

## XIV. Summary

In 1949, A.J. Arkell published his book "The Old Stone Age in the Anglo-Egyptian Sudan", in which he gave the first overview of the Old Stone Age in the area that is today the Republic of Sudan. His work was based on 25 known sites. The thesis presented here attempts to incorporate more recent research and the numerous discoveries that have been made since then into an overall picture of the history of settlement in the Old Stone Age in this part of Africa. It covers the huge space of time from the earliest appearance of humans to the end of the Pleistocene 12,000 years ago, which has been divided into four major periods, namely the Lower, Middle, Upper and Late Palaeolithic. This study is based on 159 sites (tab. 2; figs. 12-15) the data of which have predominantly been assembled from the available literature where it is systematically catalogued. The only original material evaluated in this study consists of finds from the Libyan Desert that were gathered within the framework of the Cologne B.O.S. Project and are published here for the first time.

The conditions of the natural environment of a given area, amongst them the geological ones as prime factors, are of particular importance in the assessment of the distribution as well as in the progressive development of the stone age settlements. These conditions, together with the respective climate, determine the habitat for human life and are the decisive factors in providing the necessary raw materials for the production of tools. The history of the landscape and of the settlements in Sudan were also shaped by the fluctuation of the climate and changes in the river system of the Nile, the vital artery of the region. These two factors determined the life of the local population to a greater or lesser extent.

The findings of the archaeological and geomorphological studies that were conducted by the interdisciplinary "Combined Prehistoric Expedition" under the auspices of Fred Wendorf in the Nubian Desert from 1961 to 1965 served as the essential basis for the typological and chronological classification of the above mentioned material. In spite of being relatively limited with respect to their regional scope, the findings brought a different light to bear on the stages of development in the Old Stone Age, beyond this particular region. These studies provided the guideline for the classification of the material into the periods defined above. As direct data for older periods is lacking, technological and typological characteristics were taken as criteria for the classification of the individual industries, whilst carbon-14 dating was available only for more recent periods.

The oldest period – the Acheulean – was subdivided into three stages, late, middle and old Acheulean, that are characterised by different types of hand axes (map 2; figs. 1; 2; 14). In the succeeding Middle Palaeolithic, six industries could be differentiated, mainly by employing technological criteria (map 3; figs. 6; 7; 14). Amongst them is the Sangoan/Lupemban tradition of Central and East Africa, whose extension so far north in the continent has been established for the first time. In east and central Sudan, it has been stratigraphically and typologically dated back to the beginning of the Middle Palaeolithic, i.e. it is more than 100,000 years old. The industries of the Nubian Mousterian, the Nubian Denticulate, the Nubian Middle Palaeolithic as well as that of the Khormusan are restricted to the Nubian Nile valley, whereas the Atérien has so far only been established on sites in western Sudan, in the Libyan Desert.



This situation implies that the Sudan was exposed to various cultural influences during the Middle Palaeolithic, which had led, in the context of regional development, to the formation of the groups mentioned above. For the Old and Middle Palaeolithic industries, it is also worth mentioning that they were not restricted to the present day Nile valley, but were also to be found in areas that are now part of the Sahara. This shows that the cultural development must be seen in close connection with climatic changes. Apparently, the Nile valley did not play so important a part as a human dwelling place in these early periods as it did in later ones. Towards the end of the Middle Palaeolithic, with the Khormusan, there seems to have been a change in the cultural development of the Sudan that was characterised by closer ties to the Nile valley, and which has been labelled in the literature as "nilotic". In the period that followed the Middle Palaeolithic, the cultural development of the Sudanese part of the Nubian Nile valley and that of Upper Egypt became obviously different. This difference is indicated by the occurrence of sites from the Upper Palaeolithic in Upper Egypt, whilst they are as yet absent in Nubia and the Sudan. However, the Later Palaeolithic is again represented in both regions, each being characterized by its own industries and technological variants (map 4; figs. 8; 9; 14). Thus, in Nubia, there is a gap of approx. 20,000 years between the end of the Middle Palaeolithic (Khormusan – around 40,000 bp) and the Gamaian industry, dated between 21,000 and 19,500 bp, as the earliest occurrence of the Late Palaeolithic. On the other hand, there also have been no finds in the Sudan south of the Second Cataract that could be safely identified as belonging to the Late Palaeolithic. Thus, there seems to be an even greater gap up to those sets of finds of the early Holocene that are linked to the emergence of the earliest ceramics, and which some authors have called "Mesolithic".

Yet one should be cautious in interpreting these gaps in finds as an actual gap in settlements, as the picture may well change with the discovery of new sites. In this light, the difference in research knowledge of the various regions must be taken into account, as well as the geological develop-

ments of the Nile valley and the changes of the river bed, which may have rendered it impossible, by erosion and sedimentation, to discover potential settlement sites.

The large number of sites documented for Nubia infers that we should allow for richer legacies and a variety of cultural forms in other parts of the Sudan as well. In any case, the idea of only sparse settlement in the Sudan during the Lower, Middle and Late Palaeolithic can no longer be supported. The distribution maps of palaeolithic sites that are presented in this study almost certainly do not present the full picture of settlement sites during the periods in question, but rather reflect particular concentrations of research activities, or simply gaps in our knowledge. This holds particularly true for southern Sudan where until recently not a single palaeolithic site was known. Only a brief survey, however, soon revealed several Lower and Middle Palaeolithic sites that give evidence that this part of the country had been included in the Lower Palaeolithic settlements. In spite of the previously mentioned reservations, the distribution maps convey some indication of the history of settlement, particularly for the region outside the Nile valley.

The overview of the cultural development in the Sudan during the Old Stone Age presented here cannot clarify the question of whether the industries that have been defined for Nubia also occurred in other parts of the country, but it shows that at different periods and at separate places regional developments took place that were obviously linked to climatic conditions. Numerous other questions are still waiting to be answered, e.g. the absolute dating as well as the chronological classification of individual industries in the Sudan relative to each other, and the position they occupy with respect to neighbouring areas. In this context, and with regard to the adaptation of man to the various climatic and geographical conditions, natural sciences are of particular importance. However, for the time being, their findings are far too meagre to answer all the questions on ecology and the history of the environment.

The same holds true for conclusions on the mode of subsistence, when only a few finds of

bones and no botanical material whatsoever have been available for evaluation. On the other hand, finds like the skull of Singa – which unfortunately cannot be exactly classified – give rise to hopes that further advances in research will eventually deliver more results in this field to bring our understanding of the Sudan into line with our understanding of other parts of Africa.

Based on the relevant publications and the available dating methods, this thesis attempts to give an outline of the earliest and at the same time

longest period of Sudanese history. Although it mainly follows the pattern the CPE developed for Nubia, it shows at the same time that the pre-historic development of the Sudan was as much shaped by cultural influences from more southern African regions. In addition, it is meant to stimulate further research along the lines taken by the CPE and to enhance our knowledge about the Old Stone Age in the Sudan, and thus form a bridge between the centres of early human development in the eastern part of the African continent and the African regions further north, Asia Minor and Europe.