

SUDAN & NUBIA

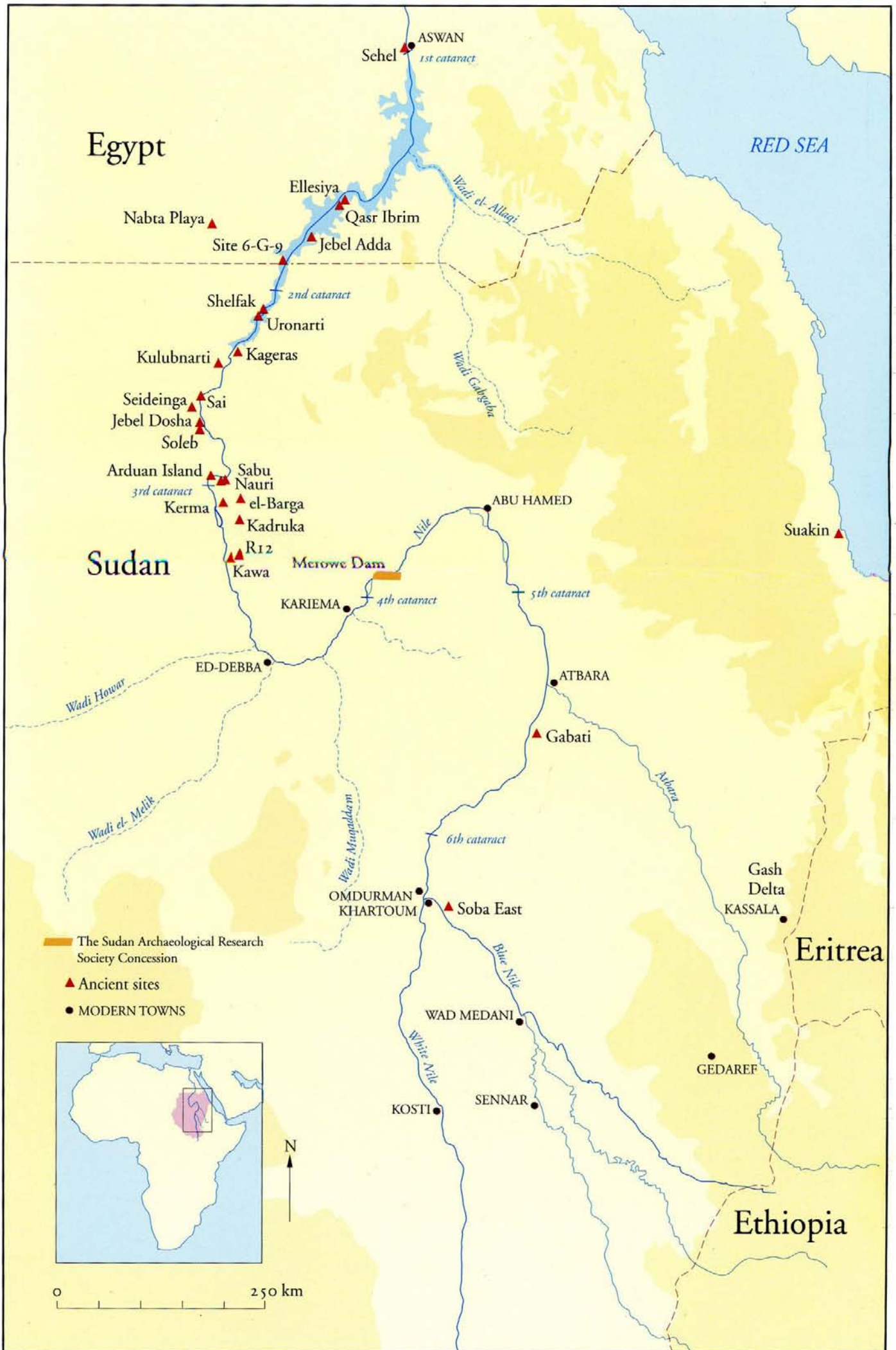
The Sudan Archaeological Research Society



Bulletin No. 8

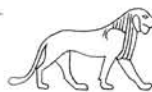
2004





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Front Cover: Uronarti: view along 'Middle Street' towards the southern defences in March 2004 (photo Derek A. Welsby)



The Central Amri to Kirbekan Survey

A Preliminary Report on Excavations and Survey 2003-04

Dorian Q Fuller

Introduction

Within the SARS concession previous survey and excavation work was directed by Derek Welsby in 1999 (Welsby 2000; 2003a), in the winter of 2002-2003 and in December 2003 (Welsby 2003b; this volume). The work in 1999 consisted of survey, focusing on a stretch of *c.* 10km in the centre of the concession which included numerous islands

as well as part of the left bank. In 2002-03, excavation focused on sampling cemeteries and tomb monuments of various types. The present season, of the University College London/SARS expedition,¹ focused instead on settlement sites as well as additional survey on the large island of Ishashi (Figure 1). All of the work this year was conducted on islands which raised certain logistical challenges in terms of transporting team members and finds by boat and navigating sometimes challenging rapids. In addition to archaeological excavation, collection of modern flora and interviews with local women about agricultural practices were conducted. The nature of threshing floors, land-holding, sowing cycles, and animal fodder were discussed. In addition, some modern reference specimens of fish were collected along with information on traditional practices from a local fisherman.

¹The field team consisted of 13 members for various periods, including the director, Dorian Fuller, Eric McCann (UCL PhD student), Andrew Ginns, Ben Neil, Dr David Edwards (University of Leicester), Ruth Pelling (UCL PhD Student), Cornelia Kleinitz (UCL PhD Student), Dr David Wengrow (UCL staff from September 2004), Louise Jordan (UCL BA student), Sarah Lawson (UCL BA student), Sally Davis (UCL BA student), Brigitte Balanda (UCL BA student), and Haider Mohammedain (NCAM). In addition we were joined for one week by students from the archaeology department of the University of Dongola at Kareima.

Ishashi Island Survey

Ishashi is a large island (more than 3km in length) that was not covered in previous survey work and was therefore targeted for survey by foot by two teams of four during the first part of the present season. Modern settlement on the island focuses on the island shores and the elongated eastern part of the island, while the central and western parts of the island are covered by an expanse of rocky desert and hills (Colour plate IV). Sites were recorded with photographs and descriptions and positioned by GPS coordinates, as well as by reference to satellite photos of Ishashi Island. Surface collections of artefacts were also made in order to suggest approximate dates or date ranges of sites whenever possible. A total of 62 sites were identified, numbered in a separate Ishashi sequence from Is 1 to Is 62, and subsequently assigned numbers using the Archaeological Map of Sudan designation (3-O-14 to 3-O-53; 3-J-38 to 3-J-55;

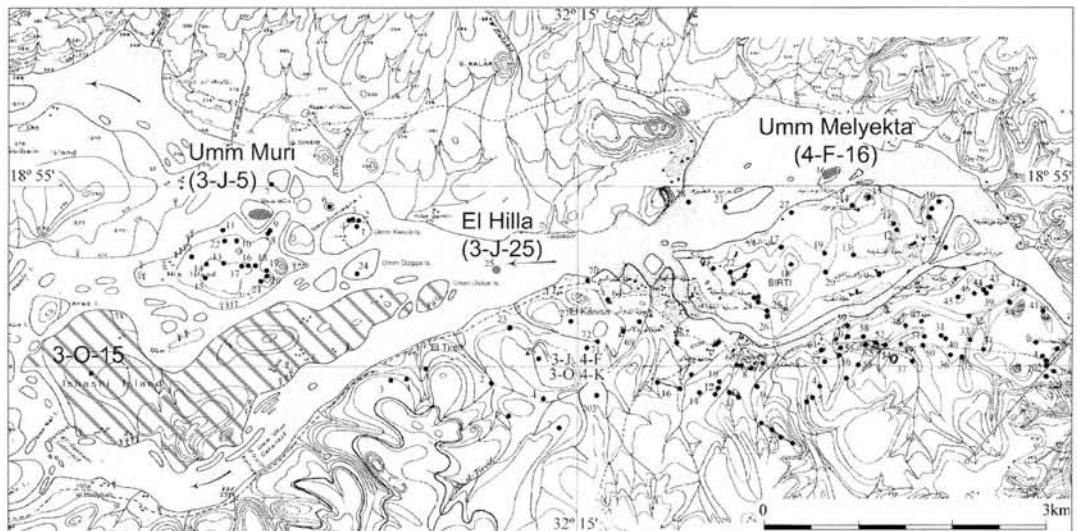


Figure 1 Map of the central portion of the SARS concession.

3-N-305). The island is particularly rich in rock art. Thirty-three of the sites constitute rock art including numerous rock drums (a more accurate description than the conventional “rock gong” and one that is in keeping with the modern local name for these features, *nugara*). The rock art and drums form the basis of a more detailed study undertaken by Cornelia Kleinitz (see article this volume). Many of these rock art sites have produced surface artefact finds which have been grouped under the same site designation, although this material need not date the nearby rock art. On grounds of stylistic variation, superposition and other suppositions, the rock art is thought to range in date from the Neolithic to the medieval period, generally with reuse of the same site over extended periods or during different phases. One rock art site consisted primarily of grinding impressions and cup-marks/mortars and suggests an ancient plant food processing area (Plate 1). This is associated with finds that may be Early Khartoum in date. Otherwise the Early



Plate 1. Cupmarks and mortars.

Khartoum (pre-Neolithic) material is not associated with the rock art sites. Near one of the rock art sites (3-O-30) a cluster of stone cairn features (3-O-15) was also subjected to small scale excavations (see site 3-O-15 below). Other sites included 12 probable burial sites, four medieval settlements (with material suggesting Early Christian through Terminal Christian occupation), one late historic/recent fortified house and 20 sites classed as finds scatters, some with associated archaeological features such as stone circles. Amongst the find scatters are four of Early Khartoum date, with lithics and rocker-stamp decorated pottery, one with probable Middle Nubian Horizon material (showing affinities with C-Group/*Kerma Ancien*), as well as a few finds of probable *Kerma Moyen/Classique* period material. Amongst burial sites are recognizable Post-Meroitic tumuli as well as Christian box graves. Meroitic material is represented only by a few stray finds of sherds near rock art sites.

Stone features on Isbashi at site 3-O-15

This site consisted of a cluster of five stone features, some stone circles and some cairns, located on the northwest side of the Jebel Zeit rock outcrop, which has a rich rock art corpus (Plate 2). While these features might be classed as “tumuli” in initial survey, excavation of two of them indicates that they are not burial sites. Rather they appear as artificial shallow pits, and accumulated stone (Plate 3). The fills of these pits indicate repeated episodes of water-washed sediment accumulation followed by puddling and gradual drying, suggesting that these pits were open and therefore in use during a rainier period. Nevertheless the lack of any recognisable artefactual material suggests that their use was

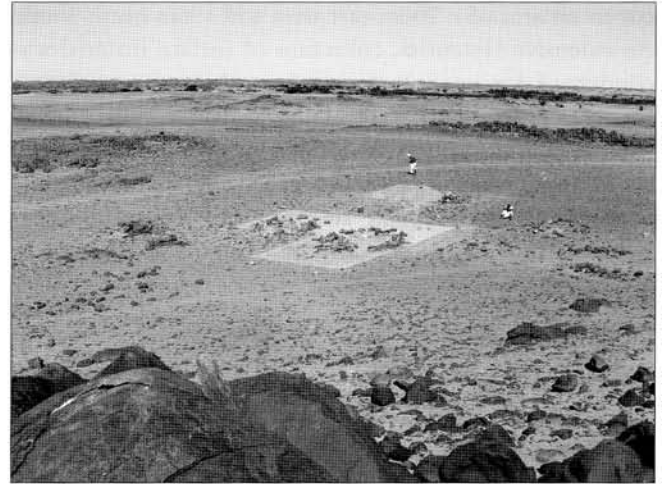


Plate 2. General view of the stone features of site 3-O-15.

sporadic. The archaeology of these features suggests parallels with the “stone places” (*Steinplätze*) known from the archaeology of the central Sahara (e.g. Southwest Libya) which are interpreted as cooking places used by mobile groups of the early to middle Holocene (e.g. Gabriel 1987). No artefacts were found that could date these features, but the sedimentological characters suggest formation during a period of significant seasonal rainfall and thus supports an early or mid Holocene date.

Umm Melyekta excavations (site 4-F-16)

The island of Umm Melyekta is at present uninhabited, although it had been used for keeping goat herds in recent years. The surface of this site is covered by a high density of ceramic sherds and bone fragments over windblown sand, although in a few places on the western end of the island alluvium underlying the sand was visible. Within this visible alluvial surface the outline of a few pits was visible. A small number of surface features were visible on the site, including stone cairns and stone alignments, but no obvious habitation structures. The distribution of surface material



Plate 3. Excavated profile.



covers an area of *c.* 200m east-west and 156m north-south. An extensive systematic collection of surface material was conducted for quantitative analysis. A large quantity of ceramics especially of late Medieval date suggest on-site habitation. This pottery is dominated by local hand-made wares, some wheel-made utility wares, and a small quantity of distinctive, recognisable Terminal Christian painted pottery, probably imported from Old Dongola (e.g. Figure 2).

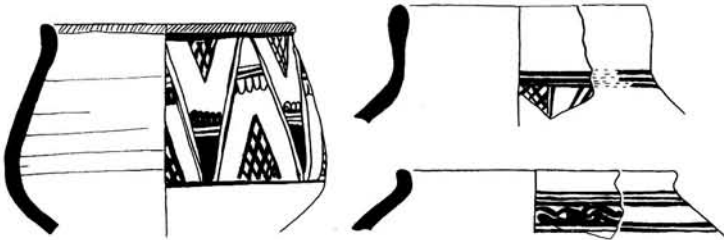


Figure 2. Examples of painted imported Terminal Christian ware, from Umm Mehyekta surface (scale 1:4).

No definitively datable sherds of earlier Christian periods were recovered, although a very few sherds that are Kushite in affinity were noted. In addition, surface collections from the western end of the island included prehistoric pottery, comparable to late Neolithic material, with some possible Pre-Kerma/Kerma Ancien affinities, largely in a distinctive fabric (e.g. Figure 3).

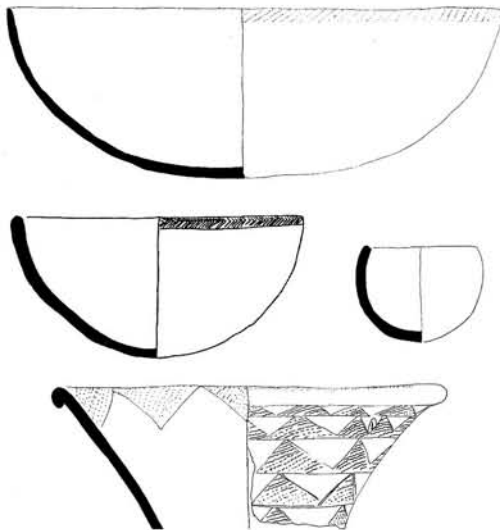


Figure 3. Examples of Late Neolithic ceramics from Umm Mehyekta (scale 1:4).

Excavation included clearing large areas of the western end of the island to reveal pits cut into the underlying alluvial surface, as well as test pitting, and some open area excavations across the rest of the island (Figure 4). In most test pits, windblown sand was found to be deep, up to 2m, and overlay the island's alluvial surface without built structures. Two structures which are likely to be late Medieval or Post-Medieval were encountered near the middle of the island.

In all excavations, except those at the far eastern edge of the island, the alluvial surface was found to contain pits. An area of some 150m² at the western end of the island was found to be riddled with pits and dug features, with *c.* 100 pits excavated and recorded in this area (Plate 4). Many of these pits have wide mouths up to 1m in diameter, and deep straight-sided profiles, suggesting that they may have functioned as storage pits. In some cases they have baked edges suggesting they were burnt out. In addition some smaller cuts represent probable post-holes and stake-holes. The test pitting evidence suggests that the surface of more than half the island was dug with pits with some scattered post-constructed buildings (see also Umm Muri, below). Although it is plausible that these pits represent storage pits from the late Neolithic period, none was found to contain their original fill, but rather were infilled with wind-blown sand and loose pottery fragments and bones. Many of these bones are from human skeletons and suggest many eroded burials in this part of the island. The alluvial surface of the island appears to have been heavily eroded and therefore the original depth of pits and post-holes is unknown.

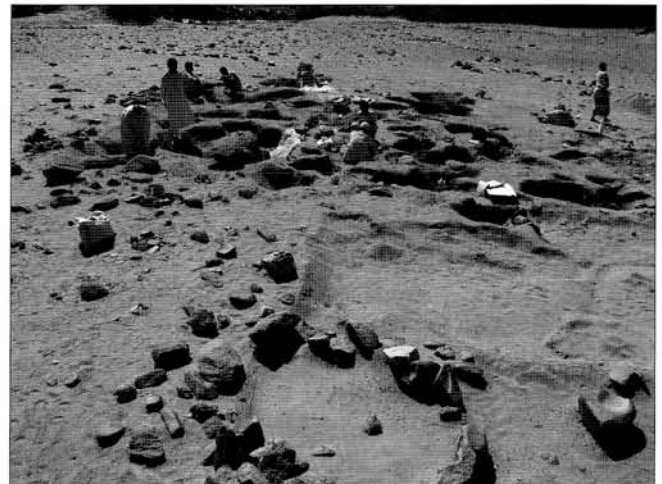


Plate 4. Major pit concentration at the western end of Umm Mehyekta.

Cut into, through, and amongst the pits on the north-western part of the island were numerous graves of which 19 were excavated. None of these burials had recognizable superstructures, and they appear to include Neolithic, Post-Meroitic and Christian internments. Three Neolithic burials were found, including one with possible Kerma Ancien affinities. In all three cases the poorly preserved skeletons were immediately below the surface, and suggest that most of the grave pits had been eroded and deflated. Thus less deep burials that might have been dug will have been destroyed and may have contributed to the loose bone fragments and Neolithic sherds incorporated into many pit-fills and the surface collections. Burial 174 was a tightly contracted adult skeleton accompanied by two bowls, a caliciform beaker, a

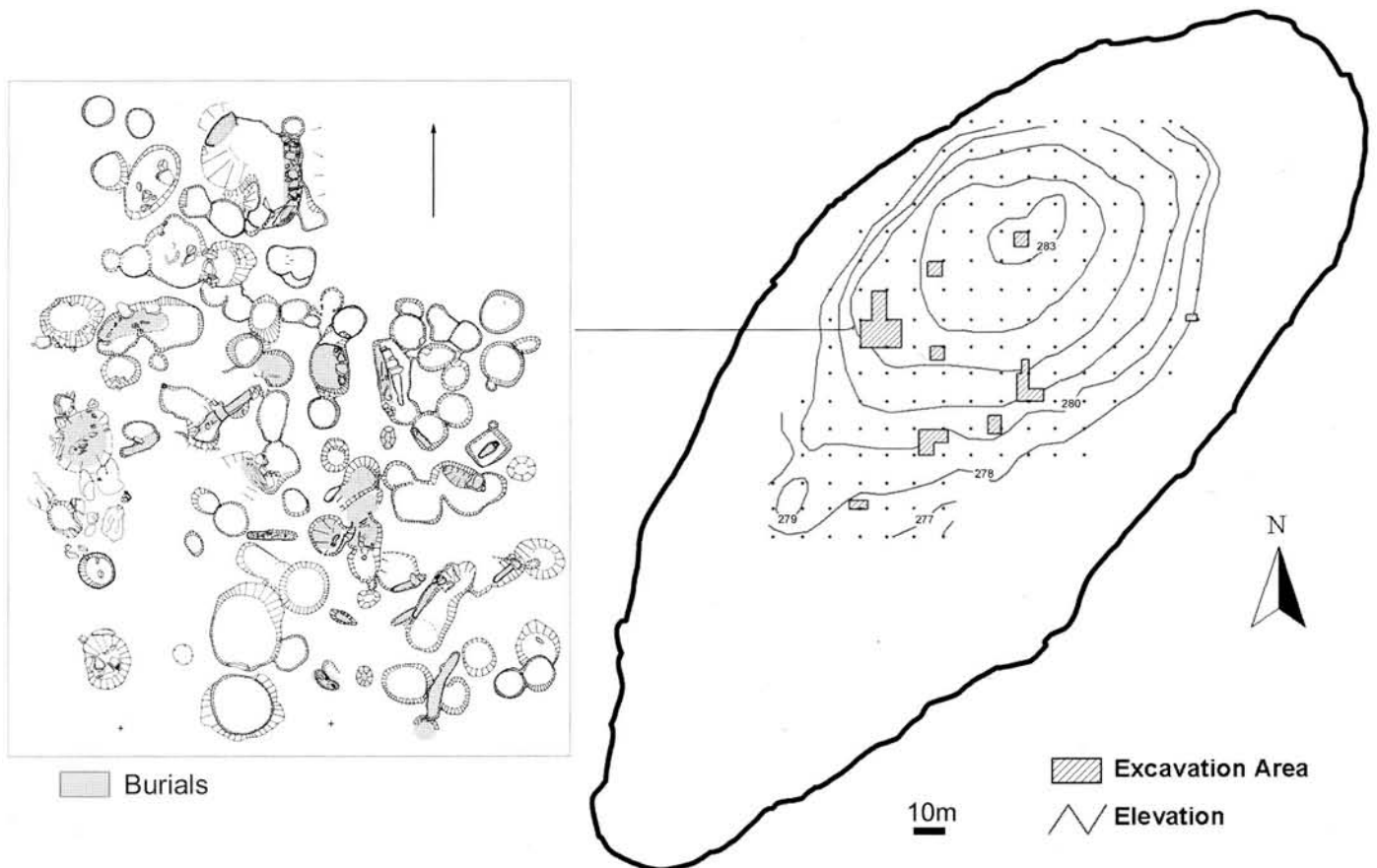


Figure 4. Plan of Umm Melyekta (4-F-16), showing excavation areas. Inset shows area of largest pit concentration at the west end of the island.

ground stone axe, numerous chipped and ground pebbles and lithics, bone tools, a palette and pumice stone rubber (Plate 5). Other Neolithic grave goods include carnelian and amazonite beads, a cattle horn and pottery. Amongst the burials were two adult burials of Post-Meroitic date, both of older females. One (burial 364) was accompanied by two beer jars, a red-slipped bowl and an oil juglet (Colour plate V). Of note is the white painted decoration on one of



Plate 5. Neolithic burial 174, showing various grave goods and remains of contracted burial.

the beer jars, which includes depictions of cattle, including a cow with udders reminiscent of some of the rock art motifs recorded on Ishashi, and a hunting scene of a human figure pursuing antelopes. The other had at its feet a large, hand-made bowl with inturned rim and distinctive incised decoration and an oil juglet above the burial. A number of adult burials that lacked grave goods, and had east-west alignments, are likely to be Christian in date. Interspersed with these were five infant burials and six of children. Some of these included beads—predominately ostrich eggshell disk beads and faience barrel beads—and are likely to be post-Meroitic in date.

Despite all these burials there is no reason to suggest permanent occupation on the island during these periods, although, during the Neolithic, it seems that it was used as a seasonal encampment and storage locality, as well as a burial ground. The find of similar deep pits in the alluvial surface of Umm Muri (see below) is suggestive of a more widespread tradition of island pit storage in the region during later prehistory.

The two structures found in the central portion of the island may represent occupation of the Terminal Christian period, pottery of which dominates the ceramic assemblage. Two small rectangular structures were recorded. One (Building A) had well-preserved mud-walls, equivalent to a single mud-brick in thickness with degraded wooden posts



defining a west-facing entrance (Plate 6). Clearly distinct bricks were not noted in these clay walls. The other building (B), not excavated in full, provided evidence for wattle-and-daub construction, with a wall woven of plant material attached to wood corner posts, over which clay was plastered. Outside of the former structure to the north was an area of plastered floor and a mud-storage basin supported by three stones. Further north beneath and underlying a burnt layer that abutted the plaster floor outside the buildings was the overturned neck of a flared mouth jar, of a form and fabric widespread in the surface collections, which probably represents a wheel-made Terminal Christian utility ware. This suggests a *terminus post quem* for the buildings.

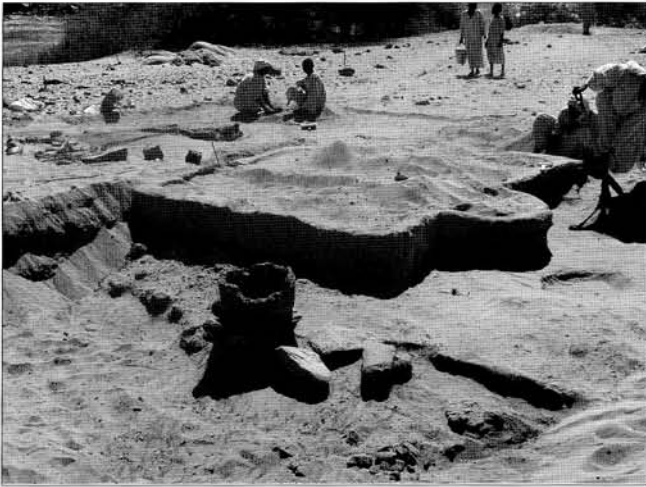


Plate 6. Building A, from central Umm Melyekta.
The door to this one room structure was subsequently blocked
by an apsidal wall.

The first building had a later re-use, perhaps as a mosque. After an accumulation of *c.* 150mm of windblown sand, the entrance way above this sand was closed by a wall of mud that formed an apse, turning the remaining rectangular room into a mosque form. Because the orientation of this apse is towards the west, it is likely that the course of the river in this area could have confused orientation as it does face towards the Nile's 'east' bank (actually to the north-west). Within the windblown sand-fill of this room, a fragment of a glazed porcelain vessel was found (Colour plate VI). While precise parallels need to be sought for this piece, it is probably Raqqa Ware, manufactured either in Raqqa or Damascus in the 13th century.²

El-Hilla excavations (site 3-J-25)

This site is a small fortified rocky island with a prominent view of the surrounding Nile, its shores and islands, including Ishashi immediately to the west, and the western tip of Birti island upstream to the east (see Welsby 2003a). This site is probably of late historic/recent date, such as 18th or

19th century. Finds include a schist-tempered ceramic fabric known from other Nubian sites of such late periods, as well as a small fragment of a clay pipe. The finds of grinders, including a large quernstone worn on both sides and eventually worn through, attest to the on-site processing and preparation of food. Architecturally the site goes through three phases, from the initial building of its outer stone walls, to subdivision of its internal space into three rooms, and finally a more recent addition of mud-brick walls around a single squarish room on the eastern end of the building. In more recent times this site has been used as a goat pen. During its earlier use, this site is likely to be associated with the same period as the large fortified house on Ishashi.

Umm Muri excavations (site 3-J-5)

The island of Umm Muri is at present uninhabited, although it is attached to Mis Island during the low Nile. Its edges are cultivated and it is sometimes used for grazing sheep and goat. It has four modern threshing floors (*taiga*). A settlement area of some 200m long (east to west) by 150m wide (north to south) was discovered during the 1999 SARS survey. The surface of the site is covered by the stones from degraded stone walls and wall foundations, some baked red brick, and mud brick, although much of the architectural layout is obscured by a covering of windblown sand (Figure 5). The surface was densely littered with ceramic sherds. During the present season, preliminary surface collection, planning of architecture visible on the surface and three small excavations were conducted in order to assess the nature of the site's archaeology and plan for intensive work there in the next season.

While surface collections consist largely of hand-made utility ware, most probably local products, imports are also present which provide evidence for the date of the site, from the Late Meroitic to Early Christian periods. Surface finds characteristic of the Early Christian period include orange slipped and white/cream slipped cups and bowls, which are likely to have been made at Old Dongola. These have fabrics that are distinct from the local hand-made wares, and decorations such as simple rim grooves and stamped motifs that characterize early Christian wares (cf. Adams 1986). Meroitic material included straight, narrow neck and body sherds of Late Meroitic beer jars, small ledge-rim bowls, and occasional sherds of fine ware cups, including some examples with characteristic Meroitic painted designs (Colour plate VII). The association of these rare, but readily datable, ceramics suggests the likely period for the production of some of the recurrent hand-made ceramic types, which we hope will be born out by more extensive excavations of stratified deposits in future seasons.

The excavations this year included three test pits aimed at determining the depth of archaeological deposit and the nature of the remains preserved on this site. Trench 4G-B, 1.5 x 5m in size, cut across stone foundations of a large wall enclosing the east end of the settlement. Together with

² Pers. comm. Derek Kennet and Venetia Porter.

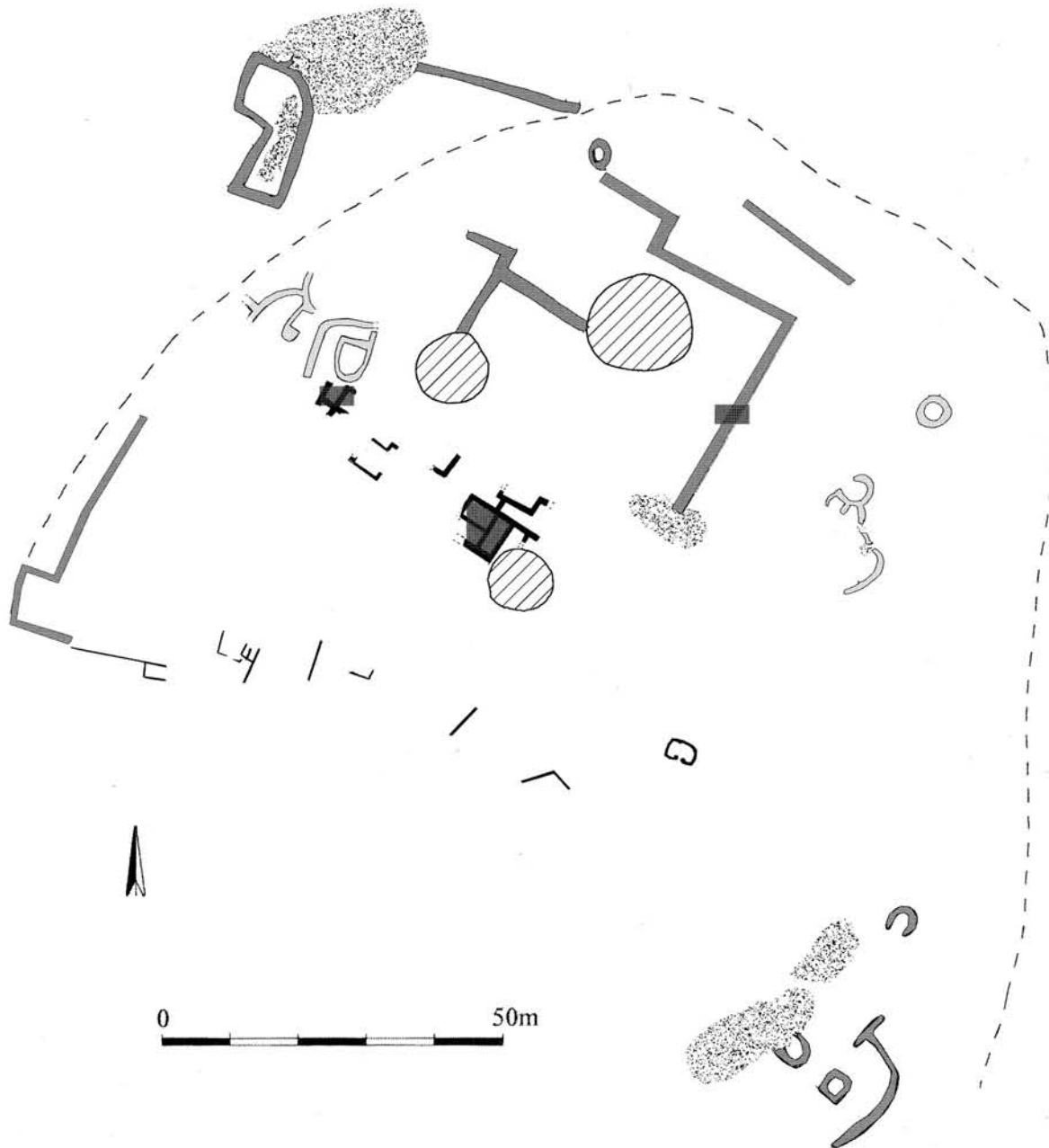


Figure 5. Umm Muri (3-J-5) plan of visible surface features. Mud-brick walls in black. Stone walls in grey. Four modern threshing floors (taiga) indicated by hatching. Areas of excavation shaded (scale 1:1000).

similar stone surface features at the west end of the site, these may have been a large fortification wall or at least a demarcation that enclosed the main settlement. In the test trench it was determined that this wall is preserved only to a height of one or two courses. It is built atop windblown sand below which bedrock is encountered at a depth of c. 500mm. The other two test pits suggest that archaeological deposits across the entire site are quite shallow, probably a maximum of c. 1m, the result of extensive deflation. The other two test pits both encountered mud-brick wall foundations, preserved to three courses. The mud-brick foundations are built either on windblown sand or on the alluvial surface of the island. In a few patches mud plaster

floor layers are preserved with sealed archaeological deposits beneath. In trench 7H-C, the junction of four mud-brick defined rooms was studied (Plate 7). Ceramic finds from the windblown sand within these rooms, as well as deposits sealed beneath floor layers, suggest that this construction is of Late Meroitic date. Finds of drop-shaped loom weights also suggest parallels with late Meroitic settlements (e.g. Trigger 1967, fig. 30).

Charred plant remains were recovered through flotation from the layers sealed by the plaster floors. Based on the ceramics in these sealed contexts, these deposits are probably Late Meroitic in date, and thus plant remains provide evidence for aspects of the agricultural economy which



Plate 7. Umm Muri, Building A after excavation.

supported the establishment of settlement during the Meroitic period. Preliminary analysis of samples from two sealed contexts indicates the presence of winter and summer field crops. Winter crops include the cereals wheat (probably emmer) and barley, which were long the staple grains of the Middle and Lower Nile. In addition to these, however, evidence for summer grains of sub-Saharan African origin are of particular interest. Archaeological evidence for a number of key African crops is still extremely poor in Africa, although finds from India indicating dispersal suggest that savannah cultivation systems in Africa were established by *c.* 2000 BC (Fuller 2003). In Nubia, evidence for these species generally relates to the northward expansion of such cultivation systems. The evidence from Umm Muri contributes to this picture with finds of hyacinth bean (*Lablab purpureus*) and the numerous charred pieces of the charac-

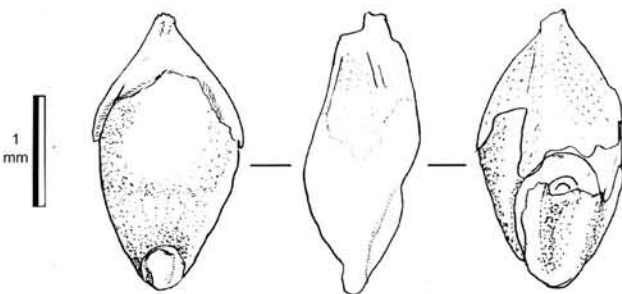


Figure 6. Drawing of a *Sorghum bicolor* grain from Umm Muri Building A (context 008), with fragments of chaff adhering. This suggests a primitive *bicolor* type cultivar. It has been dated to 230-50 cal. BC (Beta-194244, conventional C-14 age 1900 (+/- 40) bp).

teristic hilum of cowpea (*Vigna unguiculata*), found in similar form at the Medieval Third Cataract site of Nauri (Fuller and Edwards 2001). Of special interest is the evidence for sorghum (*Sorghum bicolor*), in the form of a few grains, chaff, and some grains with adhering chaff (Figure 6). From the narrow form of these grains we can attribute them to either the wild or primitive *bicolor* race cultivars. The chaff fragments including broken rachis stalks suggest that we are dealing with the domesticated *bicolor* race cultivars. This is of interest as evidence from Qasr Ibrim in Lower Nubia indicates that *bicolor* sorghums come into cultivation there only at the very end of the Meroitic period and especially in post-Meroitic times (Rowley-Conwy 1991), when they can be connected to a wider set of agricultural changes (Fuller 1999, 208).

The alluvium that underlies the walls (or the sand beneath the walls) in Trench 7H-C, contained numerous deep, circular, straight-sided pits, as well as lines of post- or stake-holes. The similarity of this archaeological layer to the pitting of Umm Melyekta is striking, and might attest to widespread digging of storage pits on isolated river islands in prehistory, although from Umm Muri there is as yet no evidence from finds to date any activity on the island to the Neolithic. Welsby (2003a, 5) reported some Kerma material from surface collection. Thus habitation at this site in perishable structures could have occurred at any period up to the Late Meroitic mud-brick building phase. A preliminary interpretation of this site might suggest that the pitting and post-holes go back to prehistoric traditions, while much of the mud-brick construction dates to a Late Meroitic town, which represented a new form of occupation probably associated with year round occupation and agricultural production. It is perhaps during this period that the site was fortified. The denuded stone and red-brick walls probably are Early Christian. This site holds much potential for further work and may shed some light on the nature of the problematic Post-Meroitic transition in this region.

Rock art and 'rock gongs' in the Fourth Nile Cataract region: the Ishashi island rock art survey

Cornelia Kleinitz

Introduction

Rock art in the Fourth Nile Cataract region has only recently received attention, when an abundance of petroglyphs sites was reported by various archaeological missions currently undertaking rescue surveys in the area of the Nile to be flooded by the Merowe Dam (e.g. Abdelrahman Ali Mohammed and Kabbashi Hussein 1999; Paner 2003; Welsby 2003a). Within the Central Amri-Kirbekan Survey, undertaken in winter 2003/2004 by the SARS/Institute of Archaeology (UCL) project (see Fuller, this volume), the opportunity arose to undertake a detailed rock art survey and documentation campaign in the SARS concession. This survey initially focused on Ishashi island, one of the larger islands in the Fourth Cataract region at c. 5km in length and a maximum width of 1.5km. Rock art was first reported from Ishashi by Leclant (e.g. 1993) and Montluçon (1994), who mentioned cross-shaped and cattle motifs. An archaeological survey of Ishashi in December

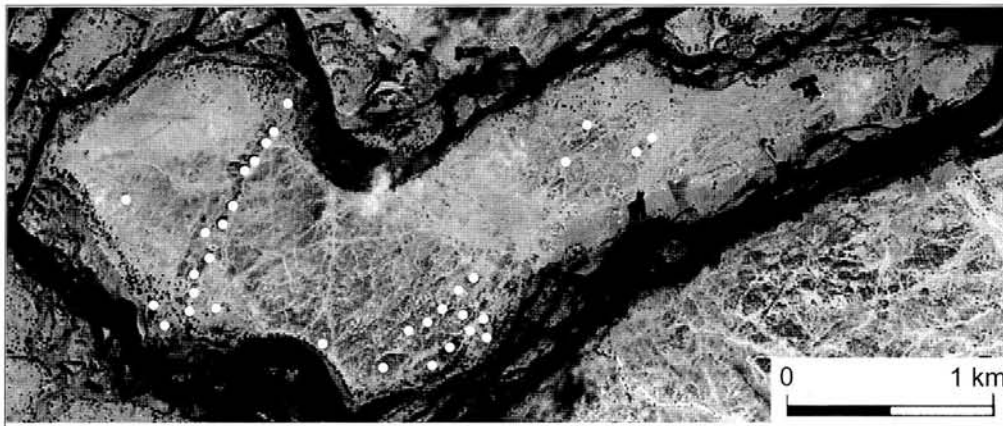


Plate 8. Map of Ishashi island showing the distribution of rock art sites.

2003 identified 62 archaeological sites, among them numerous rock art localities. Ishashi island was subsequently subjected to a five week intensive rock art survey,¹ which was aimed at establishing a full record of rock art on this island landscape. Thirty three rock art sites of greatly varying dimensions were identified and documented in the west, south and centre of the island. Preliminary results are presented here.

¹ Fieldwork was undertaken by the author, assisted by Dr David Wengrow during the initial part of the campaign.

Recording methodology

The survey methodology on Ishashi comprised the systematic examination of virtually all boulders on the island, which ensured a thorough coverage of the landscape. It is believed that all larger concentrations of rock art on Ishashi were identified. GPS points were taken of all rock art sites, followed by mapping on a high resolution aerial photograph. Digital and slide photography of motifs, panels and sites, as well as their landscape setting, formed the primary method of graphic recording. Selected panels were traced *in situ* on transparent plastic sheets, following individual peck marks with black marker pens. Other panels were drawn to scale. Detailed written documentation included a broad range of information on motifs, panels and sites. Additionally, all sites were filmed with a digital video camera, recording views of and from panels, as well as footage of their situation in the landscape, the relationships between panels and sites, and other archaeological remains. A near exclusive focus on the rock art imagery at the expense of contextual information, which characterises many of the existing records on rock art in the Nile valley, was thus avoided in favour of a broader-based approach.

The location of rock art on Ishashi

Three concentrations of rock art sites comprising about 350 boulders with petroglyphs were identified on Ishashi (Plate 8). The largest group of sites is located in the dry and rocky west of the island, where 16 rock art localities stretch along the entire length of a ridge of low hills of boulders spanning the island in a roughly north-south direction (3-O-30 to 3-O-41, 3-J-48 to 3-J-50, 3-N-305) (Plate 9). A second concentration, comprising 13 sites, is found in the south of Ishashi (3-O-42 to 3-O-52), while a third and smaller group of four rock art sites is located in its centre (3-J-51 to 3-J-54).

The fertile eastern part of the island appears to be devoid of rock art.

The rock art sites vary widely in their size and in the number of motifs present, ranging from single petroglyphs on individual boulders to hundreds of motifs on dozens of boulders on hills or low ridges. The greatest density of rock art is found along the western ridge, which appears to have remained a focus for the making and use of rock art over thousands of years, judging from stylistic variation, superimpositions and strong differences in patination. The rock art sites are located in the vicinity of modern paths crossing the island, which may also have formed communi-



Plate 9. View north over low hills of boulders forming rock art sites 3-O-33 and 3-J-48 to 3-J-50 in the west of Ishashi.

cation routes in the past. The visual appreciation of the rock art by passing individuals often does not appear to have been the main motivation for the making of the petroglyphs, however, as the imagery is often 'hidden' among the boulders. Petroglyphs are located on vertical, sloping and horizontal rock surfaces of differing orientation, with many panels only becoming visible one by one when moving between or across the low hills of boulders.

The range of motifs

Much of the rock art of Ishashi is stylistically consistent with what has been recorded in other parts of the Sudanese Nile valley (e.g. Hellström and Langballe 1970; Otto and Buschendorf-Otto 1993), although the repertoire of motifs is more restricted. Local preferences for specific motifs and for certain stylistic traits are visible. The petroglyphs are generally pecked, with both fine and dense as well as coarse and loose pecking present, pointing to differences in the tools utilised. The subjects depicted in most petroglyphs on Ishashi are identifiable, although the identification of motif content is not always without difficulties due to the ambiguous nature of the restricted visual information provided in some petroglyphs. Zoomorphs, especially cattle motifs, dominate the rock art corpus. Other domestic animals depicted include the camel. Wild animals represented in Ishashi rock art include giraffes and birds, primarily ostrich. Anthropomorphs, boats and geometric motifs occur in small numbers.

Cattle motifs are abundant and are present at virtually every site recorded, while other motifs have a much more restricted and

rare occurrence. Stylistic traits of cattle motifs on Ishashi include the depiction of the bodies and heads in profile, while the horns are shown in frontal view (Figure 8). The animals generally appear static. Body shapes and sizes vary widely, and include elongations in the vertical or the horizontal planes. The bodies are usually pecked in outline and often marked with one or more vertical lines. One or more 'collars' or 'pendants' are frequently depicted. Variation exists in the manner of depicting the legs, which are most frequently shown as two sets of two lines linked at the ends. Most cattle images seem to represent domesticated long horn cattle. Horn shapes include naturally occurring and intentionally deformed varieties, including single-curve, lyre-shaped, closed or nearly closed, and heart-shaped forms. Horns are often exaggerated in length, some are re-pecked to form multiple horns (see Figure 8 for examples). Sexual markers are in some cases shown, with both cows and bulls present. Juxtapositions of larger and smaller cattle, which are often referred to as 'cow-and-calf motifs', are present on Ishashi.

Camels are depicted as stick figures with triangular and (more rarely) circular humps. They are pecked both fully and in outline, and are usually shown walking or running. Camels occur less frequently on Ishashi than they seem to on the mainland in the SARS concession (Welsby 2003a). Giraffes in Ishashi rock art show a considerable variability in stylistic traits. While some are small and depicted as rough outlines, the largest giraffe is 1.2m high and deeply pecked into the granite surface of a massive west-facing boulder (Colour plate VIII). The torso of the animal is depicted with high anatomical accuracy, the body markings are finely worked into the rock. Two legs are depicted and its long tail is shown curling as if in motion.

Anthropomorphs are relatively rare in the rock art of Ishashi. They are mostly stick figures in frontal view, with the limbs depicted at both sides of the body. They occur singly or in pairs, as camel riders and seldom in juxtaposition to animals, such as cattle. Some anthropomorphs are shown with weapons, such as lances/swords and shields, others in connection with depictions of boats which were recorded on four boulders (Figure 9). Very few geometric

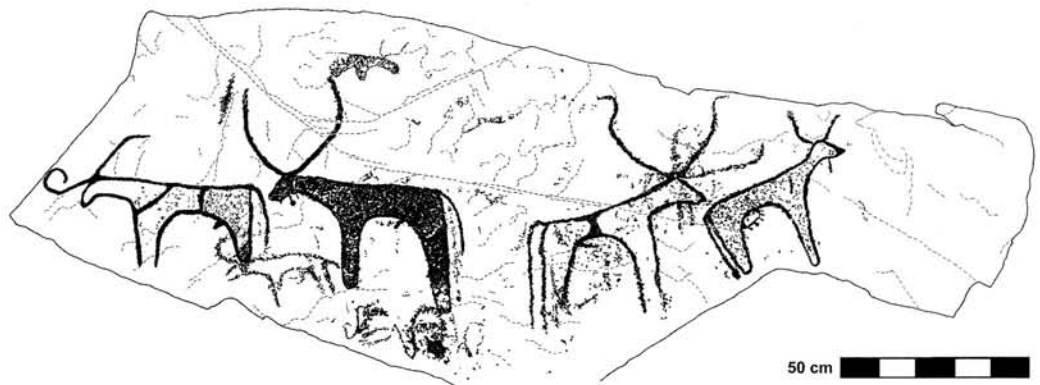


Figure 8. Group of cattle images at site 3-O-43 (Boulder 1) (scale 1:20).

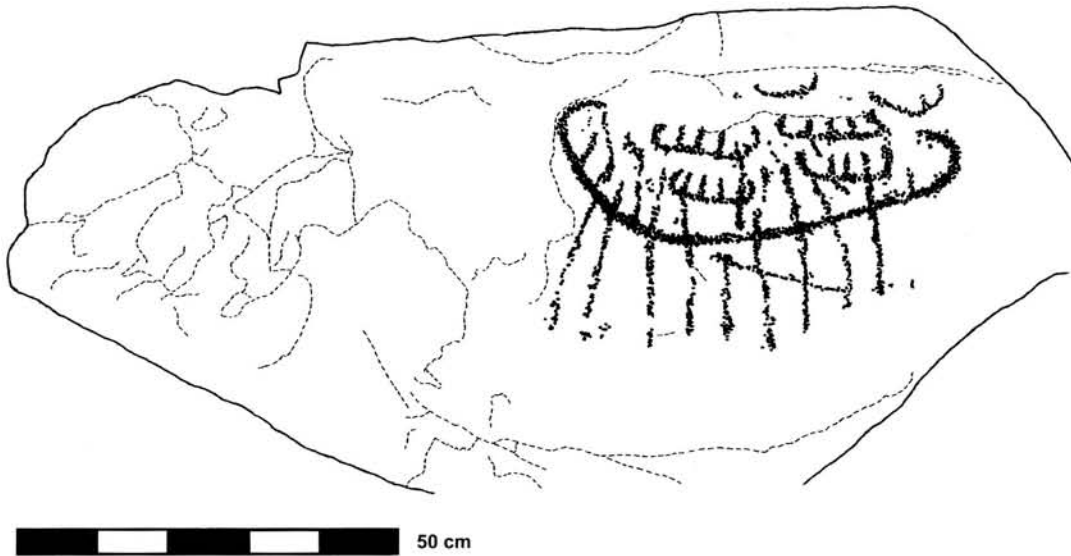


Figure 9. Depictions of boats at site 3-O-30 (scale 1:10).

motifs are found on Ishashi, these include cross-shaped motifs, as well as squares and circles with interior diagonal lines. Geometric motifs, as well as boats and ostrich, are only found at rock art sites in the western part of the island, which show the greatest range of motif types and stylistic differences. Numerous zones of non-figurative concentrations of peck marks, in contrast, were recognised on granite boulders at every major site on Ishashi (Plate 10).

Non-figurative pecked zones as traces of sound production

Non-figurative pecked zones on boulder surfaces, sometimes deepened by repeated striking to form cup marks, in most cases emanate a metallic, bell-like sound when struck



Plate 10. Slab with zones of non-figurative peck marks and cup marks (3-J-51).

with a pebble or other hard implement. These pecked zones are the visible remnants of the production of sound at rock art sites. Rocks emanating a bell-like sound when struck have been reported from all over the world (e.g. Fagg 1997 for a gazetteer of sites). Such phenomena occur in a variety of geological contexts and are referred to as 'rock gongs', 'sounding stones', 'ringing rocks' or 'lithophones'. Numerous examples are known from the African continent, where ethnographic information reports of their use in rites of passage, fertility or rainmaking rituals, as signalling devices or for entertainment. Recently, rock gongs have also been published from the Sudanese Nile valley, in particular from the Third (Edwards and Osman 2000; Jalal and Bell 2000) and the Sixth Cataracts (Fagg 1997). Examples have now also been identified in several parts of the Fourth Cataract region (Welsby 2004, pers. comm.; Wolf, this volume; Żurawski 2004, pers. comm.). While these findings are promising, no systematic survey and description of rock gong phenomena and their relation to rock art and other archaeological remains has been undertaken in the Sudanese Nile valley.

Rock gongs and rock gong complexes on Ishashi island

The Ishashi rock art survey provides an inventory of the rock gongs in an island landscape of the Fourth Nile Cataract. The great number of boulders with non-figurative pecked zones on Ishashi allows a discussion of the rock gong phenomena in some detail. When examining the evidence it quickly becomes clear, however, that the established terms can only partially describe the variation in traces of sound production on the island. Strong differences in the characteristics of the resonant rocks, such as the number of boulders and percussion zones involved, call for a more differentiated terminology.

The term 'percussion zone' describes an area of non-



figurative peck marks on a rock surface. Percussion zones may consist of only a few dispersed peck marks, or of dense areas of peck marks, and/or of cup marks of varying diameter and depth. The formation of cup marks points to the intense and repeated striking of particular areas of the rock surfaces. Single boulders with one or more percussion zones are here termed 'rock gongs' (with one, two or more percussion zones). Where two or more boulders with percussion zones are located in close proximity to each other, these are referred to as 'rock gong complexes' (consisting of two, three or more boulders). While the term 'rock gong' is not an accurate technical term for the description of natural boulders emanating a metallic sound when struck, it is employed here out of convention. Local people refer to the rock gongs as *nugara* (drum), suggesting the alternative use of the term 'rock drums' to describe the resonant rocks of Ishashi.

Ishashi yields a wide spectrum of rock gong phenomena from small and inconspicuous boulders with only a few percussion marks to large and prominent groups of boulders with multiple percussion zones. On the island 25 rock gongs with between one and eight percussion zones were identified, as well as 17 rock-gong complexes, which consist of two to seven boulders with often multiple percussion zones (Colour plate IX). With few exceptions the resonant boulders appear to be situated in their original location. Percussion at small rock gongs with single percussion zones and few percussion marks may have been undertaken by solitary individuals in specific rare situations, while activity at some rock-gong complexes, with their numerous percussion zones and often deep cup marks, may have involved larger groups of people and repeated or even regular use. It is thus likely that activities at the different rock gong phenomena had diverse motivations and were directed at different audiences.

Cattle imagery and sound production on Ishashi

Frequently, non-figurative percussion zones on Ishashi are found in close proximity to cattle imagery, in some instances even overlying parts of the cattle petroglyphs. The production of sound may thus in some instances have had a direct relationship to the making and/or use of the cattle motifs. Indeed, where the cattle imagery is located on resonant rock surfaces, bell-like sounds will have accompanied the creation of these motifs. The close association of cattle imagery and sound production is most apparent in those cases, where cattle motifs were pecked into resonant rock surfaces and where cattle imagery on such surfaces was struck repeatedly some time after its creation. It is also noticeable in those instances where single or multiple percussion zones are located either on the same rock surfaces as cattle motifs, but not touching the petroglyphs (Figure 10), or on separate rock surfaces in the immediate vicinity of panels

with cattle motifs. About half of the rock gongs and rock-gong complexes have a close spatial relationship to cattle imagery, while others offer good views of panels with cattle motifs. Apart from the cattle imagery no other motifs are repeatedly associated with rock gongs and rock-gong complexes on Ishashi.

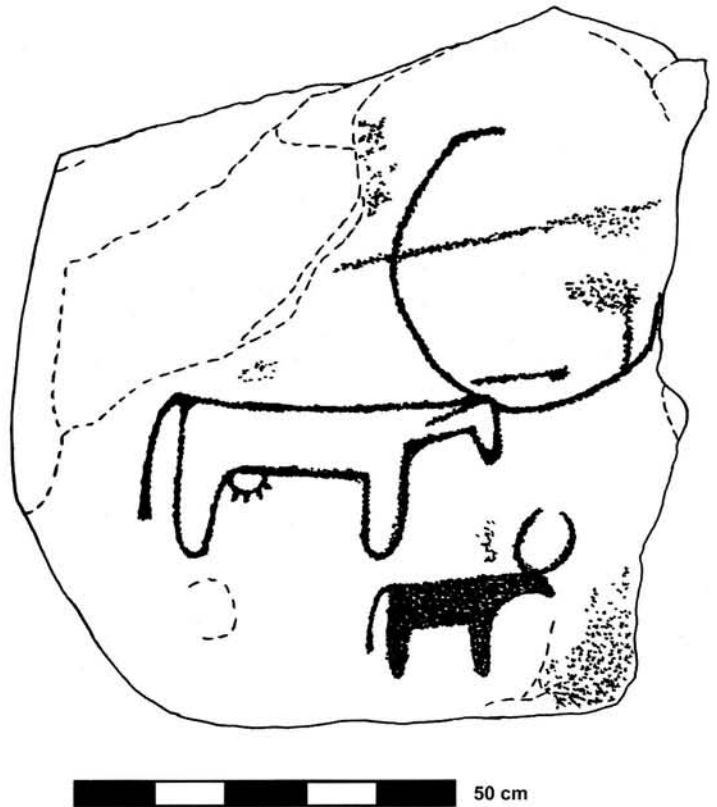


Figure 10. Slab with cattle motifs ('cow-and-calf' motif) and percussion zone (3-O-30) (scale 1:10).

Sound production and performance

Although studies of the tonal range of the individual rock gong phenomena are yet to be completed, it is apparent that, where multiple percussion zones are found on rock gongs and rock-gong complexes, they generate different tones when struck. This suggests that in these cases not only rhythms, but proper melodies may have been played. Rock gongs and rock-gong complexes with heavily worn percussion zones are all found in locations offering space for larger gatherings of people to witness or participate in the percussive action. Especially at these sites percussion may have been accompanied also by other forms of performance, such as singing, clapping and/or dancing, as is illustrated by spontaneous demonstrations of these percussion instruments by the contemporary inhabitants of Ishashi.

Percussion stones

Pebbles with percussion marks along their edges and ends were found in the immediate vicinity of some of the rock gong phenomena. Experimental percussion confirmed that

the wear marks on the pebbles resulted from striking the granite boulders. This, together with the exclusive location of such pebbles in the vicinity of rock gongs and rock-gong complexes, suggests that they were used as percussion stones to create sound. The overwhelming majority of the percussion stones are quartz pebbles, which appear to have been collected at extensive pebble fields in the vicinity of the rock art sites. Only rarely are other types of stone used. Experimental percussion showed that a clearer and more metallic sound can be achieved when striking the granite surfaces with quartz pebbles rather than with less dense types of stone. Judging from the limited amount of wear marks on most percussion stones, the pebbles were used for only a few minutes of percussion and then discarded (Plate 11). Only a few fist-sized pebbles with extensive percussion marks show signs of prolonged and/or repeated use (Colour plate X). Reference points for the duration of percussion needed to achieve particular wear marks were established by experimental percussion.



Plate 11. *Quartz pebble with a few relatively fresh percussion marks (3-J-51).*

Dating petroglyphs and rock gong phenomena on Ishashi

Differences in wear patterns and patination suggest great variation not only in the frequency, duration and manner of use of rock gong phenomena, but also in the temporal assignation of their use. The creation of sound from rock surfaces must have been practised on Ishashi over a considerable period of time, as some of the percussion areas on the granite boulders are patinated to a light brown or brown colour, while others show recent white percussion marks. While some rock gongs and rock-gong complexes saw only limited utilisation over a restricted period of time, others were used repeatedly over prolonged periods to judge from heavy wear patterns including cup marks, and from the presence of percussion stones in different stages of patination in their vicinity.

The local population on Ishashi professes no knowledge as to the use of the rock gongs and rock-gong complexes,

apart from their role in children's play. Indeed, only some rock gong phenomena located in the vicinity of modern (and Christian period) settlements show signs of recent percussion, while those at some distance to contemporary habitations were not used in the recent past. Parts of the soundscape of Ishashi thus went out of use well before the modern era. This also concerns percussion zones in close spatial relationship to cattle motifs, which are of medium to heavy patination and usually are found in the higher parts of low hills of boulders at some distance from modern settlements. Judging from states of patination sound production post-dated the making of some cattle images and was contemporary with the creation of others.

Cattle imagery in the Nubian Nile valley is commonly dated on the basis of similarities between rock art iconography and mobiliary art from A-Group and especially from C-Group contexts, roughly dating to between the mid-fourth to mid-second millennia BC. The location of cattle motifs under, over and juxtaposing Dynastic Egyptian hieroglyphic inscriptions provides further dating evidence (e.g. Davies 2003). Much of the cattle imagery on Ishashi can be assigned to this period on stylistic grounds. However, much more attention needs to be paid to stylistic development and sequencing in Nubian rock art to allow stylistic traits to be used as reliable chronological markers. For example, while superimpositions on Ishashi point to cattle imagery being earlier in date than that of the camel, similarities in states of patination of some cattle images with those of camel motifs on the same or on neighbouring rock surfaces, suggest that cattle imagery remained in use on Ishashi long after the demise of the C-Group. This is confirmed by the find on Umm Melyekta, a neighbouring island, of a post-Meroitic beer jar with a painted cattle design similar in style to some of the cattle imagery on Ishashi (see Fuller, this volume).

Conclusions

The evidence from Ishashi island provides a further facet in our understanding of Nubian rock art. It shows that non-visual properties of the rock surfaces may have played a significant role in rock art making and use, and that some activities at the rock art sites involved an acoustic dimension. The making of sound leaves a number of recognisable visual traces, such as percussion stones and non-figurative zones of dispersed or dense peck marks, the latter with or without cup marks. Future rock art surveys on the mainland in the SARS concession will test if the close connection of cattle imagery and sound production is specific to Ishashi or common in the region. Further investigations into the relationship of rock art to other archaeological sites and to landscape features will focus on gaining insights into the process of symbolic marking of insular and mainland landscapes in the Fourth Cataract region.



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Colour plate IV. The Central Amri-Kirbekan Survey. Haider Mobbameddain (NCAM) recording rock art on a jebel on Ishashi Island, with view of the cultivation around the island's edge.

Colour plate VI. The Central Amri-Kirbekan Survey. Islamic glazed sherd from Building A, probably 13th century AD.



Colour plate V. The Central Amri-Kirbekan Survey. Finds group from Post-Meroitic burial [364], including two beer jars, a bowl and an oil bottle. One beer jar has a painted scene of hunting and a cow.



Colour plate VII. The Central Amri-Kirbekan Survey. Meroitic painted sherds from Umm Muri.



Colour plate VIII. Ishashi rock art. Giraffes and cattle imagery dominate the rock art of Boulder 3, site 3-O-31.



Colour plate IX. Ishashi. Rock gong complex: at site 3-J-51 in the centre of the island.



Colour plate X. Ishashi. Percussion stones with extensive percussion marks in differing states of patination (3-J-51).