

Jebel Moya

The famous Sir Henry Wellcome excavated the Jebel Moya site, located ca. 40 km east of Rabak site, in 1910-14 (Addison. 1949). Part of this site is contemporaneous with the later phase of Rabak (Haaland. 1987a: 35, 46). Lithic artifacts recovered are the same type as that found on Khartoum Neolithic sites, except that gouges are absent.

Jebel Tomat

The site of Jebel Tomat is situated some 50 km northeast of Rabak town, and ca. 10 km east of the White Nile at Esh-Shawal village (Clark and Stemler. 1975). The cultural deposit is rich; in some parts it is 1.26 cm deep but in average it is 0.5-0.6 cm deep in the excavated trenches.

Qoz Kabaro-2

The site is situated near of the village of Qoz Kabaro at both sides of the asphalted road that crosses the Gezira from East to West. It contains mixed materials from different periods, from the late Neolithic to the Christian period, but the majority of material belongs to the Late Neolithic (Fernández *etal.* 2003).

Qoz Bakhit

The site is situated about 1 km east of the previous site, near a small village and small tent camp of northern immigrants called, Qoz Bakhit. The Qoz Bakhit site is ca. 200 x 200 m in extension of surface artifacts dispersion. Several stone rings were found, but no retouched lithic tools were found (Fernández *etal.* 2003).

Wad Sheneina

The site is situated near the village of Qoz Wad Sheneina. Over an elongated *kôm* that clearly rises around 2 m over the flat Gezira plain, about 200 m long (in a NNE-SSW direction) and 50/60 m wide. There is a prehistoric site in the Central and northern parts, with some Islamic remains at the southern end. Almost the total surface was covered with *Pila* and *Limicolaria* shells. This elevated area was occupied for a long period of time, covering different cultural periods, with pottery sherds from to the Mesolithic, Late Neolithic, Meroitic (?), Christian and Islamic times. Many human bones were conspicuous on the surface (Fernández *etal.* 2003).

Bashaqra Gharb

The site is situated near the village of Bashaqra Gharb, on the road from Medani to Khartoum. The site extends only over a small *kôm* of around 20 x 20 m. The site contains both Early and Late Neolithic materials (Fernández *etal.* 2003).

Haj Yusif

This site is located about 8 km southeast of Khartoum - North on the Blue Nile, in the area administratively known as Haj Yusif New Extension and about 4 km east of the Blue Nile (Fernández *etal.* 1989: 261). The site was discovered by Arkell in 1942 (Arkell. 1953: 108, Figure 57), and excavated by a Spanish team in January 1989 (Fernández *etal.* 1989). The distribution of Neolithic sherds covers 300 x 150 m. Due to water and wind erosion, later activities, in Meroitic and Christian times, had spread Neolithic sherds and lithic implements beyond their original distribution. The Neolithic strata are only 10-20 cm in thickness.

Hatab

The site is located northeast of Khartoum, on the higher gravel plateau to the east of the alluvial plain. The archaeological material found on this site consists of a few flakes of quartz, quartzite and volcanic tuff. The only tool found was a convex scraper. Otherwise no pottery or organic material which could have been used to date the site was left (Haaland. 1987a: 44).

Sheikh el Amin

The site is located on the south bank of the Wadi Soba course, about 1.8 km north of the village of Sheikh el Amin Balla, whose *gubbas* can be seen from the site. It is formed by eight *kôms* made of archaeological debris that are elevated between 1 and 1.8 m over the surrounding plain. The surface distribution of archaeological artifacts extends over an area of roughly 250 x 240 m. A freshwater mollusk (bivalve) shell from level 3B in square B-5 was radiocarbon dated in the laboratory of the University of Uppsala, using AMS method, yielding a date of 4590 ± 45 BP (Ua-20415) (see Fernández *etal.* 2003: Table 2).

Soba-1

Scattered sherds in an area of about 20 x 30 m made of two fabrics, with and without mineral temper. The first type is decorated with rocker impressions and wavy line; the second is decorated with incised triangles and comb - impressed lines (Late Neolithic) (Menéndez *etal.* 1994: Figure 3: 16-27). Some fragmented grinders, one tapering cylindrical rubber and two flakes in sandstone were also collected.

Soba-2

The site is situated near site Soba-1. Mesolithic sherds include dotted wavy line, and rocker (highly eroded) were reported. Late Neolithic sherds have incised triangles and impressed-incised combined decoration (Fernández *etal.* 2003).

Rabob

The site is situated near the village of Rabob. The surface remains extend over an area of about 600 x 500 m, with eight small elevations divided by shallow erosion gullies. The sediments are part of an old terrace of Lower Proterozoic age with metamorphic material, around 1 m high over the surrounding flat acacia and shrub areas. On the surface there plenty of flakes, blades and broken white quartz pebbles were found, but the percentage of retouched tools was lower than it usually is in Mesolithic and even Neolithic sites. A shell sample from test pit B was radiocarbon analysed (using the AMS technique) and produced a date of 4670 ± 50 BP (Ua-19741, Uppsala Laboratory) (Fernández *etal.* 2003).

Bir el Lahamda

The site is situated 40 km from the main river. It is a very big site (500 x 300 m) of the Shaheinab phase. Unfortunately, this important site could not be more intensively investigated (Fernández *etal.* 2003).

Wad el Amin

The site is located over an ancient terrace near a *hafir* and a modern Muslim cemetery. It consists of a dense concentration of Neolithic surface remains extending over an area of about 70 x 110 m (Fernández *etal.* 2003).

Jebel Qeili

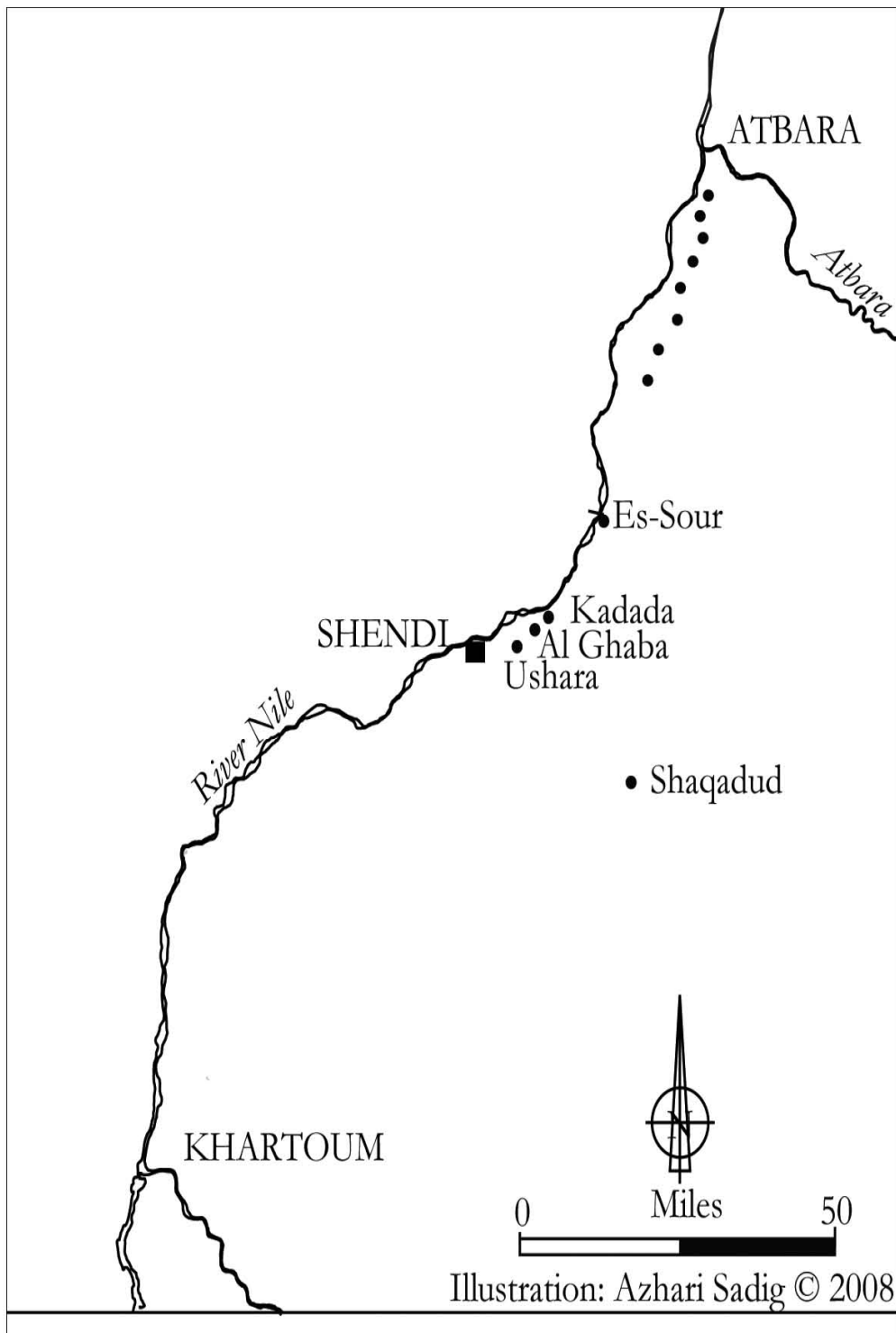
The site consists mainly of a fine Meroitic inscription carved into a rock face. Other reports mention possible Late Neolithic sherds near the hill (Fernández *etal.* 2003).

Gereif West

Geus records a Neolithic cemetery near the area of Gereif West, as well as some post-Meroitic finds (Geus. 1984a: 13).

Butana, and Sites Between Atbara and Khartoum (Map 5.3)

Map 5.3: Location of Neolithic sites between Atbara and Khartoum



Atbara-Shendi Road

Prior to the construction of the Atbara-Shendi road, an archaeological survey and test excavations were carried out by the Sudan Archaeological Research Society (SARS). Fifteen sites were located (SARS 113.3, 138.2, 150.5, 152.6, 153.1, 153.2, 154.3, 155.1, 138.3, 147.1, 152.1, 154.1, 165.1, 222.1 and 231.1). The first eight sites were attributed as 3rd millennium BC sites and dated from the finds at Shaqadud, and compared to material dating from the so-called Pre-Kerma period (before ca. 2500 BC). The rest were attributed to earlier Mesolithic/Neolithic periods (Mallinson *et al.* 1996: 1-6).

el Kadada

The site lies on the right bank of the Nile, some 200 km north of Khartoum, in an area where the river flows from west to east. The site covers an area of about 800 m from east to west. Most of the ancient remains are found on the terraces, which are the highest features of the site, and in the area situated between the terraces to the south, in the bed of a fossil *kebor* (Geus. 1984a: 8).

el Ghaba

This site is situated east of the village of el Ghaba and south of el Kadada. It is a large area covered with fragments of pottery, chipped tools and animal bones, indicating the presence of a Neolithic settlement. Many graves have been recorded. A few graves of historic times have also been found in the mound, where they destroyed parts of earlier Neolithic ones (Geus. 1984a).

Qoz Burra

A large mound, ca. 300m x 200 m shows quantities of Neolithic remains, but some Meroitic sherds have also been found here. The ruins on the mound are possibly recent and it is unclear whether this represents a Meroitic settlement (Ahmed. 1984: 28).

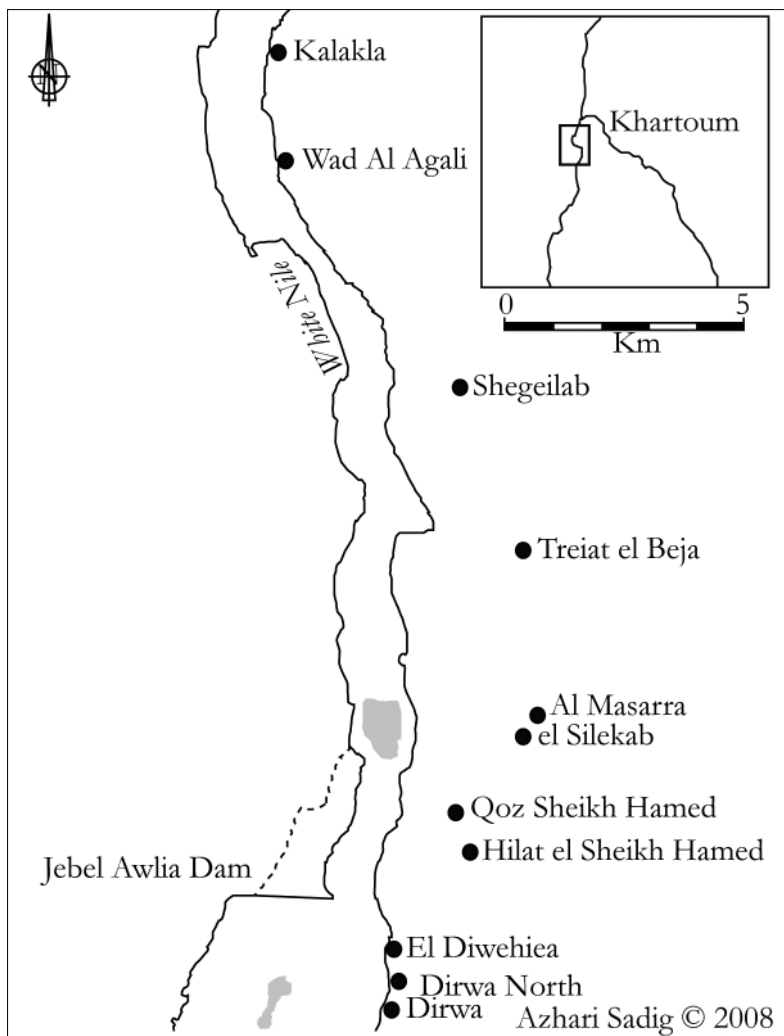
Shaqadud

The site of Shaqadud lies about 50 km east of the Nile from the village of Wad Banaga and about 13 km from the Meroitic monuments at Naq'a in the western end of the Butana. Shaqadud is a complex of sites rather than a single locality. The main site, S1, comprises two localities: S1-A, which is a large cave at the back of a canyon, and S1-B, a midden located in front of the cave. There are a number of small surface sites on top of the surrounding plateau and along its slopes. The deposits in the cave are at a depth of 3.35 m (Mohammed-Ali. 1987: 129-130).

New Discoveries

Sites between Kalakla and Jebel Awlia (Map 5.4)

Map 5.4: Location of Neolithic sites between Kalakla and Jebel Awlia, south of Khartoum



Thirteen sites were discovered in the area situated between El Kalakla and Jebel Awlia (Eisa. 1997), but they were either not excavated or not fully published. From the primary surveys it can be observed that most of these sites were essentially of the Neolithic period, accompanied by material that could be traced back to the Mesolithic (Sadig. 1999, 2004). Twelve of these sites were surveyed during the preliminary survey of 1997, and they revisited by the author in 1999 and 2004 (Map 5.4).

The study of the material from these sites (Sadig. 1999; 2004) revealed a considerable amount of material dating from the Mesolithic, to the Meroitic and post-Meroitic periods.

These sites were affected by various natural and human activities during the last 50 years. These sites differ in some aspects; some are represented by the clear concentration of archaeological remains, while such remains were scarce in others. Most of the sites represent settlement areas.

El Kalakla el Teria'a: 15°27/32°28

The site is situated about 2 km from the eastern bank of the White Nile, to the south of El Kalakla Al-Quba area. It is a plain of clay mixed with sand, covered with decorated and undecorated potsherds. Most of these potsherds are rough and it is not possible from their shape and decoration to determine the age they originate from. A few can be identified as from the Neolithic and Mesolithic periods of Central Sudan on the basis of some typical decoration.

In addition, there are a few lithic artifacts and animal bones. The poor condition of the site may be due to the human interference and natural factors as erosion. No graves were observed during the survey.

Wad Ela'gali ca.15°26/32°27

It is a small site situated to the south of El Kalakla El Teria'a, about 500 m from the eastern bank of the White Nile. Lithics, potsherds, bones and shells are scattered in the mixed clay and sand soil surface of the site. The poor condition of the site and the scarcity of archaeological materials reflect the human and natural factors that have affected the site. For all these reasons it was not easy to determine the exact extent of the site and the period it belongs to, but most of the small potsherds have features characteristic of the Neolithic of Khartoum area.

El Shegelab 15°23.524/32°30.988

This site is situated about 25 km from Khartoum and 1 km from the eastern bank of the White Nile. It is a sandy clay plain area with low sandy and clay mounds mixed with organic materials, especially in the southern part, which today forms a part of a newly-built village.

Three years after the preliminary surveys the author revisited the site and found that the earlier layers of the site, which appeared from a recent well, date back to the Mesolithic period. This was indicated by great quantities of the wavy-line decorated potsherds and other material that belong to this period. The lithic materials found on the site contain artifacts made from quartz, such as crescents, burins, and scrapers, in addition to many grinding implements made of sandstone. This site is mostly covered with animal bones and shells. Although this site has similar features to the Neolithic of the Khartoum area, there is a complete absence of tools such as gouges and polished axes.

Teria'at el Bija***Teria'at el Bija (A): 15°20 007/32°30 767***

This site is situated about 30 km from Khartoum and 2 km from the eastern bank of the White Nile, not far from Khartoum-Jebel Awlia railway. The site is very large and extends about 200 x 150 m, which makes it one of the largest discovered sites in the survey area. The site exists in a sandy clay area, which led to its easy erosion; agricultural and rehabilitation activities have caused great damage to the site. Potsherds, lithics, grinding implements, shells and other organic and inorganic materials are scattered over a great area of the site. The site contains potsherds and lithic materials, but not the polished axes and gouges similar to those found in Shaheinab site.

Teria'at El Bija (B): c.15°20 646/32°30 923

The site is situated 30 km from Khartoum and 200 m to the west of Teria'at El Bija (A) site. The sites are separated by a *kebor* that runs to the west towards the White Nile. The area of the site is about 120 x 200 m. It is covered with large quantities of decorated and undecorated potsherds. Some of these potsherds are similar to those found in Teria'at El Bija (A) site, so it might be an extension of it, especially since the two sites are near to each other. Lithic materials, grinding implements and animal bones were also present. There are no contemporary cemeteries associated with the site. The site is prone to erosion because of floods and human activities.

Teria'at El Bija (C): c.15°20 624/32°30 977

The site is situated 32 km from Khartoum, a few meters from the eastern bank of the White Nile. It is a mound raised 1-2 m from the surrounding alluvial plain. The site is cut by three *kebors*, which run to the west towards the White Nile.

Potsherds with general features of Neolithic decorations are the most common archaeological material and are scattered on the site. Lithic materials and grinders are not common. There are also few animal bones and shells.

What is very important regarding these three sites (Teria'at El Bija A, B and C) is that they have similar archaeological and topographical features.

el Selikab: ca.15° 17 457/32° 32 253

This site is situated to the north of Selikab village, about 34 km south of Khartoum, 7 km north of Jebel Awlia dam and 1 km from the eastern bank of the White Nile. It is a small, sandy mound covered with different archaeological materials namely potsherds and large quantities of lithic materials. However, the former have been affected by the natural factors that changed its shapes and edges. In addition, there are gray fossilised animal bones, and shells.

Hilat el Sheikh Hamed: c.15°15'271/32°31'311

This site is situated 36 km south of Khartoum and 1.5 km from the eastern bank of the White Nile. It is a low mound covered with different decorated and undecorated potsherds, badly finished lithic tools of Nile pebbles, and grinding implements.

Hilat Wad Hamid (Qoz Hamed): ca.15°15'646/32°30'375

The site is situated 38 km from Khartoum, and 500 m from the eastern bank of the White Nile. It is a low mound covered with differently sized decorated and unpolished potsherds. Various types of flaked stone were found at the site, most of them are scrapers and other flakes.

Crescents and borers are not common, though cylindrical grinders and different tapering cylindrical rubbers are present. Fossil bones of big animals, besides fossil wood pieces, can be observed on the surface. It is very clear from the surface remains, especially the potsherds, that this site is similar to the other Neolithic sites in the area.

el Bija El Dewihia 15°13.567/32°29.73

This site is situated to the southeast of Jebel Awlia, about 200 m from the eastern bank of the White Nile. It is a big mound (3 m above the surrounding surface) divided by a small inlet that runs towards the west (Plate 5.1). A recent Islamic cemetery covers most of the site surface. There is also a 298 m longitudinal division in the eastern part of the site (from the north to the south), that resulted from erosion and Nile water movements. This division helps to identify the site layers. The clay soil surface's graded from the east to the west, to the highest point in the longitudinal division.

Plate 5.1: General view of Dewihia site. White Nile south of Khartoum



The site is considered to be the richest among the sites surveyed in this part of the White Nile because it is composed of diversely decorated potsherds and lithic materials and has the richest layers. The potsherds have different types of decorations characteristic of the Neolithic of Central Sudan, such as the impressed dots, rockers and rippled decorations. There are also some undecorated potsherds characterised by a reddish colour on the surface or a polished brown colour with different impressed circles near the rims. There are many lithic materials on the surface and in the layers of the western part. Most of these finds are scrapers and polished stone axes, of which similar types were found in Shaheinab and at some of the Neolithic sites of Khartoum. There are also few blades, crescents and different flakes. Grinders are plentiful though the common types are not. Because this site is very close to the Nile, it is logical that there would be many types of shells, although some of them are intrusive, especially since this site is on the water level during the flood season. Furthermore, there are different types of animal bones though mostly broken. During the survey no contemporary cemeteries were observed.

From the above-mentioned information and after a preliminary study of the archaeological materials it can be said that this site can be dated to the late period of the Neolithic, and that it was perhaps occupied for successive periods. Specifically, the variety of potsherds characteristic of Meroitic and Post-Meroitic periods imply continuity in the use of the site. Moreover, this site is considered to be the most threatened by the White Nile's water and the recent Islamic cemetery.

el Dirwa North: ca.15°15/32°30

This site is situated few metres south of El Dewihia site, near the White Nile bank. Generally, the site is small, with few archaeological remains. Although the potsherds are very few, the samples collected are characterised by very fine decorations; mainly dots forming distinctive geometrical shapes. Wavy line decorated potsherds were also found.

el Dirwa: ca.15°15.646/32°30 375

This site is situated to the south of el Dirwa North, about 500 m from the eastern bank of the White Nile. It is a mound 2 m above the surrounding alluvial plain, covered with various archaeological remains: potsherds, lithics and bones. The decoration of the potsherds is characterised by impressed dots, rocker dotted zigzag and incised lines, and some geometrical decoration. The amount of potsherds increases in the eastern part. Various types of lithics, such as flakes and polished stone axes are present, as are bones, especially these of big animals. A human lower jaw with some teeth was found on the surface, implying the existence of graves. A Neolithic site and Meroitic graves were discovered just south of this site during the 2002 season of the White Nile survey. Students from the Department of Archaeology, University of Khartoum, excavated some of these graves in the summer of 2002.

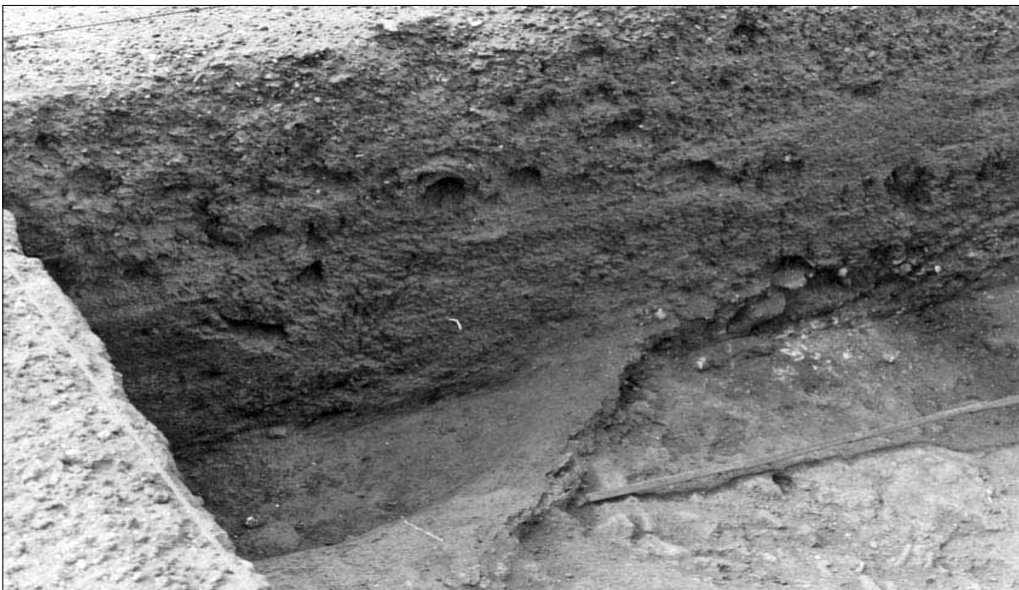
El Masarra

El Masarra is one of the scattered villages along the eastern bank of the White Nile, about 37 km south of Khartoum. The site is located about 270 m west of the Khartoum-Jebel Awlia highway (Plates 5.2 and 5.3). It is a low mound covering an area about 200 x 150 m and is elevated to 2.5-3 m above the surrounding area. Almost the whole site is covered with artifacts, human and animal bones, shells and other recent artifacts. The site is surrounded by a modern enclosure about 100 x 100 m wide called *Al Shafakhana* (Health Center).

Plate 5.2: General view of El Massara site. White Nile south of Khartoum



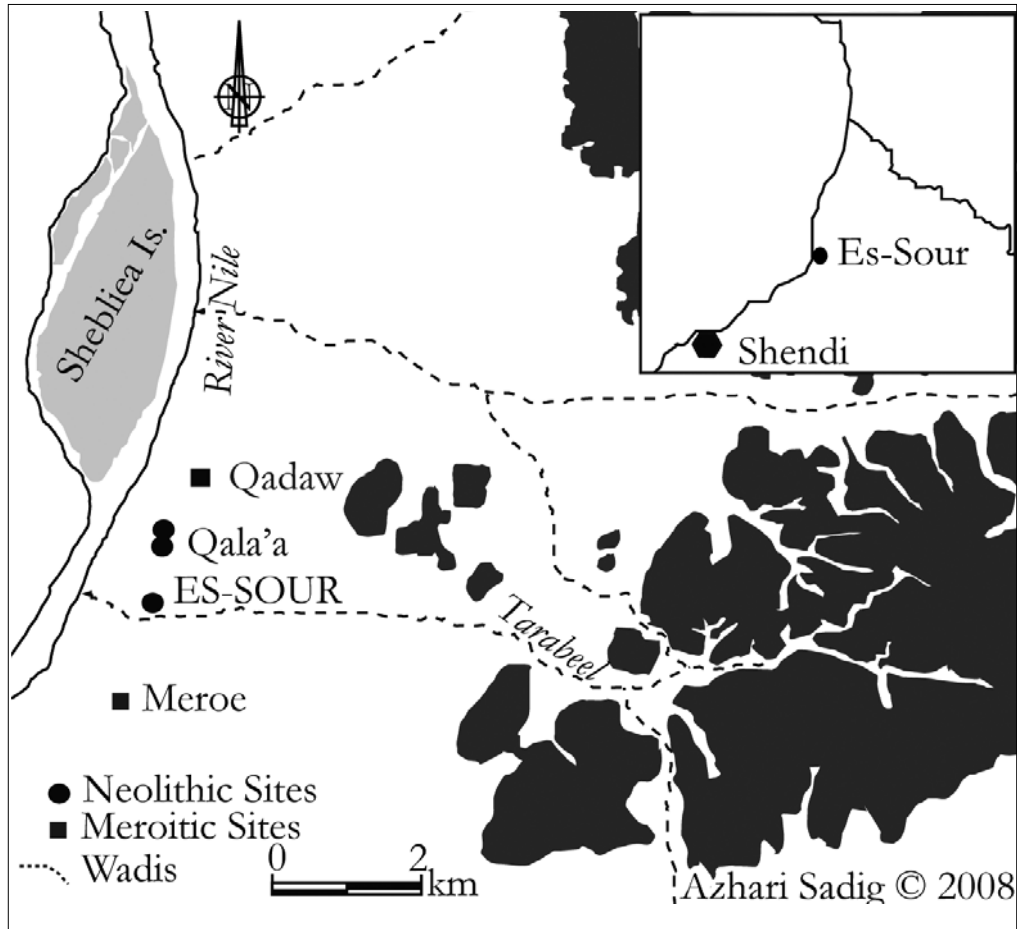
Plate 5.3: El Massara: Stratigraphical section in square A1 (northern wall). Excavation by the Department of Archaeology, University of Khartoum 2002: White Nile south of Khartoum



es-Sour

The site of es-Sour ($16^{\circ} 57.045' N / 33^{\circ} 43.133' E$) is located *ca.* 35 km from Shendi, 1.5 km from the right bank of the modern Nile channel. It occupies an area of *ca.* 176 x 90 m, and while generally flat, forms two low mounds on its eastern side. The site has been the subject of excavations by the Department of Archaeology of the University of Khartoum since 2004 (Map 5.5, Plate 5.4) (Sadig. 2005b; 2008a, 2008b).

Map 5.5: Location of es-Sour in Meroe region



During three seasons from 2005-2007, 15 test - pits were excavated across the site. The results of these excavations were extremely positive, demonstrating the existence of Neolithic occupation deposits up to 80 cm deep in some places, although affected by water and wind erosion, and by some later graves (Meroitic and Medieval) cut into the site. Material from the site is similar to that recovered from el Kadada, which lies about 30 km upriver, but no associated cemetery has yet been identified at es-Sour. However, as at el Kadada, the remains of infants, contained in large pots, were found within the settlement site.

Plate 5.4: General view of es-Sour near Meroe, Central Sudan



The settlement debris included large quantities of shells, domestic and wild animal bones, lithics, sandstone and granite grinder fragments, pottery sherds, as well as a small number of bone and ivory tools, and some human figurines.

One important discovery at the site was evidence of pot-burials (Plates 5.5a, 5.5b, 5.5c, 5.5d, 5.5e, Figure 5.1). In the Middle Nile, the practice of pot-burials was first discovered at el Kadada (Geus. 1984a, Reinold. 2008) and seems to have been restricted to young children, “*only to children up to six years old*” (Geus. 1984a: 28). Four pot-burials were discovered at es-Sour. The four pots containing the burials are large and decorated. The offerings associated with one of the burials include lower and upper grindstones found just beside one pot, while fragments of ostrich eggs, shells, and one bead may indicate the types of offerings placed inside the pot. In one case, the offering contains two complete bowls and single shell. The eroded child sized skeleton is covered with fragments of pot decorated with a rippled decoration.

Plate 5.5a: Pot-burial from es-Sour



Plate 5.5b: Pot-burial from es-Sour

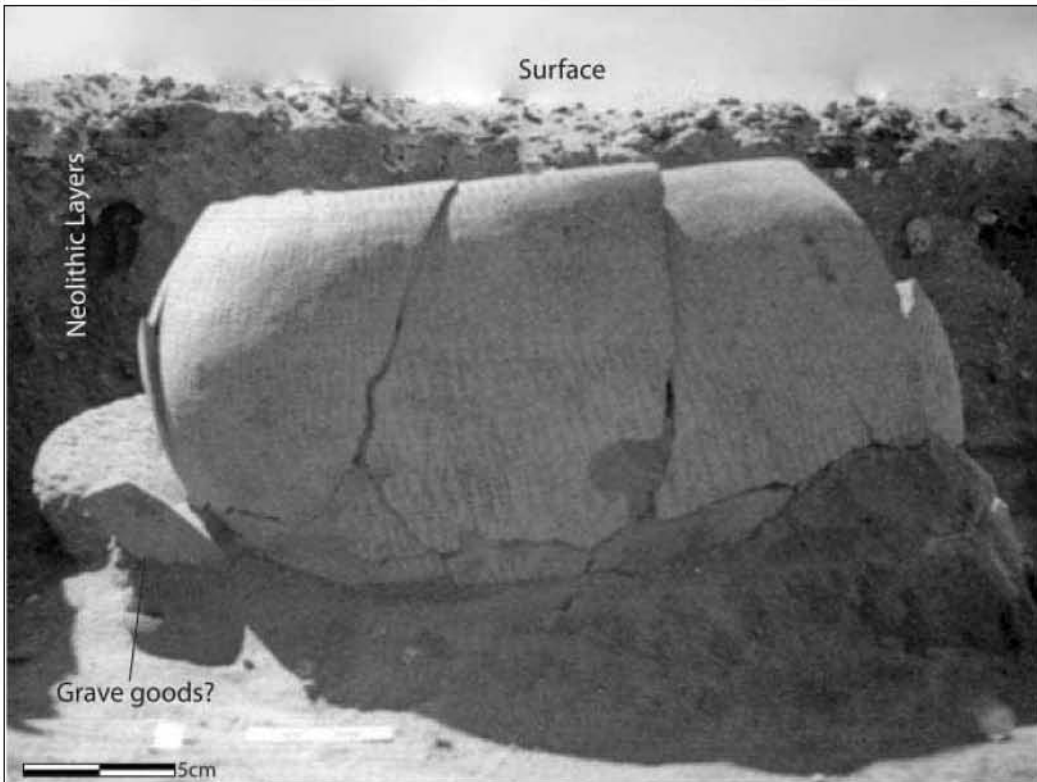


Plate 5.5c: Pot-burial from es-Sour



Plate 5.5d: Pot-burial from es-Sour

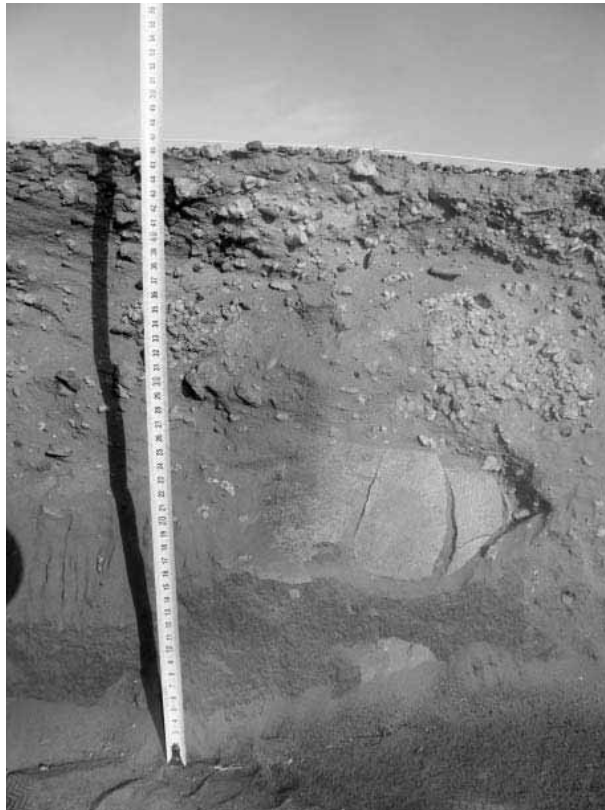
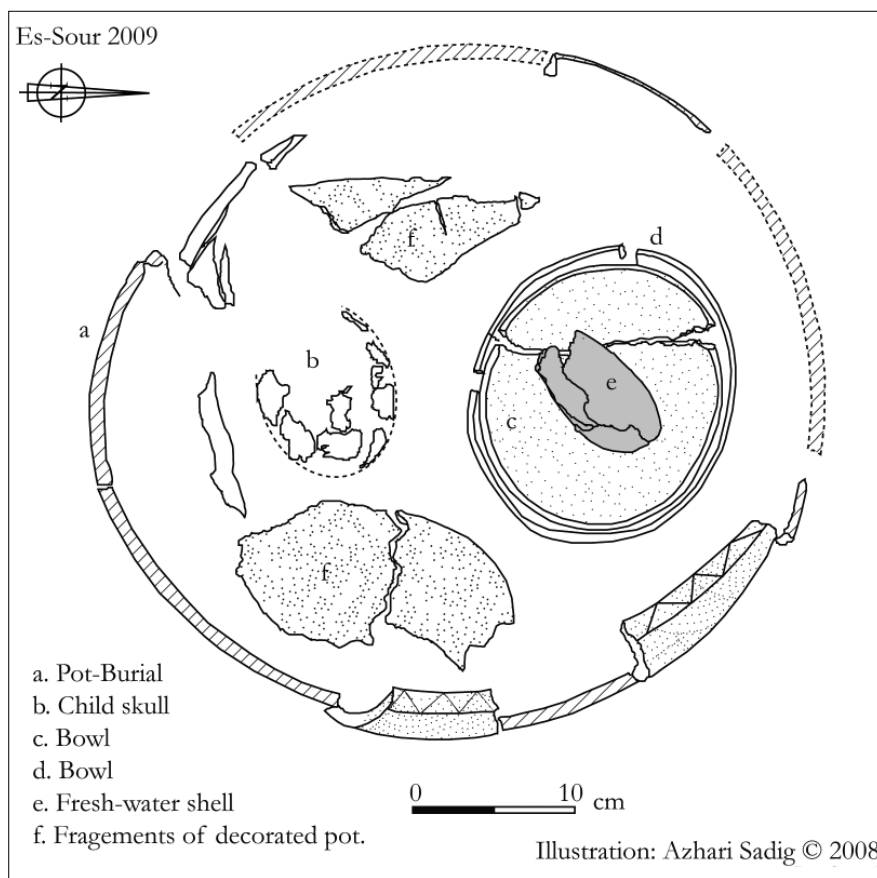


Plate 5.5c: Pot-burial from es-Sour



Fig 5.1: Neolithic pot-burial from es-Sour site, Central Sudan



The majority of lithic artifacts are finished scrapers, backed tools, borers, burins, crescents and retouched and un-retouched blades. One interesting find was a small rhyolite artifact with a characteristic shape and two small hollows on both faces. Its function remains uncertain, although the shape suggests that it may have been a fine polishing/grinding tool or palette. This find at es-Sour is very similar to specimens found at el Kadada (Geus. 1984a: 69), Eastern Butana and near Kassala (Marks *et al.* 1985: 47). The ground-stone sample recovered from the 2006 excavations is large and it includes disc grinders and pounders

The main characteristic of the pottery sherds is a hard texture, good firing and polished surfaces. The decoration generally covers most of the surface, extending to near the rim or to the rim itself. The rims are simple in shape though vessel shapes at the site exhibit a range of mainly open-mouthed vessels.

Beads made of eggshell, bones and carnelian, lip-plugs and one ivory artifact were recorded during the course of the excavation. A single shell object used as a comb for decorating pottery was also recorded. Other typical Neolithic bone artifacts, such as harpoons and gouges, were not found.

Other finds of potential importance were six fragments of human figurines (Plates 5.6a, 5.6b, 5.6c, 5.6d, and 5.6e, Figure 5.2). Two of them look very similar to examples found at el Kadada (Geus. 1984a: 22). Unfortunately, the upper and lower parts of the figurines are missing. The purpose of these pottery figurines remains unclear although it is assumed that they had a religious significance.

Plate 5.6a: Fragments of pottery human figurines from es-Sour



Plate 5.6b: Fragments of pottery human figurine from es-Sour

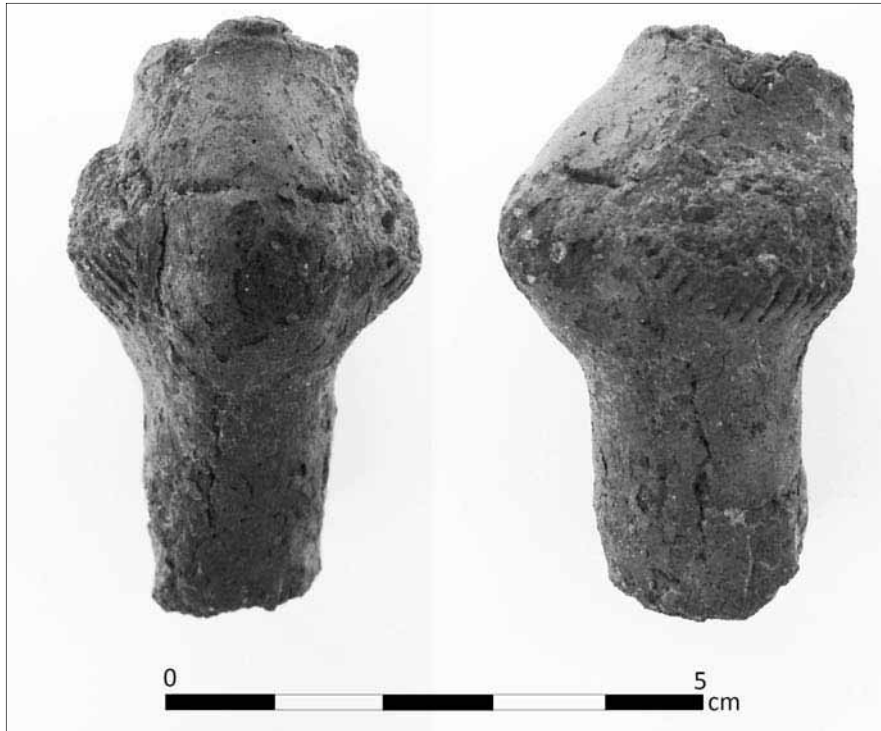


Plate 5.6c: Fragments of pottery figurine from es-Sour



Plate 5.6d: Fragment of pottery human figurine from es-Sour

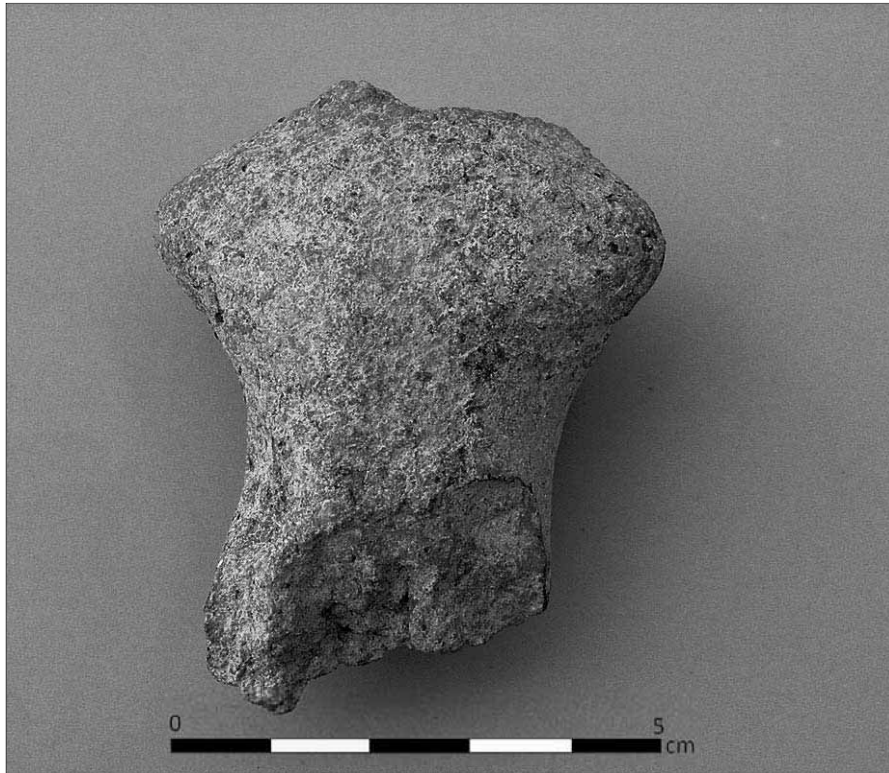


Plate 5.6e: es-Sour: A human head without prominent features, though similar to examples found at el-Kadada (Geus. 1984a: 22). The hair of the figurine is decorated with a hard, rippled and incised decoration

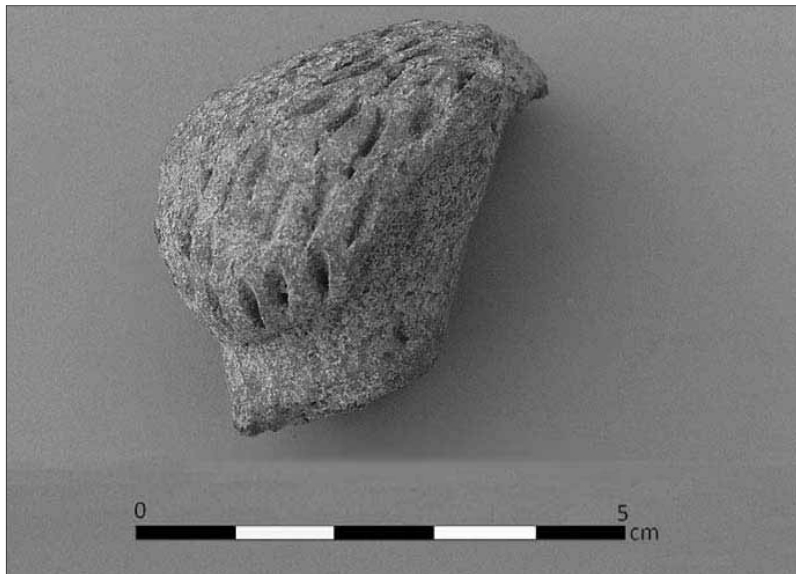
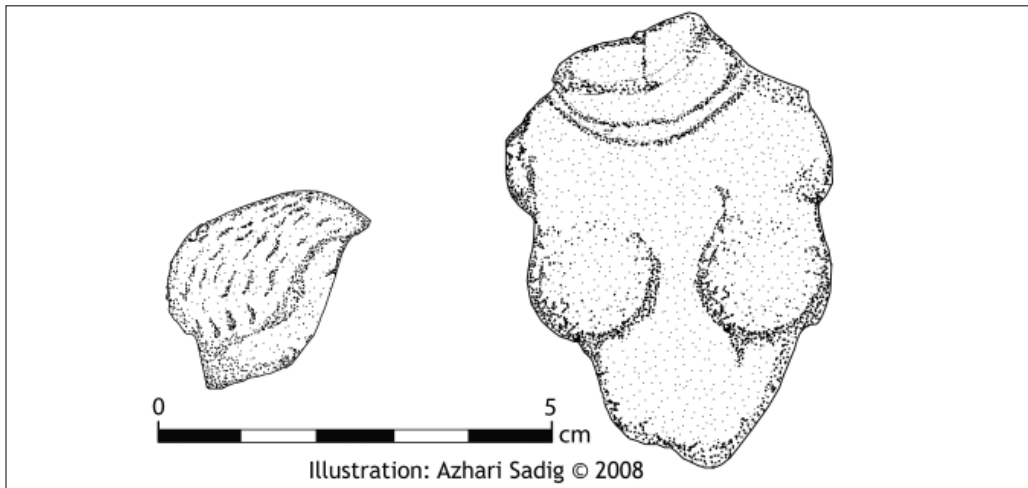


Fig 5.2: Illustration of two human figurines from es-Sour, Central Sudan



Faunal remains consisted of bones of wild and domesticated animals, including domesticated cattle, giraffe, buffalo as well as numerous remains of shells. This identification was carried out by Gautier, who based his identifications on photographs of the remains.

The most distinctive features of the es-Sour material are the high index of flakes, the decorative styles of the pottery, specific types of lithic artifacts and pot-burials, as well as the presence of carnelian beads and human figurines. A freshwater mollusk (Nile oyster) shells from levels between 20 and 50cm in squares C6, B13 and F7 were radiocarbon dated in the Radiocarbon Dating Laboratory of the University of Waikato, New Zealand, yielding the following dates:

Wk23036: 5296 ± 48 BP (OxCal calibrated: 68.2%: 4230BC-4190BC and 4180BC-4040BC)

Wk23037: 5330 ± 54 BP: (OxCal calibrated: 68.2%: 4240BC-4050BC)

Wk23038: 5180 ± 48 BP: (OxCal calibrated: 68.2%: 4045BC-3955BC)

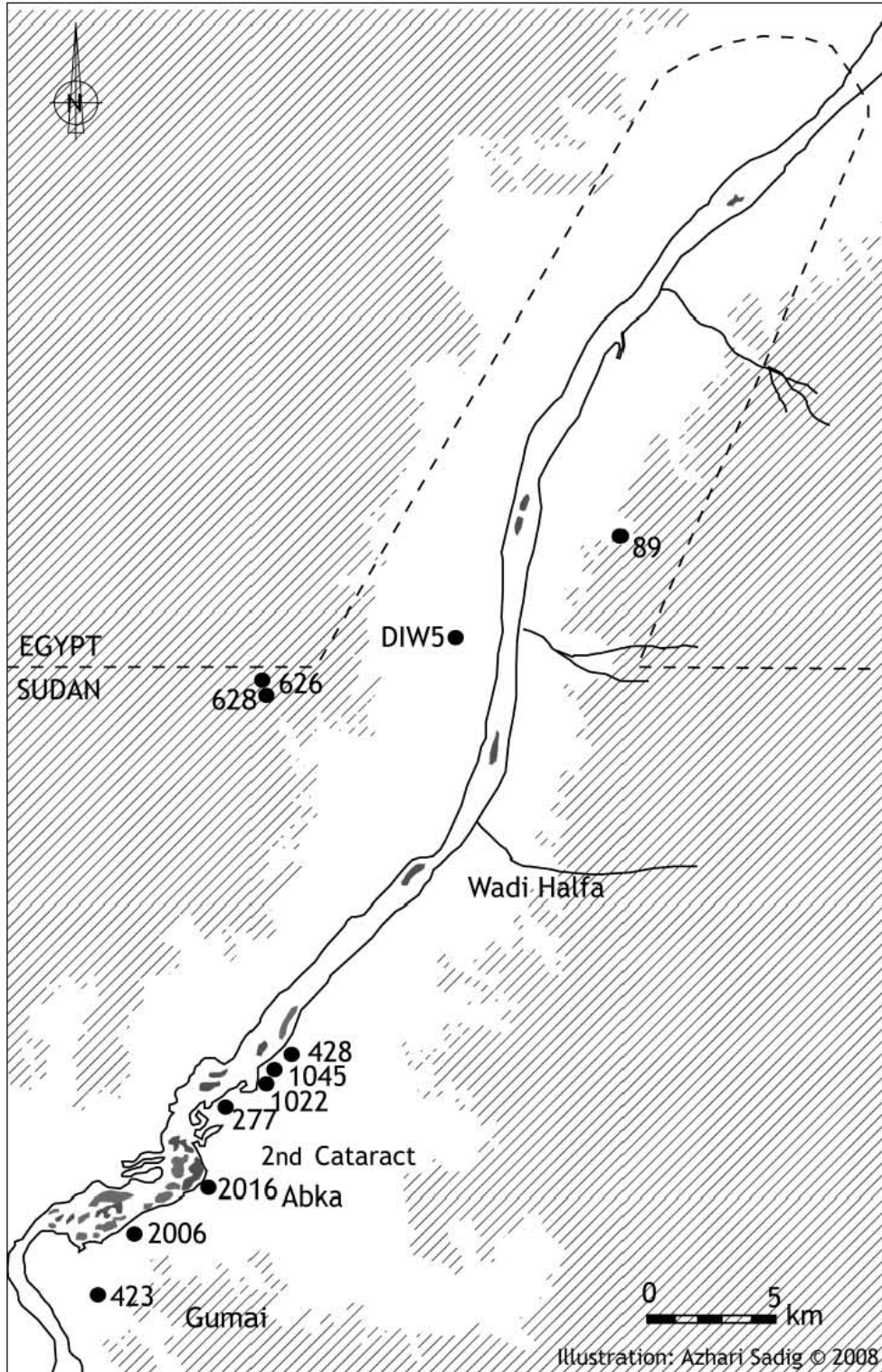
These dates place the site in the middle Neolithic of Central Sudan and perhaps slightly earlier than the oldest dates from el Kadada (GIF-5770: 5170 ± 110 BP) (Geus. 1981).

LOWER NUBIA

Khartoum Variant

The Khartoum Variant industry is primarily represented by eight sites investigated by the Combined Prehistoric Expedition (sites DIW5, 626, 628, 1045, 2006, 2016, 1022, 277), of which five are located in Abka, one on the west bank, north of Argin, and two in the desert about 1 km northwest of Wadi Halfa (Shiner. 1968b) (site 1045 is designated by Nordström as site 428). Four more sites (428, 423, 18A, 89) were recorded by Nordström (1972) (Map 5.6).

Map 5.6: Distribution of Khartoum variant sites in Lower Nubia (adopted from Shiner 1968a, 1968b, Nordstrom 1972).



The Khartoum Variant sites are not confined to the region of the Second Cataract, but have a wider distribution in Nubia (as far as Sai). The sites DIW5, 626, 628 lie north and northwest of the Second Cataract. No Khartoum Variant site was found in Batn el-Hagar. Five of the 12 sites are located outside the region of the Second Cataract, in a zone of Nubian sandstone and alluvial plains, and seven are among the Precambrian, where there is no actual flood plain.

All of the known Khartoum Variant sites are small impermanent camps. The most southern Khartoum Variant site was discovered in Sai Island. Khartoum Variant pottery sherds and lithics were identified among small depressions, in an area which was then rightly interpreted as a former river channel bank (Geus. 2000:126). A fragment of plastered mud floor was found at one place (CPE 2016) (Shiner. 1968b: 777), and a rude hearth at another (Shiner. 1968b: 789), but there is nothing to suggest that permanent structures had been built. Although the sizes of these sites are relatively small (some of them are described as “small sites” (Shiner. 1968b: 777)), this floor, the deep deposit on site CPE 2016, and high surface artifact densities at all of the Khartoum Variant sites, even those located 15 km from the Nile, suggest fairly stable, long-term occupations by a relatively sedentary population.

Table 5.2: Aspects of settlement patterns among the Khartoum variant Sites

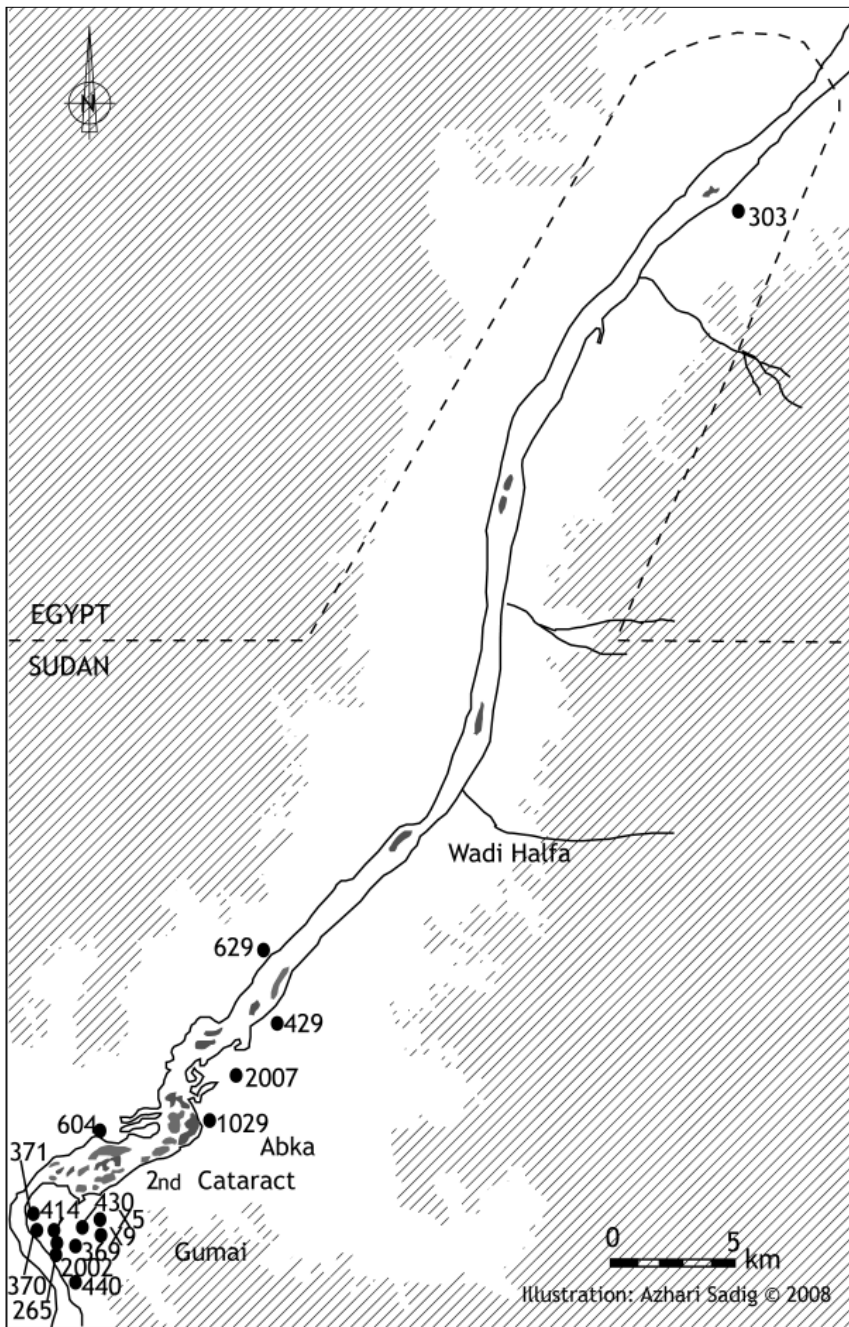
Site	Horizontal extension	Topographical location	Distance from the Nile	Depth of the occupation
1045	c.150 m ²	On gentle slope towards the Nile	125 m, and 100 m south of the mouth of Khor Musa	unspecified
2006	c. 25 m in diameter	On flat top of Precambrian hill	100 m	Surface
277	c. 20 m in diameter	On a sandy slope	50 m	Surface
2016	Small site	On a slope	unspecified	unspecified
1022	Small area of occupation	Unspecified	500 m west of Khor Musa	unspecified
626	25 m in diameter	On small alluvial fan at southern edge of large jebel	1 800 m	unspecified
DIW5	c. 400 m ²	On flat hilltop	1200 m	unspecified
18A	c. 1,575 m ²	On gentle eroded slope	180 m	0.2 m
89	c. 1,000 m ²	On sandy ridge between two branches of Wadi Ashkeit	4,000 m	0.5 m
428	c. 900 m ²	On northern side of small valley	300 m	0.2 m
423	c. 2500 m ²	On southeastern slope of rocky hill	320 m	unspecified

(Adapted from Shiner. 1968a, 1968b; Nordström. 1972)

Abka

There is evidence in Wadi Halfa area of a second Neolithic culture termed the Abkan by Wendorf (Map 5.7) (Wendorf, 1968a). Myers carried out a series of excavations, firstly in 1948 and again in 1957 (Myers, 1958, 1960; Di Cesnola, 1960).

Map 5.7: Distribution of Abkan sites in Lower Nubia (adopted from Shiner 1968a, Nordstrom 1972).



Myers found both Mesolithic and Neolithic occupation south and southwest of Abka. The sites were associated with former side channels of the Nile that are dry today due to the lowering of the Nile level. The Mesolithic people, with radiocarbon dates at about 7,350 BC and at 6,300 BC, subsisted mainly by fishing and gathering shellfish. Another radiocarbon date, about 4,000 BC, is associated with a much lower Nile; but the same culture survives, now in a Neolithic stage (Myers. 1958). In his missions, Myers excavated 12 sites. Three of them, particularly representative of the prehistory of the area, seem to have been of special interest to him. In his system of reference, they bear the numbers v, ix and xxxii.

Site (v) and site (ix) were the only ones to have ceramics. Site (ix), more than the others, was excavated in both campaigns. The excavation was done in six successive layers, up to eight layers according to Nordström (1972: 12). Layers 4, 5 and 6 and, apparently layer 7, correspond to the Neolithic occupation. Layer 4 was C-14 dated $4,500 \pm 350$ and $4,470 \pm 300$ BP, layer 5 5960 ± 400 BP and layer 6 8260 ± 400 BP (Myers. 1960).

The ceramic materials include three distinct types, two of which belonged to the prehistoric period. The first was called Khartoum A (wavy line), a reference to Arkell's excavations. The second, found in layers 4 and 5, was simply described as sandy Nile-mud ware, with the surface very crudely combed or perhaps wiped "*with grass*" (Myers. 1960: 167-177). The lithic materials were described as consisting of high proportions of denticulates, lightly retouched scrapers, groovers, a few lunates, backed flakes and backed blades (Di Cesnola. 1960).

So far only, Abkan Neolithic sites from the Second Cataract area and the Batn el Hajar are unknown (Di Cesnola. 1960: 612). Wendorf believed that the Abkan culture blends in perfectly with local traditions, and should not be compared with any cultural remains found outside Lower Nubia except, perhaps, that near el Debba in the Dongola Reach (Wendorf. 1968b: 1053). Shiner (1968a: 626) argues that, if the lithic industry has made the Abkan the apparent successor to the Final Qadan, certain ceramic characteristics would make it the precursor of the A-Group. Wendorf (1968b: 1051, 1053) is more reserved about the first argument (i.e. the Abkan was the apparent successor to the Final Qadan) but agreed with the second (i.e. The Abkan was the precursor of the A Group). In general, all the sites are located within a reasonable distance from the present Nile banks, varying between 320m-1,300 m away. The extent of the sites, measured by the surface distribution of the material, gives an average of 2,000 m², although some sites do not exceed 300 m². Further sites were discovered some distance from Abka. At Gezira Dabarosa, the University of Colorado discovered some sites that belonged to the Abkan.

Nordström (1972:13) reports that the Colorado University expedition investigated site 6-G.25, a ceramic site discovered by the Sudan Antiquities Service and which Nordström attributes to Abkan. Another site, 11-I-16 at Murshid, dated to 4935 ± 130 BP was named Wadi Kargan, after a name given by the expedition to a former Nile channel, and the cultural phase represented was labeled Kargan phase, compared to the Combined Prehistoric

Expedition (CPE) Abkan and “judged to be immediately pre-A-Group in time ... although it could be contemporaneous with the A-Group of regions further north” (Carlson, 1966:61).

Table 5.3: Aspects of settlement patterns among the Abkan sites

Site	Horizontal extension	Topographical location	Distance from the Nile	Depth of the occupation
1045	c.150 m ²	On gentle slope towards the Nile	125 m, and 100 m south of the mouth of Khor Musa	unspecified
2006	c. 25 m in diameter	On flat top of Precambrian hill	100 m	Surface
277	c. 20 m in diameter	On a sandy slope	50 m	Surface
2016	Small site	On a slope	unspecified	unspecified
1022	Small area of occupation	Unspecified	500 m west of Khor Musa	unspecified
626	25 m in diameter	On small alluvial fan at southern edge of large jebel	1 800 m	unspecified
DIW5	c. 400 m ²	On flat hilltop	1200 m	unspecified
18A	c. 1,575 m ²	On gentle eroded slope	180 m	0.2 m
89	c. 1,000 m ²	On sandy ridge between two branches of Wadi Ashkeit	4,000 m	0.5 m
428	c. 900 m ²	On northern side of small valley	300 m	0.2 m
423	c. 2500 m ²	On southeastern slope of rocky hill	320 m	unspecified
371	ca. 50 x 50 m	Tops and slopes of a ridge of basement rock	320 m	0.3 m
414	c. 40 x 60 m	On broad and shallow depression of prominent hill	1,300 m	0.2 m
429	c. 15 x 30 m	On slope of the southern side of small valley	350 m	0.2 m
440	c. 40 x 40 m	On slope of small hillock	unspecified	unspecified

(Adapted from Shiner, 1968a, 1968b; Nordström, 1972)

The reports did not mention the fauna, except in connection with the rock drawings and the remains of Nile mollusks and ostrich eggshells, but apparently a diet based on fishing and gathering of mollusks was indicated. Myers' findings at Abka were in complete agreement with those of the (CPE). With reference to Myers, the Neolithic industry of layers 4 and 5 of his site "ix" was named Abkan by this expedition (Nordström. 1972: 12).

The CPE examined seven Neolithic sites around the village of Abka (604, 94, 629, 1029, 1001, 2002, and 2007) (Shiner. 1968a: 611-29). In contrast to the Khartoum Neolithic remains, all known sites of the Abkan culture are located close to the present Nile, and they show evidence of a heavy dependence on fishing.

According to Shiner, Abkan economy "*would have heavily based on fishing. Some hunting and gathering must have played a part, although direct evidence is scanty. Grinding stones occur, though they are not numerous*" (Shiner. 1968a: 626-627).

Upper Nubia

Third Cataract Region Sites

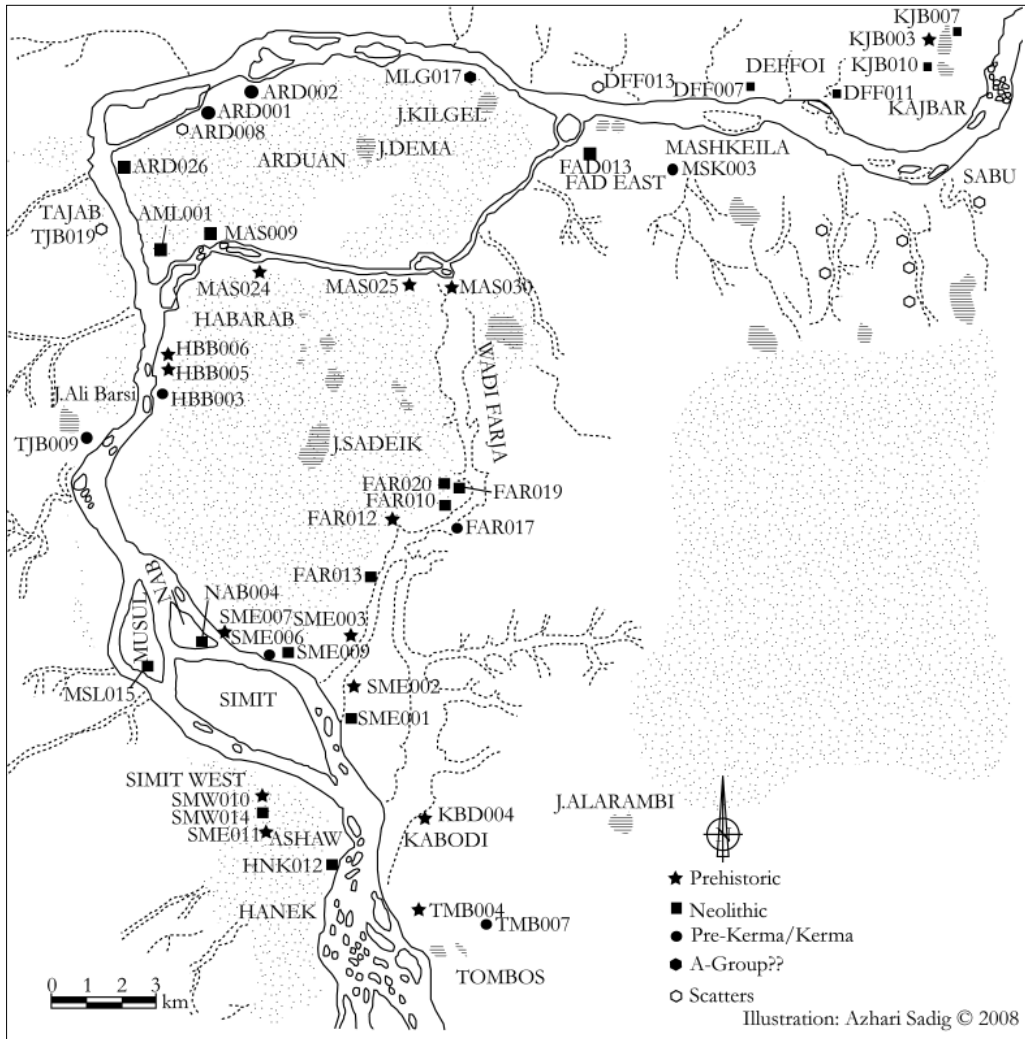
This section provides preliminary results of a study of Neolithic sites identified during field seasons of survey in 1990, 1991, 1999, 2001 and 2002 (see: Edwards and Osman 2000, Osman and Edwards 2002). Of the 47 sites discovered during these seasons the 13 sites were revisited during the season of 2002. Moreover, the last survey revealed another 10 sites (Sadig. 2004) (Map 5.8).

Although there has been considerable archaeological investigation of Nubia since the 1900s, no systematic work has been done in the Third Cataract region, which is often assumed to have been dominated by archaeological sites.

The results of the first season's survey of the Mahas project already suggest that the area was extensively settled in prehistory. A high proportion of the occupation sites identified from material scatters spread beyond the foot hills, outcrops, terraces, and along the wadis.

The Neolithic evidence in this area range from a spot find of a single artifact to a big settlement covered with archaeological material and the remains of activities of prehistoric peoples. The area covering Wadi Farja, for example, shows considerable evidence of human settlement close to the wadis. The high grounds that dominate in the regions are mainly open common lands, settled in the past and serving as a source of raw materials. On either side of this high ground are fertile valleys, where some sites were also noted. Other sites were found close to the Nile or on the open land surrounding the hills and dry *khors*.

Map 5.8: Prehistoric sites in the Third Cataract region



West Bank Sites

Satai: TJB019 (90/29): *ca.*19°54.25/30°18

This site is located at the southeast end of Jebel Satai. It consists of small group of rock drawings which are mainly of cattle. Some potsherd scatters were also noted in the area; that sherds included incised Neolithic material.

Baree: DFF007 (99/32): 19°56.958/30°28.884

A small site consisting of scatters of Kerma potsherds and some lithics, close to road just west of Baree. A little to the north, lithics and probable Neolithic pottery were recovered during test pitting and surface collections in 1999. Most of the finds were heavily abraded and rolled and probably represent redeposited material.

Haleeba: DFF011 (99/19d): 19°56.57/30°30.44

Thin scatters of Neolithic pottery and lithics were noted in this area, including a fragment of a polished stone axe.

Shofein DFF013 (99/23b): 19°56.7/30°26.37

A small site at the foot of Jebel Shofein that consists of scattered lithics and a few eroded Neolithic potsherds. Groups of rock drawings on top of the jebel, mainly animal figures, were also noted.

Siti Nafiisa: KJB007 (99/16): 19°57.64/30°32.45

This site is located on the north side of Jebel Siti Nafiisa, just north of Kajbar village. Scatters of lithics and small quantities of potsherds, probably Neolithic, were noted. One area is relatively rich in surface concentrations of artifacts.

Kajbar W: KJB010 (99/28b): 19°56.85/30°31.04

This site is located on a plateau west of Kajbar village and southwest of Jebel Noh. Extensive scatters of early Neolithic artifacts were noted here. No ground stone artifacts were found, but “Neolithic” stone lithics were common.

Kajbar: KJB003 (99/14a): 19°57.84/30°32.55

A small lithic scatter at the foot of the west side of Jebel Noh were recorded. No sherds were found.

Ashaw: SMW014 19°44.849/30°20.815

This site is situated about 3 km from the Nile to the east of an area surrounded by low gravel mounds. It is located on a gravel ridge of a *kebor* running from southwest to northeast. The area of occupation covers about 18 x 13 m, on an east-west line. Decorated and undecorated potsherds, lithics, grinding stones and animal bones were noted.

Hannek: HNK012: 19°43.784/30°21.912

This site is situated about 500m from the western bank of the Nile close to a rocky area, some 1 km north of Hannek. Scatters of potsherds and lithics were noted in area about 15 x 10 m.

Simit West: SMW010 19°45.09/30°20.631

This site is situated on the eastern bank of Gam Uffa wadi, which runs from south to north. An extensive spread of Neolithic, Kerma and more recent potsherds were recorded on raised ground.

Simit West: SMW011 19°44.61/30°20.875

The site is situated on the eastern bank of the Gam Uffa site. An extensive spread of Neolithic, Kerma and more recent potsherds were recorded.

Tajab: TJB002 (90/12) 19°49.2/30°18.5

An extensive site running along the south bank of the *kebor* Taha'nirki, west of the 'lower' truck track. Surface material comprises scatters of lithics concentrated around two rock outcrops at its east end. No pottery was recorded.

East Bank**Simit East: SME 001 (91/35): 19°45.867/ 30°22.235**

Immediately east of the road, on open ground below a low terrace, are extensive spreads of lithics and Neolithic potsherds, extending over a distance of some 150 m north-south and about 30 m west-east. Within this area a single low stone marks a grave of unknown date. A random test pit on this site during the 2002 season revealed few artifacts at a depth of only 5 cm. The material from all depths is identical and seems to belong to a single cultural period. It comprises more than four areas relatively rich in surface concentrations of artifacts. The site is also covered with quantity of potsherds exhibiting different types of decorations. A number of stone tools and stone grinders of different sizes were also found, in addition to river shells, and fossilised animal and fish bones. This site lies very close to the road and is clearly very vulnerable to increasing traffic.

SME002 (91/37): 19°46.739, 30°22.066

This site lies on the southeast side of the wide *kebor* mouth, which drains from the northeast. Extensive spreads of lithics, abraded sherds and bone fragments suggest a disturbed cemetery site. Much of the area shows signs of water erosion and considerable recent human disturbance.

Simit E: SME007 (91/31): c.19°47.5/30°20.4

This site is situated southwest of a prominent conical hill, close to the road and along the western side of minor rock outcrops. A number of small gravel patches and clusters of stone are associated with thin lithic scatters and abraded, probably Neolithic, potsherds.

Sadeik: SDK003 (91/24):19°49.494/30°19.877

Situated on the north and south sides of the desert track into Sadeik from the east, ca.3 km east of the village, three low circular stone structures ca.3 m in diameter, probably grave superstructures, were recorded. No surface finds were recovered and dating remains uncertain.

Habarab SE: HBB 005 (91/45): ca.19°52.25/30°19

This site appeared as surface scatters of lithic artifacts and probably Neolithic potsherds in a disturbed area used for gravel extraction 250 m southeast of the village.

Habarab E: HBB 006 (91/46): ca.19°52.35/30°19.1

In rock outcrops east of the southern end of the village a small sub-circular stone structure is associated with a thin scatter of lithics and potsherds, probably Neolithic. In the 2002 season the author failed to find other material either inside the structure or around it. Moreover, the “Neolithic” sherds were very few and it is difficult at this stage of the investigation to relate the sherds to the structure.

Mesada: MAS 009: 19°54.078/30°19.961

This site is a distinctive flat-topped mound near mouth of prominent *kebor*, ca.7-10 m in diameter. Occasional un-diagnostic wheel - made potsherds and stone slabs around the mound were found. Just below the mound worked quartz and Neolithic potsherds were found. A heavily burnt silty layer just below the surface also contains some Neolithic artifacts.

Mesada W: MAS 025 (91/75): ca.19°53.4/30°22.8

This site lies opposite the westerly end of Mesada Island. A number of low stone walls were noted running over the rocky hills. A number of crude stone structures built amongst the large boulders were also noted. Dating of the remains is uncertain although small numbers of possibly Neolithic potsherds were found among the rocks.

Mesada: MAS 030 (91/53): ca.19°53.1/30°23.7

The site is situated at the eastern end of the valley, between the ridges running west from J. Farja, northeast of the church (MAS021). A thin scatter of Neolithic potsherds was noted as well as a small sub-circular stone structure, partially covered by blown sand.

Mesada MAS 024 (91/54): ca.19°53.7/30°20.9

The site is situated at the southeast of the school at the edge of the village. A thin scatter of lithics and early pottery was noted in a heavily eroded area among small boulder outcrops between the road and the river.

TMB004 (91/8): ca.19°42.8/30°23.5

The site is situated within a group of rocks immediately above Pharaonic inscriptions/ graffiti close to the river. Thin scatters of sherds and some lithic material, of uncertain date, were recorded, probably representing small camp site(s).

Kabodi: KBD004 (91/40):19°44.31/30°23.08

The site is situated at the southeast of the hamlet, on gravel spreads east of the road. Extensive scatters of lithic material and sherds were recorded. Closer to the houses around large boulders are further spreads of medieval sherds.

Fad east: FAD 013: 19°55.444/30°25.466

This site is situated just east of Fad east and not far from the famous Nawri jebels. Clusters of stones surround the site on the northern edge of a rocky area. Lithic scatters and occasional abraded Neolithic potsherds can be seen amongst possibly disturbed grave superstructures.

Simit East: SME009: 19°47.779/30°21.048

The site is situated near Simit Island ferry station. Surface material comprises lithics and very few eroded sherds.

Wadi Farja and hinterland

The Wadi Farja (Farja in the Mahas Survey archives) includes the main wadi and other channels to the east and west. Its northern end lies the Meseda church, and sites to the north of this spot are included within Meseda (MAS)

Wadi Farja: FAR 010: 19°49.676/30°23.608

This site lies on a prominent silt bank on the western side of a small wadi running from east to west. It has more than one area of concentrations of unburnished, simply decorated potsherds as well as stone implements, the majority of which are grinding stones, extensive spreads of lithics, fragments of green blue “amazonite” type stone and bone fragments covering an area of about 180x50m. Also noticeable was the presence of shells, sometimes clearly concentrated in one place although the site is far from the Nile. No human skeletons or indications of burials were noticed. Several burnt areas with eroded “hearths” *ca.*1m diameter raised *ca.*10-15cm above the surrounding ground surface were also seen.

To the west of the site is another site containing the same types of artifacts. The surface around the two sites is covered with un-diagnostic potsherds, well-fired bricks and recent potsherds.

The work in this small section of Wadi Farja showed that the wadi is likely to be of considerable archeological interest. Sites were found on the prominent silt banks of the wadi, or associated with rocky outcrops.

Wadi Farja: FAR 012: 19°49.143/30°22.806

Surface scatters of sand-tempered Neolithic pottery, occasional grindstone fragments and lithics were noted in this area.

Wadi Farja: FAR 013: 19°48.402/30°22.493

Stone structures on raised silt bank include one large sub-circular structure *ca.*3.6 m in diameter. Some classic Kerma and later potsherds are scattered in the area. The Neolithic material is very limited and eroded and it is not clear to whether it is related to the structure.

Wadi Farja: FAR 018 (91/10) ca.19.47.40/30.24

Lying close to the west side of the track running south from the Wadi Farja in a largely featureless plain. The site is marked by a linear scatter of cobbles and small stone blocks covering an area of over 1 ha. Surface finds were limited to a thin scatter of sherds and lithics.

Wadi Farja: FAR019: 19°49.894/30°23.728

This site is situated about 2 km north of FAR10, just west of the road. It is surrounded by an area characterised by a low plain and rocky outcrops. A small amount of potsherds and a large amount of lithics and grinding implements cover this small site (only 40 x 20 m from south to north). This site has been affected by the road and by erosion.

Wadi Farja: FAR 020: 19°49.904/30°23.691

The site is situated in rocky outcrops just east of FAR019. It is small site covered by a small amount of lithics and potsherds, mostly black fabric. A few Neolithic potsherds were also noted.

Islands

Arduan

Amla: AML 001: 19°54.035/30°18.45

The site is situated at the southwestern edge of Arduan Island, just northeast of Amla village. The site contains Neolithic pottery scattered on eroded silt banks near the mouth of a *khor* to the east of the road-line. These potsherds are similar to others noted by the researcher in Farja, although the present site is not as big as the site at Farja.

Arduan: ARD 001: 19°56.135/30°19.903

This site is situated about 2 km south of Arduan village, close to the rocky area that dominates the middle part of Arduan Island. An extensive surface spread of abundant pottery and occasional lithics has been discovered on these stony lower terraces. Test excavation conducted in the 2000 season revealed several storage pits and postholes from a settlement site of late Neolithic/early Kerma type.

Arduan: ARD 008: 19°56.081/30°19.409

Some lithic scatters and occasional Neolithic potsherds were discovered in open an area on the southern side of a rock outcrop west of Arduan village deeply cut by two gullies. A medieval sub-circular rough stone structure *ca.*4m diameter and occasional medieval potsherds were discovered nearby.

Arduan Konj: ARD 026: ca.19°55.6/30°18

Three Neolithic polished stone axes were reported in rocky outcrops southeast of Konj hamlet.

Nab***Nab: NAB004: 19°47.706/30°19.485***

Scatters of lithics and eroded potsherds were noted on a sandy area just south of Konj hamlet. This material is scattered over a large area and is affected by agricultural activities.

Musul***MSL 015: 19°47.379/30°18.400***

Some lithic scatters and occasional Neolithic potsherds were discovered at the northern side of rock outcrops south of Gaame hamlet and southeast of the island. No other features were noted. Extensive scatters of lithics and potsherds at the foot of a rocky area were also noted northwest of this site (19° 47. 282/30° 18. 562).

It is unlikely that all of the Third Cataract, for example, can be completely surveyed in just five seasons, given both limited time and resources. During the survey seasons of the Mahas survey and during the work of the present author, a number of observations were made:

- a. Neolithic period site locations and occupation possibilities were extremely variable in the region, depending on the basic geomorphological features: Nile alluvium, gravel terraces, hills and rocky areas, desert and wadis.
- b. Some occasional finds, are assigned to what is called the “Pre-Kerma” period, in these areas and along the old terraces of Wadi Farja. Some of these potsherd scatters belong to the Neolithic period rather than to the “Pre-Kerma period”.
- c. There is little evidence in the survey reports of Neolithic sites in Third Cataract in the open areas east and west of the Nile and along the Nile south of Simit, north of Jebel Ali Barsi and along the eastern bank from Fad to Sabu. Several interesting features along the Farja terraces and along the small *kbors* of the western bank were documented that these features could be associated with the occupation of the region in the Neolithic periods. These finds are not discussed here, as it requires more than surface collection. A series of low-lying linear mounds extending along the terraces of these *kbors* may provide good evidence about the nature of the environment during the prehistoric period.

- d. Further evaluation of the survey data is required before any additional comments can be offered. However, it must be stressed that the task of reconstructing the cultural landscape associated with the Neolithic period (actually, for any archaeological period) is difficult, given the degree to which the landscape has been modified since then. It is estimated that nearly a 100 of the archaeological sites along the Nile have been either destroyed or badly damaged by agricultural activity or floods. This obviously prevents a thorough understanding of the Third Cataract land, as there is no way to fully evaluate or gauge the nature or percentage of ancient sites destroyed.
- e. The sites that were found during these surveys can be divided to the following categories:

Type of the site	No.
Occupation	30
Occupation and graves	2
Occupation and rock drawings	2
Habitation	3
Settlement	1
Structure	1
Graves	4
Probable grave - structures	1
Lithic scatters	1
Burning, sherds	1
Find-spot	1

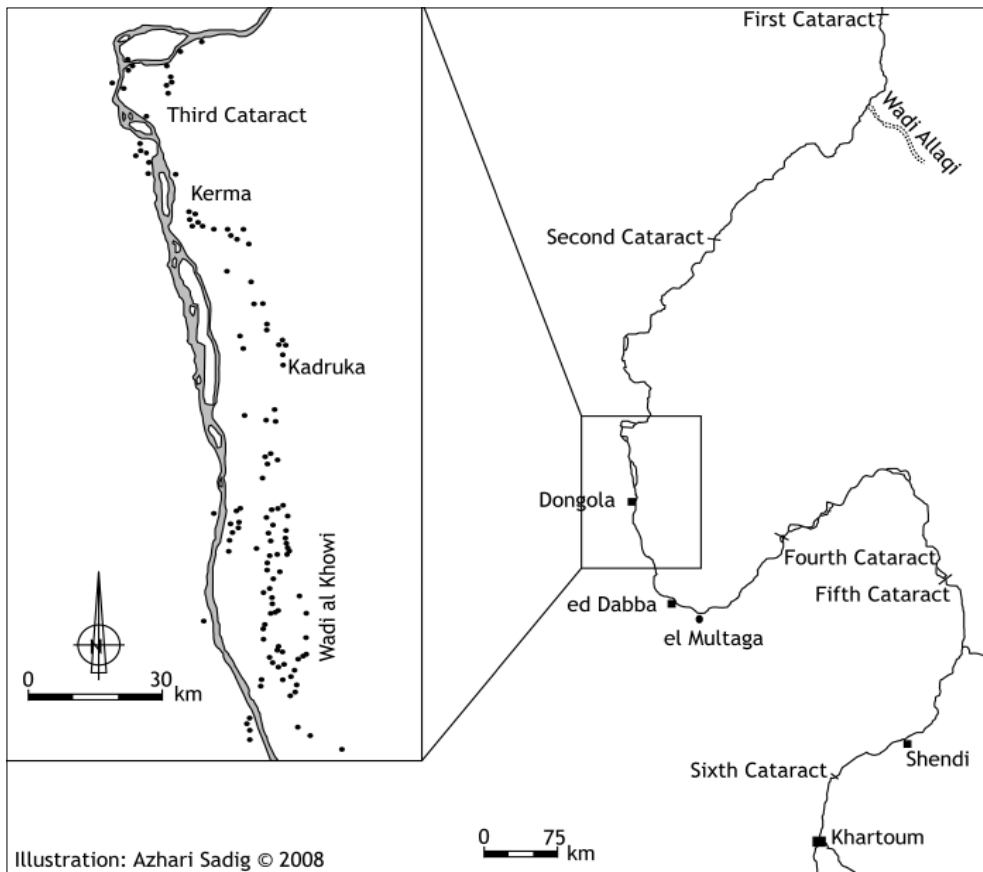
- f. It is obvious that some of the sites mentioned above may have had more than one function. Some 47 later prehistoric sites (16 of them Neolithic) have been registered (1990-2002); nearly 30 of them are occupation sites.

Sites South of Third Cataract Region

Dongola Reach

Around Kerma and Dongola, several sites dating from the Neolithic period were discovered (Map 5.9).

Map 5.9: Distribution of Neolithic sites in Dongola Reach



The University of Geneva excavated one of the best preserved Neolithic habitation sites in this area. It occupied the same location as the eastern cemetery of the Kerma civilization. It was buried under several dozen centimeters of Nile silt, and was uncovered in an area revealed by wind erosion. This site is part of a group of several stratified Neolithic settlements. They had all been subject to erosion by the Nile before being covered by flood silt, showing that this location was reoccupied on several occasions, and that it was not protected from Nile floods (Honegger, 1997: 116).

These sites may have been seasonal and have been linked to populations practicing animal husbandry, who occupied the alluvial plain during the dry season while seeking pastureland. The sites yielded hearths and postholes, as well as pottery, stone objects

(flints, grinders and grindstones) and faunal remains. The species represented consisted mainly of cattle and domestic caprines. An isolated human bone was also found, indicating that graves were dug nearby.

The settlement structures can be reconstructed from the posthole alignments. They consisted of oval huts, rectangular buildings, wind-breaks located to the north of the hearths, and a series of palisades, some of which seem to have formed enclosures (Honegger. 1997: 116).

Many other Neolithic sites were discovered south of Kerma and along paleo-channels of the Nile. Jacques Reinold, working immediately to the south in the area around Kadruka from 1986, suggested that the settlement sites lay along the bank of a branch of the Nile running in the bed of the Wadi el Khowi, which lies close to the plateau (Reinold. 2000). Welsby, who worked in the area between the sites investigated by Reinold and by the Royal Ontario Museum, defined the Neolithic sites as “*appearing to be much more dispersed and are extremely large. They are difficult to define archaeologically as the vast spreads of occupation material gradually fade away in some areas, but in many others their edges are masked by the extensive dune fields*” (Welsby. 2000: 131).

It seems that, in spite of the many sites discovered, it is too early to suggest the functions of these occupations, although they appear to occur over much of the survey area and cover a much greater percentage of the concession area than the sites of the other periods (Welsby. 2001: 569).

Elsewhere, Welsby defined these sites as “occupation scatters” rather than as settlements, due to the absence of occupation mounds. He added that “*this may be the result of post-Neolithic erosion and one should bear in mind that the occupation scatters of today may have been permanent settlements in the Neolithic period*” (Welsby. 2001: 569). Very occasionally hearth-like features were noted, which may have been associated with the Neolithic occupation and these, along with pits, are one of the most prevalent features of the recently discovered Neolithic settlement under the eastern cemetery at Kerma (Honegger. 1997: 116).

The University of California Dongola Reach expedition reported some Neolithic occupation in the area between Hannek and Al Khandag on the west bank of the Nile (Smith. 2003: 164-165). Smith suggested that the presence of large sherds and bone eroding out alluvial deposits, along with possible pitting, indicate that most of these sites were cemeteries, although no graves were found (2003: 164).

More recent researches recorded small surface Neolithic sites displaying mainly lithics and ceramics. These sites were located within the new area of Al Multaga, near Genetti, “a resettlement area related to the construction of the Merowe Dam” (Peressinotto *et al.* 2003). The small size of the settlements, the lack of grave concentrations and the

scarcity of grave goods contrast with what is known from other sites of the same horizon excavated in Central Sudan and Nubia (Peressinotto *etal.* 2003: 35-39).

Debba-Korti Area

Former archaeological and associated geomorphological research was limited to survey and excavation carried out after the end of the Nubian Campaign, from November 1966 to January 1967, between Debba and Korti by former members of the CPE (Combined Prehistoric Expedition) under the leadership of Shiner (Shiner *etal.* 1971) (Map 5.10). They defined four ceramic-bearing groups of assemblages as the Karmakol (first labeled Early Khartoum Related Group), Karat Group, Tergis Group and El Melik Group. The Karmakol and the Karat groups showed important affinities, mostly through their ceramic assemblages (Figure 5.3), with the Khartoum Mesolithic and Khartoum Neolithic, while the Tergis Group was considered as specific to the area and the Melik Group as rather poor and possibly representing “more than one cultural entity”. In the Goshabi area they identified 32 localities, belonging mostly to the Karmakol and Karat Groups.

Map 5.10: Distribution of Neolithic sites near Debba and Wadi El Melik

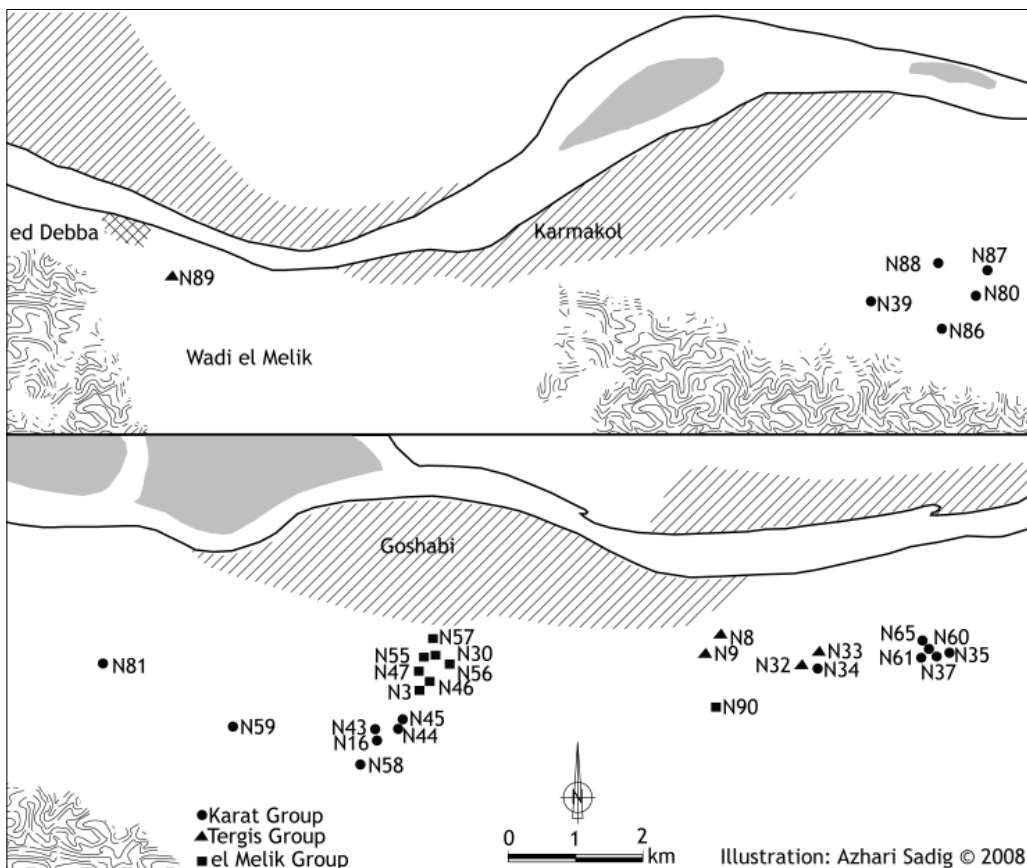
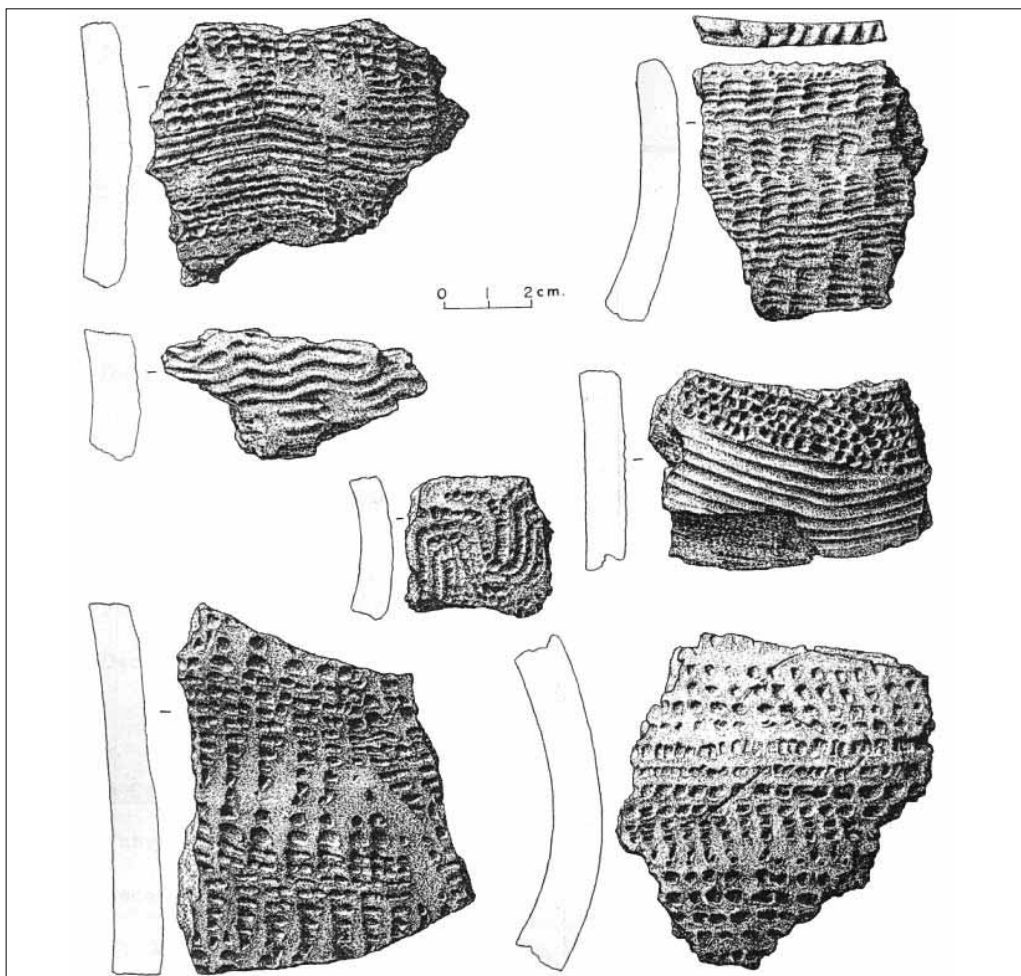


Fig 5.3: Pottery of Karmakol group (Source: Hays. 1971a.)



Early Khartoum (Karmakol) Group

The Early Khartoum - related group owes its name primarily to Early Khartoum-like pottery which occurs in primary association with a previously unknown lithic industry (Hays. 1971a).

Tergis Group

The eight sites of this group tend to be quite large in area, with dense concentrations of chipped and ground stone. No pottery was found on the surface, but two sites (N3 and N55) contained some material, in situ, including a few potsherds (Hays. 1971b).

Karat Group

All the sites of this group were located between the villages of Girra and Ganetti. Nineteen sites were located (N16, N34, N37, N39, N43, N44, N45, N48, N58, N59, N60, N61, N65, N66, N80, N81, N86, N87, N88). These sites were easily recognisable by the presence

of dense concentrations of burned Nile pebbles, associated with sherds, chipped stones, and small numbers of ground stone artifacts (Marks and Ferring. 1971).

El Melik Group

A total of 13 sites were located: N8, N9, N32, N33, N89 near the Nile and N50, N51, N24A, N24B, N25, N27, N28, N29 on the gravel hills on the western edge of Wadi El Melik, up to 9 km from the Nile. All sites consist of surface concentration of chipped stone, very few pieces of ground stone and variable amounts of pottery (Shiner. 1971) (for a more recent study see Garcea. 2003: 325-336).

El Multaga Area

More recent researches recorded small surface Neolithic sites displaying mainly lithics and ceramics. These sites were located within the new area of El Multaga, near Genetti, "a resettlement area related to the construction of the Merowe Dam" (Geus and Yves. 2003) (see Map 5.9). Most recorded settlements are small surface sites displaying mainly lithics and ceramics and documenting limited occupations. 65 sites were classified as Neolithic (Geus and Yves. 2003: 35-39) (Map 5.11, Figure 5.4).

Map 5.11: Distribution of Neolithic sites in the area of Goshabi and Abu Dom (adopted from Geus and Yves 2003).

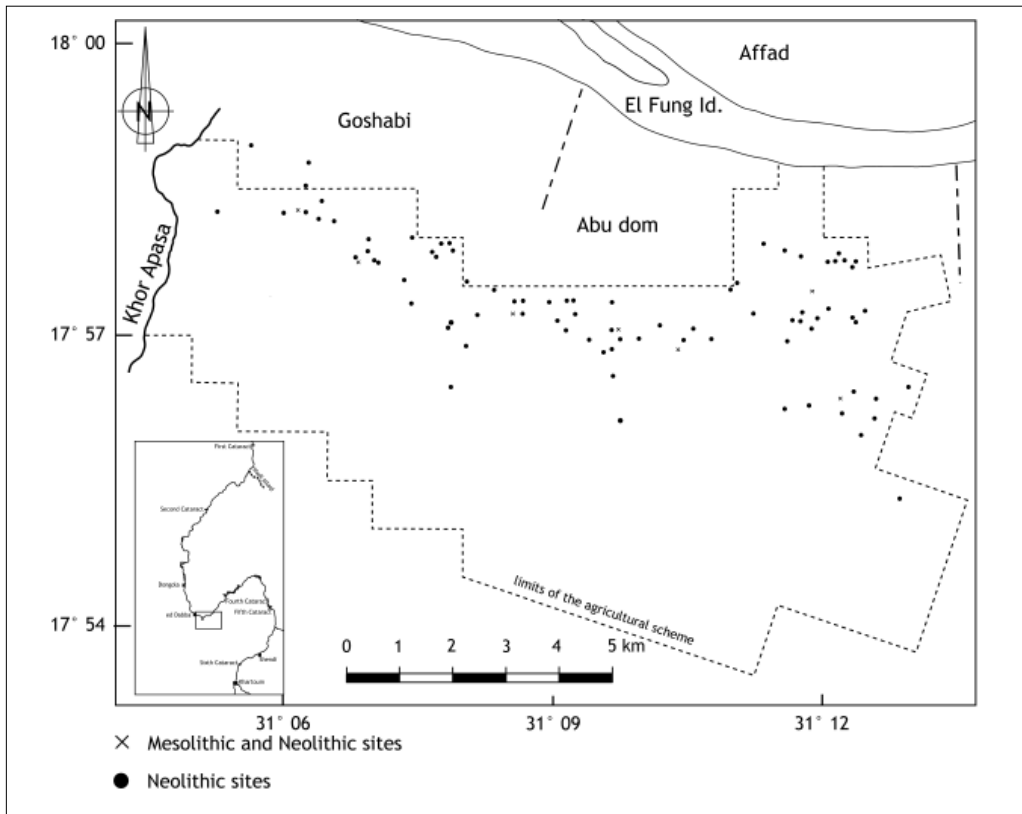
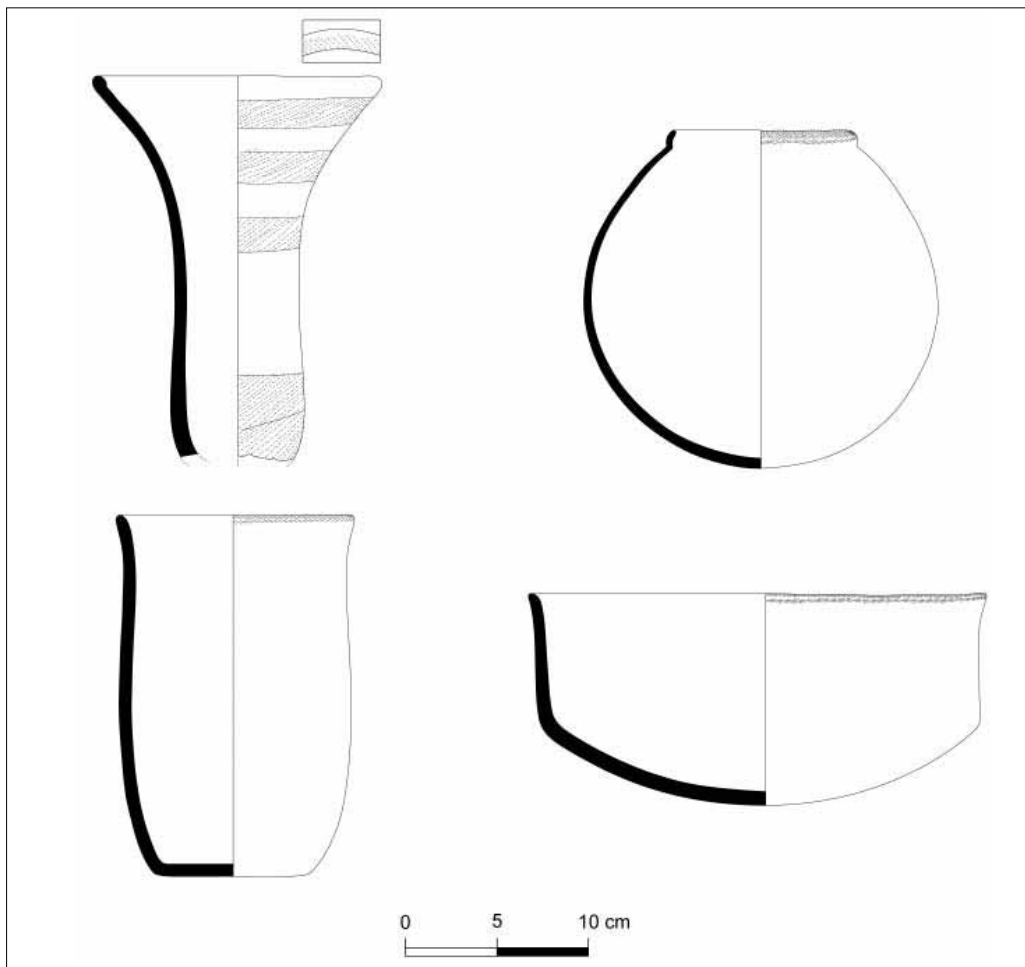


Fig 5.4: Neolithic pottery vessels from el-Multaga, southern Dongola Reach, Upper Nubia (adopted from Geus and Yves 2003).



Old Dongola

The Polish expedition headed by Jakobielski and Krzyżaniak conducted an archaeological survey and excavation in area of Old Dongola, starting mid 1964. In the third season, 11 December 1966 to 15 February 1967, many prehistoric sites were discovered. The sites were divided into two different groups according to the description of the stone implements and the general geological situation; one, the sites situated on the hills of solid sandstone, and two, the sites situated on the gravel hills (Jakobielski and Krzyżaniak. 1968: 149). Stone implements of the sites situated on the hills of sandstone (Old Dongola Sites 1-5) are composed of large, crudely finished tools, cores, flakes, blades, and a relatively large number of broken lumps or nodules of raw chert. The most imposing tool of this group is the axe with transversal and ground edge, from Old Dongola Site 1. Jakobielski

and Krzyżaniak mention that this axe is similar to another found in Kharga Oasis. On the other hand, on the explored sites they found no evidence of typical Neolithic attributes as the polished stone and pottery. Moreover, they called these sites “*the Proto-Neolithic sites*”, and place them in the 4th and 5th millennium BC (Jakobielski and Krzyżaniak. 1968: 150).

Letti Basin

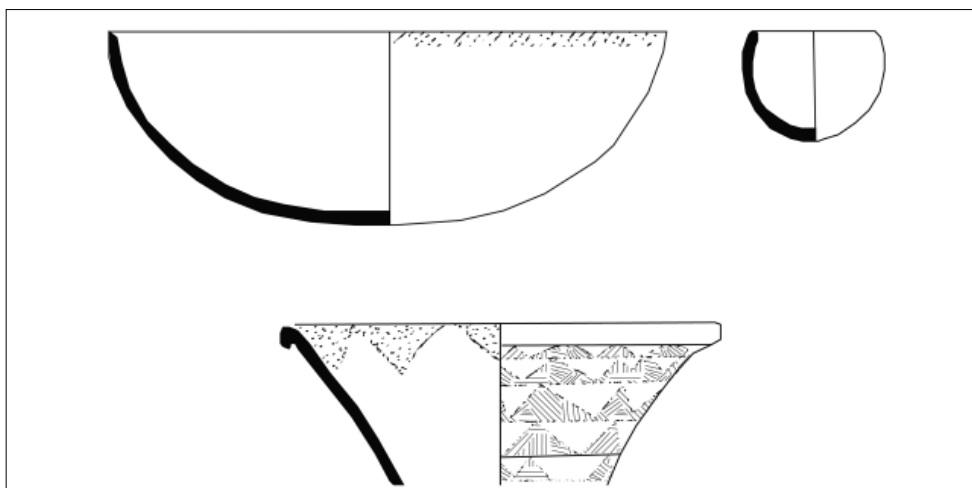
In this area, archaeological survey and excavation were carried out by the Royal Ontario Museum. The terraces extending along the eastern edge of Khor Letti had been known for some time to have Stone Age deposits (Grzymski. 1987). The preliminary reconnaissance, which was carried out in early 1980s, revealed the presence of some Neolithic sites (Grzymski. 1987). In the 1993 field season, scatters of Neolithic pottery, possibly from a settlement, were also noticed in the area (Grzymski. 1997: 237). Moreover, numerous Neolithic sherds and stone tools were found, suggesting the presence of a Late Neolithic settlement and cemetery there (Grzymski. 1997: 239).

The Fourth Cataract

Little is known about the Neolithic settlement patterns in this area. Garcea mentioned a late Neolithic site near El Kurru but it possesses no Neolithic settlement patterns characteristic of this area (Garcea. 2000: 137-147). The site is identified by a large quantity of lithics scattered over an area of 50 m². Generally it has more similarities to sites in the area of Debba-Korti than the sites in southern Central Sudan.

The SARS group identified only one Neolithic site in the Kirbeka-Amri area during 1999 survey season. It is located on a flat area among rocky outcrops, and has an appreciable amount of pottery of Mesolithic and early Neolithic date, as well as lithic materials (Welsby. 2003: 28, Fuller. 2004) (Figure 5.5).

Fig 5.5: Examples of Late Neolithic ceramics from Umm Melyekta, Fourth Cataract, Upper Nubia (reproduced from Fuller 2004).



Of the total number of 711 sites recorded in the area between Kareima and Abu Hamed (Paner. 2003: 15-20), over 240 yielded ceramic, stone and flint artifacts dating from the Neolithic period. Some Neolithic settlements tended to be located on higher terrain, within natural hollows. Oval and circular stone structures up to 1.5 m in diameter probably represent hearths. Larger concentrations of stones (also circular in plan but with larger diameters) may possibly mark the remains of dwellings which were constructed from organic materials. Querns and grinders were also found at these sites. Agate was among the raw materials used for making tools, with white quartz increasingly used on late Neolithic sites. The pottery of this period is hard, richly decorated and well-fired, with large pieces of mica easily visible to the naked eye. This indicates that the raw materials used for making this pottery originate from the Precambrian basement complex, which was never covered by Nile alluvium in the Fourth Cataract region.

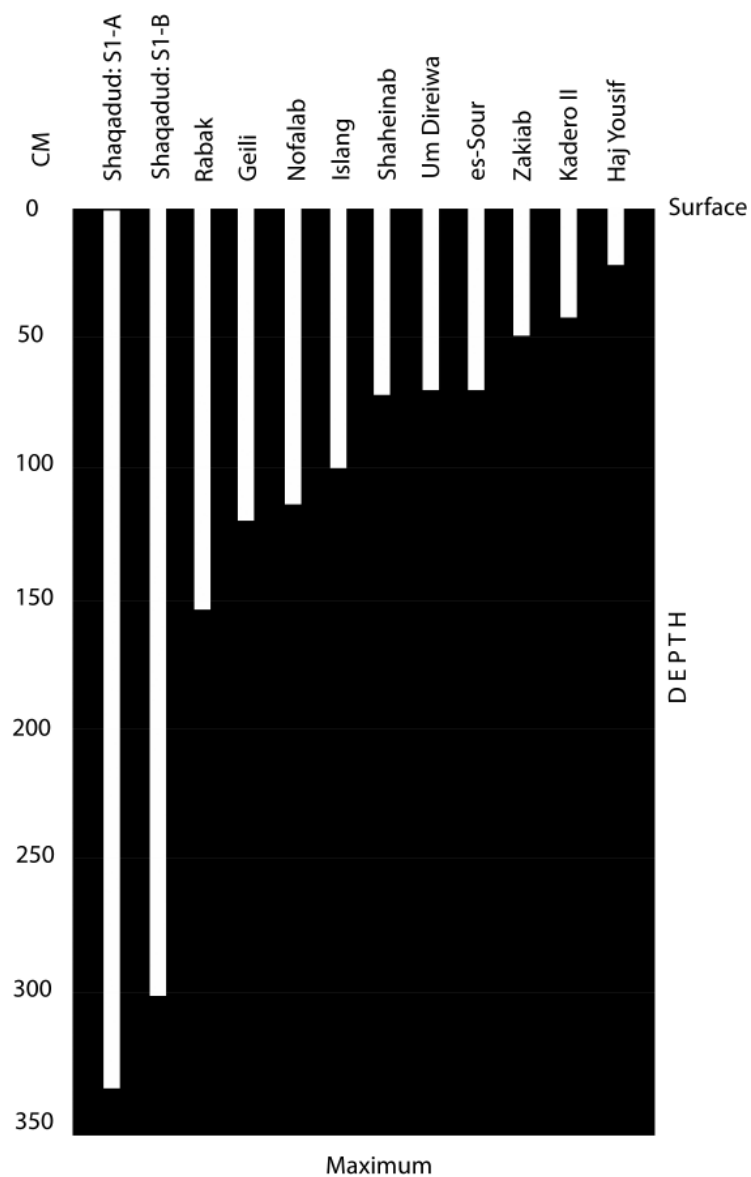
The SARS Anglo-German Expedition to the Fourth Nile Cataract recorded a number of Neolithic occupation sites and workplaces on the seasonal islands of Umm Mereigit, Umm Balla and Midaimir, as well as on the adjacent left bank near Fourth Cataract (Wolf and Nowotnick. 2005: 23-31). These sites are strategically well-placed on higher outcrop plateaus, on gravel terraces overlooking the Nile valley or in smaller wadis. Materials associated with Neolithic pottery were also recorded near ed-Doma. One site in particular yielded a vast number of lithics over a large area on the bank of the Wadi Fursib paleochannel (Welsby. 2005: 2-8).

Conclusions and General Remarks

The following generalisations about the settlement patterns of the Central Sudan Neolithic sites are made:

1. Most known sites are quite large and the occupation layers are of considerable depth, although stratified deposits seem to be lacking in some sites (Figure 5.6). Cemeteries are sometimes associated with the sites.
2. The sites on the west bank in the Khartoum area and between the White and Blue Niles besides the sites in Shendi area are today generally close to the water and they were even closer at the time of occupation.
3. The sites on the east bank in the Khartoum area lie a considerable distance from the present Nile. The location suggests that the Nile covered part of the surrounding plain, at least seasonally, perhaps with small lakes and swamps.

Fig 5.6: Neolithic sites of Central Sudan: Depth of archaeological material



These patterns might generally be based on seasonal movement. Four of the sites on the east bank (Kadero I and II, Um Direiwa I and II) shared certain features. They are large, occupying areas of between 10,000 m and 45,000 m, and they are situated, on average, about 7 km from the present river (Figures 5.7 and 5.8). The sites were rich in pottery, grinding implements and lithic materials and had burials associated with them.

Fig 5.7: Neolithic sites of Central Sudan: Occupied area (in metres)

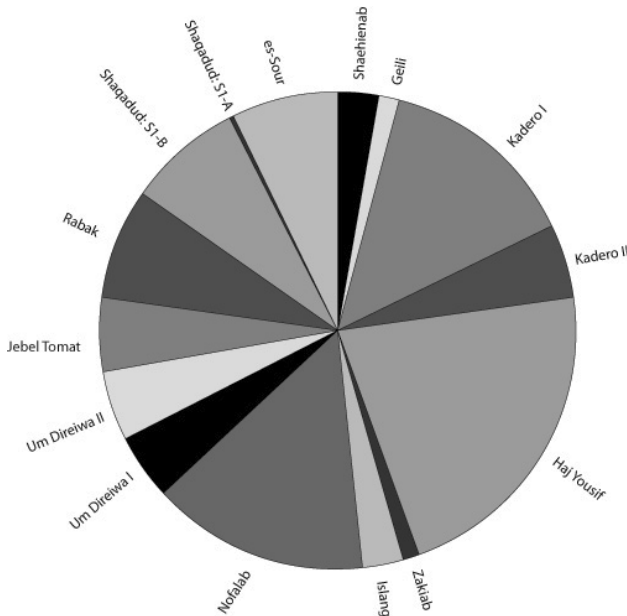
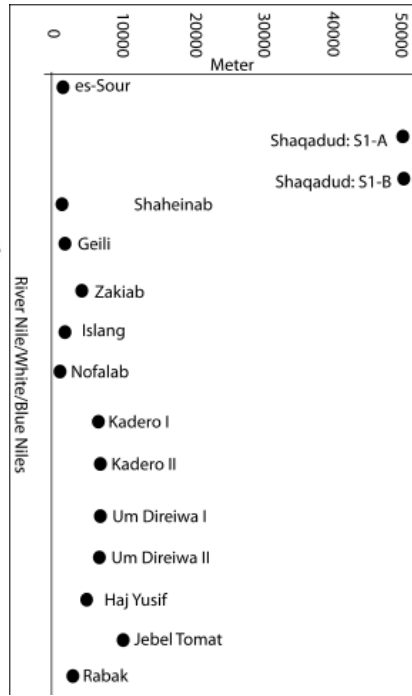


Fig 5.8: Neolithic sites of Central Sudan: Distance from the water-system



On the basis of the distribution of these sites and their cultural manifestations, Haaland postulated that they reflected a settlement pattern related to seasonally specific activities (Haaland, 1987a). The four large sites were seen as permanent base camps where emphasis was placed upon the exploitation of plants, sorghum cultivation, and the manufacture of pottery. A small site (Zakiab) was interpreted as a dry - season camp where herding and fishing were practiced. It was occupied temporarily and was also a place where lithic artifacts were manufactured.

Haaland's assumption proposed that a large community occupied a base camp when conditions were favourable for cultivation. During the dry season the inhabitants of each base camp would split into smaller bands and occupy fishing and herding camps along the Nile, where conditions would be optimal for these activities. After the rains, equivalent herding camps would be set up in the grasslands of the Butana farther to the east.

Mohammed-Ali and Magid tested this model within the same general area but with sites found on the west bank of the Nile. They showed that the sites on the west bank (Nofalab and Islang) are close to the river and "*the settlement pattern on the west bank does not suggest occupation back from the river as the case of the east bank*" (Mohammed-Ali and Magid, 1988: 66). They suggested that the topographical differences between the two banks

must have affected local adaptation. In other words, the flat alluvial clays of the east bank, with their Nile-fed swamps and ponds, would permit cultivation to be practiced and would support a rich pasture with a thick cover of vegetation and shrubs. On the other hand, the eroded sandstone and pebble conglomerates of the west bank would not permit agriculture, and its stony surfaces support relatively little grass, even after the rainy season (Mohammed-Ali and Magid. 1988: 66). They suggested a reversed pattern to that proposed by Haaland. Their model assumes that, since the large sites are located close to the river, these sites might have served as base camps, densely populated during the dry season. When conditions improved in the hinterlands, during the rainy season, part of the population might have split into small groups and occupied smaller sites in those areas.

The distribution of raw materials does not seem likely to have been a major factor in settlement location. Sources of high quality for tool making are very limited in most of the Middle Nile region. The majority of lithic tools were made on Nile pebbles, quartz pebbles and sandstone, which are commonly available. Most sites have shown no traces of exotic or imported material. Exceptionally for the Khartoum region, small quantities of rhyolite from the Sixth Cataract are found, and more rarely exotic amazonite, from an unknown source (thought by Arkell to come from Tibesti) (Arkell. 1953: 4). The two models of seasonal patterns, though based on limited data, are plausible, but the evidence from the region has failed to provide conclusive proof and some questions remain, notably in relation to the possible role and significance of agriculture in subsistence strategies. Another significant problem is the lack of smaller (and more ephemeral) inland sites which could relate to shorter-term seasonal activities. If these were existed, then *“it might be indicated that two quite different settlement systems existed on the opposite banks of the Nile River during the Khartoum Neolithic”* (Arkell. 1953: 67).

A more general problem remains concerning the identification of the most impressive large and artifact-rich sites as permanent settlements, with a considerable static population. Some of these sites may have been occupied over a long period of time, which could explain the high density of lithic materials, pottery and other debris and, in some cases, with the graves scattered in and surrounding the sites. However, it is important to realise that no evidence of dwellings or other permanent structures were found in association with any of these Neolithic sites. It is likely that such dwellings were made of perishable materials, which might have left relatively few, or no, traces.

It is clear that the sites have suffered considerable erosion and deflation, which would have removed many more ephemeral features. However, the basis for assuming that permanent settlements or what can be called “proto-villages” existed during this period remains far from clear. If we accept that pastoralism was becoming an increasingly

important feature of the Neolithic way of life, the role of such permanent centers remains unclear. The large quantities of pottery, lithic and food debris recovered from the sites are certainly not what might be expected of relatively mobile pastoral communities.

Arioti and Oxby attention to special activities that took place on such large sites (Arioti and Oxby. 1997). They partly accept Haaland's suggestion that, rather than a permanent settlement, Kadero I might be interpreted as a special meeting place or a herders' gathering place, used for collective ceremonies and feasts, with ritual killing of animals. Those people would have lived scattered in the Nile hinterland for the rest of the year (Haaland. 1987a). This suggestion is based mainly on the presence of so many cattle bones in the site.

A similar suggestion may be offered for the remarkable site at Shaqadud. This site has a long prehistoric sequence marked by exceptionally rich and deep deposits protected in one of the rare caves present in the Sudan, as well as in a massive midden deposit outside the cave (Marks and Mohammed-Ali. 1991). The combination of sites show a superimposition of settlement debris dating from the earliest Mesolithic to the full development of the Neolithic, therefore lasting in total about 4,000 years (Marks. 1991).

Arioti and Oxby suggest that the Butana is close enough to the Nile *"to hypothesize that the groups living there practiced some sort of transhumance towards the narrow riverine zone"* and *"thus the Butana region could have been the main home of herder-hunters who only camped near the river during the dry season"* (Arioti and Oxby. 1997: 110). As yet there is insufficient evidence to prove this hypothesis.

Few prehistoric settlements are known in Nubia today. They are frequently spread over vast areas yielding generally fragmented and eroded artifacts. Among the rare examples of preserved structures, hearths are the best represented. Storage pits are less common and architectural elements are truly exceptional. This situation is typical, not only of Nubian prehistory, but also of the prehistory of the entire Nile valley. In consequence, our understanding of these settlements is distorted and partial, whereas the cemeteries are abundantly documented because they are better preserved. The main factor responsible for this disparity is wind erosion, which has destroyed most of the occupation levels at prehistoric sites, leading to the loss of settlement structures and artifacts.

6

The Material Culture

Central Sudan

In this chapter the material finds from Shaheinab, Kadero I, Geili, el Kadada and Shaqadud, are considered. There are many other Neolithic sites in Central Sudan but they reflect similar traits to the sites described. Attention is focused on the newly discovered sites at es-Sour and White Nile.

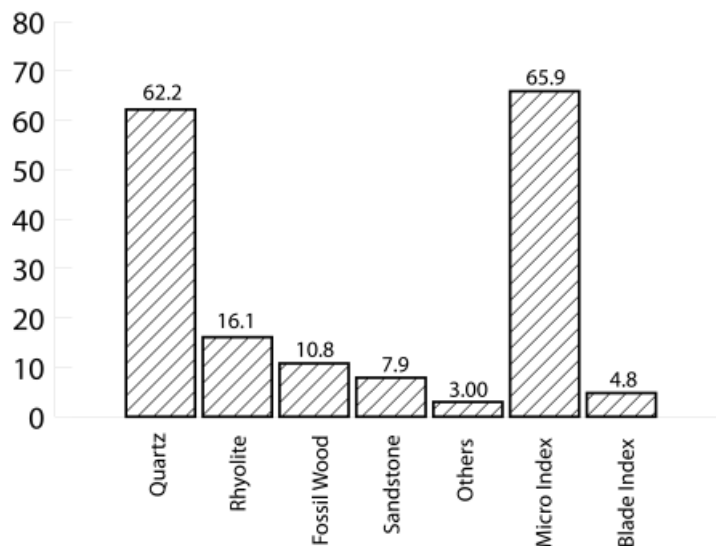
Lithic Artifacts

Shaheinab

The material culture of Shaheinab shows a number of technical advances over that of the Mesolithic Period of Early Khartoum.

Quartz was the principal raw material and was dominant among the microlithic tools. Rhyolite was used for the manufacture of large stone tools, while sandstone and petrified wood were favoured for grinding implements (Figure 6.1).

Fig 6.1: Index of raw material and technology at Shaheinab site



The microlithic tools show development from those of Early Khartoum but continue to be made of quartz and to be mainly, as before, lunates, scrapers and engraving tools (Figure 6.2). In addition to the flaked tools there are, found for the first time, various

polished stone tools, of which the diagnostic one is a tool made of rhyolite, a close-grained igneous rock found at the Sixth Cataract, and usually called a “gouge”- thought by Arkell, who for a time used “Gouge Culture” for what is usually called the “Shaheinab”, to have been used for wood working (Figure 6.3) (Arkell. 1953: 31). Arkell considers the use of boats as essential for hunting water animals and fetching raw material from the Sixth Cataract area (Arkell. 1953: 31). Other ground stone tools were also found and grindstones made of sandstone were present.

Fig 6.2: Microlithic tools from Shaheinab site (source: Arkell 1953.)

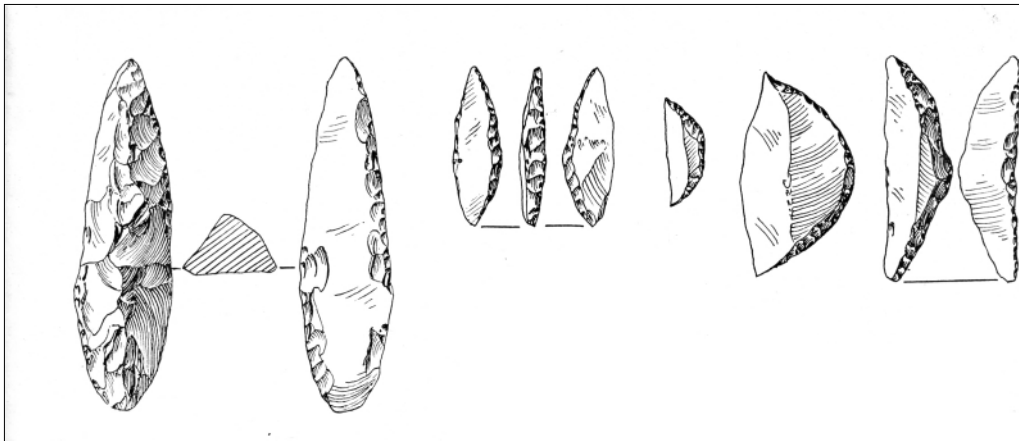
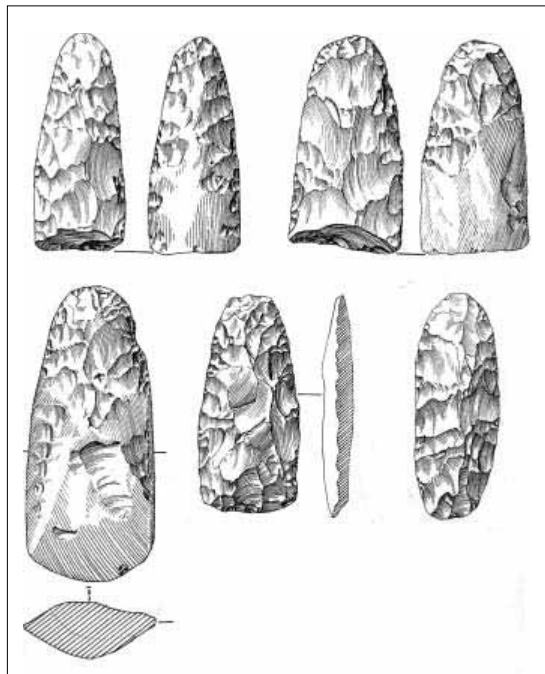


Fig 6.3: Gouges and polished celts from Shaheinab site (source: Arkell 1953.)



Kadero I

The raw materials utilised in the Neolithic settlement at Kadero I can be divided into seven rocks: precambrian rocks, Nile pebbles, quartz and quartzite, rhyolite, fossil wood, sandstone and Egyptian flint. The Kadero I assemblage has a typical flake character, with only small amount of blade and bladelets. The assemblage is characterised by a high index of notches and denticulates, piercing tools, gouges, and partially retouched flakes and blades. The assemblage is also characterised by a low index of end scrapers, side scrapers, segments and celts. Many ground stone artifacts were found (Figures 6.4 and 6.5).

Fig 6.4: Frequencies of lithic raw materials and debitage at Kadero

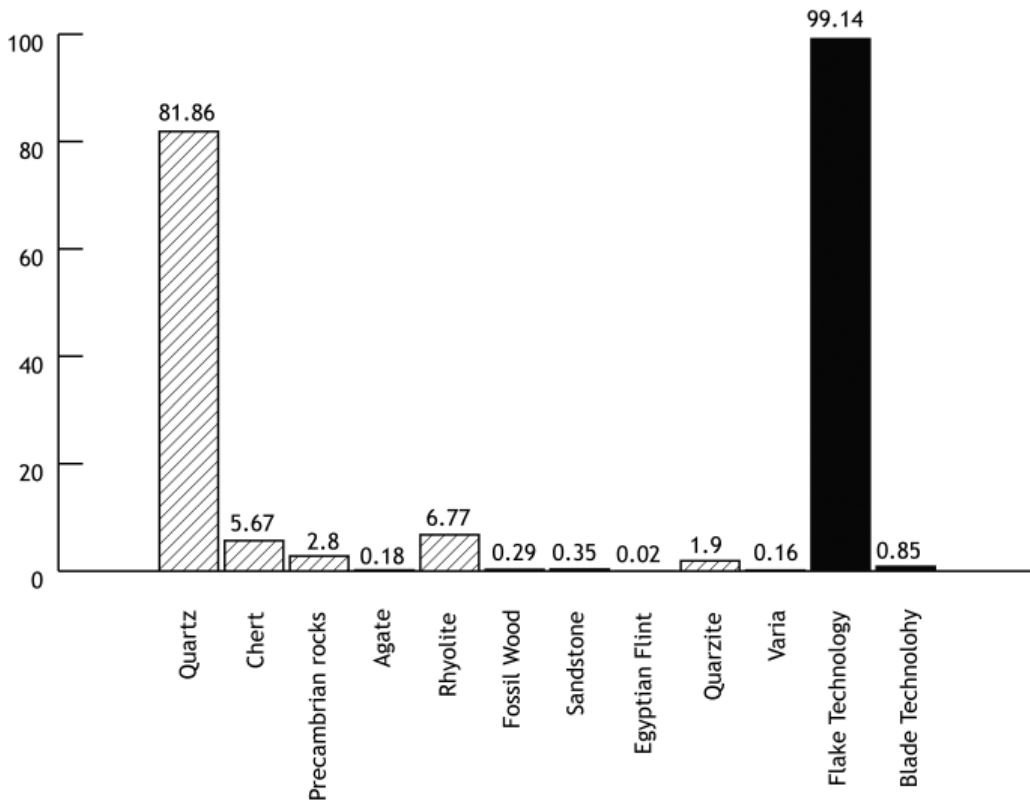
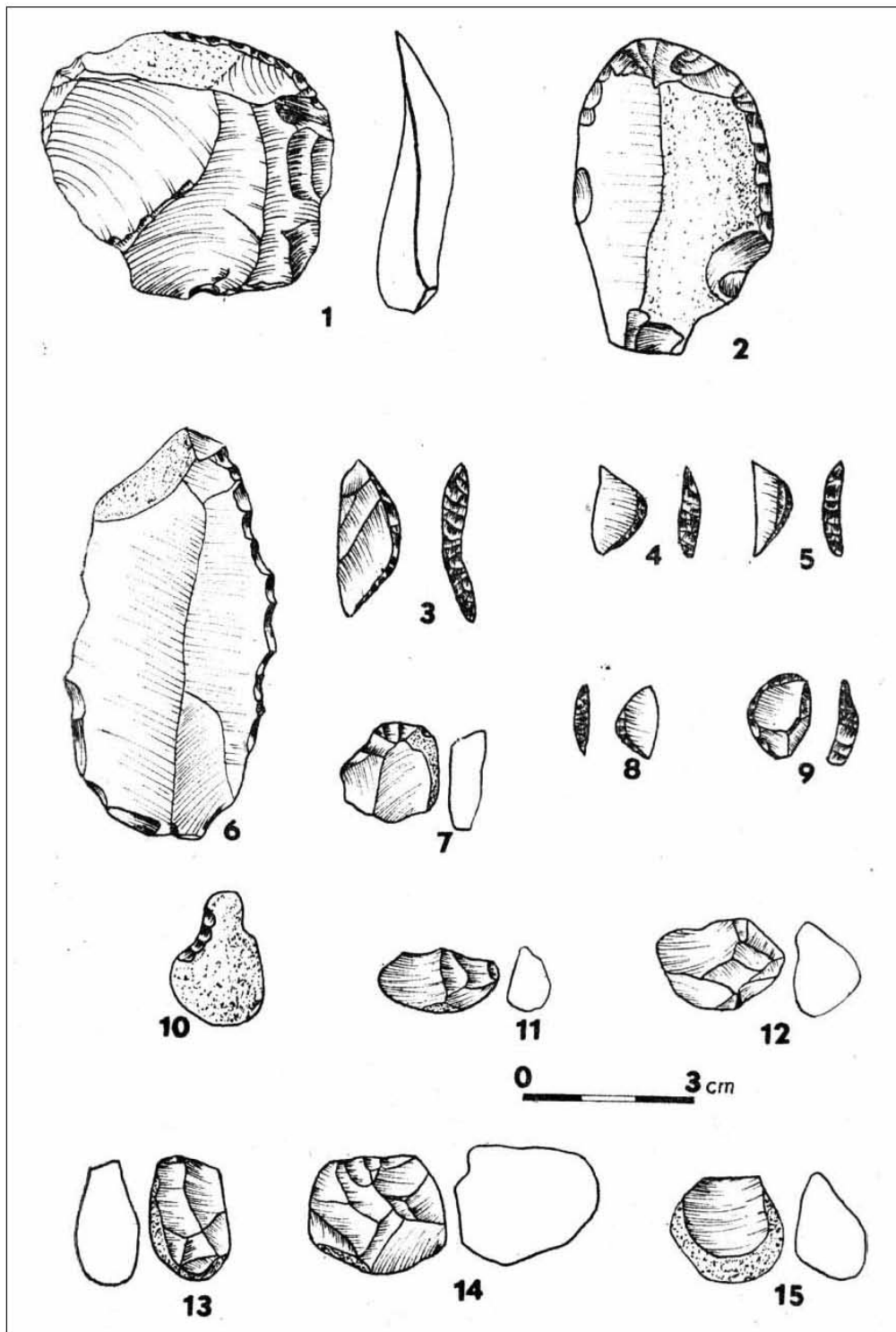


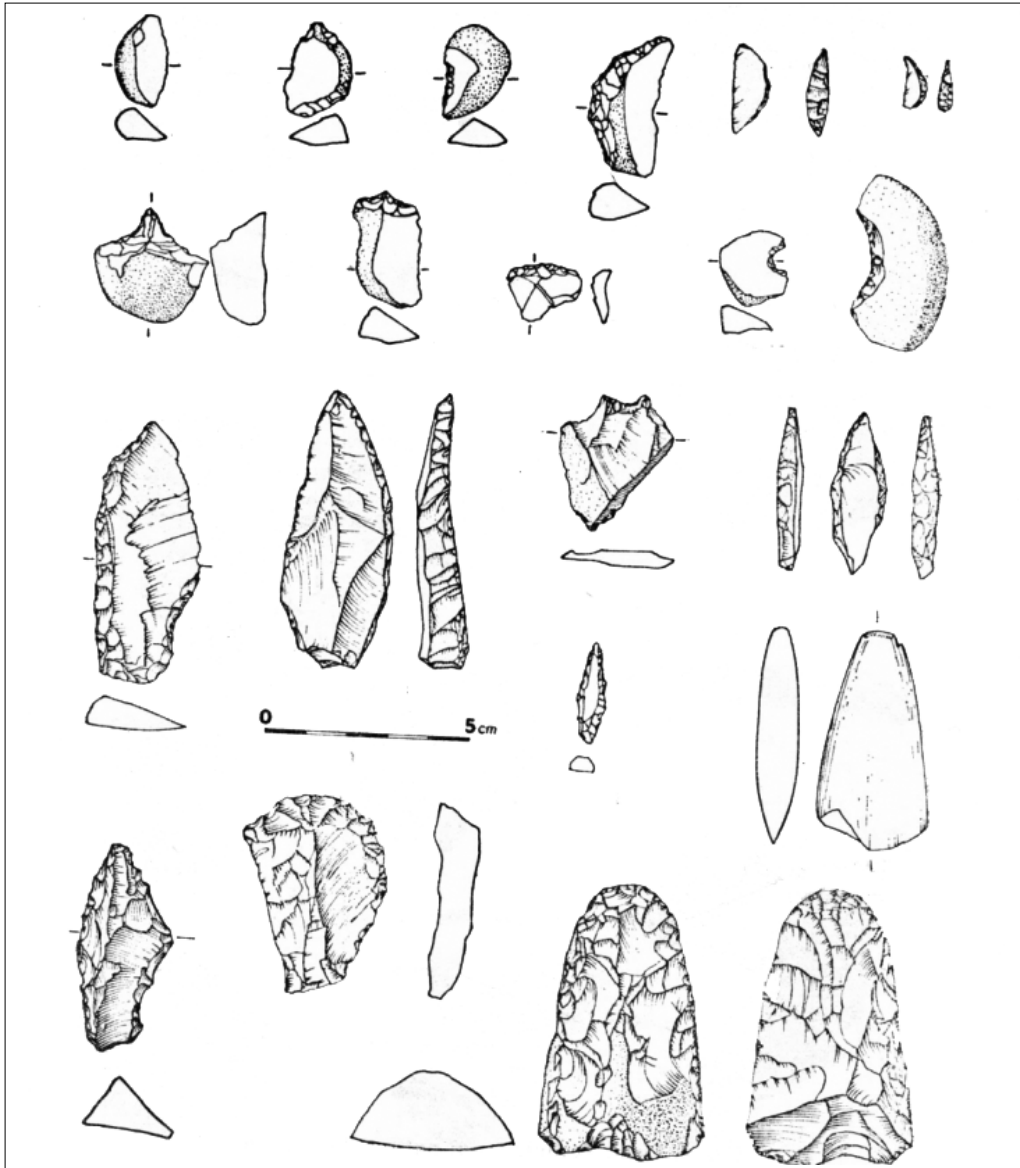
Fig 6.5: Lithic artifacts from Kadero 1 1-2, 7: end scrapers; 3-5, 8, 9: segments; 6: denticulates; 10: notch; 11-15: cores (source: Nowakowski 1984.)



Geili

The settlement at Geili yielded an amount of lithic implements which constitute a typical Shaheinab assemblage. The lithic industry includes quartz microlithic tools (crescents, borers, end-scrapers). A number of rhyolite tools is also represented, mostly scrapers, points and polished gouges. Grinding equipment is characterised by small grinding and pounding stones (Figure 6.6).

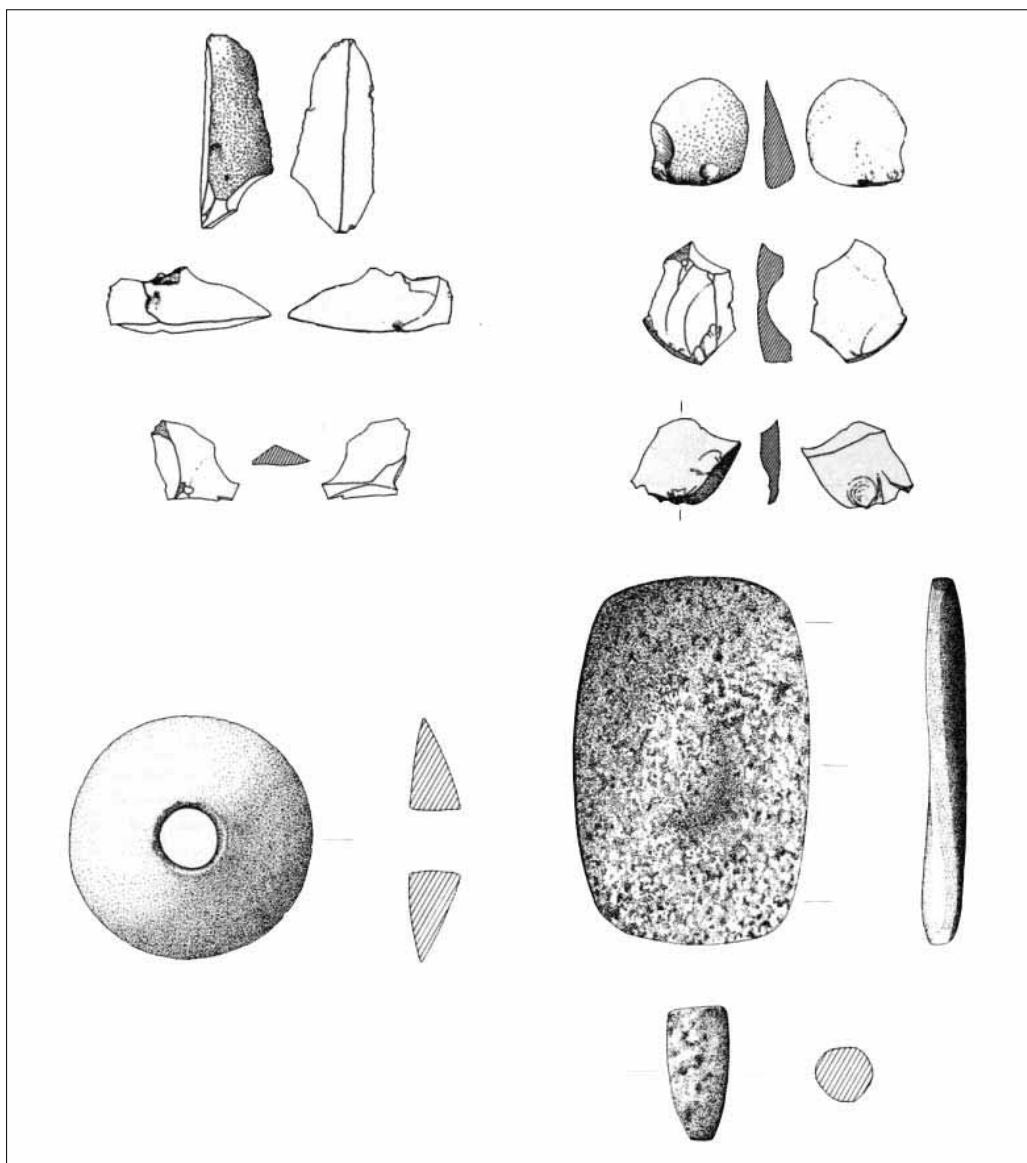
Fig 6.6: Lithic artifacts from Geili (source: Caneva 1984.)



el Kadada

The lithic industry is characterised by numerous sandstone grinding tools and heavy quartz chert flaking associated with a few finished or retouched pieces. The graves contain numerous and varied types of lithics. These include quartz, chert and sandstone fragments, broken quartz pebbles, sandstone grinding tools, polished stone axes, mace-heads, discs and palettes. Most of the material found at el Kadada belongs to a late development of the Central Sudanese Neolithic (Figure 6.7).

Fig 6.7: Lithic artifacts, polished disc and palette from el Kadada (reproduced from Reinold 2008).



From the above accounts, the following is suggested:

- a. The raw materials exploited are locally available, either on the sites themselves, or within a reasonable distance. There are no clear indications that any raw material was imported from outside the region, except in the case of Egyptian flint. The evidence is that the rhyolite at the Khartoum sites was imported from Sixth Cataract.
- b. Gouges and celts characterise the assemblage of Shaheinab and Kadero I. these items were not found at el Kadada and Geili. This may suggest a specific activity, common at the first sites, where the tools were significant great part of the tool kit.
- c. Ground implements were numerous in all assemblages.
- d. Polished stone palettes for grinding cosmetics characteristic of el Kadada were not recorded at Shaheinab.
- e. In general, the four sites belong to the same lithic tradition and show a local development through time. The most characteristic tools are gouges and celts. The gouges were absent at el Kadada site, which is not within the same microenvironment. The presence of other developed tools at el Kadada suggests a late date for this site.

Es-Sour

The archaeological material from es-Sour is considered here, and observations presented below are based on the personal examination of artifact samples from the site (Sadig, 2005b, 2008a).

The lithic inventory includes debitage, cores, a few retouched tools, grinders and hammerstones. The finished tools are few and badly made. They exhibit a somewhat limited technological and typological variability. The occurrence and density of artifacts was variable but continuous from the surface down to the undisturbed natural soil, although most artifacts were concentrated in the top 50cm of deposits.

Preliminary analysis of the material confirms that it was largely debitage, composed of shattered fragments, broken flakes, small chips and chunks. Retouched tools formed 12.9% of the assemblage. With the exception of a single piece of fossil wood and sandstone used for pounders/grinders, all the excavated material is quartz. No rhyolite and granite tools were found in the excavated squares, although some tools of these materials were collected from the surface. The majority of lithic artifacts are finished scrapers. Backed tools, a few crescents and grinders make up the bulk of the remainder. The flakes themselves vary considerably in size and shape, from small flakes to irregular large flakes. Although only a small sample of chipped stone artifacts has been examined;

it is possible to describe the site's industry as a flake-based industry, with some larger but badly-made quartz tools being produced on small blades. Cores are generally of simple forms and were used primarily for the production of flakes.

No polished stone tools and gouges of the type found at Shaheinab were found, except for small fragments of granite palettes found on the surface (Plate 6.1), and a polished stone axe collected from the surface during season 2009 (Figure 6.8). However, an interesting find was a small rhyolite artifact with a characteristic shape and two small hollows on both faces (Plate 6.2). Its function remains uncertain, although the shape suggests that it may have been a fine polishing/grinding tool or palette. The example from es-Sour is very similar to specimens found at el Kadada (Geus. 1984a: 69). Similar artifacts have also been found in the Eastern Butana and near Kassala (Marks *et al.* 1985: 47).

Plate 6.1: Fragments of granite palettes from es-Sour

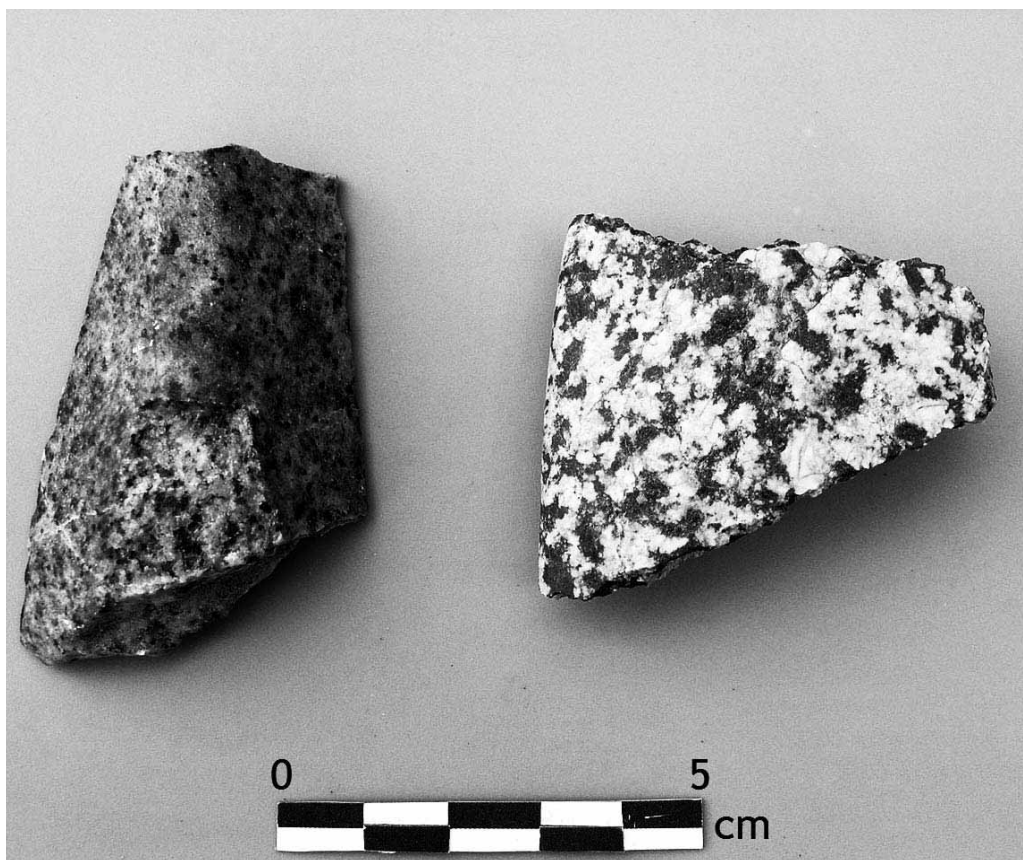


Plate 6.2: Small stone grinder/polisher tool from es-Sour

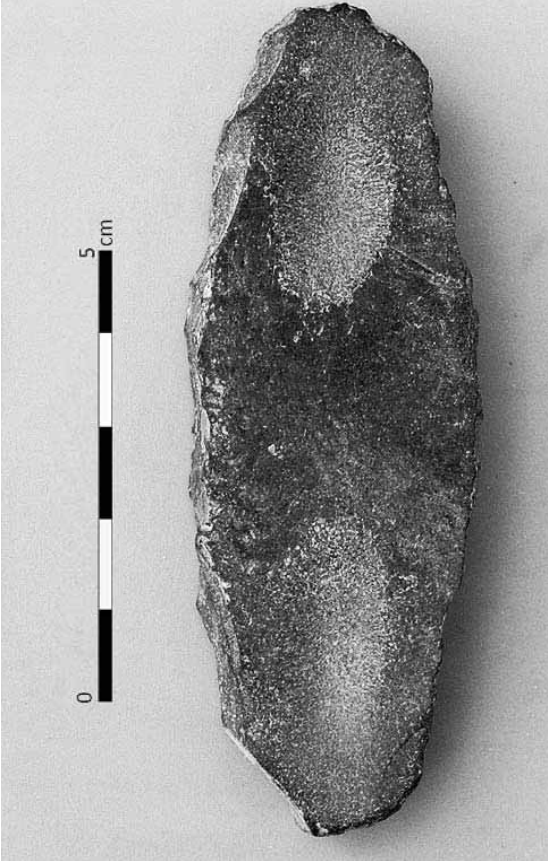
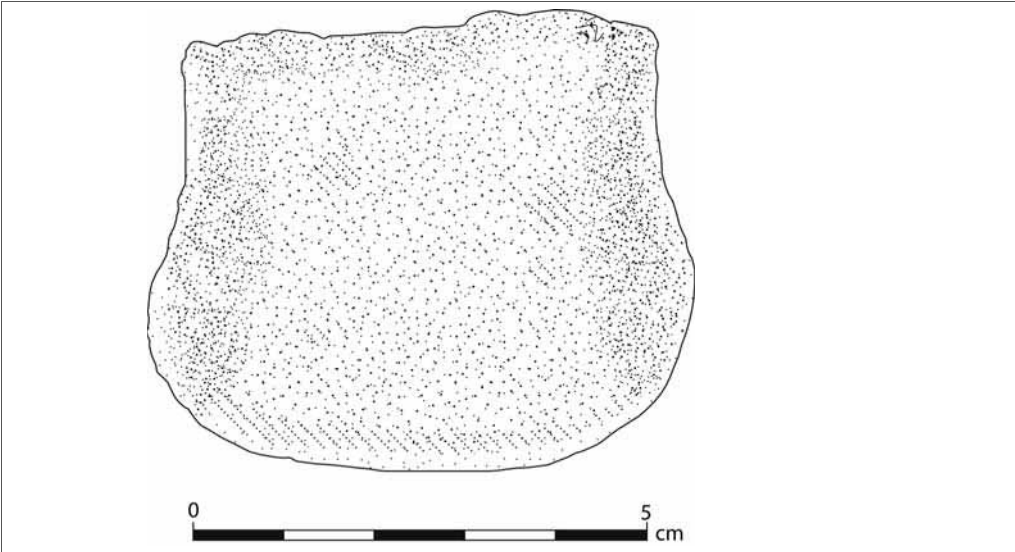
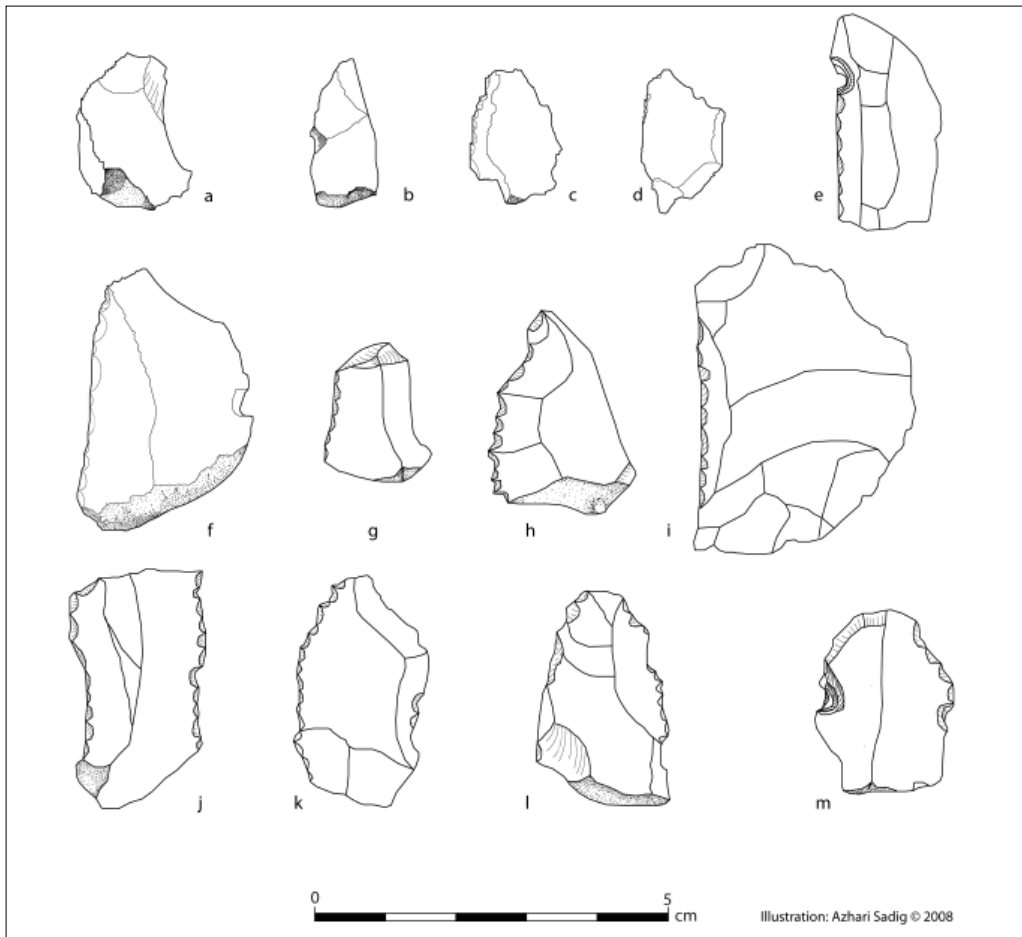


Fig 6.8: Polished stone axe from es-Sour



Almost 1,528 lithics from the 2006 season of excavations add greatly to understanding of the predominantly lithic technology in es-Sour site. These tools are simple flakes and have no or only minimal retouch. The formed tools are limited to very few classes, of which scrapers and backed tools predominate. There is considerable variability in the debitage, which amounts to more than a half of the 2006 sample (Figure 6.9).

Fig 6.9: Lithic artifacts from es-Sour



Other formed tools include borers, burins, crescents and retouched and un-retouched blades. Retouched blade forms include endscrapers, burins and backed pieces. Unfortunately, none is complete. However, it is odd that the large sample from two major seasons of excavation contains only a single identifiable, broken polished axe. The majority of the formed tools were made on quartz. Poor and medium grades of quartz are available in the immediate vicinity of the site.

The ground-stone sample recovered from the 2006 excavations is large. This includes disc grinders and pounders (Table 6.1, Plates 6.3, 6.4 and 6.5, Figure 6.10).

Table 6.1: Es-Sour: Distribution of sherds and other finds material through excavated levels.

Level	Lithic	
	2005	2006
Surface	63	85
1 (0-10cm)	413	498
2 (10-20cm)	712	357
3 (20-30cm)	513	227
4 (30-40cm)	392	183
5 (40-50cm)	130	20
6 (50-60cm)	45	53
7 (60-70cm)	18	-
Total	= 2286	= 1423

Plate 6.3: Grinder tools from es-Sour

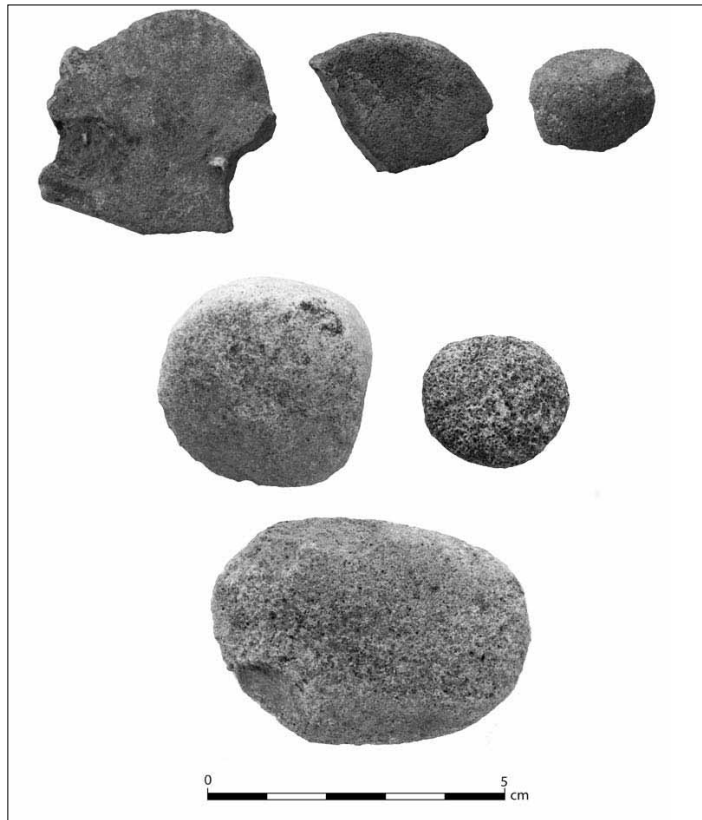


Plate 6.4: Sandstone stone ring from es-Sour



Plate 6.5: Pounder tool made of quartzite from es-Sour

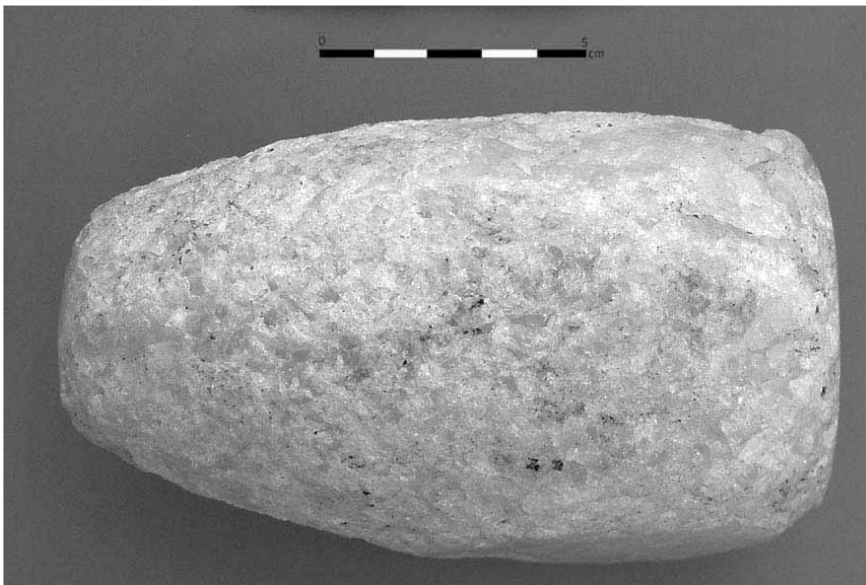
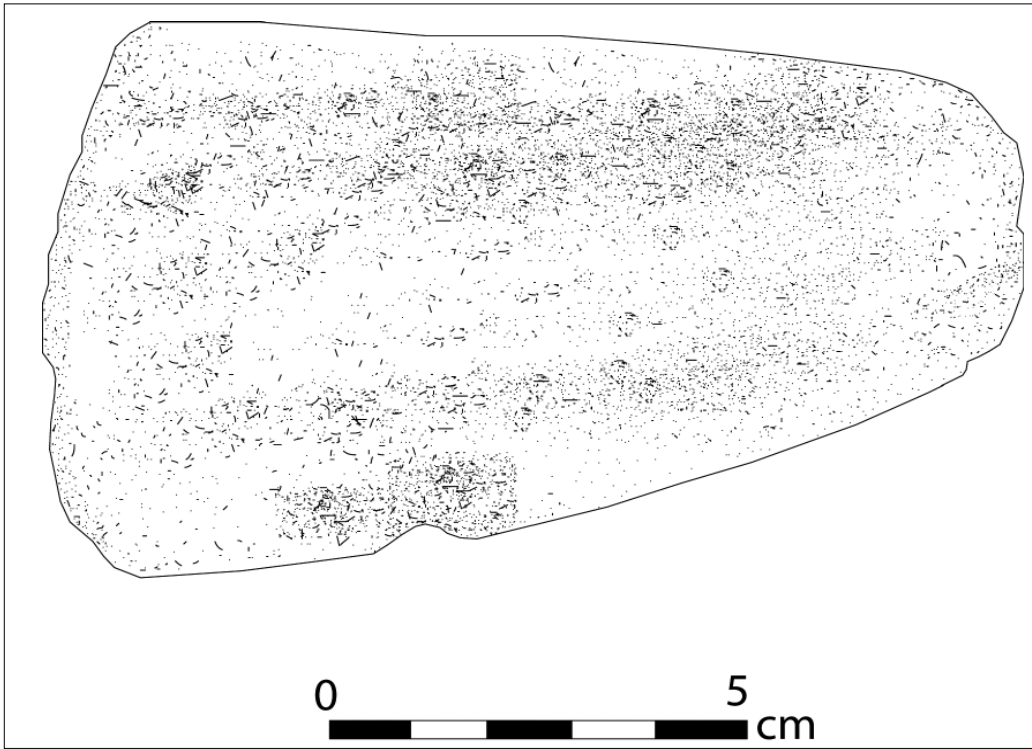


Fig 6.10: Sandstone pounder from es-Sour

White Nile

The archaeological material from 13 Neolithic sites is considered below. These are located between Kalakla and Jebel Awlia. Observations presented below are based on the personal examination of artifact samples from each of these sites (Sadig, 1999, 2004).

Pebbles, small cobbles and boulders derived from the weathering and reworking of bedrock (Nubian Formation) were the principal raw materials utilised. These included quartz, sandstone and Nile pebbles. Choices exercised in raw material selection are evident, and thought to be restricted to the availability of these materials, quality and requirements of the technology. All these materials were available in the area. This also includes the granite and rhyolite which were represented in small quantities among the Nubian Sandstone formation. Increasing use of fine milky-grained quartz is also evident. The Nile pebbles were also available in gravels deposited along the seasonal khors or old banks of the Nile. The comparative study of the raw materials in these sites *and* that of Shaheinab is as follows:

1. Lithic materials were not abundant at the sites. A total of 284 artifacts were collected, all of them flakes. Some sites (e.g. Kalakla, el Dirwa, el Dirwa North, and Wad Al A'gali) contain no more than the number collected. Human and natural activities

have affected the distribution of the artifacts since all these sites are very close to, or in some cases, within the villages and the flood area. Although only a small sample of chipped stone artifacts has been examined, it is possible to describe the lithic industry on these sites as a flake-based industry (Figure 6.11). This is the situation for all Neolithic sites in the Khartoum area. The lithic industry of these sites is broadly comparable to Neolithic industries elsewhere in the Khartoum area. Approximately 34.4% of the surface - collected lithic samples consist of cores, flakes and retouched flakes. The second most frequent category of lithic artifacts is finished scrapers, which represent about 18.3% of the lithic samples. Backed tools, crescents, borers, groovers, axes, and grinders make up the bulk of the remainder ((Figures 6.12a and 12b). Most of these were made of flakes and small cores. The lithic materials from the sites are characterised by relatively few groovers, borers and crescents. Gouges and celts were totally absent. A similar situation was observed by Haaland (1987a) in Neolithic sites along the White Nile. The sites are also characterised by few end scrapers, segments and burins. The comparative analysis of these collections demonstrates their similarity to other lithic assemblages known from Central Sudan.

2. A number of common features can be observed in comparison to the lithic assemblage excavated at Shaheinab (Arkell, 1953) and Kadero I (Krzyżaniak, 1984). The following traits are considered to be common:
 - a. Use of identical raw material.
 - b. Use of flake technique.
 - c. Very low index of burins.
 - d. Very low index of backed tools.
 - e. Presence of many types of grinders.
3. The following different frequencies and traits between Shaheinab and the survey area sites were found:
 - a. The small polished axes, which represent 2.5% of the collection. Most of the axes differ from those of Shaheinab.
 - b. The high index of scrapers (18.3%) in the sites. In all sites they represent about 7.1 to 36.1% of the collection. In contrast, they were not as many as scrapers in Shaheinab; about 100 were recognised. They account for 10.2% of the total samples.

- c. The high index of lunates at Shaheinab site (16.4%). Lunates were the commonest flaked tools in Shaheinab, from where nearly 2000 were recovered.
 - d. High frequency of polished celts and gouges in Shaheinab and the total absence of these tools in the survey area.
4. The lithic assemblage excavated at the Khartoum Hospital site was also compared to that of the survey area. The common traits of these two are as follows:
- a. Use of flake technique.
 - b. High index of scrapers.
 - c. Morphologically similar types of grinders.

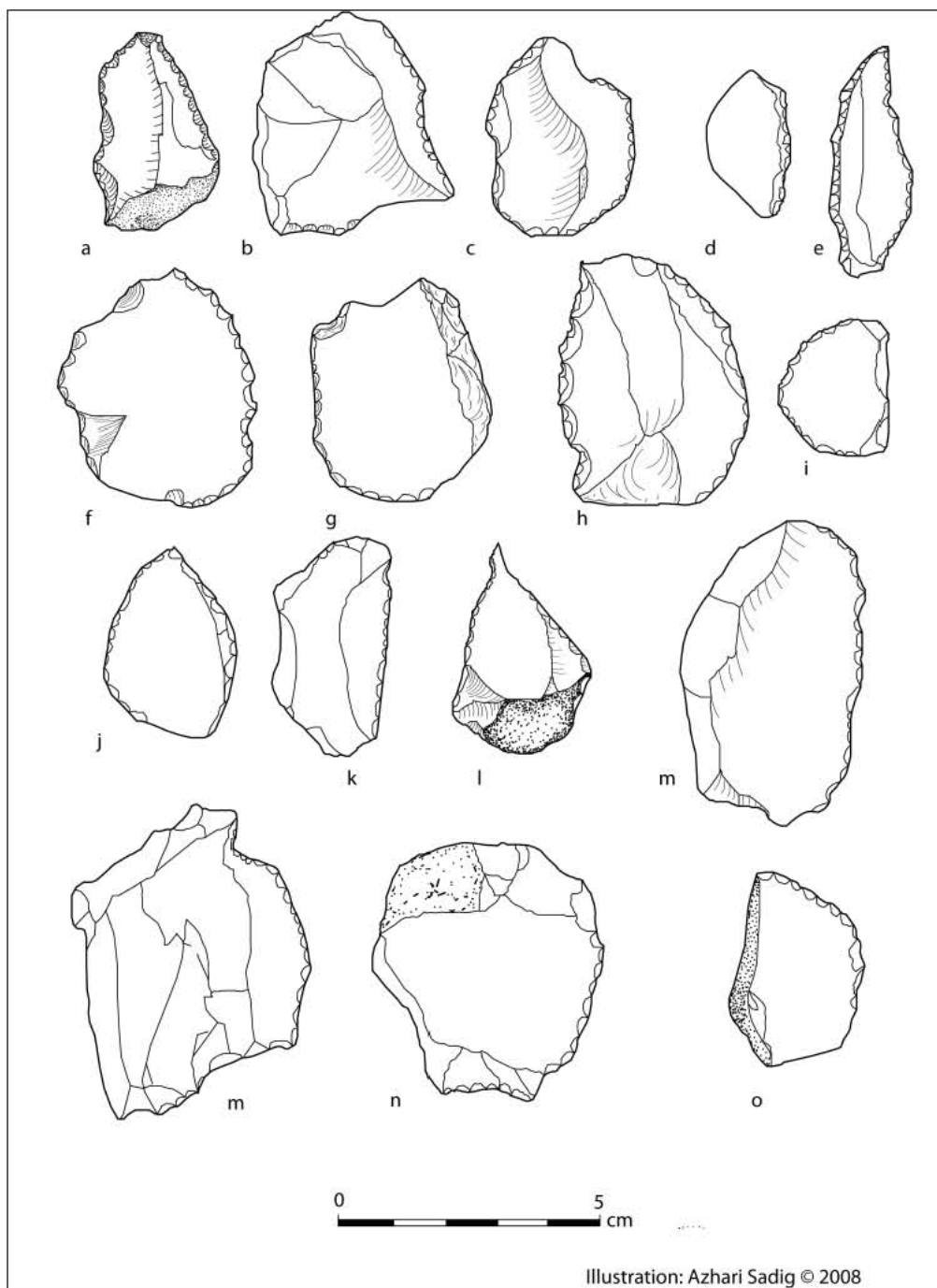
The following differences between them were found:

- a. Higher index of backed blade tools at Khartoum Hospital site
 - b. Higher index of lunates at Khartoum Hospital site
 - c. Lack of small axe at Khartoum Hospital site
5. A comparative study with other Neolithic sites reflects some differences. Three sites in Khartoum area were selected; Zakiab, Um Direiwa I and II. The following similar traits were found:
- a. The low index of concave scrapers.
 - b. Similar quantities of backed tools.
 - c. Similar types of grinders.

The following different frequencies were observed:

- a. Large quantities of groovers at all three sites (about 15.15% of tools in Zakiab, 7.45% in Um Direiwa I, and 8.2% in um Direiwa II).
 - b. The high frequency of polished celts and gouges in the three sites compared to the total absence of these tools in the survey area.
6. The comparative analysis indicates that the sites south of Khartoum relate to the same Neolithic tradition as Shaheinab. The differences in the structure of the tool group may be explained by their chronological differences and as a result of a different type of exploitation of the micro-environment.

Fig 6.11: Lithic artifacts from the White Nile sites south of Khartoum: a-d, Teria'a-A; e,f, Teria'a-B; g, Teria'a-C; h, Dirwa North; i, Wad Ela'gali; j, Kalakla; k, l, n, o, m, Shegelab



**Fig 6.12a: Polished stone axes from the White Nile sites south of Khartoum: a, b
Diwahia; c, Dirwa**

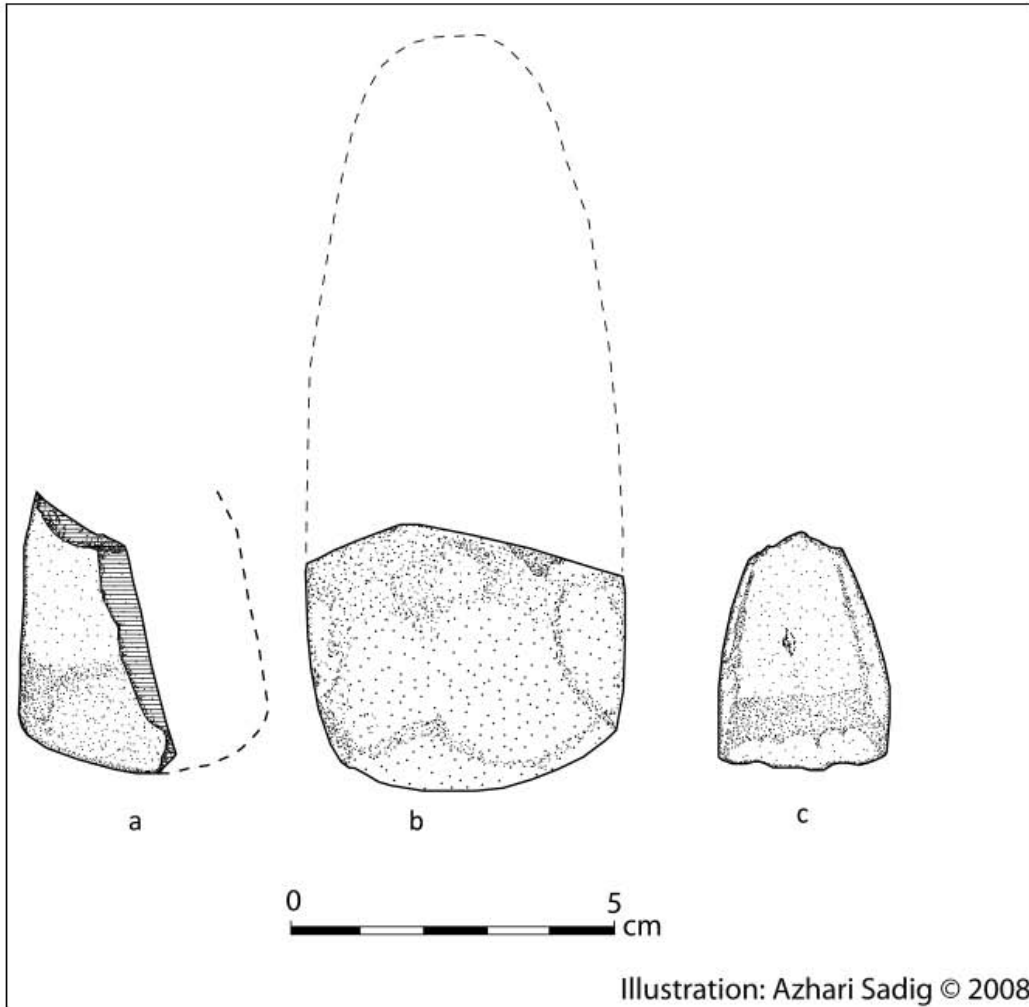
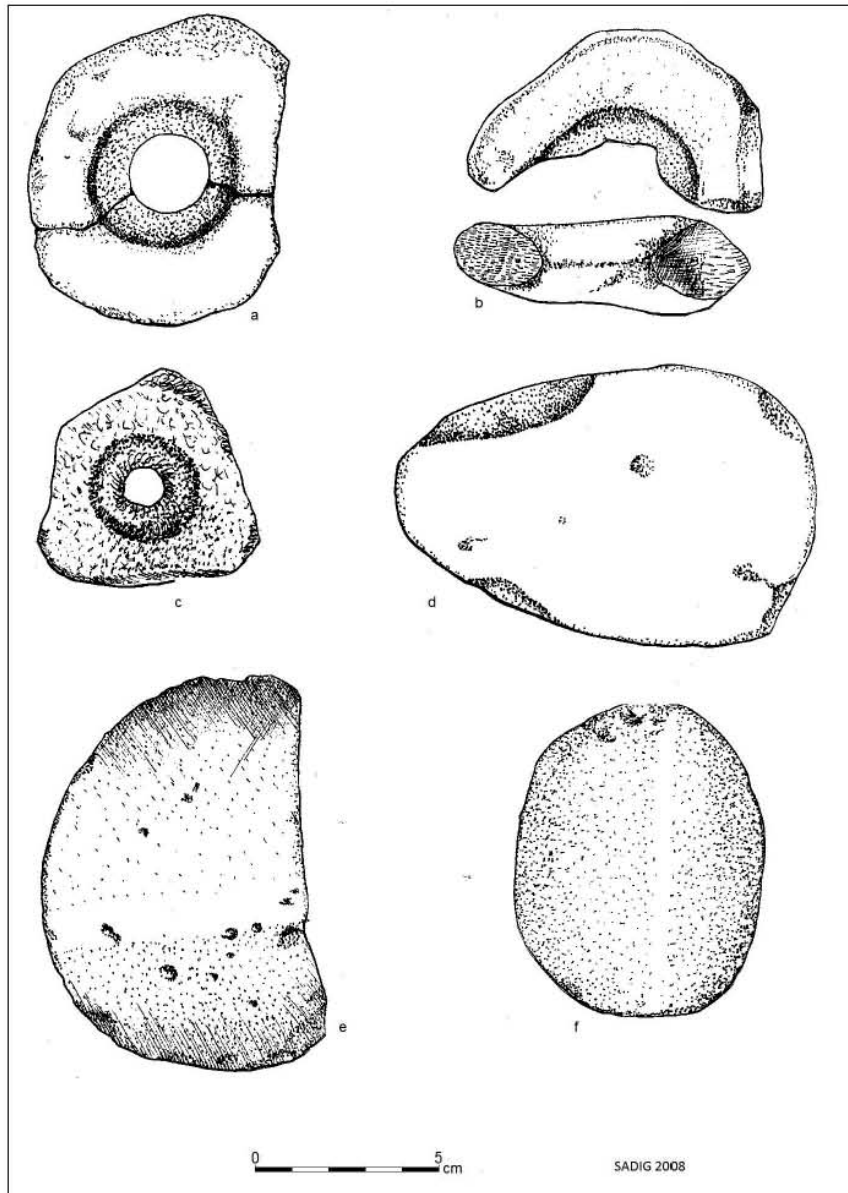


Fig 6.12b: Stone grinding tools from the White Nile sites south of Khartoum: a, Qoz Hamed; b, Sheikh Hamed; c, d, f Dirwa; e, Teria'a-C

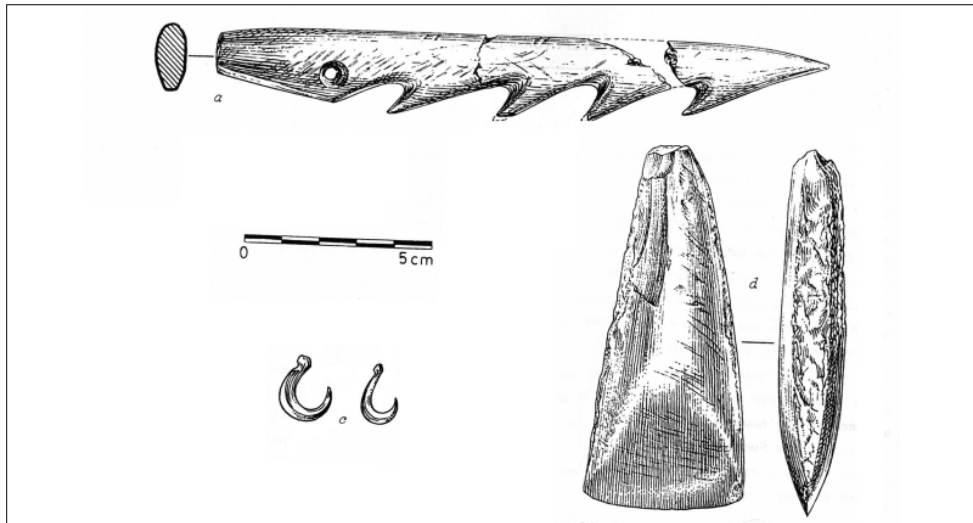


Non-Lithic Artifacts

Shaheinab

The most common non-lithic artifacts at Shaheinab are bone harpoons. They exhibit semicircular butts and one to three barbs with perforated butts. Bone celts were also found at Shaheinab; these are wholly polished. A few bone awls or borers and fishhooks made of *Aspatharia* shell were found (Arkell, 1953: 56-60) (Figure 6.13).

Fig 6.13: Bone artifacts from Shaheinab (source: Arkell, 1975.)



Kadero I

Bone objects were rare at Kadero I. Krzyżaniak reports the presence of Red Sea shells used as beads in the graves of Kadero I (1984: 314) (Plates 6.6a and 6.6b).

Plate 6. 6a: Diadem made of strings of marine shells decorating the head of the deceased in the grave no. 60 at Kadero I (source: Krzyżaniak 1978.)

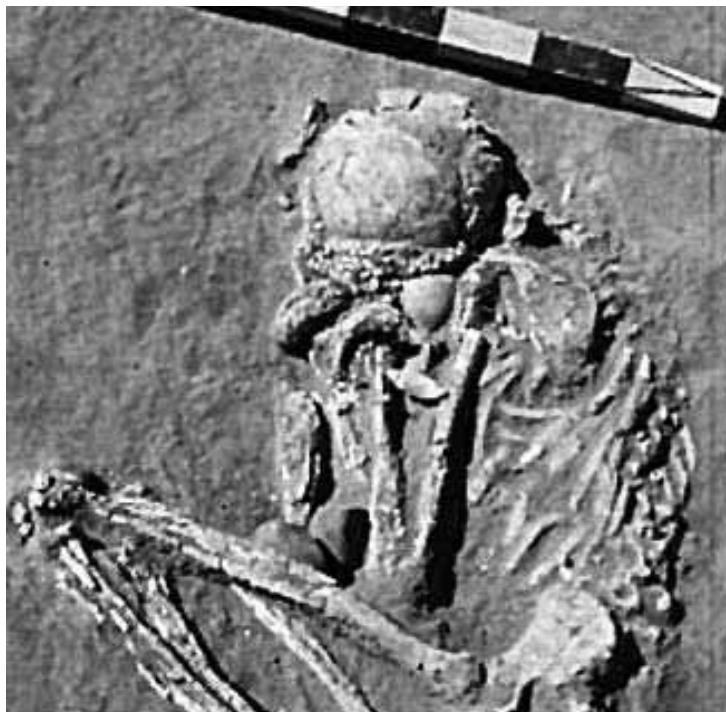


Plate 6.6b: Kadero Neolithic cemetery. Bone heads of harpoons and spears
(source: Krzyżaniak 1978.)



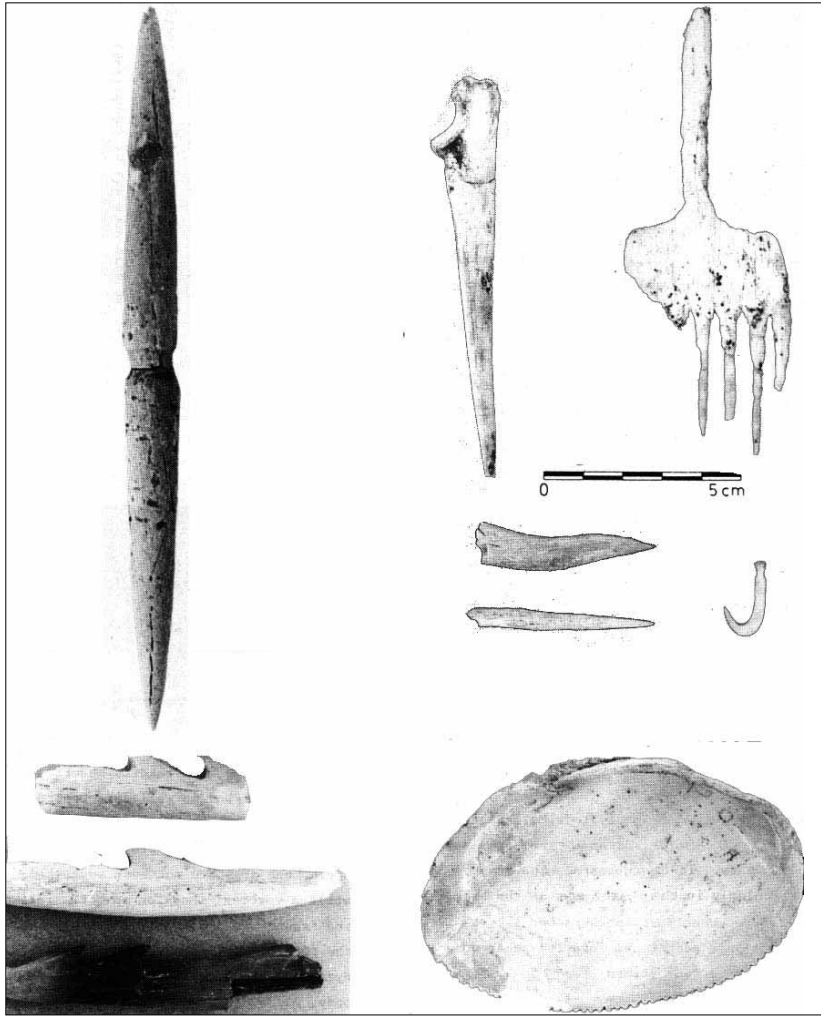
Geili

Bone objects were extremely rare at Geili. Not only were the celts, so characteristic of Shaheinab, completely absent, but bone harpoon were also rare and fishhooks were never found. The rest of the bone implements found at Geili consist of a few awls, and some beads made either of bone or ostrich eggshell.

el Kadada

Objects similar to that of Shaheinab were found at el Kadada. These consist of bone harpoons and shellfish hooks. Other artifacts include bone and eggshell beads, lip and nose-plugs, and ivory rings (Plate 6.7).

Plate 6.7: Bone and shell implements from el Kadada (source: Geus. 1984a.)



Es-Sour

Non-lithic artifacts were rare at es-Sour. During the first season the team recorded only two beads made of eggshell, a carnelian bead, one lip-plug and one ivory artifact. The ivory tool could have been used as an awl/perforator but it could also have been a personal adornment. Other artifacts were recorded during the second season. These include 19 bone and carnelian beads, one lip-plug and a single shell object (Plates 6.8a, 6.8b and 6.8c). The last was used as a comb for decorating pottery. Other typical Neolithic bone artifacts such as harpoons and gouges were not found. The lack of bone tools is a feature of most other Neolithic sites in Central Sudan, although recent finds in more arid areas further north suggest that this may be due to poorer preservation.

Plate 6.8a: Ivory awl and lip-plugs made of bone from es-Sour. The lip-plugs were inserted into the lips to alter their shape and have been used in Sudan as decoration since Neolithic times, and are still used by some African societies

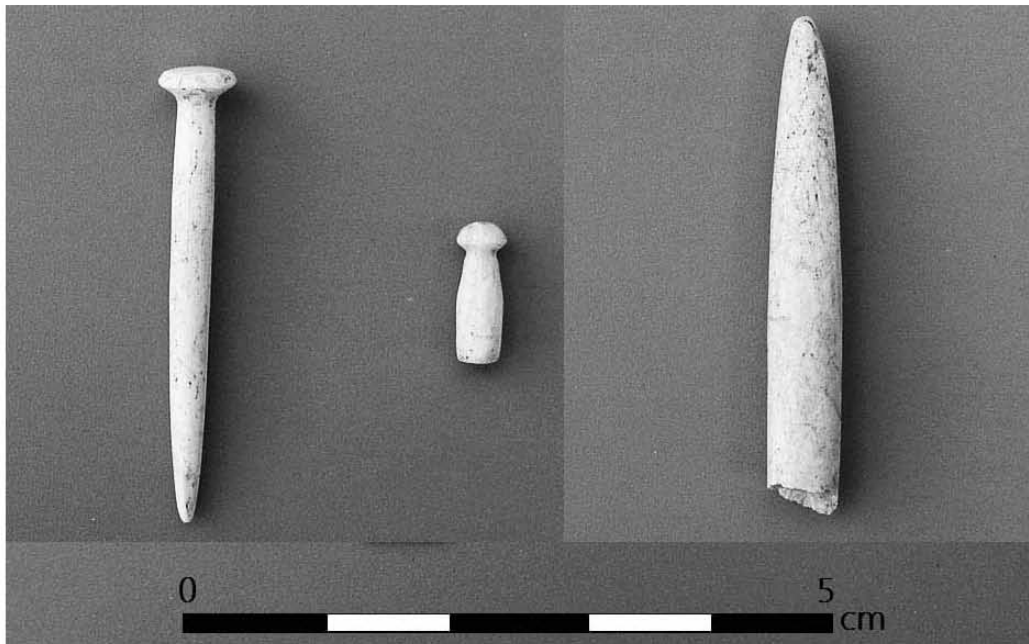


Plate 6.8b: Shell tools from es-Sour. Probably used for pottery decoration

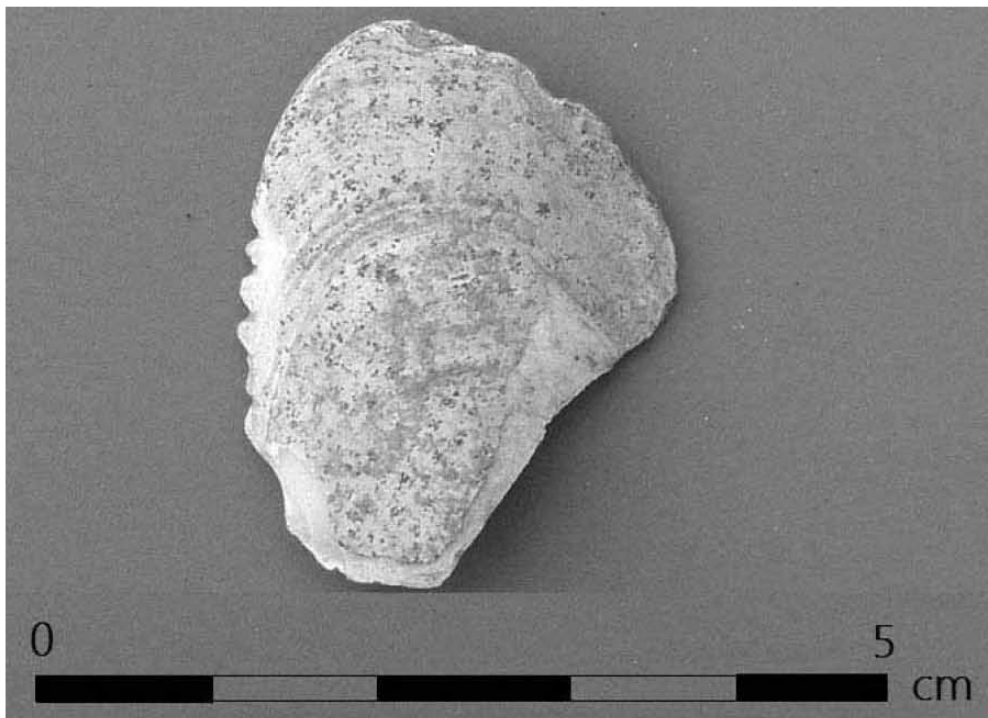
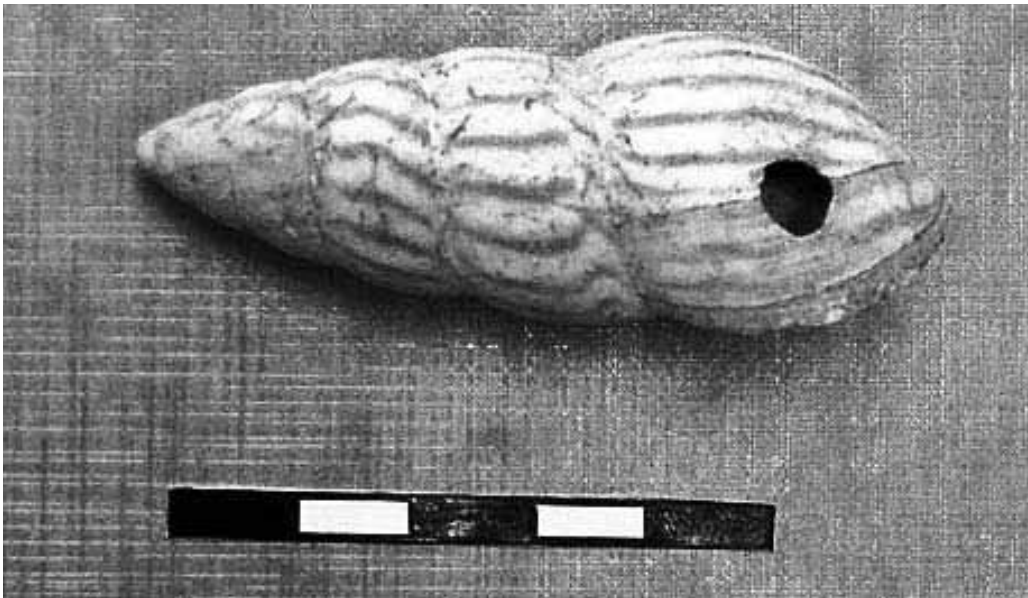


Plate 6.8c: Personal adornment made from a common form of the land snail *Limicolaria cailliaudi*



From the above accounts, the following summary can be offered:

- a. Fish hooks of shell are good evidence of fishing, are the bone harpoons that are clearly distinguished from those of the earlier Early Khartoum type by a hole pierced near the base for attaching a line.
- b. In general, there are no complete reports of the bone and shell industry of the Neolithic sites in Central Sudan, except for fish hooks found at Nofalab (Magid. 1981) and Shaqadud (Masucca. 1991)

Pottery

Shaheinab

The pottery of Shaheinab is shaped and built by a coiling technique and finished by the anvil and paddle technique. Arkell (1953) took burnishing as one of the distinguishing features of Shaheinab pottery. Mohammed-Ali (1982: 79) suggests that the Shaheinab pottery was highly smoothed but not polished. The temper of the Shaheinab pottery is partly quartz; but organic materials, mainly plants, were also used. The motifs were varied and included incised straight lines, triangular impressed ware, dotted straight lines, many types of zigzags, and linear impressions, among others (Figures 6.14 and 6.15, Plate 6.9). The wavy line has disappeared and the dotted wavy line motif has decreased markedly. There are also considerable amounts of plain ware comprising coarse plain, fine plain and black-topped red ware.

Plate 6.9: Vessel sherds from Shaheinab site (source: Arkell 1953.)

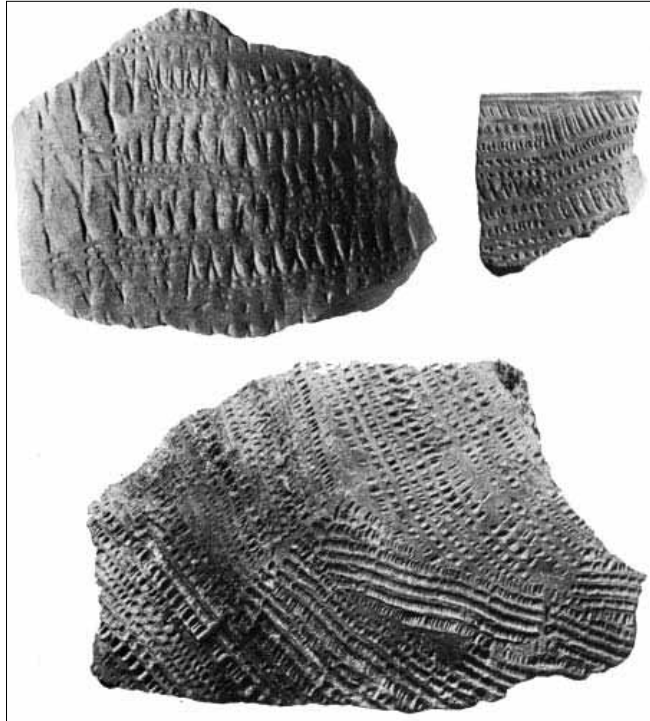


Fig 6.14: Vessel sherds from Shaheinab site (source: Arkell, 1975.)

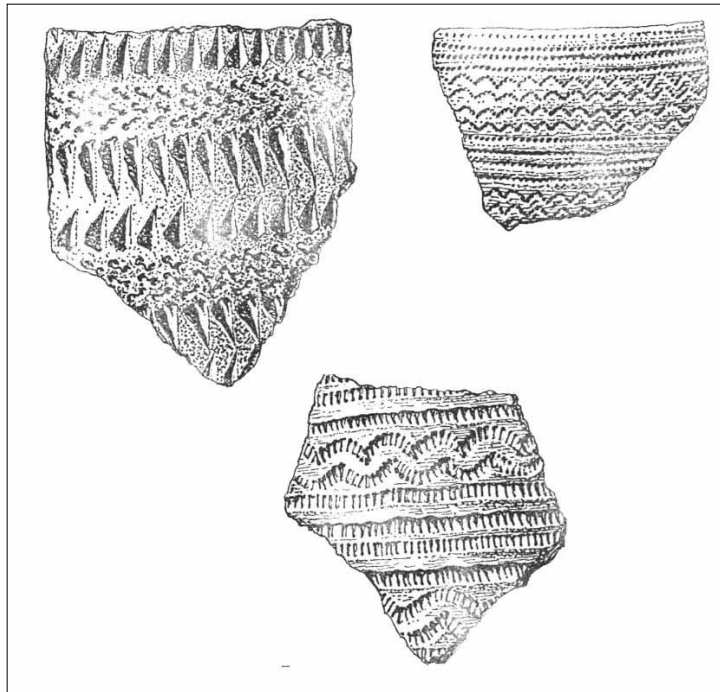
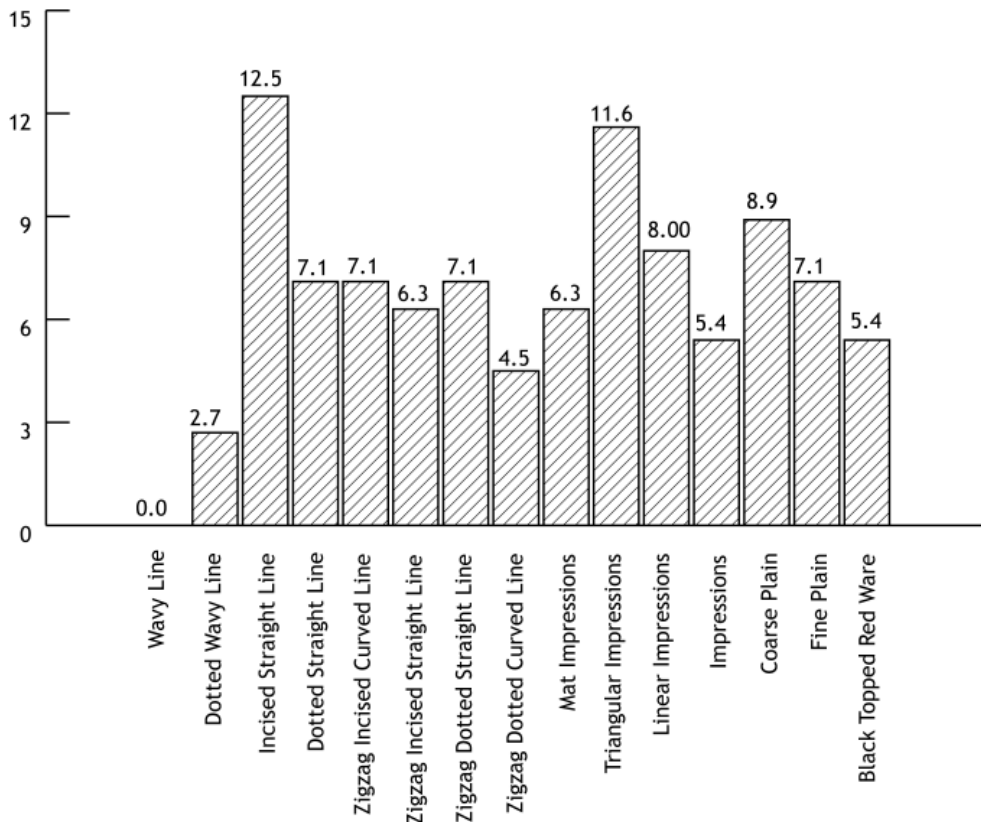


Fig 6.15: Frequencies of pottery types at Shaheinab site



The pottery consists of open-mouthed globular pots with rounded bottoms (Arkell. 1953: 69-71). Magid (1989: 118) observed that the degree of burnishing is correlated with the size of the pots, based on the measurement of rim-sherds and their thicknesses. This has shown that the pots had different functions which include cooking, containers for liquid and solid substances, and food-serving (Haaland. 1987b: 48, 59, Magid. 1989: 118).

Kadero I

The pottery of the Neolithic site at Kadero I is usually burnished and only seldom combed. Sherds with an unburnished, coarse surface are very rare. Pots with red-coated surfaces are very common at Kadero I. Most of potsherds are decorated. The decoration shows a high degree of differentiation. Rocker stamp impressions, forming a zigzag pattern or straight dotted lines, are the most common. Most characteristic patterns are various combinations of lines dots and triangles, generally arranged in horizontal concentric bands. Zigzags of dotted or continuous lines, and bands of multiple lines of closely spaced dots are also common. Incised, horizontal lines and semicircular panels occur frequently too (Figures 6.16 and 6.17, Plate 6.10). The bodies of the vessels are decorated over the entire exterior surface, from the rim to the base (Krzyżaniak. 1984).

Plate 6.10: A selection of tableware vessels from the rich Early Neolithic grave no. 60 at Kadero I (source: Krzyżaniak 1978.)

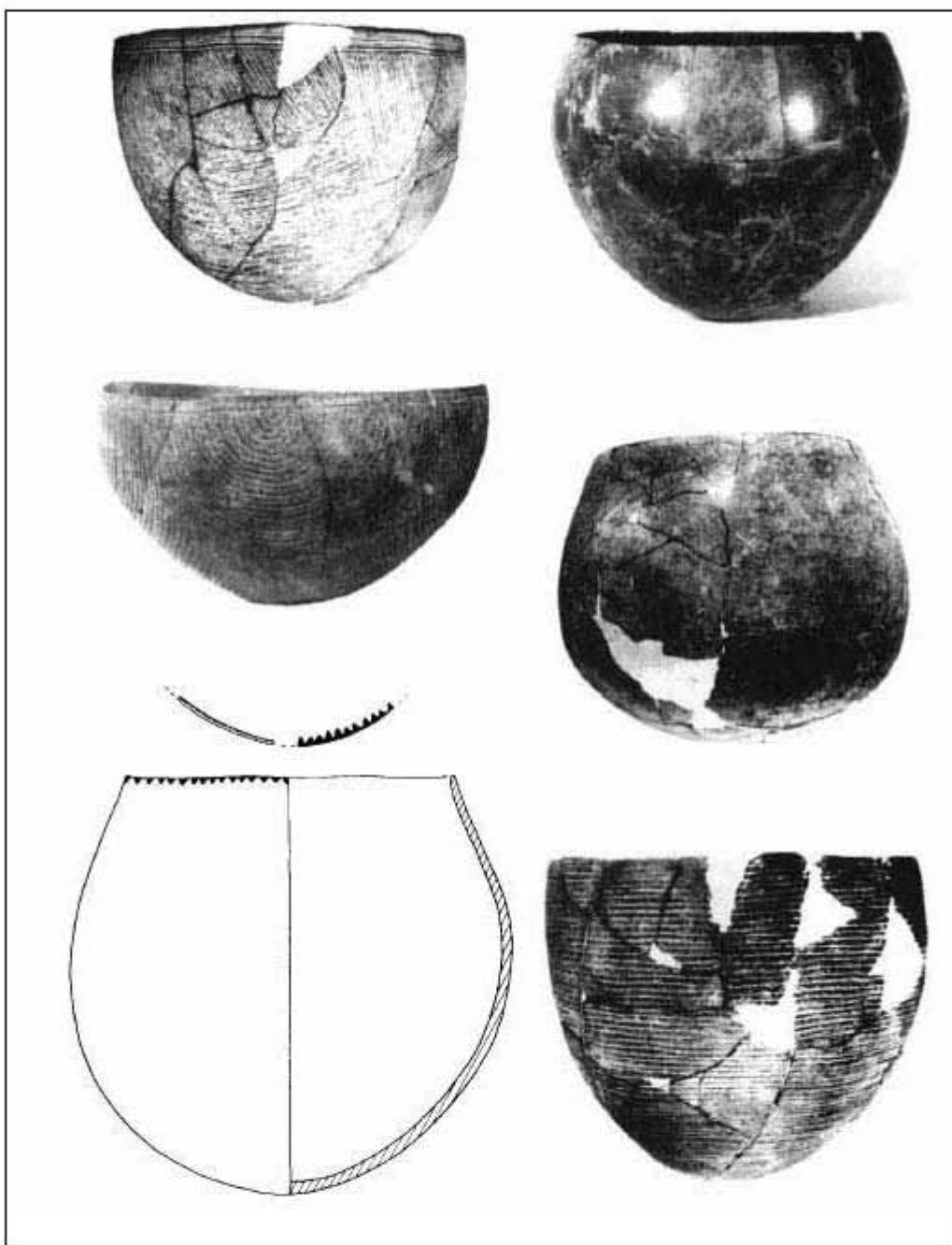


Fig 6.16: Frequencies of pottery types at Kadero I site

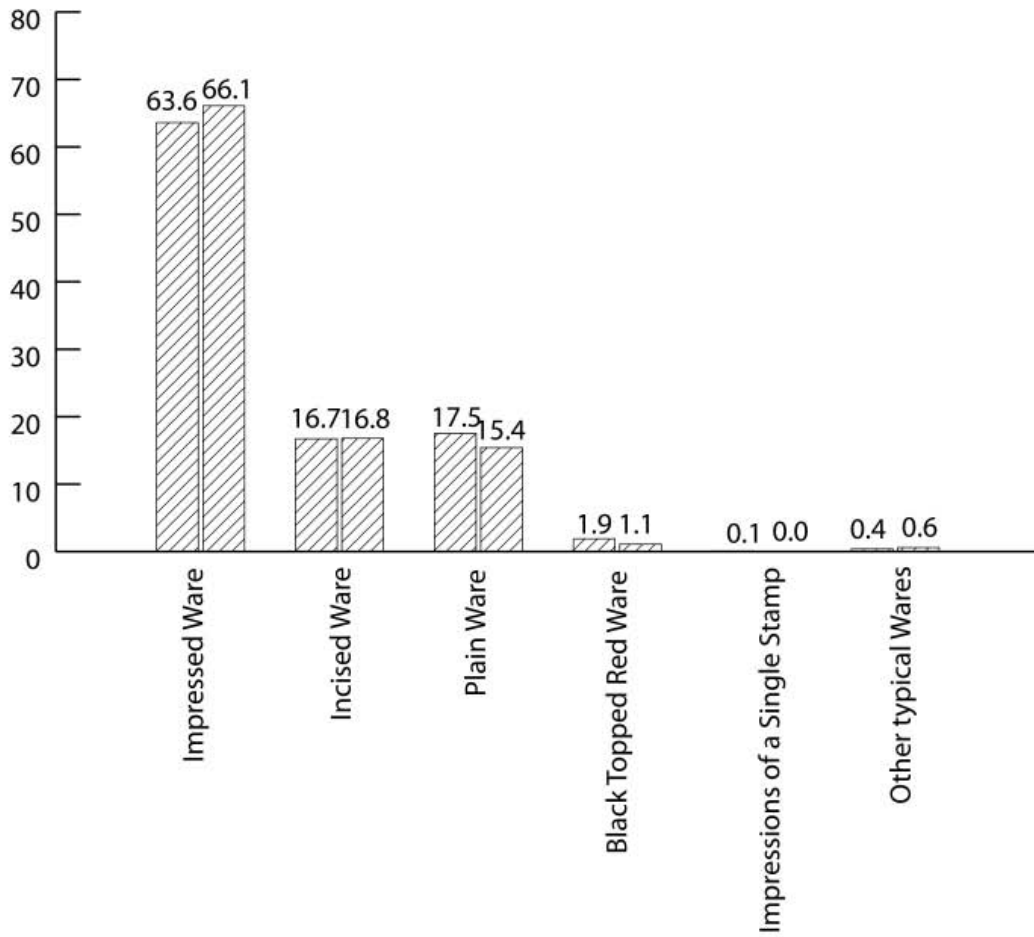
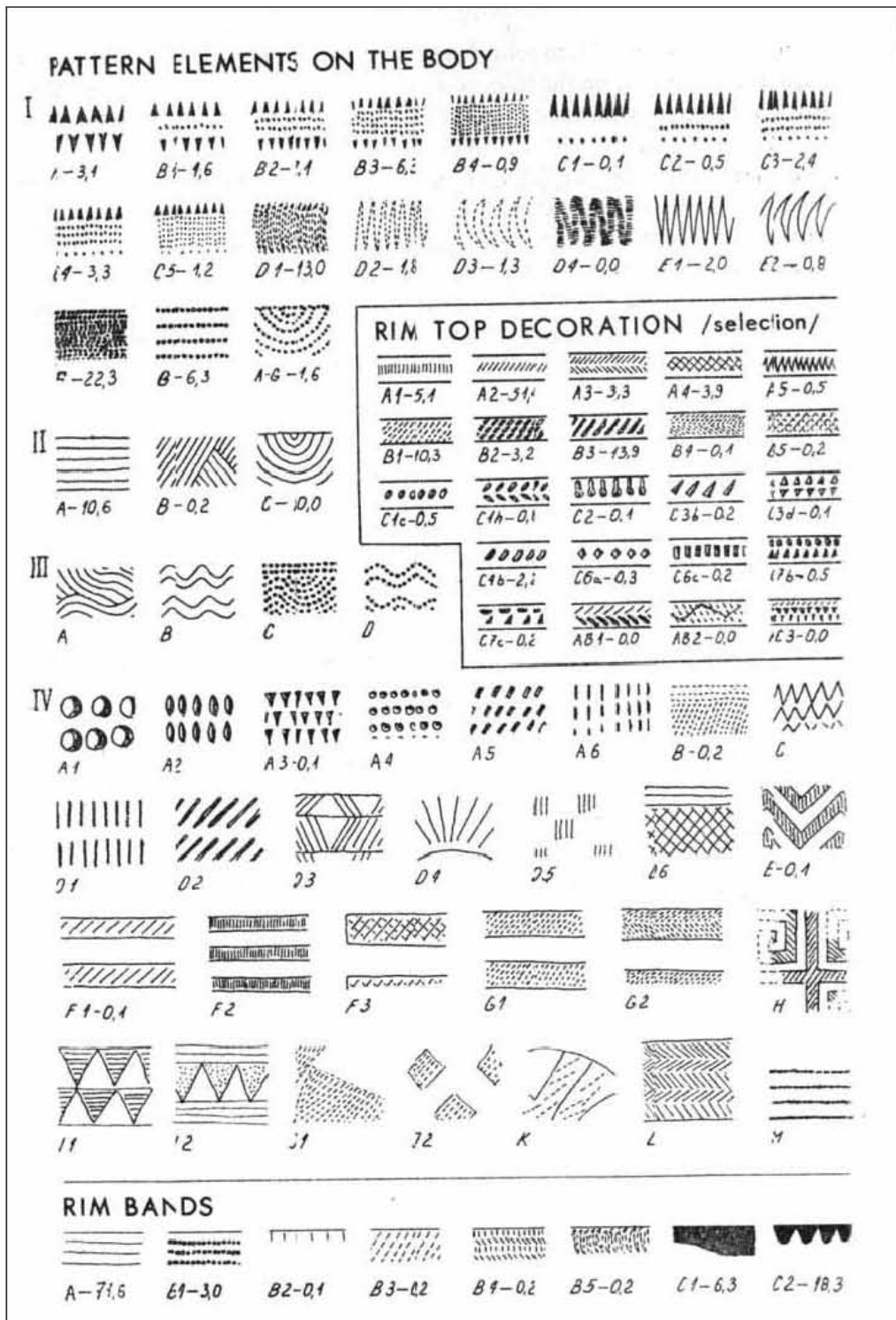


Fig 6.17: Pottery decoration elements from Kadero I (source: Chlodnicki 1984.)



Geili

Surfaces are always burnished. Decoration usually covers the upper third of the body, including the rim (Figure 6.18, Plate 6.11).

Plate 6.11: Decorated vessel sherds from Geili (source: Caneva 1988.)

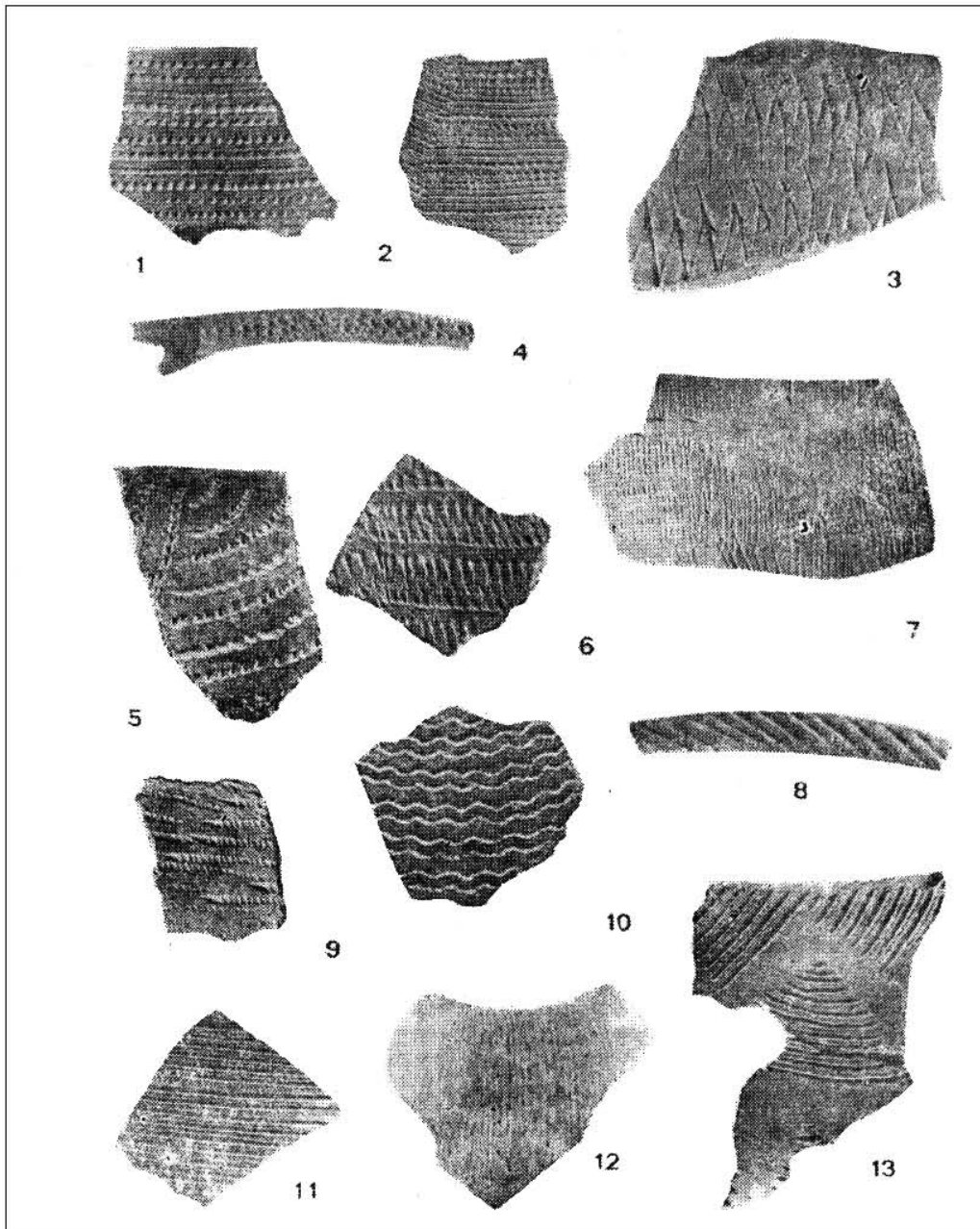
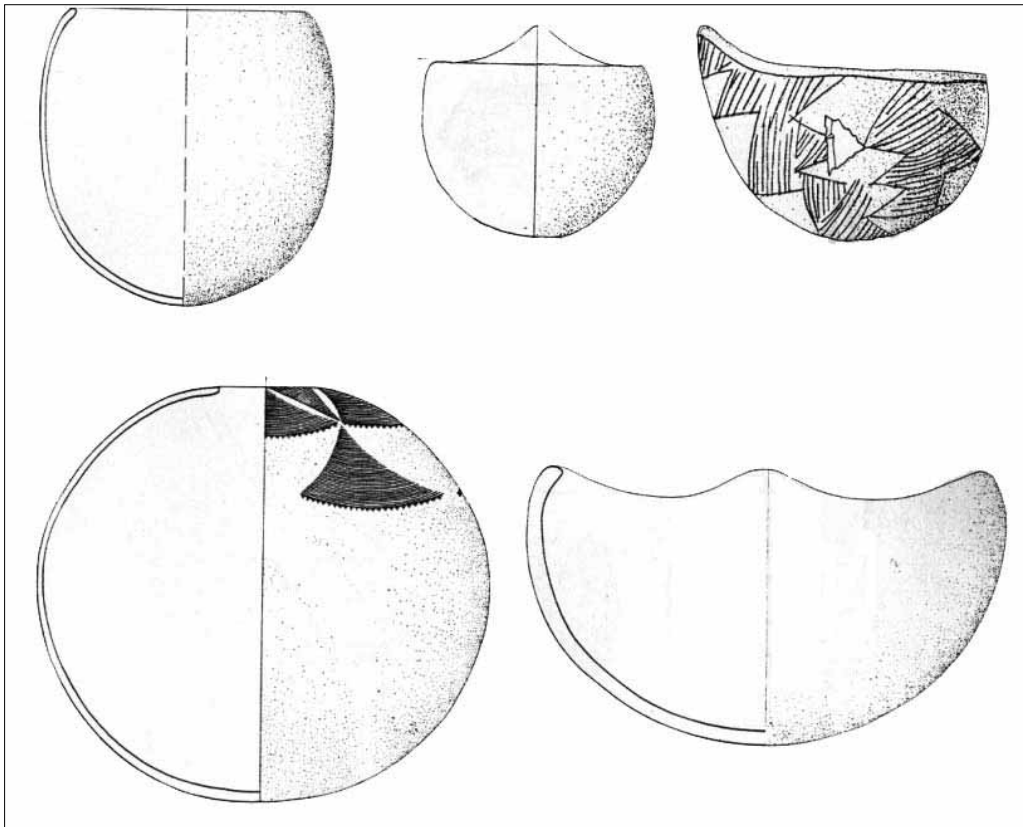


Fig 6.18: Pottery vessels from Geili (source: Caneva 1988.)



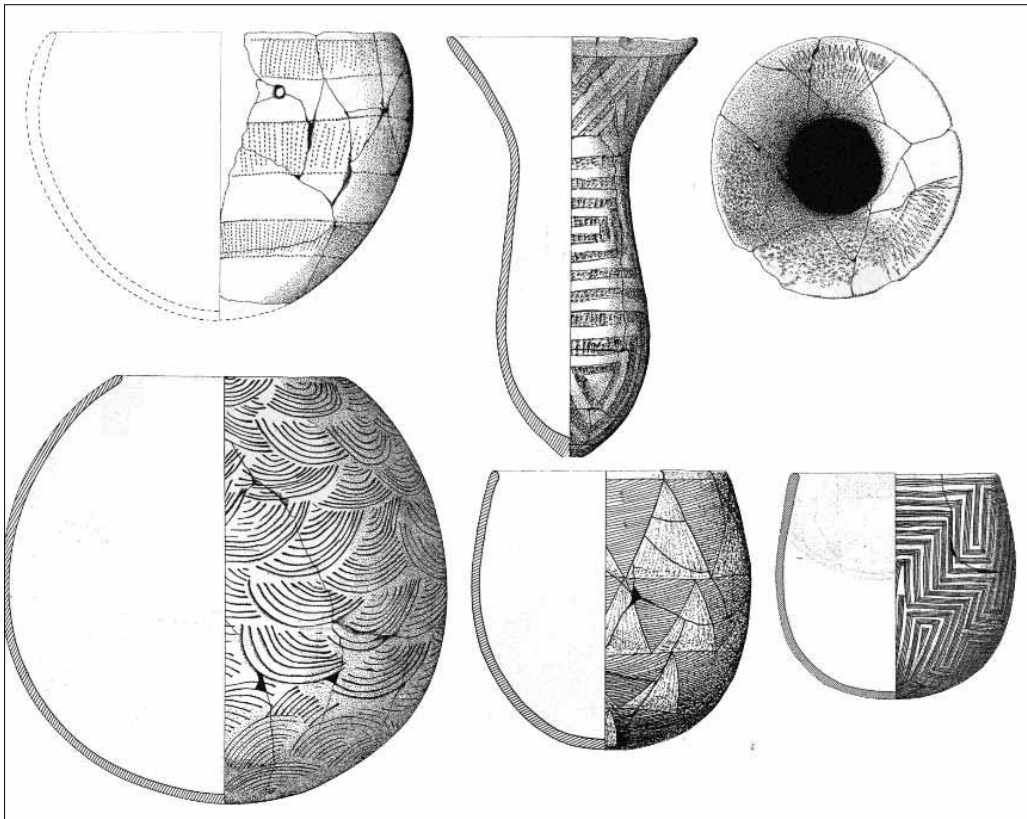
Except for red-slipped and burnished wares, the pottery of Geili site shows decoration executed with three main techniques:

- a. The rocker technique: this produces zigzag motifs coupled rows of dots or vees.
- b. The simple impression: characterised by dotted wavy line motifs.
- c. The incision: this produces coupled horizontal lines or vertically combed surfaces which was usually slipped and burnished (Caneva. 1988).

el Kadada

A large quantity of pottery sherds, mainly black ware, plain and decorated, has been found. This reflects a high independence of burnishing and various decorative patterns. The graves include pot burials, which are generally large, hemispherical and decorated. In general, the pottery is very well made with a great variety of patterns made by combing, impressing, and incising with various tools, some of shell, others of wood, and much of it well burnished (Geus. 1984a) (Figure 6.19).

Fig 6.19: Pottery vessels from el Kadada (source: Reinold 2008.)



From the above accounts, the following summary is offered;

- a. The types of pottery decoration familiar from Shaheinab have also been found, in similar proportions, at Kadero I and Geili.
- b. Shaheinab pottery is also similar regarding technology to that of Kadero I and Geili and contains the same limited number of vessel forms.
- c. The black - topped red ware, common to the Nubian A and C – groups, is also common at Kadero I and el Kadada, and it therefore indicates a relatively late date for these sites.

Es-Sour

The ceramics from es-Sour resemble those recorded by Geus (1984a, 1984b) from el Kadada. The main characteristic of the potsherds is a hard texture, good firing and polished surfaces. Sherds range in thickness between 10 to 4 mm. Some are polished both inside and outside. A coloured polished slip was evident in some examples. The decoration generally covers most of the surface, extending to near the rim or to the rim

itself. The predominant surface colour of the potsherds is grey to dark grey to brown and black.

The ceramic collection from es-Sour included all the techniques and motif types favoured in the Khartoum Neolithic of the Central Nile Valley. A variety of techniques were employed. These include impressing, incision and rocker stamping resulting in a number of motifs (Plate 6.12, Figure 6.20). The decorated sherds from the 2005, 2006 and 2007 seasons are classified into the motifs set out in Figure 6.21 (Sadig, 2005b, 2008a, 2008b).

Plate 6.12: Decorated vessel sherds from es-Sour

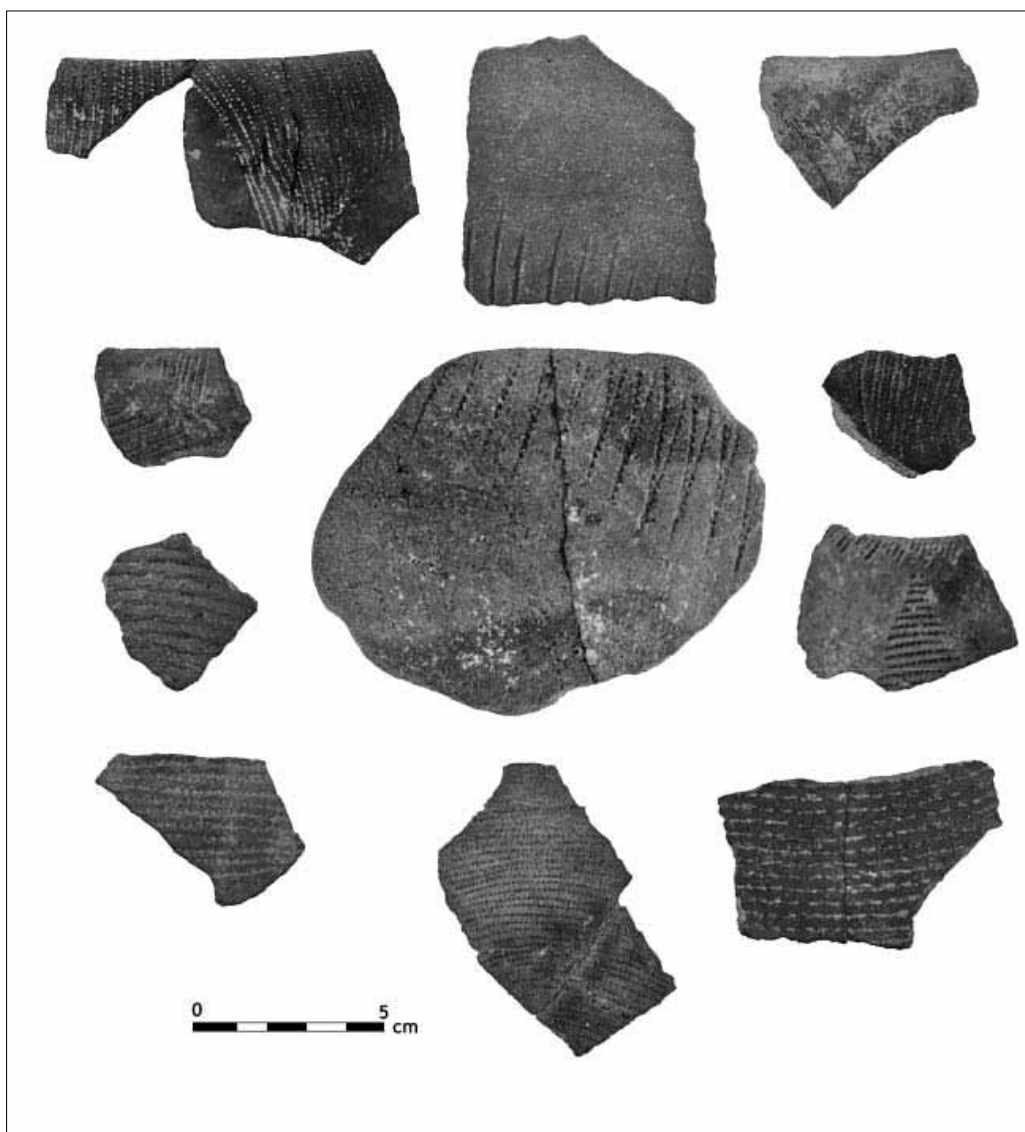
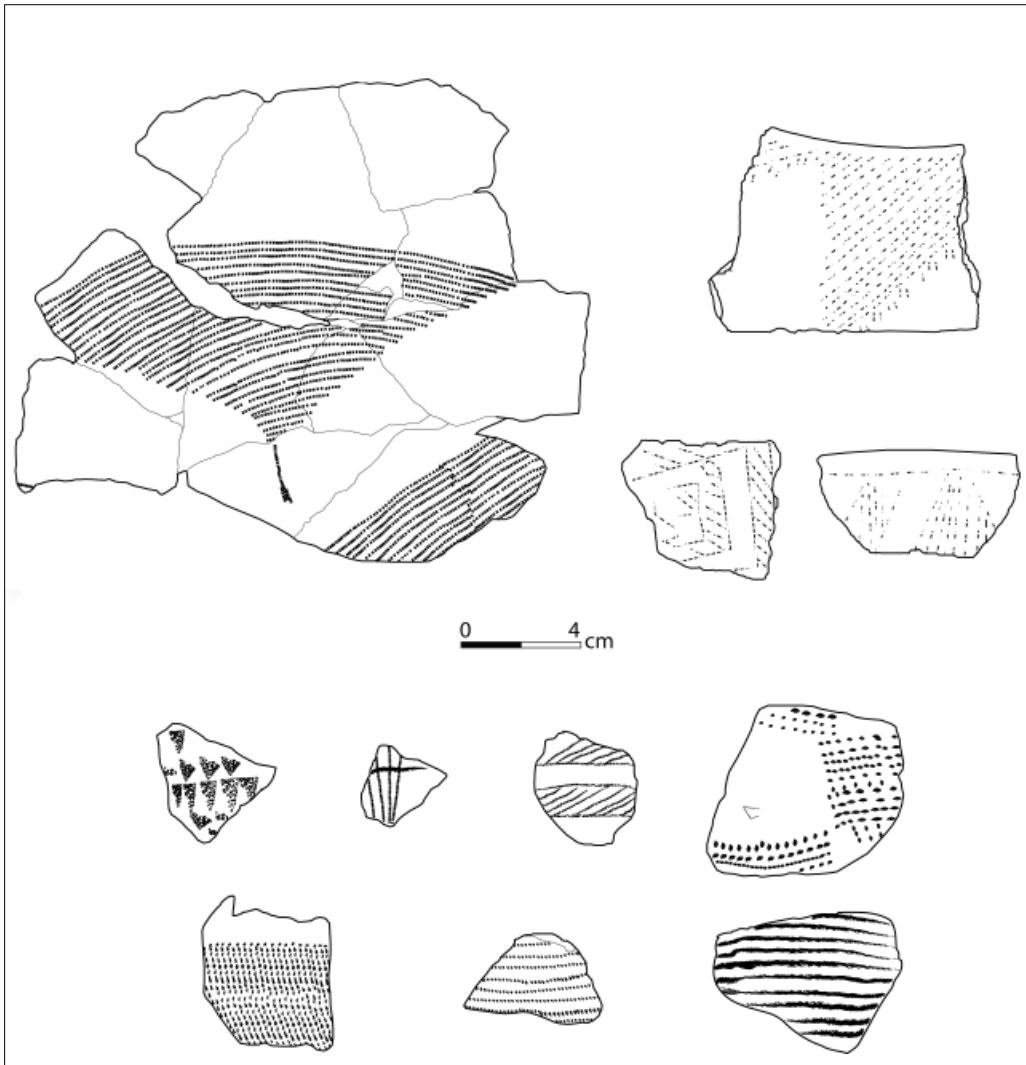
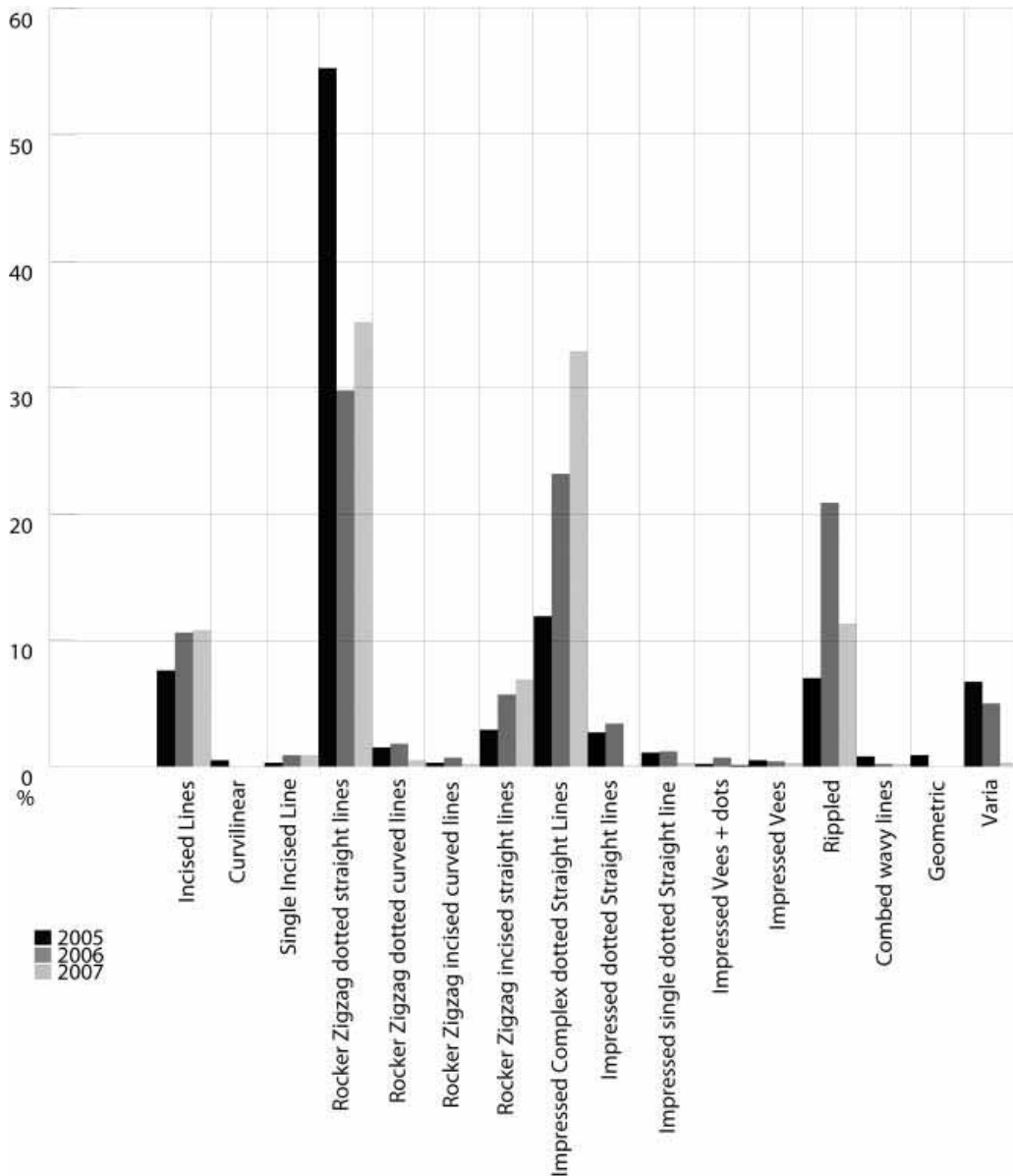


Fig 6.20: Vessel sherds from es-Sour



As can be seen in Figure 6.21, the favourite decorative technique at the Neolithic site of es-Sour is the rocker stamp in all its varieties. These account for more than 60% of the total. The impression technique accounts for more than 19.5% of the total. The incised lines account for 8.4% while the rest account for 12.1%. There is clearly some scope for comparing the relative predominance of various decorative techniques with collections from other sites, as some significant variation can already be identified. The variation is likely to reflect chronological differences, with, for example rocker stamping comprising 45% at Geili, 58-72% at Nofalab, and 50% at Shaheinab, but only 36% at Kadero I.

Fig 6.21: Percentages of ceramic motifs at es-Sour (2005, 2006 and 2007 seasons.)

One significant element of the es-Sour material is the rippled pottery (Plate 6.13). It comprises about 14.4% of the collection. This type of decoration is an indicator of the late Neolithic (ca.3800-3000 BC) of Central Sudan.

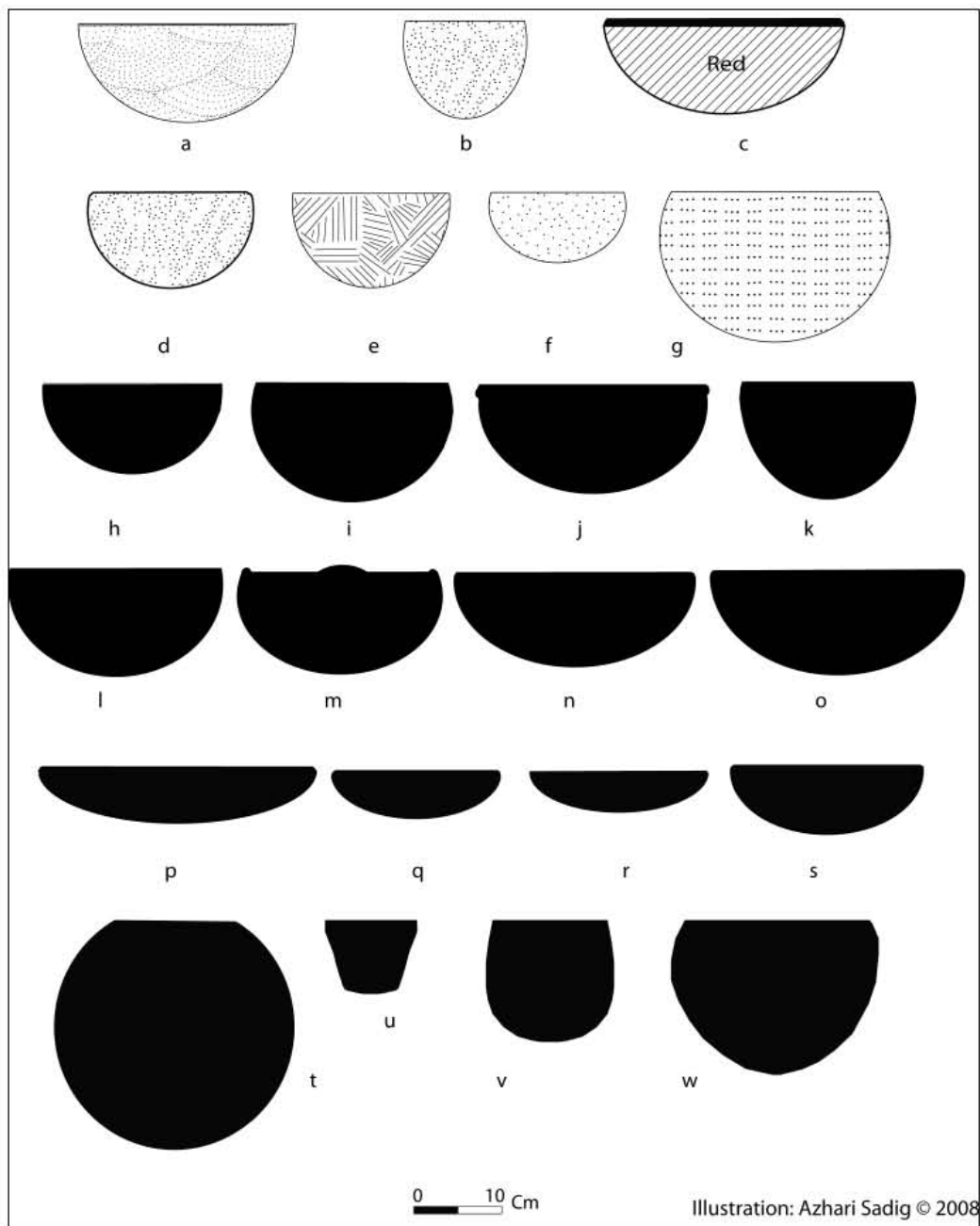
Plate 6.13: es-Sour: Rippled decoration. Most of these sherds belong to small bowls



The rippled ware was known from the Badarian (ca. 4000 BCE) in Upper Egypt, and Terminal Abkan (3200 Cal BCE) in Nubia (Bietak, 1987). Significant quantities of rippled pottery have also been reported at el Kadada, where it comprises about 60% of all the vessel forms (Reinold, 1987: 33-34).

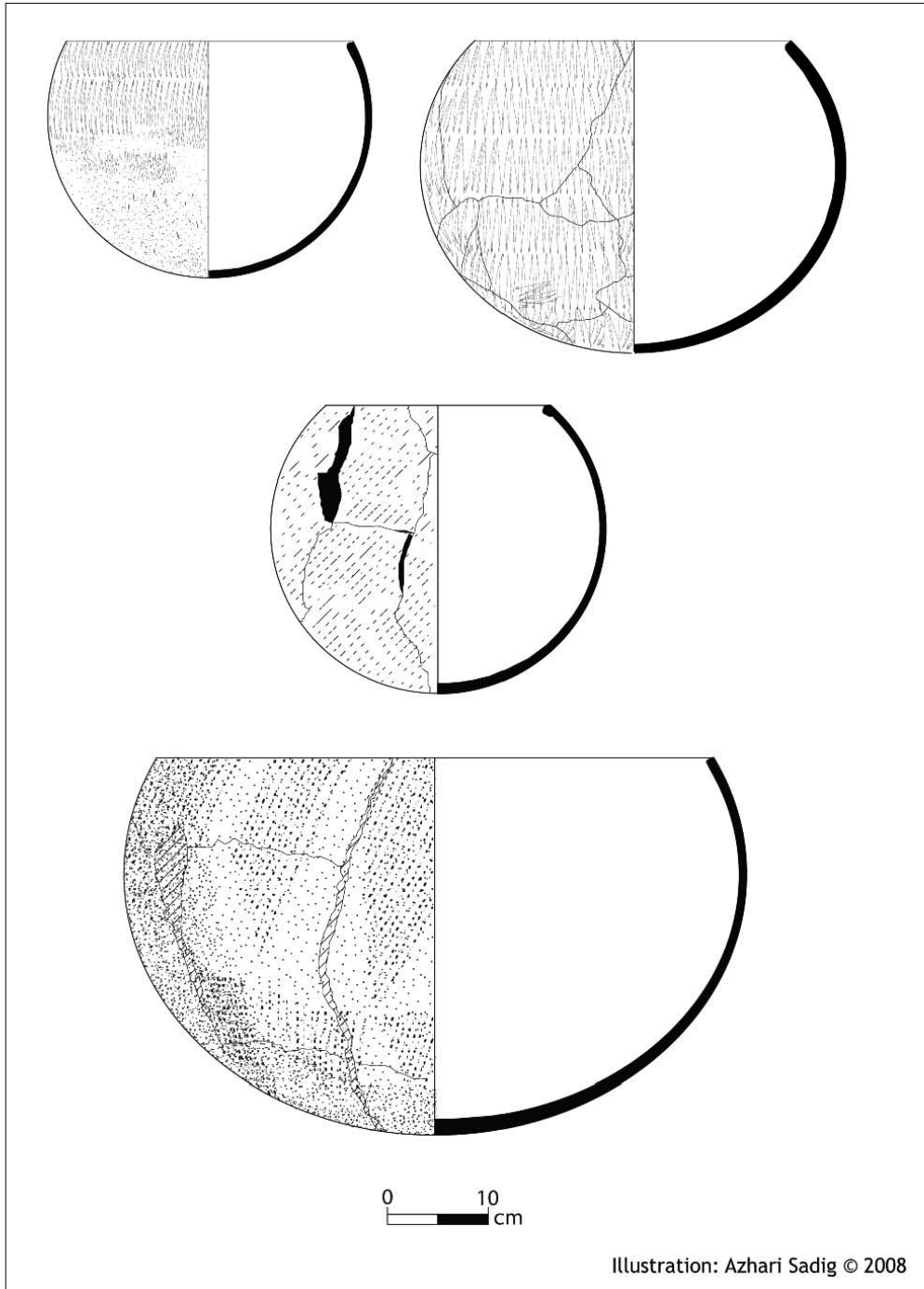
The rims are simple in shape but vessel shapes at the site include a range of mainly open-mouthed vessels. The favorite vessel forms seem to be a medium-sized open bowl and hemispherical vessels (Figure 6.22).

Fig 6.22: es-Sour: Principal vessel shapes reconstructed according to specific sherds. A - curvilinear; B, E and F - impressed dots, C - Red pottery with black-topped rim; D - incisions; H-O, and T-rocker zigzag; the rest reconstructed from different types of sherds



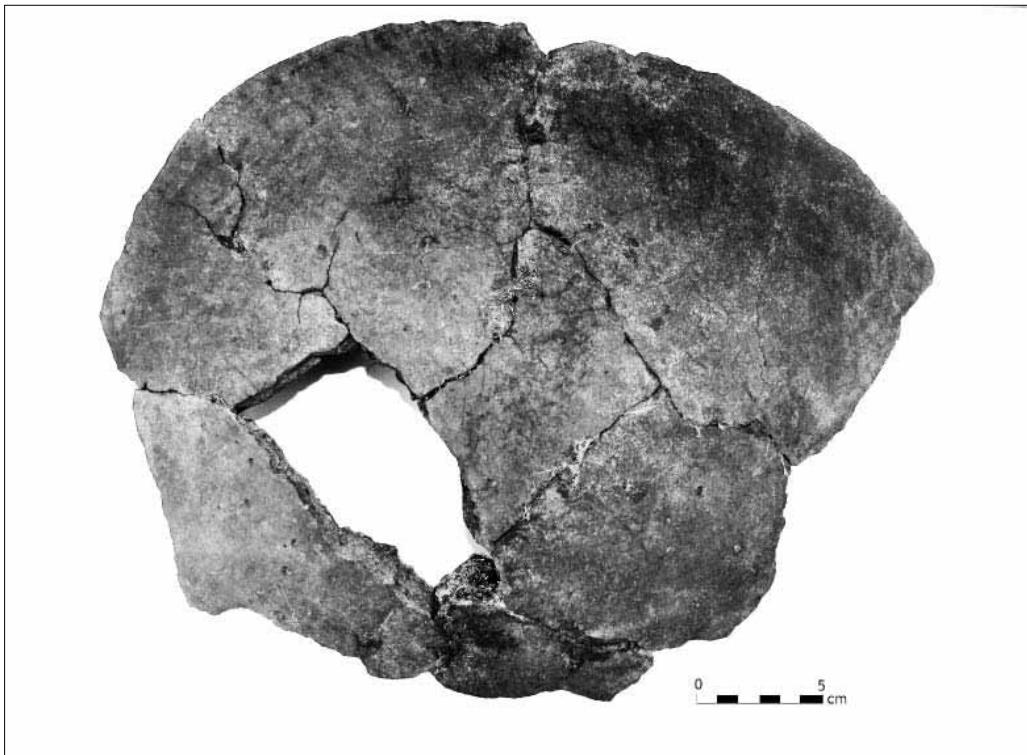
Seven complete pots were recovered. Four of them were used for pot-burials of infants, and had mouth diameters of 35, 40, 45 and 32 cm (Figure 6.23).

Fig 6.23: es-Sour: Four pottery vessels used for pot burials



The undecorated sherds are often characterised by a scraped or wiped surface, although often with burnished surfaces (Plate 6.14). These sherds relate mainly to quite coarse black-topped red ware. Such black-topped red ware has been found at Shaheinab (Arkell. 1953: 75) and Geili (Caneva. 1988:110), are reported to have been quite common at Kadero I, el Kadada and among the pottery assemblage of A-Group of Lower Nubia (Nordström. 1972: 88-89), and are consistent with the relatively late date suggested for the site at es-Sour.

Plate 6.14: Plain sherd from es-Sour



The character of the pottery assemblage from es-Sour needs to be explored further, not least because so much of the published comparative data relates to assemblages derived from cemeteries (e.g. el Kadada or el Ghaba) which cannot be seen as “typical”, and which may differ significantly from those from settlement sites. The relative abundance of pottery and good preservation of much of it provides excellent opportunities for increasing the understanding of the range of Neolithic pottery in use at settlements sites in this period.

White Nile

The archaeological material from 13 Neolithic sites is considered here. These are located between Kalakla and Jebel Awlia. Observations presented below are based on the personal examination of artifact samples from each of these sites (Sadig. 1999, 2004).

No complete vessels or pots have been found; the collection consists of 292 potsherds, including rim-sherds and body sherds. Most potsherds collected from this area are small pieces. A large number of potsherds was collected from the sites but the small size and the bad condition of some of them did not enable the researches to analyse them. Therefore, they depend on classification mainly on the 292 potsherds; about 84% of them are decorated. It is very important to mention that this percentage does not represent the quantity of potsherds at these sites, but only samples collected from the sites.

The main characteristic of the potsherds is the hard texture, good firing and the polished surfaces. Some are polished both inside and outside. The colour runs from black, through dark brown, light brown to gray or red. Decoration covers most of the surface, extending to near the rim or to the rim itself. Undecorated pieces are about 16%. Colours are used to decorate some pieces, but with a simple figure of a circle at the rim. Most of the potsherds are burnished. The inside surface is usually soft but it is not burnished. The plain potsherds exhibit a high degree of burnishing; 90% of them were burnished, and some were painted.

The rims are vertical, sloping vertical, incurved, pendent, inverted rims and others. Sometimes the rims are decorated by dotted impressed lines, incised lines, small dotted bands and impressed dots or painted circles. Although the researches could not find a complete pot, most diameters range from 160-360 mm; this means that the rim-sherds are parts of big vessels or bowls. Rims with diameters not more than 60-80 mm, and thickness of 3-15 mm were also collected; they may be parts of cups or small dishes. It should be mentioned here that all pieces have thicknesses of about 3-15 mm (the majority is between of 4-9 mm). Sometimes, the thicknesses of the pieces vary according to the size of the vessels. Probably, as far as the rim-sherds indicate, the thicker pieces are part of spherical bowls, and the thinner ones are parts of cylindrical vessels.

The common decorative technique at these sites is the impressed dots in all its versions. These account for more than 31.5% of the total. The rocker stamping accounts for more than 26.7% of the total. The incised lines account for 13% while the combed decorative pattern accounts for 3.8% (Figures 6.24, 6.25 and 6.26).

Fig 6.24: Vessel sherds from the White Nile sites south of Khartoum: Impressed decoration: a-c, Dirwa North; d-h, Dewihia; i, Selikab; j, k, Qoz Hamed; i, o, p, Dirwa; n, m, Shegelab; q, r, Teria'a-C

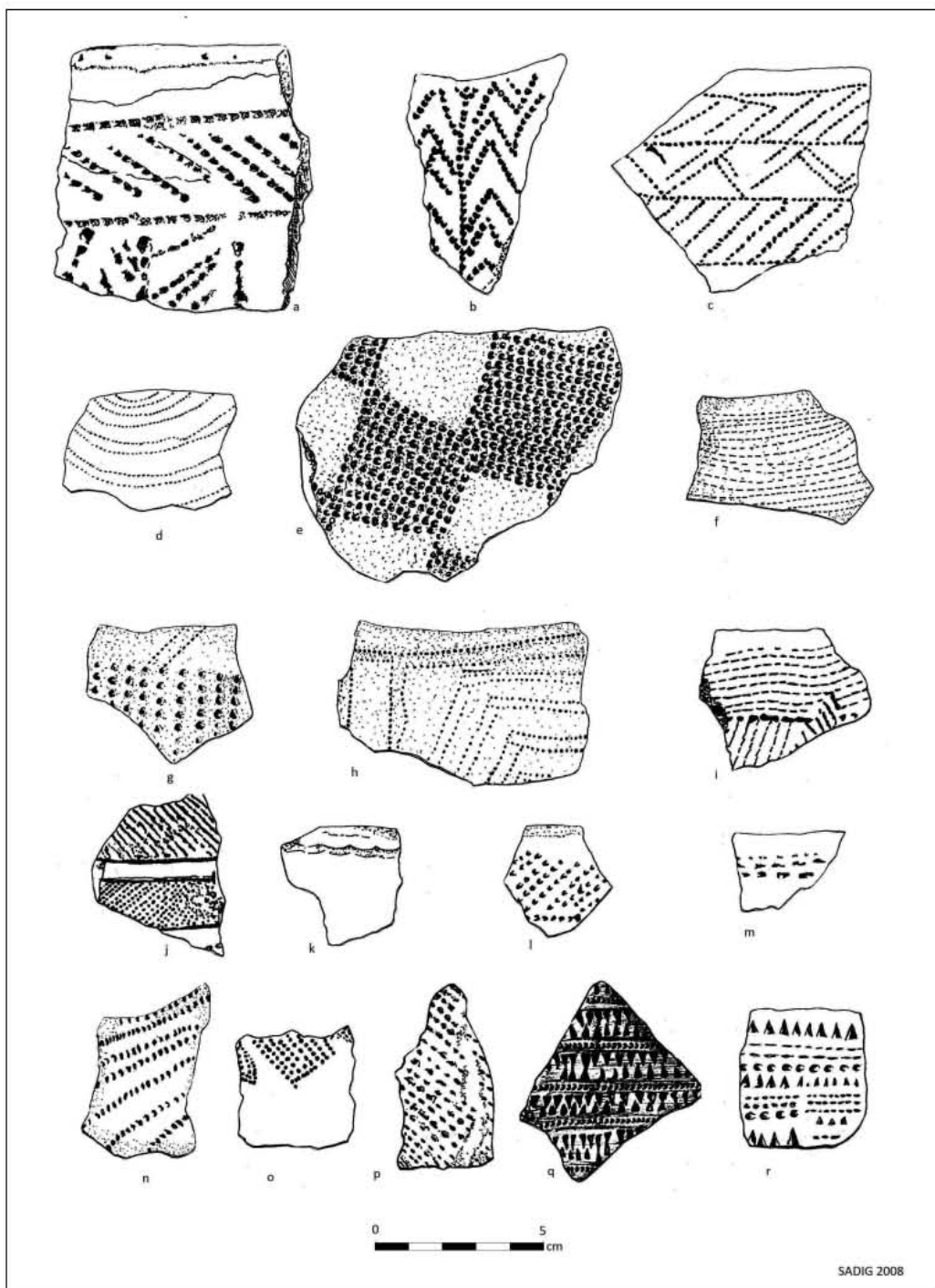


Fig 6.25: Vessel sherds from the White Nile sites south of Khartoum: Incised decoration: a-d, Teria'a-A; e, f, Teria'a-B; g, Teria'a-C; h, Dirwa North; i, Wad Ela'gali; j, Kalakla

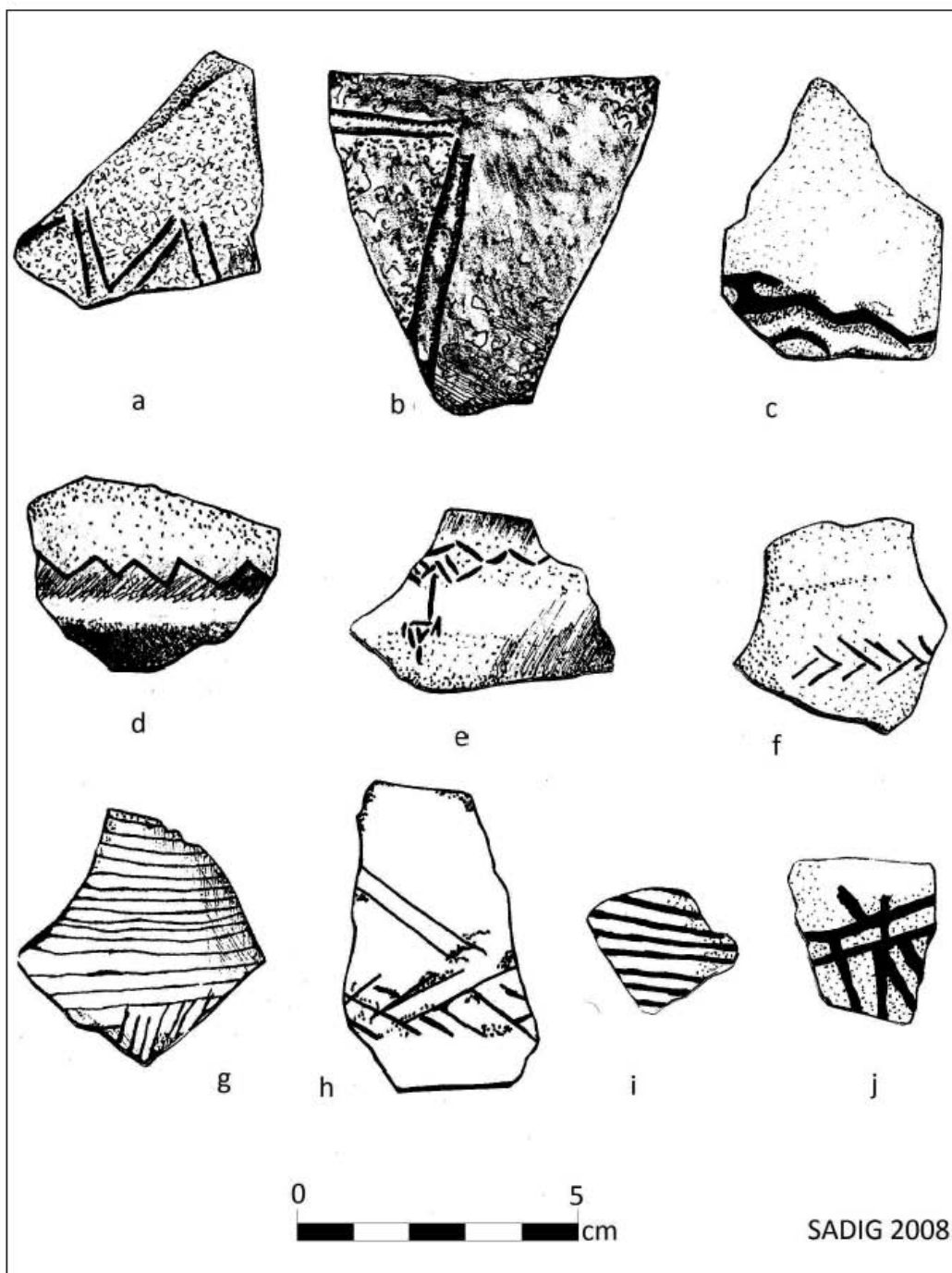
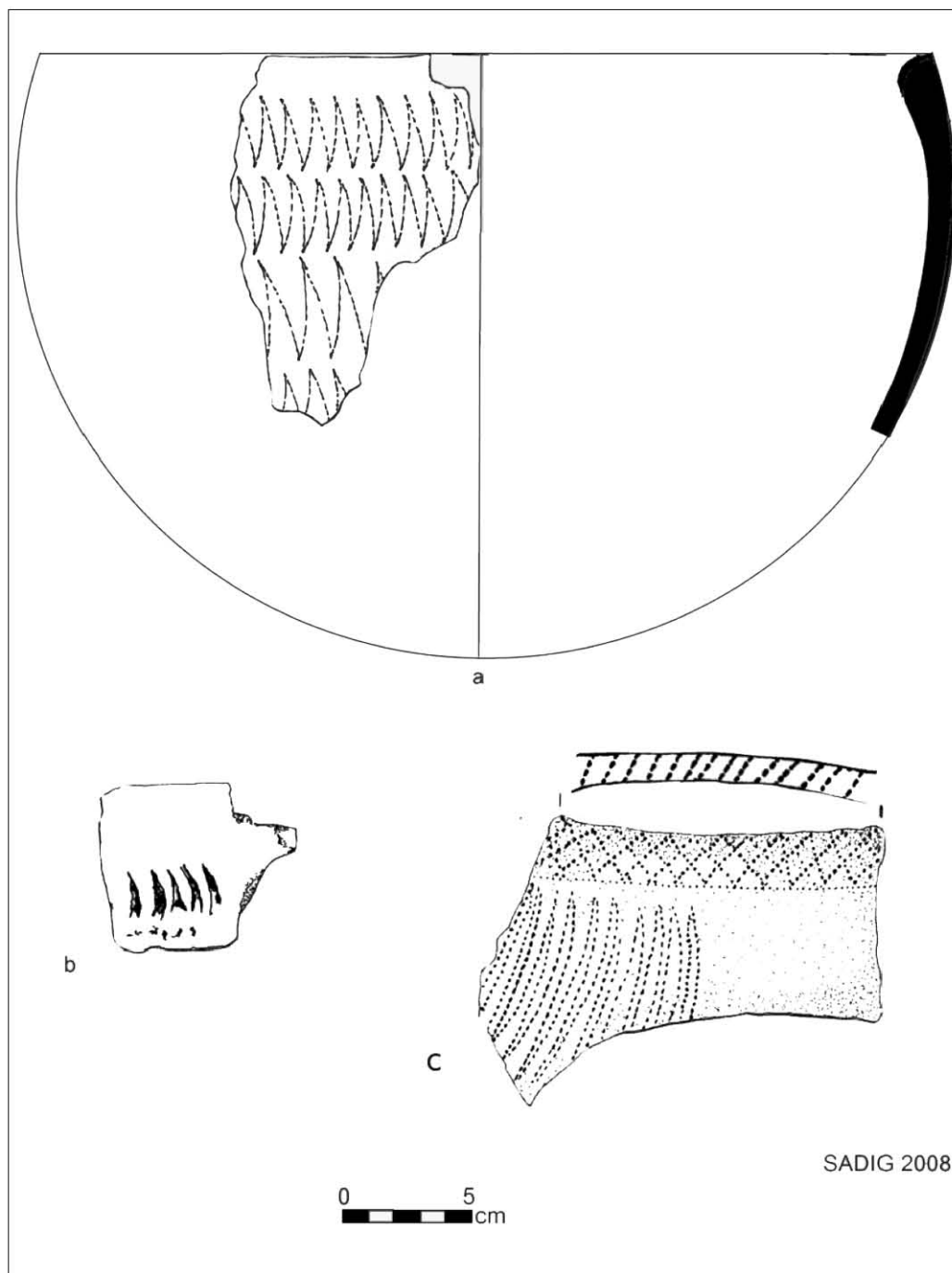


Fig 6.26: Vessel sherds from the White Nile sites south of Khartoum: Rocker zigzag decoration: a, d, Dewihia; b, Dirwa North; c, Shegelab



In the whole collection it was generally noticed that the grit temper in sections through the potsherds had a yellowish brown to red colour and this may have been a result of

the presence of ferric oxides among the mineral components from which the pot was made. In addition, a black colour was clearly noticed in parts of the sections of these potsherds and may be due to the presence of organic material in the mixture (i.e. dung, straw etc). Sometimes the sections have black and red colours and this might be due to unevenness in oxidation or variation in the degree of firing due to wind, for instance. Also a pale brown colour may result from uneven firing, or the rock materials may have been mixed with powder from crushed rocks.

Plain potsherds are subdivided into the following types:

1. Plain brown potsherds: most of the potsherds are burnished. The inside surface is usually soft but not burnished. Twelve potsherds of this pattern were collected.
2. Plain black potsherds: the potsherds have high burnishing. Thirteen potsherds were collected.
3. Plain red potsherds. This group includes 10 potsherds. They show high degree of burnishing inside and outside the potsherd.
4. Plain potsherds with painted circles: only two potsherds of this group were found. The exterior surface is brown and highly burnished.
5. Others: These include other colours like gray or pink or a mixture of two or other colours. This group includes eight potsherds.

Nubia

Lithic Artifacts

Abkan Industry

The common raw material at Abkan sites is quartz. Other types of raw materials, such as quartzite, petrified wood, etc. were utilised sparingly. Among the Abkan assemblages, the microlithic index is high, varying between 67% and 84%, with most of the assemblages having an index of over 70%. The industry can be called microlithic. The blade index is low, varying from 0.65 to 15.3%. The most characteristic tools of the industry are groovers and borers. Other tools include denticulates, points, lunates, micropoincons, notched flakes, burins, truncated and retouched flakes and blades, but they vary greatly in relative abundance from one assemblage to other. Ground stone artifacts include axes, proto-gouges and grinding implements (Nordström. 1972) (Table 6.2, Figures 6.27 and 6.28).

Table 6.2: Frequencies of lithic artifacts at Abkan sites

Sites	Total no. of tools	Scrapers		Denticulates	Notches	Lunates	Geometrics	Points	Micropoincons	Burins	Borers/Groovers
		concave	others								
2002	130	-	10.8	15.4	16.1	-	0.8	3.1	-	6.9	3.8
1029	195	2.1	24.1	8.2	5.1	1	-	-	-	1.5	35.4
604	192	3.6	14	6.8	9.9	6.2	-	0.5	0.5	0.5	39.1
629	123	1.6	11.4	12.2	7.3	4.1	-	3.2	-	1.6	19.5
2007	110	1.8	9	15.5	7.2	-	-	2.7	-	-	22.7
94	145	6.2	17.3	17.3	10	1.4	-	-	-	0.7	17.2
1001	97	5.2	10.3	8.2	6.2	-	-	1	3.1	-	44.3
303	32	6.3	31.3	18.8	3.1	-	-	9.4	-	6.3	-
429	120	?	12.5	9.2	10	-	-	-	-	-	41.7
371	98	2	23.5	8.2	10.2	6.1	1	11.2	-	2	22.5
369	410	2.2	12.7	2.9	17.3	3.2	-	3.4	3.7	-	24.9
365	176	1.7	34	6.3	12.5	-	-	0.6	1.7	2.8	22.7
414	74	?	36.4	2.7	12	2.7	-	9.5	-	1.3	23