

## CHAPTER FORTY NINE

# ATYPICAL USE OF BONE OBJECTS OF KNOWN FORMS FROM SOME EAST EUROPEAN UPPER PALEOLITHIC SITES

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### **Abstract**

This paper represents an analysis of some atypical use-wear traces on bone objects from the following East European Upper Palaeolithic sites—Zaraysk, Gonzy, Anetovka-2, Byki-1, Byki-7 (layer I), Byki 7 (layer Ia). Particularly, the analyzed bone objects do represent specific cases when the shape of an object does not give us a clue about its use or function. Indeed, some morphologically similar objects could have different functions. That is why it is important to realize that nowadays we, the 21st century people, are not always able to imagine a real use variability of many Palaeolithic worked bone pieces.

**Keywords:** East European Upper Paleolithic, worked bone objects, use-wear analysis

### **1. Introduction: Atypical use of bone objects of known forms from some East European Upper Palaeolithic sites**

This paper represents an analysis of some atypical use-wear traces on bone objects from some East European Upper Palaeolithic sites—Zaraysk,

Gonzy, Anetovka 2, Byki-1, Byki-7 (layer I), Byki 7 (layer Ia). As it is known, the kinematics of many utilitarian worked bone objects is often predetermined by their shapes. Therefore, based on shape characteristics, many bone objects are functionally interpreted without the use of use-wear analysis. In many cases, such an approach is correct. At the same time, only a real use-wear analysis allows us to identify the correct contact material, as even with similar kinematics, the objects could be used in several different ways. In this paper, the author discusses only the most interesting examples after studying collections where the shape of an object cannot give us a clue about its use or function. The presence of such artefacts forces us to be more careful and precise in the identification of use-wear traces for bone objects coming from both new and old excavations, although even a thorough use-wear analysis does not always bring us to an unequivocal interpretation on the functional use of an object. Nevertheless, it is still possible to recognize some possible use, and definitely exclude certain activities for a tool.

## 2. Study methods

The used methods for micro- and macro analysis studies of worked bone objects are based on methodology developed by the Saint-Petersburg Use-Wear Lab (Institute of History of Material Culture, Russian Academy of Sciences) (Semenov 1952, 1957; Semenov & Korobkova 1983; Filippov 1977, 1983; Schelinsky 1983; Korobkova & Schelinsky 1996 et al.). All bone artefacts have been studied with magnification to 60x using a MBS-10 binocular microscope. Then, most pieces were also analyzed using a metallographic microscope “Polam” (magnification to 200x). A magnification from 10x to 50x is considered to be an optimal one as larger magnification leads to a loss of colour, fatness and density of polished areas that are so necessary for the recognition of a contact material. The study of wear area location, and its characteristics and macro-traces are also significant. A larger magnification for bone object analysis was usually used for the most precise kinematics refinement. The realized analysis was also based on both samples of the author’s own experiments and the experimental samples of the Saint-Petersburg Use-Wear Lab.

Non-utilitarian artefacts are the most difficult for a use interpretation. Archeologists usually do pay more attention to the morphology of pieces, the technology of their production and the context of their discovery. But the use-wear study, in combination with some other data, allows us to get closer to a real understanding of object meaning (Akhmetgaleeva 2010).

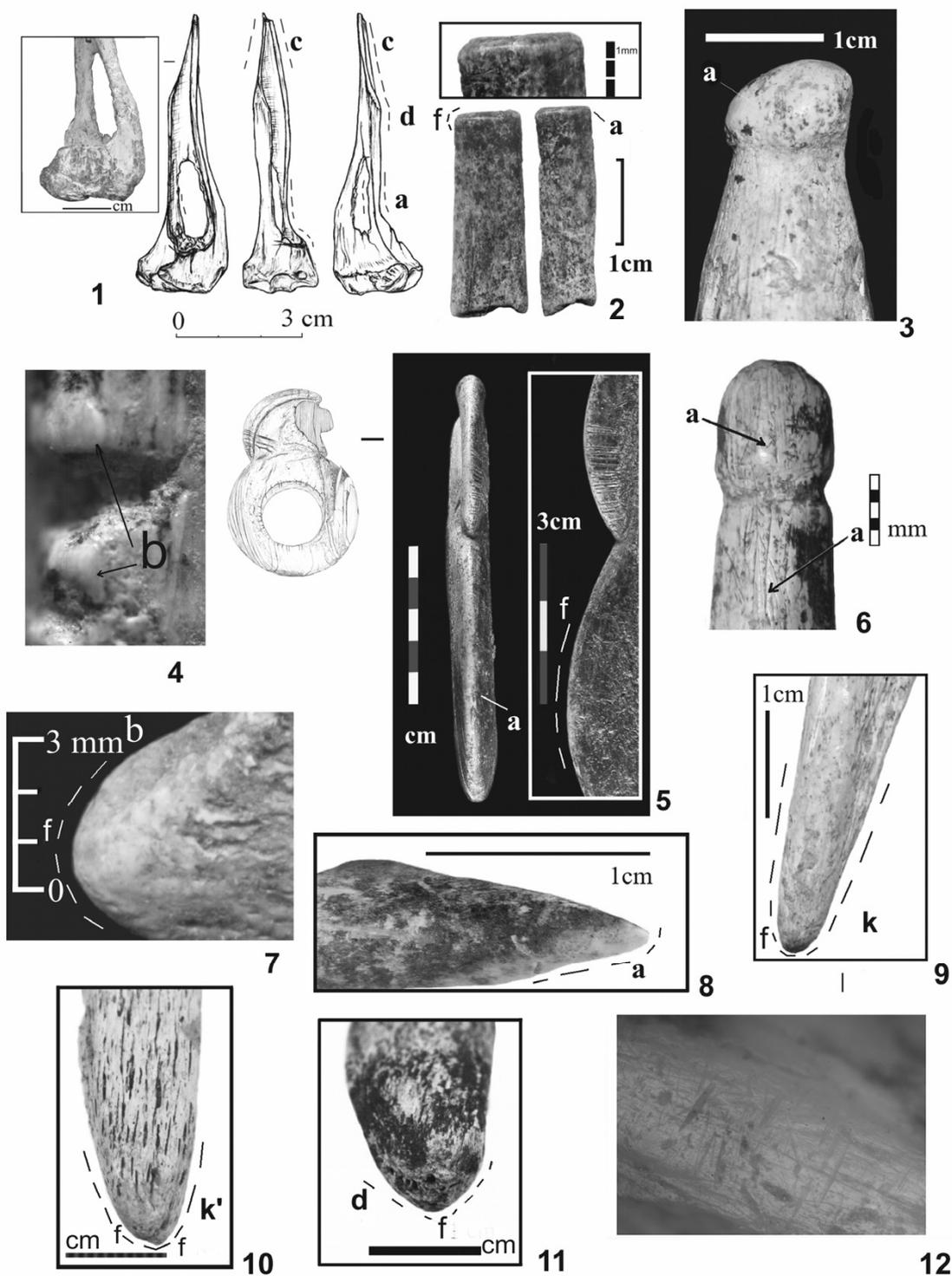


Fig. 1. Worked bones with use-wear traces: 1 – awl with a hole on rabbit tibia bones, Gonzy site; 2 – bead from a small-sized animal’s bone tube, Byki-7 site (layer I); 3 – use-traces on feet of an anthropomorphic ivory figurine, Zaraysk A site; 4 – use-traces on an ornamental fragment of a horse’s rib, Byki-7 site (layer Ia); 5 - use-traces on a zoomorphic ivory figurine, Byki-7 site (layer I); 6 - use-

traces on a rod-ornamented ivory piece, Zaraysk A site; 7 - use-trace on a pointed flake of a flat large mammal (mammoth?) bone (a tool for some no through-holes' elaboration), Zaraysk A site; 8 - use-traces on a cutting tool produced from a reindeer's tibia bone flake, Byki-7 site (layer Ia); 9 - tip wedge on a long bone of a large-sized ungulate, Anetovka 2; 10 – tip wedge on a mammoth rib, Gonzy; 11 - tip wedge on a mammoth rib, Gonzy; 12 - use-traces on the wedge of №9, macro x 200.

### **3. The East European Upper Palaeolithic bone objects: the studied examples**

#### **3.1. Beads from Byki-7 site (layer I) (ca. 17000 BP uncalibrated, excavated by N. B. Akhmetgaleeva; Akhmetgaleeva 2004)**

15 pipe-shaped beads made on the long bones of small animals (bird, hare, and arctic fox) have been found at the site's layer I. The lengths of the beads vary from 1.8 to 2.4 cm (Fig. 49-1: 2). Only narrow stripes on the beads' edges are polished. These use-traces are clearly fatty indicating the beads' contact with a hide. The polish covers the beads' edges and extends out to their external sides. The internal surface of the holes is not polished. The observed use-traces cannot definitely tell us a function of these pieces, but it could well be that strips of hide were used for connecting the beads (Akhmetgaleeva 2010, 212-213).

#### **3.2. Ornamented fragment of a horse's rib from Byki-7 site (layer Ia) (ca. 16000 BP uncalibrated, excavated by N. B. Akhmetgaleeva; Akhmetgaleeva & Burova 2008)**

One edge of a horse's rib fragment is covered by a series of short perpendicular lines after a sawing process. No less than 60 such lines are present there. The surfaces of the barbs are with an easy polish. The polishing is matte and superficial (Fig. 49-1: 4). It is possible that the barbs did have contact with clay. It is highly likely that the incisions on the artefact were of a utilitarian function.

#### **3.3. An anthropomorphic ivory figurine from the Zaraysk site (ca. 22000 BP, excavated by H. A. Amirkhanov; Amirkhanov et al. 2009)**

Some use-wear marks have been recognized on one of the site's Venuses—the largest ivory figurine found there (Amirkhanov et al. 2009,

218, 282). Its height is 16.6 cm. The head and legs are much more carefully crafted and smoothed than the rest of the body. The feet, as the head, are well handled by a mild abrasive (Fig. 49-1: 3). They have spots of a hide polish. It is not, however, clear—is it the only Venus figurine with such features or could similar traces be found on other female figurines coming from some other Eastern Gravettian sites? It is also of interest to note that the surface of one of the Zaraysk site's "head" rod-ornamented ivory pieces (4.4 cm long) also demonstrates an intensive oily hide polish on its "head" (Fig. 49-1: 6) that certainly smoothed out the micro-relief there (Amirkhanov et al. 2009, 264).

### **3.4. A zoomorphic ivory figurine from Byki-7 site (layer I) (ca. 17000 BP uncalibrated, excavated by N. B. Akhmetgaleeva)**

A large-sized ivory ring from the site with a top shaped like a horse's head is unique for European Upper Palaeolithic (Akhmetgaleeva 2005, 2009). The edge of the artefact in its «mane» and the adjacent lower area of the ring reveal a clearly polished strip (Fig. 49-1: 5). Polishing even goes beneath the most superficial surface of the artefact. It is fatty and more yellow in colour than the piece's other areas. It is possible to say that this part of the artefact with the polished strip had contact with a skin or hide. On the other hand, it does not allow us to make a clear-cut suggestion on its function. We might only suggest that it was used for some ritual purposes, because the location of the contact area is hardly compatible with a utilitarian function.

### **3.5. Various bone tools from several different sites**

A special variety of functions have been observed for some tools made on bone, ivory, reindeer antler, random fragments and flakes. They served as piercing tools, cutters, wedges, shovels, retouchers, etc. (Akhmetgaleeva 2006, 2012; Amirkhanov et al. 2009; Sergin & Akhmetgaleeva 2008).

It is also worth noting that bone tools used for similar contact materials do vary by kinematics (Fig. 49-2: 6, 12). At the same time, tools with similar kinematics have use-wear traces after some work with different materials having variable characteristics (being wet, cold or dry). For example, traces of a contact with sand are different from the traces of snow, frozen or wet sand and silty sediment (Fig. 49-1: 9-12).

Some important results come after analyses of objects whose function seems to be clear because of their specific morphology (Akhmetgaleeva 2006). For instance, there is an interesting variation of traces for pieces

used for digging (Fig. 49-2: 10-11). In analyzing bone points, it was well established that their function could actually be very different (Fig. 49-1: 1, 7-12; Fig. 49-2: 1-6, 8-9). Changes in manufacturing technology and morphology also usually mean modified kinematics and/or contact materials. The most indicative examples of such cases are given below.

### **3.6. Flat elongated shouldered borers from Byki-1 site (ca. 18000 BP uncalibrated, excavated by A. A. Chubur; Chubur 2001).**

The borers have been manufactured on ribs (13 examples) and long bones (2 specimens) of reindeer and horse (Akhmetgaleeva 2006, 196, 200). Their length varies from 3.5 to 9 cm (Fig. 49-2: 1-5, 8-9). The short tip on some of the tools is a result of their breakage or rejuvenation. Use-wear traces are either absent or weakly present on the borers. The study of complete pieces has shown that apart from just one large-sized object (Fig. 49-2: 5), none of them were piercing tools, awls, pins, etc. Their precise function remains unknown. According to the present author's special experiments, it could be that they were inserted into already made holes. That is why it is possible that they were used as a component of some complex yet unknown objects. Borer tips have only contacted with a rather soft material (Fig. 49-2: 1-4, 8-9) that is different from a hide. The closest wear marks correspond to a short-term contact with clay. The side parts of the borers have spots of a skin polish (from a user's hand?). Also, there are some other use-wear traces on the borers. Particularly, there were recognized some rubbing traces after sandy material on the rounded base of one borer (Fig. 49-2: 4). As a result, some borers did probably serve as combined tools. Finally, it is also important to underline that all borers have been produced in a single technological way.

### **3.7. Awls with holes from Gonzy site (ca. 14500 BP uncalibrated, excavated by V. Ya. Sergin)**

Two awls with minor fragmentation have been produced on rabbit tibia bones (Sergin & Akhmetgaleeva 2008). Awl tips were formed by double grooves, obliquely going on the bone axis. The basic feature of the awls is a deliberately punched oval hole of the size 1.8 x 0.6 cm (Fig. 49-1: 1). The holes' edge breaks are uneven with some transversal cracks. The holes' breakage features point out a possibility that they were also additionally damaged during the use of the artefacts. The break wedges are slightly worn out after contact with a solid material. The areas adjacent to

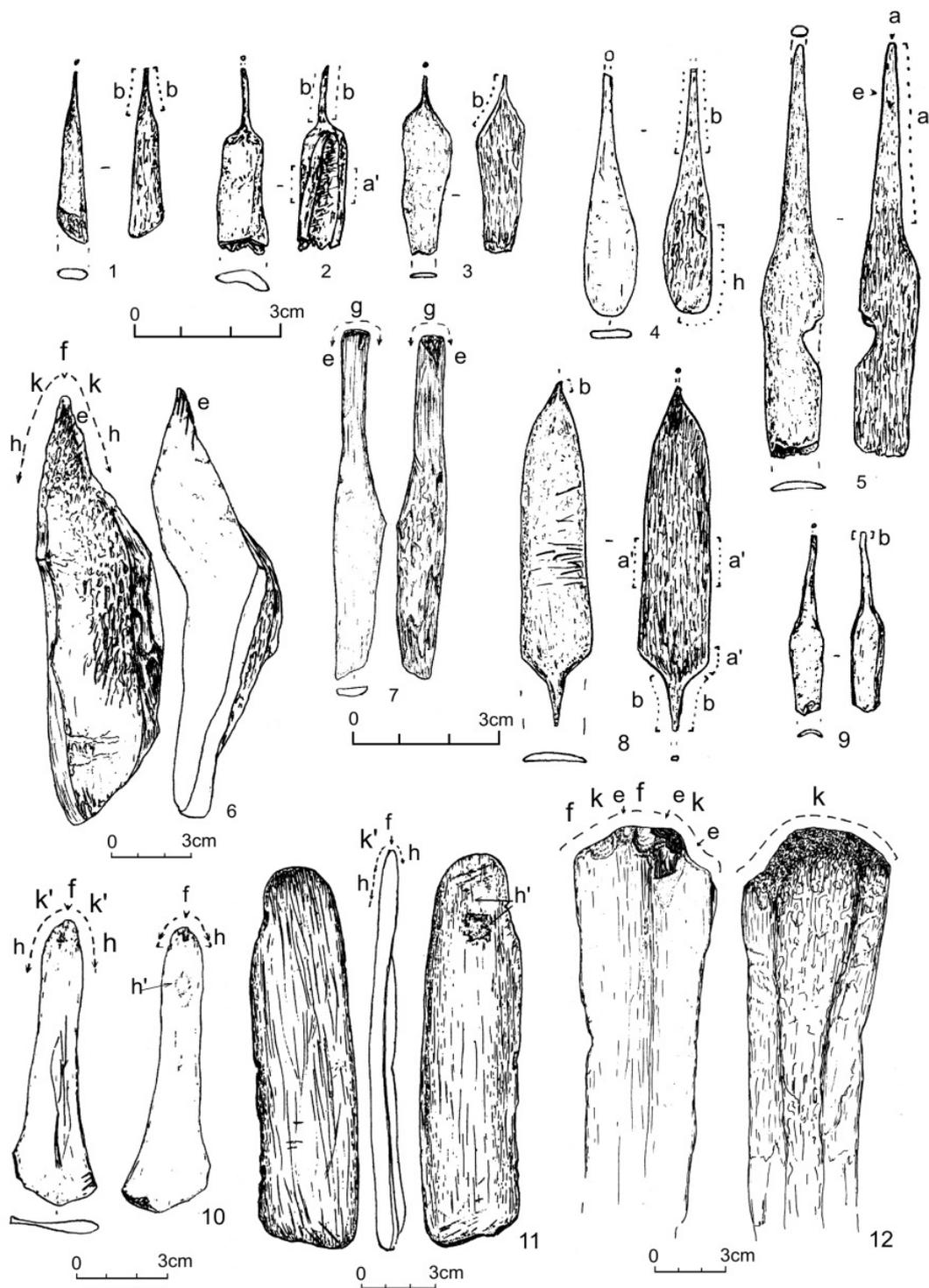


Fig. 2. Worked bones with use-wear traces: 1, 3-5 – flat elongated shouldered borers on rib parts of reindeer and horse, Byki-1 site; 2, 9 – flat elongated shouldered borers on tibia bones of horse and reindeer, Byki-1 site; 6 – pick on a tibia bone of horse, Byki-7 site (layer I); 7 – bevelled tool on a rib of horse, Byki-1 site; 8 – double flat elongated shouldered borer of an ungulate bone, Byki-1 site;

10 – spatulate on a mammoth hyoid bone for digging, Byki-7 site (layer I); 11 – an ivory shovel for digging, Byki-7 site (layer I); 12 – hoe from a mammoth tibia bone, Byki-1 site. Key: a – hide polish, a' - polish, б – polish of indefinable soft, abrasive material (silty sediment polish?), c – plant polish, d – mixed polish, e – perpendicular line trace, k – loam polish, k' - ice-soil polish (sand with snow), f – the maximal polish, h – abrasion, h' – erosion of liquid materials, g – scarred thin edge

thin partitions of the holes are covered by fatty skin polish spots. Also, spots of plant and some mixed polish traces are present in the middle parts of the awls. It seems that the morphologically looking awls were actually used as parts of some binding systems: for example, this could be an intermediate tool for material stretching.

#### 4. Conclusions

Functional analysis results are not always predicted at all. Indeed, they make us cautious on the use and function of many known bone artefacts. Also, it should be remembered that morphologically similar objects might have different functions. It is truly believed by the present author that this fact is no longer a doubt. Additionally, it is also of great significance to realize that we, the 21st century people are not always able to imagine a real use variability of many Palaeolithic worked bone pieces.

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