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The faunal remains of the Early Neolithic site Kadero, Central Sudan

Kadero is an important and well known Early Neolithic or Khartoum Neolithic site dated to 4850-4250 BC, situated on the east bank of the Central Sudanese Nile some 20 km north from Khartoum (Krzyzaniak 1991). The site has been excavated for more than three decades and its archaeological harvest including a large collection of animal remains, is impressive. However, no detailed analysis of these remains is available. Sobocinski (1977) published a short paper dealing with the animal bone finds from the earliest campaigns (1972-1975). Another short paper presented a revision of the remains identified by Sobocinski and later finds (Gautier 1984). It was to be followed by a detailed account by the last mentioned author and a paper dealing with the fish remains by Dr Wim Van Neer. Both these papers were completed in 1985 but for various reasons they never reached the printer. Finally a small monograph with an introduction by the main excavator, the late Lech Krzyzaniak, dealing in principle with all the finds collected until 2003 was planned, but abandoned because of the unexpected death of Lech Krzyzaniak. These finds were presented at the 7th International Symposium "Archaeology of the earliest Northeastern Africa" in Poznan in 2003 with the aid of the table reproduced here (Table 1). Some preliminary comments were added.

The table shows that the Kadero fauna is quite diverse, but as is generally the case, it comprises several taphonomic groups, that is, groups of remains of animals with comparable death-to-burial history and hence varying archaeological significance. Most important is the group of animals used, comprising mostly animals which were eaten and thus consisting mainly of consumption refuse. The exact use of some animals is difficult to establish: python, Nile monitor or some of the carnivores may have been skinned and the skinned carcasses thrown away.

A special group within the first group comprises the Red Sea shells, *Nerita polita* and especially *Engina mendicaria*, used as beads. The larger bivalves, *Etheria elliptica* and again especially *Spathopsis*, formerly known under the generic name *Aspatharia*, were no doubt collected for making tools as exemplified by valves cut into pottery tools.

Penecontemporaneous intrusives are animals which came to a site by their own or other not human means or were brought to the site inadvertently by people. At Kadero they include the land snails, the amphibians, the small snakes, the lizard and the small rodents, who reached the site mainly by their own means. As to the smaller gastropods and bivalves, these derive no doubt mostly from the fluvial deposits on which the site was established and can therefore be included in the category of the reworked intrusives. The jerboa finds are no doubt mostly late intrusives because of their fresh aspect and the fact that they form clusters of skeletal elements combinable in single animals. The cowry, *Cypraea turdus?*, is probably another late intrusive. It was found on the surface and may derive from a later occupation.

The consumption refuse consists mainly of livestock, but people also collected ampullarids or apple shells (*Pila* and *Lanistes*) for food, and added fish, birds and mammalian game to their diet. As was to be expected the mammalian game consists mainly of antelopes. Kob, well represented in pre-Neolithic or Early Khartoum sites, is no longer very frequent. This may be the result of over-hunting as the species is a tenacious territorial antelope which will stay on its grounds even when people disturb them very much (see Gautier et al. 2002). Changes in the wild resource spectrum may have led people to include new animals in their game-bag such as the hare virtually absent in the known pre-Neolithic faunas. The Kadero hedgehog is the second record of this kind of small mammal in the Sudanese archaeofauna. Hedgehogs are eaten in Europe and Africa, but the Kadero find could be a penecontemporaneous intrusive.

The Kadero livestock finds consist mainly of cattle (more than 80%) and some sheep and goat. The cattle are large, attaining heights at the withers between c. 120 and 145 cm and I have been wondering whether people practised castration. The limited age distribution data give the impression that the Kadero people sacrificed much more easily small livestock than their cattle.

The faunal evidence provided by Kadero, as well as the less detailed data known from other sites of the same period, indicate clearly that cattle were very important to the early Neolithic people of the Central Sudan. However can we say Kadero presents evidence for the beginning of the so called cattle complex, that is, the economic, social and symbolic significance of cattle for many, especially if not exclusively Nilotic tribes of Africa? Traditionally these people have Sanga cattle. Sanga cattle are probably the descendants of the original and

probably autochthonous African cattle as exemplified by Pharaonic cattle formerly labelled *Bos africanus*, which have been crossed to some varying extent with zebu introduced in Africa during our era (Grigson 1991).

Another problem is presented by the scenario describing how and why pastoralism did come to the Central Sudan. Was there climatic forcing to use a trendy term? Was there over hunting as suggested for kob? Did these phenomena occur in synergy? Did livestock arrive at the right time with pastoralist immigrants or was livestock adopted from people elsewhere?

A detailed account and evaluation of the Kadero fauna and a comparison of this fauna with faunas from other Khartoum Neolithic sites by the present author and Dr Wim Van Neer is in preparation. This paper will be included in the forthcoming memoir summing up the excavations and research dealing with Kadero. The present small contribution is dedicated to the memory of our good friend and colleague Lech Krzyzaniak.

References

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Table 1. The fauna of Kadero (a).

Marine molluscs	<i>Nerita polita</i> (b)	-	-	R
	<i>Cypraea turdus?</i>	1	-	1
	<i>Engina mendicaria</i> (b)	-	-	F
	marine bivalve (b)	-	-	1
Freshwater molluscs	small gastropods (<i>Cleopatra bulimoides</i> / <i>Melanoides tuberculataula</i>)	R	-	R
	<i>Pila wernei</i>	F	F	F
	<i>Lanistes carinatus</i>	R	R	R
	small bivalves (<i>Corbicula consobrina</i>)	R	R	R
	<i>Spathopsis</i> spp.	R	R	R
	<i>Etheria elliptica</i>	R	R	R
Landsnails	<i>Limicolaria cailliaudi</i>	F	F	F
	<i>Zootecus insularis</i>	R	R	R
Freshwater fish(c)5		40	65	105
Amphibians		5	6	11
Reptiles	crocodile (<i>Crocodylus niloticus</i>)	-	4	4
	Nile monitor (<i>Varanus niloticus</i>)	60	104	164
	lizard	-	1	1
	rock python (<i>Python sebae</i>)	18	29	47
	small snake(s)	6	23	29
Birds		16	4	20
Wild mammals	hedgehog (<i>Atelerix albiventris?</i>)	-	1	1
	small monkey, probably grivet monkey (<i>Cercopithecus aethiops</i>)	-	1	1
	hare, probably Cape hare (<i>Lepus capensis</i>)	11	-	11
	ground squirrel (<i>Euxerus erythropus</i>)	5	-	5
	tatera gerbil (<i>Tatera robusta?</i>)	4	2	6
	multimammate rat (<i>Mastomys</i> sp.)?	-	1	1
	lesser jerboa (<i>Jaculus jaculus</i>)	±30	-	±30
	unidentified smaller rodents	F	9	F
	porcupine (<i>Hystrix cristata</i>)	3	1	4
	canid, probably golden jackal (<i>Canis aureus</i>)	27	-	27
	honey badger (<i>Mellivora capensis</i>)	11	-	11
	medium sized viverrid (<i>Herpestes ichneumon</i> or <i>Atilax paludinosus</i>)	1	-	1
	small carnivores	2	1	3
	wild cat (<i>Felis sylvestris</i>)	13	2	15
	large felid, probably caracal (<i>Felis caracal</i>)	10	P	10
	aardvark (<i>Orycteropus afer</i>)	1	-	1
	elephant (<i>Loxodonta africana</i>)	1	1	2

	warthog (<i>Phacochoerus aethiopicus</i>)	5	4	9
	hippopotamus (<i>Hippopotamus amphibius</i>)	8	7	15
	giraffe (<i>Giraffa camelopardalis</i>)	5	6	11
	medium sized antelopes, mainly redfronted gazelle (<i>Gazella rufifrons</i>)	5	2	7
	larger antelopes (d)	30	26	56
	medium sized antelope, probably kob (<i>Kobus kob</i>)	11	9	20
	small antelopes, mainly oribi (<i>Ourebia ourebi</i>)	166	38	204
Domestic or wild	small bovid (antelope or small livestock)	73	39	112
Domestic mammals	cattle (<i>Bos primigenius</i> f. <i>taurus</i>)	1028	498	1526
	goat (<i>Capra aegagrus</i> f. <i>hircus</i>)/sheep (<i>Ovis ammon</i> f. <i>aries</i>)	151	77	228
Total vertebrates		±1746	961	±2707
Total not identified vertebrates		±3000 0	6300	±36300

(a) Counts of fragments or specimens, i.e., finds which clearly belong together; F: frequent; R: rare; P: present but not counted, e.g., rib or vertebrae other than atlas or axis. (b) Only found in graves. (c) Mainly *Clarias* sp., *Synodontis* sp., *Protopterus aethiopicus*, *Lates niloticus*. (d) Tiang (*Damaliscus lunatus*), hartebeest (*Alcelaphus buselaphus*), greater kudu (*Tragelaphus strepsiceros*), etc.