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From lake to well: 5,000 years of settlement in Wadi Shaw (Northern Sudan)

Since 1980 the interdisciplinary research project „Besiedlungsgeschichte der Ost-sahara” (B. O. S.) has carried out surveys and excavations in the western desert of Egypt and the northwestern provinces of the Sudan. The main object was the reconstruction of the history of prehistoric settlement in the Eastern Sahara from the end of the Palaeolithic through the historical times, along with palaeoclimatic research (for the general outline of the project, see Kuper 1981). One of the main excavation areas in Northern Sudan was a shallow depression which, in agreement with V. Haynes (1982: 299), is now called Wadi Shaw.

During his trip from Nukheila (Merga) to Selima in 1935 W. B. K. Shaw set up in Wadi Shaw his camp No. 49. Guided by reports of L. E. de Almasy and G. L. Prendergast who had visited the depression two years earlier, he recorded rich archaeological finds in this area (Shaw 1936a: 48).

The wadi is located about 80 km north-west from the oasis of Laqiya Arbain and 180 km south of the Egyptian-Sudanese border. Cutting about 60 m deep into the surrounding plateau it has been disintegrated into several small basins of different size sided by dune-sand, partly covered by slope rubble. The bottom of the wadi is covered with soft drift-sand, but as Shaw had already mentioned (Shaw 1936: 206), locally playa-like sediments could also be noted.

Because of time limit — three weeks and a half of effective fieldwork — only brief surveys and small excavations were carried out in 1982 in Wadi Shaw (Francke 1986) as well as in the adjacent Wadi Sahal (Cziesla 1986; Fig. 1). The richness of sites known from this fieldwork was one of the main reasons for selecting Wadi Shaw for a more detailed research programme which was carried out during two months of fieldwork lasting from the middle of October to December, 1983¹.

¹ Concerning the work in Egypt and Wadi Howar see reports by R. Kuper, E. Cziesla, F. Klees, W. Schön, and J. Richter, this volume.

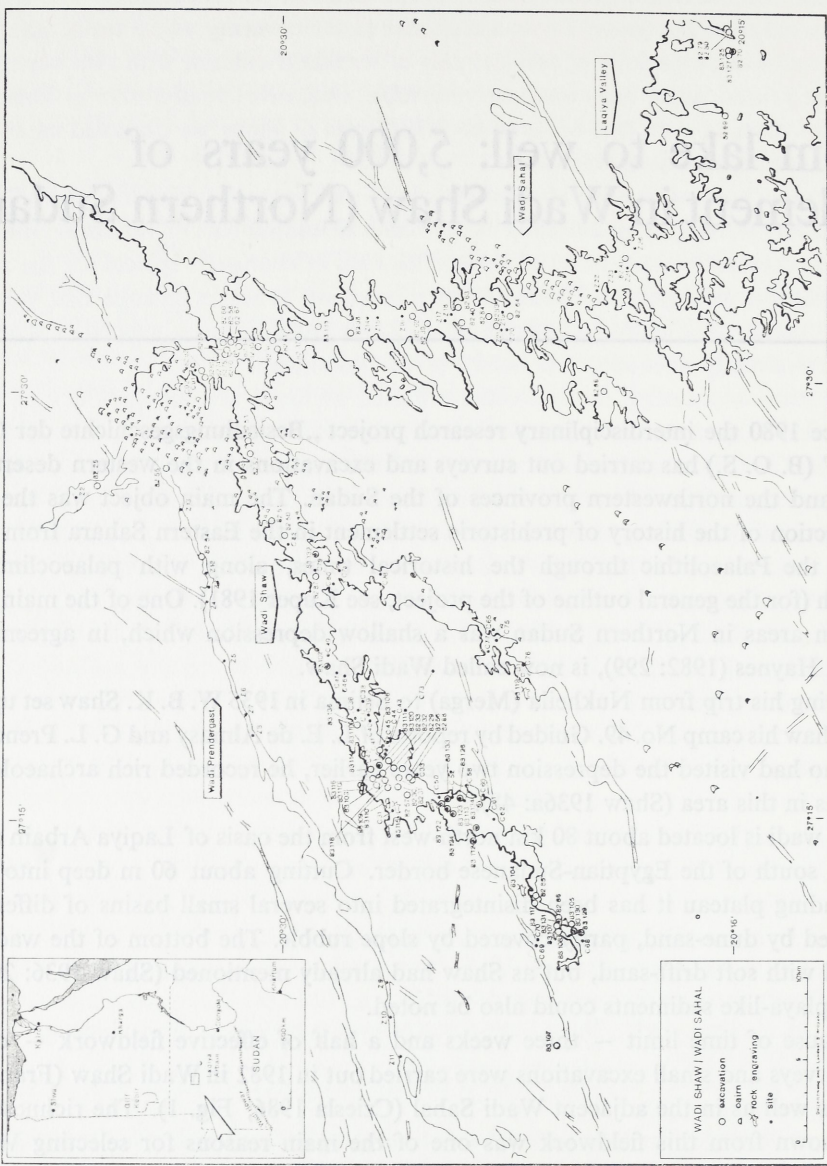


FIG. 1. Map of sites from the Lajiya Area (Northern Sudan)

In this brief report attention will be focused only on some aspects of the settlement and the placing of the succession of prehistoric cultural groups in the Wadi over the 5,000 year period. In other words, the report relates more to the general results of the excavations and surveys rather than to the description and interpretation of individual sites.

While excavations started at those sites which were known from 1982, an overall intensive survey was carried out throughout the Wadi. During this survey a number of sites had been discovered, out of which only some were excavated. Altogether, 90 sites in Wadi Shaw were noted and mapped.

Using a mechanical excavator, the geographers B. Gabriel and St. Kröpelin from the Free University of Berlin had dug out test pits in the packed sediments at four different localities. Although these localities were as far as 30 km apart one from another, they show similar stratigraphical sequences: two limnic accumulations containing shells of various freshwater gastropods, separated by two meters of valley-sand (Gabriel and Kröpelin 1984: 295). The exact dimensions of these lakes are unknown because of the modern sand-sheets masking their boundaries. Radiocarbon dates establish the accumulations to the middle of the 6th and the 5th millennium B. C. (KN 3088 - $5,540 \pm 300$ B.C.; KN 3086 - $5,010 \pm 65$ B. C.; KN 3094 - $4,600 \pm K65$ B. C.)². These dates seem to coincide with the range of time within which wet and dry phases occurred in the Sahara lasting from 9,000 B. P. to 4,500 B. P. (v. Zinderen Bakker 1972: 18; Sutton 1974: 529).

By far the oldest finds that had been discovered in the test trenches were a sherd bearing a dotted wavy-line decoration (Fig. 2: 12) together with other artefacts and a molar of an elephant found nearby. The sherd was found in the upper part of the valley-sand separating the two limnic accumulations. That means that the sherd was under the upper lake deposit which could be dated to 4,600 B. C., thus yielding a *terminus ante quem* for the object. Only a few sherds from other sites could be correlated to this chronological frame; most of them seemed to have belonged to a younger phase of the Khartoum-type ceramics. Quartz predominates in the fabric of these sherds, and organic as well as fine-sand temper appears in only small amounts. Some other sherds, decorated all over the outer surface, remind us of the Early Khartoum-related group. They show dotted wavy-line ornaments on the vessel body. Rims are decorated with short vertical incisions along the outer edge (Fig. 2: 8 - 9). The wavy-line decoration along the outer edge of the rim decoration of the whole vessel were made by a comb (Fig. 2: 7, 10, 11). The pattern can be described as a cross-hatched herring bone ornament which might be termed "Laqiya-type". The only radiocarbon date for this kind of decoration, obtained from bone, is $4,250 \pm 350$ B. C. (KN - 3403): site 83/117. After the 1983 excavations sherds with this particular kind of decoration are being now discovered in larger numbers not only in Wadi Shaw but

² All radiocarbon dates were processed by the Laboratory of the Cologne University (Dr. J. Freundlich). The dates are uncalibrated.

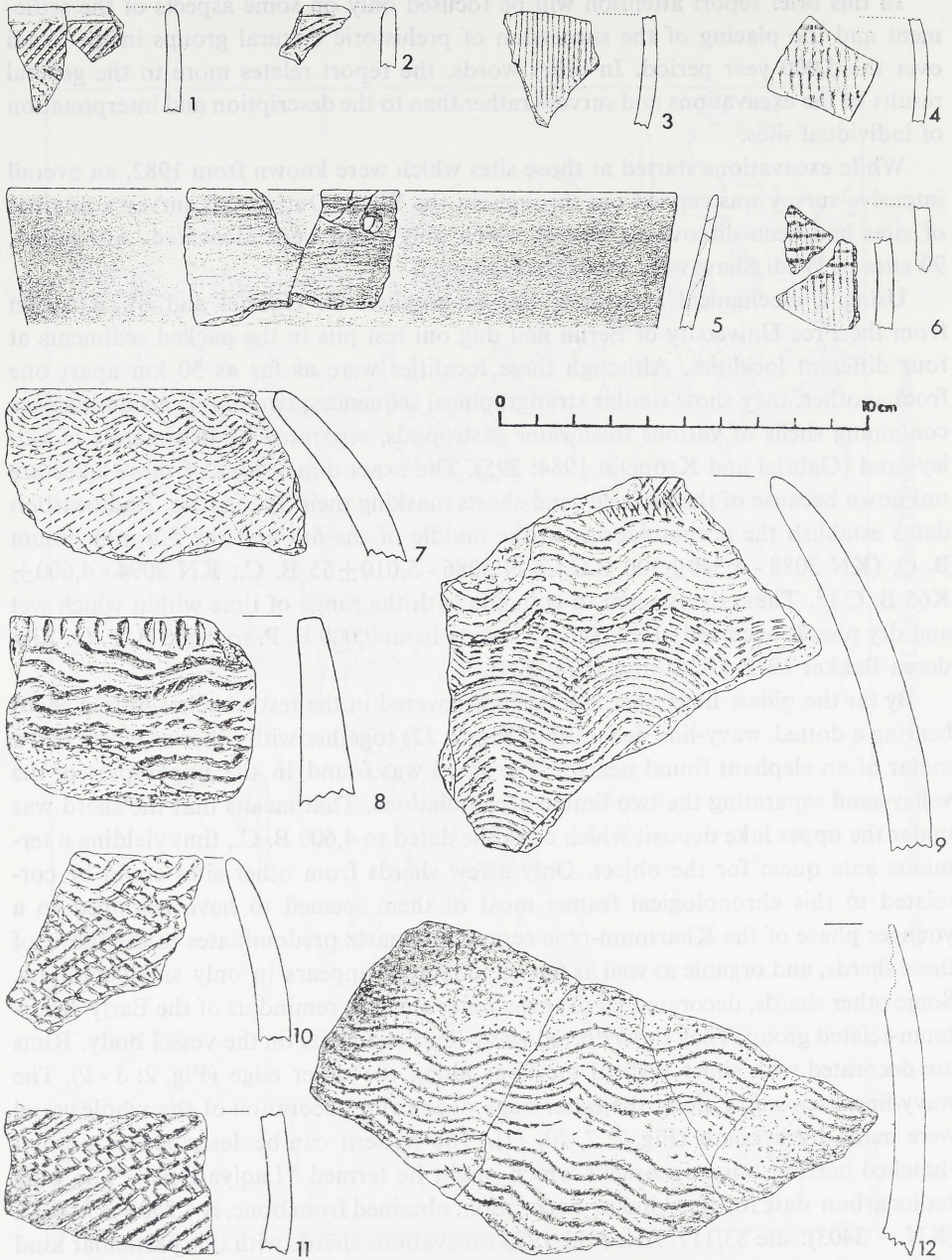


FIG. 2. Wadi Shaw. Potsherds from different sites

1 - 6: Site 82/33; 7, 8: Site 83/117; 9: Site 83/111; 10, 11: Site 82/56; 12: Site 82/57

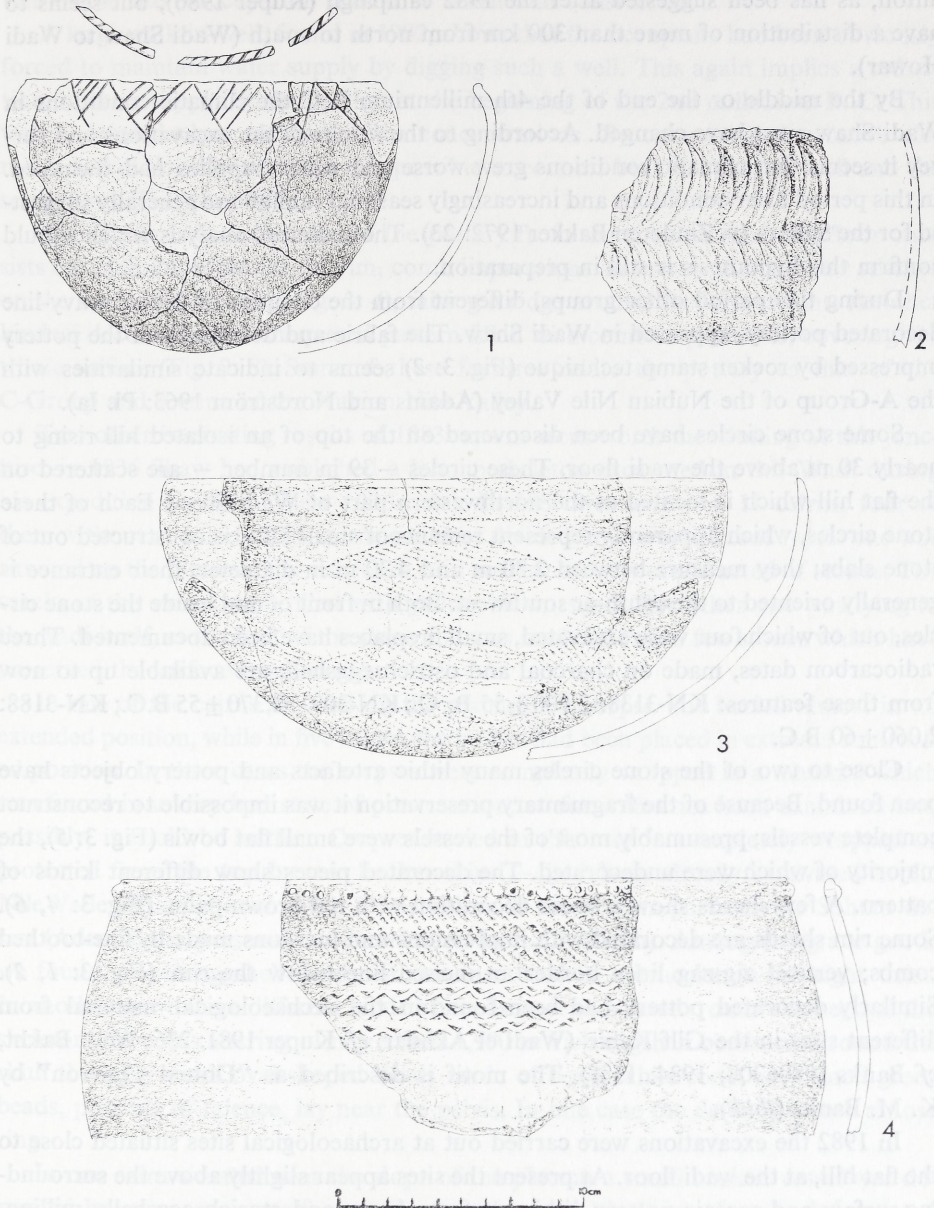


FIG. 3. Wadi Shaw. Potsherds from different sites

1: Site 83/110-9; 2: Site 83/120; 3, 4: Site 82/31

also in Wadi Howar; thus the decoration apparently does not represent a local tradition, as has been suggested after the 1982 campaign (Kuper 1986), but seems to have a distribution of more than 300 km from north to south (Wadi Shaw to Wadi Howar).

By the middle or the end of the 4th millennium B. C. the climatic conditions in Wadi Shaw must have changed. According to the results of the excavations and survey it seems that climatic conditions grew worse and water supplies had dwindled. In this period drier conditions and increasingly seasonal rainfall are generally suggested for the Sahara (v. Zinderen Bakker 1972: 23). The sediment analysis which should confirm this hypothesis is still in preparation.

During this period other groups, different from the complex of dotted wavy-line decorated pottery, appeared in Wadi Shaw. The fabric and decoration of the pottery impressed by rocker stamp technique (Fig. 3: 2) seems to indicate similarities with the A-Group of the Nubian Nile Valley (Adams and Nordström 1963: Pl. Ia).

Some stone circles have been discovered on the top of an isolated hill rising to nearly 30 m above the wadi floor. These circles — 39 in number — are scattered on the flat hill which is located at the northwestern part of Wadi Shaw. Each of these stone circles, which apparently represent remains of small huts, is constructed out of stone slabs; they measure between 2.80 m and 4.30 m in diameter, their entrance is generally oriented to the south or southwest. Both in front of and inside the stone circles, out of which four were excavated, small fireplaces have been documented. Three radiocarbon dates, made on charcoal and ostrich eggshell, are available up to now from these features: KN-3138: $2,900 \pm 55$ B. C.; KN-3091: $2,370 \pm 55$ B.C.; KN-3188: $2,060 \pm 60$ B.C.

Close to two of the stone circles many lithic artefacts and pottery objects have been found. Because of the fragmentary preservation it was impossible to reconstruct complete vessels; presumably most of the vessels were small flat bowls (Fig. 3: 5), the majority of which were undecorated. The decorated pieces show different kinds of pattern. A few sherds show a linear decoration with red brown paint (Fig. 3: 4, 6). Some rim sherds are decorated with impressions and incisions made by fine-toothed combs; vertical zig-zag lines border an incised line below the rim (Fig. 3: 1, 2). Similarly decorated pottery had been found in the archaeological material from different sites in the Gilf Kebir (Wadi el Akhdar, cf. Kuper 1981: 236; Wadi Bakht, cf. Banks 1980: 308; 1984: 158f). The motif is described as "Dotted Chevron" by K. M. Banks (*ibid.*).

In 1982 the excavations were carried out at archaeological sites situated close to the flat hill, at the wadi floor. At present the sites appear slightly above the surrounding surface and contain pottery, lithic artefacts, bones and ostrich eggshells, millstones as well as grinding-stones. During the last campaign it was possible to investigate the stratigraphy nearly 80 cm with different layers of sand and ashes. Although detailed study of the material from the surface as well as from the different layers of this stratigraphy has not been carried out yet, this example indicates that

besides the question of simultaneity of many round surface-concentrations, the question of the site reoccupation should be taken into consideration.

A large walk-in-well, found in 1982, shows that the occupants had been obviously forced to maintain water supply by digging such a well. This again implies a reduction in water supply by desiccation at the beginning of the 2nd millennium B. C. This well is located close to the surface concentrations. By comparing decorative elements and radiocarbon datings it is possible to connect both the walk-in-well and the settlements (Francke 1986).

A characteristic decoration of the pottery from the sites on the wadi floor consists of small knobs under the rim, comb impressions and rows of triangular stitches on the body of the vessel (Fig. 3: 4), raising a ridge around the impressions. Another kind of decoration is a chequered pattern filled with comb impressions, covering the whole surface (Fig. 3: 3). Some of these features relate the pottery to that of the C-Group and Kerma of the Nubian Nile Valley.

Two other interesting results of 1983 season seem worth mentioning at this juncture: in 1936 Shaw had published a human skeleton excavated in this Wadi during his expedition in 1935 (Shaw 1936a: 48). In 1983 we excavated 11 cairns, four of them without any finds. The cairns could be divided into two different types: one was situated on the plateau near its slopes, and was exclusively constructed of stones. The cracks of the stones were filled with yellow blown sand. The other one was lying in the wadi itself, at the foot of the slope and was made of only a few stones which have preserved the surface from erosion.

In one of the cairns situated on the plateau the corpse was buried almost in an extended position, while in five others the bodies had been placed in extreme contracted position. In three cases the corpses were completely wrapped in a material which was found in a very bad state of preservation; so far it has not been examined but, possibly, it could be leather. Corpses buried in this way — completely wrapped or protected from the top by two leather-skins — had been already excavated in the Nile Valley (Bonnet *et al.* 1982: 21) as well as in the western parts of the Sahara desert (Adrar Bous, personal communication by A. B. Smith). Among the grave goods we found ostrich eggshell beads, in one case used as a bracelet on the right wrist. In another grave three different kinds of beads were excavated: round the neck of the skeleton there was a string of more than 1,900 ostrich eggshell beads, and round the skull there lay small oval-shaped beads made of bone, while some very small green beads, possibly of faience, lay near the pelvis. In one case the deceased wore a nose ring.

In one cairn situated near the slope of the plateau a small broken vessel was deposited but no corpse was found. The vessel is grey-black in colour and decorated by a row of hanging triangles under the rim, filled with three or four diagonal incised lines (Fig. 3: 1). This vessel obviously bears a strong resemblance to decorated vessels from Kerma (Privati 1978: 131, Pl. III). Ribs were taken from the skeletons for radiocarbon dating. Five of them could be dated to $1,040 \pm 120$ (KN - 3437),

1,200±180 (KN - 3438), 1,700±150 (KN - 3354), 2,770±300 (KN - 3356), and 6,650±450 (KN - 3353) B.C. The last date relates to the corpse buried in an extended position in the cairn situated on the plateau. Preliminary results of the study of the skeletons which are being examined by Chr. Simon (Université de Genève), concern their age, sex and height. Four of the skeletons are those of males between the ages of 30 and 52 years, and one of a female of *ca* 55 years of age. The height of the deceased ranges from 1.63 m to 1.80 m. The general morphological description suggests an elongated skull with the face medium to long. A definite determination and comparison with other populations is in preparation.

The other discovery worth mentioning here are the rock engravings, found in the Wadi Shaw proper and in one of its branches. They seem to fill the gap between the rock pictures known from Zolat el-Hamad (Newbold and Shaw 1928: 111; Frobenius 1934: 39ff) and the single engraving of a cow from Burget Tuyur. Although all engravings were found on the wind-protected rock sides, they present different stages of preservation. Beside wild animals (such as mufillon, elephant and giraffe), there also appear images of cattle with different horn-types, apparently of different workmanship.

Summarising, it seems to be possible to establish a sequence of settlement history for Wadi Shaw covering a period of more than 5,000 years. Apart from the burial dated to the 7th millennium B.C., the sites with dotted wavy-line decorated pottery belong to the oldest finds in Wadi Shaw. The pottery from other sites could be correlated with the ceramics from sites in the Nubian Nile valley, the Gilf Kebir and the Wadi Howar. No doubt it were particularly the water resources available in different periods (marked by different pottery phases) that made this Wadi attractive to the early inhabitants of the Western Desert. Nevertheless, a complete and exact picture of the sequence of settlements in this Wadi still requires more research in the form of a detailed examination of individual sites as well as comparison with the material from other sites in the western parts of the Sahara and the Nile Valley.

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