



## EDITORIAL

The next SAfA conference will be held in Bergen, Norway from June 26-29, 2004. A web site with all relevant information is up and running. Check it out at <http://www.uib.no/safa2004/>. For those of you with a stone age bent, you might like to know that the week before (June 19 to 26<sup>th</sup>, 2004), the 5<sup>th</sup> meeting of the International Association for the Study of Human Palaeontology will be held in Barcelona, Spain. This conference, which deals with the fossil evidence for human evolution (and also includes archaeology!) was originally planned for the summer of 2003. More information is available at this web site: <http://www.iashp2004.com>.

Speaking of web sites, our President Susan McIntosh has been developing a new site for the Society of Africanist Archaeologists. It can be seen at <http://cohesion.rice.edu/centersandinst/safa/>. It will continue to provide the information that Detlef Gronenborn's site pioneered (news, current events, links to member's web sites), as well as access to previous issues of *Nyame Akuma* as PDF files. Susan is talking about having an on-line discussion group. Stay tuned. By the way, thanks to Detlef for his role in giving us a web presence.

The biennial meeting of the Southern African Association of Archaeologists (SA3) will be held from April 4 to 8, 2004 at the McGregor Museum, Kimberley, South Africa. Deadline for submitting paper or poster titles and abstracts is February 15, 2004. More information available from Jake Jacobson at [jake@museumsnc.co.za](mailto:jake@museumsnc.co.za).

There has been some discussion at meetings as well as by e-mail, about what *Nyame Akuma* is supposed to be. There have been complaints from some of our elders that it was not designed as a place to publish major articles, but for short preliminary reports and current news. My initial response is that the list serve and web site provide up to date information, so "news" is often old by the time it is included in *Nyame Akuma*. But I agree that the bulletin was never intended for long, detailed discussions of field work and/or methodological issues. If you have a long article, sent it to a journal like the *African Archaeological Review*. On the other hand, standards of publication and the numbers of submissions have both increased, so authors want to submit the best possible articles even to *Nyame Akuma*.

Even though *Nyame Akuma* is not refereed, not every article submitted makes it to print, believe it or not. Here are some bits of advice to increase the chances that your article will be published promptly. Please keep references, tables and figures to the minimum necessary to present your research. In reference style, follow the format of previous issues; this makes it simpler for editing. Make sure to send me a print version of the text and any figures - you can send an article by e-mail, but it is easier for me to scan in figures than to deal with myriads of graphics programs. Software programs are evolving a lot quicker than the editors and people who have to deal with them! But keep articles coming - we want to hear what members are up to in both the field and the laboratory.

In the papers in this issue, Natalie Swanpoel talks about fieldwork at Yalingbong and Zambulugu in the Upper West Region of Ghana, an area with a well known 19<sup>th</sup> century history as a trading center. John Barthelme, along with his students and Kenyan colleagues, reports on stone age research in the Lake Magadi basin in southern Kenya. Julius Tombo-Kodalo gives a very preliminary report on his archaeological survey of Narok South in central Kenya. Birgit Wiesmüller discusses the famous settlement mounds south of Lake Chad in Nigeria which have been the focus of much archaeological attention. Ibrahim Thiaw discusses an archaeological survey of the island of Gorée off the African coast near Dakar, Senegal. Gorée is famous or, more accurately, infamous, as one of the centers of the Atlantic slave trade. Discussions of importance of trade to local economy, and the participation of this region in the world economic system shows that archaeological research may offer additional data. Francis Geus and Yves Lecoite, part of the French Unit of the National Corporation for Antiquities and National Museums in the Sudan, discuss a salvage project they conducted at Le Multaga in northern Sudan, a region which will be flooded due to a proposed dam. Frederike Jesse reports on archaeological research in the Lower Wadi Howar, also in northern Sudan that has a long history of human settlement.

## ■ GHANA

**A report on archaeological investigations of the fortified site of Yalingbong in Upper West Region, Ghana: 2001–2002 fieldwork**

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### Introduction

I completed two field seasons of archaeological fieldwork at the sites of Yalingbong and Zambulugu in the Upper West Region, Ghana as part of my dissertation fieldwork in 2001 and 2002. Yalingbong, which means ‘the war rock’ in the local language, is historically related to a war between the people of the Sisala village of Kpan (now called Dolbizan), who lived there at that time and the Zaberma, a group of slave raiders operating in the area in the latter half of the nineteenth century (Pilaszewicz 1992). The first season, April to May 2001, was comprised of a survey of the site in order to locate and record its different components as well as to identify specific loci that warranted further investigation. During the second season, January to June, 2002, I surface collected, mapped and test excavated twelve loci within the site of Yalingbong and three within the related site of Zambulugu.

### Site Description

Yalingbong is situated approximately ten kilometers northeast of the present day village of Dolbizan (Figure 1). It is a rocky granite outcrop and is best characterized as a naturally defensible space with easily settled habitation areas. The top of the hill is crowded with very large boulders but there are open spaces between these that were usually large enough to accommodate at least two, if not more, family compounds. Each one of these habitation areas was designated as a separate locus and approximately thirty loci in all were located. Zambulugu is

located 1.5 kilometers east of Yalingbong and is situated on the plain. It is composed of three different loci. Loci at both sites were characterized by the presence of one or more compounds with extant walling, associated kitchen middens and artifact scatters. In all, fourteen loci were mapped and a 20 m<sup>2</sup> surface collection, as well as the excavation of a 1 m<sup>2</sup> test unit, was carried out at each. Artifacts recovered include local ceramics, beads, cowrie shells, local tobacco pipes, various metal artifacts, gun flints, imported ceramic and tobacco pipe, glass, spindle whorls, ceramic, stone and glass bracelets, ivory and two nyame akuma.

### Chronology

At present, three distinct periods of occupations have been identified at the sites. While the archaeology confirms the primarily 19<sup>th</sup> century occupation of Yalingbong suggested by the oral traditions, there is also evidence of an earlier occupation. Two of the loci that were tested had slag heaps and local ceramics but no trade goods. The pottery found at these loci bear some similarity to that from Kpaliworgu to the west, which has been dated to the mid-17th century onwards (Kankpeyeng 2003). It is probable that these loci predate the settlement of Yalingbong by the ancestors of the current day inhabitants of Dolbizan. The site of Zambulugu, dates to the early twentieth century after the abandonment of Yalingbong at the end of the slave wars. The archeological research at these sites informs us about warfare in 19<sup>th</sup> century northern Ghana and the role of auxiliary trade in the regions far from the trade entrepôts such as Salaga.

### Defense

Security shows itself to have been an overwhelming concern at Yalingbong. This is reflected both in the placement of settlements to take advantage of the natural defenses offered by the landscape but also by the large numbers of arrow and spearheads, relative to other metal artifact categories recovered (Figure 2) and the additional fortifications that provided cover for marksmen within the rocks. Iron-working remains at the site indicate the presence of craft specialists, who would have been able to produce or repair any necessary weapons such as arrow- or spearheads. Only three gunflints and one

Figure 1: Map of the study area.

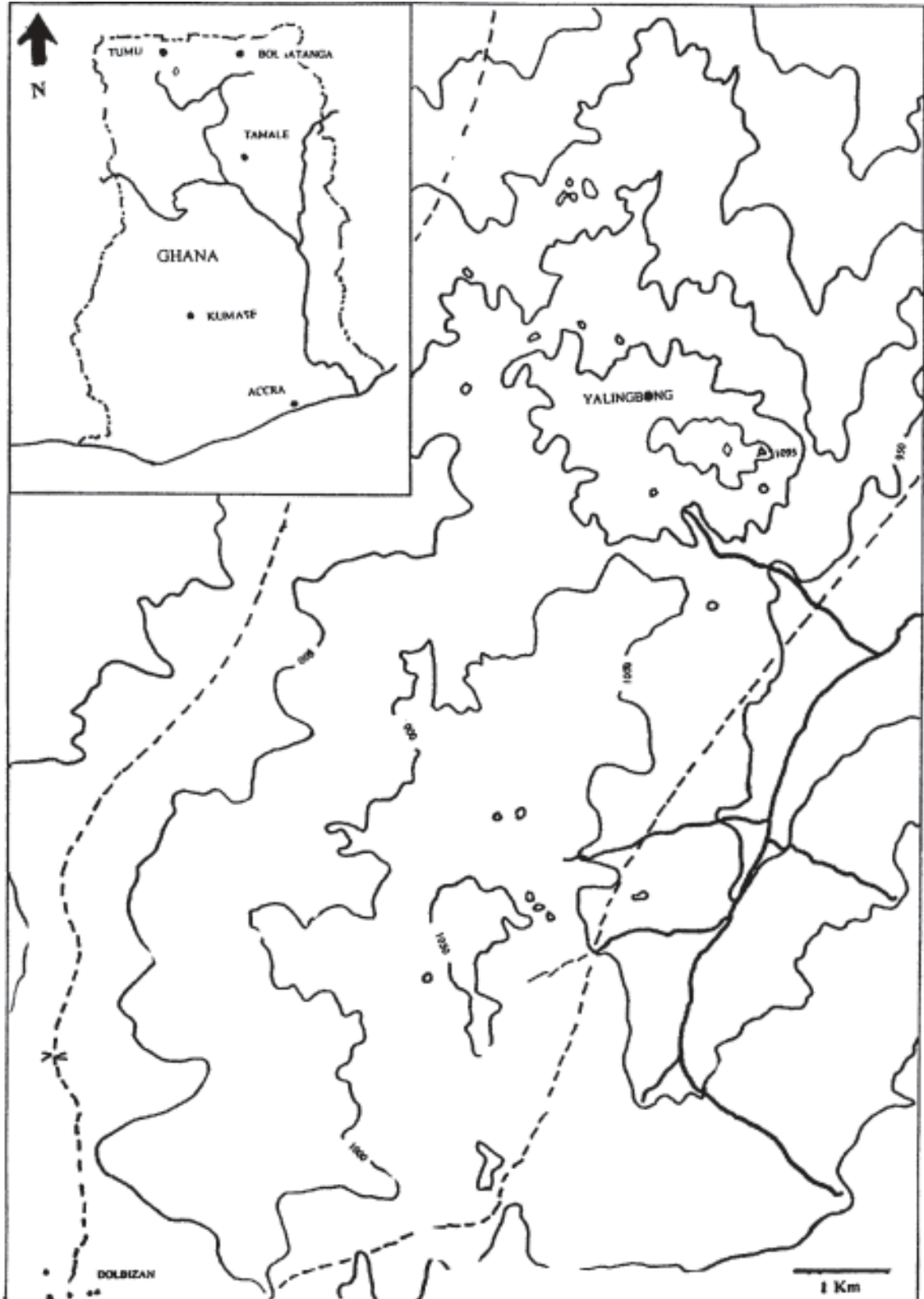
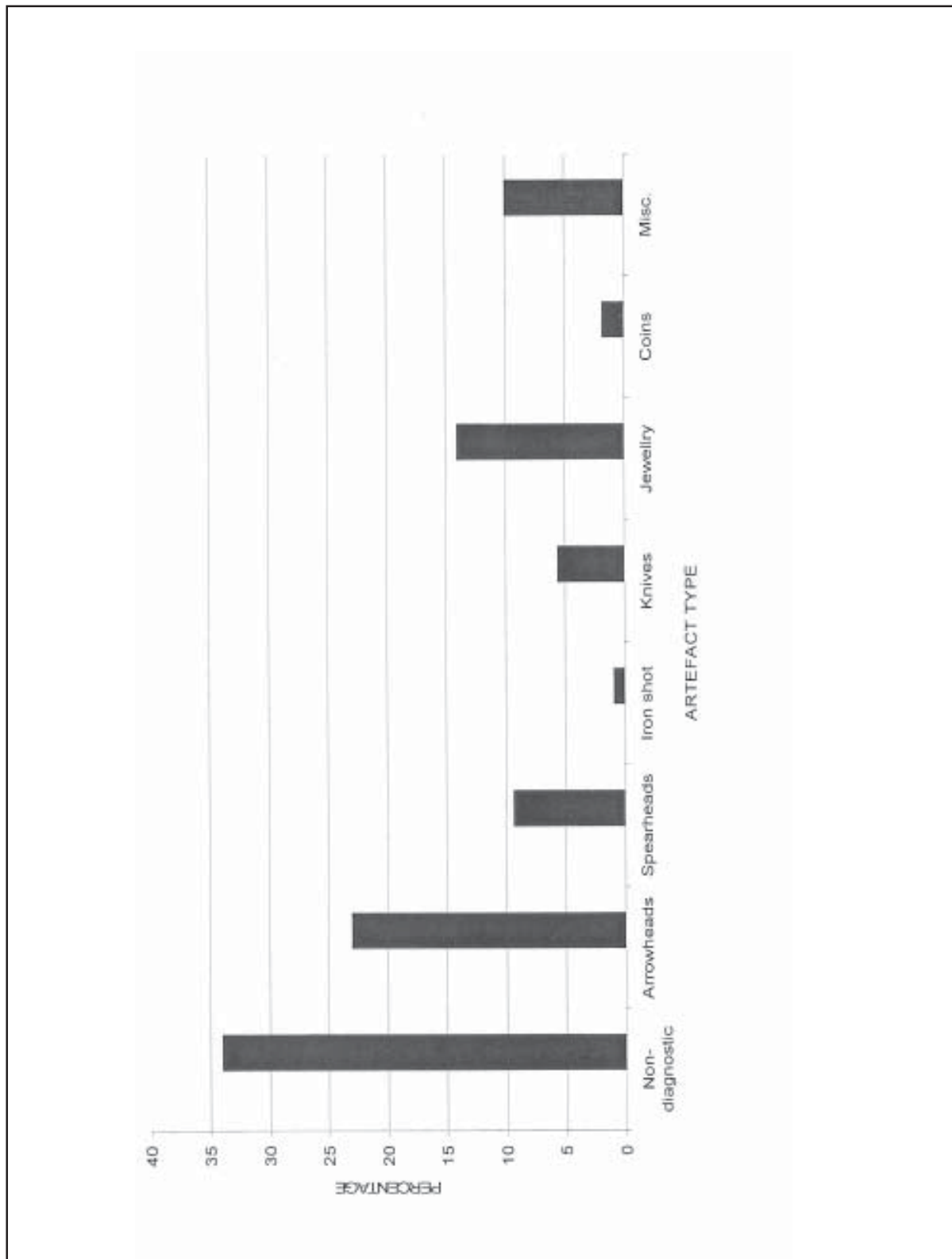


Figure 2: Metal artifacts (n=107).



piece of iron shot were recovered. The gun flints appear to have been used as strike-a-lights so may or may not be evidence of the ownership and use of Danish guns at this time.

The topography of the site is uniquely suited for defensive purposes. The northern edge is steep, making it extremely difficult for anyone to climb up undetected by sentries. The natural entrances along the eastern, southern and western edges are easily accessible but also narrow and gradual so that anyone entering that way would have been easily spotted. In places, rows of stones have been laid out parallel to these entrances, probably to make it difficult for horses to ride up unhindered. There are several rock shelters close to these entrances and within the rock that were supposedly utilized by sentries and marksmen to keep watch for the enemy. The larger ones were suitable for hiding groups of up to 75 people for a short time. The defenses have been reinforced in places by the building of low walls at strategic points. These walls were reportedly used to provide cover for marksmen who would be shooting at Zaberma intruders. At several vantage points there are piles of stones. They are not in places that were suitable for farming and thus do not represent ground clearing activities. They may be a store of projectiles to be dispatched onto the heads of riders below. This practice was observed historically in parts of Nigeria (Clark 1854 cited in Usman 1998).

## Trade

The archaeological remains at those loci dating to the 19<sup>th</sup> century document the growth of Yalingbong as a trade center. There is a steady increase in the number of trade goods over time and oral traditions indicate that the inhabitants had control over the auxiliary trade in the region. The trade items recovered are diverse. Local trade goods include clay tobacco pipes and one brass ring, probably from the Frafra area. Some of the other metal artifacts, such as the knives, may well have been imported as well, as were the stone beads and stone bracelet. It is likely that perishable trade items such as cloth or food were also frequent, but they are not visible in the archaeological record.

There is also evidence of trade connections to farther afield. Several classes of European imports were recovered. One fragment of a European tobacco

pipe, imported ceramic sherds (MNV=4), bottle glass (MNV=3), cowrie shells (n=31) and European-manufactured glass beads (n=155). The variety of trade items in the area may have increased in the early twentieth century, with the imposition of the colonial peace, as at Zanbulugu we find glass bracelets and ivory, neither of which was present at Yalingbong.

Due to the difficulties of transport and trade during this period it is not surprising that the most abundant imported trade items should be the beads and cowries shells (Figure 3). Several scholars (Johnson 1976) and (Boahen 1962) have remarked on the nature of the trade items making their way into the interior. There was a marked tendency towards small, lightweight objects that were not overly fragile as the prevalent transportation systems required daily loading and unloading. Cowry shells were in circulation as a currency at this time and formed a substantial portion of a community's portable wealth. They are also subject to heirlooming and may thus be under-represented in the assemblage.

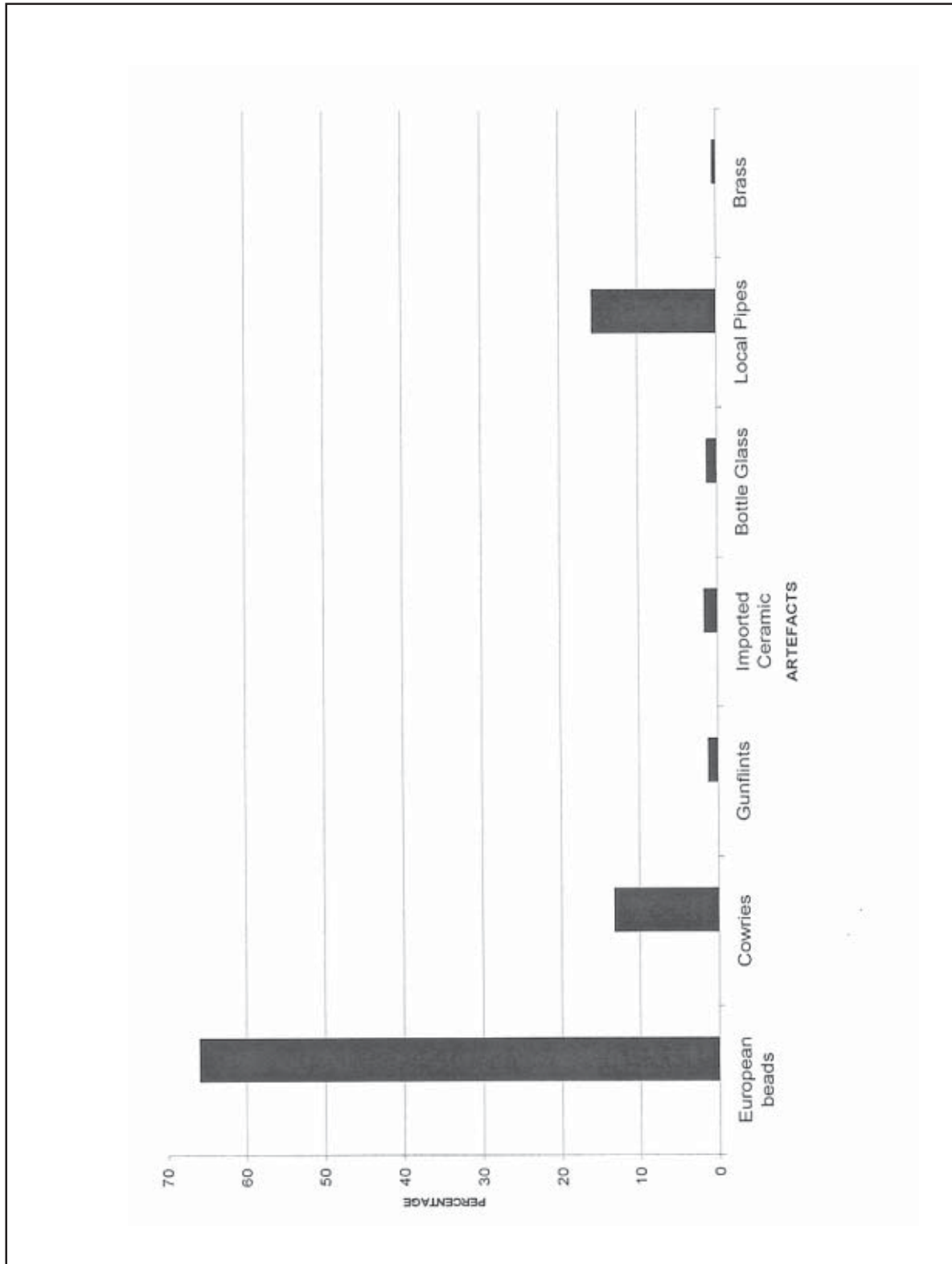
## Conclusion

The access to new and varied sources of trade items in the nineteenth century appears to have led to changes in the local political economy. The area was not rich in natural resources that could be transformed into exchange items for trade goods. Instead, the inhabitants in the region appear to have started engaging in slave raiding on their own behalf and trading their captives to the Zaberma in return for cowries or other goods. In addition, increased warfare saw the rise of new leaders who organized defensive and offensive operations, who manipulated the trade routes and who would send their followers to markets such as Salaga and Yendi to acquire more goods. There seems to have been no overwhelming accumulation of wealth in any one section of Yalingbong which leads me to argue that goods were disseminated throughout the community as a way of earning and keeping support.

## Acknowledgments

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Figure 3: Trade items (n=259).



Museum in Ghana, particularly Ben Kankpeyeng for logistical assistance. Sam Spiers and Keith Bratton of Syracuse University assisted me in the field as did Elvis Abouleh of the Bolgatanga Museum and Kassim, Issako, Dramani and Tyero from the village of Dolbizan. I would like to thank the villagers of Dolbizan for their hospitality while in the field and the Kankpeyeng family for their kindness and hospitality during the entire length of my stay in Ghana.

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## ■ KENYA

### Recent Archaeological Research in the Lake Magadi Basin, Southern Kenya

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## Introduction

In May-June of 1999 and 2002 archaeological excavations were conducted at Lake Magadi in southern Kenya by faculty and students from St. Lawrence University in the United States and the Catholic University of Eastern Africa and Kenyatta University in Kenya. As part of an ongoing archaeological field course undergraduate students are trained in geology, paleontology and archaeology within an interdisciplinary perspective that focuses on Kenyan prehistory and human evolution in Eastern Africa. Specifically, students learn basic field procedures of site survey, stratigraphic analysis and map making, as well as excavation techniques and analysis of stone artifacts and faunal remains. Fieldwork has been based at Lenderut, a Lower to Middle Pleistocene Acheulean site southeast of Lake Magadi (Barthelme 1991 and 1993) and Olkena, a Later Stone Age occupation situated east of the present lake (Barthelme *et al.* 2000 and 2002; Barthelme and Murimi 2001). The course has been offered on three occasions since 1997 while one of us (Barthelme) has engaged in archaeological fieldwork at Lake Magadi since 1987.

Lake Magadi, 20 km wide, 100 km long and at an altitude of 600 m, is located within the southernmost and deepest depression of the Gregory Rift Valley, just north of the Tanzanian border (Figure 1). To the west, the Ngurumau escarpment outcrops repeated layers of basaltic lava, while further west, exposures of Precambrian basement schists and gneisses are present. South of the lake lie a series of extinct Miocene and Pliocene aged volcanoes composed primarily of andesite, trachyte and phonolite (Baker 1958, 1986). The still active carbonatite volcano, Oldoinyo Lengai, is a dominant visible landmark in northern Tanzania. Lake Magadi is a sodium carbonate – bicarbonate lake that is intermittently dry. It is fed primarily by hydrothermal springs and intermittent runoff during the rainy season and is covered by an extensive trona crust up to 30 meters thick. The modern hypersaline lake has an average annual rainfall of 409 mm, concentrated between October and May. The climate is semi-desert with a mean annual maximum air temperature of 35°C.

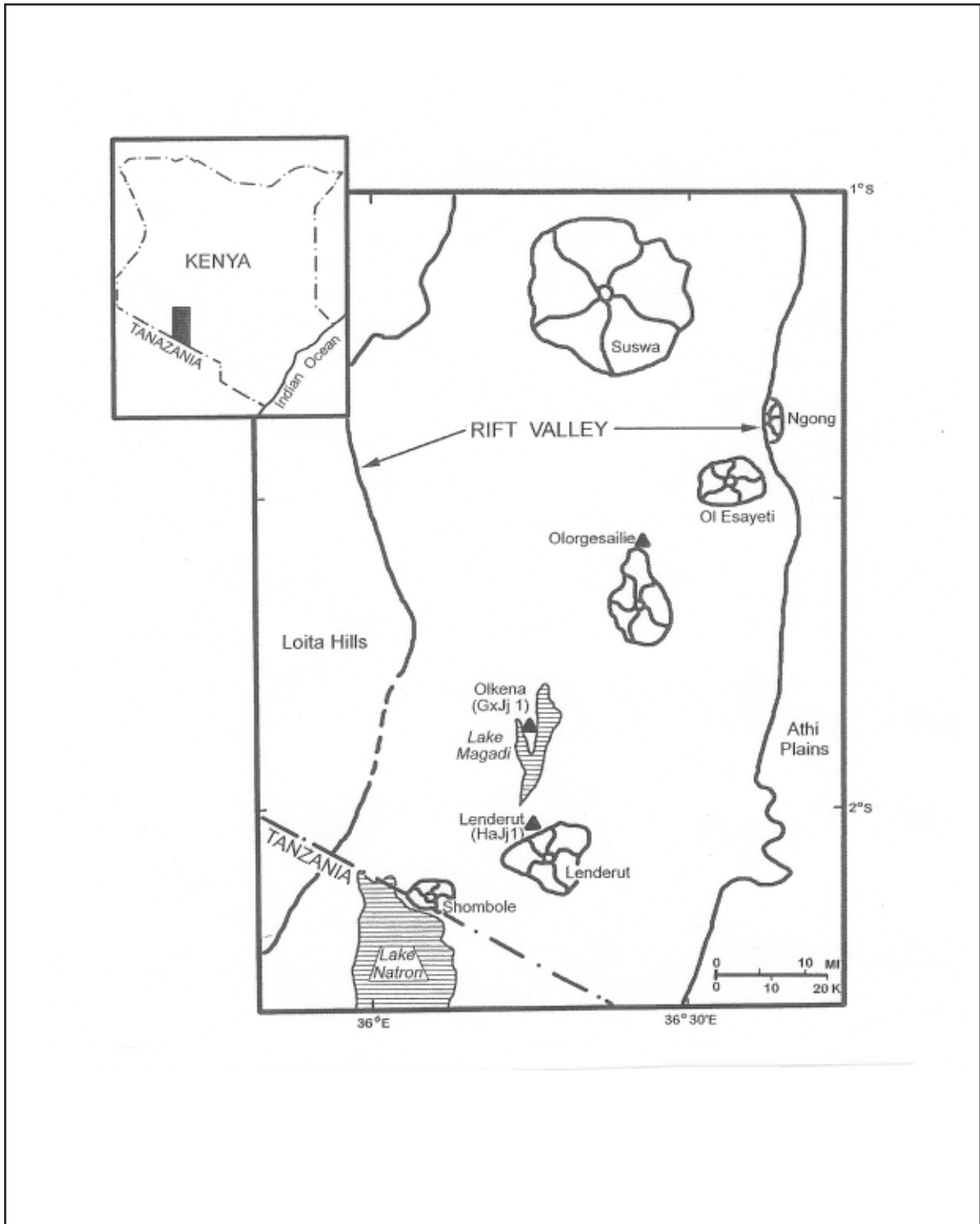
Evidence of two large precursor paleolakes are widespread in the basin both of which indicate Lake Magadi in Kenya and Lake Natron in northern Tanzania were joined to form a single body of water (Surdam and Eugster 1976; Roberts *et al.* 1994). The older paleolake is represented by the Oloronga Beds (Baker 1958), composed primarily of lacustrine silts, clay and reworked tuffs, which have been dated by K-Ar measurements to at least 780,000 years BP (Fairhead *et al.* 1972). The more recent lacustrine deposits are represented by the High Magadi Beds (Baker 1958, 1963) which have been <sup>14</sup>C dated to the late Pleistocene and early Holocene (Butzer *et al.* 1972; Barthelme 1999). Fieldwork, based primarily on mapping stromatolites, diatoms and geochemistry has indicated that between 12,450 and 9,650 BP, Lakes Magadi and Natron formed a single lake 50-60 m deep (Hillaire-Marcel *et al.* 1986). Recent comparative studies have shown broad synchronicity with the late Pleistocene-Holocene transgressive-regressive sequence at Lake Magadi, other East African lakes and the last European deglaciation (Roberts *et al.* 1994).

## Olkena (GxJj1) (1°50'S, 36°13'E)

In 1999 while surveying sedimentary exposures adjacent to the northwest lagoons at Lake Magadi, widespread and dense scatters of characteristic Later Stone Age (LSA) artifacts were identified eroding out of three closely situated low lying outcrops of



Figure 1: Map of the southern Kenya rift. The location of Olkena and Lenderut are indicated.



silts, sands and gravels. The site was located approximately 450 meters from the main road just south of the Tiasilal Primary School. LSA microlithic debitage as well as crescents, backed blades, thumbnail scrapers, and micro-drills were observed. Grindstone fragments, numerous broken pieces of ostrich eggshell, ostrich eggshell beads and fragments of the land snail *Achatina*, some of which appeared burnt, were also present. No hearths or other archaeological features were identified. Artifacts were eroding from a sand and gravel unit between 20-30 cm thick that lay stratigraphically between the Middle Pleistocene Oloronga Beds and the Late Pleistocene-Early Holocene High Magadi Beds.

In 1999, four 5 x 5 squares were gridded and the surface artifacts collected. Four excavation units, each 2 m<sup>2</sup>, were laid out and excavation began by utilizing arbitrary and natural levels. All sediment was sieved through a 4 mm mesh screen. Surface and excavated artifacts were later analyzed at the National Museum (Barthelme) and Kenyatta University (Ngari). Over 5500 lithic artifacts were recovered during surface sampling and excavation. Reconstruction of the site's sedimentary environment was unclear and preliminary interpretations suggested either fluvial deposits within a low energy distributary system, lacustrine deposits or a possible debris flow.

In 2000 a <sup>14</sup>C date on ostrich eggshell was obtained from the archaeological horizon at Olkena. The date (AMS) was 10,300 ± 100 BP (Beta-141041 uncalibrated) and suggests the LSA occupation occurred during a period of cooler and drier conditions as well as decreased lake levels (Roberts *et al.* 1994). South of Magadi town in 1998, previously collected ostrich eggshell fragments near the base of the High Magadi Bed exposures, also yielded a <sup>14</sup>C date (AMS) of 9940 ± 60 BP (Beta-114554 uncalibrated) (Barthelme *et al.* 2000). Results of the 1999 field season were presented at the 11<sup>th</sup> PanAfrican Congress on Prehistory in Mali (Barthelme and Murimi 2001).

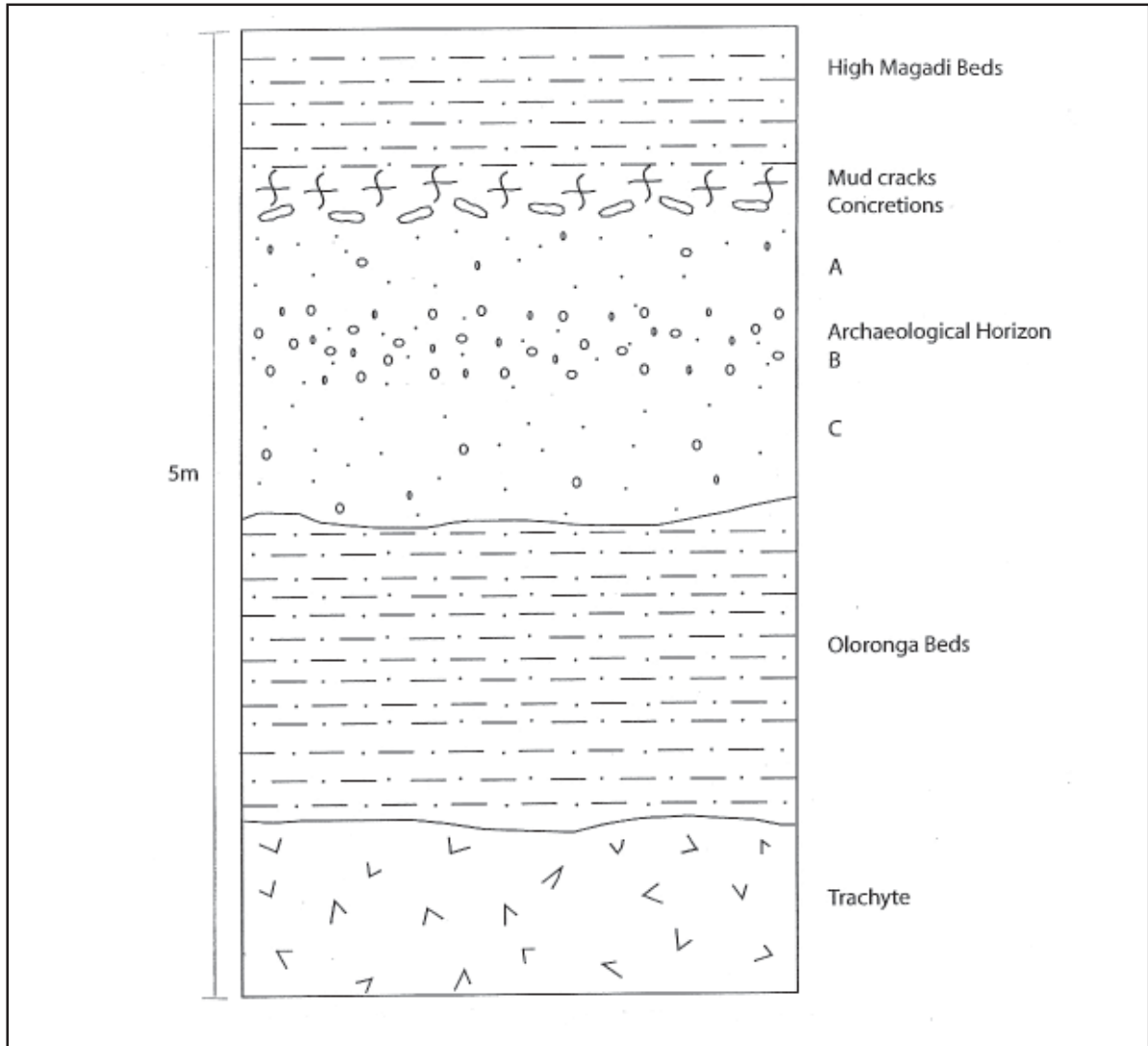
The main goals of the 2002 field season focused on resolving Olkena's environment of deposition, enlarging the lithic assemblage as well as locating well preserved faunal material and archaeological features. Reconstruction of the site's stratigraphy and depositional context were unclear in 1999. Extensive geological trenching and correlation of sedimentary units in 2002 helped resolve the problem.

Field and laboratory analyses of the site's sediments indicated that the artifact bearing units consisted of lenses of coarse sub-angular to rounded gravels, silty sands and finely sorted sands. The thickness of the archaeological horizon varied from 2-3 cm to between 20-30 cm. A composite stratigraphic section (Figure 2) indicated three sub-units. Unit A: Light brown uncemented silty sand with scattered sub-rounded gravels. Bedding structures absent. Artifacts abundant. 6-7 cm thickness. Unit B: Very cemented silty sand with distinct lenses of sub-rounded gravels and small CaCO<sub>3</sub> concretions. 6-7 cm thickness. Artifacts very abundant. Unit C: Extremely cemented light brown sandy silt with scattered very small sub-rounded gravels. 14-16 cm thickness. Artifacts abundant in upper 3-5 cm.

The origin of the archaeological horizons is fluvial and the site appears to have been situated within a low energy distributary system of small interfingering streams. Repeated episodes of water movement buried the occupation surface or surfaces and probably, to judge from large numbers of very small (<5 mm) obsidian and chert lithics with sharp flake release margins, after minimal redeposition. The topmost surface of Unit A is covered with a thin 1-2 cm layer of CaCO<sub>3</sub> concretions suggesting subaerial exposure of undetermined time. Transgressive, unlaminated silts, part of the High Magadi Beds, overlie the concretionary layer.

In 2002, six surface collecting squares, each 2 m<sup>2</sup>, were located NE of the 1999 excavation. Two of the squares were also scraped and sieved through a 4 mm mesh screen. Excavation units, each 1 m square, were located within surface square 1. Four spits, arbitrary and natural levels, were utilized to excavate Units A-C. Over 3500 stone artifacts were recovered from the sampling squares and excavation. The expanded lithic assemblage revealed a LSA microlithic tradition with crescents, single and double backed blades, thumbnail scrapers and micro-drills as the predominate types. Small single and multiplatform cores were numerous as were bi-polar obsidian cores. Several quartz and quartzite hammerstone fragments were recovered as well as a double sided quartz grinding stone. The majority of the stone artifacts were manufactured from locally abundant white and green chert (magadiite) and obsidian. Blades of obsidian (>35 mm) appear to be derived from extensive obsidian flows near Lake Naivasha some 80 km north. Analysis of the stone artifacts is being conducted by Barthelme and Ngari.

**Figure 2:** Composite stratigraphic section of the Olkena sediments.



Faunal remains were uncommon and usually very fragmentary probably due to substantial sub-aerial weathering. While no remains were collected at the excavation outcrop, at Watene's Outcrop, approximately 160 m to the NW, a broken Zebra (*Equus burchelli*) lower molar and distal end of a bovid metapodial (Size 1) were discovered eroding out of the archaeological horizon. At both the excavation and Watene's outcrops ostrich eggshell fragments were numerous (over 200 pieces) and often burnt. Preform and finished ostrich eggshell beads were also abundant; over 100 examples were recovered. Rebecca Chartier is currently studying the ostrich eggshell beads from Olkena. Shell fragments of the

large terrestrial gastropod *Achatina* were common in both surface and excavated collections. Many pieces were burnt and probably represent food debris.

**GxJj2**

To the NW of Watene's Outcrop, we discovered what appeared to be a burial cairn. The structure, primarily of vesicular lava, was 3m in diameter with a maximum height of 77 cm. The cairn was thought to be associated with the LSA occupation and excavation was intended to record the body's orientation, check for burial goods, determine relative age based

on tooth wear and epiphyseal fusion of long bones, and possibly collect skeletal material for  $^{14}\text{C}$  dating and paleo-dietary analysis. Excavation proceeded by sectioning the cairn in half and removing fill in 10 cm spits. Large stones were removed and fill was sieved for grave goods, especially ostrich eggshell beads. At 55 cm below the cairn's highest point a human burial was discovered. The body was flexed, faced  $330^\circ\text{NW}$ , bone was poorly mineralized and burial goods were absent. It was decided not to fully excavate the burial until a  $^{14}\text{C}$  date could be determined. If the burial dated to within the last several thousand years and hence was not associated with the Olkenia occupation, disinternment of the individual would not be necessary. Human bone was sent to Beta Analytic Inc. (USA) for  $^{14}\text{C}$  (AMS) dating. Unfortunately, they reported that, "Little separable collagen was present suggesting that the human bone was exposed to contamination by some sort of carbonate or from groundwater" (letter to John Barthelme dated October 10, 2002). Further dating samples will be collected in the next field season.

## Conclusion

Excavations at the Later Stone Age site of Olkenia were conducted in 1999 and 2002. The site dates to 10,300  $^{14}\text{C}$  BP (AMS uncalibrated) and represents the first open air Late Pleistocene LSA occupation in the Magadi Basin with good stratigraphic context. Based on recent comparative diatom, geochemistry and magnetic studies of Lake Magadi sediments the site was occupied during cooler and drier temperatures and lowered lake levels prior to renewed warming and rainfall increases at ~10,000 BP (Roberts *et al.* 1994). The site was situated adjacent to or within a low energy distributary system of interfingering streams that drained into paleo Lake Magadi. Stone artifacts were dispersed throughout the gravelly sands and were part of an LSA microlithic tradition based on percussion or punched flakes and blades from diminutive chert and obsidian cores. Crescents were the most common shaped tool while chert micro-drills were used to perforate ostrich eggshell fragments to manufacture beads. Mammalian faunal remains were fragmentary and thus far only zebra and a small bovid have been identified. The land snail, *Achatina*, was represented and may have been used as a food resource. Renewed fieldwork is planned in 2004 and will focus on continued recon-

struction of the site's depositional environment, enlarging the sample of lithics and fauna and re-excavation of the burial cairn.

## Acknowledgments

Support for this research came from St. Lawrence University and Kenyatta University. Special thanks are due to the St. Lawrence University Kenya Semester Program, the Magadi Soda Company, the National Museums of Kenya and the Kenyan Ministry of Education, Science and Technology. We also thank Mary Haught for typing the manuscript, Matt VanBrocklin for assistance in drawing the figures, and the Maasai people at Lake Magadi for their generous hospitality.

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## ■ KENYA

### Archaeological survey of Narok South, Kenya

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### Introduction

The paper presents information about an archaeological survey of the Narok South region of the Kenyan Rift Valley. The main objective was to document the region's lithic industries, including their types, attributes and raw materials. The survey noted 17 sites of which 15 have evidence of stone age occupation, one is a faunal site and the other an Iron Age site. The artifacts collected, both through surface and excavations, are stored at the Archaeology Laboratory of the National Museums of Kenya, Nairobi.

### Study Area

Narok South is in the Narok District of the Rift Valley Province of Kenya (Figure 1). Archaeological sites are found along the Ntuka, Olonganaiyo, Seyabei and Uaso Ngiro river valleys. The region's general dominant vegetation includes leleshwa scrub, acacia, woodland and grassland in the higher rainfall areas, *Acacia* and *Commiphora* wooded grassland on slopes and open grassland patches along stream terraces and level plains (Wright 1967). The sites do have evidence of hominid remains (Waibel and McDonough 1977) and are found in the habitat zone of Interior Plateau proper mostly from about 1500 to 1768 meters in elevation. The region is also characterized by both permanent rivers and seasonal streams with deeply incised valleys exposing long sequences of sediments and volcanic rocks. Alkali basalt lavas rest on the thick sequence of volcanic ashes, sediments and tuffs, many of which were waterlain. There are also lava exposures where the deeply incised Ntuka-Olonganaiyo system joins the Uaso Ngiro and Seyabei rivers. Fault scarp ridges of melanephelinite, phonolite and other lavas are flanked by plateaus of trachite lavas.

### Methodology

In 2002, three months work focused on mapping the extent of surface occurrences of the archaeological materials in the Narok south area. Survey was conducted to identify archaeological sites and to determine their geographical distribution. Sites were plotted on a relief map. Test excavations were also undertaken at the Ntuka River 3 site. All the surface collections, excavated materials and field catalogs are stored at the Nairobi museum. Seventeen (17) sites were noted during the survey (Table 1). Of these, fifteen (15) sites are Stone Age, one is an Iron Age site and the other is a faunal site. The lithic sites include five Early Stone Age, six Middle Stone Age and four Later Stone Age occurrences. Two (2) of the lithic sites have evidence of multiple occupations spanning more than one period.

### Early Stone Age sites

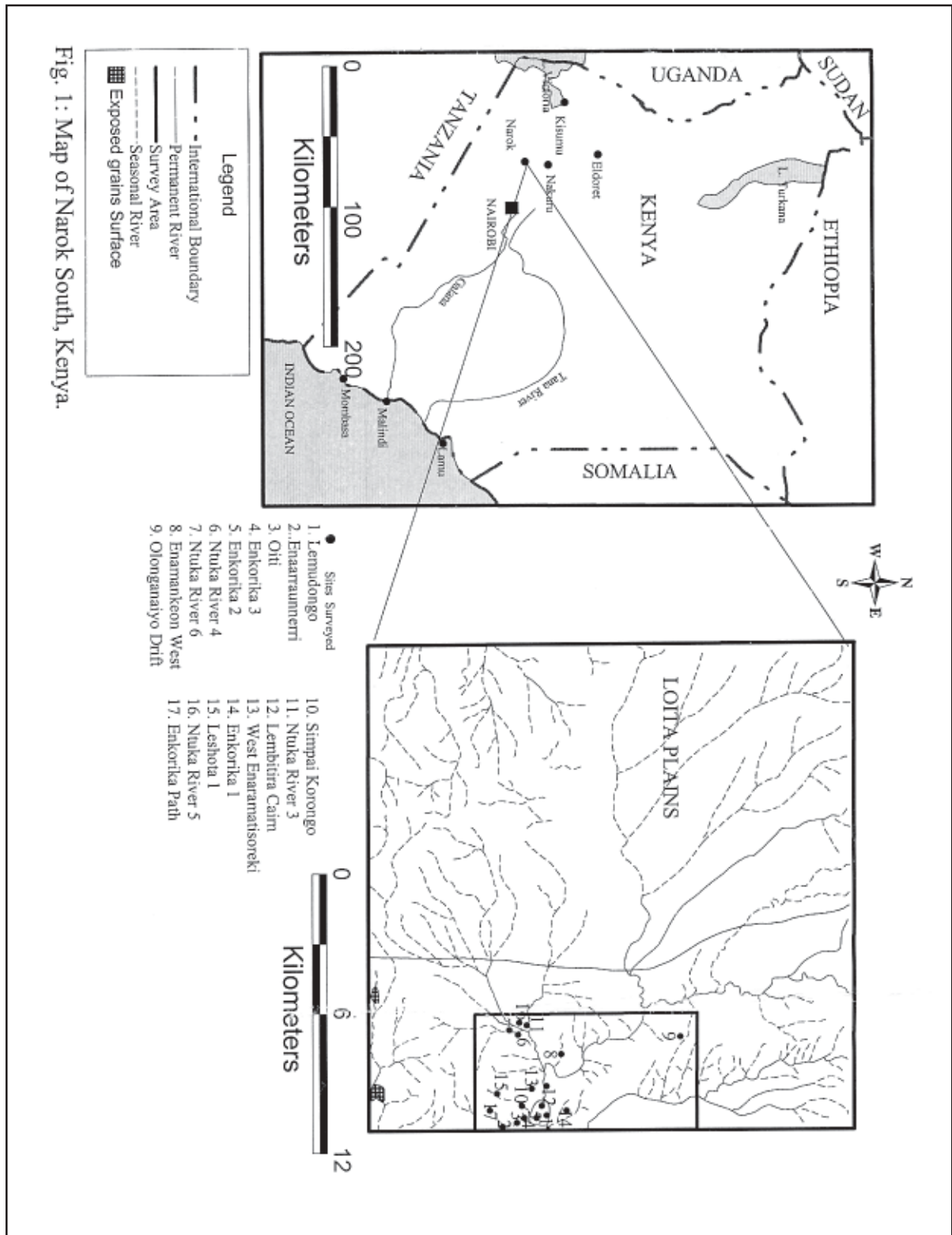
Lemudongo. This is a paleontological site in the Enkorika area with an Oldowan assemblage. It is characterized by paleosol of green-red-brown-gray clay, volcanic ash, yellow lacustrine silt, fine sandy gravel and sandstone. Some of the bones collected had grooves, cut or gnaw marks in them suggesting modification by animals. The site also produced three quartz choppers.

Enaarraunnerri is a 200 by 700 m Acheulean occupation site along the drainage of the Uaso Ngiro River between the east and west sides of the Ol Doinyo Loosindin melanephelinite lava and Ol Doinyo Oiborosoit quartzite. Sediments comprise light gray-brown paleosols, gray-green volcanic ash and yellow-brown sandy silt. Artifacts include handaxes, cleavers, picks, biconic cores, flakes and flake fragments of phonolite lava and quartzite.

Oiti is an Acheulean site on the east of the Uaso Ngiro River. It estimated area is about 100 by 200 m. Its physical features are characterized by carbonate nodules, grass, leleshwa and thorn bush. Associated sediment is a red-brown paleosol with carbonate nodules on a fluvial horizon. The artifacts collected from Oiti include handaxes, cleavers, flakes and cores.

Enkorika 3 is also an Acheulean site in the Enkorika area of Narok South. The site's area is about 40 by 30 m. It is associated with a paleosol with

Figure 1: Map of the Narok South, Kenya.



**Table 1:** Surveyed sites (\* transitional sites)

ESA	MSA	LSA	Faunal	Iron Age
Lemudongo	Ntuka River 4	Lembitira Cairn	Ntuka River 5	Enkorika Path
Enarraunneri	Ntuka River 6	West Enaramatishoreki		
Oiti	Enamankeon West	Enkorika 1		
Enkorika 3	Okonganaiyo Drift	Leshota 1		
Enkorika 2*	Simpai Korongo			
	Ntuka River 3*			

carbonate nodules and gray volcanic ash. The assemblage consist of bifacial handaxes, burins, a radial core, flakes of granite and lava rocks and one fossil bone.

Enkorika 2 has artifacts of both Early and Middle Stone Age and thus represents an ESA/MSA transitional occupation. The site is about 30 by 60 m and is situated on the west of the Enkorika area. Associated sediments are gray-green-yellow fluvial with light brown paleosols. Artifacts recovered from the site include fossil bones and teeth, as well as quartz and chert lithics.

**Middle Stone Age sites**

Ntuka River 4 is a Middle Stone Age site on the grassland mosaic southwest bank of the Ntuka River. Its estimate area is 60 by 80 m. Its stratigraphy comprises of light reddish brown silts and loams. Lithic artifacts include obsidian, quartz, lava and chert tools while its faunal materials include teeth and large mammal bones some with cut marks.

Ntuka River 6 is a Middle Stone Age site on the woodland/grassland mosaic south of the Ntuka River. Its estimated site area is 30 by 40 m. Its stratigraphic context is buff silts and paleosols. The assemblage includes faunal and lithic remains.

Enamankeon West is also a Middle Stone Age site located west of the Entapot or Enamankeon Hill. The site is about 40 by 80 m in extent and is associated with blue-gray volcanic ash and red-brown and gritty buff paleosols with carbonate nodules. Lithics include handaxes, Levallois cores, flakes, blades, scrapers and points made from lava, obsidian, quartz and chert. It did not produce faunal remains.

The Olonganaiyo Drift MSA site is on the southern bank of the Olonganaiyo River. It is an estimated 30 by 10 m in extent and is characterized by dense thorn and leleshwa bush with pale yellow silts and carbonate nodules. Artifacts include flakes, cores, outils ecaillés, points, scrapers, spheroids, polyhedrons, fossilized bones and teeth, ostrich egg shells and snail shells. Lithics are made on lava, obsidian, chert and quartz.

Simpai Korongo measures about 40 by 70 m and is on the northwest of the Ol Doinyo Siloma area. Its vegetation cover includes thorn scrub and grass while associated stratigraphy is composed of red-brown soils with carbonate nodules. The assemblage includes a piece of a fossil bone, a point, flakes and cores. Lithic raw materials include chert, lava, obsidian and quartz.

Ntuka River 3 extend about 30 by 40 m in area. The site is located in the valley north of the Ntuka River in the patchy woodland and grassland mosaic. It has a deeper Middle Stone Age layer and a younger Later Stone Age occupation. Artifacts are represented by flaked tools of obsidian, quartz, lava and chert, and faunal remains are also present. Some of the bone fragments had cut marks in them suggesting both carnivore and human activity.

**Late Stone Age sites**

Lembitira Cairn is a Neolithic burial site located west of the Ol Doinyo Lembitira between Enaramatishoreki and Enarraunnerri Hills. Its stratigraphy comprises of bright yellow bentonites, waterlain ashes, lava and dark brown clays. Its estimated area is about 3 m<sup>2</sup>. It is characterized by a mound of stone and no bone was present on the surface.



West Enaramatishoreki is an Elementeitan Neolithic habitation located in the plains west of the Enaramatishoreki Hills. It is about 90 by 80 m in area with a stratigraphic context of ashy gray silty sediments. Its assemblage consists of pottery, blades and bored stone fragments.

Enkorika 1 is a Neolithic site located at an upslope area of the Enkorika region. It is about 100 by 130 m and characterized by leshwa and thorn bush. Its stratigraphy is of medium brownish-red dark soils. Artifacts include pottery, bones and grinding stones.

Leshota 1 is located at the south of the Leshota stream. It is estimated at about 25 m<sup>2</sup> and has flaked artifacts made from obsidian, quartz and chert. The collection also has bone fragment remains.

### Other sites

Ntuka River 5 is in the woodland/grassland mosaic west of the Ntuka River. It is estimated at about 3 by 8 m and has stratigraphy characterized by light brown-buff fine silts and paleosols. Materials from the site include mandibles and large bones associated with hyena accumulations. Thus it is a faunal site probable a hyena den. No lithics were recorded.

Enkorika Path is an Iron Age smelting site located on the bushy south slope of Enkorika Hill. It is characterized by a path passing through it from Uaso Ngiro to Enkorika. The site is about 30 by 30 m in area. It has a furnace, slag heaps, scoria and burnt clay. No tuyeres were noted in the site.

### Archaeological Excavations of Ntuka River 3

The trench was dug at the northern part of the site to a depth of about 2.48 m, revealing two horizons (Figure 2). The datum point was located uphill west of the trench. Its southern corner was designated N90 E101 and N90 E100 on the grid. The revealed seven stratigraphic occupation layers mostly have both faunal and lithic artifacts. The Late Stone Age horizon was from the upper sections of the seventh layer following the Middle Stone Age sequence.

Stratum 1 is approximately 74 cm thick with pale brown soil, small deposits of coarse silt, pebbles,

carbonate nodules, a possible rodent burrow and two root marks. It has low density of faunal and lithic wares. The second layer is about 13 cm thick and is characterized by carbonate horizon with pale brown soil, light gray coarse silt and root marks. Most of its artifacts are lithics. The third stratum measures about 27 cm thick and is mainly composed of pale brown soil, a root mark and sandy gravels. It does not have any faunal remains or lithics.

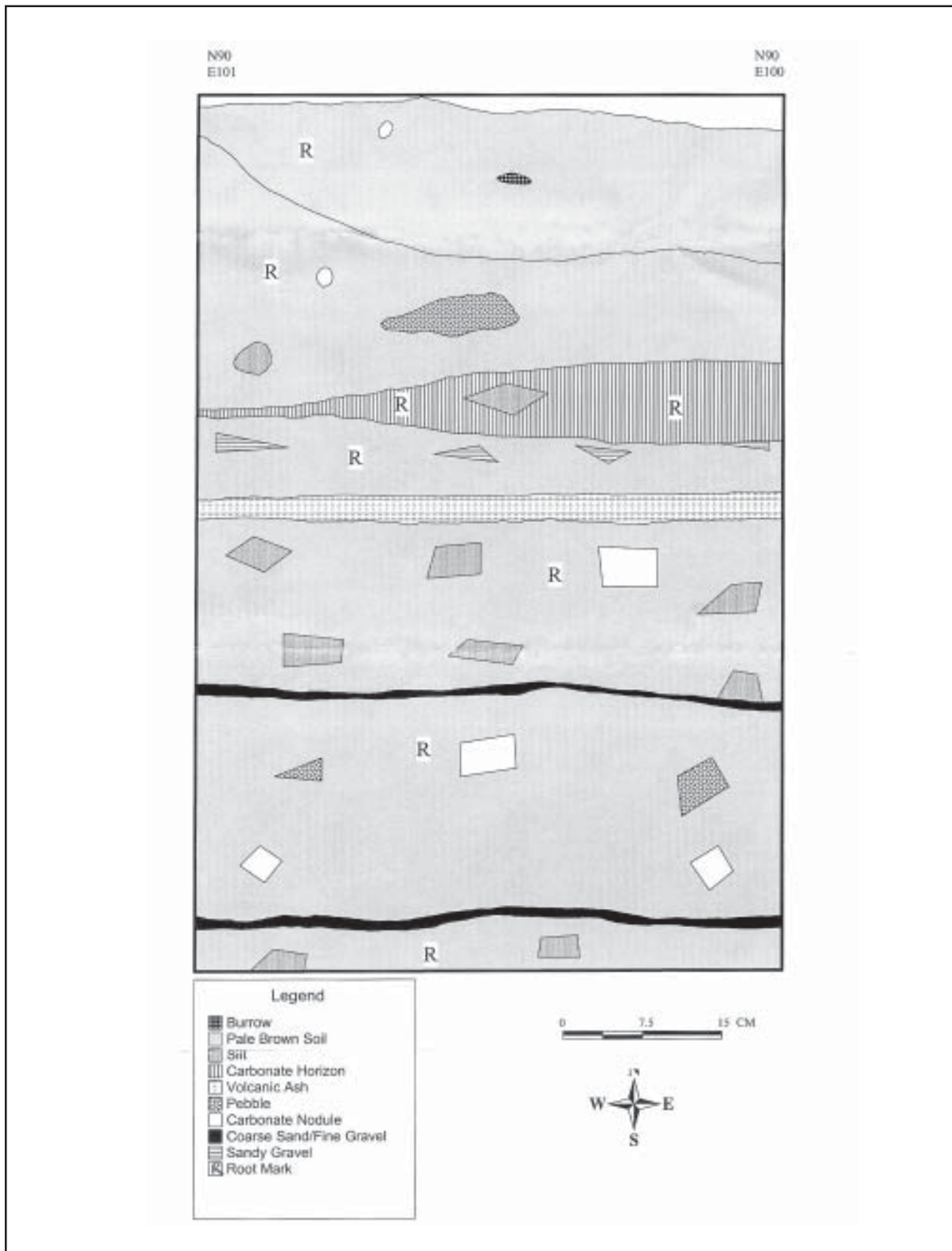
Layer 4 is of light brownish gray volcanic ash. Its measurement is about 7 cm thick. Layer five is approximately 50 cm thick and is marked by pale brown soil, thick gray coarse silt, a root mark and carbonate nodule. A mixture of coarse sand and fine gravel marks its lower boundary with the subsequent layer. The sixth layer is of pale brown soil, thick infill of silt, pebbles, carbonate nodules and a root mark. It is about 61 cm thick. It also has coarse sand and fine gravel spread on its lower parts. Layers 4, 5 and 6 produced faunal and lithic artifacts. The last occupation level has a 16 cm thick pale brown soil stratum with clayey silts and a root mark. It has a mixture of both coarse sand and fine gravel layer on its upper parts linking it to those of the stratum immediately above it.

### Data Analysis

A total of 6270 artifacts were recorded from both surface collections and excavations. Of these 945 are lithics, 5298 are faunal remains, 22 snail shells and 5 ostrich egg shells. Excavations produced 4929 faunal remains and 759 lithics, including some unmodified rocks (Table 2). Surface data were also analyzed from six other sites namely Lemudongo, Enarraunnerri, Enamankeon West, Olonganaiyo Drift, Simpai Korongo and Enkorika 3. Lithics include handaxes, cleavers, knives, burins, cores, flakes, outils écaillés, points, scrapers, polyhedrons, spheroids, choppers and blades. Ntuka River 3 has the highest number followed by Olonganaiyo Drift. Raw materials include obsidian, chert, quartz, lava, granite and feldspar; materials vary with site. Lava was the widely used, while chert is the rarest. This can be explained by the fact that the lava rocks are the most commonly found in the region while the least used rocks were possible imported

Generally the faunal remains include bones of suids, bovids, hyracoids, hippotamids, crocodilians,

Figure 2: Ntuka River 3 Excavations, south wall stratigraphy.



**Table 2:** Lithic raw materials

Site	Number of lithic artifacts
Ntuka River 3	759
Lemudongo	3
Enaarraunneri	8
Enamankeon West	38
Olonganaiyo Drift	400
Simpai Korongo	27
Enkorika 3	8
Total	1243

hystricids, rodents and primates amongst others. Ntuka River 3 has the largest faunal collection followed by the Lemudongo site while Enaarraunneri and Enamankeon West have none. Other finds include 22 snail shells, 5 ostrich egg shells and 14 potsherds. The latter include 12 rims and a body sherd from Enkorika 1 and a mica-tempered pottery from West Enaramatishoreki. Ntuka River 3 has ostrich egg shells while Olonganaiyo Drift has both ostrich egg shells and snail shells.

**Conclusion**

The Narok South region contains a number of prehistoric sites. Two stone age sites have materials that suggest that they are transitional. Raw material proximity seems to have influenced choice, as most lithics were produced from the locally available lava and obsidian. Lava pieces are bigger and highly represented than other materials. Lithics made from materials like chert, quartz, feldspar and granite are relatively few and small, because of scarcity and distance involved in their transport.

**Acknowledgments**

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## ■ NIGERIA

### Late Stone Age and Iron Age settlement mounds in the firki plains south of Lake Chad

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In northeastern Nigeria near Lake Chad, archaeological evidence for human settlement is represented by huge settlement mounds, which are easy to detect in the flat landscape. Excavations of such mounds by Connah (1981) in the 1960s, and more recently by the Frankfurt/Nigeria project have shown that they document an occupation over the last 3000 years. This paper focuses on changes in the ceramic material and the economy of the inhabitants of such mounds during the Late Stone Age and Iron Age periods as well as their relevance for the relationship of the clay plains to the surrounding regions. The area south of Lake Chad is characterized by so-called firki clay soils. These are deposits of the former Mega-Lake Chad, which had its maximum extension in the Middle Holocene up to the Bama ridge. After its regression, due to increasing dryness between 1500-800 BC, the area could be settled again on relict islands of sand dunes, which interrupt the clay soils and protect the people from flooding in the rainy season. Continuous occupation led to the accumulation of stratified deposits and finally to the development of settlement mounds.

Near to the village of Ngala, our project excavated the settlement mounds Kursakata, Mege and Ndufu (Gronenborn 1998). Their occupation comprises different periods, separated by changes in the ceramic material and dated by several <sup>14</sup>C dates. The earliest settlement phase can be placed between 1200-800 BC in the final stage of the Late Stone Age. The transition to the Early Iron Age took place between 850-420 BC. It is not possible to give a more precise date, because of the well known imprecision of the radiocarbon calibration curve around that time. The Late Iron Age began around 500 AD, followed by the historic period around 1600 AD with the integration

of the area into the Borno Empire and the Kanurisation of the native people. The 19th and 20th centuries are defined as the sub-recent period (Wiesmüller 2001).

If we have a look at the ceramic material, the greatest difference can be observed between the Late Stone Age and the Early Iron Age. As it will be demonstrated on the example of Mege, changes in decoration techniques are the most important chronological factor. First of all a tendency towards more complete surface decoration is obvious (Figure 1), since the percentages of undecorated potsherds are highest during the Late Stone Age and gradually decrease in the Iron Age. This situation can be explained by the different decoration techniques used (Figure 2). Typical for the Late Stone Age are incision, impression and rocker stamping, which have been arranged into motifs of horizontal bands. Mat and roulette impression, which cover a greater part of the surface, are less common. At the end of the Late Stone Age the situation has changed, as the use of mat impression increases. In the Early Iron Age impression, incision and rocker stamping are no longer of importance. Mat and roulette impressions are characteristic now, and roulette gradually replaces the use of mat impression. Finally, in the Late Iron Age roulette is almost the only technique used for decoration. The mat and roulette types mainly used in the Late Stone Age and Iron Age are different; plaited basketry is characteristic for the Late Stone Age, but in the Early Iron Age, twined basketry occurs (Figures 3 and 5). For the roulette techniques (Figures 4 and 5), the composite roulette cord-wrapped stick was the only one used during the Late Stone Age. With the beginning of the Early Iron Age twisted string roulette replaces it in importance. At the end of the Early Iron Age a special type of twisted string roulette ("canaux à fond filété" - Rapp 1984) and the composite roulette cord-wrapped stick with spacing become common, and even more common in the Late Iron Age. Carved roulette and small quantities of twisted strip roulette first appear in the Late Iron Age. The shift to the historic and sub-recent periods is reflected by the decrease of carved roulette, accompanied with an increase of twisted strip roulette and the new sgraffito technique (Wiesmüller 2001).

Marked changes in the pottery towards the Iron Age are not isolated phenomena but are also reflected in changes in the economy of the inhabitants, as we now know from the investigations of the archaeozoological and archaeobotanical remains of

Figure 1: Proportion of undecorated and decorated potsherds in Mege.

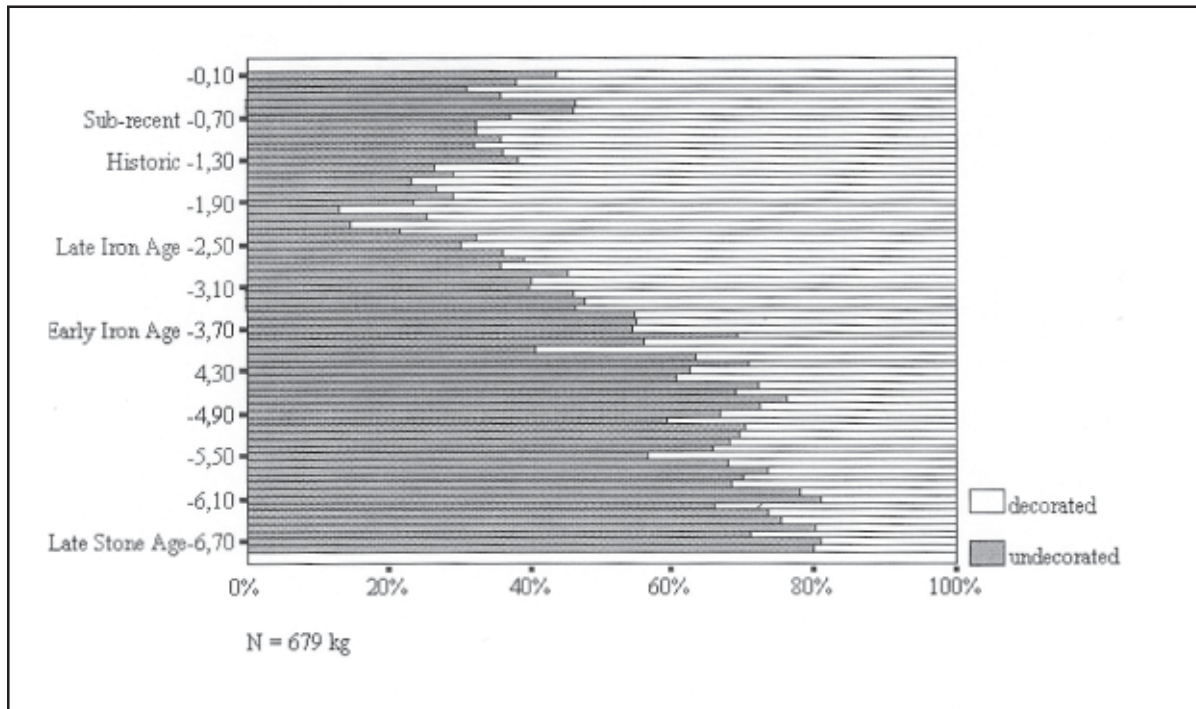
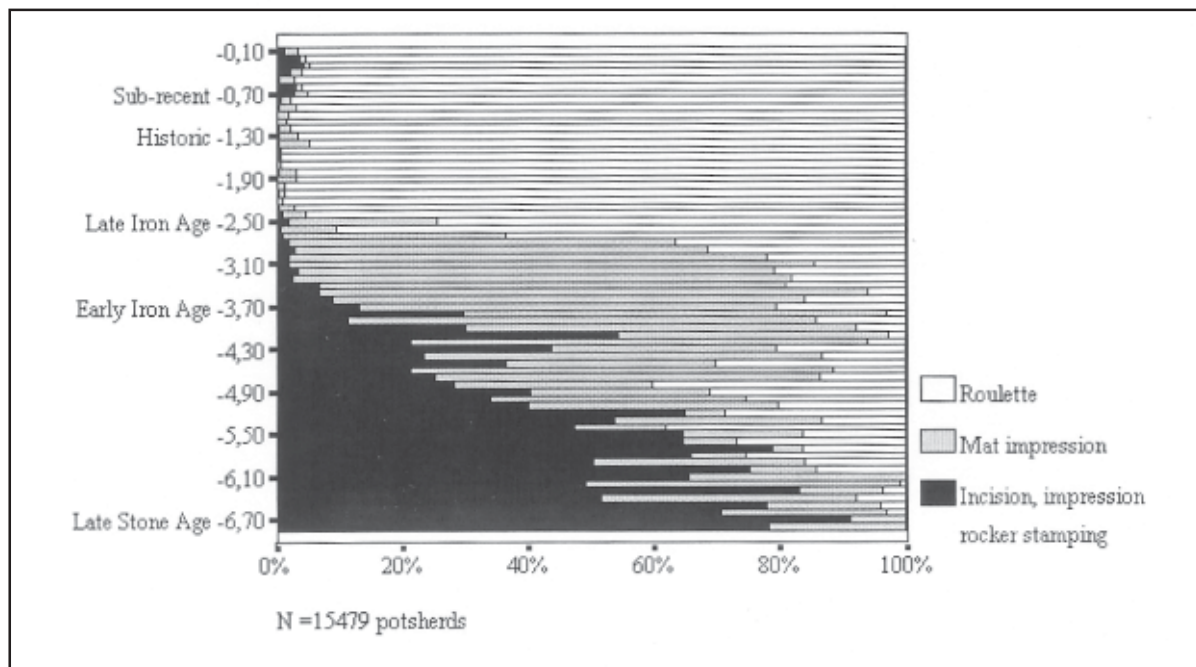


Figure 2: Proportion of undecorated and decorated potsherds in Mege.



Kursakata. Late Stone Age settlers of the firki plains were pastoralists raising cattle, sheep and goat. They made use of the rich stands of wild grasses and rice. The importance of fishing and to a lesser degree of hunting further show that people intensively used the various ecological habitats of the area. Agriculture played only a minor role in their economic activities as the small number of pearl millet finds demonstrate. The transition to the Early Iron Age is marked by the sudden beginning of large scale farming, indicated by the large amounts of pearl millet in the deposits. Gathering of wild grasses and rice as well as fishing and pastoralism still remain important, in order to minimize the risk of failure in subsistence strategies. The notable changes in the economy and the larger amounts of cultural material in the Iron Age deposits in general are the main reason to think that a permanent settlement way of life was not fully established until the beginning of the Iron Age (Klee *et al.* 2000).

The chronological development of ceramics gives us information about the relationship of our study area to neighboring cultures. First of all the archaeological material of the settlement mounds is related to other excavated sites in the firki plain area, extending from northeastern Nigeria to northern

Cameroon and west central Chad (Connah 1981; Rapp 1984; LeBeuf *et al.* 1980). A close relationship also exists with the Iron Age settlement mounds in the plains of the northern Mandara region of Nigeria and Cameroon (Marliac 1991; MacEachern 1996), although mat impression and carved roulette decoration are only represented in a few examples. Nevertheless, as a common feature all these sites share the development to almost only roulette decorated pottery in the Iron Age with twisted string roulette as an indicator of the Early Iron Age. This makes the sites different from sites further north in the Sahara/Sahel area, where roulette techniques seem to play an important role as early as neolithic times. People who first settled south of Lake Chad must have come from outside this region, because it was flooded until 1000 BC. The economy of the people of the Late Stone Age in the firki plains and their characteristic pottery point to a migration from the Sahara (Klee *et al.* 2000). The oldest pottery decorated with incision, impression and rocker stamping, as well as “cord-wrapped stick (with spacing) roulette”, appears between the 9th and the 7th millennium BC, during the neolithic in the eastern and western part of the Sahara (Arnell 1949; Camps 1969; Soper 1985). But the cord-wrapped stick (with spacing) roulette was usually impressed

Figure 3: Proportions of mat types.

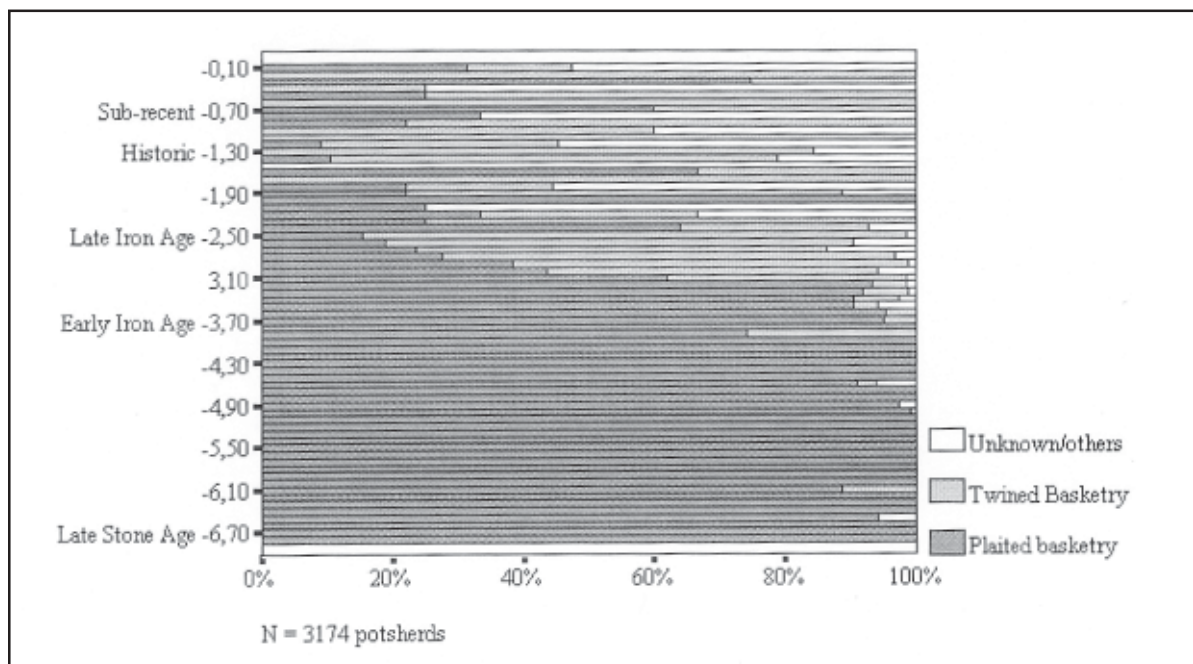
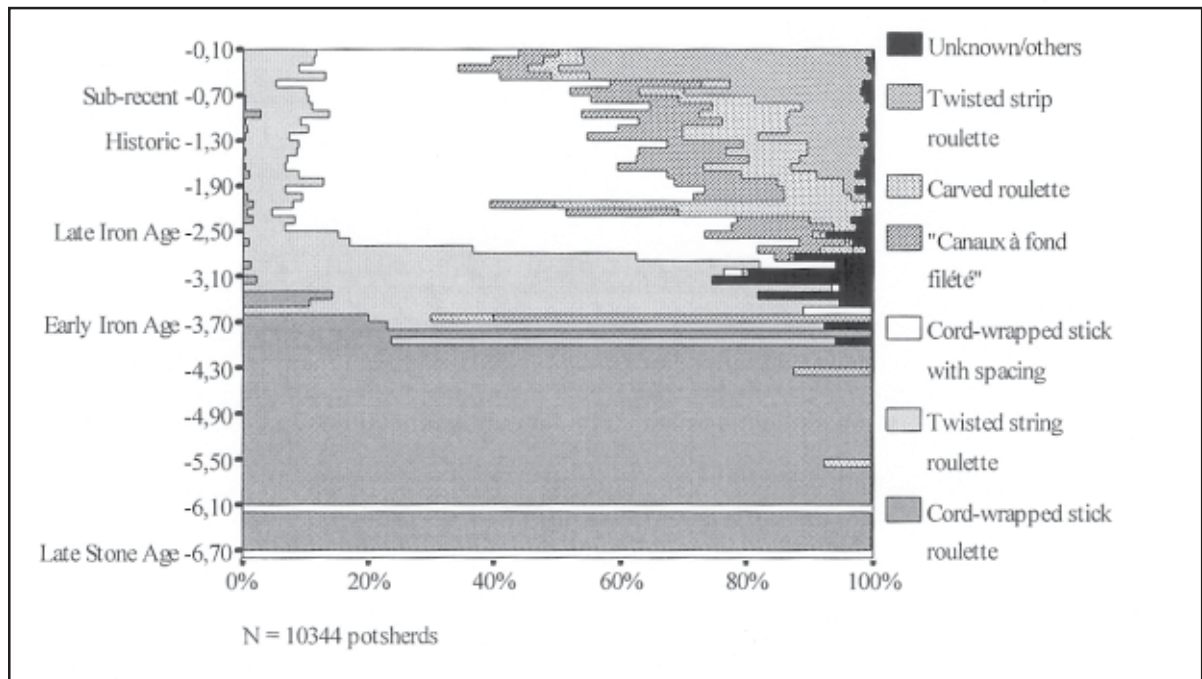


Figure 4: Proportions of roulette types.



in the clay of the vessel and had not been rolled over their surfaces (Arkell 1949). Therefore an influence from the western part of the Sahara/Sahel is more likely, where plaited basketry impressed pottery and the use of cord-wrapped stick (with spacing) as a roulette could be clearly proved (Holl 1986; MacDonald 1996).

With the beginning of the Early Iron Age new influences from the southwestern part of the Sahara and the adjacent Sahel must be taken into account. The use of twisted string roulette had already been invented here in neolithic times around the 3rd millennium BC (Holl 1986; MacDonald 1996; Soper 1985) but remained unknown in the eastern part of the Sahara (Sudan) until the first millennium AD. For the transition from the Late Stone Age to the Early Iron Age archaeobotanical and archaeozoological investigations suggest a shift to more and conditions in the firki clay plains (Klee *et al.* 2000). As seen from the influences in the ceramic material it seems to be possible that aridity forced people from the north to go south and to settle in the well watered plains. This may have led to an intensification of pearl millet farming and a permanent settlement way of life.

In the Late Iron Age the sphere of influence had changed, because the use of carved roulette

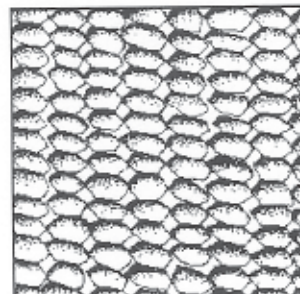
seems to have been developed further south in Nigeria, Cameroon and the Central African Republic. Very early <sup>14</sup>C dates in the first millennium BC for the use of carved roulette in Nigeria (site of Samun Dukiya, Nok Valley) and Cameroon (Shum Laka) contrast with the occurrence of carved roulette in the first millennium AD in the Central African Republic (site of Nana-Modé) (Soper 1985). This kind of roulette and the giant so-called So pots form an important part of the typical pottery of the Late Iron Age people in the firki plains known as the mythical So in Arabic written sources (Connah 1981; Gronenborn 1998). The occurrence of carved roulette separates the Late Iron Age pottery tradition in the firki plains from their immediate neighbors further west in the sand plains and northwest in the Yobe valley and south in the plains of the northern Mandara region.

The integration of the firki plains into the Borno empire at the end of the 16th century AD do not go along with marked changes in the pottery tradition. The increase of strip roulette around the 16th century together with the appearance of sgraffito after this time has been interpreted as an evidence for the Kanurisation of the local people (Connah 1981). Both decoration techniques are typical for the Yobe valley in northwestern Nigeria, where the Kanuri settled first.

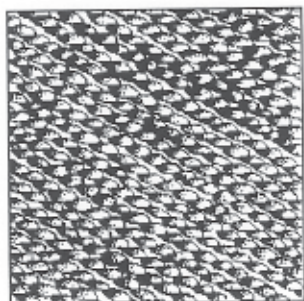
Figure 5: Mat and roulette types (drawings by Monika Heckner).



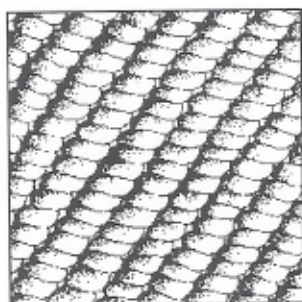
Plaited basketry



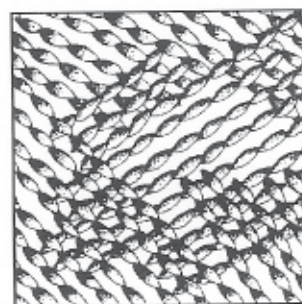
Twined basketry



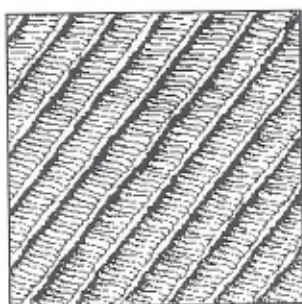
Cord-wrapped stick roulette



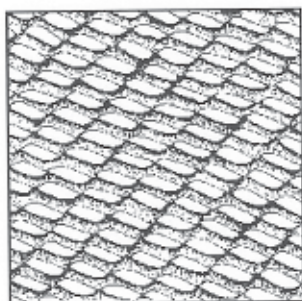
Twisted string roulette



Cord-wrapped stick with spacing roulette



“Canaux à fond filé” roulette



Twisted strip roulette



Carved roulette



But these techniques have a longer tradition in the Yobe valley prior to the arrival of the Kanuri in the 15<sup>th</sup> century (Connah 1981). As we do not know how Kanuri pottery looked, further investigation must show, which kind of assimilation processes took place there. Either the Kanuri has taken over the pottery elements from the indigenous population or cultural exchange between the Yobe valley and Kanem must have formerly existed. The use of twisted strip roulette is not restricted to Nigeria or a special ethnic group. It plays an important role in the Early Iron Age of Mali and occurs in small quantities already in the first millennium AD in the northern Mandara region.

To summarize, the ecological factors in the firki plains had created an environment attractive for long-term settlement at one site, made possible by the regression of Lake Chad at the end of the Late Stone Age. This special situation has given us the possibility to investigate the resettlement of an area and the transition from the Late Stone Age to the Iron Age periods, not preserved at other sites in West Africa. We have seen, that this transition is a real marked one because it led to the development of an almost only roulette decorated pottery tradition and an economy still practiced today.

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## ■ SENEGAL

### The Gorée Archaeological Project (GAP): Preliminary results

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### Introduction

Gorée is a small island of just 17 ha, but it has an eventful history. It is located 3 km off the coast of Dakar in Senegal, and offers unique potential for the study of the nature of early Afro-European culture interactions and patterns of trade in this part of the Senegambia Atlantic borderland. Since the mid 15<sup>th</sup> century, many European explorers harboring the West Africa coast chronicled trade activities and the peculiar lifestyle of Goreans (Adanson 1763 in Becker and Martin 1980; Boilat 1984; Demanet 1767:102; Froger 1698:7; Golbéry 1802; Lamiral 1791:45/46; Saint Lo 1637; see also de Moraes 1993, 1995, 1998). These accounts are differently appreciated by scholars who remained profoundly divided over the nature and impact of the Atlantic encounter on Gorean and Senegambian societies. Issues at stake include, the historical role and significance of Gorée island in the slave trade, the number of slaves who transited in the island, the nature and impact of the Atlantic commerce on Senegambian societies and its consequences on economic, social and cultural development. While available historical accounts may be laconic, biased or based on hearsay, part of the information they provide is extremely valuable and is amenable to archaeological testing. So far, archaeology contributed very little to the debate (Bâ 1997; Camara and Bâ 2000). One of the goals of the Gorée Archaeological Project (GAP) was to fill that gap.

The GAP was initiated in early 2001 as part of our efforts to gather archaeological material data to supplement historical textual sources. Since 2001, two field seasons of six months each were conducted in the island permitting to gather a large body of data to gain preliminary insights on trade, artisanal crafts,

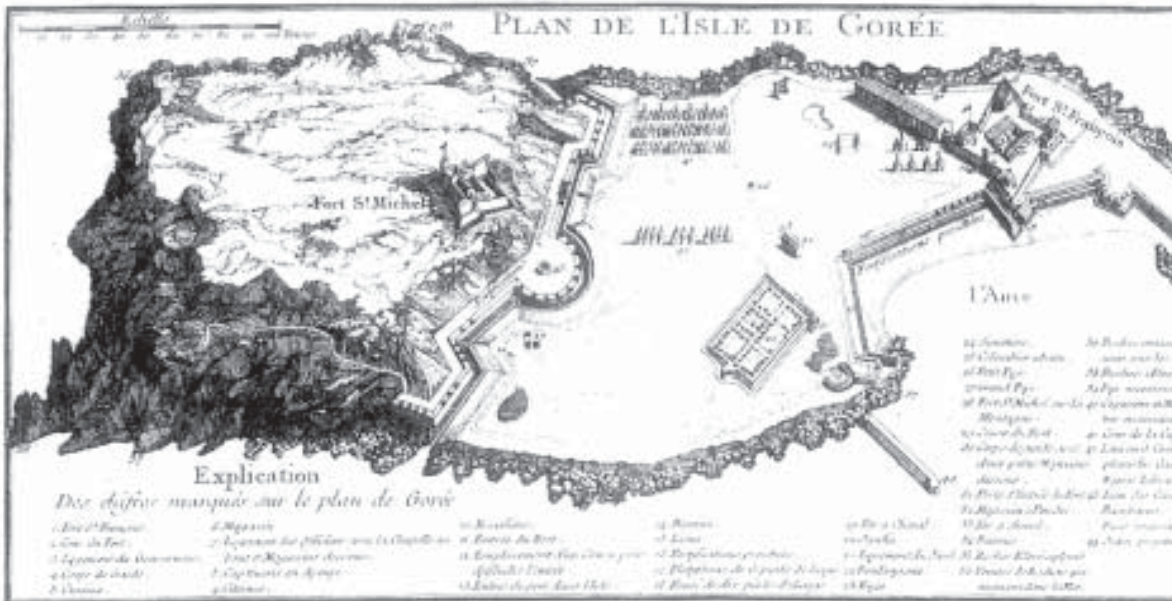
food ways, mortuary practices, and information on settlement and the use of space. Preliminary analysis of the data collected demonstrates the potential of archaeology to supplement documentary textual sources and raises new questions on both pre and post Atlantic Gorean society.

### Background

According to early European historical accounts, Gorée was a mere seasonal fishing camp when Portuguese sailors reached the West Africa coast in the mid 15<sup>th</sup> century. The Portuguese had no permanent establishment in Gorée beyond a church where many Christians who died in the Senegambia and Guinea coast were laid to rest (Boilat 1984:41; Fernandes in Boulegue 1987:110). The Dutch were the first Europeans who settled permanently in the island in 1627-28, giving it its current name Goeree and erecting there two forts: Fort Nassau in the northwest, and the Castle atop the hill that flanks the island in the south. The French ousted the Dutch from the island in 1677 after which it fell back and forth in French and British hands throughout the 18<sup>th</sup> and 19<sup>th</sup> centuries. Gorée owed its importance in the Atlantic commerce thanks to its excellent harbor where oceangoing ships accosted for supplies. But many European sources maintained that Gorée was a barren island essentially depending on adjacent mainland polities for water and food supplies (Adanson 1763 in Becker and Martin 1980; Demanet 1767:102; Froger 1698:7; Lamiral 1791:45/46).

Early European maps and plans indicate that settlement on the island was very sparse until the early 18<sup>th</sup> century (Figure 1). Passed that time, Gorée was increasingly incorporated into the Atlantic frontier, which ensured the circulation of people and commodities at a scale never reached before. Until the first quarter of the 18<sup>th</sup> century, settlement was segregated into slaves or Bambara quarter, "gourmettes" or Christianized Africans (probably freed former slaves) quarter, and a residents' (*habitants* in French) quarter including free Africans and mulattos. By the second half of the 18<sup>th</sup> century, settlement grew rapidly becoming un-segregated (Figure 2). Many African and Afro-European women married with expatriate European traders becoming *signares*, a corruption of the Portuguese word *signora*. The European presence in Gorée was motivated by trade and they were helped in that by *signares* who were both sexual

Figure 1: Plan of Goree by Aine (1725). Courtesy Mark Hinchman.



and trade partners to the Europeans. They mediated between mainland African populations and European traders living in the island. Most Europeans traders returned home after a few years leaving behind their African families and part of their fortune (Delcourt 1952). By the mid 18<sup>th</sup> century, *signares* owned most of the island's lands and houses (see also Knight 1970, 1977) as well as many domestic slaves who they rented to the Europeans who employed them as boatmen, skilled laborers, domestics and soldiers in the inland trade.

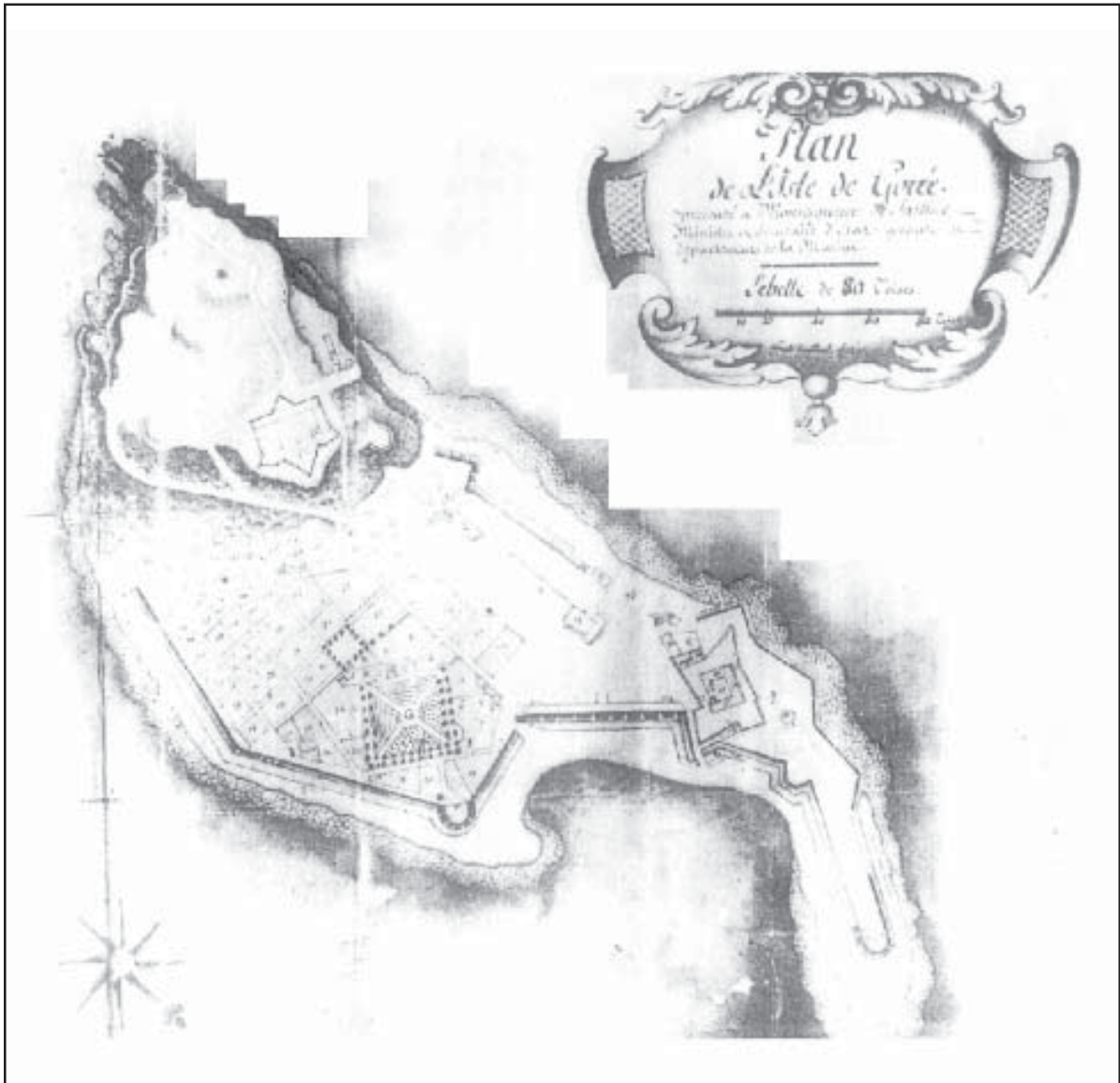
While documentary textual sources illuminate a number of historical conjectures including European competition for control of the island, the activities of trading companies, significant aspects of Gorean everyday life and practices remained unknown. We know very little on the nature of the pre-European settlement and the ways it was affected by incorporation into the Atlantic world. We have no idea on how the Europeans maintained their racial differences and cultural identities while interbreeding and living with local women. The ways social space between the different racial, class, and ethnic identities that were seminal to the expanding Atlantic world were defined, negotiated and imprinted in the physical landscape, are barely unknown. The processes through which, the settlement went from seg-

regated to integrated, and the delineation of the different quarters are still ill defined. The role of domestic slavery in the economy of the island and within the wider Atlantic world remains largely unexplored. The impact of transit slaves on the island's economy and how they imprinted their presence in the island's everyday life, are barely known. We have little idea on the scale and impact of the introduction of European trade goods, plant and animal domesticates respectively on local crafts and subsistence economy. The GAP was designed to begin collecting archaeological data to shed light on some of these questions.

### The Gorée Archaeological Project

The GAP was initiated in 2001 and involved survey, testing, mapping and excavations to evaluate the potential of archaeology to answer some of the questions raised above. Its main objectives were to collect relevant archaeological material data on the nature and chronology of the pre- and post-European settlement but also gather reliable contextual data on the distribution of material culture within the island, settlement and the use of space. The goal of this research program that will extend over several years was to begin to recover information on how

**Figure 2:** Cadastral map by Evrard Duparel (1778). Courtesy Mark Hinchman.



the Atlantic expansion and its many corollaries, including the wide scale circulation of trade goods and people, intense cultural interactions and emerging new identities, affected local life. Research will examine how these processes were expressed in the material record, settlement and the use of space.

Gorée Island is a primary tourist destination in Senegal, and is therefore difficult to systematically survey. However, fieldwork was possible on several

abandoned houses and unoccupied public space. Sampling was largely dependent on the size and configuration of the sites. In total 21 sites numbered G1 to G21 were tested. Out of those 21 sites, ten sites including G1, G4, G5, G6, G7, G11, G13, G14, G18 and G21 were selected for excavations (Figure 3). The size and number of excavated units varied from one site to another but excavation technique and recording procedures were identical in all sites.

## Analysis and Results

Preliminary analysis of the data collected via testing, mapping, and excavations permit us to gain new insights on the role and historical significance of Gorée in the Atlantic commerce. Two different assemblages were identified at four (G1, G5, G6, G7) of the ten sites excavated: a pre-18th century assemblage dominated by African manufactures and exclusively found in the northwestern part of the island, and a post-18th century assemblage where European imports grew considerably. This post 18th century assemblage was found at all sites but was the only assemblage recovered in the southern and eastern parts of the island where deposits were rather shallow. Preliminary analysis of this data yield critical insights on settlement and material culture and shed light on both pre and post Atlantic Gorean society.

## Gorée Island, before the Europeans

Test pits and excavations permitted us to locate and delimitate roughly the pre-European settlement in the northwestern part of the island. Sites with pre European deposits were only found in the area defined by a line approximately joining the actual Historical Museum in the most northwestern part of the island, the market in the island's central place, and the northwestern coastline overlooking Dakar (Figure 3). Curiously the area thus defined, encompass former Fort Nassau, renamed Fort Saint François by the French. Documentary textual sources indicate that the Dutch purchased the island from the chief of Dakar or from a local fisherman for a handful of nails (Boilat 1984; Cariou 1966). There is little archaeological evidence to ascertain the nature of the transaction that transferred the island from local to Dutch hands. However, the levels between the pre and post European contact period are characterized at G6 by widespread termite nests. The density of features recovered in the pre European deposits of this site suggests that the core of the settlement may have been located in this area. If this interpretation is correct, the massive termite invasion of the site may indicate abandonment of the settlement prior to the establishment of the forts by the Dutch in 1627-1628. The fact that Portuguese never settled permanently on the island but instead used it as a graveyard may have encouraged abandonment of the settlement by local dwellers in the mid 15<sup>th</sup> century. This may in part explain the absence or rarity of European trade

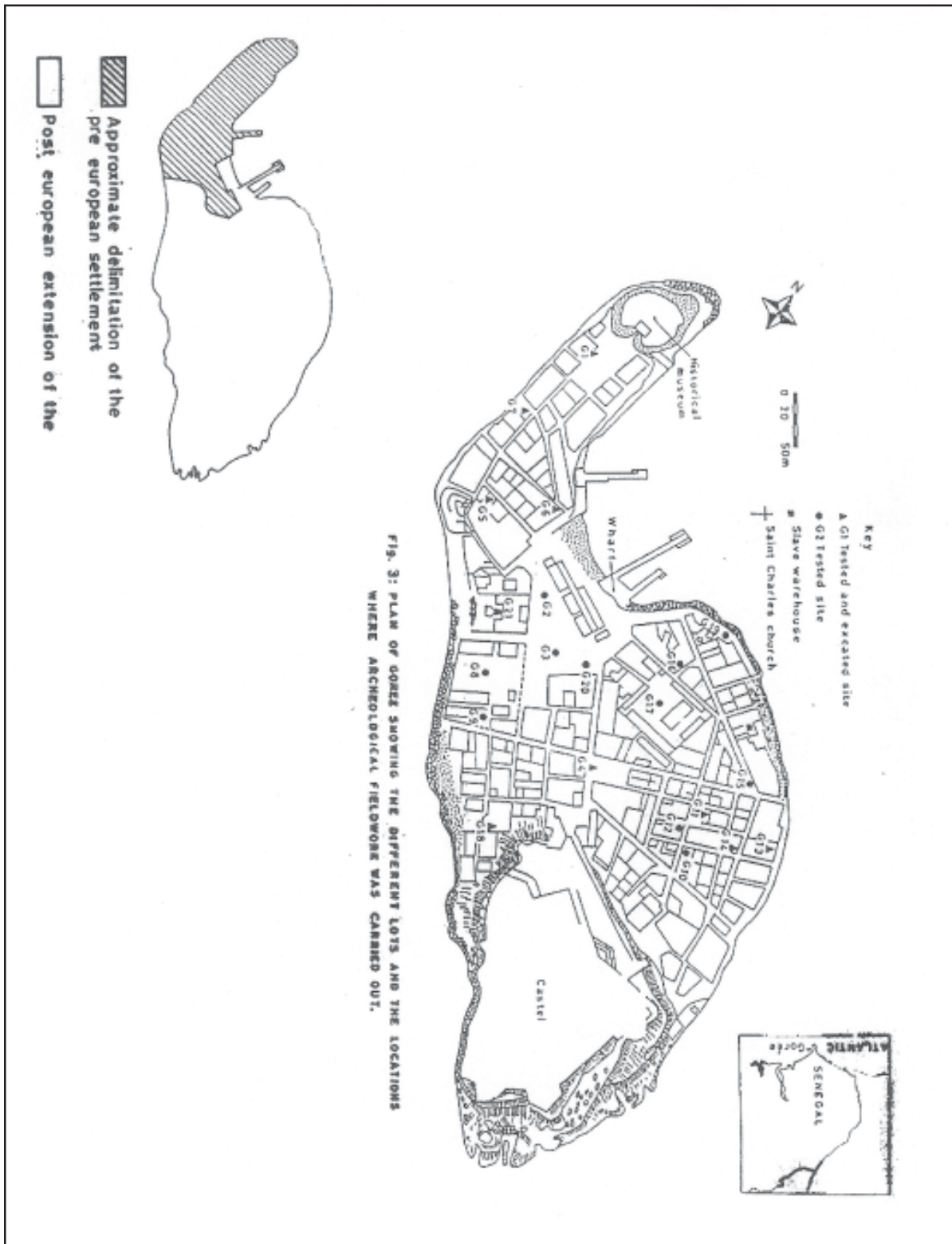
material in the archaeological contexts prior to the seventeenth century. It may also explain the alleged relative ease with which the Dutch put their hands on the island in 1627-1628 but not the rarity of European trade material for the 17<sup>th</sup> century that remained to be documented archaeologically.

The pre European deposits are dominated by pottery where twine and fish vertebrae roulette dominate in the decoration motifs. Features of floors and fireplaces excavated in association with these deposits indicate that the settlement, although small, might have been permanent. Additionally, this pre-18th century assemblage yielded a number of pottery features. This included small (diameters often less than 10 cm), unrestricted, and generally plain or twine decorated pots containing several miniatures pots whose diameters were less than 5 cm. Sometimes, these miniature pots were placed in *Cymbium* shell (*yeet* in wolof) but they were always covered either with potsherd fragments or other *Cymbium* shells (Figure 4).

Identical vessels were recovered elsewhere in nearby Madeleine Island where they were dated to the late first and early 2<sup>nd</sup> millennium AD (Descamps 1982). They were also found elsewhere in the Cap Vert peninsula where they were attributed to a ritual introduced into the region by Dahomean soldiers who came into the area in the colonial period (Mauny 1946, Monod 1944). While we know very little about the archaeological contexts in which these were recovered at the later sites, in Gorée Island they are unmistakably found in pre European contexts. Available data suggest that prior to contact with the Europeans in the mid 15<sup>th</sup> century, Gorée Island was occupied by a small-scale society. The pottery assemblage indicates likely cultural affiliations with inland communities of the Cap Vert peninsula. Although abundant fish remains were recovered, evidence of fishing equipment is rare in the assemblage suggesting that the occupants may not have been specialist fishermen. Additionally, there is no evidence of iron use prior to the 18<sup>th</sup> century.

The number of features of ritual pots found at the core of the settlement at G6 indicates intense ritual practices and it is likely that this was the primary function of the island in pre European times. The arrival of Portuguese sailors who used the island as a graveyard may have, in the eyes of local dwellers, transformed the island to a haunted place,

Figure 3: Plan of Gorée showing the different lots and the locations where archaeological fieldwork was carried out.



causing abandonment by the mid fifteenth century. In any case abandonment is suggested by massive invasions of termites in the levels between pre and post European contact deposits.

**Post-18th century assemblages**

In contrast to the earlier period, the post-Atlantic contact deposits were found at all tested and excavated sites and displayed a wide access to European trade material. Although local manufactures mainly including pottery continued to appear in the assemblages, European trade goods incontestably predominate in the post eighteenth century deposits. A vast array of European trade goods were recovered, including metal (mostly nails) and glass,

which were dominant followed by ceramics (Figure 5). The glass assemblage included a varied number of alcoholic beverages such as gin, cognac, wine and beer bottles. Beads, tobacco pipes and gun flints were present but in lower frequencies. Data recovered comprise also miscellaneous artifacts including ointment jars, perfume bottle, inkwells, coins, etc. Preliminary analysis of these European trade goods indicates mainly post-18th century deposits. Significant changes were also noted in the pottery assemblages with increased incidence of a number of decorative motifs including cord wrapped stick, stamp, channeling, comb and geometric incisions. Overall however pottery density seems to decrease considerably compared to pre eighteenth century deposits. Small ritual feature pots that were so characteristic of

**Figure 4:** Ritual pottery from unit G6B.





Figure 5: European ceramic from unit G13A.



pre European deposits were not recovered anywhere in the post-18th century assemblages.

These changes in material culture were similarly accompanied by significant changes in the settlement as most the island was occupied at this time. Documentary textual sources indicate that houses *en dur* (built in stone or brick) progressively replaced houses in clay and straw (Hinchman 2000). This is confirmed by archaeology, as several architectural features found in these contexts are associated with stone, brick, mortar and tile. Stones were quarried locally and shell processed to produce lime.

Although excavations, tests and mapping concerned the different quarters known historically, data collected and patterns observed do not so far permit to delineate these quarters unambiguously. Trade goods were found in the alleged slave or Bambara quarter as well as resident's and *gourmette's* quarters. Artifacts inventory, and analysis of fauna and flotation samples per quarter, once completed may

yield critical insights permitting to discern differential access to trade goods and subsistence. However, there may be very little archaeological visibility for such discrimination because by the mid 18<sup>th</sup> century, Gorée became a plural community. The exiguity of the island, just 17 ha, opportunities for social mobility, in which the *signares* played a critical role contributed to narrow both the social and physical distance between islanders.

The density of European trade goods throughout the island and the rapid growth of the settlement encompassing most of the island by the mid 18<sup>th</sup> century is a major consequence of Gorée incorporation into the Atlantic frontier. It reflects the central role of the island in the Atlantic commerce. Although small, Gorée began to play an important role in the political economy of coastal Senegambian polities. It supplied and provided several services to the Europeans and in the same time redistributed European trade goods inland. It was a safe haven for free Africans, Europeans and Afro Europeans traders who all relied

on domestic slave labor in various ways. Although many slaves transited in Gorée on their way to the New World, the island was also a big consumer of slaves itself.

## Conclusion

One major conclusion of this preliminary analysis is evidence of occupation of the island prior to the European Atlantic voyages, probably around the late first and early second millennium AD. This makes it possible to study both pre and post Atlantic contexts and evaluate transformations resulting from incorporation of "traditional" Gorean society into the Atlantic world. Preliminary analysis indicates the little archaeological visibility of European presence on the island prior to the eighteenth century despite historical claims of Portuguese frequentation of the island by the mid 15<sup>th</sup> century and Dutch permanent establishment by the early second quarter of the 17<sup>th</sup> century. Analysis of the deposits between pre and post Atlantic periods revealed termite nests that may indicate possible abandonment of the settlement by local dwellers probably as a result of Portuguese's visits and uses of the site as a graveyard from the mid fifteenth century until the Dutch occupation of the island in 1627-1628.

The pre European settlement on the island was apparently small scale and confined in the northwestern part of the island in the same area where the Dutch later built Fort Nassau. The deposits attributed to this period include a pottery assemblage with strong cultural affiliations with other assemblages of the Cap Vert peninsula. Fish may have also constituted an important part of the diet of the islanders but the rarity of fishing equipment in the assemblage may suggest that the occupants were not specialist fishermen. In the light of this evidence, it is likely that fish was brought into the island from the coast through different forms of exchange. It is also important to note that no evidence of iron use was recovered prior to contact with the Europeans.

Data collected suggests that the encounter between African and Europeans was more complex than generally indicated by historical documentary sources. It yields insights on how incorporation into the Atlantic system affected everyday life in the island. Beginning in the 18<sup>th</sup> century, there was wide access to European trade goods. Most of the island

was occupied at this time as tests and excavations revealed post 18<sup>th</sup> century deposits at all sites. The wide scale distribution of European trade goods is accompanied by a decline of local manufacture mainly constituted of pottery. This pattern makes it difficult to outline properly the different quarters historically documented in the island. In any case, historical plans and maps suggest that by the mid 18<sup>th</sup> century, which was marked by population growth and more intense involvement in the Atlantic commerce, Gorée became progressively a plural community. The consequence of this development was the reduction of both the social and physical distance between the different identities living on the island.

## Acknowledgments

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## ■ SUDAN

### Survey and Excavations at El Multaga (Northern Sudan). A New Aspect of the Neolithic in the Upper Main Nile

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### Introduction

The fieldwork of the SFDAS, the French Unit of NCAM (National Corporation for Antiquities and National Museums of the Sudan) at El Multaga has been carried out following the decision of the Sudan Government to build a dam on the fourth cataract of the Nile. During the summer 2001, NCAM was informed that the construction of the dam, henceforth called the "Merowe dam", would start in the following months. Part of the population of the forthcoming reservoir would also be resettled within a year in the districts of Goshabi and Abu Dom, between Korti and Debba, in an area where an agricultural scheme including three new villages and a network of canals would be set up for that purpose. The French Unit was then requested to carry out a comprehensive survey of that area, where, thanks to the delay in the resettlement project, work could cover two seasons, from the 14th of November 2001 to the 14th of April 2002 and from the 5th of November to the 24th of December 2002. The two campaigns have been carried out thanks to financial support from NCAM, the Ministry of Irrigation and Water Resources and Ariab Mining in Sudan, and from the Ministry of Foreign Affairs in France.

### Description of the area

The area selected for the villages and for the scheme has been named El Multaga - the crossroads -

because the new Bayuda road, which links Omdurman to Abu Dom, divides there into two branches, one going up river towards the fourth cataract and the other down river towards Dongola. Before earthworks were carried out, it looked like a flat sandy plain with no visible natural or human features, apart from some low gravel mounds that had escaped sand covering. Except for a narrow strip of land, where the main pump station has now been set up, it is about 5.5 km wide and 15 km long, starting at a distance of about 2 km back from the river and ending at a distance of about 5 km from the low hills that border the valley. Being inhospitable, it seems to have been uninhabited for a very long time.

### Earlier research

Former archaeological and associated geomorphologic research was limited to survey and excavations 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 J. L. Shiner (Shiner *et al.* 1971). Their work led to the discovery of about ninety localities, mostly ceramic bearing prehistoric sites, of which only a few were found *in situ*. To their disappointment, no significant earlier site was identified. No later site was reported. They defined four ceramic bearing groups of assemblages as the Karmakol (first labeled Early Khartoum Related), Karat and Tergis Industries and El Melik Group. The Karmakol and the Karat Industries showed important affinities, mostly through their ceramic assemblages, with the Khartoum Mesolithic and Khartoum Neolithic, while the Tergis Industry was considered as specific of 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 Industries. As GPS instruments were not available at that time, none of them was given co-ordinates and, in great part because of continuous sand movement in the area, we failed to re-locate them.

### The survey

Our survey, which was carried out during the first campaign, led to the identification of 147 sites including remains of single occupation (119) and

Figure 1: Map of the Middle Nile Valley locating El Multaga.

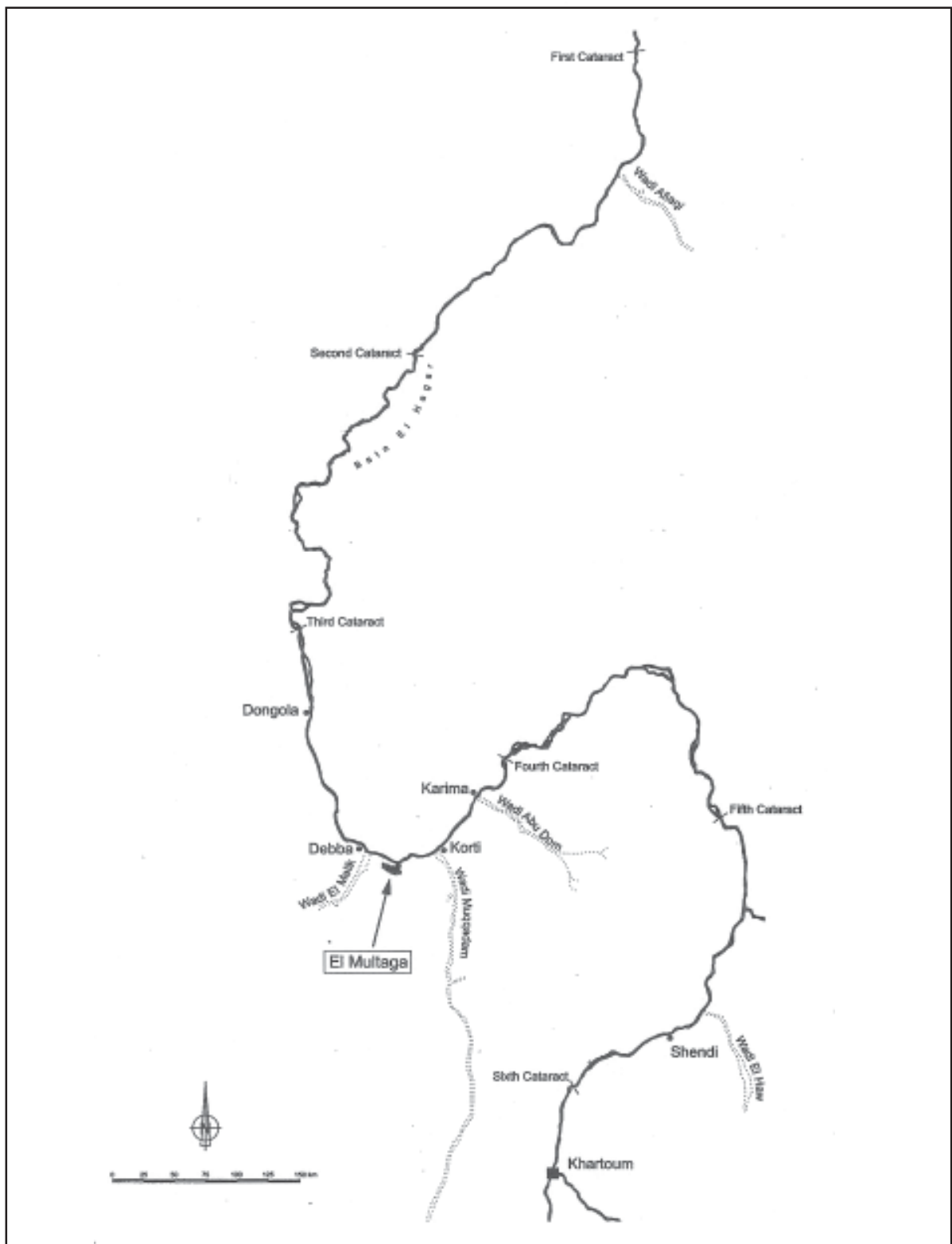
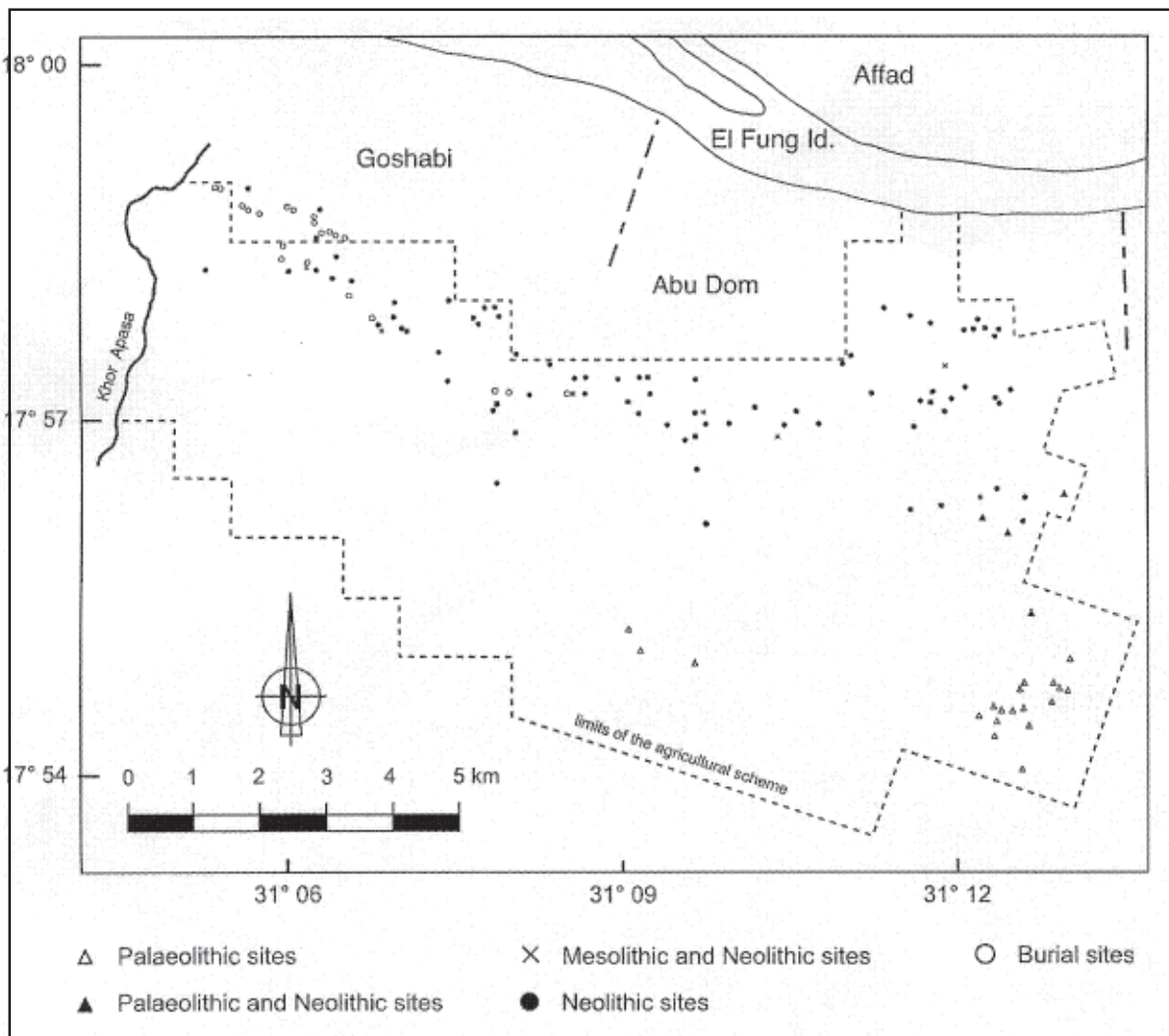


Figure 2: Distribution of archaeological sites at El Multaga.

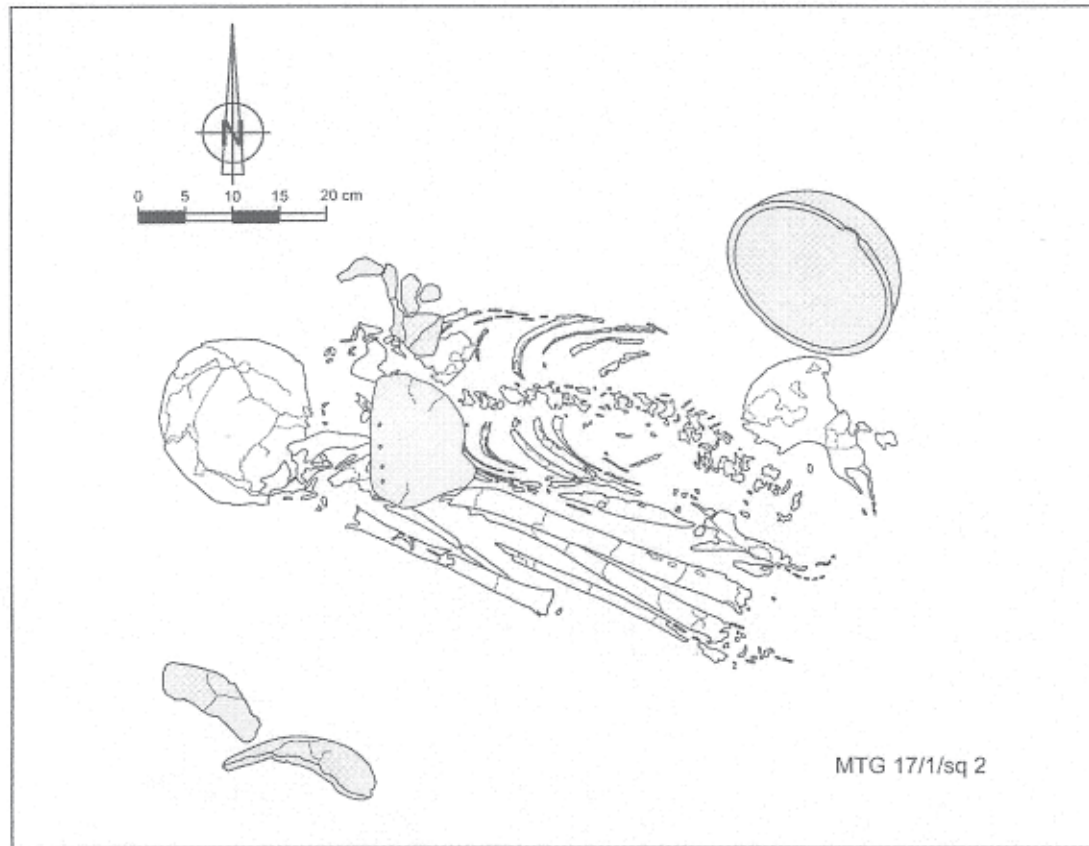


mixed occupation (28) pertaining to Palaeolithic (23), Neolithic (105), Christian (34) and late (13) horizons. Except for one settlement, located near the river at the pump station site, all Christian and late remains were restricted to few pottery sherds that did not indicate significant activity. Even the river site, which seemed to evidence a substantial settlement where saqia had been used, gave disappointing results, since it produced only surface material already much disturbed by the digging of an earlier and smaller canal. As a consequence, the main contribution of our work pertains to the field of prehistory.

### Palaeolithic occupation

The Palaeolithic remains are mostly situated in the south-eastern part of the area, where seventeen sites were recorded during the survey. Philip Van Peer, who paid a short visit to that area, identified them as Middle Palaeolithic workshops where local chert was processed for manufacturing tools. A small sounding showed that the lithic material, which is very eroded when found on the surface, occurs also in an underlying deposit of Nile gravel, where it is remarkably fresh. He concluded that those sites were of great archaeological interest, hence our decision to investigate them in more detail during our second

Figure 3: A Neolithic grave.



season. That further investigation was entrusted to Elena Garcea who, during the second campaign, identified at the light of four soundings three Middle Palaeolithic industries in stratigraphic position, of which she already gave a description in an earlier issue of *Nyame Akuma*. As they are located in non cultivable land, the sites will not suffer from agricultural activities and, consequently, they will certainly escape destruction.

### Early Ceramic occupation

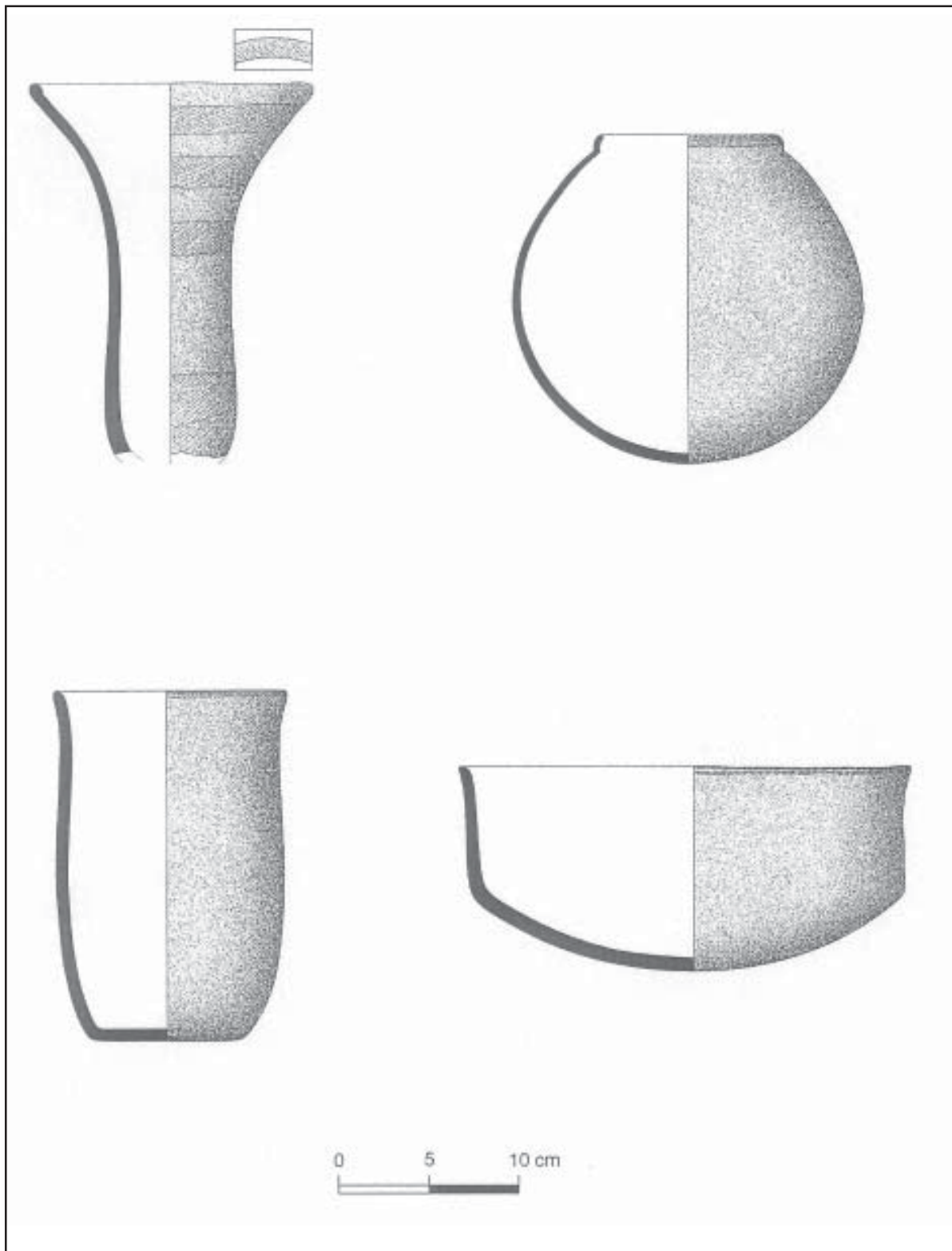
This is not the case for the Early Ceramic sites, which, in most cases, have now been destroyed since they were located on cultivable old river silt that induced the choice of the area for the agricultural scheme. They occupy, along the northern edge of the scheme, a 2 km broad east-west strip of land which indicates an old river shore that moved progressively from south to north. Although most of them are re-

lated to the Karmakol and Karat industries, they will be labelled here Mesolithic and Neolithic in accordance with a more usual trend in Sudanese archaeology. They include Mesolithic and Neolithic settlements and burial sites belonging almost exclusively to the Neolithic.

### Settlements

The settlements were heavily eroded sites where, in all instances, the material was restricted to a surface layer where, beside a few exceptions, only lithics and ceramics were preserved. Seven of them belonged to the Mesolithic and sixty-five to the Neolithic. All were small concentrations documenting limited occupations, except for one, MTG 3, a Mesolithic site extending over a surface of about 7000 m<sup>2</sup> that appeared as the only significant settlement site of the area. This is the reason why, during the first campaign, we carried out there, on a surface

Figure 4: Neolithic vessels.





of 3400 m<sup>2</sup>, a systematic collecting that provided large quantities of pottery sherds and lithic material and almost no organic remains. The pottery is characterized by thick walls; surface colors ranging from dark red to light grey; tempers of vegetal fiber, quartz sand, and quartz sand mixed with mica; dotted decorative motifs identical to those found in all Early Khartoum Horizon sites. As usual for such sites, microliths are abundant and display a high ratio of finished tools, mostly lunates. Surprisingly, grinding tools are almost absent.

### Burials

The burial sites include 53 graves containing a total number of 55 skeletons, which all belong to the Neolithic. Most were excavated during the second campaign, which, in point of fact, was scheduled when it was discovered, at the end of the first campaign, that some of the small natural mounds that had been noticed and tested with no result during the survey contained Neolithic burials. Among the 65 mounds that we excavated, 21 only contained Neolithic graves. They were scattered over the area described above and provided between one and six burials each. Except for three, which were discovered in flat areas, the graves were all found in the mounds. All are small shallow shafts containing a single individual, except for two that contained double burials. All skeletons were found on their side in a very contracted position, with no particular orientation, and few only had associated material. That material, which was never abundant, includes as a whole some personal adornment, one mace-head, two bone awls and a number of pottery vessels. The personal decoration is restricted to several strings of amazonite beads, two zeolite curved lip plugs and three ivory armllets. The pottery displays a variety of vessel shapes that are identical to those of cemetery KDK1 at Kadruka, dated to the second half of the fifth millennium BC (Reinold 2001). A few sherds from rippled vessels indicate however that some graves could be slightly later in date. In few instances animal remains were also associated with the burials.

### Other features

More surprisingly some of the mounds, eight of which were devoid of burials, provided (a) pottery vessels that were not associated with any particular

feature and (b) forty-three rounded shallow shafts filled with gravel, twenty-five of which contained pottery vessels and/or sandstone grinders. Those vessels, which belong to the same family as those found in the graves, include decorated caliciform beakers similar to those from cemetery KDK1 at Kadruka. It is worth mentioning that such beakers do not occur among the vessels collected in the graves. One of the most interesting of those particular finds is a complex deposit that contained polished celts, bone tools and numerous lunates that were certainly originally packed in a bag, of which all material evidence has since vanished. The bone tools include the hafts of three sickles, which have been grooved on one side for setting in the retouched edges of the lunates found with them.

### Conclusion

The salvage work carried out by the SFDAS at El Multaga has mostly covered a territory some distance from the river where archaeological remains were restricted to prehistoric sites. Besides Middle Palaeolithic concentrations of artifacts involving quarrying and tool-making activities, most sites displayed artifacts related to two main phases of the Early Ceramic tradition. They are all located in a broad strip of Nile alluvium evidencing an old river shore that moved progressively from south to north.

The so-called Mesolithic is mainly documented by a large settlement that provided large quantities of lithic and ceramic material related to the dotted phase of the Early Khartoum tradition, while the Neolithic is documented by settlements and burial sites that provided material related to the Khartoum Neolithic and its Kadrukan counterpart. The small size of the Neolithic settlements, the lack of grave concentration and the scarcity of grave goods contrast with what is known from other sites of the same horizon, such as Kadero, El Ghaba and Kadruka, where intensive occupation is associated with large cemeteries. They certainly document an adaptation based on nomadism, which may have been related to the exploitation of the large wadis that join the Nile in the area. The discovery of three sickles shows that such exploitation included the gathering of cereals, whether wild or domesticated. El Multaga has therefore revealed an aspect of the Neolithic of the Upper Main Nile that would certainly not have been documented without salvage pressure. It is significant that the

survey carried out in 1966-67 between Debba and Korti, i.e. in a larger area (Shiner *et al.* 1971), did not lead to the discovery of any Neolithic burial site, not even of a single grave.

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## ■ SUDAN

### New Archaeological Work in The Lower Wadi Howar (Northern Sudan) – A Preliminary Report on the 2002 field season

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### Introduction

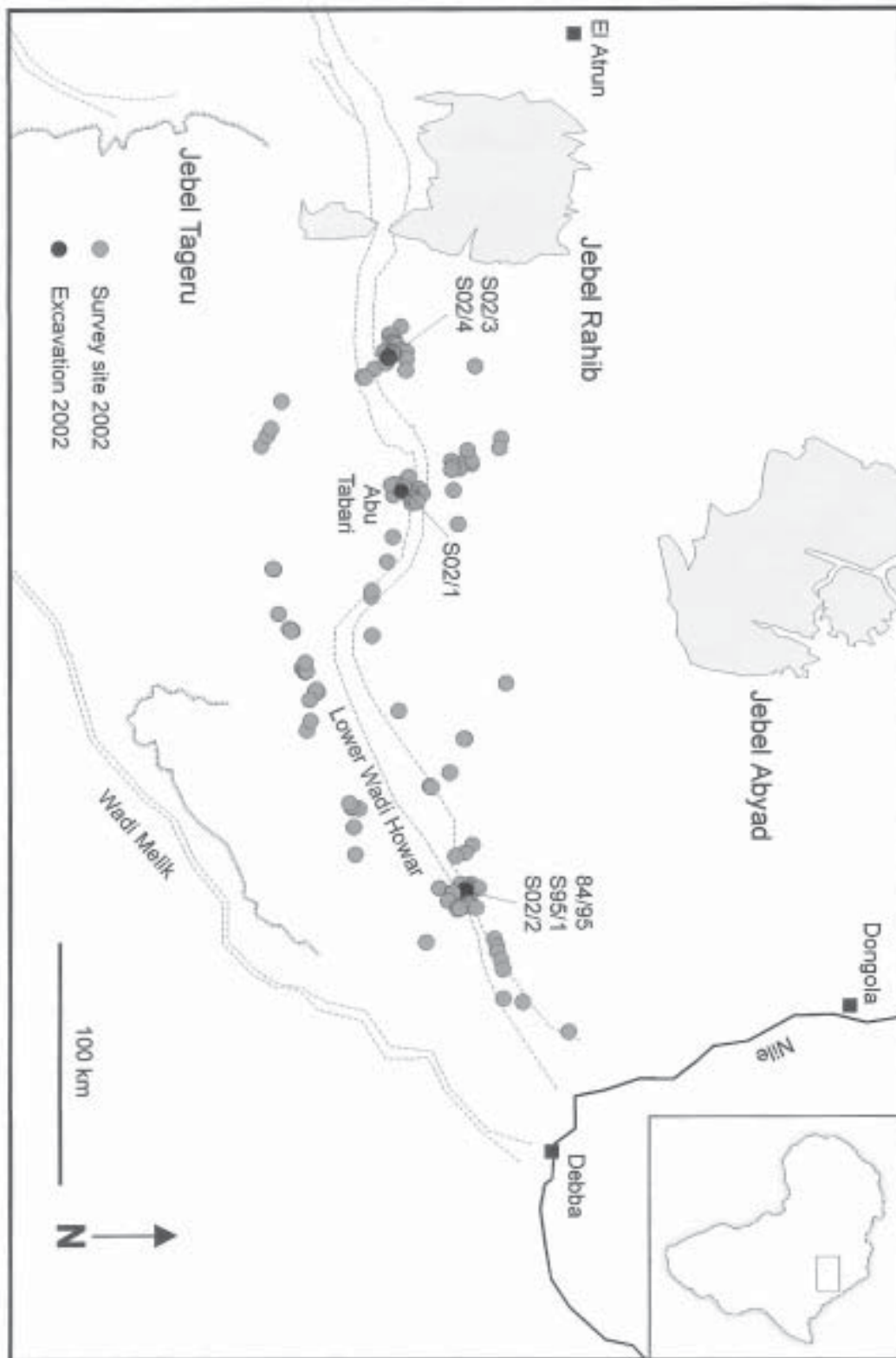
The Wadi Howar traverses over a length of more than 1000 km the southern fringes of the Sahara between its source in eastern Chad and the Nile (Figure 1). This actually dry river system was once the most important tributary from the Sahara to the Nile. Its lower course stretches about 400 km between the mountain chain of Jebel Rahib and the Nile. In contrast to the upper course, this part of the wadi is a featureless, 5 to 15 km wide valley with no pronounced embankments and nearly no vegetation. Geoscientific and archaeological work during the past 20 years has, however, revealed a long and complex ecological and cultural history of this part of the Southern Libyan Desert (see e.g. Gabriel *et al.* 1985; Pachur and Kröpelin 1987; Kuper 1988; Richter 1989; Kröpelin 1993; Keding 1997, 2000). At about 9300 BP (ca. 8500 cal BC) climatic conditions became favourable, the wadi of the early and middle Holocene has to be imagined as a chain of lakes and temporary pools (Kröpelin 1993:234). Favourable conditions remained until 3000 BP (ca. 1200 cal BC), when desiccation reached this part of the Sahara. In the Lower Wadi Howar, a short humid episode at about 2000 BP (ca. 0 BC/AD) is attested (Kröpelin 1993:236).

The history of human occupation is reflected in the ceramic sequences detected on the very peculiar type of sites of the Lower Wadi Howar, the dune habitats: Dotted Wavy Line pottery is followed by Laqiya type pottery and then Leiterband as well as

undecorated pottery (Gabriel *et al.* 1985; Keding 2000). The pottery and the radiocarbon dates attest an intensive human settlement of the area from the end of the 6<sup>th</sup> millennium BC up to the 3<sup>rd</sup> millennium BC (Keding 2000; Jesse in press), after which evidence becomes scarce. The ecological conditions obviously no longer permitted permanent settlement in the Lower Wadi Howar. Only a few traces of the small livestock keepers of the Handessi Horizon of the 2<sup>nd</sup> millennium BC have been found. The massive stone walled fortress Gala Abu Ahmed, attributed to the Kushite period and situated about 110 km west of the Nile, (see Kuper 1988: 136; Kröpelin 1993: 137-140) indicates, however, the continuing importance of the wadi as a passage through the desert.

Archaeological research in the Lower Wadi Howar, conducted since the 1980s by the projects B.O.S. (“Besiedlungsgeschichte der Ostsahara”) and later ACACIA (“Arid Climate, Adaptation and Cultural Innovation in Africa”) of the University of Cologne (see Kuper 1988; Keding 1997, 1998, 2000, 1998-2002) has focused on the dune-habitats. Large dunes of parabolic shape have been preferred places for settlement in the Lower Wadi Howar (see Gabriel *et al.* 1985; Keding 2000; Jesse in press). More than 50 of these very striking sites were discovered by 2001, all situated in quite a restricted area, stretching from about 200 km west of the Nile up to the Jebel Rahib. (Keding 2000:91). A dense scatter of archaeological material on the surface and excavated stratigraphic sequences of about one metre thickness indicate long-term human settlement (Gabriel *et al.* 1985; Keding 2000). In contrast, the sites in the plains always seemed to be of less interest as they appeared to be mostly large surface scatters consisting of stone artifacts and rare pottery (Keding 2000: 91). However, Leiterband pottery, typical for the 4<sup>th</sup> and 3<sup>rd</sup> millennium BC in the Wadi Howar Region (Keding 1998:5-9), is quite numerous on sites in the plains in the eastern foreland of Jebel Rahib (Jesse in press). Furthermore, the discovery of a large surface site near Abu Tabari with a pottery type so far unknown in the Lower Wadi Howar and a rich faunal assemblage in 2001 led to the consideration that a more detailed study of the surface sites would be useful. Thus, excavations and survey were carried out in different parts of the Lower Wadi Howar during the field season in 2002.

Figure 1: The Lower Wadi Howar, Northern Sudan.



## Field work in 2002

**Survey activities.** Combining a systematic car survey and survey by foot, a total of 155 sites were discovered in 2002 (Figure 1). These comprise mainly surface sites in the plains but also 27 new dune habitats. Several dune habitats were discovered south of the wadi. This type of settlement was so far only known in the northern part of the Lower Wadi Howar. As is the case there, the dune habitats in the southern part show traces of a long-term human occupation reflected by different types of pottery and an enormous amount of archaeological material. In the direct vicinity of the Nile Valley only few settlement sites could be identified. The large artifact scatters observed here seemed mostly quite disturbed by erosion.

## Excavations

**Abu Tabari S02/1.** Site S02/1 is situated in the Lower Wadi Howar, approximately 260 km west of the Nile (Figure 1). The site is situated on a large flat mound orientated ENE-WSW and covers an area of several hundred square meters. A trench measuring 30 m<sup>2</sup> (S02/1-1) was partly dug to a depth of 30 cm, where yellow sterile sand was reached. The excavation revealed a large amount of ceramics, lithics and bones (several species of fish, among them *Lates niloticus* and *Clarias* sp. as well as cattle, hippopotamus and crocodile). The pottery is mostly undecorated. Among the decorative patterns, incised or impressed herringbone motifs and oblique impressions concentrating on the rim of the vessels are quite common. The sherds are rather thick and heavily tempered with quartz.

Using a total station, a detailed measurement program for single finds and structures (e.g. knapping areas or stone settings) was carried out to provide a complete plan of the site. Many lower grinding stones were recorded; these were mostly complete, made out of granite and of large dimensions (up to 80 cm long). During the measurement program, six eroded human burials were discovered. Two of them were chosen for excavation (S02/1-2 and S02/1-3). In both cases, the body was buried in a flexed position laying on the right side with the head to the south. No grave pits were visible. In grave S02/1-2, two wing bones of a spur-winged goose (*Plectropterus gambensis*; identification by Nadja Pöllath, Munich)

were found laying on the pelvis of the body. In both graves, a few ostrich eggshell beads were found.

A small trench of 1 m<sup>2</sup> (S02/1-4) was laid out around a nearly complete but broken caliciforme beaker, a type of vessel rather unexpected in this part of the Sudan. Caliciforme beakers are known from cemeteries in the Sudanese Nile Valley, such as Kadero (e.g. Krzyzaniak 1991: 522) and Kadruka (e.g. Reinold 2001: 3), where they form part of the grave goods. The first impression of the archaeological material found at site S02/1 makes an attribution to the Khartoum Neolithic, thus to the 5<sup>th</sup> and 4<sup>th</sup> millennium BC very probable. The site is not an isolated one but embedded in a larger regional settlement pattern. Further flat mounds with similar scatters of artifacts were discovered in an area of about 10 km around S02/1.

**Conical Hill S02/3 and S02/4.** The two sites (Figure 1), situated about 320 km west of the Nile, are located in a flat and vast sandy plain. Site S02/3 showed several concentrations of bones and ceramics, among them also complete vessels. The bones are mostly from cattle, the pottery is decorated with Leiterband patterns but also with an incised herringbone pattern comparable to a decoration recorded at several of the dune habitats (Keding 1997:43, photo 3). Two trenches were excavated encompassing bone and pottery concentrations (S02/3-1 and S02/3-3). During excavation it became clear that these concentrations were the remains of eroded pits, in one case preserved up to a depth of about 30 cm. The cattle bones were generally found in these pits. The pottery found in S02/3-3 is decorated with a fine impressed plain zigzag-decoration. A stone structure, consisting of several large lower grinding stones, was chosen for further excavation: S02/3-2. The 15 m<sup>2</sup> trench was dug to a depth of about 10 cm. Underneath the stone setting, no features were visible.

An eroded human burial, situated on the western margin of the site, was excavated (S02/3-4). The body had been buried in a seated and very flexed position; it gives the impression that the dead were tied up the dead before being buried. No grave goods were found and a grave pit was not visible. Four geological profiles clearly indicate that the prehistoric settlers lived on a flat sandy dune near a water surface. The human burial was situated quite near to the ancient shore line of the water surface.

Site S02/3 is located in a larger settlement area, as could be shown by survey activities. The way of burying the dead in a seated and very flexed position seemed to be a common rule in this region: further burials (always quite eroded) of this type have been found at different survey locations. Just several hundred metres south of site S02/3, a large site of a similar layout was discovered: site S02/4. A large concentration of pottery sherds, decorated with an impressed fine plain zigzag pattern was chosen for excavation. The trench (S02/4-1) covered an area of 15 m<sup>2</sup> and revealed a pit of 30 cm depth filled with mostly cattle bones underneath the pottery concentration.

The fortress Gala Abu Ahmed (84/95) and its surroundings. The massive stone walled fortress, discovered by the B.O.S. project of the University of Cologne in 1984 (Kuper 1988: 136-137; Kröpelin 1993:137-140) and registered as site 84/95, is situated on the southern shore of a clearly distinguishable wadi channel, about 110 km west of the Nile. In 1984 only a short survey was possible; a schematic plan of the approximately 180 m x 120 m large building was drawn (Kuper 1988:137, fig. 7). The aim of research in 2002 was to take more detailed measurements using a total station in order to correct the existing map of the site. A kite was used to take aerial photos of the building. A test trench of just 2 m<sup>2</sup> (84/95-1) was excavated in the north-eastern corner of the building in the hope of finding some material suitable for radiocarbon dating. At a depth of 30 cm the underlying sandstone was reached. During the excavation about 1300 ostrich eggshell beads of different size were found. Small fragments of faience point from their fabric and stylistic workmanship to the Napatan period (ca. 900-400 BC). This attribution has been confirmed by a first radiocarbon date established on one of the ostrich eggshell beads: 2490 ± 30 BP, 630 ± 90 cal BC (KIA-20651). Survey of the surroundings of the fortress did not lead to the discovery of settlement sites clearly connected with the building. On the northern, and especially on the southern, bank of the wadi channel in which the fortress is situated, many stone tumuli have been recorded, presenting diameters between 3 and 5 m and a height of sometimes up to one metre (Kröpelin 1993:140-141).

Rock engravings about two kilometers east of the fortress have been known since the field campaign of the ACACIA project in 1995 (site S95/1). In 2002, a detailed photographic documentation of the engravings was made and a plan of the rock art site

was established. The engravings mostly show schematic signs, but also some animals (probably cattle and gazelle) as well as human figures and a sign which can be interpreted as an "Ankh-sign". They were worked on horizontally lying quartzite blocks. These blocks stretch over a length of about 200 m. The schematic figures seem to be older than the other depictions, the latter being brighter. Sometimes shallow grinding depressions superpose the schematic engravings. Close to the north-eastern corner of the fortress more engravings of animals (e.g. cattle and giraffe) were discovered on the vertical sides of flat sandstone outcrops (site S02/2). The engraving of a giraffe was discovered with its legs still covered by sediment. The very solid playa-sediment in front of the block had to be dug to a depth of about 40 cm before the bottom of the engraving was reached. Some small fragments of charcoal were found during the excavation, as well as a few bones and lithics. The radiocarbon dating of the charcoal, which is still in progress, will provide a *terminus ante quem* for the rock art.

## Conclusions

Adding the 155 sites discovered in 2002, a total of 295 sites are now known in the Lower Wadi Howar. Most of them are surface sites in the plains, the number of dune habitats rose to 83. The distribution of the latter type of settlement is no longer limited to the northern bank, as several of these sites have been discovered south of the Wadi Howar. However, dune habitats are still confined to the western part of the Lower Wadi Howar, they do not occur near the mouth of the Wadi Howar and nearly 200 km upstream.

The large number of sites in the westernmost part of the Lower Wadi Howar (around sites S02/3 and S02/4) presenting important amounts of cattle bones and pottery decorations attributable to the Leiterband Horizon (ca. 4000 - 2200 BC) will allow a more detailed study of the proposed transhumance cycles of the cattle-herding Leiterband people between the Middle and the Lower Wadi Howar (Keding 1998:10). The presence of the herringbone pattern on site S02/3 indicates also connections to the Nubian Nile Valley. This pattern, so far only known from the dune habitats of the Lower Wadi Howar, shows resemblance to the Pre- and Early Kerma-Culture and the A-Group in the Nubian Nile Valley (see

Keding 2000:92). The detailed examination of the archaeological material at the sites S02/1, S02/3 and S02/4 should enrich the chronological frame provided by the stratigraphic sequences excavated on the dune habitats with more information concerning settlement strategies and subsistence patterns during the 5<sup>th</sup> to 3<sup>rd</sup> millennium BC.

The fortress Gala Abu Ahmed could be attributed to the Napatan period. The function of this massive stone walled building, probably an outpost controlling a trade route either east-west or more probably north-south orientated (see Kröpelin 1993:140), still remains open. However, even during the 1<sup>st</sup> millennium BC the Lower Wadi Howar, or at least parts of it, was still used by human groups.

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