

SUDAN

Excavations in the Wadi Hariq, North-western Sudan – A preliminary report on the field season 2001

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Introduction

The Wadi Hariq is a large valley system situated in northwestern Sudan, about 200 km north of the Wadi Howar and about 400 km west of the Nile (Figure 1). Archaeological work in this remote area of the eastern Sahara only started in 1997. During a geological-archaeological survey tour by the members of the multi disciplinary research project ACACIA ("Arid Climate, Adaptation and Cultural Innovation in Africa") from the University of Cologne, several sites were discovered. Characteristic of these sites were large artifact scatters of lithics, bones and pottery. In 1999, excavations were carried out at two of these sites, S97/5 and S97/7 (Keding 1999). Both are situated in the southeastern part of the wadi system (Figure 1). A large geological profile (S97/8; Figure 1) was also documented, providing a complete sequence of the Holocene climatic evolution of this part of the Eastern Sahara (Kröpelin in preparation).

Analysis of the pottery found during excavations on sites S97/5 and S97/7 permitted a cultural attribution to the Geometric Pottery Horizon of the Wadi Howar region (ca. 2200 – 1100 BC), which is characterized by geometric decorations as well as mat impressed patterns (Keding 1998:10-11). Charcoal from a fireplace on site S97/7 was dated to around 2100 BC (KN-5327: 3675 ± 40 bp; 2055 ± 65 cal BC). Well preserved faunal remains (Berke 2001) yield evidence of small livestock (sheep and goat) and cattle keeping. Hunting also played an important role in the subsistence as indicated by bones of gazelles and giraffe. Domesticated donkeys were used as work and pack-animals. A nearly complete skeleton of a donkey was found at site S97/5.

Radiocarbon analysis gave a date of ca. 1900 BC (KN-5318: 3560 ± 150 bp; 1920 ± 200 cal BC).

A typical feature of both sites are burnt structures, sometimes preserved up to a height of one meter above the surrounding playa sediments. Three of these structures, studied by sondages at site S97/5, are probably burnt trees. In one case (sondage S97/5-7), the archaeological profile clearly showed root structures. As well as providing a C14-date of about 2700 BC (KN-5316: 4075 ± 45 bp; 2665 ± 134 cal BC), small layers of charcoal identified the wood as *Acacia* sp. A second structure (S97/5-8) was dated to ca. 2400 BC (KN-5317: 3875 ± 35 bp; 2357 ± 70 cal BC). Here, *Acacia* sp. was also identified. The interpretation of these burnt features is still open for discussion. A clear association with the archaeological finds was not possible.

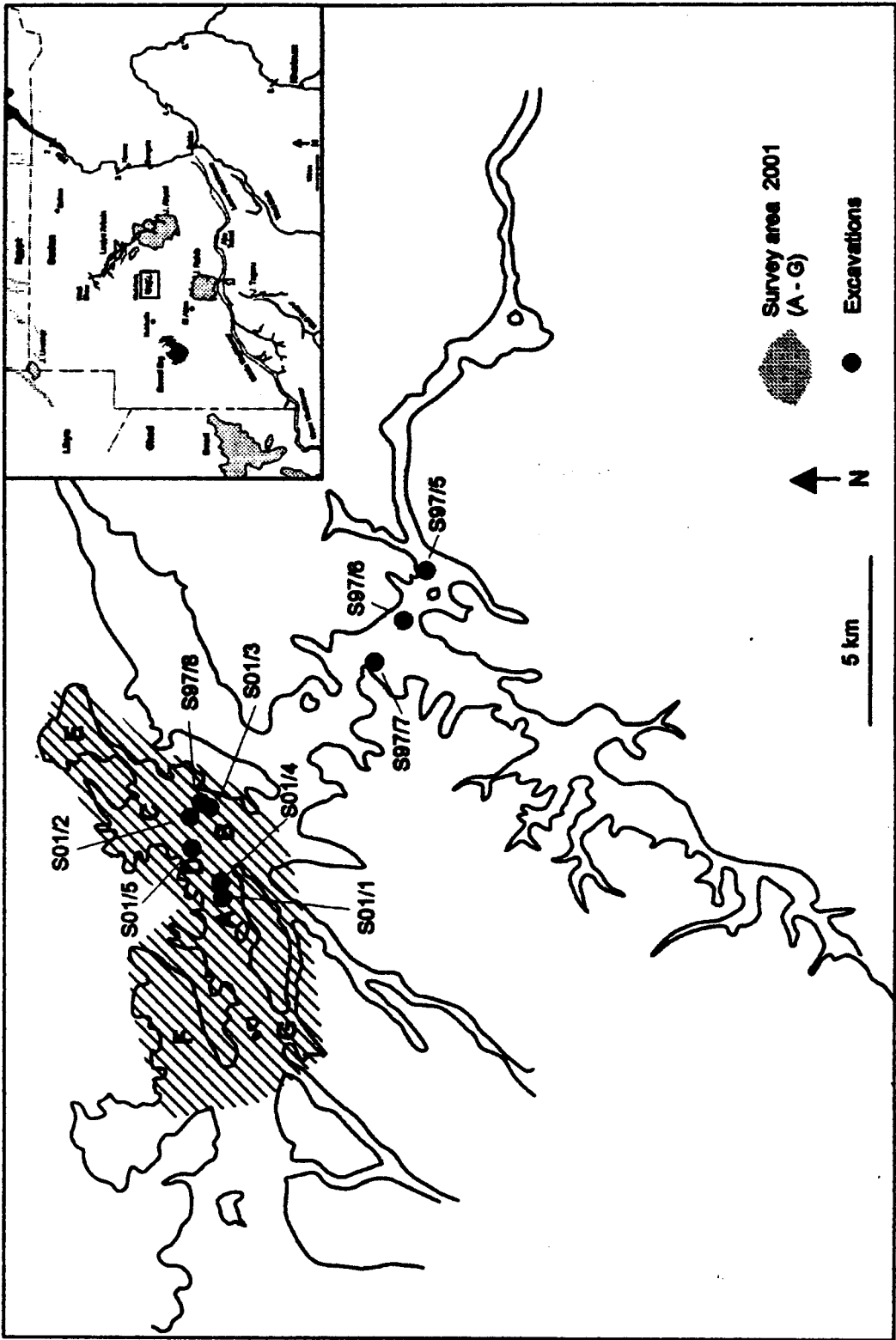
The present studies allow a glimpse into just one part of the settlement history of Wadi Hariq, dated by radiocarbon evidence and typological comparison to the 3rd and the beginning of the 2nd millennium BC. Settlement prior to this period is so far only documented by the presence of a few sherds decorated with the Laqiya type pattern. The geological sequence documented at S97/8 shows however that favorable climatic conditions prevailed throughout the Holocene, beginning at around 7000 bp (Kröpelin in preparation). An earlier Holocene settlement of this region of the Eastern Sahara could thus be supposed. One objective of the field work in 2001 was therefore, to complete and intensify survey and excavations of the Wadi Hariq.

Field work in 2001

Survey

Field work in 2001 concentrated in the north-western part of Wadi Hariq, until present an archaeological no-man's land. Different survey areas (A to G; see Figure 1) were established and an extensive survey was then carried out by foot. During the survey our first impressions of the basins and valleys of Wadi Hariq, covered more or less continuously by archaeological material, changed. The intensive walking of the area made it obvious that the amount of archaeological material could differ, and that areas with a less dense artifact cover were distinguishable. However, at a first glance it was still quite

Figure 1: The area of Wadi Hariq, northwestern Sudan



impossible to identify the exact limits and dimensions of a prehistoric site. Only clearly visible concentrations - e.g. of pottery sherds, bones, fragments of ostrich eggshell or knapping sites - could be exactly traced in their spatial dimensions. The thickest artifact cover was always observed in areas where the underlying playa-sediments are visible on the surface, here one has to account however for heavier disturbance by erosion by water and/or wind. However, to a more or lesser extent, disturbance by water is visible in most parts of the study area.

During four days of survey a total of 95 sites were discovered. The recorded pottery dates most of them to the younger periods of the Holocene evolution in northwestern Sudan: pottery of the Geometric Horizon of the Wadi Howar region (about 2200 to 1100 BC) dominates largely, some sherds decorated with rippled ware point to older events - as do some fragments of Dotted Wavy Line and Laqiya type pottery. The evidence fits in well with the results described for sites S97/5 and S97/7. A complete correlation between the archaeological results and those from the geological sequence S97/8 was not possible as sites from the beginning of the Holocene period would appear to be missing. Only the Dotted Wavy Line and Laqiya type pottery recorded in the northern part of survey area C might still be in situ. Some stone artifacts, probably of Middle Palaeolithic date, have been registered on the edges of survey area B, but here one has to account for re-use or disturbance. Sites clearly belonging to the Palaeolithic period could not be identified. On the hills surrounding the basins and valleys no sites have been found, except for a few stone structures in survey area A and three tumuli in survey area C. Numerous burnt features, similar to those described for sites S97/5 and S97/7, have been recorded in the survey areas A and C. These features, probably the result of burnt trees, are always to be found in the most heavily deflated parts of the wadi, that is to say in areas where the playa-sediments are visible on the surface. The structures serve as evidence of heavy fires in this part of the Wadi Hariq.

Excavations

Site S01/1

The most promising sites for a more detailed study were found in survey area A. Site S01/1

(Figure 1) provided excellent bone preservation as well as a large amount of mat impressed pottery belonging to the Geometric Pottery Horizon. Consequently, this site was chosen for excavation. The artifact scatter covers an area of several hundred square meters. Different stone settings were identified. A trench measuring 33 m² (S01/1-1) was plotted out, encompassing two concentrations of stone artifacts, well preserved pottery and one of the stone settings. The excavation revealed two fireplaces under a thin layer of windblown sand and a large number of archaeological finds still embedded in the sediment. A third fireplace was also discovered whilst excavating the first 5 cm thick layer. The parts of the trench where archaeological finds were still embedded in the sediment were dug to a depth of 10 cm below the surface. Below this depth no more finds were observed; up to 50 cm below the surface only sandy layers were recorded. The excavation provided a large amount of charcoal as well as bones of cattle, sheep, goat, gazelle and ostrich (Nadja Pöllath, Munich, personal communication), lithics and pottery.

A second area designated for excavation (S01/1-2) included a knapping site with stone artifacts of bright beige quartzite. A 16 m²-trench was excavated up to a depth of 5 cm below the surface. No features became obvious underneath the knapping concentration. A detailed measurement program was conducted and finds and structures were recorded, including a great number of the typical burnt structures of the Wadi Hariq in the vicinity of the excavated areas. This provided a good insight into the spatial organization of the site and its surroundings.

Site S01/2

A concentration of pottery decorated with rippled ware in area C was chosen for further study: site S01/2 (Figure 1). The site is less well preserved than site S01/1; the artifacts lay directly on the playa-sediments in a thin cover of windblown sand. A 25 m² trench was excavated. Besides the pottery (very probably just the remains of two or three vessels), large fragments of lower grinding stones, some flakes and some pieces of ostrich eggshell were found. No finds or structures were observed in the playa-sediments.

Site S01/3. A series of stone circles comprising vertically placed stone slabs and stone structures

were discovered in survey area C. A small trench of 1 m² encompassed one of the stone circles: site S01/3-1 (Figure 1). Inside the stone circle, excavation revealed Two clearly distinguishable layers of charcoal below a thin layer of windblown sand. The bottom of the stone circle was completely paved with stone slabs. No archaeological material was found during the excavation. The immediate surroundings of the stone circles were also void of finds attributable to the stone structures. However, sediments, very probably resulting from the digging of a well about 20 m west of the stone circles, would point to an interpretation of a watering place for animals. The structure was then probably re-used as a fireplace.

Site S01/4. In survey area A, a further excavation (S01/4-1; Figure 1) was conducted around a concentration of geometric decorated pottery situated some hundred meters east of site S01/1. Besides the pottery well preserved bones (e.g. cattle, sheep/goat and giraffe; Nadja Pöllath, Munich, personal communication) and grinding material were visible at the surface. The 35 m² trench was partly dug to a depth of 10 cm below the surface. The excavation revealed traces of at least one fireplace, however the features were badly preserved, indicating a stronger impact of erosion at S01/4 than on site S01/1.

Site S01/5. In the vicinity of deeply eroded playa-sediments, a measurement program for single finds and structures was carried out. Several potsherds belonging to different occupation horizons (e.g. Dotted Wavy Line, wheel made pottery), and knapping sites were recorded. The area seemed however quite eroded and disturbed by water activity, so most of the finds were certainly no longer in situ.

Preliminary results

The field work in 2001 added to the overall picture of prehistoric Wadi Hariq. Contrary to what was expected from previous research, it was not possible to provide a complete correlation between the geological profile S97/8 which indicates a Holocene climatological sequence in this region starting at about 7000 bp (Kröpelin in preparation) and the archaeological occupation. Sites of younger Holocene periods, from the 3rd and 2nd millennium BC, were identified during the intensive survey and partly studied in excavations. The excavation of rippled ware

pottery at the site S01/2 which can be dated by comparison with ceramics found in the Nile Valley to the 5th and 4th millennium BC, and the small number of sherds with Dotted Wavy Line and Laqiya type decoration also indicate earlier presence of human groups in this area. The remains of these periods are no longer well preserved but disturbed by erosion, water activity and later settlement activities. This makes it rather difficult to establish the corresponding settlement patterns.

For the younger periods of the Holocene the evidence is much better. During the 3rd and 2nd millennium BC the Wadi Hariq was part of the sahelic vegetation zone (*Acacia* desert scrub) (see Neumann 1989). Amongst the charcoal remains from the excavations (samples from sites S97/5, S97/7 and S01/3) *Acacia* sp., *Tamarix* sp. as well as *Capparaceae* (very probably *Maerua crassifolia* and *Capparis decidua*) were identified (Stefanie Nussbaum and Barbara Eichhorn, Cologne, personal communication). The human groups based their subsistence on the herding of small livestock (sheep and goat) as well as cattle. Hunting played an important role. Bones of giraffe are frequent, not too surprising in an area mainly dominated by *Acacia* trees. The decoration of the pottery (mostly impressed or incised geometric patterns) shows not only connections to the north, the area of Laqiya Arbain, and to the south, the Middle Wadi Howar (Keding 1998:10-11), but also to the Nile Valley. The frequency of domestic ass among the animal bones point to a certain mobility of the prehistoric groups; these animals were certainly used as pack-animals. The detailed analysis of the finds of the field work in 2001 will add to complete the picture of human activities during the later periods of the Holocene in the Eastern Sahara.

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