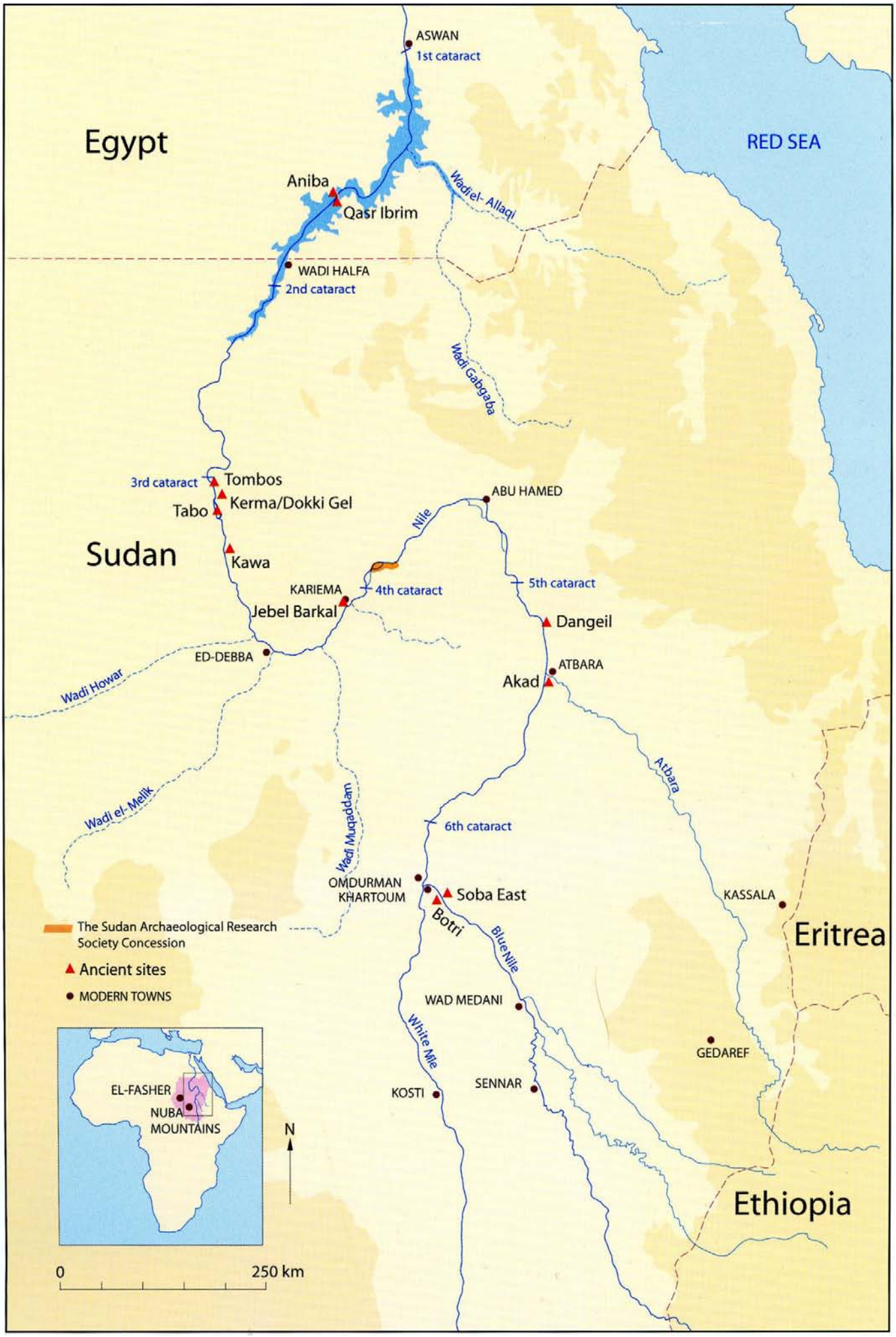
SUDAN & NUBIA

The Sudan Archaeological Research Society

Bulletin No. 11 *2007*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Dangeil
ED-DEBBA
ATBARA
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Soba East
Botri
KASSALA
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The Sudan Archaeological Research Society Concession
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Blue Nile
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Front cover: Village on the Island of Dirbi in the SARS concession above the Fourth Nile Cataract (photo: D. A. Welsby).

Akad Excavation Project.

Preliminary report on the 2005 and 2006 Seasons

Mohamed Faroug, Yassin M. Saeed and Alexandros Tsakos

The archaeological activity in Akad continued during the 2005-2006 seasons being funded by the National Corporation for Antiquities and Museums and the Sudan Archaeological Research Society. The Director of the General Administration of Tourism Authority, Abdel Bagi Ageeb, kindly provided a governmental rest-house in Atbara as accommodation for the team. The fieldwork in 2005 took place between 12th September and 1st October, whilst in 2006, it took place between 18th September and 9th October.[1]

Considerable results were obtained from this fieldwork in Akad, including the discovery of four more double-shaft graves, a characteristic type in the cemeteries between Meroe and Dangeil, as well as a unique, square, deep-shaft grave, with northern side niche. Additionally the physical anthropological study provided us with valuable information despite the poor preservation of the skeletons.

We are very grateful to Husna Taha (physical anthropologist – Khartoum University – Department of Archaeology) and Hwida Mohamed Adam (archaeologist) for their work, studying the human remains from the excavations in Akad over the last three seasons and for providing useful results notwithstanding the badly-preserved skeletons which were recovered (see below) and the very fragile ones which could not be removed from the graves.

Surface clearance

During the work in Akad in the last two seasons, the superficial deposits (300-500mm in thickness) were removed, revealing a level with many depressions, filled with windblown sand. The preliminary explanation for these features is that sand accumulated in hollows resulting from the collapse of tomb chambers and, also, that sand accumulated in recent pits made by local inhabitants. At the same time, this level revealed some features that might indicate the presence of additional graves.

The Excavations

The main aims were to map and investigate the mounds discovered in the previous season, east of the railway line and adjacent to the new cement factory.

Akad East

After an initial survey of the area, it was decided that, of the seven mounds of pebbles with concentrations of lithic material on the surface, four features on the main mound would be further examined. After surface clearance, features 1, 3 and 4, at the centre of the highest point on the mound, were excavated and proved to be the elongated shafts of three graves. Feature 2 contained three oval pits without any archaeological material. These graves can be described as follows:

AKD-E 1

Elongated shaft about 1.8m long, 520mm wide and 850mm deep. The deceased was laid in an extended position, east-west, head to the east, facing up, with the legs covered by a mat. The vegetal material had consequently been rehydrated by water intrusion (Plate 1). No other artefacts were found.

Plate 1. An extended burial covered by a mat in Akad East grave 1.

AKD-E 3

An elongated north west – south east shaft measuring 1.7m long, 500mm wide and 760mm deep. The extended burial was lying on its right side with the hands towards the pelvis, the head to the south east facing north east. It was wrapped in textile, without grave goods. According to the positioning of the burial and its orientation, it can be dated to the Islamic period.

AKD-E 4

The superstructure is a shallow gravel mound 3.7m in

[1] The team in the two seasons consisted of Mohamed Faroug (director- antiquities officer, NCAM), Alexandros Tsakos (fieldwork assistant), Yassin M. Saeed (surveyor, NCAM), Taha Bashier (geologist, NCAM), Musa ElFadul (volunteer archaeologist, NCAM), Seif Eldawla Ahmed (archeologist-Atbara Tourism office) and Ahmad Abu-Elgasim (archaeologist- Atbara tourism office).

diameter and 100mm high in the centre. The substructure is an elongated east-west shaft 1.75m long, 460mm wide and 1.7m deep. The burial lay on his/her back, head to the east, facing south, with the hands on the pelvis. No archaeological finds were found.

The same super and substructure, and the orientation of graves 1 and 4, were found in the Shuhada site south of Shendi, and this type of grave can be dated to the introduction of Christianity (Welsby 2002, 49). The coming excavation in both sites will provide us with more archaeological evidences for further studies.

Excavation in Area A

Some interesting features appeared immediately after the surface clearance in Area A. The different types of graves discovered led us to concentrate more upon the diversity of the substructures and associated features, as well as on the material of the wall blocking and used to refill the shafts, in addition to the animal sacrifices and meat offerings.

The wall blocking material

Despite being 300m from the Nile, it was clear that in some cases the wall blockings were built out of mud bricks made from Nile alluvium or in combination with Meroitic red bricks. It appears that both of these types of bricks have a symbolic meaning.

The use of red-brick in the blocking walls in the post-Meroitic graves is very common. This led us to presume the presence of an important Meroitic building nearby, not far from Akad. Remains of Meroitic monuments were found in Frai (Mohamed Faroug 2006). According to the ethno-archaeological work that has been undertaken by the first author at the Kushite sites of Kawa, Jebel Barkal, Meroe royal city (the 'Royal Bath') and el-Kurru, some people in Sudan still believe in the sanctity of ancient buildings and practice ritual ceremonies associated with child birth, weddings and the deposition of votive offerings (see Faiz Hassan Osman 2004, 364-370.) In the light of this, it may be that the explanation for the presence of the red bricks in the wall blockings is to obtain blessings for the deceased by having part of a sacred Meroitic building in their burial. This can be observed both in the wall-blocking of the graves, and in grave 21, where the deceased has been placed between four Meroitic red bricks (see below).

The double-shaft graves

Grave 21

The double shafts run from west to east, with red-brick walls blocking the two entrances to the oval burial chamber which measured 5.44 × 2.87m (Figure 1). According to the archaeological evidence, this grave was heavily robbed and disturbed by water intrusion. At a depth of about 3m from the surface, two skeletons were revealed along with grave goods and two archers' looses. Skeleton no. 1 was flexed, head to the south, facing east. He was flanked by four Meroitic red bricks, while the grave goods, which consisted of two pot-stands (Type AKD 3-1) and one bowl (Type AKD 1-1), were located in front of his face (Plate 2). Burial no. 2 was located towards the western part of the chamber and south of the first. Due to water intrusion and the collapsed cavity, the remains of this individual were dislocated and raised about 130mm above the bottom of the burial chamber. The two archers' looses led us to assume that the

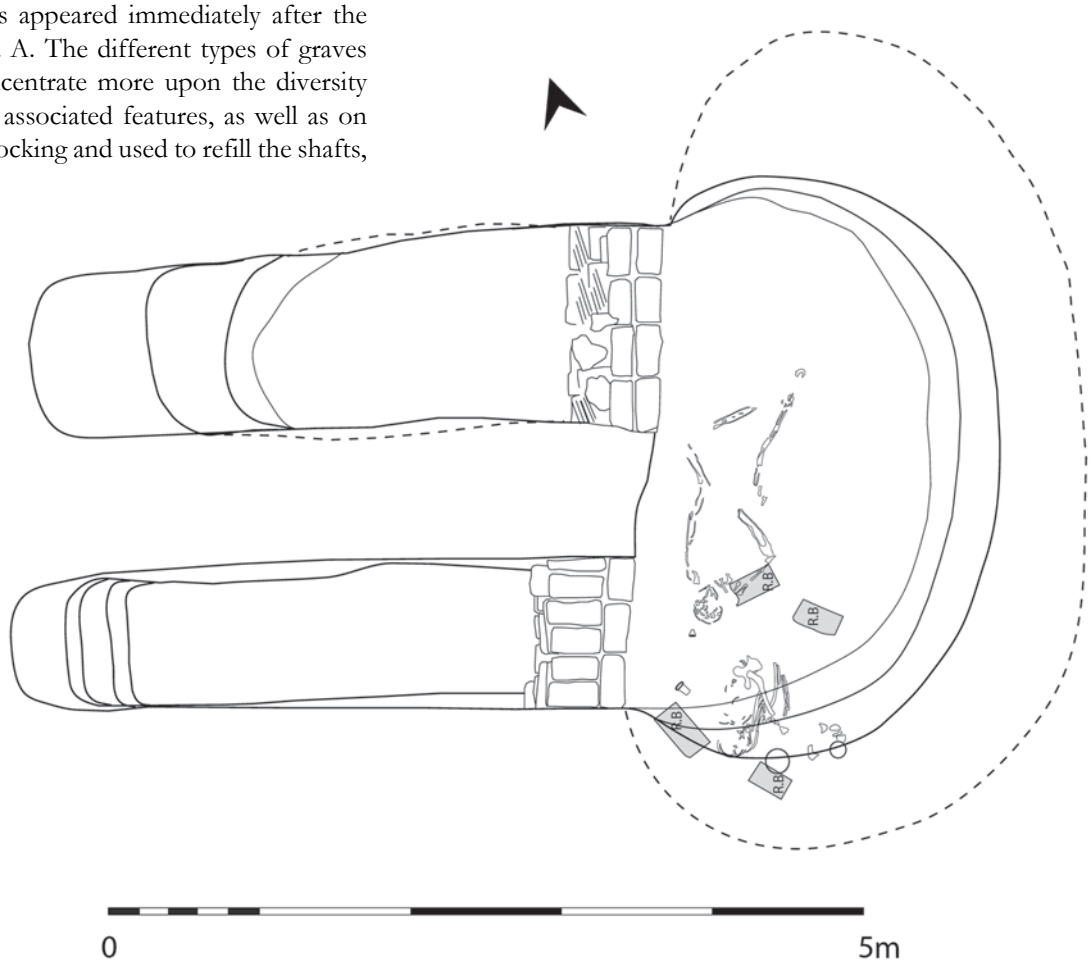

Figure 1. Top plan showing the location of skeletons 1and 2 and the grave goods in grave 21 (scale 1:50).

Plate 2. General view showing the location of the burials in grave 21.

main burial is most probably that of a warrior.

Grave 25

An east-west double-shaft grave with a red-brick wall blocking the entrance into an oval burial chamber located towards the east. The chamber measured (2.1 × 4m). It was filled with sediment, due to robbers' activity in the grave and subsequent water intrusion. The remains of the deceased consisted of some very badly preserved and scattered bones; it seems that the head was positioned towards the south. The grave goods consisted of two pot-stands (Type AKD 3-1) located towards the eastern side, while a bowl (Type AKD 1-1) was on the northern side.

Grave 29

This was the most fascinating and interesting grave. For the first time in Akad, the double-shaft was oriented east-west giving access to an oval burial chamber measuring 4.22 × 1.64m (Figure 2). A sacrificed dog was found guarding the northern entrance; the same burial custom was found in the southern shaft in Berber (Reinold and Lenoble 1991).

In the light of the chronology and frequency of human (and animal) sacrifices in the Meroitic period, one may suggest that the emergence of both rites was determined by concepts of the afterlife introduced by a discrete group of individuals, remaining connected to that particular group into the post-Meroitic period. It can further be suggested that it cannot be interpreted as a general development in Meroitic funerary ritual (Török 1997, 446). At the same time, the frequency of the sacrifice of dogs at Berber and Akad in double-shaft graves may indicate political, social or religious beliefs. Therefore, we strongly believe this type of grave belongs to the upper class of the post-Meroitic period, particularly in the case of the well-furnished double-shaft graves, and the symbolic objects that were associated with them.

Due to water intrusion, the burial chamber had collapsed, preserving its contents; most of the objects seemed to be *in situ*. They comprised 43 ceramic vessels including beer jars, small dishes, pot-stands and bowls. The metal objects consist of an iron spear head and arrowheads, a chatelaine and four stone archers' looses.

The distribution of this quantity of grave goods in the burial chamber provides us with considerable archaeological data and evidence concerning the burial and libation ceremonies. These data might enrich our knowledge of the burial tradition and rites practiced in the double-shaft graves between Meroe and Dangeil (see the discussion below). The ceramic grave goods are listed in Table 1.

The small finds located were as follow (Colour plate XXXIX):-

1. Six iron arrowheads found on the right knee (max. length 60mm).

2. A long spear head (440mm long and 57mm wide), located on the floor by the entrance in front of the face of the deceased.

3. Two knives: the first one found together with arrowheads, and the second one in the middle of the grave (110 × 220mm and 100 × 270mm).

4. A chatelaine, consisting of a copper-alloy spatula connected by an iron

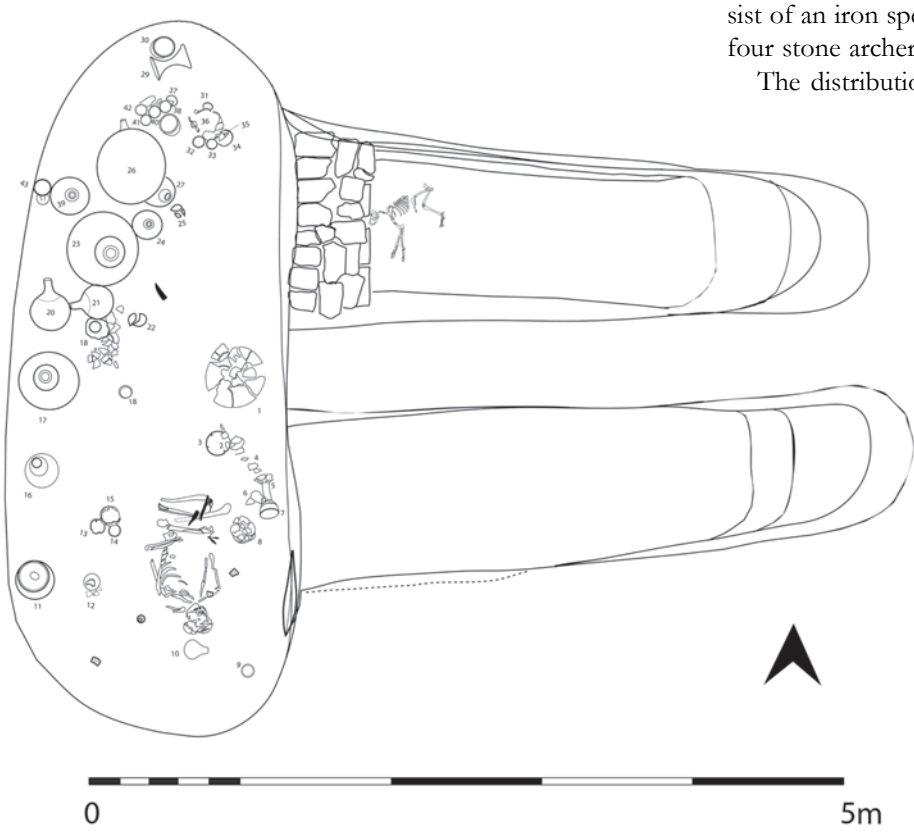

Figure 2. Top plan of the intact grave 29 (scale 1:50).

Table 1. Categories of ceramic grave goods.

No.	Categories	Description (see full description below)	Total
1	AKD 1-3	Two plain bowls and one reddish brown decorated with groups of four short wavy lines below the rim on the interior surface.	4
2	AKD 2	One reddish-brown goblet and two with black-slipped surfaces.	3
3	AKD 3-1	Small pot-stand with different decoration.	6
4	AKD 3-2	Large hollow pot-stand.	1
5	AKD 3-3	Small hollow pot-stand	1
6	AKD 5	Shallow-footed basin	1
7	AKD 6	Seven reddish-brown cups and nine cups	16
8	AKD 7-1	Three large beer jars	3
9	AKD 7-2	Two small jars with matt impress decoration.	2
10	AKD 7-3	Five small jars with plain body	5
11	AKD 8	One black libation bottle	1
			43

ring to another L-shaped object.[2]

5. A large number of beads scattered near the neck, arms and the legs.

6. Four archers' looses: one was found on the right thumb, the second in front of the body, whilst the others were found west of the body.

Grave 31

This is the fifth double-shaft grave discovered in the Akad cemetery and is located immediately east of grave 29, with which it shares the same shaft orientation. The northern and southern shafts measured 3.74m, ending in a mud-brick blocking wall. The excavation of the northern shaft revealed a double-scarab bead and palm frond charcoal, a common element in most of the Akad graves.

The excavation of this grave is much more promising than the others, and might provide considerably more archaeological data about the east-west double-shaft graves in Akad. It will be fully excavated next season.

West-east single-shaft graves

Grave 26

It is a west-east shaft type with a 'pillar' cut from the subsoil in the northern corner where the wall blocking was built. It is most probable that this technique was adopted in order to make the opening smaller and less than the width of the shaft. This serves to protect the burial chamber and makes the wall blocking stronger (Plate 3). Despite this, water entered the grave and filled it with soil.

An adult male burial of about 18 years old was lying in a contracted position in the middle of the oval burial chamber (dimensions 2.36 × 1.75m), with the head to the north, facing west. He wore an archer's loose on his right thumb. The grave goods were represented by one bowl (Type AKD.1-1) located in front of the face (Figure 3).

[2] For similar objects from Tomb R2-8B at Qustul see Williams 1991, 151, pl. 80(a).

Plate 3. The shaft and wall blocking in grave 26.

Grave 28

For the first time in the cemetery, a west-east shaft, about 1.7m deep with ledges on the north and southern walls, was found. This type of shaft led us to consider that deep shafts are one of the characteristics of Akad graves.

The oval burial chamber (3.07 × 1.61m) was filled with water-deposited silt. The excavation revealed the deceased laying in the middle of the chamber in a contracted position, head to the south facing west. The grave goods located to the north of the body consisted of two bowls (Type AKD. 1-7), two pot-stands (Type 2-2 and 2-3) and one footed bowl (Type AKD. 5) (Figure 4, Plate 4).

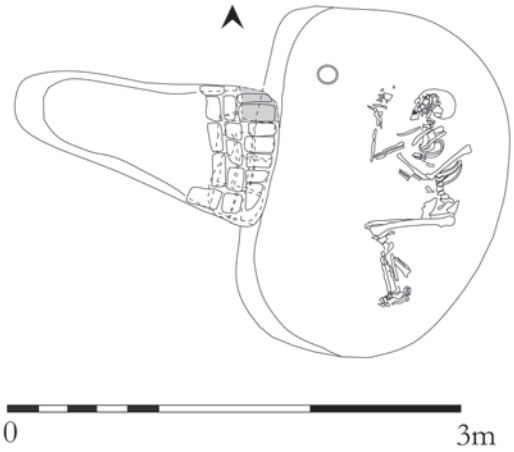

Figure 3. The north-south contracted burial in grave 26 (scale 1:50).

Despite the different orientation, the positioning of the grave goods indicates a similar burial ceremony to that of grave 10 (Mohamed Faroug and Tsakos 2005, 64-65).

Square and rectangular-shaft graves

Grave 30

This is one of the largest and deepest rectangular shafts (3 × 2.8-2.3 m) with ledges in the eastern, western and southern walls and a pillar in the south-west corner perhaps functioning as a step to facilitate the interments (Plate 5). Half of a post-Meroitic pot-stand (Type AKD. 3-1) was found about 1m down in the filling of the shaft, which indicated the robber's activity in the grave. Due to water intrusion, part of the lower part of the roof had collapsed. The deceased was smashed and disturbed, but seemed originally to have been located slightly towards the western part of the chamber, head to the west. It is most probable that the burial was contracted and facing south. Unfortunately, the grave was robbed and no further archaeological evidence was found.

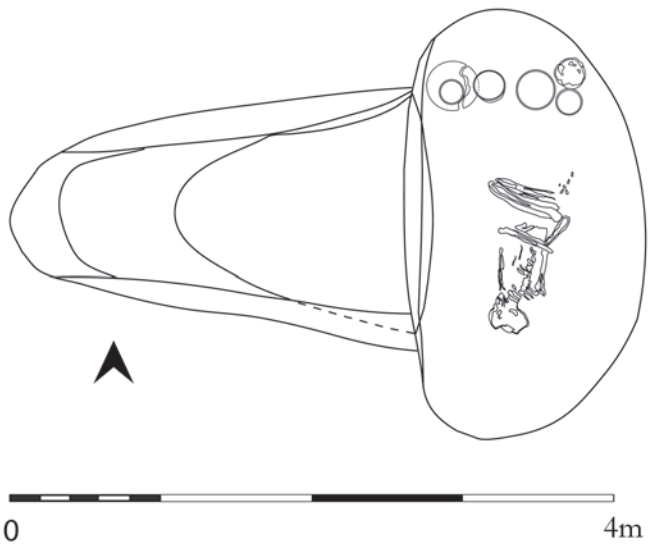

Figure 4. The contracted burial and grave goods towards the northern side of the chamber (scale 1:50).

Plate 4. Location of burial position and grave goods in grave 28.

Grave 22

An intact grave with an almost square shaft oriented north-south (1.70 × 2.1m) and a side niche towards the north where a mud-brick wall blocked the entrance. The extended deceased was lying on his back, head to the west. No grave goods were found, except for some beads around the left arm.

Plate 5. Seif Eldawla Ahmed stepping inside the burial chamber in grave 30, photo was taken from south.

Grave 23

This grave is located west of grave 22. The substructure is the same as in grave 22, but the burial position is different. It is an intact grave; the shaft is almost square and measures 2.2 × 1.95m. A wall of red brick, faced in Nilotic mud bricks was built towards the northern side and closed an oval entrance that leads into an oval burial chamber (2.4 × 1.24m). The deceased was placed in the middle of the chamber in a contracted east-west position, head to the west and facing south (Plate 6). No grave goods were found.

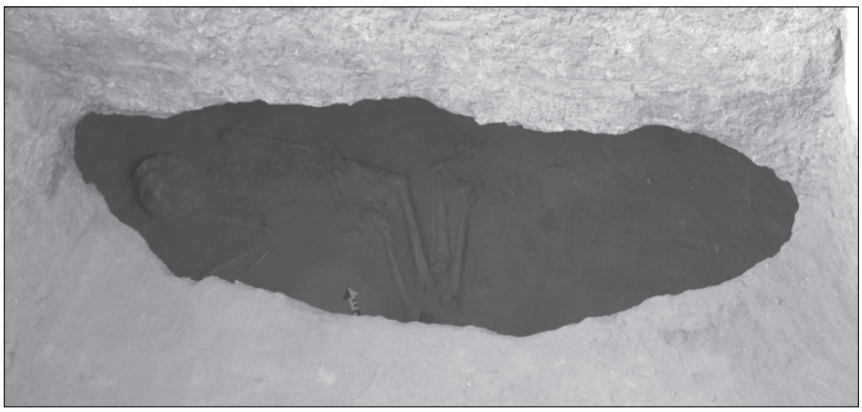

Plate 6. Contracted burial in grave 23.

From the evidence recovered in graves 4, 23, 24 and 30 it seems that this type of grave was less well furnished than the other post-Meroitic graves in the cemetery.

Grave 27

This grave was discovered in the 2004 season. It is of a type that has been dated to the Christian period, with an east-west rectangular shaft, with side niche; the extended adult male, approximately 18 years old was lying on its back, head to the west and the hands on the pelvis (Plate 7). No grave goods were found accompanying the burial.

Preliminary pottery classification

The range of post-Meroitic pottery forms found at Akad, encouraged us to make a preliminary classification for the site. This classification is based generally on the form and the decoration (for further details and descriptions see Mohamed Faroug and Tsakos 2005, 62-71). The final classification will be provided at the conclusion of excavations on the site.

In general Akad pottery falls into eight categories and can be identified as follows:-

Plate 7. The extended burial in grave 27.

AKD 1 (Bowls)

Different types of bowls were noticed; the main decoration is represented by groups of dots forming lines or crossed lines, and can be described as follow:

1. Carinated/slightly carinated medium-sized bowls with mostly burnished reddish-brown slipped surfaces decorated with groups of three, four and sometimes five dots forming crossed lines. Sometimes it has a boss and post-firing incised graffiti (Figure 5/06-Pl-46).

2. Carinated bowls with mostly plain burnished reddish-brown or black-slipped surfaces sometimes with a boss.

3. Large bowls, with either burnished reddish-brown slipped surfaces, or a black slip. These are decorated with groups of horizontal/vertical wavy lines (Figure 5/06-PL-77) while the black ones are either plain, or decorated with groups of short vertical lines below the rim (Figure 5/06-PL-49).

AKD 2 (Goblets)

One type has a black/reddish-brown slipped exterior and interior and is slightly carinated, the other is mostly un-slipped on the interior (Figure 5/06-PL-15).

AKD 3 (pot-stand and incense burners)

1. Burnished dark/light-slipped brown, plain, or with white painted decoration, consisting of short/long wavy lines arranged horizontally or vertically (interior/exterior) and sometimes with crescent shapes forming the lines, with a closed tubular stem, where the decoration is separated by two horizontal lines in some cases (Figure 5/06-PL-45).

2. Large hollow pot-stand (max. height 370mm), with a burnished dark/light-brown slip with irregular dots all over the exterior surface and onto the inner conical surface but not on the cylinder (Figure 5/06-PL-11).

3. Small hollow pot-stand decorated with vertical/horizontal long/short white wavy lines (height 204mm).

4. Small black-burnished and slipped pot-stand, with incised geometric decoration.

We can ascertain the function of this vessel type, from either the remains of burned incense, or from the position among the grave goods inside the burial chamber.

The incense burners in grave 8, for example, are located north of the head of the main burial and another one, with traces of incense burning, was next to the middle burial (Colour plate XL).

AKD 4 (plates/basin)

All the plates/basins in Akad have black-slipped interior and exterior surfaces with a maximum diameter of 360mm and height of 136mm. Sometimes the rim is decorated with short incised wavy lines (Figure 5/04-PL-15).

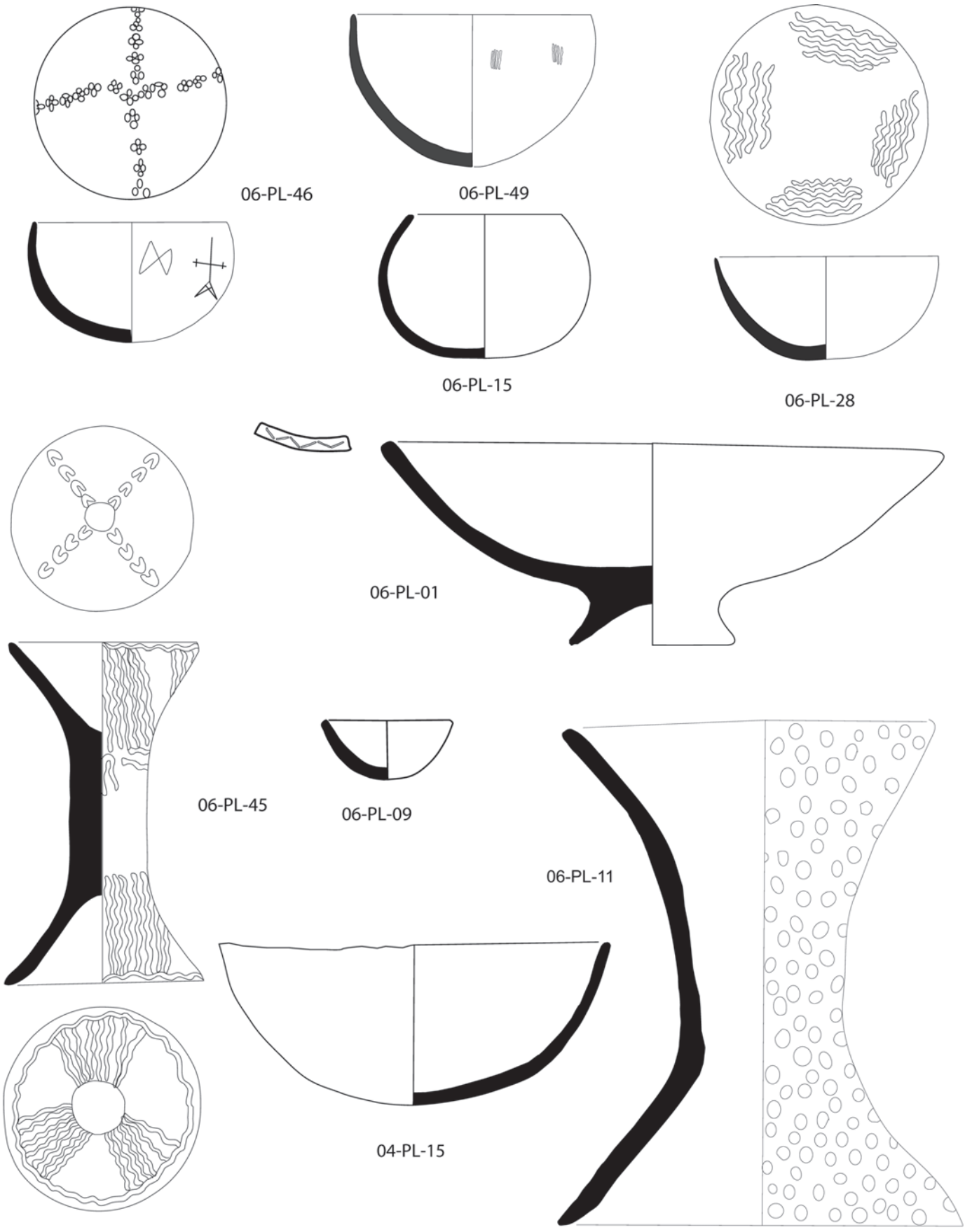

Figure 5. Different types of the pottery vessels from the Akad cemetery (scale 1:4).

AKD 5 (footed basins)
Shallow and deep-footed basins with different heights (192, 153 and 182 mm), and with dark-brown/reddish-brown slipped and burnished interior and exterior surfaces. One example is decorated with two crossed groups of white wavy lines and connected white crosses on the interior surface (Figure 5/06-PL-1).

AKD 6 (cups)
The feeder cups, which were found in Gabati (Smith 1998, 179), are absent in Akad, but small, plain, reddish-brown/black cups were found with a maximum diameter of 128mm and a height of 51mm (Figure 5/06-PL-09).

AKD 7 (jars)
For the first time in Akad, large and small beer jars were found. These fall in to three sub-categories:

1. Large beer jars (height 655mm) with a long and narrow neck. The neck and shoulder are red/reddish-brown slipped (Figure 6/06-PL-22).

2. Small beer jars (height 375 mm) with a long and narrow neck and open mouth. The neck and shoulder are red/reddish-brown slipped (Figure 6/06-PL-19) with mat-impressed decoration over the lower part of the body. Very similar beer jars were found in the Meroe necropolis in Tomb 300 (Garstang *et al.* 1911, pl. XXXVII-4). It has been assumed that some tombs in the Middle Necropolis at Meroe may predate the fall of Meroe in *c.* AD 350 based on the presence of objects such as an imported glass toilet bottle from Egypt. However, objects such as these may have remained in use for a long time (Kirwan 1939, 42). It is probable that some of the Middle Necropolis graves can be dated to the early post-Meroitic period, and that Akad grave 29 can be dated to the same period.

3. Small beer jars (height 358mm) with a long and narrow neck. The neck and shoulder are red/reddish-brown slipped; the body plain (Figure 6/06-PL-27).

AKD 8 (libation bottle)
Small black-slipped bottle with narrow neck and mouth (height 187mm) used especially for the libation ceremonies.

Discussion

The distribution of vessels in the double-shaft graves
The distribution of the vessels apparently depended on the relationship between the deceased in the multiple-burial graves. This is evident in grave 8, where the distribution of three groups of vessels for the three burials was very similar, despite the one to the north appearing to be the main burial. Therefore, in this case, it is most probable that those deceased belonged to one family and that a separate ceremony took place for each one.

In grave 21, the main burial was deposited to the south and located between four 'sacred' Meroitic red bricks. The two archer's looses found nearby indicate that he was a warrior and that the individual without grave goods, or any ornament, is a secondary burial, or perhaps that of a slave.

The vessel groupings and the ritual ceremonies can be readily observed from graves 8, 10, 28 and 29, each of which show a rigid burial tradition.

The libation and burial ceremonies
As usual, in most of the burial ceremonies and before the positioning of the body, some ceremonies took place away from the grave and others near to it. In Akad, burnt palm fronds were found in some of the shafts and within the filling, reminding one of the scenes of the palm-frond bearers and of Anubis and Nephthys libating, as depicted on offering tables[3] and on Meroitic scenes on the inside wall of the funerary chapels (Abdelgadir 1982, 64). Palm fronds are associated with Isis and probably Isis-worship. They are connected with life (*ibid*, 88), having a relationship with the *ankh* sign, the 'breath of life' held to the nose of the dead king (Ali Ahmed Gasmelseed 1998, 284). Thus, this evidence might indicate that some ceremonies took place next to the grave and most probably were related to the cult of Isis. At the same time, in Shuhada post-Meroitic grave 2, in site 2, it was very clear that a ceremonial meal was prepared (probably of a bird) immediately after the blocking of the burial chamber.

Referring to libation objects and their position in the burial chamber, as studied by Reinold and Lenoble (1991): beer jars were found only in grave 30 and a libation bottle was found in the northern part of the grave, next to the head.

A group of small cups and bowls was found in grave 29. This can be considered as a group of vessels for specific ritual ceremonies, especially when a meat offering was found in between a group of the same vessels in the same grave. The seven Meroitic connected bowls found in Dangeil and explained by Anderson as for ritual purposes (pers. comm. J. Anderson 2007) support this hypothesis. On the contrary, these groups form part of the funerary banquet at Akad, as is clear in Akad grave 29, where large, medium and small beer jars, bowls, goblets and cups were used and positioned along the north and western side of the burial (see also Lenoble 1991, 5).

Further study concerns plates. In the Shuhada cemetery the same relationship between the plate and the small cup was found, but instead of the black plates, well-decorated dark red, cream-washed plates had been used for the same purpose (Colour plate XLI). At the same time, a large number of pot-stands, incense burners and footed bowls were found in the Akad graves among the grave goods, but were absent from the excavated graves at Shuhada (Mohamed Faroug, NCAM interim report: 2006) and Gabati, except for one example from grave T. 5 (Smith 1998, 180).

The footed bowl is a unique vessel type and is character-

[3] From the analyses of these scenes, Abdelgadir stated that the Meroitic resemblance to Egyptian scenes is incomplete.

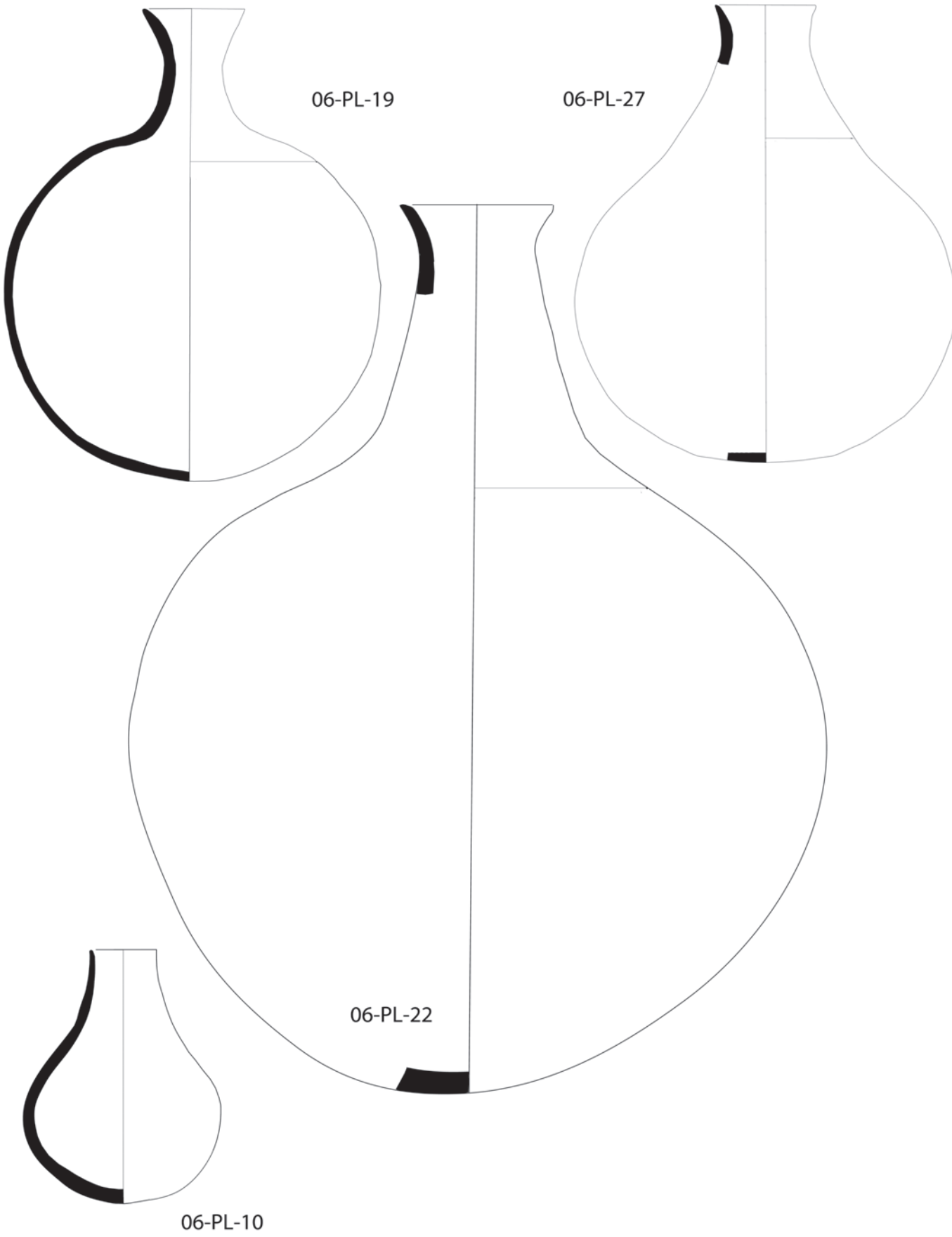

Figure 6. Pottery jars from the Akad cemetery (scale 1:4).

istic of the Akad cemetery, but has thus far not been found elsewhere in the area between the Fifth and Sixth Cataract. This vessel type is found in the well-furnished and rich graves in Akad, graves 10, 28 and 30. These vessels are associated with the rest of the grave goods in grave 10, which contained a male burial. In grave 29, the bowl was positioned on its own and directly on the floor between the two entrances. It seems that the footed bowl was used together with the libation bottle for the libation ceremonies.

Fumigation in the Akad graves is documented by incense burners in some of the burials, which are mostly located either in front of, or behind the body**.** This may suggest the stereotypical nature of the performed liturgy, following the Meroitic tradition. Evidence for the funerary banquet was clear in Akad grave 29 and made use of large, medium and small beer jars, bowls, goblets and cups along the north and western side of the burial (cf. Lenoble 1991, 5). It is important to mention that the funerary assemblage of the earlier Meroitic period consists principally of large jars, a practice still followed by the Akadian early post-Meroitic people.

Conclusion

The 2005 and 2006 seasons made a significant contribution to the study of different types of post-Meroitic graves which can be defined as:

East-west double-shaft graves.
West-east double-shaft graves.
East-west shaft graves.
West-east shaft graves.
Rectangular and square-shaft graves, with side niche towards the north.

Different types of substructures, grave goods and sacrifices may indicate different social, or political status. In these graves, some archaeological evidence, such as palm charcoal remains, may illustrate what type of burial ceremonies took place outside (cooking or incense burning, etc.). Some of these remains were thrown into the shaft before/during the refilling.

In Akad, the square-shaft graves commonly have a burial chamber towards the north, while the descending-shaft graves have a burial chamber\chambers towards either the east or west.

Different types of double-shaft graves are worthy of study, as is the relationship between different types of graves and grave goods, offerings, sacrifices and ceremonies that were practiced and which took place at\in the grave. All these elements may help us to understand the customs, beliefs, religious life and political status of the individuals at Akad, and in the rest of the area between the Fifth and Sixth Cataracts.

Report on the human skeletal material from Akad

Husna Taha el-Ata and Hwida Mohamed Adam

Introduction

This report is a detailed description of 16 skeletons recovered from the archaeological excavations at the site of Akad in northern Sudan – Wadi el-Neel State - during the 2004, 2005 and 2006 seasons.

As a result of the small number of skeletons examined, they are treated as separate entities. At this stage, larger scale population and human groups' studies, analyses, and comparisons are not possible. This report provides, however, detailed data and registration of the above-mentioned skeletons for use in further investigations.

Throughout this report, the skeletons are coded to correspond with the numbers given to their associated graves, following the general archaeological map of the site. Only one grave, grave 21, contained more than one skeleton. With its two skeletons, the codes given were 21 A and 21 B.

The Skeletons

Regrettably, the 16 skeletons are not in a good state of preservation. Only three could provide all the required information with all, or most of, their vital determining skeletal elements intact (skeletons 11, 16 and 17). Even with these skeletons, their relatively good condition does not mean that all elements are present. In general, the bones suffer from severe post-mortem damage that might have resulted from the burial environment and\or the handling, excavation and transportation of the skeletons. Therefore, the specificity of the given details cannot but differ from one skeleton to another.

The condition of the bones determined the techniques used for the different assessments of the skeletons. When a bone is not mentioned in the analysis, this is either due to its loss or fragmentation.

The different methods of determining sex in this report, utilising the pelvis and skull bones, were based on the methods and criteria described by Buikstra and Ubelaker (1994).

For the estimation of age, the auricular surfaces of the pelvis were examined, following Lovejoy and his colleagues' descriptions for aging from examination of this area (Lovejoy *et al.* 1985). This method was complemented at times by an assessment of the pubic symphyses, when available. However, the first method was preferred being dependent on an element that is more frequently encountered, continues to change throughout the life of the individual, and gives a narrower range of age that corresponds with the given description.

When the skeleton offered indications of a young age,

the different stages of fusion of the available skeletal elements were noted and related to the various age groups and categories as cited in White and Folckens (2000).

Finally, skeletons that presented examples of anatomical variants were recorded, followed by the details of those with signs of pathological alterations.

It should be noted that all the skeletons exhibit breaks and damage to the long bones, prohibiting measurement of the bones to allow an estimation of the stature of the individuals.

Determination of sex

The determination of sex was based upon the morphological characteristics observed via the available bones. The details of this assessment and the skeletal elements which may be used, are summarised in Table 1.

With the pelvic area being considered the best indicator of sex, in view of the dissimilar biological functions for which the pelvises of the different sexes are designed (Stewart 1979), the indications of sex offered from this area were considered more accurate than those provided by other parts of the skeletons. Differences in other skeletal areas result in differences in appearance rather than in natural compulsions. However, due to the bad condition of these skeletons and damage to their pelvic areas, sexing with cranial elements was considered, but with less confidence (skeletons 4, 10, 15 and 27). The sex of skeleton 13, with the indeterminate nature of two of its three detected sexing cranial features, was even less certain. In better preserved skeletons, sexing by the skull is supplementary to sexing via the pelvis and is not the main basis for sexing criteria.

Age Estimation

The age estimation of different skeletons depended on the availability of diagnostic elements. It is worth noting that Brothwell's techniques of aging, based upon wear of the molars (1981) was not applied, even when molars were present. The technique was excluded because it is highly influenced by a given population's diet. This can produce overestimation/ underestimation of age, when subsistence studies are not available. The results are presented in Table 2.

Descriptive Traits

Anatomical Variants

Anatomical variants, or non-metric traits, are discontinuous features that can pass from one generation to the next. They are features which do not affect the performance of the individual, but make the skeleton visibly different from other regular skeletons.

The only detected anatomical variant in the studied skeletons was the presence of a septal aperture in the distal end of the left humerus of skeleton 15. The presence of this variant in this skeleton is consistent with the variant's suggestion of femaleness. The anatomical variant of the presence of a septal aperture is usually related to femaleness, as the aperture may result from the gracile nature of females' bones, but it should be noted that it is not rare to find this feature in males.

On the other hand, the more important attribute of the occurrence of this variant is the possibility of detecting familial relations between the individuals displaying the same trait in future studies dealing with the same population, from the same site.

Pathological Alterations

Most of the observed pathological alterations in the studied skeletons were dental conditions. Skeletons 4, 10, 13 and 27 all had dental problems. Skeleton 4 presented an example of a possible periodontal disease with the exposure of the roots of the mandibular dentition and the presence of a rim around the alveolar bone. Skeleton 10 presented an ante-mortem loss of the 1st and 2nd left mandibular incisors, the 2nd right mandibular premolar, and the 3rd left mandibular molar. Skeleton 13 suffered from the ante-mortem loss of the 1st left mandibular molar. Skeleton 27 suffered the ante-mortem loss of both the left and right mandibular 1st molars.

The results of the skeletal analysis are summarised in Table 3.

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Table 1. Assessment of the skeletal elements used to determine sex.

	Observed feature	Suggested result
Skeleton 4	Mandible: pronounced mental eminence	Male
Overall result		**Male (?)**
Skeleton 9	--	--
Overall result		**Indeterminate**
Skeleton 10	Cranium: large mastoid processes	Male
	Cranium: small occipital nuchal crest	Female
	Mandible: large mental eminence	Male
Overall result		**Male (?)**
Skeleton 11	Pelvis: acute angled right greater sciatic notch	Male
	Pelvis: absence of preauricular sulcus	Male
	Cranium: large frontal eminences	Female
	Cranium: small occipital nuchal crest	Female
	Cranium: faint glabella	Female
	Cranium: small mastoid processes	Female
	Mandible: medium mental eminence	Female or male
Overall result		**Male**
Skeleton 12	--	--
Overall result		**Indeterminate**
Skeleton 13	Cranium: medium left portion of glabella	Male or female
	Cranium: faint right portion of glabella	Female
	Mandible: medium mental eminence	Male or female
Overall result		**Female (??)**
Skeleton 14	--	--
Overall result		**Indeterminate**
Skeleton 15	Cranium: faint glabella	Female
	Cranium: small occipital nuchal crest	Female
	Cranium: small mastoid processes	Female
	Cranium: large frontal eminences	Female
Overall result		**Female (?)**
Skeleton 16	Pelvis: presence of sub-pubic concavities	Female
	Cranium: small mastoid processes	Female
	Cranium: faint glabella	Female
	Mandible: medium mental eminence	Female or male
Overall result		**Female**
Skeleton 17	Pelvis: acute angled greater sciatic notches	Male
	Pelvis: absence of preauricular sulcus	Male
	Cranium: medium glabella	Male or female
	Cranium: medial occipital nuchal crest	Male or female
	Cranium: medium left mastoid process	Male or female
	Cranium: large right mastoid process	Male
	Mandible: medium mental eminence	Male or female
Overall result		**Male**
Skeleton 21-A	--	--
Overall result		**Indeterminate**
Skeleton 21-B	--	--
Overall result		**Indeterminate**
Skeleton 26	Pelvis: acute angled greater sciatic notches	Male
	Cranium: medium occipital nuchal crest	Male or female
	Cranium: small right mastoid process	Female
	Cranium: faint glabella	Female
Overall result		**Male**
Skeleton 27	Cranium: large mastoid processes	Male
	Cranium: pronounced glabella	Male
	Mandible: large mental eminence	Male
Overall result		**Male (?)**
Skeleton 29	--	--
Overall result		**Indeterminate**

Table 2. Assessment of the age of the different skeletons.

	Studied element	Observed features	Corresponding age
Skeleton 4	3rd mandibular molars	Fully erupted	18+
Overall result			**Adult (18+ yrs)**
Skeleton 9	--	--	--
Overall result			**Indeterminate**
Skeleton 10	3rd mandibular molars	Fully erupted	18+
Overall result			**Adult (18+yrs)**
Skeleton 11	3rd maxillary & mandiblar molars	fully erupted	18+
	Right auricular surface	Coarse granularity	Phase 3: 25-29
	Fusion line of 1st & 2nd sacral vertebrae	Open fusion line	17- 32+
	Fusion line of 2nd & 3rd, 3rd & 4th, 4th & 5th sacral vertebrae	Still visible fusion line	17-23, 17-25
Overall result			**25-29 yrs**
Skeleton 12	--	--	--
Overall result			**Indeterminate**
Skeleton 13	3rd left mandibular molar	fully erupted	18+
Overall result			**Adult (18+ yrs)**
Skeleton 14	--	--	--
Overall result			**Indeterminate**
Skeleton 15	3rd maxillary & mandibular molars	Fully erupted	18+
Overall result			**Adult (18+ yrs)**
Skeleton 16	Right auricular surface	Straie, dense irregularity	Phase 3: 30-34
	Pubic symphises	Still visible ridge development	Phase 2: 19-34
Overall result			**30-34 yrs**
Skeleton 17	Right auricular surface	Granularity, retention of youthful appearance	Phase 2: 25-29
	left pubic symphsis	Commencing of delimitation of extremities	Phase 2: 19-34
Overall result			**25-29 yrs**
Skeleton 21 A	--	--	--
Overall result			**Indeterminate**
Skeleton 21 B	--	--	--
Overall result			**Indeterminate**
Skeleton 26	3rd right mandibular molar	fully erupted	18+
Overall result			**Adult (18+ yrs)**
Skeleton 27	3rd left mandibular molar	fully erupted	18+
Overall result			**Adult (18+ yrs)**
Skeleton 29	--	--	--
Overall result			**Indeterminate**

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Table 3. Summary of results.

Skeleton	Sex	Age[1]	No-metric trait	Pathology
4	Male (?)	18+	--	Periodontal disease (?)
9	(?)	?	--	--
10	Male (?)	18+	--	Ante-mortem teeth loss
11	Male	25-29	--	--
12	(?)	?	--	--
13	Female (??)	18+	--	Ante-mortem teeth loss
14	(?)	?	--	--
15	Female (?)	18+	Left septal aperture	--
16	Female	30-34	--	--
17	Male	25-29	--	--
21 A	(?)	?	--	--
21 B	(?)	?	--	--
26	Male	18+	--	--
27	Male (?)	18+	--	Ante-mortem teeth loss
29	(?)	?	--	--

[1] Age is estimated in years.

Colour plate XXXIX. Akad. Small finds from grave 29.

Colour plate XL. Akad. The pot stand in grave 8 with traces of probable incense burning.

Colour plate XLI. Akad. The relationship of the plate and cup in site 6 grave 1 discovered by the Shuhada rescue project.