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A general review of the known prehistoric faunas of the Central Sudanese Nile Valley

In a paper presented in 1980 at the Dymaczewo Symposium we attempted to evaluate what we thought was known about the Quaternary mammals and archaeozoology of Egypt and Sudan (Gautier 1984a). The data for the Nile region in the Central Sudan were then still very scanty and far from precise. The present paper read at the second Dymaczewo conference gives a summary of the faunal data obtained since then and their general significance.

Detailed research on the faunal assemblages of Central Sudanese sites was started in 1977, when the author was invited by L. Krzyżaniak to study the faunal samples from Kadero. The research program now includes:

Early Khartoum:

- Khartoum Hospital (*cf.* Arkell 1949); preliminary faunal analysis (Bate 1949); re-analysis of the fauna (Peters 1986);
- Saggai (*cf.* Caneva 1983); detailed faunal analysis (Gautier 1983);
- Umm Marrahi (not published excavations by the Department of Archaeology, University of Khartoum); preliminary faunal analysis by the author.

Khartoum Neolithic:

- Shaheinab (*cf.* Arkell 1953); preliminary faunal analysis (Bate 1953); re-analysis (Peters 1986); new excavations (Haaland 1981); preliminary faunal analysis (Tigani el Mahi 1982), re-assessed by the present author;
- Kadero (*cf.* Krzyżaniak 1984); preliminary faunal analysis (Sobociński 1977; Gautier 1984b); detailed faunal analysis (Gautier in preparation);
- Geili (*cf.* Caneva 1984); preliminary faunal report (Gautier 1983). More faunal material from the earlier excavation seasons has now become available and has been included;
- Nofalab, Umm Direiwa, Zakiab (Haaland 1981); preliminary faunal analysis (Tigani el Mahi 1982) re-assessed by the present author;

— Kadada (*cf.* Geus 1984); detailed faunal analysis of part of the site (Gautier 1986a).

These sites are representative of the Holocene archaeological sequence spanning approximately the period 8,500 - 4,500 B.P. (Caneva *ibid.*: 153; Haaland *ibid.*:57; Geus *ibid.*) during which pastoralism was adopted in the Central Sudanese Nile Valley.

The program is carried out with the aid of various colleagues. T. Pain (London) helped with the identification of some of the molluscs. W. Van Neer (Leuven) included the ichthyofauna in his project on archaeoichthyology of Africa (see this volume). F. de Broin (Paris) identified the turtle remains and has been invited to write a general paper on the turtles from various prehistoric sites in Egypt and the Sudan. D. Mathiessen (Gainesville) prepared preliminary identifications of the birds.

Results so far obtained are summarized in Table 1. An important change in the identifications of the older samples of Shaheinab should be stressed. The work by Tigani el Mahi (*ibid.*) and Peters (*ibid.*) has established beyond doubt that the so-called African buffalo (savanna or forest type) from Shaheinab is in fact domestic cattle. Both large and small livestock are therefore present at that site, which does not represent a case of incomplete adoption of pastoralism as has been intimated in the literature. Moreover, there is no evidence for a dwarf goat at the site, though both sheep and goat are undoubtedly present.

As the table shows, the list of animals found is fairly impressive, especially if one considers that some groups have not been listed specifically. Thus the marine molluscs comprises various species: *Engina mendicaria*, *Conus coronatus*, *Nerita polita*, *Cypraea* spp. The ichthyofauna is in most cases quite voluminous and the total number of families or species found exceeds a dozen. The frequency distribution of the turtles appears rather haphazard, but the remains found belong to at least five species, mostly freshwater ones. The avifauna is very restricted in most sites but the number of families or species present is comparable to that observed for the fish. Most of these birds appear to be resident forms.

In evaluating the faunal spectrum found and the individual assemblages, attention should be drawn to several facts. First, sample bias distorts the composition of the older samples. This is due to very selective sampling or a rather careless storage after study, a deplorable fact that happens much too often (even in large, highly reputed institutions!). As a result larger animals predominate in the Khartoum and older Shaheinab collection; moreover some material from these collections may have been mixed. Second, the Geili assemblage is very much distorted by differential destruction of smaller and less dense bones. Third, the polygenetic origin of most archaeological faunas should be clearly recognised.

We have introduced the concept of taphonomic groups to separate in an explicit way the different components of archaeological assemblages on the basis of death-to-discovery history of the animals concerned (*cf.* Gautier 1986b). The Central Sudanese assemblages contain essentially five such groups:

1. Consumption offal: this is a major group comprising *Pila wernei*, fish, reptiles, birds, most of the wild animals, livestock;
2. Remains of animals used but not consumed. Clear examples are the Eastern Coast gastropods brought to the Central Sudan for personal adornment. For several other animals no definite decision can be made (e.g. python, carnivores);
3. Remains of carcasses of domestic animals not used as food; containing in our case only dog;
4. "Pene-contemporaneous" intrusives, comprising, no doubt, some amphibians and such rodents as gerbil, tatera, field rat, multimammate rat. Small land-nails such as *Zootecus insularis* belong also in this group, as well as *Limicolaria cailliaudi* which we think colonized the sites and thrived on them because of the lush vegetation;
5. Late intrusives. These are animals which come to the site long after it has been occupied. This group comprises some of the small rodents, which show a lesser degree of fossilisation *s.l.* (e.g., the jerboa remains at Kadero).

As it stands, Table 1 does not suggest any major break between any of the assemblages except for the fact that in the Neolithic sites (from about 6,500 B.P. onwards) cattle and small livestock are present. For the pre-Neolithic wild fauna we have suggested (cf. Gautier 1983) living conditions as found now in the northern drier savannas, with an annual rainfall of some 500 mm and corresponding to a shift of the climatic belts of 400 km; comparable estimates have been made by other scholars (which may have influenced ours!). Some changes in the Neolithic game faunas, not all very certain, are the introduction of hare, the disappearance of marsh cane rat and of kob. For the drastic reduction of the number of kob, a desiccation of the Nile Valley can be invoked, perhaps combined with the effects of human over-predation since kob is a highly territorial species much attached to its home range and therefore very vulnerable, and with competition with domestic stock. Marsh cane rat is an amphibious rodent and its absence in the Neolithic suggests shrinkage of its typical marshy habitat. As to hare, dwindling game resources may have forced people to put this small game on their menu.

Calculations and estimates, not repeated here (Gautier in preparation) indicate that pastoralism with large and small livestock appears to have been a major subsistence activity in all the Neolithic sites. There may, however, exist some differences between right and left bank sites due to the location and catchment areas of these occurrences. Indeed, at Shaheinab and Nofalab, both on the left bank, game and small livestock may have been more important than on the right bank with its expanses of alluvial deposits providing good grazing. Anyhow, as yet none of the Neolithic sites appears to present clear unequivocal evidence for the progressive adoption of pastoralism, nor can we state precisely when and how this adoption began since the archaeological and archaeozoological sequence is very incomplete. The available data can be fitted in a model in which climatic deterioration combined with a possible change in the behaviour of the Nile (more regular flow and restricted

flooding) provide an ecological stress factor making the prehistoric gatherers and hunters of Khartoum Hospital, Saggai, *etc.* willing to adopt pastoralism. Pastoralism in itself may have added to the deterioration of ecological conditions forcing people to rely increasingly on livestock as a major resource. This model has been with us, implicitly or explicitly, for some time. It appears plausible, but for the moment we do not see how the available archaeozoological data can do more to establish its ultimate validity; more data and no doubt many more detailed excavations (and re-excavations?) are needed.

Those disappointed with the foregoing may perhaps find solace in the striking discrepancy between the faunal spectra found near the Central Sudanese Nile and those collected in the Nile Valley in Egypt. In Egypt the mammalian assemblage is dominated by hartebeest (*Alcelaphus buselaphus*) and wild cattle (*Bos primigenius*), to which are added some finds of about twenty other mammal species only. As yet, we do not understand well the significance of this marked difference, which we hope to evaluate in detail in our re-appraisal of the archaeozoology of the Wadi Kubbaniya sites (*cf.* Gautier 1987). However, at the moment we are willing to advance the hypothesis that in the past we overestimated the ecological potential of the Egyptian Nile Valley. Vegetation and hence terrestrial life in this region has been for long very dependant on the river Nile and its floods, while in the Central Sudan the buffer effect of the Nile was combined with at least a modicum of rain! Therefore, more so than in the Sudan, fish may have been the only reliable animal resource in prehistoric Egypt that permitted the persistence of hunter-gatherer lifestyles, while elsewhere experiments in domestication were already having their impact. In our view the foregoing emphasizes once more that archaeozoology is basically a comparative discipline in which not only inter-site but also inter-regional comparisons can be very revealing.

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