

Musical instrument

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In the 2001 season a grave of an adult man related to the Neolithic stage of the site occupation was discovered (Krzyżaniak 2002; Witas et al. 2002; A. Krzyżaniak, this volume). The rich inventory of the inhumation (grave No. 244), indicates an important status of the deceased within the



Fig. 1. Kadero. Grave no. 244

Kadero society. The offerings consists of 3 vessels, 2 armlets of elephant ivory, ca. 50 shells with perforated holes, a necklace of carnelian beads and finally the artifacts made of bones. Traces of a red ochre were also recorded in the grave pit.

All of the bone objects were located in the eastern part of the grave pit, placed by the contracted legs (Fig. 1-2). Here two flat artifacts measuring 30 x 5 cm (Fig. 3:A) and 27 x 5.5 cm (Fig. 3:B) respectively were found and between them the third object elongated in shape (Fig. 3:F; 15 cm long), oval in cross-section and a perforated hole at one end was located (Fig. 2). Additionally, three other fragments of flat objects were recorded, the 2 larger (Fig. 3:C, D) measured 4 x 5 cm and 5 x 5.5 cm. All the flat objects are made of hippopotamus ribs, the elongated (Fig. 3:F) one is made of unidentified bone (Gautier, this volume).

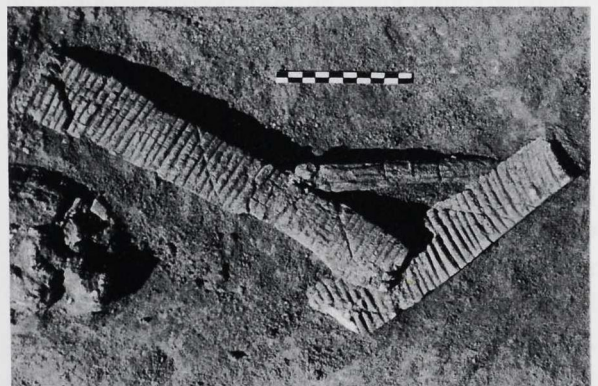


Fig. 2. Kadero. Object of hippopotamus bones found in grave no. 244



Fig. 3. Kadero. Object of hippopotamus bone found in grave no. 244

As the find is unusual for all the Khartoum Neolithic, detailed microwear and functional studies were carried out. The bone objects were the subject of traseological observation with the help of stereoscopic microscope Olympus SZX9, with a magnification ranging from 6.3 to 57x. All the finds were well preserved however the previous conservation sometimes made microscopic observation difficult.



Fig. 4. Kadero. Grave no. 244. Microscopic photograph of hippopotamus bone object – side profile. Magnification 20 x.

The two large rib pieces (Fig. 3:A, B) were most probably individual objects. The dorsal surfaces are engraved with a sharp tool making “V” shaped incisions (Fig. 4) with parallel lines perpendicular to the longer rib axis. In the final stage of production wide zigzag-lines were engraved over the parallel lines on the surface. The back side of the object is undecorated.

When observing the longitudinal profile of the object different thicknesses are noticeable due

to differences of the thickness of the rib itself, the state of preservation and possibly due to usage (Fig. 5, 6). On the raised surfaces in between the parallel cuts, tiny breaks, traits and striations parallel to the long sides of ribs can be observed, which are not visible within the interior of the concave cuts (Fig. 7). The distribution and fre-



Fig. 5. Kadero. Grave no. 244. Microscopic photograph of hippopotamus bone object – side profile. Magnification 20x.

quency of these traces is different not only on one object (A) but also when comparing it to object B (the larger object has more of such traces). Most probably these traces are the result of rubbing the object with a tool made of hard material. Similar surface modifications, including zigzag pattern



Fig. 6. Kadero. Grave no. 244. Microscopic photograph of hippopotamus bone object – surface with use-traces. Magnification 20x

and traces of use are also observed on another small fragment (D) while the remaining two (C and E) seem to be unused (Fig. 8).



Fig. 7. Kadero. Grave no. 244. Microscopic photograph of hippopotamus bone object – surface with use-traces. Magnification 20x.



Fig. 8. Kadero Grave no. 244. Microscopic photograph of hippopotamus bone object – surface without use-traces. Magnification 20x.

The smaller elongated bone object (F), oval in section, has concave incisions and small depressions at the dorsal surface around the perforated hole (Fig. 3). This suggests that it was suspended on a strap or string. Due to the bad state of preservation it was not possible to identify any traces of use.

There can be no doubt that all the incisions recorded on the flat parts of the hippopotamus ribs are intentional. Their regularity, different widths in the cross-sections, clear traces of rubbing visible at pronounced parts of the pieces and finally the presence of a “rubbing” stick – strongly suggests these object might have been made to produce a specific sound.

Object with different kinds of incisions, can generate sounds when rubbed with harder material (rasp). They belong to a group of the simplest musical instruments – idiophones, that generate sound by vibrations induced by hitting or rubbing (Hickmann 1982:234; von Hornbostel, Sachs 1961). One of the oldest musical instrument known come from Schulen in Belgium and is dated to the Middle Paleolithic. That is a fragment of mammoth bone with intentionally incised lines (Huyge 1990)¹. Incised cattle spatulas from Mediterranean and Near East known from the sites of Bronze and Iron Age are interpreted the same way (Reese 2002) as well as single finds of such bones, including ribs, come also from chronologically older layers of different sites of that region. In modern times very popular are, especially in Af-

rica and Asia, wooden models of different animals, e.g. frogs, with incised parts of their bodies. When rubbed by wooden stick they produce sounds similar to those generated by these species.

The hippopotamus bones are identified in the osteological material from the Kadero site and from other Khartoum Neolithic sites, but much more often hippopotamus tusks and incisors were discovered served in that time for production of decorations/bracelets (Krzyżaniak 1992a). Hippos were hunted not only for bone and ivory but first of all for the enormous quantity of meat and excellent hide. In spite of intensive husbandry and possible consumption of tropical cereals in the Neolithic of Central Sudan, hunting played an important role in the subsistence of the early Neolithic societies. That is also quite visible at the Kadero site (Gautier, this volume). It is possible that hippo hunting was the privilege of a narrow group of hunters belonged to the Early Neolithic social elite and that only in their graves object made of hippo ivory are placed.

The rich inventory in grave no. 244, including decorations made of elephant ivory and the “musical instruments” made of hippopotamus bones points to the important social role played by the deceased. It cannot be excluded these objects generated sounds similar to an animal and might be used during hunting. At the same time single sounds composed into musical phrases could play an important role during ritual ceremonies.

¹ In this case D’Errico (1991) suggests that the traces are the effect of carnivorous activity.