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An interpretation of the faunal remains from El Zakiab site (Central Sudan)

This paper is an attempt to correlate some evidence which indicates the seasonal status of El Zakiab site and to investigate the suitability of the settlement during the rainy seasons. I will concentrate on osteological evidence, abiotic evidence, and some observations based on the excavated material, with reference to ethnographical information.

The El Zakiab site lies 18 km. north of Khartoum, on the eastern bank of the Nile, at a distance of 3 km. from the stream of the river. The material from the site consists of typical Shaheinab pottery, lithic tools, fish-hooks, bone harpoons, and artifacts used for personal decoration. The osteological remains of the terrestrial fauna are those of domestic cattle, small livestock, and various wild animals. The aquatic fauna is represented by the remains of *Lates niloticus*, *Tilapia* sp., *Clarias* sp., *Heteratis* sp., *Protopterus* sp., and *Crocodilus niloticus*. The site is radiocarbon dated to 5660±80 B. P. (MASCA calibrated to 4525±65 B. C.) and 5350±90 B. P. (MASCA calibrated to 4225±155 B. C.).

The study of the remains of the lungfish *Protopterus* sp., its behaviour in absence of water, and its general ecological requirements offered some indications of the status of the site and its surroundings with reference to the seasons, the river's behaviour, and human behaviour.

The lungfish remains represented 72% of the aquatic faunal remains from the site. The measurements of the material indicated that the smallest specimens belonged to species of 170 mm. in total length. On the other hand, the lungfish is known for its habit of aestivation in sleeping nests in the absence of water. At many localities in Africa, the lungfish is caught (especially in dry seasons) by digging up the sleeping nests. This explains the high occurrence of the fish – 72%. Thus, it is possible to conclude that the fishing activity at El Zakiab took place in the dry season.

On the basis of the results of study of soil samples from the site, which indicates that the samples were homogeneous to riverain sand, the river behaviour can be re-

constructed. It is evident that it flooded the area leaving pools and marshes after the inundation which eventually evaporated, forcing the fish to aestivate.

The material recovered from the site contains remains of fish species whose habitat are oxygenated and deoxygenated waters, as well as fishing-hooks and bone harpoons. I found that the two categories of fishes and fishing equipment are quite sufficient to be considered as representative of diverse types of hydrological conditions in terms of water depth, especially in absence of clear evidence of boats. Again, this reflects the river behaviour which produced marshes and pools after resession in the dry season. Thus, El Zakiab site offered the human group in question and its livestock a very promising locality in the dry season.

On the basis of this conclusion, let us have a closer look at the following features of El Zakiab site. The absence of human burials on the site can be explained by its seasonal status, for the range of social and ritual activities is expected to be more limited in dry season camps than in base camps. The relatively small size of this site in comparison with other Neolithic sites in the area indicate the possibility that El Zakiab site was not an "independent" site. Another feature from the area is the distributional pattern of sites in relation to the present bank of the Nile. This distributional pattern reflects the limits of the river in the wet seasons, since we believe that the location of sites served a well-known function to the inhabitants of these sites.

By examining the suitability of El Zakiab site under such environmental conditions, the following can be concluded. The location of the site during a rainy season and a flooding river exposed the livestock to the danger of predators, such as crocodiles. Yet not only predators cause danger to man and his livestock but, more important, any settlement under such conditions would be unfavourable for the health of the livestock during the wet seasons. Hence, from an ecological point of view, El Zakiab site could not have been inhabitated during the wet seasons.

In conclusion, we find that the osteological remains of the lungfish, the observations on the excavated archaeological material, and the nature of the site itself indicate that El Zakiab was a dry-period seasonal site[1].

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[1] An ela borate discussion of these data will be published in the *Norwegian Archaeological Review* (1981). The author of this paper is most grateful to the NORAD for supporting his study.