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Early Khartoum ceramics in the Wadi Howar (Northwest Sudan)

Introduction

The wide distribution of Early Khartoum type decorations, especially dotted wavy line has been well known since the first research done by Arkell at sites in the Khartoum province (Arkell 1949; 1953; 1962). Dotted wavy line is among the oldest decoration patterns in the Sahara and parts of the Nile Valley. In both areas it occurs since the 9th millennium B.P. The Khartoum province however, shows a different development than that of the rest of the Nile Valley or the Sahara: Arkell had already proposed that the Early Khartoum horizon should be separated into two phases: an older phase with wavy line ceramics and a younger one with dotted wavy line ceramics. This sequence was confirmed by Isabella Caneva and her team by their extensive work in the Khartoum province (Caneva et al. 1993; Caneva 1996:232) and by the stratigraphic sequence excavated by the Butana Archaeological Project at the site of Shaqadud in the Butana (Marks and Mohammed Ali 1991; Caneva and Marks 1990). According to the model proposed by I. Caneva, dotted wavy line was introduced from the Sahara into the Khartoum province at the end of the 7th millennium and the beginning of the 6th millennium B.P. (Caneva 1996:232; Garcea 1993:47). This provides evidence of stylistic distinctions between the ceramics of the Early Holocene in different parts of the Nile Valley. Similar patterns can certainly be expected in other regions of the Sahara as well.

The Early Khartoum horizon and the Wadi Howar

Before the 1980s, very little was known about the Early Khartoum horizon in some areas immediately to the west of the Nile Valley, including the region of the Wadi Howar. The Wadi Howar is an old link between the Chad area and the

Nile valley. Analysis of sites located along the route can provide interesting information about exchange and contact between these two regions during the Early Khartoum horizon.

The Wadi Howar originates in the mountainous region between the Jebel Marra and the Ennedi and enters the Nile between the third and fourth cataract, opposite Old Dongola (Pachur and Kröpelin 1987:298). Earlier on the Wadi Howar was believed to terminate in the middle of the Libyan Desert at the mountain chain of Jebel Rahib. In the early 1980s however it was found to connect with the Nile Valley using LANDSAT-scenes (Meissner and Schmitz 1983) and ground-checks (Kuper 1988:136; Pachur and Kröpelin 1987; Kröpelin 1993). The 1050 km wadi course can be divided into three major parts: the Upper, the Middle and the Lower Wadi Howar (Kröpelin 1993:20). Today, the 640 km course of the Upper and Middle Wadi Howar up to the Jebel Rahib traverses the southern fringe of the Sahara and is marked by a stripe of ground-water-fed vegetation up to 11 km wide (Neumann 1989). The Lower Wadi Howar however is rather difficult to distinguish geomorphologically and is separated from its upper and middle course by a 15 m high and 5 km wide dune barrier (Pachur and Kröpelin 1987:298).

During the Early and Middle Holocene climatic conditions were favourable, indications for humid phases in the Wadi Howar are as old as 9300 B.P. A favourable climate persisted until 3000 B.P. (Kröpelin 1993:215-216). The humid conditions during the Holocene permitted an increase in rainfall and a rise in the groundwater table of the area. The wadi at that time must be imagined as a ground-water-fed, continuous chain of wadi sections and permanent pools (Kröpelin 1993:234). "After local rainfalls these experienced seasonal flooding resulting in intermittent river activity and overflows from one sheet of water into the next" (Kuper 1995:129). The climatic conditions during the Holocene shifted the vegetation zones approximately 500 to 600 km to the north. During this period the Wadi Howar was located at the southern frontier of the sahelic zone, with an annual precipitation of about 400 mm per year. Conditions were favourable for savannah type vegetation, great mammals, fish and molluscs (Neumann 1989). Even at the end of the humid period of the Holocene about 3000 B.P. a sahelic type vegetation still persisted and provided environment suitable for human settlement.

All archaeological work done up to the 1980s in the Wadi Howar focused on the areas west of Jebel Rahib. During the 1920s and 1930s several teams reached the Middle Wadi Howar and reported the richness of archaeological finds (Newbold 1924; Newbold and Shaw 1928; Bagnold 1933; Shaw 1936; Frobenius and Rhotert 1934). Forty years later, in winter 1975/76, a team of the University of Khartoum directed by Abbas Mohammed-Ali conducted surveys and several

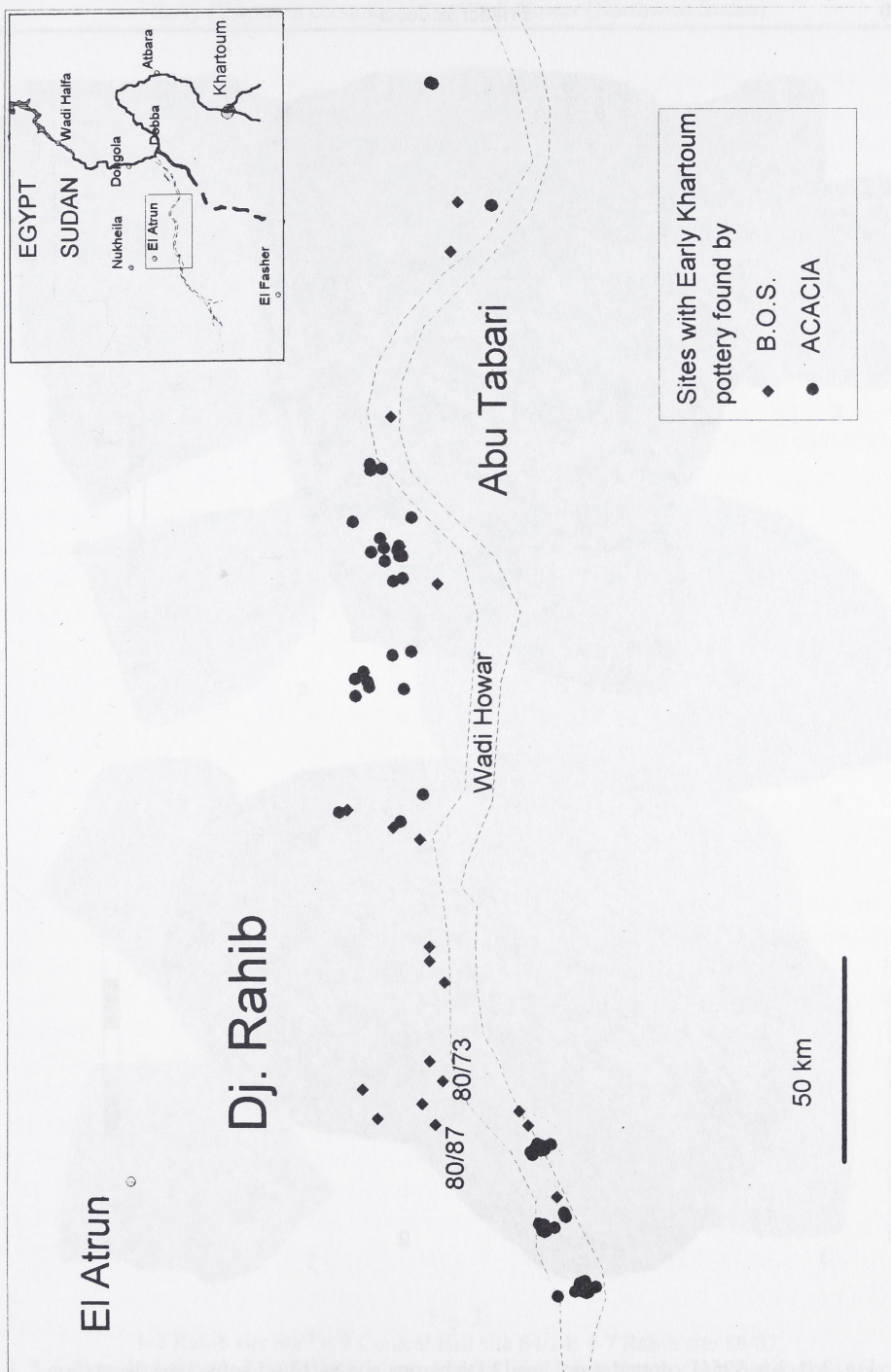


Fig. 1. Sites with Khartoum and Laqiya type pottery in the Wadi Howar.

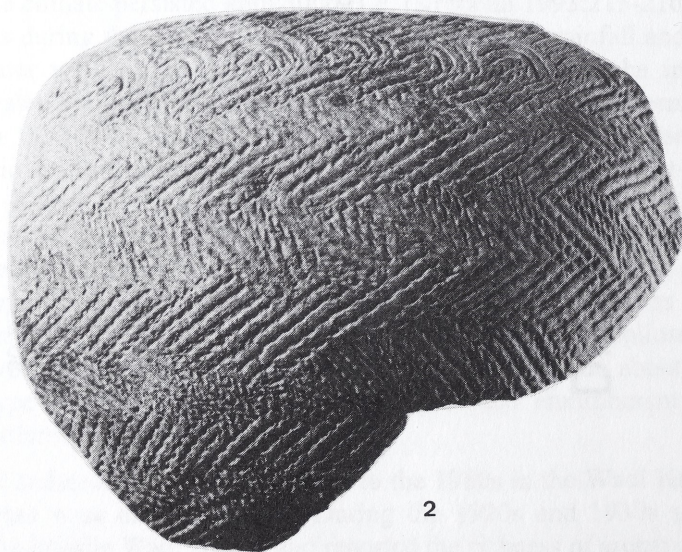


Fig. 2: 1 Site S95/4 - dotted wavy line. 2 Djabarona site 84/13 – Laqiya type decoration.

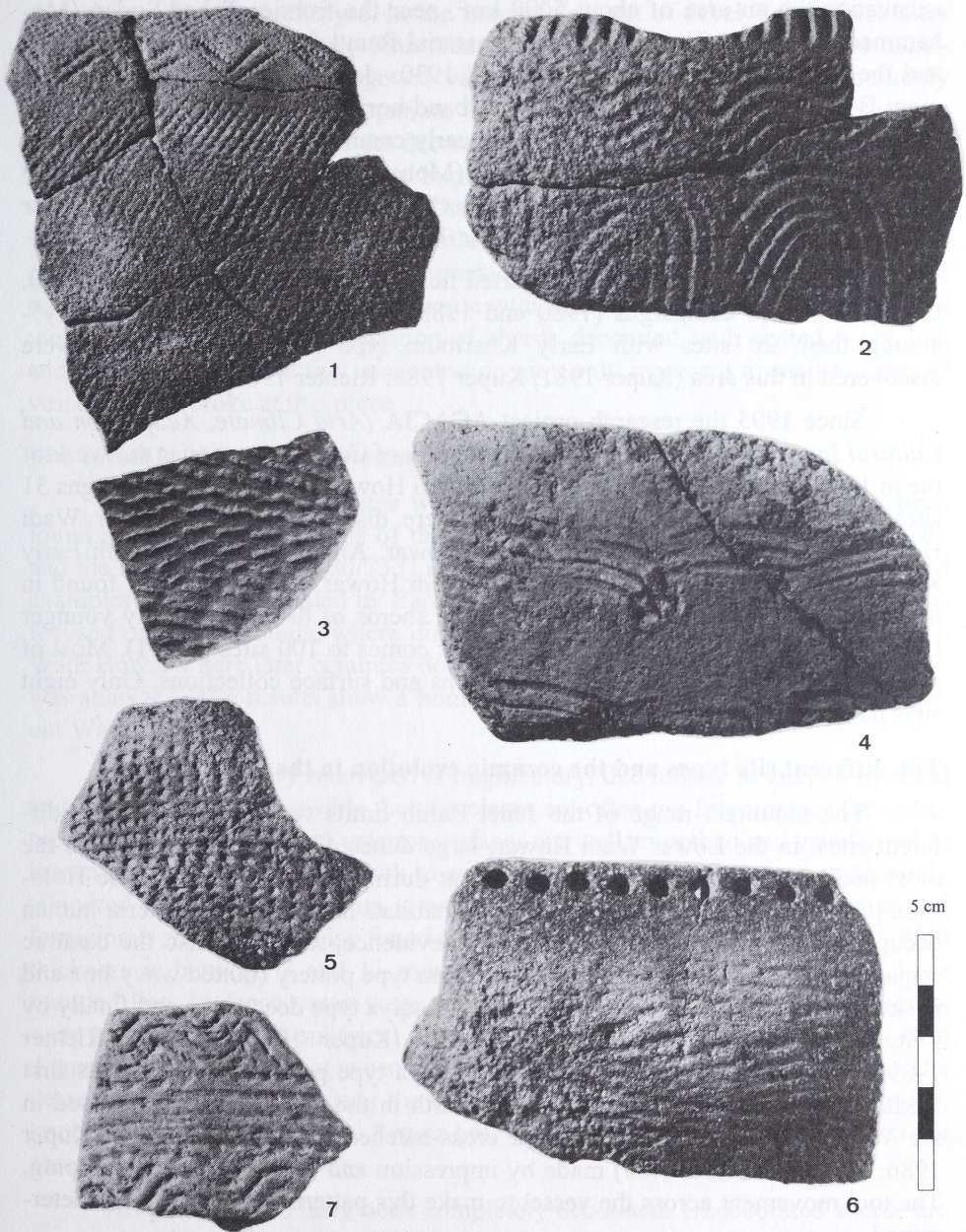


Fig. 3:

1-2 Rahib site 80/73; 3 Conical Hill site 84/24; 4-7 Rahib site 80/87.

1, 3, 5-6, packed zigzag; 2 dotted wavy line; 4 wavy line; 7 dotted wavy line and packed zigzag.

excavations in an area of about 5000 km², near the frontier Tchad-Sudan (Mohammed-Ali 1982). The archaeological material found during this field campaign and the finds made during the 1920s and 1930s date to the 5th and 4th millennium B.P., a period now known as Leiterband-horizon (Keding 1997), and to an even later time. Only three sites with the early ceramic design style of wavy line were known from the whole Wadi Howar (Mohammed-Ali 1982:102, map 7; 47) before the beginning of the research project B.O.S. (*Besiedlungsgeschichte der Ostsahara*) of the University of Cologne in 1980.

The research project B.O.S. started fieldwork in the Wadi Howar in 1980. During two field campaigns (1980 and 1983/84) over 100 sites with pottery - among them 20 sites with Early Khartoum type material (Fig. 1) - were discovered in this area (Kuper 1981; Kuper 1988; Richter 1989).

Since 1995 the research project ACACIA (*Arid Climate, Adaptation and Cultural Innovation in Africa*) of the University of Cologne continues the work of the in 1993 finished B.O.S. project in the Wadi Howar. In two field campaigns 31 sites with Early Khartoum type pottery were discovered in the Lower Wadi Howar and 18 sites in the Middle Wadi Howar. All in all, 69 sites with Early Khartoum pottery are now known in the Wadi Howar. Adding 31 sites found in the Middle Wadi Howar and yielding some sherds of the only slightly younger Laqiya type ceramic, the total number so far comes to 100 sites (Fig. 1). Most of them are known only by survey descriptions and surface collections. Only eight sites have been excavated.

The different site types and the ceramic evolution in the Wadi Howar

The mountain range of the Jebel Rahib limits two areas with quite different sites: in the Lower Wadi Howar, large dunes of parabolic shape were the most preferred places for human settlement during the Early and Middle Holocene (Gabriel et al. 1985:107). These dune habitats have seen a long-term human occupation - as shown by the stratigraphic evidence, reflecting also the ceramic sequence of the Wadi Howar. Early Khartoum type pottery (dotted wavy line and packed zigzags) is followed by pottery with Laqiya type decoration and finally by Leiterband as well as undecorated pottery (Kuper 1995:130, 133; Richter 1989:434; Gabriel et al. 1985:110). The Laqiya type pottery (Fig. 2.2) was first identified approximately 300 km further north in the area of Laqiya, focused in the Wadi Shaw. It is described as a cross-hatched herring-bone motif (Kuper 1986:131; Schuck 1989:423) made by impression and certainly rocker stamping. The tool movement across the vessel to make this pattern has not yet been determined.

The sites in the Middle Wadi Howar, however show a very different layout than those of the Lower Wadi Howar: they are large surface scatters, with only a

very thin archaeological layer. In the immediate west of Jebel Rahib these sites yield large numbers of Early Khartoum ceramics, but often appear to be multi-component sites with a range of variation in ceramic types, thus certainly reflecting more than one occupation. The Djabarona area further to the west is dominated by later ceramics, the decorations include Leiterband, Crescent Leiterband, geometric patterns and mat impressions (Keding 1997; Richter 1989:435, 437). Only few sherds with Early Khartoum type - or Laqiya type - decorations were found on these sites in the Middle Wadi Howar. There are three known exceptions to this pattern: one site dominated by Early Khartoum ceramics, one site with only Laqiya type pottery, and a site with predominantly Leiterband ceramics yielding however one concentration of sherds decorated with dotted wavy line and packed zigzags, but this concentration may only represent a small number of vessels which broke at this place.

The ceramic of Early Khartoum type in the Wadi Howar

The most important sites with Early Khartoum type pottery have been found at the western foothills of the Jebel Rahib, among them site Rahib 80/87 and the nearby site Rahib 80/73 (Fig. 1). These two sites are the only excavated examples of sites dominated by Early Khartoum ceramics. The other excavations focused on dune habitats, where different ceramic styles occur, and the Middle Wadi Howar where later ceramics dominate. All the Early Khartoum type pottery was analyzed. The results show a homogeneity for this type of ceramic throughout Wadi Howar.

All of the pottery recovered is fragmentary, due mostly to erosion by wind and sand. Refitting is possible, but the pieces are often too fragmentary for vessel reconstruction. Interior and exterior surfaces are well smoothed and usually red to brown in colour, with some black to greys. The pottery is rather hard and heavily tempered with quartz grains up to or slightly exceeding 2 mm in size. Mica and ferruginous materials are also found as temper, but rarely in great quantities. Wall thickness is between 7 and 11 mm. Rim profiles are simple and mostly have rounded lips. In those cases where vessel reconstruction was possible jar forms were globular and hemispherical in shape. Bowls are also present, but rare. Rim diameters generally are between 18 and 30 cm, with some size variation. The vessels were constructed using the coiling technique. Bases are mostly rounded, knobbed bases also do occur. Repair holes and worked sherds also appear in the assemblage.

All pots seem to have been completely decorated. Undecorated sherds are rare and only partly decorated sherds unknown. Impressed motifs dominate, incision is infrequent. The impressed decorations are made by simple impression or rocker stamping. Pivoting stamp with a two-toothed implement is nearly un-

known. Among decorations, different kinds of dotted wavy line patterns - semi-circular waves (Fig. 3.2) as well as curves (Fig. 2.1) - occur as do packed zigzags (Fig. 3.1;3;5-6). Packed zigzags are often made by using an instrument producing dashes, perhaps a cord wrapped implement (Fig. 3.3;6). Combination of dotted wavy line patterns and packed zigzags in zoned bands was also observed (Fig. 3.7). Incised motifs are very rare and usually belong to wavy line patterns (Fig. 3.4). Laqiya type decoration is also present (Fig. 2.2).

Notches arranged in a single horizontal row are rather typical rim decorations (Fig. 2.1;3.2), as are punctuations which nearly perforate the wall (Fig. 3.6). These nodes then protrude into the interior of the vessel. On site Rahib 80/73 only, a single band of small zigzags was found as a rim decoration (Fig. 3.1).

As seen by stratigraphic evidence, Laqiya type decoration is later than the Early Khartoum type decoration. However, these two decoration styles seem to be at least partly contemporaneous as show some sherds with dotted wavy line decoration concentrated in a single band on the upper part of the vessel near the rim, followed by Laqiya type decorations on the wall (Fig. 2.2) or the appearance of this type of decoration on the Early Khartoum ceramic site Rahib 80/87. Further study is needed to clarify this problem. In general, the existence of dotted wavy line patterns limited to the upper part of the vessel seems to indicate a later occurrence. Site Rahib 80/73 with mostly packed zigzags and seldom dotted wavy line (always in the upper part of the vessel) or packed zigzags made by a cord wrapped implement is an example of this later occurrence.

Summary and conclusion

The Wadi Howar Early Khartoum type ceramics fit well into the established picture - mainly dotted wavy line and rarely wavy line - for this horizon in the Sahara. In the Wadi Howar, ceramics of Early Khartoum type are quite homogenous. Differences occur only in the quantities in which this type of decoration is present: in the Middle Wadi Howar, only a few sherds with Early Khartoum type decoration are found on the large sites dominated by later types of decoration. Sites with important quantities of Early Khartoum ceramics are found in the region immediately west of Jebel Rahib and in the Lower Wadi Howar. These discrepancies may be due to site conservation: the sites with mainly Early Khartoum ceramics in the Middle Wadi Howar may be totally eroded or just covered with sand. In addition, reuse of pottery, as cited for example for Nigeria (Breunig 1995:15), may also bias the sample.

Determining the age of Early Khartoum ceramics in the Wadi Howar is a constant problem. Very few radiocarbon dates exist even though a large number of sites are now known.

The existing radiocarbon dates, taken from bone or snails, place the Early Khartoum type ceramics in the Wadi Howar in the 6th millennium B.P. Compared to the decoration patterns, especially the dotted wavy line motifs, and seeing them in comparison with adjoining areas these dates are in my opinion too young (see also Kuper 1995: 130). The slightly later occurrence at site Rahib 80/73 (where dotted wavy line motifs are rare and concentrated on the part of the vessel near the rim) is also dated to the 6th millennium B.P. This seems acceptable, but points again to the problem of radiocarbon dating the older evidence yielding a larger amount of dotted wavy line patterns as present on site Rahib 80/87.

Parallels to the Early Khartoum type pottery of the Wadi Howar can be found in the Sahara, for example at the sites of Délébo (Bailloud 1969), Gabrong (Gabriel 1981), Wanyanga Kebir (Arkell 1964) and further sites in the Tchad (Courtin 1969) and Jebel Uweinat (Aumassip 1993), as well as in the Nile Valley: at the sites of Khartoum Hospital (Arkell 1949), Shabona (Clark 1989), Shaqadud (Marks and Mohammed Ali 1991; Caneva and Marks 1990), Abudiya (Geus 1979), the Geili-Kabbashi-area (Caneva et al. 1993) and the Atbara region (Haaland and Magid 1995). Even closer are the similarities with pottery of the Jebel Tageru, a small mountain chain approximately 70 km south of the Middle Wadi Howar: there some sites with Early Khartoum and Laqiya type pottery were found during a survey by the B.O.S. mission of 1984. Also very similar are sherds recovered in the area of Wadi Shaw, approximately 300 km to the north of Wadi Howar (Schuck 1989:426; Kuper 1995:133).

Thus, during the Early and Middle Holocene, the Wadi Howar shows connections to the four points of the compass. Regional stylistic development is also found with the appearance of the Laqiya type decoration, at least partly contemporaneous to the Early Khartoum horizon in this region. Laqiya type decoration is only known from the Laqiya area, the Wadi Howar and the area of Jebel Tageru, showing close links between these three regions and the existence of a special regional ceramic phase. During the last millennia B.C., this connection to the north was cut due to degrading climatic conditions. With the appearance of Leiterband and related ceramic decorations the east-west-orientation became more important for the Wadi Howar.

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