

Louis Chaix and Jacques Reinold

Animals in Neolithic Graves: Kadruka and Kadada (Northern and Central Sudan)

All around the world, animals have played an important role in the funerary rituals, as well as (Eliasberg 1992; Kenney 2004) or Europe (Bodson 1999; Bede *et al.* 2014).

In North-East Africa, the ritual deposit of animals in human graves is attested since the end of the Pleistocene in Egypt (Wendorf 1968). During the Ancient Holocene, many graves found in Egypt and Sudan contains whole animals or parts of animals (Chaix and Honegger 2015; Morey 2006; Gräslund 2004; Flores 2003; Nielsen and Petersen 2003; Paris 2000 ; Stager 1991; Bonnet and al. 1989 ; Chaix 1989).

During the Middle Neolithic, between 5000 and 4000 BC, many cemeteries were dug, delivering human graves with animal deposits or single animal graves. Two examples are presented below (Fig. 1).

1. Kadruka

In the Northern Sudan, around 50 km south of the 3rd cataract, the site of Kadruka lies on the right bank of the Wadi el Khowi, a fossil tributary of the Nile (Reinold 1994a, 2001, 2004). Remains of settlements were found, often on flat ground, with scattering remains due to the strong erosion. On the other hand,

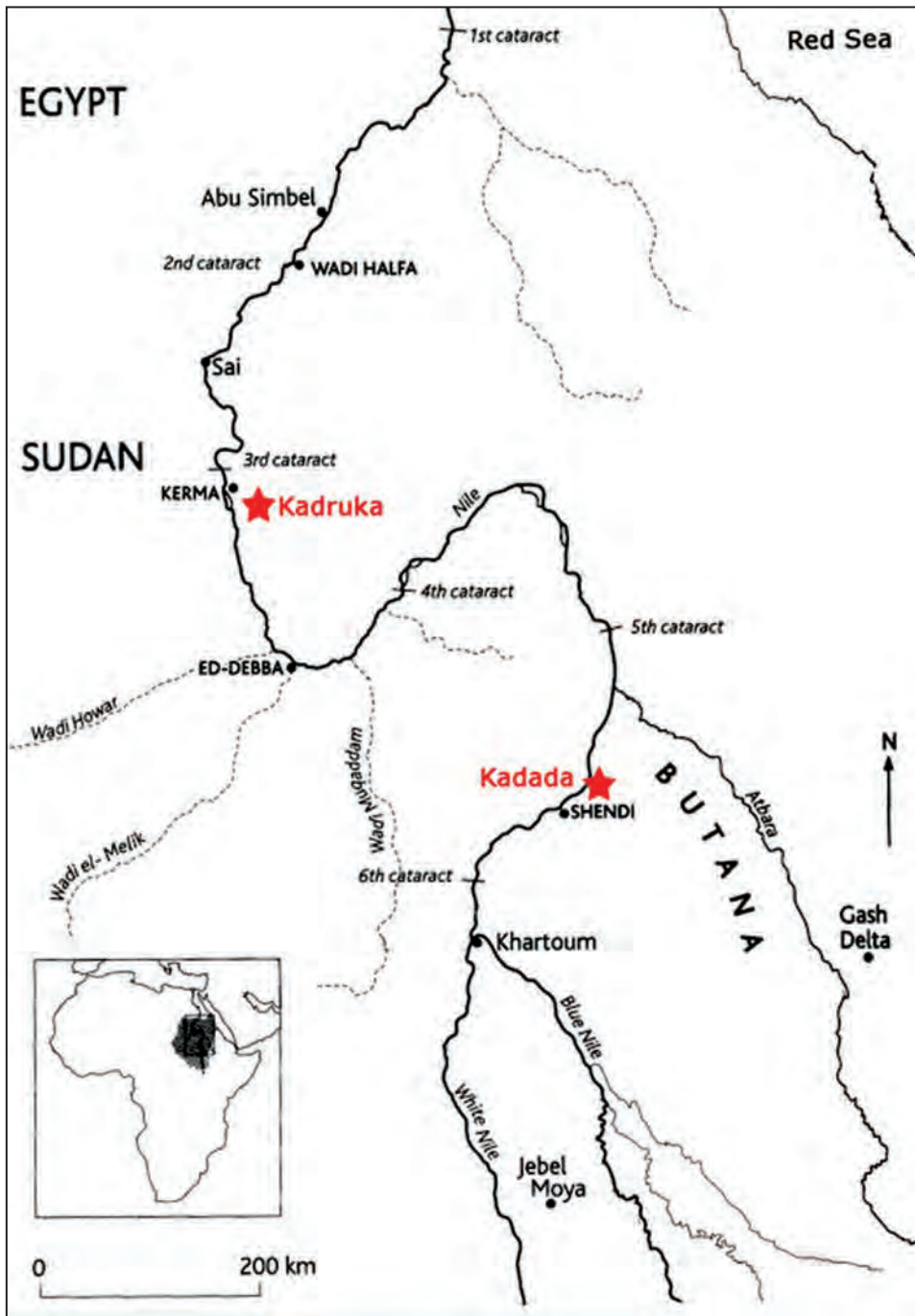


Fig. 1. Map with the situation of Kadruka and El Kadada

cemeteries were dug into hillocks, the depth of the pits allowing their better preservation. In such Neolithic contexts, the localisation of the tomb can be translated into the social position of the dead within the community (Reinold 2004: 42) (Fig. 2).

The necropolis of KDK 21 is the oldest, dated between 5910±60 BP and 5850±70 BP (4944-4537 cal BC). The main tomb is of a woman with a man as “mort d’accompagnement” (Testart 2004). Some dogs are buried in small pits: one on the top of the hillock and four others, each with two dogs, at the four cardinal points (Fig. 3). Despite the bad preservation of the skeletons, some remarks can be made:

- The dogs are oriented east-west with the head at the west, like humans; they are lying on the left side.
- Rare measurements indicate small and slender individuals, less than 50 cm at the wither (Fig. 4). We have no indication about the sex.

In some graves, bucrania of domestic cattle were deposited, inside the grave, with a clear relation with the dead (Fig. 5) For some measurements, like the least breadth between the horncore bases, skulls from Kadruka are significantly bigger than those from the later site of Kerma, around 2500 BC (Chaix 2007) (Fig. 6). Some graves delivered artefacts made of animal bones or ivory: hippopotamus incisors used as a box for make-up or bracelets, chisels made from sheep metapodials (Reinold 2000) (Fig. 7).

2. El Kadada

Around 425 km south-east of Kadruka, in the Central Sudan, the necropolis of el- Kadada lies on the right bank of the Nile (cf Fig. 1). The graves are dated between 3700 and 3200 BC; pits are excavated in a coarse fluvial gravel, explaining the bad preservation of the bones (Reinold 1994b). Excavations led in 2009 delivered many Neolithic graves with various animal deposits (Fig. 8).

In El- Kadada, contrary to Kadruka, all animals are deposited inside the human graves.

Four categories were found : whole dogs, whole kids, bucrania and artefacts.

For a total of 38 graves studied, 10 contains one or two dogs (Tab. 1). The distribution of the graves with dogs do not show any concentration and no linkage with the dimensions of the graves. As we can see (cf. Tab.1), there is no clear relations between the number of dogs and the sex of the dead.

The position and orientation of these dogs is variable. In the grave 86/144, with two main dead lying on the ground of the pit and two “morts d’accompagnement”,

Table 1. List of the graves containing one or more dogs

DOGS		
Grave no	Dog's age	Human dead
85/117	> 12 months	one adult man
85/125	4- 5 months	?
86/94-95-96	> 3 years	one adult man, one adult woman, one undetermined adult
86/105	6 - 9 months	?
86/107	> 2 years	one young man (18-19 years old)
86/115	20- 24 months	one undetermined adult
86/128-131	5 - 6 months	one adult man, three young men (18, 18 and 15 years old)
86/128-131	> 8 months	
86/136	< 5 months	one undetermined adult
86/144	> 18 months	three adult women, one adult man
86/144	> 2 years	

Table 2. List of the graves containing one or more kids

KIDS		
Grave no	Kid's age	Human dead
85/117	8-10 months	one adult man
85/127	3-4 months	one young women (18-19 years old)
86/101	7-8 months	one adult man
86/104	1-2 months	?
86/105	7-8 months	?
86/105	8-10 months	?
86/132	12-14 months	
86/132.1	4-6 months	one adult woman
86/132.2	5-6 months	
86/144	7-8 months	one adult man

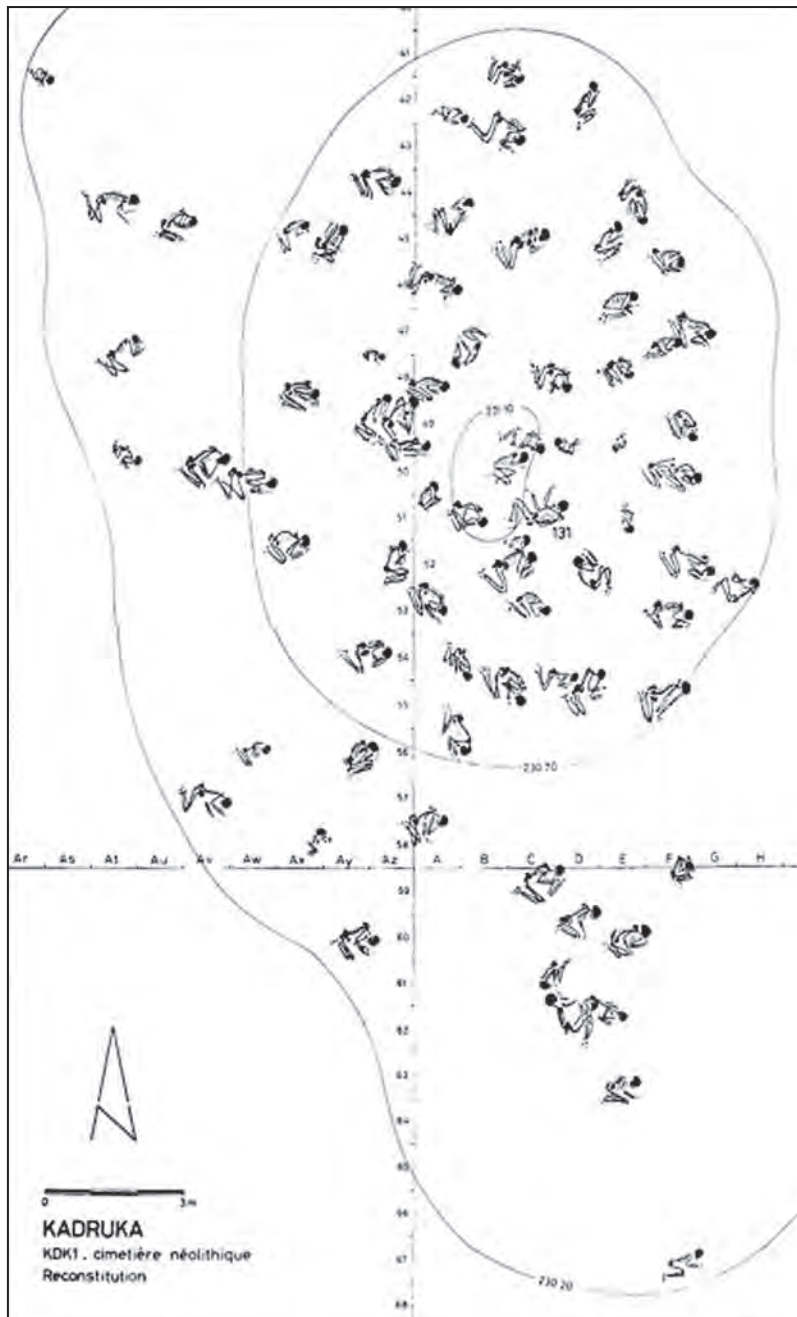


Fig. 2. Kadruga. Neolithic cemetery (KDK 1) showing the organisation of the necropolis around the grave of an important person, a man buried with a lot of furniture (after Reinold 2004: 44)

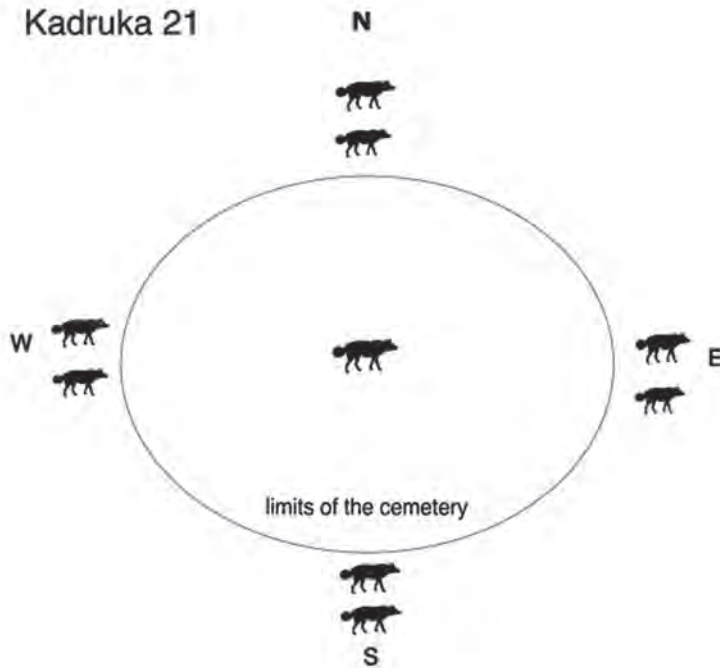


Fig. 3. Kadruka. Neolithic cemetery (KDK 21) with a schematic distribution of dogs, in the center of the hill and at the four cardinal points of the necropolis

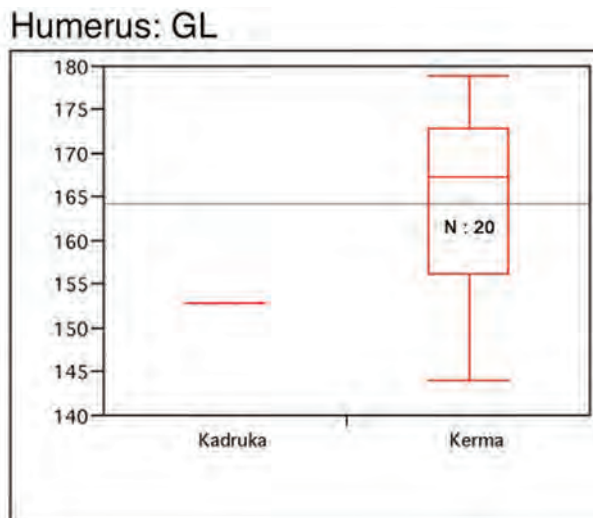


Fig. 4. Kadruka. Diagram showing the position of the humerus (Greatest length) of the dog from Kadruka compared with those from Kerma



Fig. 5. Kadruka (KDK 1). Grave 131 of the principal dead of the necropolis, with various deposits and the presence of a bucranium “(in red)” (after Reinold 2000: 73)

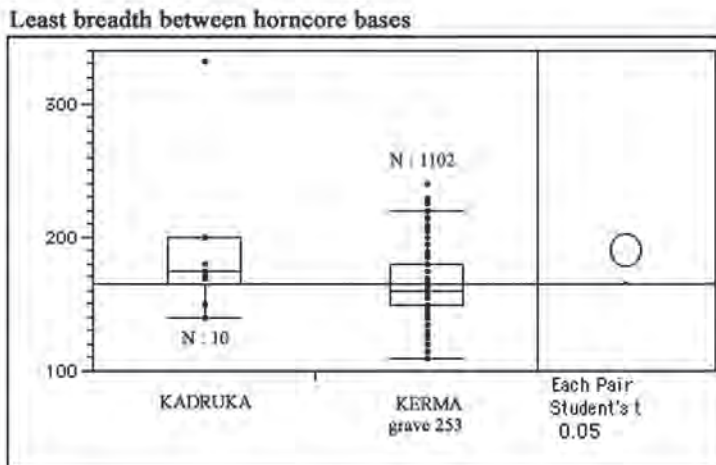


Fig. 6. Kadruka. Diagram showing the big dimensions of the breadth between the bases of horncores, compared with those from Kerma

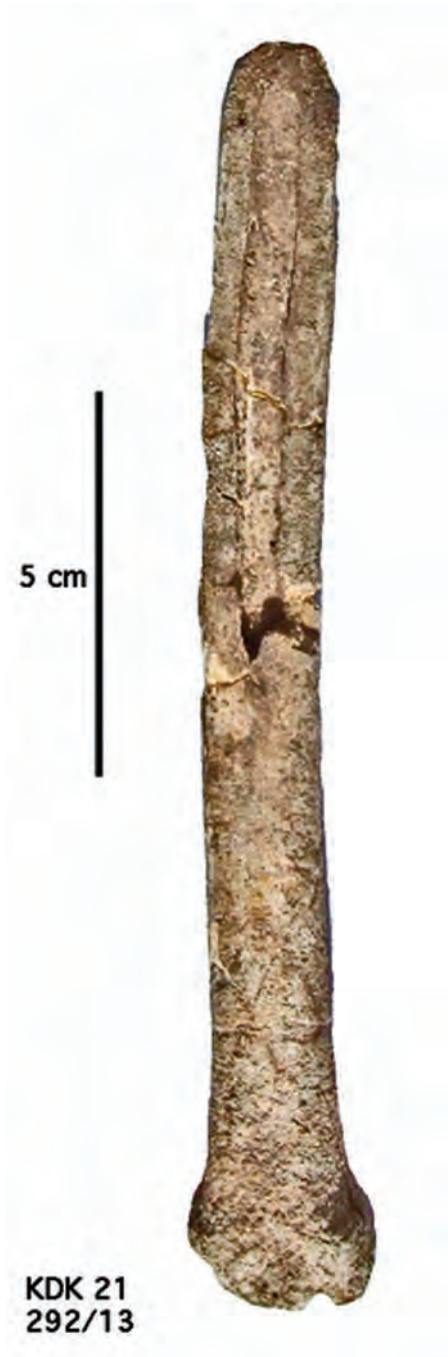


Fig. 7. Kadruka. Chisel made from a tibia from a sheep

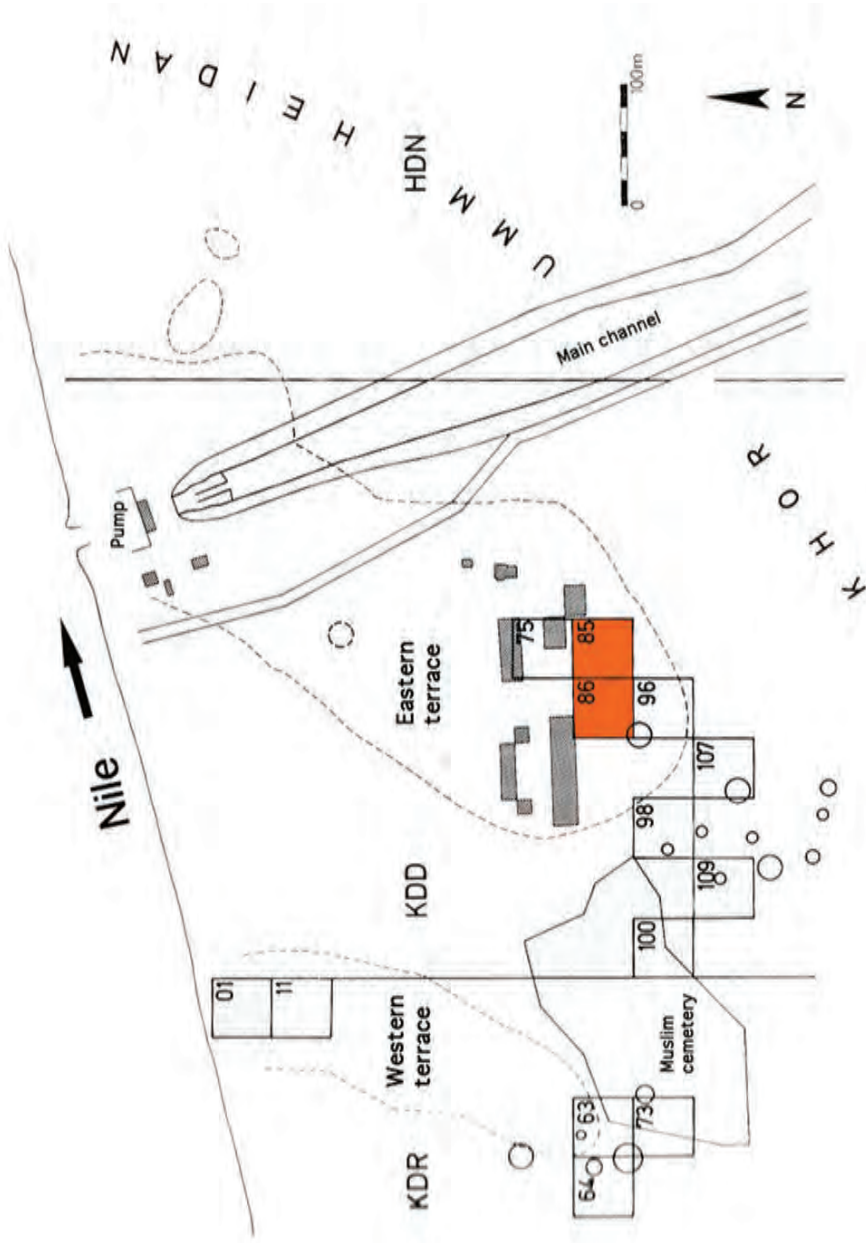


Fig. 8. El Kadada. Plan of the sectors excavated by Jacques Reinold in 2009 (in red). These sectors delivered animal skeletons and faunal remains presented here



Fig. 9. El Kadada. The dog of the grave 144. This curled individual is deposited on the south wall of the pit, in a semi-vertical position

one in the north and the other to the east, one dog is put on the southern wall of the pit, oriented west-east, with the head to the west and curled up (Fig. 9). Another dog, badly preserved, is put to the west of the first dog. Ages of the dogs varies between puppies (4 months old) to adult dogs (more than 3 years). Metrical data indicate small and slender individuals, significantly different from the dogs from Kerma, around 2500 BC (Chaix 1999) (Fig. 10).

Seven tombs delivered skeletons of caprines (Tab. 2). Most of them are kids (*Capra hircus* L.), attested by their dental characters (Halstead *et al.* 2002) (Fig. 11).

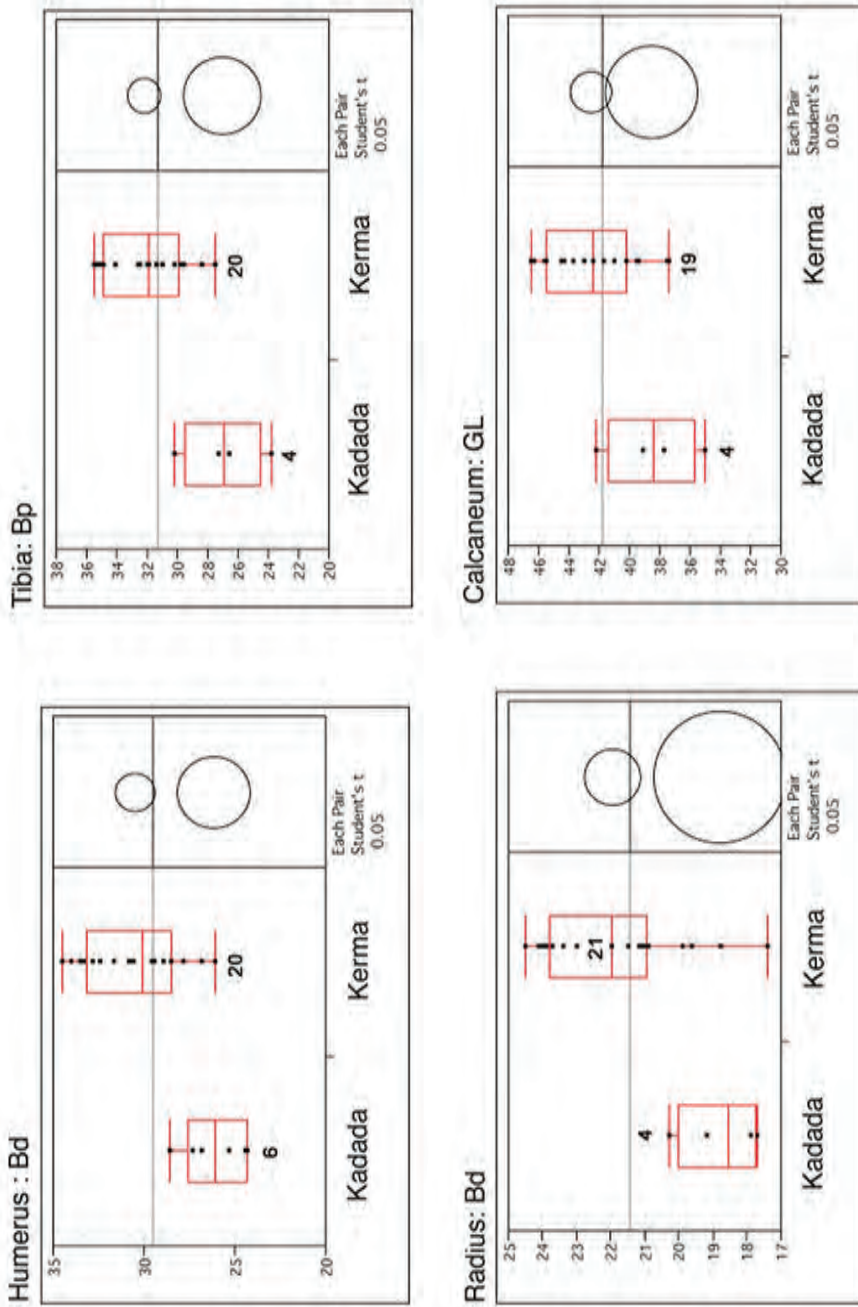


Fig. 10. El Kadada. Diagrams showing the low dimensions of the dogs from El Kadada compared with the same measurements for the dogs from Kerma. (Bp: proximal breadth; Bd: distal breadth; GL: greatest length)

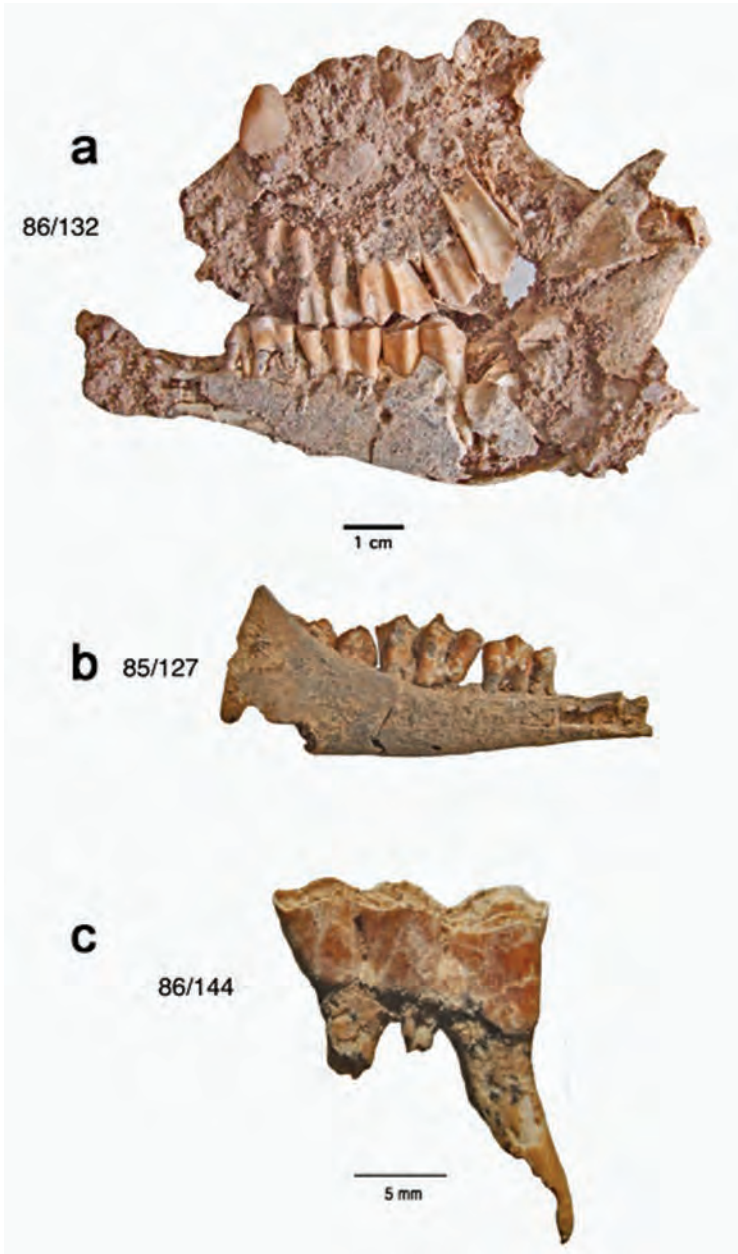


Fig. 11. El Kadada: a – left portion of skull, b – right mandible, c – left lacteal D4 of young goats (*Capra hircus* L.) showing their typical morphological features (after Halstead *et al.* 2002)

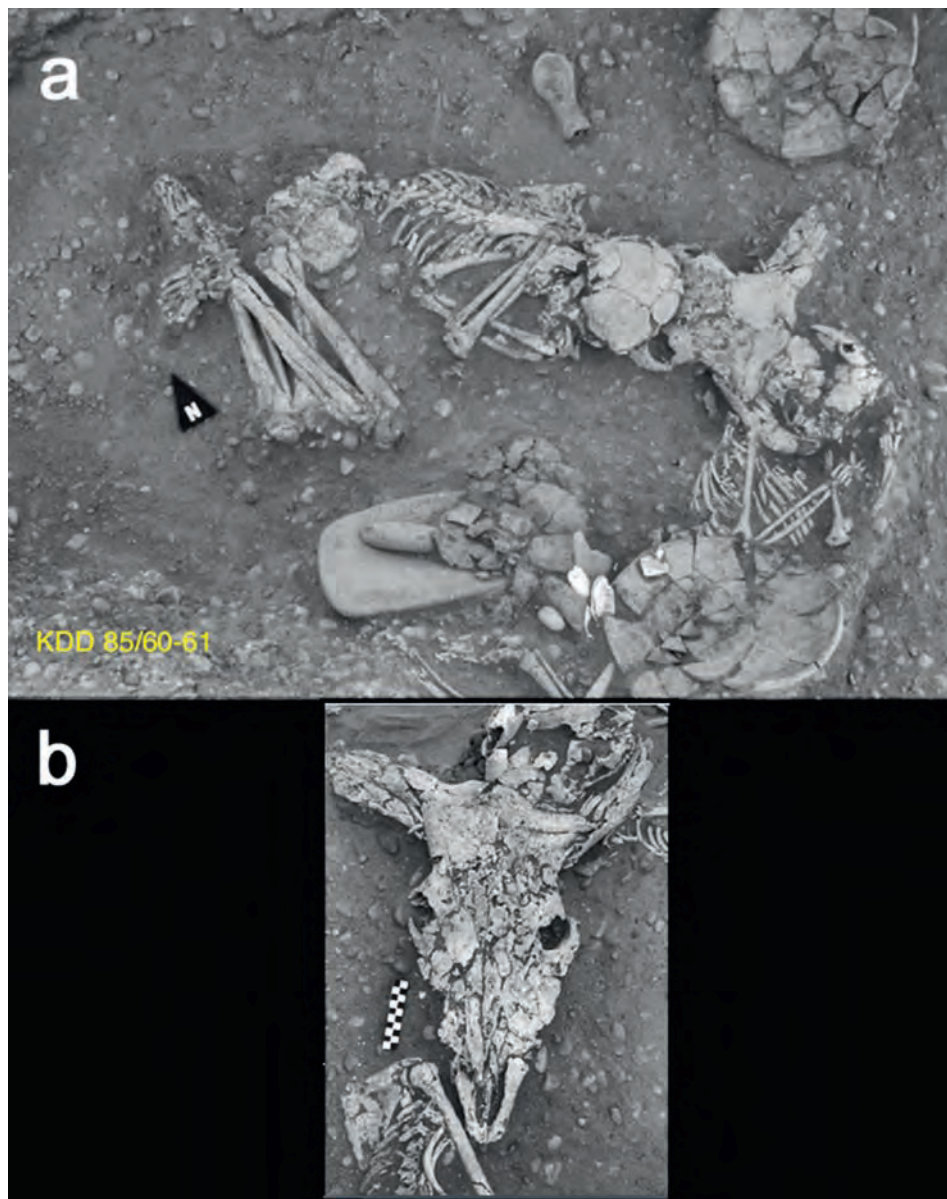


Fig. 12. El Kadada: a – view of the grave 60/61 with a bucranium under the head of the principal dead, covering the head of an adolescent; b – view of the cattle cranium after removing the principal human skeleton

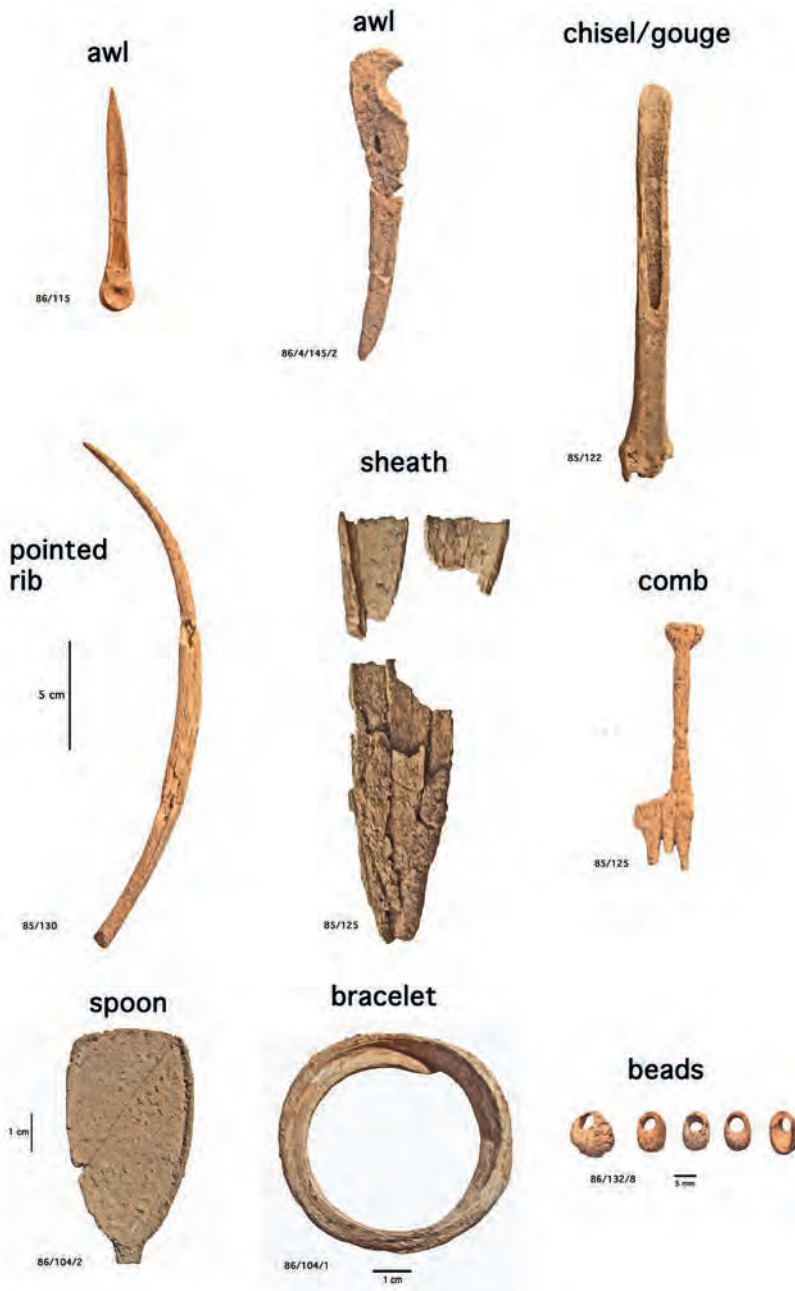


Fig. 13. El Kadada. Various artefacts made of animal bones, teeth and marine shells

In four cases, kids and dogs were buried together. The position and orientation of the kids is variable. Some skulls show horned animals. Ages are distributed between one month and one year. It is interesting to note that the settlement of El Kadada delivered more sheep than goats (7 sheep for one goat) (after Gautier 1986).

Two graves contains bucrania. It is a clear difference with the northern part of the cemetery (sector 75) where numerous tombs (N:15) delivered such a pieces. In the case of grave 85/60-61, a complete skull is deposited under the head of the principal dead, above the head of a “mort d’accompagnement” (Chaix 1989) (Fig. 12). Bucrania from the campaign 2009 are in a very bad state of preservation and do not allow any measurement.

Some tombs show the presence of parts of animals like an hippotamus rib, a gazelle horncore and crocodile dermic plates.

Finally, a lot of artefacts made of ivory, teeth and bones were found in different graves (Fig. 13). Cattle ribs were cleaved and sharp pointed; they were probably used as cards. Chisels are made from dogs’ radius and caprine’s tibia, when awls comes from caprine’s metapodials and carnivore’s ulna. One piece is made from a right ulna of a cheetah. Many objects are of ivory (bracelets and shovels), other bracelets comes from big marine gastropods (cf *Charonia*).

Finally, 10 lower third molars of dogs were used as beads (grave 86/126).

To conclude this short contribution, we can see that the data obtained from two Neolithic cemeteries in different areas of the Sudan, testify the importance of animals in funerary rituals, particularly dogs. This animal was probably very useful for the Neolithic pastoralists during their life and a companion after the death (Reinold 2005).

At El Kadada, we have no explanation about the kids buried in the graves when the animal economy is mainly based on sheep. Their signification is yet unknown.

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