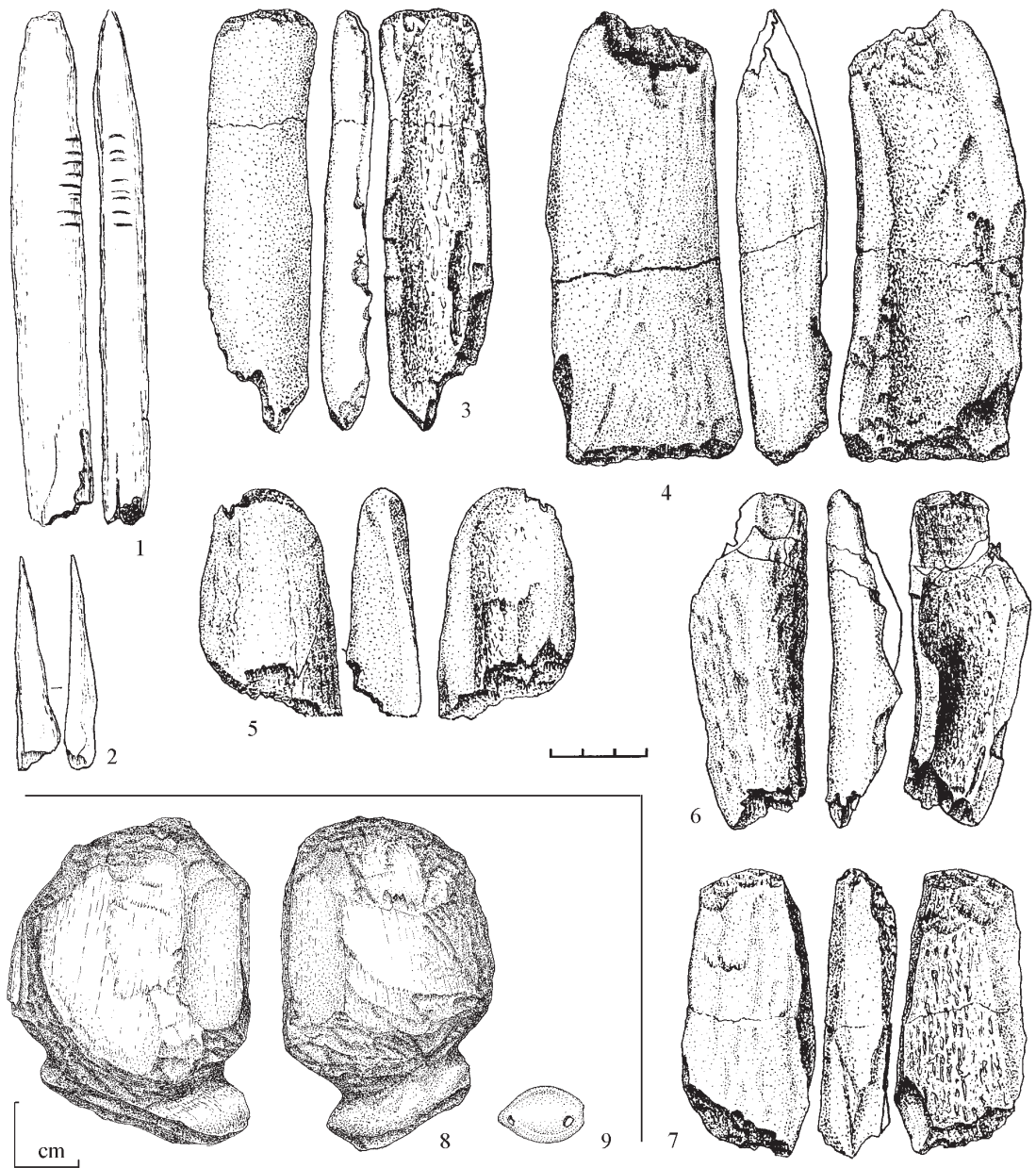


FIG. 3 – Kostenki 14 (Markina gora). 1-4, 7-9. cultural layer IVb; 5-6. “horizon of the hearth”.

radiocarbon evidence, this group is estimated to date to the time interval 33-37(>40) kyr BP (Sinitsyn et al., 1997), although only 50% of the available dates actually fall inside the interval's limits (Sinitsyn, 1999). The group is composed of ten sites: Kostenki 1 (layer V), Kostenki 6, Kostenki 11 (layer V), Kostenki 12 (layers II and III), Kostenki 14 (layers IVa, “hs”, IVb and “hh”) and Kostenki 17 (layer II) (Fig. 1).

Two cultural traditions coexist in chronological group I: the Streletskian (Fig. 4), represented by four sites; and the Spitsynian (Fig. 5), represented by a single occurrence, the cultural layer II of Kostenki 17 (Spitsyn). The attribution to the Spitsynian of the assemblage from cultural layer II of Kostenki 12 (Fig. 6), proposed by Anikovich (1992, 1999, 2000), is probably correct but remains in question because of problems relating to the real affinity of the materials and to the homogeneity of the available collection.



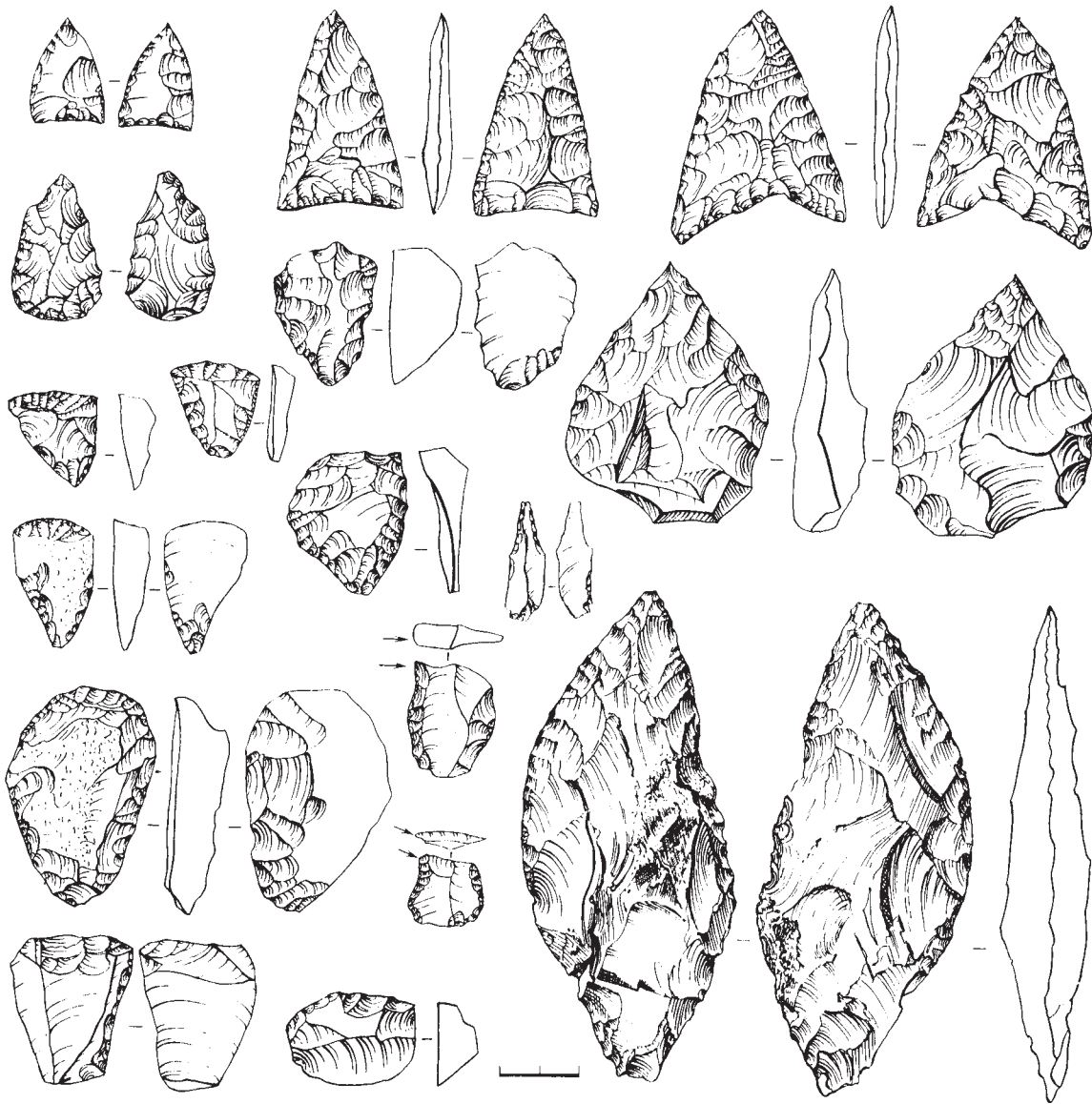


FIG. 4 – Streletsian. Kostenki I (cultural layer V). Lithic assemblage (from Boriskovski, 1984).

The inclusion of the Streletsian among the “Transitional” assemblages with bifacial points is widely accepted, but the affiliation of the Spitsynian remains under discussion. J. K. Kozłowski (1986) attributed it to the Gravettian, and M. V. Anikovich (1992, 2000) to the Aurignacian, but both attributions are questionable. In fact, that such disparate, if not opposite attributions have been made is in itself evidence of the fragility of both. On the basis of his method of dating through the characteristics of lithic inventories, the author of the excavations at the site, P. I. Boriskovski (1963), placed the assemblage of layer II from Kostenki 17 in a Magdalenian context (group V of his stadial scheme), and saw the collections from Kostenki 2, Kostenki 3, Mezin, etc., as its closest analogs. Without stratigraphic and radiocarbon evidence, this affiliation could not be questioned but, on present evidence, the Spitsynian appears to be a particular eastern European unit without direct analogs in the European “Early Upper Paleolithic” epoch.

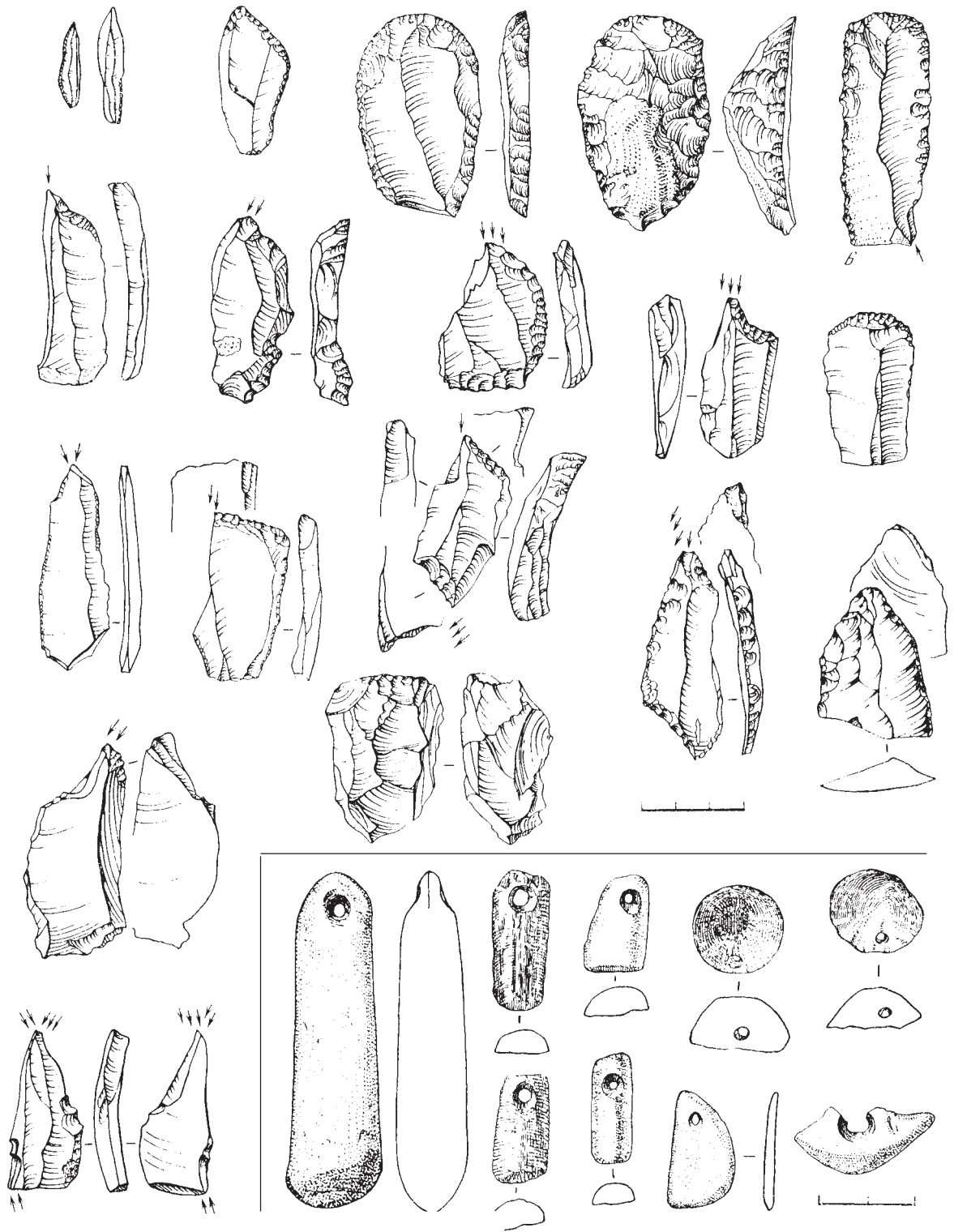


FIG. 5— Spitsynian. Kostenki 17 (cultural layer II). Lithic assemblage, ornaments (from Boriskovski, 1963).

Two assemblages fall outside the Streletskian-Spitsynian binomial structure of the ancient chronological group of Kostenki. These are the Aurignacian-Dufour from a cultural layer capped by volcanic ash and the new, original assemblage from cultural layer IVb of Markina gora. Thus, three models seem conceivable for the cultural configuration of this group:



- 1) those two technocomplexes can be added as a third and a fourth component to the binomial Streletskian-Spitsynian structure;
- 2) the assemblage from cultural layer IVb of Markina gora can be separated from the others in the group on the basis of the stratigraphic, palynological and paleomagnetic evidence suggesting that the lowermost cultural layers of Kostenki 14 are the earliest of all;
- 3) the binomial system can be modified through its division into two chronological subgroups; in this case, a more recent subgroup would be represented by the pair Aurignacian and local "Transitional" industry (Streletskian), and a more ancient subgroup would be represented by the coexistence of two particular cultures, the Spitsynian and the lowermost layers (IVb and "hh") of Markina gora.

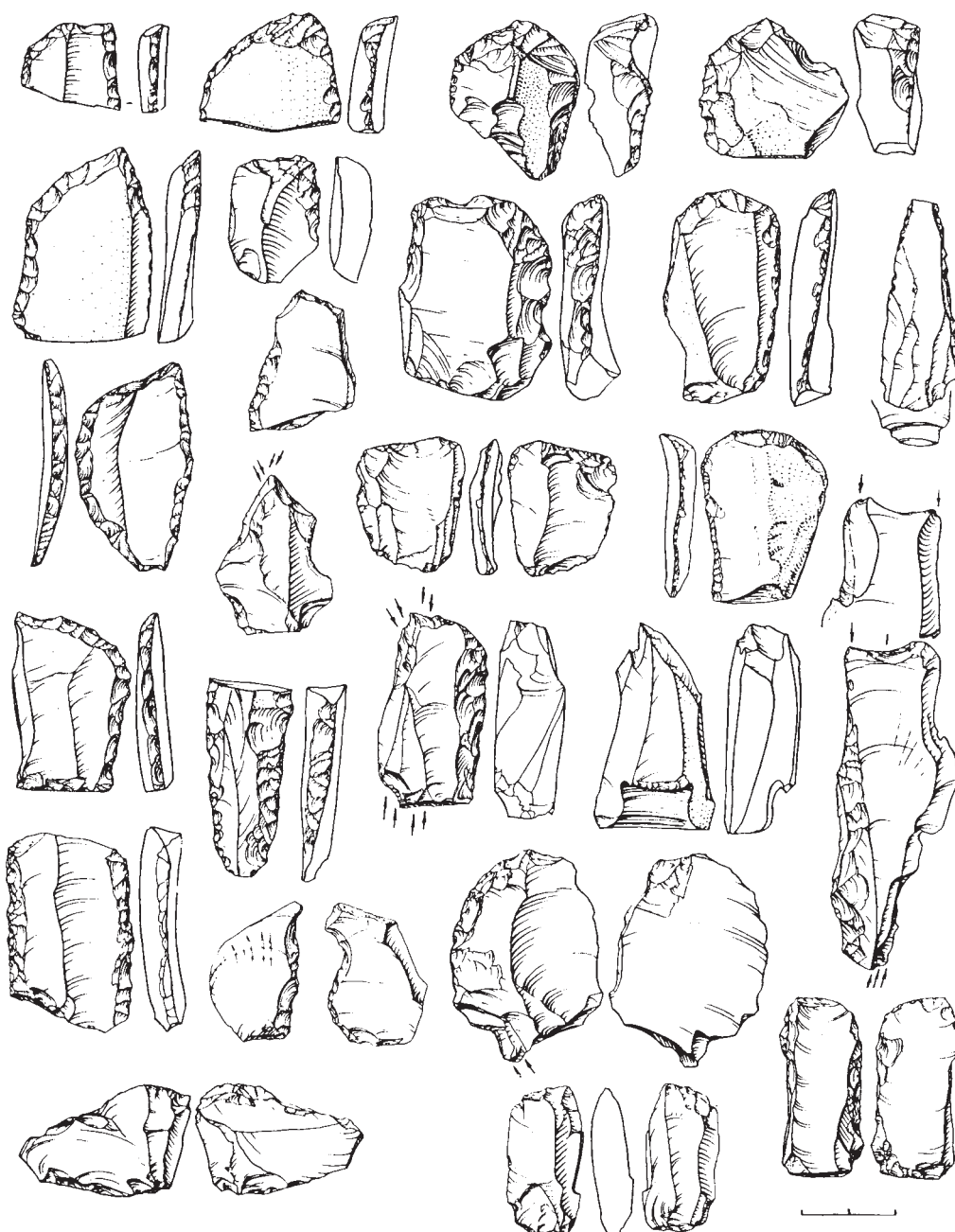


FIG. 6 – Kostenki 12 (cultural layer II). Lithic assemblage (from Anikovich, 2000).

The principal purpose of determining the taxonomic affinities of any material is the definition of its place in two systems of relations: the context of contemporary materials, in order to identify its shared and unique features; and the context of chronological sequences, in order to establish its position in a phyletic line of evolution. The starting point in the problem of the taxonomic position of the lower cultural layers of Markina gora, conceived as part of the more general problem of how to structure the ancient chronological group of Kostenki, must be its discussion in the context of the European “Early Upper Paleolithic”.

## The “Early Upper Paleolithic”

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### *The traditional view*

According to the traditional view, the “Early Upper Paleolithic” (hereafter EUP), at least as far as Europe and the Near East are concerned, has a binomial structure where the Aurignacian is always a component. In western Europe, we have the opposition Aurignacian-Châtelperronian, in northern Europe the opposition Aurignacian-Lincombian, in certain areas of the northern Mediterranean the opposition Aurignacian-Uluzzian, in central Europe the opposition Aurignacian-Szeletian. The most common opinion is that the Aurignacian is intrusive and falls outside the aboriginal line of evolution. In contrast, the second, local component of these oppositions would be aboriginal, with both a local ancestor and a local descendant, and would be the manifestation of the continuous flow of evolution of local Middle Paleolithic traditions. The formation of the Upper Paleolithic technocomplex is related to the influence of this intrusive Aurignacian component, which would have played the role of a catalyst in the process of leptolithization. At least in the case of the Châtelperronian phylum of Western Europe, Neandertals are seen as the carriers of local traditions and as a terminal point, an evolutionary dead-end “sapiented” by populations of modern physical type. The transformation of culture and physical type are considered not as two aspects of a single process, but as two parallel phenomena, even if linked to a certain extent.

Two exceptions are admitted in this binary structure: in a narrow area of south Moravia, the Bohunician industry is added to the Aurignacian-Szeletian opposition, traditional for central Europe; and, in the also narrow area of the Negev desert, the “Initial Upper Paleolithic” industry of Boker Tachtit is added to the opposition Aurignacian-Ahmarian as a third component. Practically all researchers dealing with this problem agree to the similarity between these two industries and to the fact that both cultural traditions seem to lack continuation.

The Middle-to-Upper Paleolithic transition is a complex issue, as sets of separated but associated aspects have to be dealt with, as pointed out in the 1970s and 1980s by P. Mellars (1973) and R. White (1982). Until recently, the examination of the transformation of cultural and physical evolution within the framework of the transition could only be based on the evidence from Saint-Césaire, where a Neandertal skeleton was found in Châtelperronian cultural layer 8 (Lévêque, 1989), with a TL date of  $36.3 \pm 2.7$  kyr BP (Mercier and Valladas, 1996). Isolated Neanderthal teeth from the Grotte du Renne, at Arcy, and some other Upper Paleolithic sites have also been used in support of the idea that Neandertals were the carriers of the Châtelperronian cultural tradition.

On the other hand, new data gradually increased the number of *sapiens* carrying Mousterian traditions. Teeth of modern humans from the Mousterian layers of Abri Romani

(Carbonell and Castro-Curel, 1992) and Rozhok 1 (coast of Azov sea) (Praslov, 1968), and especially the burial from Taramsa 2 reliably dated by OSL to  $55.5 \pm 3.7$  ka (Vermeersch et al., 1998) are added to the generally accepted Middle Paleolithic *sapiens* from Skhul and Qafzeh. Even without considering the debatable remains from Djebel-Irhoud, Dar-es-Soltan, etc. (Debénath, 2000), the number of modern human finds in Mousterian contexts now exceeds the number of neandertaloid finds in Upper Paleolithic contexts.

The consequence of this situation is the recognition that the evolution of culture and physical type are processes of a different nature, and that the problems related to their evolution/transformation have to be solved separately and by different methods. Their consideration as a single issue does not help in finding a solution to those problems. A series of recent studies give an increasing role to behavioral, processual components both in cultural evolution and in the evaluation of the mental and motor capacities of humans in the process of general evolution (Kaufman, 2001; McBrearty and Brooks, 2000; Marks et al., 2001; Zilhão, 2001).

### **The current state of the problem**

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The revision was triggered by the recognition that certain tenets of the traditional view had to be revised, given the unusual ancient dates for a set of sites spread across the vast territory from the western Mediterranean to the Trans-Baikal area and the reconsideration of the criteria traditionally used in the cultural assignation of lithic assemblages, in particular where the Aurignacian is concerned.

D'Errico et al. (1998) and Zilhão and d'Errico (1999, 2000) suggested a relatively recent age for the Aurignacian component of the traditional binomial system of the EUP. Even if clearly oriented towards the demonstration of a specific argument, their line of reasoning is rather convincing. The acceptance, at least where Europe is concerned, that no real Aurignacian exists before ca. 37 kyr BP, carries the implication that the Aurignacian must be deprived of its traditional status of being the primary carrier of the leptolithization process. Moreover, such an acceptance also deprives the binomial structure of the traditional EUP of its status as the most ancient structure of organization of the Upper Paleolithic world.

### **Consequences of the conceptual revision**

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There are no doubts that the traditional concept of the EUP as a binomial system valid for the 36-27 kyr BP period totally corresponds to the available factual base, at least in Europe and the Near East. A logical consequence of the deconstruction of the traditional view, however, is that an earlier stage of the Upper Paleolithic must be recognized, with different components and a distinct organization of the material. As a minimum, two components of this stage appear to reflect the organizational structure of the Paleolithic world in that period: the local units of Upper Paleolithic attribution (Châtelperronian, Uluzzian, Szeletian, Streletskian) and the non-local Mousterian variants (at least where the opposition between levallois and non-levallois, or bifacial and non-bifacial, are concerned).

## Proposing a new model

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### *The empirical background: European and Near Eastern perspectives*

The most obvious factual discrepancy with the binomial organization of the EUP is the Bohunician industry (Valoch, 1976, 1986; Oliva, 1984, 1986; Svoboda, 1984; Svoboda and Simán, 1989; Kozłowski, 1996, 2001). It represents an extraordinary phenomenon in the framework of the EUP, for at least the following reasons: 1) its extremely narrow temporal and spatial distribution in the Drahany Plateau of southwest Moravia, although possibly related contexts (Kačák rockshelter, Dzierzyslaw - lower layer, and Kulychivka - lower layer) are known; 2) the fact that levallois and blade-levallois methods are the principal technological basis of the industry; 3) the absence of any connection with cultural entities of the subsequent chronological stage; 4) the very wide range of analogs — from the Seclenian to the Khormusan (Oliva, 1986) and from Kulychivka to the Abri Maras (Valoch, 1986) — unusual for the Upper Paleolithic but typical for the Mousterian.

Emphasizing the absence of bifacial tools in the Near Eastern site, all European researchers recognize the special place of the Bohunician in the range of analogs to the assemblage from the lower layers of Boker-Tachtit (Negev desert, Israel) (Marks and Kaufman, 1983). As is the case with the Bohunician in a European context, the industry from Boker-Tachtit chronologically and taxonomically falls out of the traditional binomial (Aurignacian and Ahmarian) structure of the Near Eastern EUP (Marks, 1983; Marks and Ferring, 1988; Bar-Yosef and Belfer-Cohen, 1988; Belfer-Cohen and Bar-Yosef, 1999), and remained in relative isolation for a rather long time.

The situation has changed with the publication of the materials from Üçağzlı and Kanal in southeast Turkey, which are comparable to the industry of Boker-Tachtit in both their age (39 400±1200 BP — AA-27994 and 38 900±1100 BP — AA-27995) and their techno-typological parameters (Kuhn et al., 1999). According to some particular features, the assemblage from layer III.2 of Umm El Tlell (with dates of 34 530±750 BP — GifA-93216 and 36 000±2500 BP — GifA-932150) (Bourguignon, 1998) is possibly related to this phenomenon. It is important to note that these authors not only describe the materials outside the traditional opposition Aurignacian-Ahmarian, they also designate them differently as “Initial Upper Paleolithic”, in the first case, and “Intermediate Paleolithic” (*Paléolithique Intermédiaire*), in the second.

The first of these terms has also been used to designate the assemblage from Nazlet Khater 4, differentiated as a manifestation of an initial stage of the Upper Paleolithic of Lower Egypt, with the purpose of emphasizing its particular taxonomic position in the evolution of local industries, without connections with either antecedent late Mousterian traditions or with Upper Paleolithic materials of the subsequent chronological period (Vermeersch, 1988; Vermeersch and Van Peer, 1988; Van Peer, 1998). The term “Initial Upper Paleolithic” has also been used in relation to the Dabban industry (McBurney, 1967, 1977) with an earlier radiocarbon age but with a similar taxonomic position in relation to local Mousterian and Upper Paleolithic sequences.

The most complicated problem in using materials of the earliest Upper Paleolithic assemblages of western Europe whose attribution to the Aurignacian has been questioned is that they are published selectively and mostly in controversial papers. The only bases for their evaluation are the points of view and judgments of the authors, sometimes ambiguous, sometimes contradictory. Taking into account the difference in points of view, the same qualitative feature — that they all fall outside general evolutionary sequences —

characterizes a number of assemblages of the earliest period of the Upper Paleolithic designated as “Proto-Aurignacian”, “Aurignacian 0”, “Archaic Aurignacian”, “Basal Aurignacian”, etc. Such terminological variability seems to be the consequence of the absence of alternative explanatory models outside the Aurignacian-Châtelperronian opposition. In practice, out of these two possibilities of classification, preference tends to be given to the first, on the basis of the absence in the lithic assemblages of types that are specific of the Châtelperronian phylum. Thus, negative evidence becomes the basis for the diagnosis. Because of the high degree of variability of these industries (Demars, 1992; Leroyer and Leroi-Gourhan, 1983; Djindjian, 1993), it is widely accepted that their inclusion in the framework of one concept, and under a single name, is based solely on their chronology.

A similar situation pertains where the cultural affiliation of a number of assemblages of central and eastern Europe is concerned (Amirkhanov et al., 1993; Anikovich, 1992; Cohen and Stepanchuk, 1999, 2000, 2001; Hoffecker, 1988, 1999; Kozłowski, 1988, 1996, 2000; Soffer, 1989). Such is the case, in particular, with Bacho Kiro (XI) (Kozłowski, 1979, 1982, 1999), Temnata (IV) (Kozłowski, 1999), Korolevo 1 (Ia), Korolevo 2(II) (Gladilin, 1989; Gladilin and Demidenko, 1989), Kulychivka (Savich, 1975; Ivanova and Rengarten, 1975; Cohen and Stepanchuk, 2000, 2001), and Buran-Kaya III (C) (Marks, 1998).

### **The empirical background: northern Asian perspectives**

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The basic reason to extend to northern Asia the scope of the problem of the organization of the earliest Upper Paleolithic is the identification of a number of sites with unexpected ancient radiocarbon dates, first of all the sequence at Kara-Bom, in the Altai (Goebel et al., 1993; Escutenaire, 1994; Lisitsyn and Svezhentsev, 1997). Recent reviews of the evidence (Derevianko, 2001; Otte and Derevianko, 1996, 2001; Otte and Kozłowski, 2001) have shown how complex and complicated is the issue of the Middle to Upper Paleolithic transition, or transformation, in northern Asia, and indicate a certain convergence of opinions. For the aim of the present paper, the particular structural unit known as the “Kara-Bom layer” (Derevianko et al., 1998; Derevianko and Markin, 1999; Derevianko et al., 1998, 1999) is of special importance. These materials have attracted attention since their first publication (Okladnikov, 1983) because of their similarity with the Bohunician, especially in connection with the bifacial tools, a rare type in the Siberian Upper Paleolithic (Abramova, 1995). Although such tools are not mentioned in subsequent publications, which only used materials with a secure stratigraphic position, the analogy with the Bohunician was confirmed and extended to Boker-Tachtit.

The concept of “layer” (I prefer “stratum” — Sinitsyn, 2000) is widely used to refer to a particular level of similarity for a contemporary (in a general sense) but variable group of the most ancient Upper Paleolithic sites of Siberia. At first, this concept was advanced to designate a group of materials of the Pre-Baikal area under the name “Makarovo horizon” (Aksenov et al., 1987). Later, it was defined as “an inter-regional archeological-stratigraphic association of industrial complexes, distinct in their cultural affiliations, but contemporaneous and sharing essentially common technical characteristics” (Derevianko et al., 1998: p. 111). The heuristic value of this concept is quite high, as it simply reflects the same level of affinity between materials manifested in a number of assemblages of the most ancient Upper Paleolithic sites of Europe, Near East and northern Africa.

A number of sites are incorporated in the Kara-Bom “stratum” by the authors of the concept: Kara-Tenesh (layer 3), Ust'-Karakol, Denisova cave (layers 13-18), Maloiamantskaia



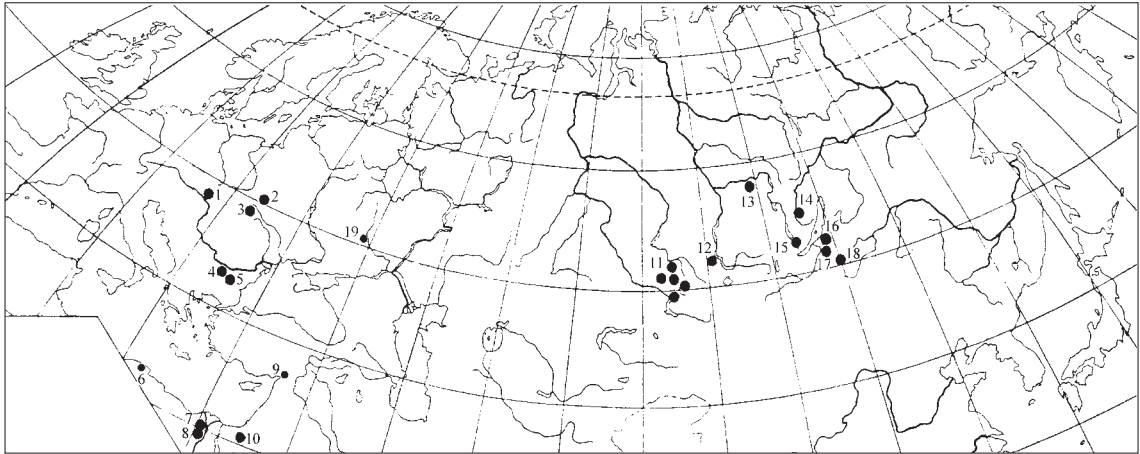


FIG. 7 – Sites of the proposed IUP “stratum” (based on the “Kara-Bom stratum”, according to Derevianko et al., 1998, with modifications and additions): 1. Bohunice; 2. Kulychivka; 3. Korolevo; 4. Temnata; 5. Bacho Kiro; 6. Haula Fteah; 7. Taramsa; 8. Nazlet Khater; 9. Üçağızlı; 10. Boker Tachtit; 11. Altai group (Strashnaya; Denisova; Ust’ Karakol; Ust’ Kanskaya; Kara Bom); 12. Malaya Syia; 13. Ust’ Kova; 14. Makarovo; 15. Arembovskogo site; 16. Kamenka; 17. Tolbaga; 18. Podzvonkaya; 19. Kostenki.

cave, Malaya Syia (lower layer), Ust’-Kova, Voennyi Hospital, Makarovo IV. And, in the Trans-Baikal region: Varvarina gora, Kamenka (complex A), Tolbaga, Sukhotino, Sannyi Mys (levels 4-7) (Derevianko et al., 1998) (Fig. 7).

## The logical background

The situation arising from this revision of the structure of the European EUP and its logical implications can be summarized as follows:

- 1) There is a rather numerous group of materials falling outside the traditional binomial system of the EUP stage.
- 2) There are two possible solutions for this situation: adding a third component to this binomial system, or separating them as a different system of relations; the second seems preferable, since it adjusts better to the empirical evidence, especially where their chronology is concerned.
- 3) The chronological position of the sites in this group suggests the proposition that they define a more ancient stage of the Upper Paleolithic, anterior to the EUP, with an upper limit at ca. 36-37 kyr BP and an unknown lower limit.
- 4) In Europe and the Near East, the taxonomic position of these industries, with blade-levallois and blade technology and reduced Upper Paleolithic tool-kits, is defined inside a complex system, in association with non-local Mousterian variants and local sequences of “Transitional” industries (Châtelperronian/Uluzzian in the west and an ensemble of cultures with bifacial tools in the east); in northern Asia, they correspond to a separate “stratum” of diverse assemblages, intermediate between the Middle and the Upper Paleolithic.
- 5) Differences in the attribution of concrete assemblages to one or another period may or may not be coincidental with their real chronological position, as is the case with the different Mousterian complexes; the final forms of manifestation of an earlier system can be contemporaneous with the first manifestation of the initial forms of a later stage.

6) Most of the materials involved in this debate seem to correspond to a final manifestation of a system of relations whose early phases were probably fixed by the phenomenon known in global cultural evolution as “running ahead” (Vishniatsky, 1994) and whose beginnings are manifested in such isolated points as the Seclenian (Tuffreau, 1990; Revillon, 1993) and Rosh ein Mor (Marks et al., 2001), dated to more than 100 kyr BP.

## Designation

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As the materials under discussion have only recently been released to a scientific audience, no accepted designation exists for them, even if such notions as “Initial UP”, “Transitional UP”, less often “Intermediate UP”, have been used (Broglia, 1996). The concept of “stratum” seems to be optimal for Siberian archeology, but does not totally apply to the European context, where a very similar phenomenon comprehends the coexistence of sites of both Upper Paleolithic and Mousterian affiliation in the same broad chronological interval.

The most appropriate position in this situation seems to be using “Initial UP” for the set of assemblages that, at an empirical level, are defined by its Upper Paleolithic affiliation and, at a logical level, are defined by lacking both ancestors and successors. Although the problems of designation cannot be solved in a declarative manner, it seems to be most convenient that this concept is used, in association with traditional Mousterian variants and “Transitional” industries, for the constitution of a trinomial system of Levallois-leptolithic processes between pure Mousterian and pure Upper Paleolithic epochs.

### *The Initial Upper Paleolithic. Kostenki perspectives. Conclusion*

The problem of the taxonomic position of the new materials from the lowermost cultural layers of Kostenki 14 is determined by their age (the uppermost limit of which is estimated by radiocarbon to be of ca.36-37 kyr BP, the lower limit being unknown) and by the context in which they can be comprehended and analyzed.

Considered in a wide Eurasian context, the structure of the more ancient group of Kostenki, can be conceived under the three variants discussed above. At present, the most preferable, seems to be the third (i.e., the recognition that they belong to an “Initial Upper Paleolithic” stage earlier than the traditionally-defined “Early Upper Paleolithic”). The arguments in favor of this solution are the following:

- The assemblages from the lower cultural layers of Kostenki 17 and Kostenki 14 have no analogs among known European industries of the EUP stage.
- After the discovery of an Aurignacian-Dufour assemblage covered by volcanic ash, the traditional binomial EUP structure may be recognized in the Kostenki area as the opposition between Aurignacian and Streletskian.
- From the two possible variants for the taxonomy of Kostenki 17 (layer II) and Kostenki 14 (layer IVb) — to be incorporated in the binomial system of the EUP as supplementary components, or to be separated as a more ancient system — the second is preferable, since it conforms better with the chronological evidence.
- Given their techno-typological features, these must be considered as two different industries; however, they share, as the basis of their joint consideration as part of a

separate stage, the fact that both fall outside all known cultural sequences, which aligns them with the Eurasian IUP.

- Both assemblages have no recognized predecessors in a more ancient stage nor do they have successors in more recent stages; like all IUP industries, they seem to represent independent, isolated events.
- Both assemblages include components that, at such an early time, are unexpectedly “advanced” — ornaments at Spitsyn, and bone tools at Markina gora.

The IUP seems to be a real taxonomic unit of the Eurasian Paleolithic, chronologically more ancient than the traditional European and Near Eastern EUP, with its binomial composition. In Europe, it appears to be part of a trinomial system together with non-local Middle Paleolithic variants and local “Transitional” industries. In northern Asia, it seems to be an independent, internally diverse but indivisible “stratum” of materials between the Middle and the Upper Paleolithic.

The model proposed here is no more than a hypothetical construction, and differs from that presented in 1999 (Sinitsyn, 2000), when the cultural layer covered by volcanic ashes was still unknown. There is no doubt that new findings will make further modification necessary.

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