

# SUDAN & NUBIA

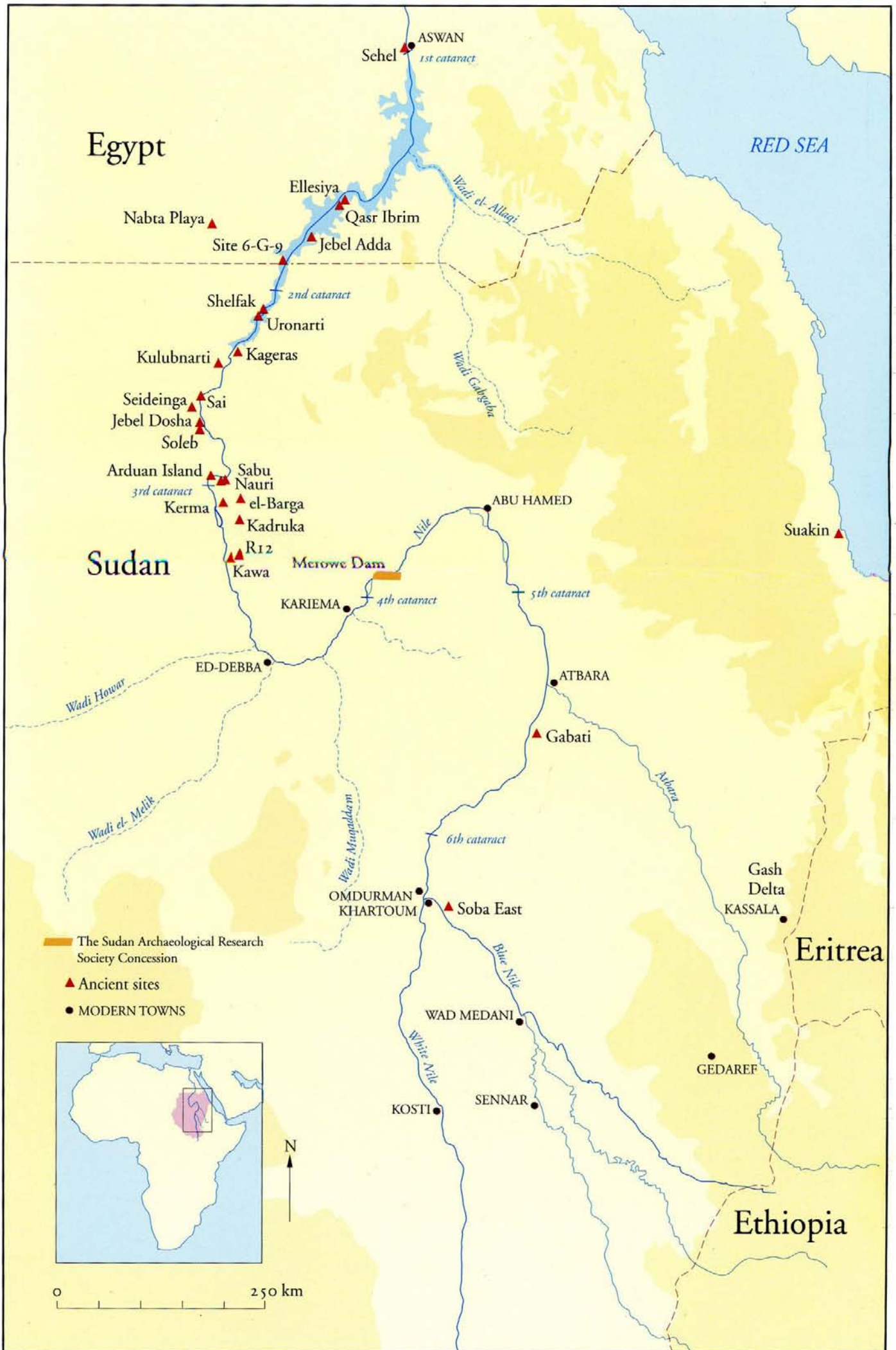
The Sudan Archaeological Research Society



*Bulletin No. 8*

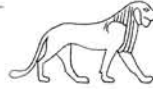
2004





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

# The Nubian Cemetery at Hierakonpolis, Egypt. Results of the 2003 Season

## *Excavation of the C-Group cemetery at HK27C*

Renée Friedman

In 2001, a cemetery of the Nubian C-Group (HK27C) was identified at Hierakonpolis, a site located 113km north of Aswan in Upper Egypt. This cemetery is placed on a low rise, measuring approximately 50m (N-S) by 40m (E-W), northwest of the Second Dynasty mud-brick enclosure of Khasekhemwy and not far from the decorated rock-cut tombs of the nobles of the late Old Kingdom through Second Intermediate period. Excavation of one 10 x 10m square in 2001 revealed seven graves of Nubian tradition, which could be dated on the basis of associated Egyptian pottery and a scarab to the late Middle Kingdom/13<sup>th</sup> Dynasty (Friedman 2001; Giuliani 2001). This cemetery is the northernmost archaeological attestation of the C-Group culture in Egypt.

In November 2003, with the assistance of a grant from the Michela Schiff Giorgini Foundation, two additional 10m<sup>2</sup> grid squares (Figure 1, Test squares B and C, covering an area of 21 x 22m) were excavated, revealing 16 further graves, all of which had features that identified the owners as Nubians of the C-Group culture.<sup>1</sup> Diagnostic features included grave architecture, burial customs, pottery, leather garments and jewellery.

Immediately south of the area excavated in 2001 (Test square A), excavations revealed a row of rectangular burials shafts (Tombs 9, 10, 12) with the same NW-SE alignment as those uncovered in the first season. There was only scant indication of superstructure: scattered naturally exfoliated sandstone slabs, possibly once forming parts of rings, surrounded Tombs 10 and 12.

All of the graves have been plundered, some quite seriously; however, organic preservation in a select few was excellent. In the small rectangular grave (Tomb 9) of an older female (35-50 years of age), preservation of the skin on the disturbed body was such that we were able to observe tattoos and reconstruct their elaborate pattern (Fig-

ure 2; Colour plate XXV). This included a lozenge of short dashed lines on the back of her left hand between her thumb and forefinger, and a pattern of dots and dashes running down the back of her left lower arm. Skin adhering to the ribs preserved a dotted zigzag line along the front of the torso from at least the level of the waist to just below the breast, with another set of tattoos that may have surrounded or decorated the breast, but the evidence breaks off at this point. More elaborate is the lattice of dotted squares running down along her abdomen, up over her hip and onto her back. The pattern within each of these squares is made up of lines of dots. The number of dots per line is always four, suggesting that a comb with four sharp teeth was used to introduce the pigment (possibly soot, now blue in colour) into the skin with the application of intense and rapid pressure.

The skin on the right side of the body was not well preserved, and we can only assume the tattoos were symmetrical as seen on contemporary Egyptian (e.g., Keimer 1948, pls XII-XIII and especially Capel and Markoe 1996, 65, cat. 13) and Nubian (e.g., Williams 1983, pl.102-103) figurines, although the evidence from the tattooed bodies of the early Middle Kingdom priestess Amunet and the dancing girls found in Egypt (but considered to have Nubian affiliations) indicates that this is not always strictly the case (Keimer 1948, 8-14, pls I-IX). Tattooed patterns similar to those found on the body in Tomb 9 have been reported at other C-Group cemeteries (Keimer 1948, 16, no. 1 and 3), but they are rarely illustrated (except Firth 1927, pl. 25d), and preservation was apparently insufficient to determine their distribution over the body.<sup>2</sup> No tattoos were observed on the face of the female in Tomb 9, although both eyes were preserved in the sockets. The legs were not recovered, having been tossed out of the grave during plundering, thus whatever decorative pattern they may have had is unknown. The skin on the upper arms was not preserved.

Tomb 9 also contained copious amounts of leather. Unique to this grave were fragments of perforated leather of different qualities, which appear to belong to two different garments (Plates 1 and 2). Leather perforated with a similar pattern of narrow parallel rectangles has been observed in several C-Group graves (e.g., Säve-Söderbergh 1989, 131, pl. 58.3; Junker 1920, pl. 4.16), and also in a Pan-Grave burial at Balabish in Egypt (Wainwright 1920, pl. X), and appears to be a strictly Nubian leather-working technique.

A mass of leather with rectangular perforations (c. 5 x 2mm) was recovered from the north-west corner of Tomb 9 and was sufficiently supple to allow conservator Franca Cole to examine the construction of the garment from which it originated (Figure 3; Plate 1). It was composed of

<sup>1</sup> Excavations were undertaken from 7th November to 4th December 2003 under the direction of Renée Friedman with the assistance of Masahiro Baba, Xavier Droux, Serena Giuliani and especially Joseph Majer. Analyses and drawings were made by Franca Cole, Bernadette Dickman, Sean Dougherty, Joel Irish, Veerle Linseele, Ivana Milosavljevic, Gillian Pyke, Wim Van Neer and Andrew Wilson.

<sup>2</sup> The position of the tattoos on a number of bodies (mainly female) discovered in the Meroitic cemetery at Aksha are illustrated in Vila 1967, 368-9, pls XII-XIX.

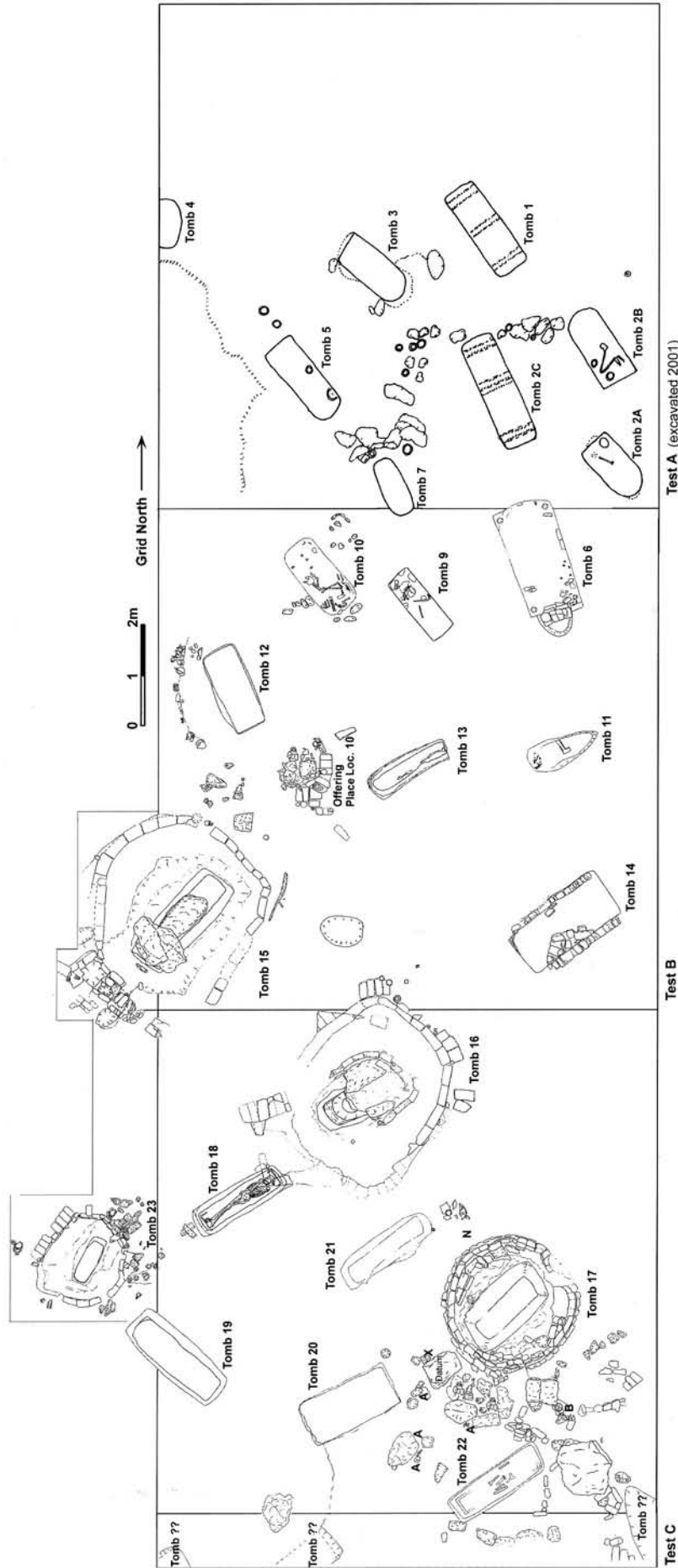


Figure 1. The excavated area of the C-Group cemetery at HK27C, Hierakonpolis (compiled by M. Baba).

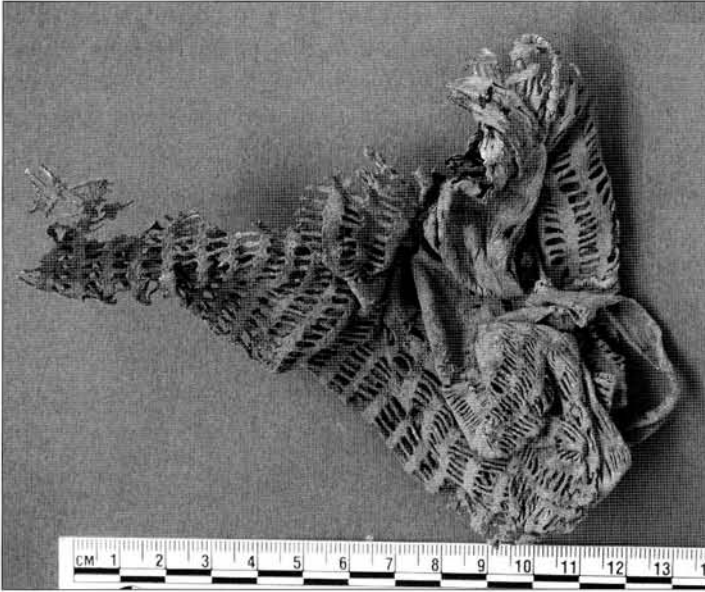


Plate 1. Mass of perforated leather from HK27C Tomb 9.

a number of small pre-cut panels of leather that had a specific number of cut-out rectangles per row and solid margins around the edges to allow for sewing. The majority are long thin rectangular panels, 3-4cm wide, with approximately five perforations per cm. Wider square panels, also of standardized dimensions, have somewhat finer perforations. These panels were then fitted together, perhaps for decorative effect, and carefully sewn. A waistband, decorated with four lines of very fine slashes (not cut out), was sewn onto what appears to be a tie string of solid leather. The junction of the tie string with the waistband and the rest of the garment was reinforced with small solid panels, no doubt to provide additional strength at this stress point. The garment's construction also included many intentional gathers and folds suggesting that it flared out in various ways.

Perforated leather is commonly assumed to originate from loincloths, an article of male attire. Actual loincloths preserved from New Kingdom Egyptian contexts display an entirely different construction (single piece of hide) and cutting technique (generally a diamond mesh) (Vogelsang-

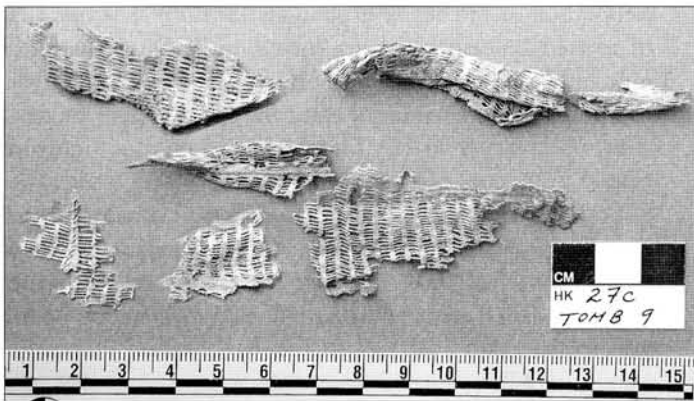


Plate 2. Fine perforated leather from HK27C Tomb 9.

Eastwood 1993, 17-31) from almost all examples of Nubian leatherwork.<sup>3</sup> Despite these major differences in manufacture, perforated leather in Nubia is also generally considered to derive from loincloths (e.g., Säve-Söderbergh 1989, 132); however, many of the graves from which this type of leatherwork has been reported in sufficient detail belong to females (e.g., Williams 1983, 65, T8 and T121; Säve-Söderbergh 1989, grave 97/18), suggesting that the garment should instead be considered a skirt, perhaps similar to those with decorative punched designs found at Kerma (Reisner 1923, 304-5, pl. 65.3).<sup>4</sup>

Leatherwork of this type was apparently employed in a variety of garments. Impressions on the preserved ear and the skin on the chin of the occupant of Tomb 9 suggest the finer quality perforated leather may be the remnant of a mesh-work hair net, possibly tied beneath the chin (Plate 3). It too was composed of small panels, only 3cm wide and 10+cm long, that were sewn together along their solid margins (cf. Plate 2). The quality of this leatherwork is impressive, with up to 42 tiny cut-outs, less than 4mm in length, per square centimetre. Headgear of leather with perforated decoration has been reported from the graves of females in C-Group graves, but unfortunately the pieces have not been adequately described to allow comparison (Säve-Söderbergh 1989, 186, grave 97/23; 208, graves 179/34 and 179/35).

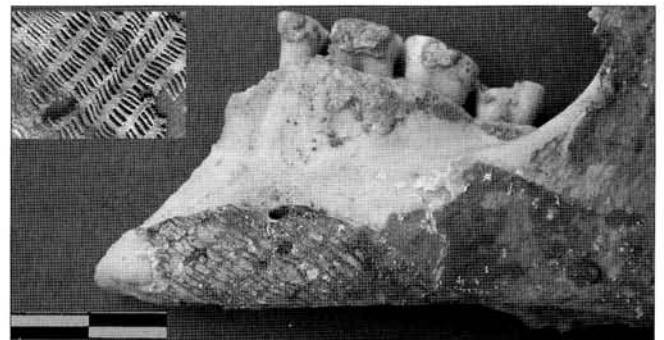


Plate 3. Impressions of the fine perforated leather hairnet (?) on the chin, HK27C Tomb 9.

Other garments in Tomb 9 include what has been reconstructed as a brown and white, horizontally striped, flaring sleeve composed of small pieces of leather sewn together, which may have connected to a bodice of pink leather with

<sup>3</sup> Leather cut in a diamond mesh pattern was found in the C-Group cemetery at Ermenne (Arminna), Junker 1925, 19, pl. II.96.

<sup>4</sup> Despite the difference in time, it may be more than coincidental that pictorial evidence from the Ramesside period clearly shows dancing girls, some of whom are tattooed in a manner similar to the female in Tomb 9, wearing cut-work, presumably, leather loincloths as part of their special performance apparel (cf. Peck and Ross 1978, pl. VI [ostrakon Turin 7052] and fig. 68 [ostrakon IFAO 3190]). Neither tattoos nor perforated leather garments have thus far been found in any other grave at HK27C, although leather and human soft tissue are preserved in several of the graves.

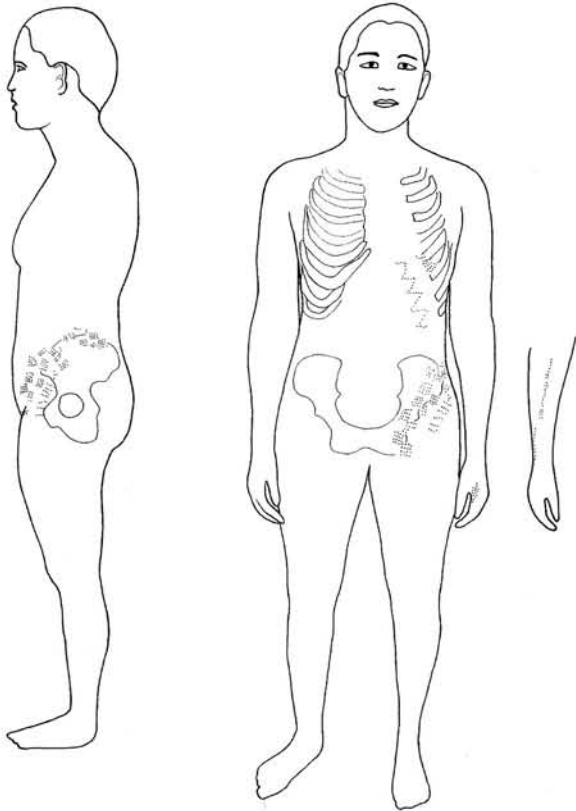


Figure 2. Distribution of tattoos on the woman in HK27C Tomb 9 (drawing by I. Milosavljevic and G. Pyke).

yellow appliqué. Garments made of a patchwork of brown, beige, pink, red and yellow leather panels were found in several graves, but almost exclusively those of women. In these cases, they may be multi-coloured skirts as described by Reisner (1923, 304), discussed by Junker (1925, 18) and depicted on Nubian women in the tomb of Huy (Davies and Gardiner 1926, pl. xxx; colour facsimile in Wilkinson 1983, fig. 42). Leather kilts with blue faience beads sewn into the seams and along the edges were found in the graves

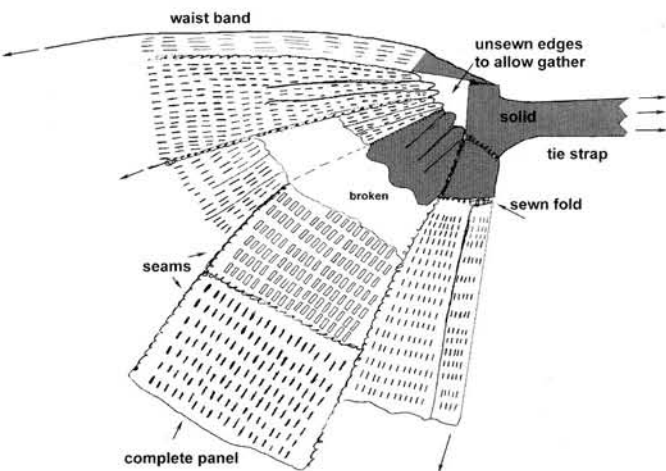


Figure 3. Schematic reconstruction of the perforated leather garment from HK27C Tomb 9 (drawing by F. Cole).

of men (Tombs 17 and 18) (Plate 4), although the small glassy blue faience beads favoured for this decoration were found in almost all of the graves (cf. Williams 1983, 94).

Fragments of Nubian black-topped bowls were found in and around all graves, although their original association

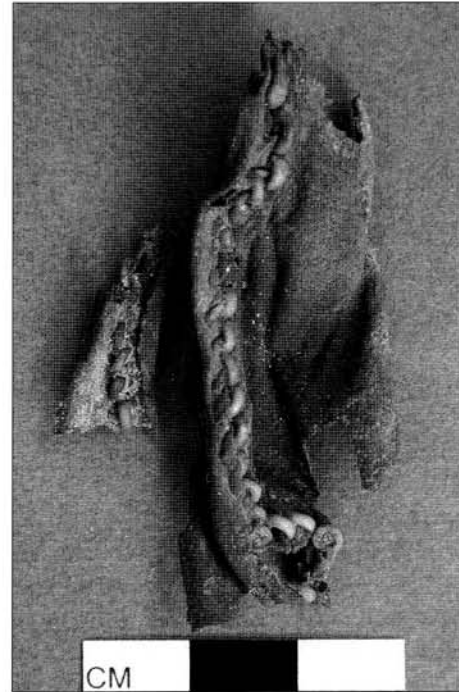


Plate 4. Beaded leather from in situ kilt in HK27C Tomb 18.

cannot always be determined (see Figure 4). Egyptian pottery from the northern part of the cemetery indicates a late Middle Kingdom/13<sup>th</sup> Dynasty date. Tomb 6, with its apsidal brick end niche and round holes (15cm in diameter and 10cm deep) at each corner of the shaft, possibly for the feet of a wooden bed in the Kerma tradition (see Giuliani below), and Tomb 14, lined along its long walls with diagonally laid mud bricks to support a vault, are probably later additions at the cemetery's eastern edge, but, as both burials were extensively plundered, ceramic dating is inconclusive.

As the excavations progressed southward (Test C), there was a marked change in burial orientation and a notable elaboration of the above-ground architecture. The number of incised Nubian ceramics, including Black incised and milk jars (see Figure 5; Plates 7 and 8), also increased. Egyptian pottery recovered in the southern sector suggests a date somewhat earlier in the Middle Kingdom (see Giuliani below).

Four graves (T15, 16, 22, 23) were found surrounded by rings of loosely arranged mud bricks, now only one or two courses high (cf. Junker 1920, 39, pl. 1.3) (Plate 5). Square offering chapels and platforms built of brick and stone on which pottery was deposited were built onto these rings. Large naturally exfoliated stone slabs were used to roof two of these tombs (Tombs 15 and 16), and a third (Tomb 20) that had no remaining evidence of surface architecture. In

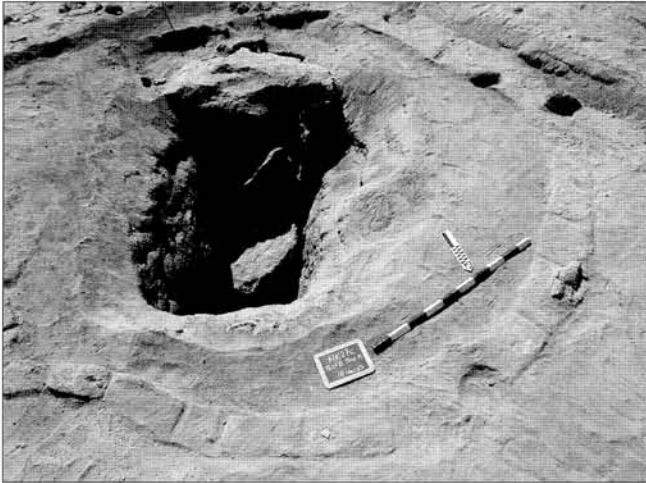


Plate 5. Tomb 15 surrounded by low brick ring, HK27C.

addition to its stone slab roof, a series of five matched sockets on each side half way down the shaft wall of Tomb 15 indicates an interior roof of wooden beams; the remnants of one was found tossed out of the tomb to the east.

The most elaborate tomb to date was surrounded by a well-built ring of mud bricks four courses high, or originally higher (Tomb 17; Colour plate XXVI). After its construction, several large rounded boulders were rolled in and set in place against the south side of the brick ring. Between two of these boulders a platform or offering chapel was built of fieldstones. Bright yellow sandstone was specially collected for this and other stone constructions in this cemetery (including the offering place surrounded by mud bricks upon which a large amount of fine white ash and *in situ* pottery was found in Test B, locus 10; see Figure 1). Numerous surface deposits of Nubian and Egyptian pottery were found on all sides of the tumulus of Tomb 17: nestled beneath rocks (A on Figure 1; Figure 4d; Figure 6a, b, e); placed within in small brick cists (Figure 1, B and X; Figure 6 c, d, f); or simply deposited against the tumulus wall in the case of large Egyptian marl-ware storage jars (Figure 1, N). The grave contained the burial of a young man 20-30 years of age wearing a beaded kilt and a later interment of a child, 5-10 years of age.

Later graves were inserted to either side of this tomb. The interior of the long and narrow Tomb 21 to the north-west was completely plundered, but at ground level at its south-east corner, a pendant made of a carefully shaped shell of *Spathopsis rubens* (Nile clam) was still in place, wrapped in a string of over 1600 light blue faience beads. The string had long ago disintegrated, but these tiny beads and one faience amulet were carefully collected and restrung in their original order (Plate 6).

Disk or ring beads, mainly of blue or black faience, and to a lesser extent brown steatite (?), were the most frequent find in the cemetery (see Colour plate XXVII), but beads of the size wrapped around the pendant were not found in any other context. Ostrich eggshell beads were rare, and

only occurred in any number in the anklet found *in situ* on the body of the older woman in Tomb 10. Tomb 10 also contained four marine shells (*Conus* sp.): a pierced specimen, two worked into beads, and one fragment apparently representing the refuse of bead making. Typical circular bangle bracelets/armlets (associated with either Tomb 15 or 16) were made from the shell of a marine gastropod (*Charonia tritonis*). Also typical of C-Group grave gifts, an unmodified specimen of *Etheria nilotica* (Nile oyster) containing galena powder was recovered within Tomb 22 (Colour plate XXVII) (cf. Williams 1983, 75, pl. 113).

Archaeozoological examination of the faunal material was undertaken by Wim Van Neer and Veerle Linseele (Royal Museum of Central Africa, Belgium). In addition to the aquatic fauna described above, they also identified the remains of ovicaprines. All the material that could be identified to species belonged to sheep, in contrast to other C-Group cemeteries where cattle is more prominent (Säve-Söderbergh 1989, 141ff), but in keeping with the importance of sheep in C-Group settlements (Bietak 1966). The majority of the bones were foot elements, more specifically the canon bones (metacarpals or metatarsals), sometimes with associated small carpal or tarsal bones. Such metapodals were found in Tombs 9, 10, 17 and 23 (usually a fore and hindfoot in each grave). In addition, a fragmentary torque or bracelet of polished cow horn was retrieved from Tomb 22 (Colour plate XXVII).

Tomb 22, which was apparently inserted later as its surface architecture abuts and incorporates some belonging to Tomb 17, contained a narrow wooden coffin with white plastered surfaces. Remnants of similar coffins were also

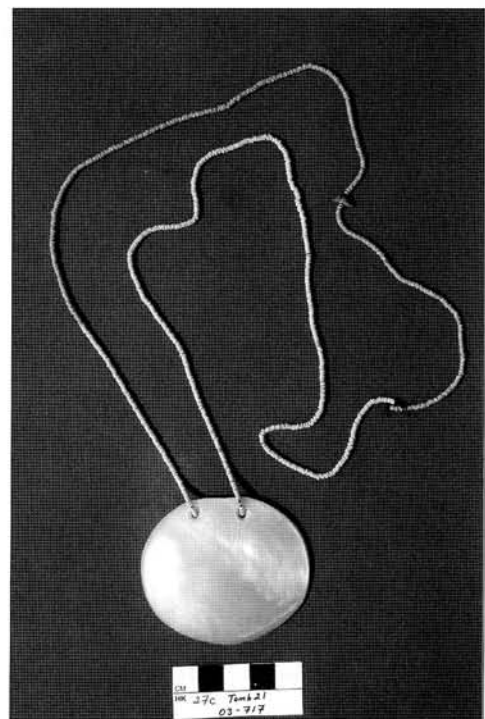


Plate 6. Shell pendant and beads restrung.





found in Tomb 18 (Plate 9), which had been dug into the chapel of Tomb 16, and in the much denuded Tomb 11. Limited evidence (the nearly intact body in Tomb 18) suggests that burials in these narrow coffins were extended, on the right side, with the head pointing northeast (magnetic), thus with the body more or less facing local (river) east. In the northern sector, again only limited information (*in situ* legs and pelvis in Tombs 2B and 10) indicates that the bodies were placed in a loosely contracted position, on the right side, with the head to the northwest, thus facing away from the river.

Despite being so far north in what we consider to be Egyptian territory, the occupants appear to have made few concessions to Egyptian influence other than a general use of Egyptian pottery, mud brick instead of stone for the tumuli, and in some cases simple wooden coffins (no evidence of painting was found). At least in death, they dressed like Nubians (no textile was recovered from any grave in 2003), constructed Nubian funerary architecture and deposited Nubian grave goods above ground in typical Nubian fashion. Nubian pottery and other typical grave goods were procured or created, and a minimum number of 26 black-topped vessels are present from the current excavations (see Figure 4). The population of the cemetery, which includes an even spread of men, women and children,<sup>5</sup> was obviously a wealthy one, with most of the population living into their 40s and beyond in relatively good health. Caries and abscesses with relatively minor osteoarthritis given their age are the most common pathology (see Irish below).

More work is required, but it does appear that some of the burial features occur in this cemetery earlier than suggested by chronologies developed from Nubian cemeteries further to the south. With less than one quarter of the cemetery excavated, it is hoped that further exploration will elucidate this issue and provide more information on these Nubians and their position in the community.

<sup>5</sup> Examination of the skeletal material was undertaken by Bernadette Dickman (Belfast, Ireland) and Sean Dougherty (University of Indiana, Bloomington). Their analysis revealed that older women (35-50+ years) were buried in Tombs 9, 10, 19, and 22, a younger woman (20-35 years) in Tomb 14; older men (35-50+ years) in Tombs 18 and 20 with a younger man (20-30 years) in Tomb 17 (lower burial). Unfortunately not enough remained in Tombs 6, 12, 13, 15 and 16 to determine sex, though all appear to have been adults. Children were buried in Tombs 11, 17 (upper), 23 and 21, with infant bones also in Tomb 15.

## *Preliminary remarks on the Pottery Corpus from the C-Group Cemetery at HK27C*

*Serena Giuliani*

The preliminary investigation of Cemetery HK27C at Hierakonpolis in the winter of 2001 revealed its great importance as an unexpected example of a C-Group cemetery in Upper Egypt (Friedman 2001; Giuliani 2001). The results of the recent excavations in 2003 and the analyses of the pottery and archaeological remains show beyond a doubt that this necropolis is affiliated with the C-Group culture; no Pan-Grave pottery or other elements diagnostic of this culture were found. Earlier studies (e.g., Bietak 1966; 1968) suggested that the C-Group was present only in Lower Nubia as far north as Kubanieh; however, these new findings show that members of the C-Group culture were deeply involved in Egyptian territory from at least Middle Kingdom times. In light of the results obtained from the latest excavations at HK27C, I wish to highlight its importance. It is not only at this point the only C-Group cemetery found in Egypt, but also represents the northernmost attestation of a more or less permanent C-Group Nubian presence there. Yet it also displays elements that differ from classic Lower Nubian C-Group funerary remains. One of the main characteristics of this necropolis is its mixed nature: for example, some of the graves exhibit C-Group cultural markers (i.e., tumuli, offering chapels, C-Group pottery) in conjunction with Egyptian funerary traditions such as sarcophagi at a date earlier than encountered further south. A certain disjunction between relative chronologies developed in (southern) Nubia and the appearance of the same feature in “Egyptian” territory has also been observed at Elephantine (cf. Raue 2002).

The analysis of the pottery found within the cemetery at HK27C is still in progress, but here I present a general view of the material, both Egyptian and Nubian, which was found throughout the cemetery. The vessels were usually found in very fragmentary condition, but mends were frequent with pieces scattered across the cemetery (but generally within a radius of 5m). No vessels were recovered *in situ* within any of the tombs excavated in 2003; however, a number of complete or reconstructible vessels of Egyptian and Nubian manufacture were discovered, if not *in situ*, in close proximity to their original position, in the offering places surrounding Tombs 17 and 23 and the offering place, Test B Locus 10 (see Figures 1, 4, 6). Nevertheless, in the majority of the cases, it is impossible to associate the pottery with certainty to one specific grave. The dispersal of the pottery is due, first of all, to the C-Group funerary custom of placing the pots outside of the tomb and around the tumulus.

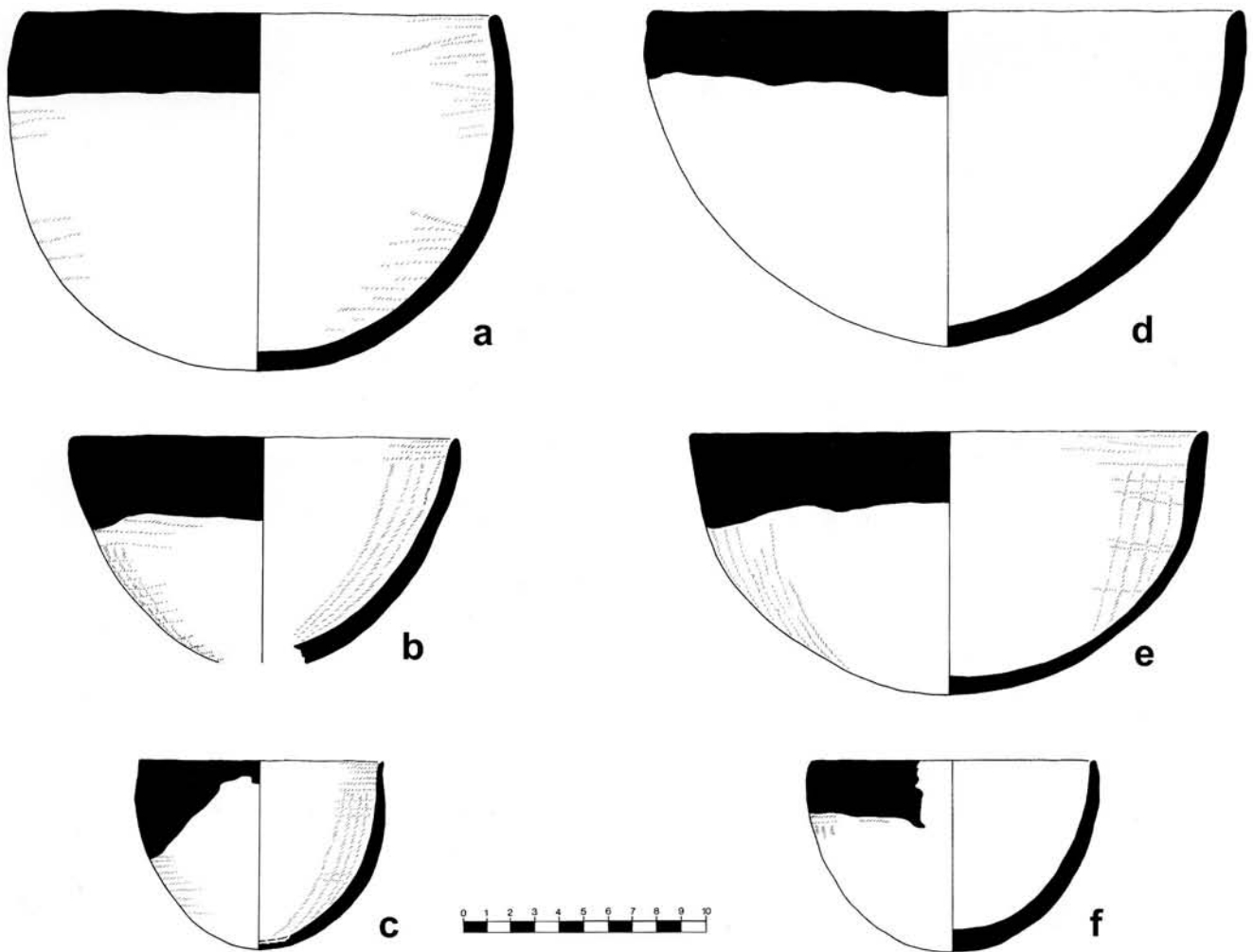


Figure 4. Black-topped Nubian bowls from HK27C. Bowls a, c: Tomb 22 offering place; b: Tomb 10; d: Tomb 17 offering place A; e: Tomb 23 offering place (drawings by G. Pyke).

In addition, the graves have been robbed in ancient and modern times.

### C-Group pottery

The pottery types found during the excavation at HK27C confirm the attribution of the cemetery to the C-Group culture, as we proposed in 2001 (Giuliani 2001).

Many red slipped black-topped ware bowls were recovered during the excavation, with a suggested minimum number of 26 distinct vessels in a range of sizes (Figure 4). All are typical of C-Group production: hand-made of Nile silt with varying amounts of dung tempering, usually well slipped and finely burnished with a black interior and a black zone at the rim and upper exterior wall. The reconstructed examples from the deposits beside Tombs 17 and 23 had both been ritually killed by sharp impact to the base (Figure 4de).

One large reconstructed black-topped bowl has impressed decoration on the rim (Figure 5a). A single point tool was used to create a decorative band of three irregular lines of impressed dots. Streaky horizontal burnishing lines are clearly

visible on the body of the vessel. The interior was smoothed with a brush.

Several fragments of hand-made black ware with incised patterns were found mainly in the southern sector of the excavation. Only one bowl, with the typical C-Group decoration of bands of incised triangle over the entire body, could be extensively reconstructed (Figure 5c; Plate 8). A second bowl (fragmentary) is decorated with incised, horizontally hatched, vertical bands or chevrons on the body and impressed triangles on the rim (Figure 5b; Plate 7 upper right). In addition, several rims and one incised shoulder fragment of “milk-jars” were found (Plate 7 upper left). These diagnostically significant C-Group jars are made from a rough, organically tempered fabric that is extremely friable. The firing temperature must have been very low. The designs suggest an association with the C-Group phases IB-IIA, which are contemporary with the 12<sup>th</sup> and 13<sup>th</sup> Egyptian Dynasties (Bietak 1968), and this dating is supported by the Egyptian pottery found at HK27C, but we hope in future to obtain tighter dating criteria.

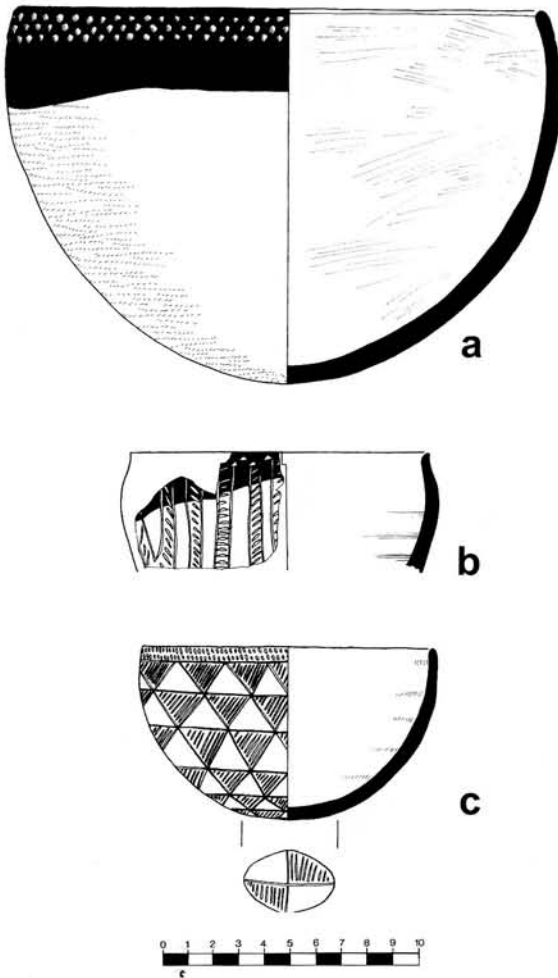


Figure 5. Decorated Nubian vessels from HK27C (drawings by G. Pyke).

## Egyptian pottery

The quantity of Egyptian pottery (Figure 6) is much larger than the amount of Nubian pottery. This situation has already been pointed out in the preliminary results of 2001 (Giuliani 2001).

More than ten examples of hemispherical cups were

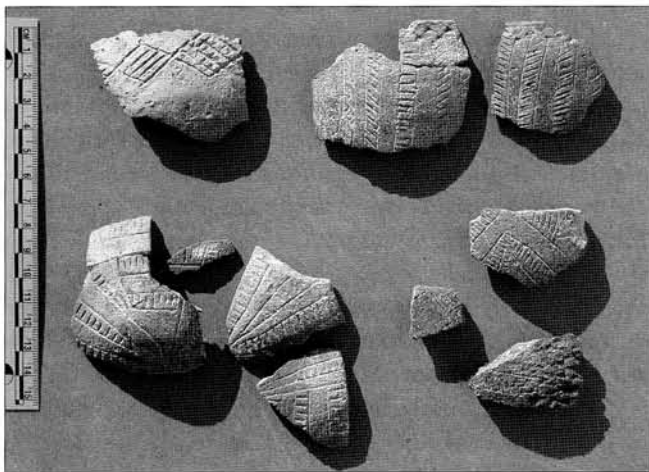


Plate 7. Incised and impressed Nubian pottery from HK27C.



Plate 8. Black Incised bowl.

found made of the Nile B1 and Nile B2 fabrics of the Vienna System (Nordström and Bourriau 1993, 171-173). They have uncoated surfaces and cut and scraped bases. Dorothea Arnold's (1982; 1988) dating criteria suggest a date ranging throughout the 12<sup>th</sup> Dynasty (Figure 6i).

Several medium-to-large sized carinated bowls in Nile B1 and Nile B2 fabrics also were recovered. The bowls are red slipped on the exterior and decorated with a band of incised lines (up to six) under the rim (Figure 6d, h). They have cut-and-scraped flat bases.

In addition, several small-to-medium jars of Marl A3 fabric were found. Some, almost complete, were found in place around Tomb 17 in the offering places marked A and B on Figure 1 (see Figure 6). From the same area, a number of jars with trefoil rims, typical of Middle Kingdom production, were also recovered. One has a post-firing potmark common to these vessels at this time (Figure 6b). Most of the Egyptian pottery in general finds close parallels in Bauschichten 13 and 14 of Elephantine (von Pilgrim 1996; Kaiser *et al.* 1999, 195-204), which are dated to the 12<sup>th</sup> and 13<sup>th</sup> Dynasties.

## “Mixed” pottery production

Fragments of a small, possibly wheel-made bowl of organic tempered Nile silt with reinforced lip and rocker stamp decoration on the rim and upper body represent a separate group of pottery production (Figure 7). The technology of this small bowl is typical of Egyptian pottery production while the rocker-stamp decoration on and below the rim is well-known only in C-Group and more frequently in Kerma pottery traditions. Kerma coarse and domestic wares often have rocker stamp decoration in these locations (Gratien 1986, 97-98, fig. 93c - Kerma Classique).

The fragments were found in the highly disturbed fill of Tomb 6 and cannot be considered *in situ*. Tomb 6 may be associated with the Kerma Culture because of the four holes

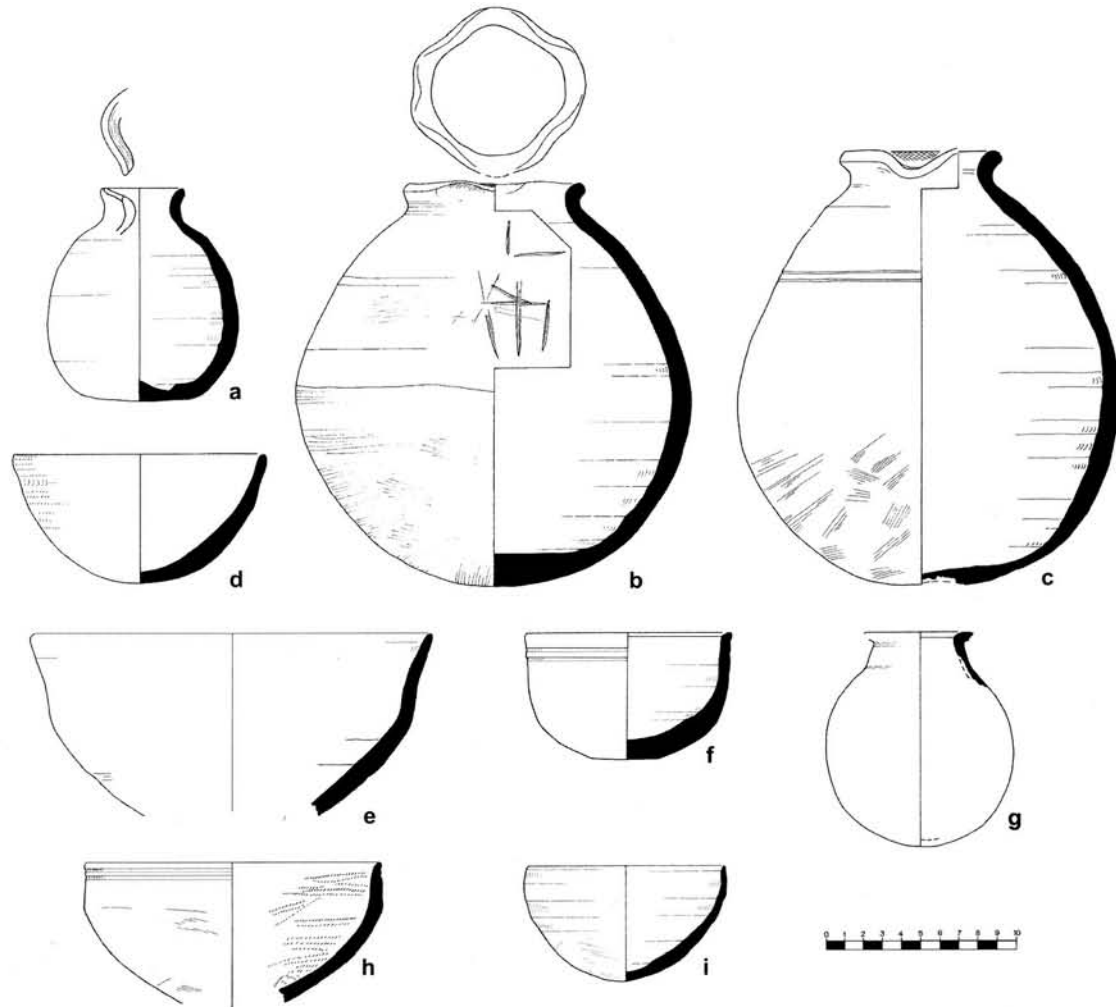


Figure 6. Selected Egyptian pottery from HK27C. Vessels a, b, e: Tomb 17 offering place A; c, f: Tomb 17 offering place B; d: Tomb 17 offering X; g: marl jar from Test B Locus 10; h: Tomb 23; i: Tomb 12 (drawings by G Pyke).

found in each internal corner of the shaft. Such holes are considered to be emplacements for the legs of the funerary bed commonly used in Kerma funerary tradition (Reisner 1923; Bonnet 1995). For this and other reasons, this large tomb should be considered a later addition to the cemetery, possibly dating to the early Second Intermediate Period (Bourriau 1981). However, no sherds clearly associated with Kerma pottery production were found.

Vessels of “mixed” pottery production are quite rare, but are almost always present in Nubian contexts. In El-

ephantine, for example, (von Pilgrim 1996) and in the Wadi es-Sebua C-Group village (Gratien 1985) this “mixed” class has already been observed. These fragments are not the first evidence of mixed production at HK27C. From the 2001 excavations there is a wheel-made bowl painted to imitate a red slipped black-topped bowl (Friedman 2001, pl. 2; Giuliani 2001, fig. 9a). These examples illustrate important cultural and social connections between the Nubian and Egyptian people who, in so many cases, shared the same territory.

In conclusion, the study of the ceramics from the C-Group cemetery at Hierakonpolis is still in progress, but the future results will no doubt help to determine and clarify the political, economic and cultural relationships between the Nubian C-Group people and Egypt. Moreover, we hope that future finds will make it possible to distinguish a chronological sequence in the presence of different Nubian groups (C-Group, Kerma and Pan-Grave) in Egypt.

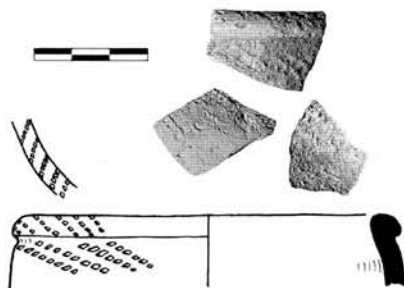


Figure 7. Rocker-stamp decorated sherds from Tomb 6.



## Physical Anthropological Study of the HK27C C-Group Sample

Joel D. Irish

A preliminary physical anthropological analysis was conducted on the C-Group skeletal remains recovered in 2003 from the cemetery at HK27C. Because time was short, analysis was limited to the teeth and supporting structures. In general, teeth are characterized by:

- 1) a high genetic component in expression
- 2) once erupted, direct interaction with the physical environment (i.e., through mastication, use of the dentition as a third hand, etc.)

Thus teeth can provide more information on biological affinity, diet, idiosyncratic behavior, and health than many other parts of the human skeleton.

Ten sets of remains retain teeth. Their preservation is very good to excellent, although, with one exception (Tomb 18; see Plate 9), many are damaged or incomplete. Table 1 identifies the remains, and lists their age, sex, and remarks on preservation, element presence, and completeness. Before proceeding, it must be stated that the HK 27C sample size is much too small ( $n=10$ ) to provide definitive conclusions about the C-Group populace at Hierakonpolis; however, it provides some interesting initial findings that may be confirmed by a future, more complete, study of all remains interred at the site.

Regarding biological affinity, a simple qualitative comparison of ten highly diagnostic dental morphological traits (for details about these traits and their use in estimating genetic relatedness among populations see Turner 1985; 1987; 1990; Turner *et al.* 1991; Haeussler *et al.* 1988; Irish and Turner 1990; Irish 1993; 1997; 1998a,b,c,d; 2000; Scott and Turner 1997; Jackes *et al.* 2001) was conducted (Table 2) between HK27C (abbreviated as HCG in the table) and two contemporaneous regional samples. The first comparative sample ( $n=54$ ) was recovered from a Middle Kingdom cemetery at nearby Thebes (THE); curated at the American Museum of Natural History, it may date to the 11<sup>th</sup> and 12<sup>th</sup> Dynasties (2125-1773 BC). The second sample ( $n=62$ ) comprises skeletal remains that were explicitly identified as Nubian C-Group (CGR); they were recovered from sites in

Sudanese Nubia by the Scandinavian Joint Expedition, and date between 2300-1580 BC (see Nielsen 1970 for details).<sup>6</sup>

To facilitate comparison, the frequencies of each comparative sample that most closely emulate those of the HK27C sample are denoted with an asterisk in Table 2; in the case of a tie both are marked. As can be seen, all 10 trait frequencies of the HK27C sample are most similar to those of the Egyptians at Thebes; for two traits (i.e., peg-reduced UI2 and LM2 root number), all three samples, including the C-Group Nubians, share similar frequencies. The implication then, based on the very small HK27C sample (which may not be representative of the population), is that despite a cultural affinity to contemporaneous Nubians, the Hierakonpolis C-Group people were biologically more akin to Egyptians. Such findings could, therefore, be indicative of cultural diffusion rather than population movement. Alternatively, it could be interpreted as genetic diffusion, due to long-term inbreeding of C-Group Nubians with the local Egyptians.



Plate 9. Tomb 18 with remnants of coffin.

The diet of the HK27C people likely contained a substantial amount of grit, and would have been high in carbohydrates. The former observation is, in part, based on the extensive occlusal wear, or attrition, seen in the extant teeth of the nine adults. In some instances the crowns had been worn almost completely away. More important than the extent of wear is the type. In all cases, the teeth exhibit slight to moderate cupping or concavities on their occlusal surfaces. Such patterning is characteristic of grit (most likely desert sand, although grit from grinding stones is also possible) being introduced into the food (Hinton 1981) and is, not surprisingly, ubiquitous in Egyptian and Nubian samples

<sup>6</sup> The author thanks Neils Lynnerup from the Panum Institute, Copenhagen, and Ken Mowbray and Gary Sawyer from the American Museum of Natural History, New York, for access to the C-Group Nubian and Egyptian samples. Research was supported, in part, by the National Science Foundation (BNS-0104731) and the Hierakonpolis Expedition.

Table 1. The HK27C remains analyzed for the present study.

| Tomb No. | Age            | Sex           | Remarks   |
|----------|----------------|---------------|---|
| 2B       | Adult (45-50+) | Female        | Complete maxilla and mandible. Cranium and most of trunk present.   |
| 2C       | Adult (18-23)  | Female        | Complete maxilla and two mandibular teeth; cranium and most of trunk present; legs missing.   |
| 9        | Adult (35-50)  | Female        | Maxilla with ante-mortem loss of 15 teeth; complete mandible. Most of trunk present; legs missing.  |
| 16       | Adult          | Indeterminate | Maxilla only; remains include premolar from a second individual aged 11-12 (probably second individual in Tomb 17). Only fragmentary skeletal material recovered. |
| 17       | Adult (20-35)  | Male          | Complete maxilla and partial mandible. Skull and left side of trunk recovered; legs fragmentary.  |
| 18       | Adult (35-50)  | Male          | Almost complete, naturally mummified body with full set of teeth. Arms missing.   |
| 19       | Adult (55-65)  | Female        | Mandible fragment. Lower trunk present. Upper trunk very fragmentary.   |
| 20       | Adult (50+)    | Male          | Complete maxilla and mandible fragment. Cranium and most of trunk present. Ante-mortem tooth loss of upper molars.  |
| 22       | Adult (35-40)  | Female        | Complete mandible and maxilla fragment. Skull fragmentary. Lower trunk present.   |
| 23       | <4 years       | Indeterminate | Tooth fragments only. Very fragmentary skeletal remains.  |

Table 2. Dental trait percentages (%) and number of individuals scored (n) for the three samples.

| Trait: <sup>2</sup>                 | Sample: <sup>1</sup> | HCG        | THE         | CGR         |
|-------------------------------------|----------------------|------------|-------------|-------------|
| Winging UI1<br>(+=ASU 1)            | %<br>n               | 0.0<br>6   | 5.6*<br>54  | 16.3<br>49  |
| Peg-Reduced UI2<br>(+=ASU P or R)   | %<br>n               | 0.0<br>6   | 0.0*<br>54  | 0.0*<br>56  |
| Congenital Absence UM3<br>(+=ASU -) | %<br>n               | 16.7<br>6  | 19.6<br>51  | 7.1*<br>56  |
| Rocker Jaw<br>(+=ASU 1-2)           | %<br>n               | 0.0<br>5   | 22.6*<br>53 | 27.3<br>44  |
| Cusp 7 LM1<br>(+=ASU 2-4)           | %<br>n               | 0.0<br>5   | 6.8*<br>44  | 11.6<br>43  |
| Tome's Root LP1<br>(+=ASU 3-5)      | %<br>n               | 0.0<br>6   | 11.1*<br>36 | 19.6<br>46  |
| Root Number LC<br>(+=ASU 2+)        | %<br>n               | 0.0<br>5   | 0.0*<br>35  | 8.2<br>49   |
| Root Number LM1<br>(+=ASU 3+)       | %<br>n               | 0.0<br>6   | 0.0*<br>39  | 2.6<br>39   |
| Root Number LM2<br>(+=ASU 2+)       | %<br>n               | 100.0<br>6 | 91.7*<br>36 | 91.2*<br>34 |
| Torsomolar Angle LM3<br>(+=ASU +)   | %<br>n               | 16.7<br>6  | 22.5<br>40  | 4.8*<br>42  |

throughout time (e.g., Ruffer 1920; Irish 2001). The high-carbohydrate determination is based on the presence of carious lesions in the teeth of four of the nine adults (44.4%). Such a high rate is within the range for pre-industrial agricultural populations world-wide (Irish and Turner 1987). The caries rates in the adult dentitions of the two comparative samples are 15 of 50 (30%) in THE, and only seven of 53 (13.2%) in CGR; both samples exhibit high attrition rates comparable to that of the HK27C sample.

Beyond attrition, there is an obvious case of dental abrasion in the sample. By definition, abrasion is a type of wear that occurs as the result of friction from a foreign body, independent of mastication. The individual from Tomb 18 exhibits extreme bilateral, angled wear on the upper first and second premolars, with accompanying wear on the lower second premolars and first molars. The wear is so extreme that the pulp cavities of these teeth were perforated. As a result, they became infected and produced large peri-apical abscesses in the jaws for pus

<sup>1</sup>HCG=Hierakonpolis C-Group, THE=Thebes Middle Kingdom Egyptians, CGR=C-Group Nubians (see text for sample details).

<sup>2</sup>ASU rank-scale trait breakpoints from Irish (1993; 1997; 1998a,b) and Scott and Turner (1997).

\*Indicates which comparative sample's frequencies most closely emulate those of the HK 27C sample; in the case of a tie both are marked (see text for details).



Plate 10. Head of male from Tomb 18 and unhealed abscess.

drainage; the latter were unhealed at the time of death (Plate 10). Such wear may be indicative of habitual behavior that was undertaken by the individual. Analogous wear was observed by the author in teeth of prehistoric people in the American Southwest; in these instances, it was determined that the wear was due to the stripping of plant material during the production of basketry. It is plausible that the Tomb 18 individual was engaging in similar behavior.

Lastly, a cursory inspection of the teeth in all eight individuals revealed no macroscopic signs of linear enamel hypoplasia (LEH). In brief, LEH is a thinning of tooth enamel as a result of disruption in the deposition of enamel matrix during crown formation (Goodman *et al.* 1980). Such a disruption generally results from some form of systemic stress (i.e., weaning, starvation, illness, etc.) that affects the individual during childhood (Goodman *et al.* 1980; Rose *et al.* 1985). The absence of LEH is suggestive of good childhood health in these eight individuals. Moreover, no other overt evidence of dental pathology or anomalies (e.g., cementum hypoplasia, amelogenesis and dentinogenesis imperfecta, enamel opacities, etc.) was detected in the HK27C sample. Thus, the individuals were in a good state of dental health and, by way of analogy, perhaps overall hard tissue health at the times of their death; such a finding is somewhat contrary to the results of other ancient Egyptian and Nubian dental pathology studies (e.g., Ruffer 1920). Of course, the small number of individuals must, again, be

taken into account, as the sample may not ultimately prove to be representative of the Hierakonpolis C-Group population.

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<http://www.archaeology.org/interactive/hierakonpolis/nubians.html>

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*Colour plate XXV.  
Hierakonpolis. Tattooed  
skin from the pelvic  
region, HK27C Tomb 9.*



*Colour plate XXVI. Hierakonpolis.  
Tumulus and stone offering platform of  
Tomb 17, HK27C.*



*Colour plate XXVII.  
Hierakonpolis. Etheria shell, beads  
and polished cow horn ornament from  
Tomb 22, HK27C.*