

# SUDAN & NUBIA

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The Sudan Archaeological Research Society



*Bulletin No. 18*

2014





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The Sudan Archaeological Research Society



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- Front cover:* Examining the pharaonic inscriptions at Khashm el-Bab on the Korosko Road, November 2013 (photo: D. A. Welsby).
- Sudan & Nubia* is a peer-reviewed journal



# The Qatar-Sudan Archaeological Project in the Northern Dongola Reach

## Introduction

*Derek A. Welsby and Ross I. Thomas*

In December 2013 the first season of excavations in the Northern Dongola Reach, funded as a part of the Qatar-Sudan Archaeological Project (QSAP), commenced. This is a five-year project, one of many in northern Sudan funded by QSAP. The project – *Kawa and its hinterland. Urban and rural settlements of the Kerma, New Kingdom and Kushite Period* – will have two foci, the town and cemetery at Kawa (sites Q3 and R18) and a rural settlement (Site H25) set on the banks of the Alfreda Nile palaeochannel 40km to the south south east (Figure 1).

At Kawa the pre-existing programme of work, undertaken periodically since 1993 and funded by the Sudan Archaeological Research Society, will be continued and expanded particularly in the areas of site protection and management. Site H25 was discovered during the SARS Northern Dongola Reach Survey in 1995, one of the approximately 150 settlements located along the banks of the Nile, the Hawawiya and Alfreda Nile channels to the east, and the Seleim Basin. It will be extensively excavated to allow a detailed comparison between the major urban centre at Kawa on the banks of the main Nile channel and a much smaller settlement in a rural setting on a Nile channel which was becoming increasingly unreliable as a supplier of water during the later second millennium BC.

Aspects of the project are focussing on the fluvial history of the area with geomorphological studies of the Nile palaeochannels, work begun in the region in the mid 1990s. Studies of archaeozoological and archaeobotanical remains will shed light on the agricultural economy and on the local climatic conditions. Another major aspect is the data provided by the human skeletal material from Kawa informing on diet, general health and longevity of the population occupying the major urban centre in the region. No cemetery has yet been found associated with site H25 although one grave has been found close by.

## Acknowledgements

The project is extremely grateful to the Qatar-Sudan Archaeological Project which provided the funding.

Particular thanks go to the National Corporation for Antiquities and Museums for its assistance, especially to Dr Abdelrahman Ali, the Director-General, Mahmoud Suliman Bashir and our inspectors, el-Ghazafi Yousif Ishag, Murtada Bushara Mohamed and Musa el-Fadl. The British Embassy in Khartoum offered logistical support.

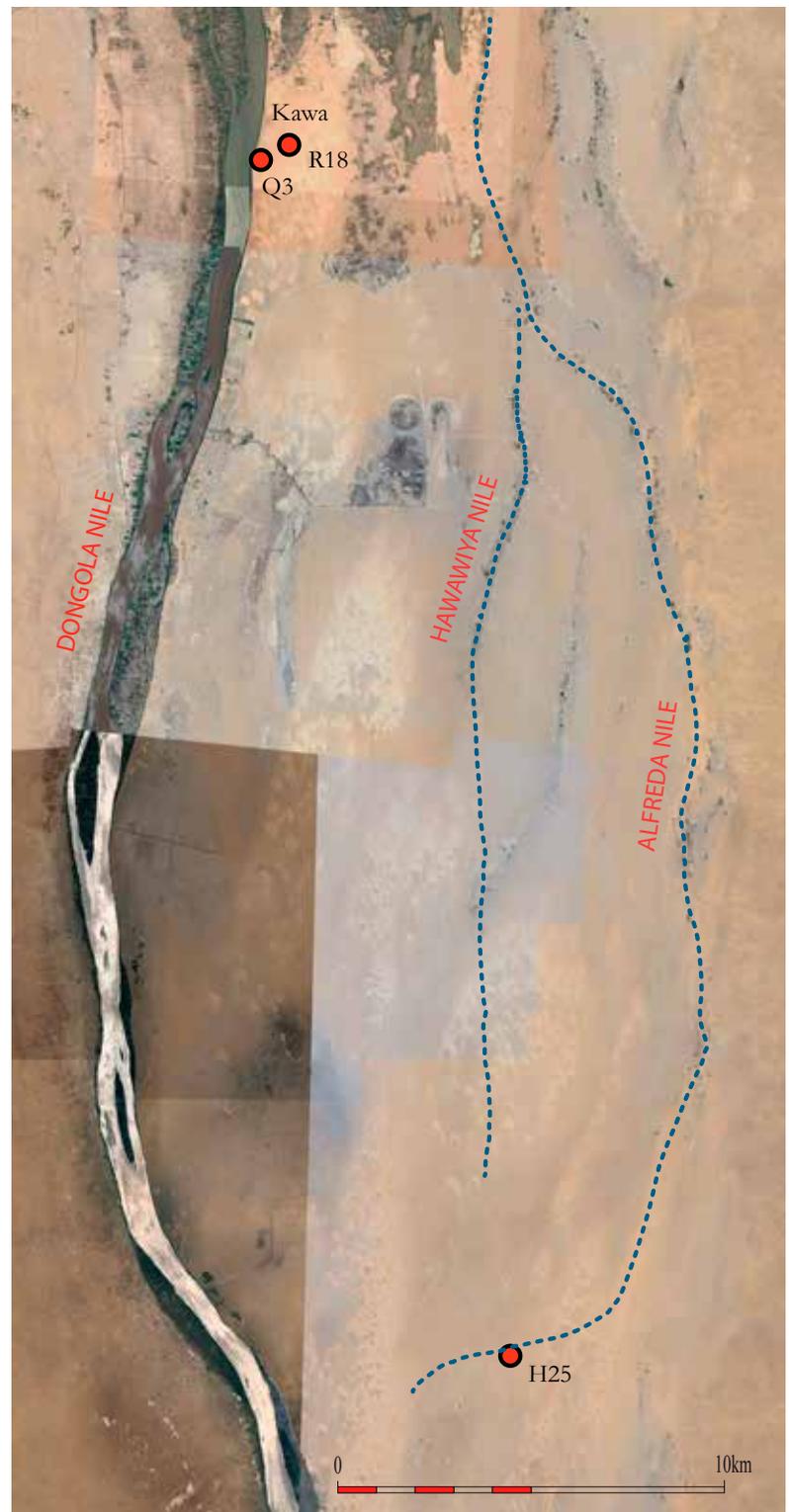


Figure 1. The Northern Dongola Reach with the locations of Kawa and site H25 along with the Nile channels (background image Google Earth).



# *Excavations within the Kushite town and cemetery at Kawa 2013-14*

*Derek A. Welsby*

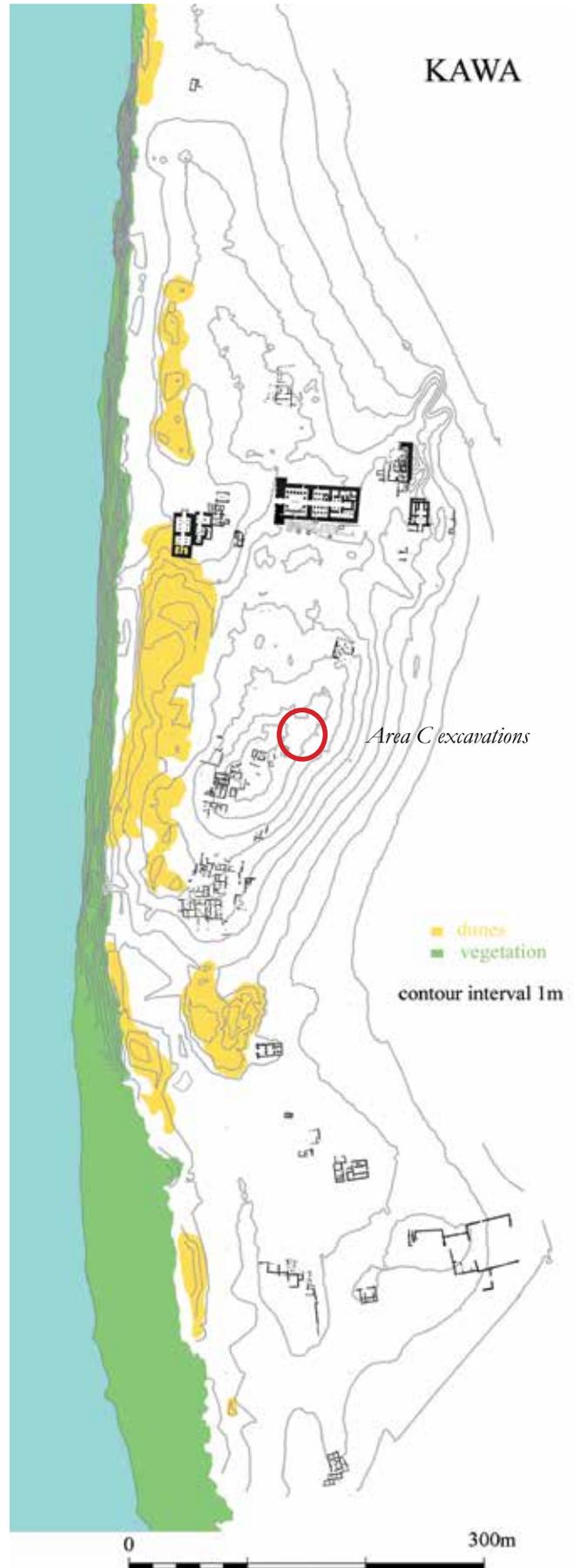
## **Excavations in the town**

Within the town excavations were commenced in an area initially 20 x 20m square towards the summit and on the eastern slope of the tell (Figure 1, Plate 1).<sup>1</sup> It had been the intention to define one or more buildings and excavate those and the adjacent streets but this proved impossible and walls extend out of the excavation area to the north, south and west. Occupation in this area was very complex with many different periods of buildings and many phases of use within each. Little can be said of these structures in detail at this stage until the period and phase plans have been produced. It appears that the earliest buildings uncovered so far sit on a thick layer of sand within which many lenses of occupation can be seen. Much charcoal and some pottery came from these deposits but structural elements of the buildings to which they relate have yet to be located.

The one clearly defined early building, Building C27, not yet fully revealed, had at least two rooms with substantial walls of 1½-brick construction (Plate 2). Its north wall was abutted by a well-built structure, Building C25, with walls of 1-brick construction, its long axis at 90° to that of the earlier building (Figure 2). It also was divided into two rooms. It was entered from the west through a doorway with a timber threshold and a flight of two stone steps leading down into the room, the flat floor being terraced into the slope (Plate 3). Immediately to the north of the doorway was a series of mud storage bins with large pottery vessels set into their floors. Such pottery vessels were a feature of the buildings in this area, many of them being used as hearths (Plates 3 and 4). The north wall of Building C25 has been pushed southwards presumably by sand building up against it, necessitating the construction of a buttressing wall on its south side. At some point Building C27 was partly demolished and overlain by a new, larger building, C21. The north wall of this building was set directly on the denuded remains of the north wall of its predecessor abutting the south wall of Building C25 (Figure 3). It was a three-roomed structure with at least one doorway with a timber threshold. No external doorway was noted. Floors were of mud or sand as in all the buildings in this area.

Probably contemporary with Building C21 was Building

<sup>1</sup> The team arrived at Kawa on 10<sup>th</sup> December and worked on site for nine weeks with up to 52 workmen. Team members – Guy Cockin (archaeologist), el-Ghazafi Yousif Ishag (NCAM inspector), Mike Lewis (archaeologist), Steve Matthews (archaeologist, small finds registrar), Murtada Bushara (NCAM inspector), Nina Olofsson (archaeologist), Derek Welsby (director, photographer, surveyor), Isabella Welsby Sjöström (Assistant director, pottery specialist), Rebecca Whiting (archaeologist, physical anthropologist), Hannah Woodrow (archaeologist).



*Figure 1. Location of the excavations in Area C.*



Plate 1. General view of the excavations in Area C looking south from the upper over the lower town.

C20 separated from it by a north-south street *c.* 3.7m in width (Plate 5). The plan of Building C20 was difficult to define as many of its walls appear to have been removed at a later date while elsewhere the activities of the *sebakbeen* have removed crucial sections of walling. Later the street was infilled with buildings, being divided into three rooms, the eastern walls of which were new builds on the line of the earlier building's west wall. The very latest structural remains preserved were sections of walling surviving only to a height of a few courses. They delimited a series of floor surfaces, one of which had a pot set into it.



Plate 2. West and north walls of Building C27, the latter overbuilt by the north wall of Building C21, abutting the south wall of Building C25

Almost all the pottery recovered was coarse wares. Amongst the finds of particular note were three *Kerma Classique* beakers, one of which had been cut down to form a cup, and a naturalistic scarab (SF:1699) of a type deposited exclusively in funerary contexts (Plate 6). Presumably these had been reused by the Kushites being derived from the robbing of the earlier cemeteries in the vicinity.

Excavations will be continued in this area next season in the hope of uncovering the remains of yet earlier buildings.



Plate 3. Doorway into Building C25 with a timber threshold and stone steps. Pots are set within a storage bin. A later storage bin occupies the north-western corner of the room.

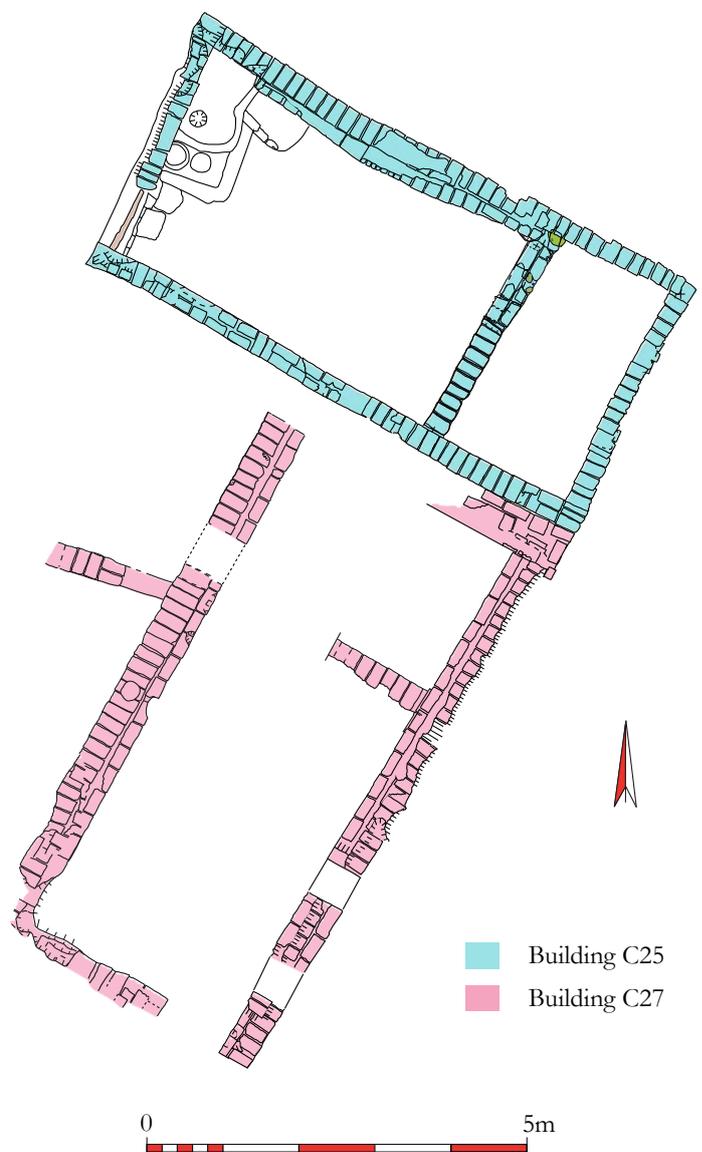


Figure 2. Plan of Buildings C27 and C25 as revealed at the close of excavation in February 2014 (scale 1:100).



Plate 4. Two pottery vessels set into a floor and used as hearths/ovens.



Plate 5. Buildings constructed in the street between Buildings C20 and C21 looking south.

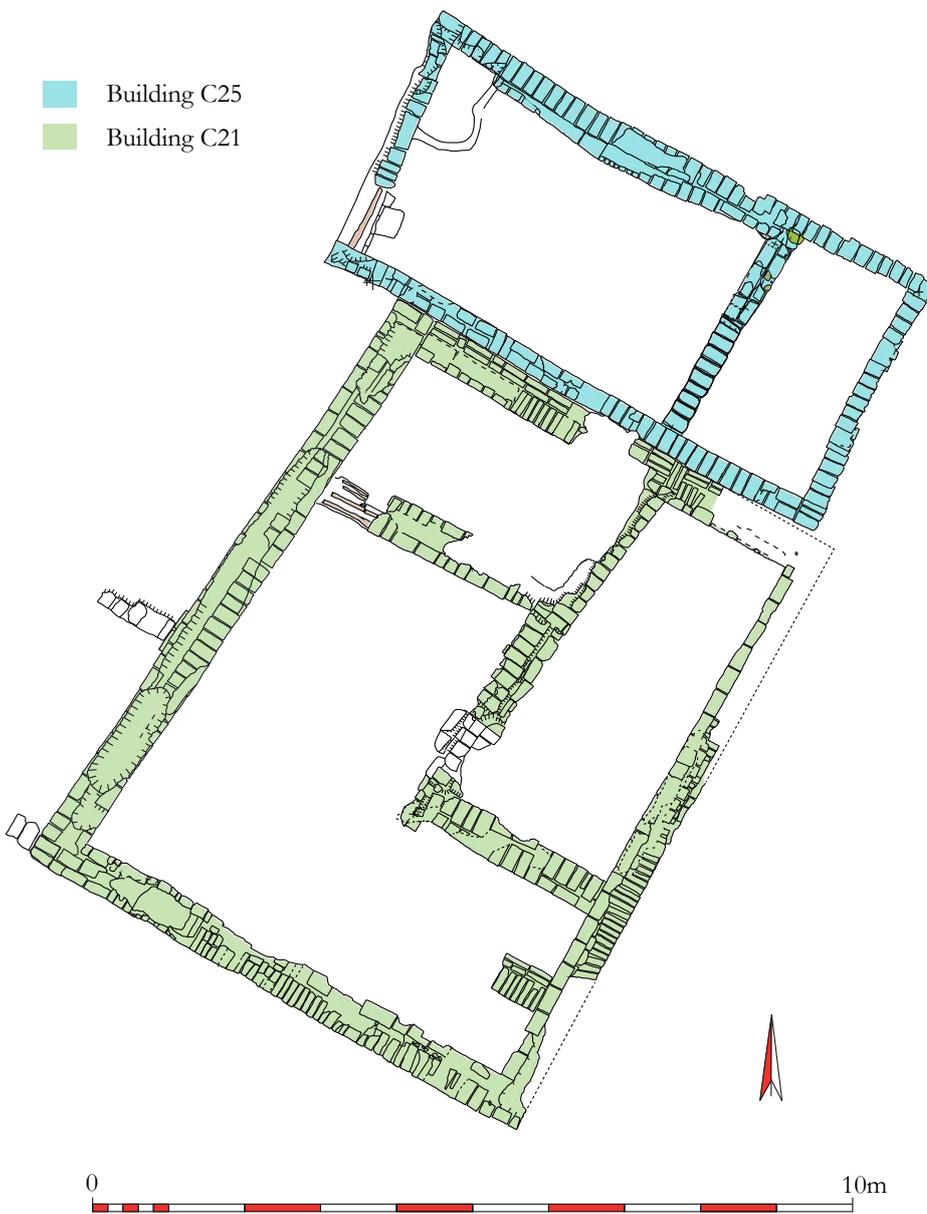


Figure 3. Plan of Buildings C25 and C21 as revealed at the close of excavation in February 2014 (scale 1:100).

### Excavations in the Kushite cemetery

Excavations were first undertaken in the eastern cemetery very briefly by Griffith in 1929 (Macadam 1955, 116) and by SARS beginning in 1993 (Khid-er 2001). In the last few seasons work has been focussed in the north-eastern part of the site where a considerable area has been cleaned down to the alluvium. Towards the north east the Kushite ground surface has been removed by aeolian erosion. In that area no tomb monuments survive and in the most extreme cases the whole of the grave pit has been removed leaving a jumble of human bones on the surface. Further to the south west some tomb monuments survive although a number of graves were found which may never have been marked by a prominent monument on the surface.

This season the excavation of two graves partly investigated in January and February 2013 was completed and six further graves were investigated.

**Grave (JC3)12** – Over the previous several seasons three stone pyramids have been uncovered occupying a north-south ridge of alluvium dropping off steeply to the east. Immediately to the south of these was another prominent mound covered with innumerable stones including dressed blocks. Excavation of this mound has revealed the remains of another substantial pyramid, the excavation of which has yet to be completed. The



Plate 6. Naturalistic scarab found in the floor deposits within Building C21.

descendary is well preserved at its eastern end (Plate 7) but has been badly damaged by a massive robber pit to the west. The last pit fill was of wind-blown sand containing rubble from the pyramid. Deep within this fill some plastic bags were found suggesting either that it had been robbed for the last time in the latter part of last century – it certainly has not been robbed since 1993 – or that the plastic bags had been deposited by rodent activity – there are many gerbils on the site.

No trace of the tomb has yet been found although the robber pits have been excavated to a depth of about 3m below the Kushite ground surface. Some mud bricks found in the robber pit fill may come from the tomb chamber or more likely from the blocking wall in its doorway. Amongst the rubble was one sandstone lintel 1m in length which might be from the tomb although it seems too small to have spanned its doorway. Another lintel 1.4m in length carved with a crude sun disc flanked by uraei and outstretched vulture wings may have been used here (Plate 8). It is of similar dimensions to that still *in situ* in the tomb of grave (JE3)132, 22m to the north, excavated a few years ago which is 1.48m long (see Welsby 2011, 58-9). If this was the lintel for the tomb doorway it indicates that it was 515mm wide – the doorway in grave (JE3)132 is 761mm wide. Bones from in the robber fill appear to be from a minimum of two individuals, a young female 20-35 years old and an adult, probably male.<sup>2</sup>

Whatever the nature of the tomb, following the burial the descendary was infilled with some care. While the eastern end of the descendary was filled with alluvium, at the point where the east wall of the chapel was to be constructed it was filled with a compact layer of stone chippings, material derived from the final dressing of the stone blocks on site. Resting on this appears to have been a foundation of larger rubble on which the chapel's walls sit (Plate 9). The construction of a chapel over the descendary fill in Kushite tombs must always have caused problems with the probability of the fill subsiding destabilising the structure. Here clearly the Kushite builders took precautions to avoid any subsequent subsidence by providing a stable foundation.

<sup>2</sup> All the human bone from the season was identified in the field by Rebecca Whiting.



Plate 7. Grave (JC3)12. The descendary with the robber pit beyond shored up with sand bags.

The tomb monument is an extremely well-built pyramid with a substantial foundation of quarry-faced stone blocks of two courses, above which are very finely dressed white and yellow sandstones forming the stepped face (Plates 10 and 11). Behind these is a row of large quarry dressed blocks revetting the rubble core. The foundation blocks bear setting out lines for the course above as do those of the other courses. The pyramid above foundation level measures *c.*



Plate 8. The lintel presumably from over the doorway into the tomb.



10.2m square. In size and quality of construction this pyramid compares favourably with those in the northern cemetery at Jebel Barkal and the Kawa pyramid is almost exactly the same size as the best preserved at Barkal, Bar.3 (Dunham 1957, 93-5). This pyramid, measuring 10.5m above the plinth, attained a height of 12.9m.

The chapel with a pylon at its east end is well built of red sandstone blocks (Plate 12). A fragment from a large lintel finely carved with vulture wings was found in amongst the rubble in this area. It is directly comparable with lintels used over chapel doorways at Meroe for example in pyramid Beg.S.7 (Dunham



*Plate 10. The south face of the pyramid.*



*Plate 9. Foundations of the chapel in the descendery.*

1963, 380). By comparison with the much better preserved chapels at Meroe it may be suggested that this is the upper of two lintels with its cavetto cornice. The chapel had been roofed with a segmental barrel vault with white sandstone voussoirs (Plate 13), a feature seen in the Northern Cemetery at Meroe in the chapel attached to the pyramid of Queen Amanishakheto Beg.N.6 and that associated with Beg.N.12 (Dunham 1957, 106, and 74, fig. 45).<sup>3</sup>

All the internal walls and intrados of the vault were covered in a white lime plaster and bore painted decoration. This is not well preserved but it is clear that an upper register on the walls was decorated with a number of standing human figures depicted in yellow and red and with the decoration enhanced with substantial areas of gold leaf – in one case a



*Plate 11. Facing stones in situ at the south-east angle of the pyramid.*

broad anklet is rendered in gold leaf (Plate 14). The paintings have been much damaged by rain water and will require careful cleaning by a conservator before the decorative program can be assessed in detail.

During the construction of the chapel and pyramid a thick deposit of stone chippings formed on the ground surface, burying the lowest foundation course and much of the course above. From within this deposit came a fragment of a bangle



*Plate 12. North wall of the chapel.*

<sup>3</sup> Beg.N.11 may perhaps be added to this list (see Dunham 1957, 72) as may other chapels at Meroe and elsewhere where the state of preservation is insufficient to preserve evidence for the form of roofing. The chapels of Beg.N.11 and Beg.N.12 are currently thought to date to the late 1<sup>st</sup> century BC (Yellin 2014, 80), Beg.N.6 to around 1 BC.



Plate 13. Voussoirs from the segmental vaulted roof of the chapel.

(SF:4109) with part of a hieroglyphic inscription preserved, comprising the edge of a cartouche followed by 'The Perfect God, Lord of the Two Lands' (Plate 15).

A highly unusual feature of this pyramid is the presence of a western descender (Plate 16). This is carefully dug right up to the west face of the monument and, although emptied out by the robbers – it was infilled with windblown sand – it appears to be a Kushite feature. It has been excavated this season to a depth of *c.* 1.5m but no trace of an entrance into a tomb has yet been observed.

**Grave (JE2)14** – the excavation of this grave was not completed this season. It has a sloping descender with at least one deep step towards the bottom. The descender was cut through a layer of stone chippings, the construction deposit associated with the pyramid over grave (JF2)55 several metres to the north. The descender fill was a mix of alluvium and the sandstone chippings. Excavation of the whole descender was not possible as the chapel was built over its fill (Plate 17).



Plate 14. Painted block from the chapel retaining some gold leaf decoration (scale bar 100mm).

The descender had been extended to the west as a deep pit within which a mud-brick barrel-vaulted chamber had been constructed. As the excavation of this is not yet completed few details can be given. It appears that the whole of the vault has been destroyed by a large robber pit dug vertically down through the core and east wall of the pyramid. Part of



Plate 15. Bangle with hieroglyphic inscription (SF:4109).

the east wall of the chamber was uncovered this season at a depth of 1.48m below the surface. Bones recovered from the fill are from a subadult aged between 13 and 15.

The grave was provided with a mud-brick pyramid surviving to a maximum height of two courses. The monument measures 5.29 x 5.49m at the base and with an angle of slope of approximately 60° it will have attained a height in the region of 4.3m to the truncated apex. On the east side is a small chapel projecting 1.86m from the pyramid with a pylon.

**Graves (JF2)20 and 79** – The larger grave was entered down a flight of steps, the upper ones very shallow, those lower down with much higher risers. A large robber pit had removed all trace of the tomb chamber. A small amount of human bone from an infant probably around 1 year old was found in the robber pit fill. The superstructure reflected the east-west axis of this descender. Immediately to the south and parallel to it was another descender (grave (JF2)79) dug down from the same surface. At its west end and in its north-west corner a chamber has been excavated into the alluvium so that it is angled towards the main burial chamber. This contained the intact burial of a small child 3-4 years old accompanied by a plain ceramic bowl (Plate 18).

After the filling of the pit over the large grave chamber and of the southern descender, if not after the burial and filling of the main descender, a pyramid 3.7m square constructed of well-dressed white and yellow sandstone blocks was built with a stone rubble core (Plate 19). It was set within a large and shallow foundation pit. The surviving two courses are part of a vertical sided plinth; that the superstructure was pyramidal is clear from at least one block found in the associated rubble with setting out lines for the next course above, its face set back from the lower course. A foundation trench/robber pit marks the position of the south wall of the chapel; the north wall will have lain directly over the descender and has been totally destroyed by the robber pit.

The provision of two descendaries, both constructed before the monument was built, is very unusual and has not been noted hitherto on the site. Later graves inserted under pre-existing monuments have been found at Kawa and elsewhere.

**Grave (JF2)26** – The outline of this grave's descender and the small sand-filled robber pit at its western end were clearly visible on the present-day surface. The sloping descender gave access to a chamber cut into the alluvium containing the



Plate 16. The west face of the pyramid and the western descender.



Plate 17. The descender of grave (JE2)14 with the mud-brick chapel, east wall of the pyramid and robber pit beyond. The fill has been left in the descender so as not to undermine the chapel walls.

body of an adult female between 20 and 35 years old in an extended position with the head to the west (Plate 20) – the typical arrangement at Kawa. The lower courses of a blocking wall of a single row of mud bricks remained.

No trace of a grave monument remained although it is possible that one may have been totally removed by erosion.

**Grave (JF2)27** – As with the adjacent grave (JF2)26 the outline of the descender and the small sand-filled robber pit at its western end were clearly visible on the present-day surface. The descender of six substantial steps gave access to a chamber cut into the alluvium containing the body of an infant probably about 3 years old in a crouched position on its right side with the head to the west (Plate 21). It had been placed in a painted coffin along with a string of blue faience beads at the neck and a copper-alloy beaker (SF:1840) upturned and placed within the coffin to the east of the legs (Plate 22). The chamber was sealed with a very substantial blocking wall, of two rows of headers, giving a total thickness of 1m. As with grave (JF2)26 no trace of a grave monument remained.

**Grave (JF2)55** – The grave was entered down a long descender originally with a flight probably of 10 steps cut into the alluvium. The base of the grave is a very soft and fine silver sand. Cutting through the descender fill was a very large



Plate 18. Grave (JF2)79. The chamber looking east to the inner face of the blocking wall.



Plate 20. The burial in grave (JF2)26.



Plate 19. The stone pyramid constructed over the grave pit of (JF2)20 and the descendary fill of grave (JF2)79.

robber pit which had removed, towards the west, almost all of the descendary fill and every trace of the tomb chamber. Only the south-west corner of the original pit is preserved, the other sides and the floor of the pit having been removed. No trace of the tomb chamber remained. From the mud bricks recovered from the robber pit fill it can be assumed that it was a barrel-vaulted structure of the type found elsewhere on the site. Some bones from a perinatal infant or one who

died very soon after birth were recovered from the robber pit fill.

Following the interment the descendary was filled with alluvium and the pyramid constructed over its western end, the construction deposit of stone fragments sealing the descendary. The pyramid was constructed within a large circular but very shallow foundation pit. It was built of finely dressed blocks of white sandstone, the lowermost two courses forming a vertical sided plinth 5m square (Plate 23). The third course, the highest surviving, was stepped back a little forming the first course of the pyramidal superstructure. The core consisted of rubble roughly revetted on the inner face delimiting a circular area of alluvium. The circular internal feature is reminiscent of circular chambers within pyramids in the West Cemetery at Meroe (Beg.W.2) and at Sedeinga (Pyramids 169,

188, 216, 232 and 250) (Dunham 1963, 82, fig. 62; Rilly and Francigny 2013, 63).

**Grave (JG1)12** – The descendary of this grave had been excavated early in 2013. It has a very steep and wide stepped descendary extending down to a depth of 2.8m. The chamber appeared to be roughly circular but was difficult to define and even more difficult to fully excavate. The chamber roof was extremely unstable and had to be shored up with metal



Plate 21. The crouched inhumation within a plastered coffin in grave (JF2)27.



Plate 22. The copper-alloy beaker (SF:1840) from grave (JF2)27.

girders, timbers and corrugated iron sheets making its total excavation impossible. The body, probably of an adult male between 35 and 45 years of age, had been much disturbed. It had been accompanied by an elegant pot stand and two jars. Remains of the blocking wall of mud brick remained set on a layer of re-deposited alluvium, perhaps associated with a secondary use of the grave although no trace of that possible burial survived the robbing. The grave was marked on the surface by a substantial mud-brick monument *c.* 5.46m square, presumed to be a pyramid.

## The finds

The pottery at Kawa was recorded by Isabella Welsby Sjöström, who has processed the ceramics since the beginning of the SARS excavations at the site. All the pottery recovered from the excavations in the town was recorded (fabric, surface finish, type of vessel, quantity of sherds and weight). A number of vessels that had broken *in situ* were also reconstructed. This season 225 new forms and 52 decoration types were noted, described and drawn. Imports were few, the majority of the material consisting of handmade and wheel-made locally produced vessels. The new forms chiefly incorporate jars with a lid seating, coarse ware cooking pots and incense burners. Decoration on the coarse wares consisted of relatively crude incised lines, straight and/or wavy. Fine wares were few, as would be expected in an assemblage of this period. The date of the structures in Area C is preliminarily ascribed to the interface between the early and late Kushite periods (Napatan and Meroitic), somewhere around the 5<sup>th</sup>/4<sup>th</sup> century BC.

The pottery finds from the cemetery are sparse compared to the town and consist largely of coarse domestic wares. As the deposits are generally very disturbed due to the activities of various episodes of robbing, sherds from the same vessel were frequently recovered from several contexts, and for this reason it was decided to process the finds in one go when work in the area has been concluded, probably during the next season. Working on the same premise, the finds from the 2012-13 season were processed this year; some of the complete vessels were also recorded. Dating material is sparse but a number of the forms can be closely paralleled in the excavations of Area C in the town and suggest a similar, or perhaps slightly later 4<sup>th</sup> to 3<sup>rd</sup> century BC date, for the use of the area of the cemetery currently under excavation. Much more data are required before firm conclusions can be drawn.

## Ground penetrating radar survey

The town at Kawa covers an area of approximately 40 hectares. In order to obtain information on the layout of the town a detailed topographical survey has been undertaken across the site followed by the cleaning and planning of the walls of buildings located immediately below the surface. Further information has been provided by the use of a Fluxgate Gradiometer. The gradiometer survey was conducted over the whole of the lower town and in a small area to the north of the Temple of Taharqo. In the lower town the survey revealed a dense strip of occupation along the river bank which lay a little to the east of its present location along with several isolated buildings most of which were visible on the surface (Welsby 2009, 76, pl. 11). Elsewhere there was very little indication of structural remains. As the areas excavated to date have been densely occupied, buildings separated by streets and narrow alleyways, the large open areas in the gradiometer survey of the lower town suggested that they were an artefact of the remote sensing technique used. In the hope of infilling these open areas a team from the Archaeological Prospection



Plate 23. The descender of grave (JF2)55 and the dressed sandstone pyramid looking west.

Service of Southampton (APSS) and The British School at Rome was invited to undertake ground penetrating radar across a small part of the site. Working in 50m grid squares initially six squares were surveyed in the lower town in an area previously investigated by the gradiometer. The results of both surveys were broadly compatible suggesting that indeed there were large open areas in the site. Limited excavations will have to be conducted in these areas to confirm whether this is actually the case. It may be that the apparently open areas were occupied by timber structures which would not be picked up by either remote sensing technique. Alternatively aeolian erosion may have removed all structural remains in some parts of the site.

The GPR survey was also undertaken in the area to the north of the Temple of Taharqo. As well as the mud-brick buildings visible on the surface one structure of note appears to be a very large enclosure, perhaps 100 x 35m in size, with a substantial structure towards its western end. The rest of the area was filled with innumerable rectilinear buildings. A considerable amount of processing is required before the results can be fully evaluated. This will be completed over the next several months.

### Site protection

A major aim of the QSAP projects is the protection of Sudan's archaeological heritage. To this end significant funds have been spent this year further enhancing measures to protect the site. This season the project has concentrated on delimiting the boundaries of the site; protection of monuments

within those boundaries will be the focus of subsequent years. In the immediate vicinity of Kawa are a number of archaeological sites:

- The pharaonic and Kushite town
- The *Kerma Classique* cemetery
- Three Kerma settlements
- The Kushite cemetery

Of these several are well preserved and have been protected by barbed wire fences restricting access to tourists, pedestrians and those travelling by donkey or camel. Much of the town site had already been protected in this way. This season over 850 metal posts set in concrete have been erected along with several gates and two strands of barbed wire—almost 11 kilometres in length have been put in place around the Kushite cemetery and two of the Kerma settlements.

There is the continual threat of encroachment of agriculture towards the archaeological site so, in an attempt to halt this, a buffer zone has been created clearly marked by concrete posts. This is not a barrier to movement but delimits the zone and facilitates the maintenance of the boundary. The buffer

zone will preserve the relatively pristine desert environment within which the archaeological remains at Kawa lie. Without it the site would become like Kerma— islands of archaeology surrounded by irrigation. Although the physical boundaries are robust the barbed wire can easily be cut and the buffer zone boundary transgressed by agricultural development. The permanent presence of the Tourist Police on the site is essential to maintain the integrity of the boundaries. Following discussions with Abdelrahman Ali, Director-General of the National Corporation for Antiquities and Museums, and with the head of the Tourist Police in Dongola, it was decided to build a police post at the edge of the buffer zone by the main track leading into the site. The design was agreed in consultation with the Tourist Police, and the completed police post was handed over in the presence of the Minister of Tourism and Antiquities from Dongola along with the head of the Tourist Police and members of their staff in February 2014, the proceedings being filmed by a local TV crew.

### The site guide

As requested by QSAP a site guide has been written in English and translated into Arabic. It is available as a PDF download via the Society's website at <http://www.sudarchrs.org.uk/fieldwork/fieldwork-kawa-excavation-project/>

Priorities for the next season in the winter of 2014-15 at Kawa will be the construction of a visitor's centre and beginning the measures needed to protect the major monuments on the site.



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## *El-Eided Mohamadein (H25): a Kerma, New Kingdom and Napatan settlement on the Alfreda Nile*

Ross I. Thomas

El-Eided Mohamadein is a settlement occupied at least from the *Kerma Moyen*, through the *Kerma Classique* and New Kingdom into the early Kushite period along the now long defunct Alfreda Nile palaeochannel, marked today with vegetated (phytogenetic) dunes. This once fertile landscape is now a desert, preserving the remains of the ancient, multi-phase settlement which forms a prominent tell partly covered by shifting dunes. This section of the palaeochannel/*wadi* is locally known as el-Eided and lies 6km north east of the riverine area of el-Ugal and 3.4km north west of Barquat Kuluf (Figure 1; GPS co-ordinates 18° 50.096' N / 30° 34.265' E). The ancient site was first recorded in the Northern Dongola Reach survey as site H25, a 230m by 136m settlement mound 4.72m high containing over 34 structures, including tumuli, stone structures, burnt mounds and ovens (Welsby 2001, 54-55). Excavations in 2013-2014<sup>1</sup> by the British Museum have confirmed the broad *Kerma Moyen* to early Kushite phasing of this settlement suggested by the NDR survey, though the long settlement history is broken by environmentally triggered hiatuses, and the archaeological excavations exposed a larger settlement than expected, almost exclusively of late New Kingdom mud-brick and post-hole structures that contained evidence of contact with Egypt and a local production of pottery.

### Environment

When H25 was occupied, the landscape was very different to what it is today, with an interwoven riverscape of Nile branches that made the region fertile and potentially well connected by boat to the north and south. The settlement grew up next to the Alfreda Nile branch at some point during the *Kerma Moyen* period (though earlier evidence may yet emerge), near the diffluence of the Hawawiya and Alfreda Nile branches (Woodward *et al.* 2013, 695) in an area with many archaeological remains (Welsby 2001, 54-5). In fact a large dune directly to the east of the site mound appears to cover more dispersed settlement alongside the Nile channel linking H25 with the nearby site H23 only 210m to the north east that produced contemporary Kerma, New Kingdom and early Kushite pottery (Figure 1). It is possible that in antiquity H23 and H25 were joined by less dense areas of settlement currently concealed by a large dune and so may have been perceived as the same settlement as it stretched along both banks of the Alfreda Nile, to which a number of other nearby sites served a variety of functions (possibly cem-

<sup>1</sup> From 10<sup>th</sup> December 2013 to 7<sup>th</sup> February 2014, directed by the author.

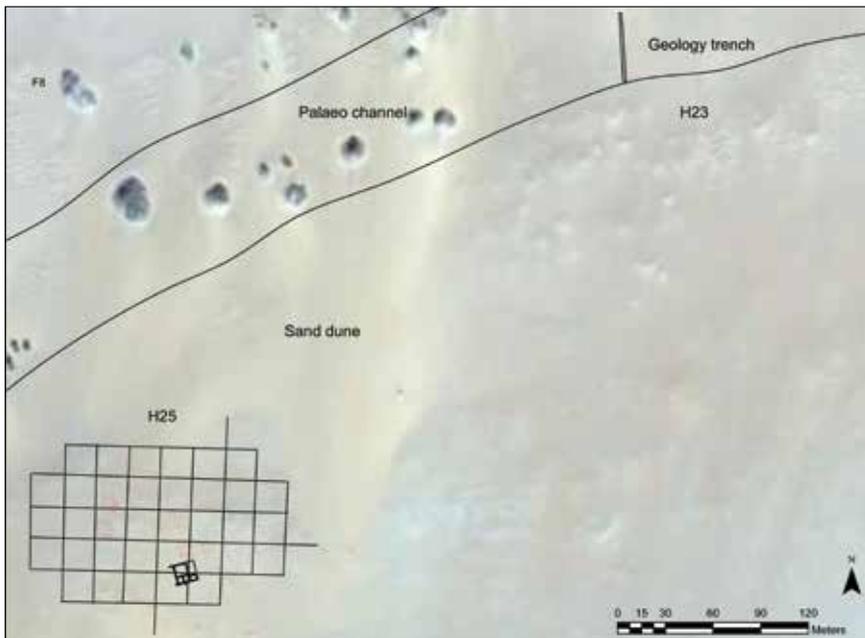


Figure 1. Google earth satellite image of H25 and H23, showing location of surveyed grids, excavated areas and geomorphology trench.

eteries – one grave was noted – and hamlets). This channel is now known to have become seasonal or ephemeral during the New Kingdom, drying up no later than *c.* 1320-1290 BC, and an ephemeral channel during the Kushite period, probably dry and unable to support a settlement by the 6<sup>th</sup> century BC (Welsby 2001, 698). In order to better understand the fluvial history of the Alfredda Nile and how this impacted upon the fortunes of the settlement a 43m long trench over 2.5m deep was excavated across the Nile channel where it was exposed next to site H23. The section revealed a thick Nile silt deposit from when this was a major channel during the Kerma period. This was followed by various drying up sand and gravel filled episodes that included New Kingdom pottery. Near the surface the channel became narrower and eventually filled with windblown sand. The project's geomorphologists, Mark Macklin and Jamie Woodward, collected four radiocarbon samples from archaeological traces above and below the sedimentary sequence and four OSL samples that will be used to date the sand that was deposited in the channel during the different drying up events. We await the results that will refine our understanding of the performance of this channel during the periods that H25 was occupied which may help to elucidate the environmental constraints faced and the human responses made by its inhabitants.

### Survey and excavations

The work started by surveying the mound, dividing the site into 20m grid squares (Figure 1). Surface pottery and small finds were collected from the whole site, the study of which confirm the earlier results of the NDRS, that this site was occupied in the Kerma period and no later than the early Kushite (Napatan) period (Welsby Sjöström 2001, 249-251). The site

produced large quantities of saddle querns of local black ferruginous sandstone, suggesting grain was processed and presumably grown here. It was certainly made into bread and baked here as numerous ovens (*tawabin*) were found across the site. The grid squares were labelled alphabetically north to south and numerically west to east. Subsequently we opened up three 20m grids for excavation; these were E6, E7 and E8. We then extended this to the north (D6), and south east (F8, F9) where mud-brick structures were found. We endeavoured to keep a large area open and excavated broadly in phase across all areas. It was important to record carefully the thin remains of the latest phases across all areas because wind erosion is a significant problem across the site which may explain the absence of Napatan stratigraphy this season. Earlier phases are more likely to be better preserved.

The settlement is characterised by a range of domestic and storage buildings made of mud brick, with post-hole structures for people

and pens for animals just to the north (Figure 2). Some of these buildings were well built and large, possibly functioning as administrative buildings during the New Kingdom. The settlement excavated to date can be broadly divided into three phases, all dating to the New Kingdom, with subsequent disturbed and eroded surface material of the Napatan period. We did not reach any Kerma layers, though surface finds suggest they can be expected, whilst the levels of the tell suggest there is an additional 4m or more of stratigraphy preserved beneath the archaeology excavated this season.

Phase 1. The earliest phase was of New Kingdom date. During this period large square structures with walls of three or four rows of bricks thick were built along a well-ordered north-south alignment.

Phase 2. Following a period of collapse, wind erosion and sand accumulation, probably representing a short hiatus, many of these earlier structures were reused for smaller cell-like buildings. These cells varied in size and were used to process corn, store materials and tools. Long ranges of these cells were adjacent to small houses with fire pits, New Kingdom storage jars set into the ground and ovens. These structures were made of thin walls one or two stretchers wide, of sandy, soft mud bricks of various sizes, built over a pebble and earth foundation. There is a long sequence of additions to these various buildings that probably occurred in quick succession. Often only one or two courses were preserved.

Phase 3 represents the ephemeral reuse of these structures, with the addition of post-hole structures, animal pens with dung heaps, fire pits, ovens and occupation deposits. This is likely also New Kingdom in date, however on the surface a number of Napatan pottery forms were found, suggesting



Figure 2. Plan of H25 excavations, showing all major structures with grid and building numbers (scale 1:500).

that the ‘ephemeral’ Napatan occupation deposits may have been just on the surface, or a more substantial settlement has since been completely eroded out by wind-blown sand. The excavation areas are discussed below starting in the north west (D6) and finishing in the south east (F9).

#### Area D6

Excavations in Area D6 revealed two buildings, each with the three major phases discussed above (Figure 3, Plate 1). Building 1 was originally two separate square mud-brick structures in Phase 1 (preserved only one course high), under what became rooms A and B. In Phase 2 these two structures were joined, and three small rooms and a bin installation were added to the east. In this phase a doorway in the east marked by a threshold was the only access to this house. Access to this doorway was via a narrow passage, blocked to the south, passing between Buildings 1 and 2. Room B was enlarged, and probably only partially covered with a palm roof, supported by a line of posts placed in post-holes or on post-pads running north to south. One of the post-pads was a reused heavy duty stone door pivot, presumably from a substantial earlier building. A mud-brick pivot in the threshold between rooms

A and B had wood preserved from the door. Following a period of collapse and accumulation of wind-blown sand, in Phase 3 Room B was only covered by roofing on the eastern part; the rest was left open to the elements. In room A the surface covered a tumble deposit from a period of collapse, the threshold covered by sand. Within this room a fire pit was found filled with flakes of rough quartz pebble tools.



Plate 1. Area D6 looking south with Area E6 in the background.

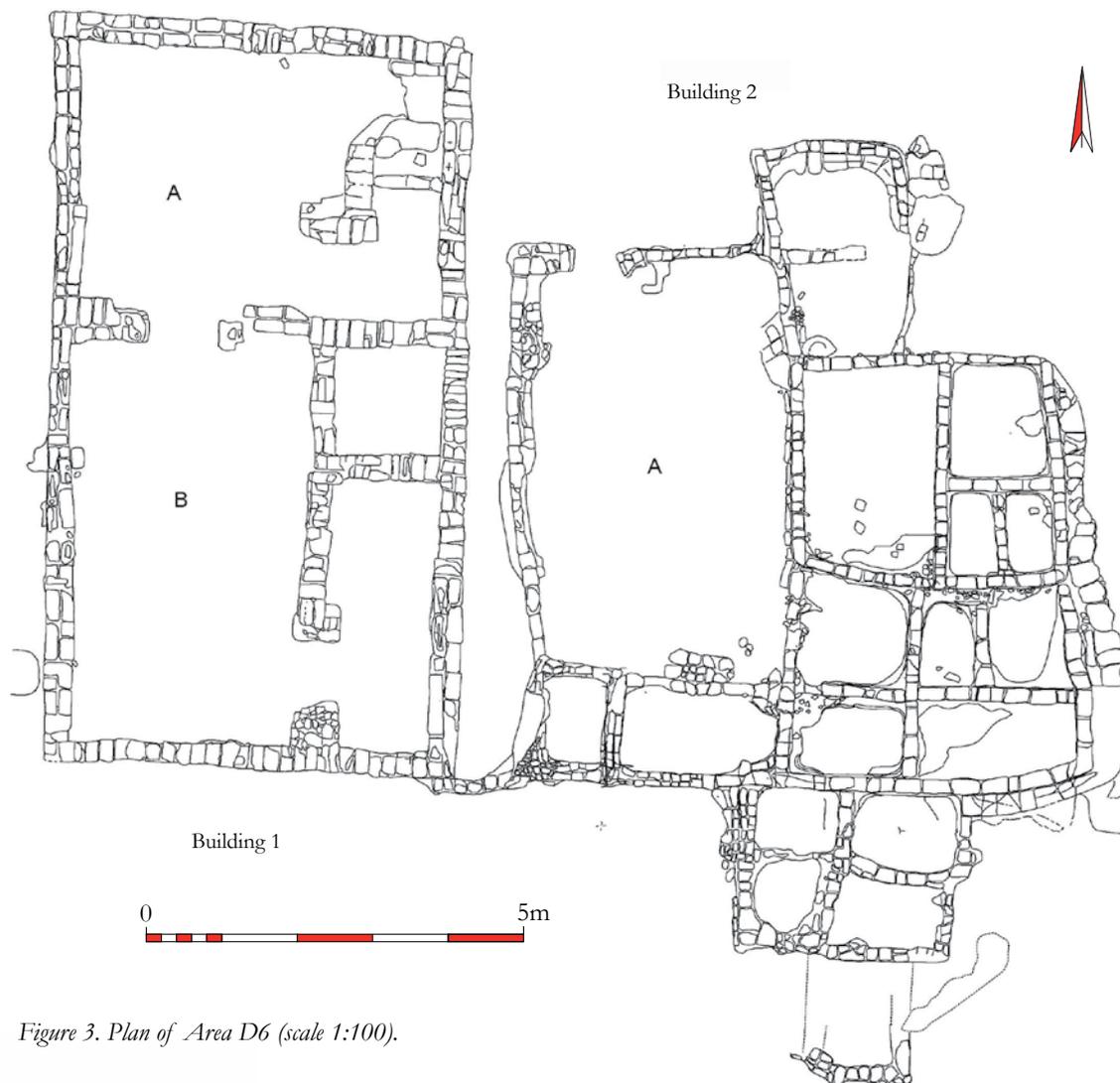


Figure 3. Plan of Area D6 (scale 1:100).

Building 2 has a similar history. In Phase 1 three mud-brick silos were built and probably belonged to the two square rooms (A and B) of Building 1 at this time. In Phase 2 a prepared surface of organic brown material (containing large quantities of dung) and mud-brick tumble was laid across the area and levelled. Pebble foundations were laid for walls and surfaces. Building 2 was built over this prepared surface. Originally the building consisted only of five rooms. The main, largest, room (A) had a similar arrangement of post-pads and post-holes as in Building 1 at this time. A New Kingdom storage amphora was placed within a pit cut down from this surface. Building 2 was soon expanded, with first one, then four rooms, followed by an outer buttress wall, then four further rooms. It is possible that all of these additions followed each other in rapid succession.

Many of these 'rooms' were tiny cells, installations for storage or, possibly in the case of the larger ones, for food preparation. The floors sloped down from the walls and usually had three, but up to seven, plaster surfaces. Often one surface was carefully and evenly burnt, presumably to harden it perhaps to deter burrowing pests. This seems to be confirmed by the presence of numerous botanical remains, such

as two dried dates found in Phase 2 room B, and numerous dom nuts and other seeds. Phase 2 also revealed a pearl-drop shaped pendant, Nubian handmade pottery as well as painted Egyptian New Kingdom pottery and storage jars of Egyptian type along with complete quern stones. The final surface of Phase 3 within room A was covered with collapsed walls and burnt and unburnt palm timbers from the roof, crushing an incense burner (carefully recut from a bowl sherd), as well as evidence of ostrich shell working (shell offcuts, beads and drills) and a double-rim faience bead.

#### *Area E6*

Area E6 contained two mud-brick structures (Buildings 5 and 6; Figure 4, Plate 2) that were originally constructed as three rectangular rows of small rooms, before the northern two rows were joined by a large room creating Building 5. The buildings were constructed from mud bricks of different compositions and sizes, often with walls of just a flimsy single width line of stretchers during Phase 2, and were often only preserved to one or two courses high. Stratigraphically Building 5 was contemporary, with some of the additions to Building 2. During Phase 2 Buildings 1, 2 and 5 were all

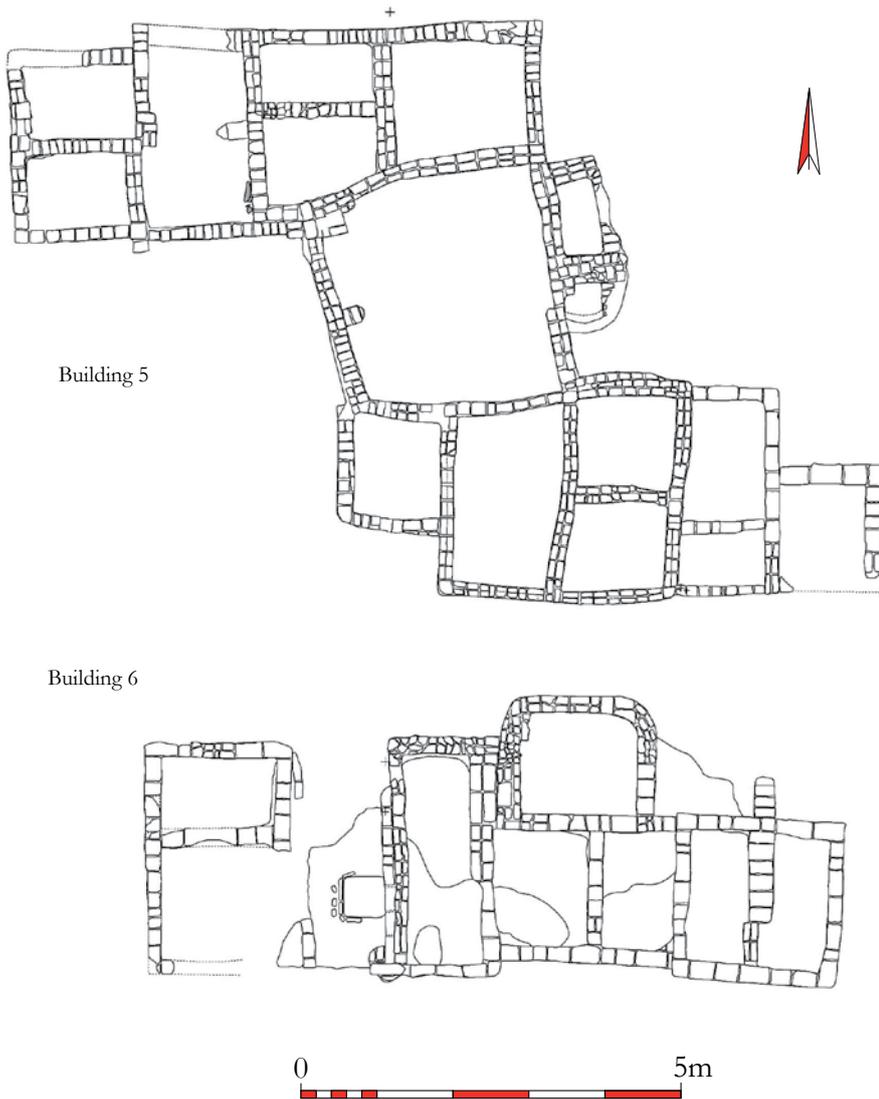


Figure 4. Plan of Area E6 (scale 1:100).



Plate 2. Area E6 looking north with Areas D6 and E7 in the background.

built over the tumble of Phase 1 Building 1 (and potentially other as yet unidentified adjacent structures in the area) and were all served by the same sandy street.

Building 5 was composed of three parts. The earliest was a southern rectangular structure split into two rooms, later subdivided into three. These ‘cellars’ were preserved to a depth of 800mm below the contemporary ground surface. They had no doorways and their floor surfaces remained this depth below street level even after other rooms were added to the building at a higher level. They must have been accessed via a ladder or trapdoor from a (now lost) superstructure, but it is possible that they were originally from an older structure, the full plan of which has yet to be discovered, and are reused as ‘cellars’ in Phase 2. The building was extended with a room to the west then four to the east.

The northern range was built on a higher piece of ground and is less well preserved due to wind erosion. It originally consisted of three rooms; then four rooms were added to the west all built with the same Phase 2 pebble foundation and plaster floors as seen in Building 2. The final Phase 2 modification to Building 5 was the joining of the two rectangular rows of rooms by the addition of a square of four rooms that cut through parts of the earlier architecture. These four rooms were merged into one living space in Phase 3. Storage jar fragments and querns were found suggesting further storage areas and grain processing in Phases 2 and 3. However, a kohl stick of copper alloy and a decorated unfired clay gaming piece suggest also domestic activity in some of these rooms in Phase 3.

Building 6 is contemporary with Phase 2 Building 5. It started as a two-celled structure as seen in other areas (E7 Building 3, F8 Building 7). Two rooms were then added on the west, two to the east and one to the north. Building 6 contained quern stones and storage jar sherds suggesting it was used for storage and grain processing. There was a shallow brick-lined installation in Room A, which may have been a setting for some installation now lost.

#### Area E7

Area E7 was a wide open space containing post-holes and dung heaps, with three

structures in the north-western corner (Figure 2, Plate 3). Stratigraphically Building 3 was cut into an earlier deposit than the later additions to Phase 2 Building 2, though the construction style and level suggests we should consider this part of Phase 2. It is a square structure split into two rooms, built on a paved surface made from large flat stones presumably robbed from an earlier structure yet to be located. Just to the east a small animal pen filled with dung was built of four large stone corner blocks with palm beams running between (one still preserved) supporting a raised timber floor surrounded by *jalous*/mud-brick walls. Just to the west (between Buildings 2 and 3) was a similar, but disturbed, structure. The rest of the area was filled with post-hole structures on a north east to south west alignment, cut into a sand and dung surface, although these could have been cut down from later layers since removed by wind erosion. This area was probably used for keeping animals.



Plate 3. Area E7 looking north west at Building 3 with Area E6 in the background.

#### Area E8

Area E8 contained a number of dung, sand and occupation layers cut by various phases of post-holes, with a circular mud-brick grain silo in the north, another in the south (only base preserved), an oven in the centre and a number of fire pits and occupation deposits, storage jars sunk into pits and pottery deposits concentrated in the north-eastern quadrant (Figure 2). The whole area is peppered with various phases of post-holes, cut into loose sandy deposits that have been badly wind eroded. Human habitation was concentrated in the north east, where hearths and post-holes presumably from a wooden hut and a large rectangular enclosure were aligned north west to south east. These post-hole structures belong to occupation during Phases 2 and 3.

#### Area F8

Area F8 contained a large number of mud-brick walls from Building 7 (Figure 5). Building 7 had two phases: Phase 1, following the same alignment as Building 4 and heavy rebuilding in Phase 2, the latest deposits of which were contemporary with the earliest post-hole structures immediately to the north in area E8. The investigation of the large rectangular structure

of Phase 1 was left for future seasons, its walls covered by a thick collapse layer of mud brick tumble and ash that was then levelled and built over in Phase 2. Phase 2 started with the construction of a small two room rectangular building that did not respect the previous structure. This was then extended by reusing some of the Phase 1 walls, but cut others and reused bricks from the rubble of the Phase 1 ruins that was levelled to create a living surface during Phase 2. The walls of Building 7 in this Phase 2 were only preserved to between one and three courses high, and were wind eroded in places to below the primary floor surface, leaving sparse evidence of the Phase 3 occupation within this structure. In the north a *jalous* or mud-brick wall was added, separating Building 7 from the post-hole structures to the north; this created a covered courtyard veranda-like area, evidenced by a line of post-holes and post-pads. Just to the east four complete New Kingdom storage jars were sunk into the ground (Figure 5). Domestic activity was concentrated in the east of Building 7, whilst small storage and processing areas were concentrated to the south.

#### Area F9

Area F9 contained three poorly preserved mud-brick structures in the north (Buildings 8, 9 and 10) and a large well preserved example to the south (Building 4; Figure 2, Plate 4). Phase 1 consists of a large building (4), over 13 x 14m in size, to the south that extends into areas F8 and G8. This was only excavated in a small area in its north-east corner and was found to be preserved three courses high, with a later wall addition (probably of Phase 2). A number of ostrich eggshell beads were found in this structure. Phase 1 walls were also noted under some of the later Phase 2 walls of Buildings 8 and 9, though no clear outlines of a structure could be discerned at this stage.



Plate 4. View looking north east across Areas G8, F8, F9 and E8.

Phase 2 consists of a number of thin and poorly preserved eroded walls built over the thick ash layer noted above from F8 and sand in the east. These were rather flimsy structures, with sloping plastered floors. Unlike other areas these seem to have been from larger rooms that contain fire pits and storage jars of New Kingdom date.

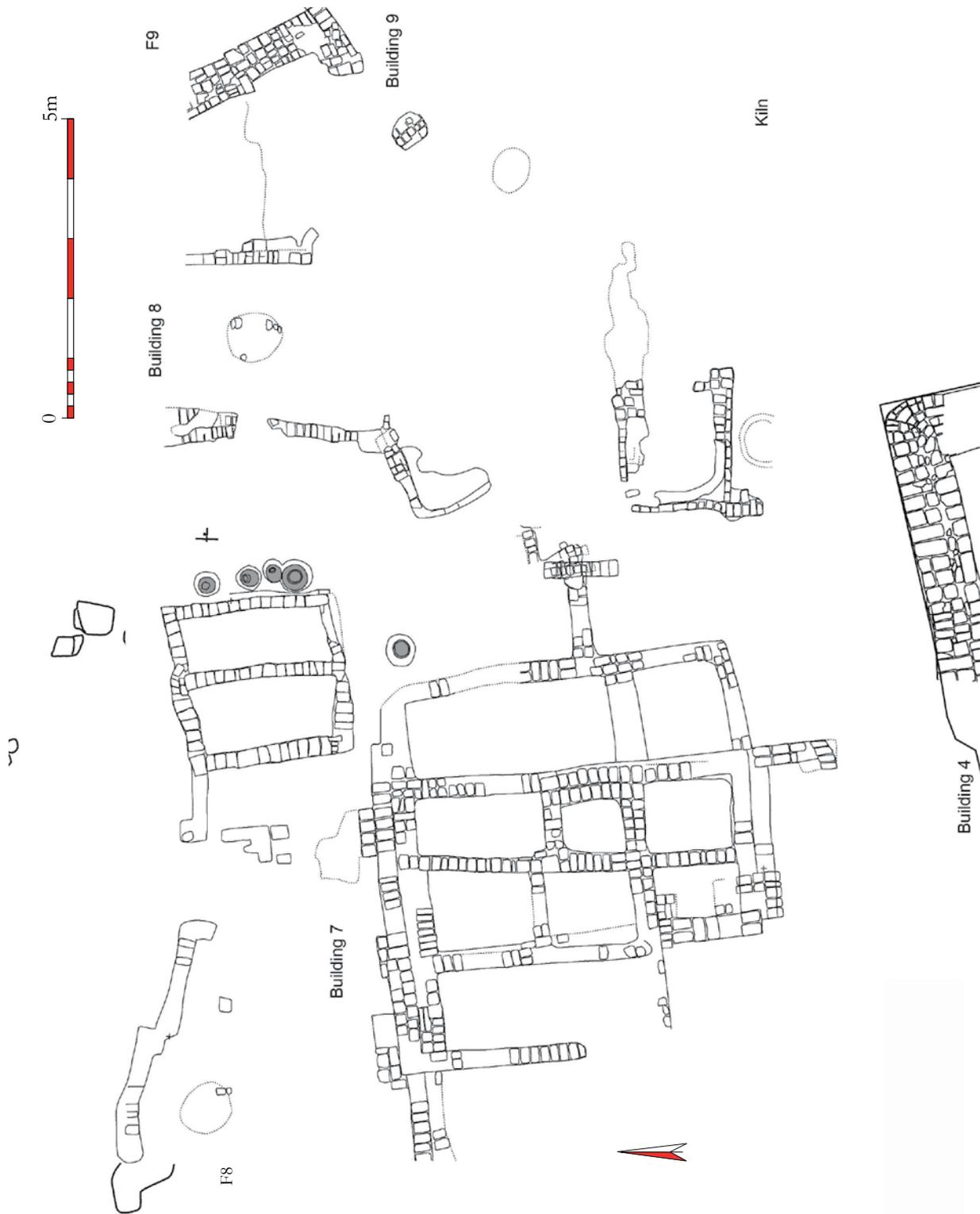


Figure 5. Plan of Area F8 (scale 1:100).

Over Phase 2 was a thick deposit of concreted fired brick wasters. This came from a later, small, kiln found in the south-east corner of area F9 (Plate 5). It was dug through



Plate 5. The 'kiln'.

the same sand that contained hearths and storage jar pits dating to the New Kingdom, but appears to have been cut down from a higher level (since eroded away). We assume this is a brick kiln, though its small size and construction make this uncertain. Certainly the large quantity of burnt bricks in this area suggests fired brick was being produced in this area and this was a much more substantial structure than the nearby ovens found in this area. No fired brick structures were found at H25 this season, but these bricks resemble those used in the construction of well heads, possibly built in the early Kushite period. If this is the case (and it is far from certain), then this is the only Napatan structure excavated this season, though Napatan sherds were found during the survey of the site on the surface.

### Artefacts and samples

Bone from sheep/goat and cattle were found on site; surprisingly no fish bones were recovered. The animal bone, a number of bulk samples of organic and burnt remains, in

addition complete dried and carbonised dates, dom nuts, grains, palm wood and other organic remains were collected as samples for future study.

Pottery accounted for the vast majority of artefacts found (58,044 sherds, 1077.9kg), amongst which 25 fabrics were recorded and 177 form variants. Pottery from the survey revealed Kerma, New Kingdom and Napatan pottery. The majority of the material recorded this season was of New Kingdom date (Plate 6, a and b) as the undisturbed excavated deposits revealed entirely material from the 18<sup>th</sup> to 20<sup>th</sup> Dynasties.

The New Kingdom deposits revealed ceramics from two distinct traditions: the New Kingdom Egyptian wheel-made tradition and the indigenous handmade tradition showing significant continuity from the Kerma culture. Wheel-made pottery accounted for *c.* 50% of the pottery by weight, but only *c.* 30% by sherd count. The fabrics were mostly local and Egyptian Nile silt,<sup>2</sup> with some imported Egyptian marl fabrics. These contemporary traditions were found alongside one another, with significant overlaps in function and use. We do not currently see any concentration of one tradition or the other in particular areas of the site, or indeed in different phases, although future statistical analysis of the material may yet reveal undiscovered subtleties in their use.

The common local Nubian handmade wares show a clear continuity of Kerma style, technology and form. This made separating Kerma pottery from that of the New Kingdom



Plate 6. New Kingdom pottery jar (a), New Kingdom painted pottery (b), unfired mud gaming piece (c), wooden seal (d), kohl stick (e). Not to scale.

<sup>2</sup> Putative Egyptian Nile silt fabrics were distinguished from locally produced coarse-wares due to the notable difference in the fabrics caused by different processing of the clay, pot construction and firing technology. Alternatively these could represent successful local adoption of Egyptian pottery techniques and technologies. Whilst the 'Egyptian' wheel-made vessels indeed resembled in form and fabric those of Upper Egypt, confirmation that these were not just local copies using Egyptian techniques and technology will require detailed petrographic and chemical analysis.



difficult amongst the survey material, though the excavations made it clear that much of the handmade pottery was contemporary with the New Kingdom wheel-made material. The majority of handmade sherds were of basketry-impressed cooking pots; decorated jars and bowls were also represented in reasonable quantities. The common basket-impressed cooking pots came in a variety of forms, though most common were those with the distinctive zig-zag basket impressions of the New Kingdom (Welsby Sjöström 2001, 251 decoration D56.2; Phillips 2003; Smith 2003a; 2003b, 46; Ruffieux 2012, fig. 28). A small number of globular storage jars with bead rims and impressed decoration were found, with *Kerma Classique* (Welsby Sjöström 2001, 250-1 e.g. J5.13; Ruffieux 2012, fig. 30) and New Kingdom parallels (Budka 2011, pl. 5; Smith 2003a, 58, fig. 3.11; 2003b, 46). Fine red handmade table wares with black burnished rims, occasionally with incised decoration, were common. *Kerma Classique* beakers were only found during surface survey, though generic hemispherical bowls were found in New Kingdom contexts (Welsby Sjöström 2001, 250-1; Smith 2003a; 2003b, 46; Ruffieux 2012, fig. 29). In Phase 1 New Kingdom contexts a small number of bowls showed the reverse of this 'Kerma' practice, with red rims and black bodies, also seen in 18<sup>th</sup> Dynasty Dokki Gel (Ruffieux 2010, 25, fig. 23.3). Whilst the handmade assemblage has good Kerma-New Kingdom parallels from Northern Sudan at Dokki Gel, Amara West, Askut and Tombos, the inhabitants of H25 appear to have relied more heavily on local handmade wares for cooking pots and table wares, understandable as this was not likely an important regional colonial Egyptian hub during Phases 2 and 3.

The wheel-made pottery assemblage of H25 largely consisted of storage jars and amphorae in (presumably Egyptian) Nile silts and rarely imported marl fabrics from amphorae. Surface treatment; usually had an unevenly applied red or pink slip, sometimes with vertical burnishing (seen at 18<sup>th</sup> Dynasty Dokki Gel Ruffieux 2010, fig. 24). Some jars and amphorae had a cream slip. String impressions were common on the larger vessels. Black-painted decoration was confined to rare tableware forms.

Storage vessel forms included neck-less ovoid/ globular jars found with and without handles ('meat jars') in Phase 1 with 18<sup>th</sup> Dynasty and later parallels (Aston 1998, 478-486; Kemp 2012; Ruffieux 2010, fig. 23.6 and 9; Rzepka *et al.* 2011, 161, 166, figs 55.5-6, 59.5; Welsby Sjöström 2001, J43.2, also from the survey at H25; Wodzińska 2010, NK8, NK28, NK27; 2012, fig. 3; Petrie Museum UC42253 and UC19194-5; variant with a high triangular rim Ruffieux 2010, fig. 23.15; Budka 2006, 94, fig. 6.7; Wodzińska 2010, 88, NK52), whilst the better preserved Phases 2 and 3 examples had better 19<sup>th</sup> to 20<sup>th</sup> Dynasty parallels (Aston 1999, pls 4, 7, 8, nos 72, 150, 173, 176; Aston *et al.* 1998, 196-210, pls 30, 35-6, 43-4, nos 251, 298, 306, 373, 382; Budka 2006, 101, fig. 11.3-4; Meyer and Heidorn 2011, 12-15, figs 6-7, nos 12-16; everted rim variant Budka 2006, 101, fig. 11.5). Ovoid (biconical body with

pointed base) jars with funnel necks were rare, in comparison with the abundant examples with straight necks consistent with 19<sup>th</sup> and 20<sup>th</sup> Dynasty parallels (Aston 1998, 195, pl. 29, nos 243-4; 210, pl. 44, no. 378; 190, pl. 24, no. 222; Binder *et al.* 2011, 58, AW497, 498, 499, 480, C8003; with bead rims Budka 2006, 104, fig. 14 nos 1-2). Small ovoid jars/bottles with straight necks were probably also late New Kingdom (Aston 1991, pl. 50, no. 51; Binder *et al.* 2011, AW496; Aston 1999, pl. 5, 116).

Rare Egyptian 19<sup>th</sup> and early 20<sup>th</sup> Dynasty marl amphorae sherds (Aston *et al.* 1998, 168-213, figs 2 and 4, pls 40-1, 46-7, nos. 15, 36, 338, 341, 385, 392-6; Aston 2004, 189, fig. 7d-e; 196, fig. 11e, types B1 and C1; Binder *et al.* 2011, C8009; Meyer and Heidorn 2011, 14-15, fig. 7, nos 20-23) and costrols had good Ramesside parallels (Smith 2003a, 51; Wodzińska 2010, NK42). Tablewares included a range of Egyptian New Kingdom style plain dishes/bowls (Aston *et al.* 1998, 181, pl.15, nos 142 and 148; Meyer and Heidorn 2011, 10, fig. 5, nos 1-5) occasionally with a triangular flattened rims (Aston 1991, pl. 47.3, 6, 10, 18; Meyer and Heidorn 2011, no. 4), carinated bowls, deep bowls with ring-foot bases ('flower pots'), beer jars and black painted pieces. A 'carinated bowl' with string impressions, white wash and added red decoration on the rim with early 20<sup>th</sup> Dynasty parallels was found within the last occupation deposits of Building 4 (Aston *et al.* 1998, 183, pl. 17, nos 166-7, 181). 'Flower pots' (deep dish with flat or ring-foot base and string impressions) with a simple or thickened rim have numerous parallels from across the New Kingdom period (Budka 2006, 92, fig. 4.9; 2011, fig. 1; Meyer and Heidorn 2011, 10-13, figs 5-6, nos 7-11; Rzepka *et al.* 2011, figs 58.6) with close 12<sup>th</sup> century BC parallels (Aston 1999, pl. 5, no. 109; see also pls 3, 4, 5, nos 50, 93, 101; Aston *et al.* 1998, 167, pl. 1, no. 5; 182, pl. 16, no. 164). Rare examples had deep wheel marks on the exterior giving a ribbed appearance (Aston 1999, pl. 4, no. 84). A number of generic New Kingdom 'beer jar' fragments with string-cut bases were found. Rare decorated pieces with black painted rim bands, stripes, rim ticking, triangles of dots and cross-hatching are distinctive of the early/mid-18<sup>th</sup> Dynasty (Holthoer 1977; Spence *et al.* 2011). A small undecorated (eroded?) carinated bowl rim fragment is dated mid-18<sup>th</sup> to early 19<sup>th</sup> Dynasty (Aston 1998, 173, fig. 7, no. 69; Budka 2006, 98, fig. 10; Meyer and Heidorn 2011, 10, fig. 5.6; Rzepka *et al.* 2011, figs 57, 58.2-3).

Nearly 590 small finds were discovered and recorded. Most were fragments or complete examples of saddle querns, rubbers and pounders/hammers made of the local black, red or white sandstone. Occasionally quartzite was used for the pounders. Some of the quern stone fragments were from round flat pieces, possibly from rotary querns, though none had holes in the centre to confirm this hypothesis so could equally be a different form of saddle quern. A few pieces of flat worked granite were found, possibly from pallets. Other small finds of note include an unfired-mud decorated gaming piece (Plate 6c), jewellery, copper-alloy tools and knapped

flint tools. Jewellery came in the form of numerous small ostrich eggshell beads, but also unworked pieces and bone drills used for their construction. A few faience beads and stone pendants were recovered. A number of copper-alloy pointed tools, possibly kohl sticks, were also found (Plate 6e), though otherwise metal objects were very rare. Knapped tools, mostly retouched blades, were relatively uncommon. Possibly the most interesting object was a nearly complete seal made of wood (Plate 6d), found beneath the Phase 2 surface from Area F9, Building 8. It has a suspension hole and rectangular symbol on the underside, though one can only speculate as to its meaning (whether it represents an Egyptian hieroglyph or not) as it was already very worn before it was discarded.

## Conclusions

The ancient settlement at H25 possessed numerous domestic, storage, industrial and administrative structures, as well as animal pens, allowing for all the necessary collection, processing and organisation of agricultural and animal-husbandry practices in the New Kingdom. The character of the site is rural, though the presence of Egyptian-style pottery and imports and the construction of substantial and well organised buildings (such as Building 4) suggest that some form of centralised organisation was in place during Phase 1, possibly concerned with the storage and distribution of the region's agricultural surplus. This could only have been significant whilst the Alfredda Nile was a vibrant channel prior to its drying up by the end of the 18<sup>th</sup> Dynasty, the beginning of the 13<sup>th</sup> century BC (Woodward *et al.* 2013). This seems to be supported by the discovery of 18<sup>th</sup> Dynasty sherds in this phase, though further excavations should confirm the dating of Phase 1 and reveal more 18<sup>th</sup> Dynasty structures and activity at H25 that may also explain the collapse and ash (destruction?) deposits that mark the cessation of Phase 1.

Rebuilding in Phase 2 followed a short hiatus. The earliest Phase 2 structures were well organised, if small, rectangular two-room buildings and cannibalised some of the ruins that were still visible at this time from the previous phase (1). The later expansion of these buildings was more ad-hoc, creating rather flimsy buildings. The latest additions to the settlement, in Phase 3, were ephemeral post-hole structures for people and pens for animals; evidence of sheep/goat animal husbandry. These Phase 2 and 3 buildings contained pottery consistent with 19<sup>th</sup> to 20<sup>th</sup> Dynasty parallels, particularly those dating to the period *c.* 1200-1130 BC (Aston *et al.* 1998; 1999, Phase IIA; Budka 2006, Phases 3 and 4). The site was largely concerned with an agrarian economy, with perhaps a later focus on sheep/goat animal husbandry in Phase 3. The scale, organisation and construction techniques used in these later phases suggest the site suffered a decline in fortunes during this period following the drying up of the Alfredda Nile. It is not clear how gradual or sharp a shift of economy to a more semi-nomadic pastoralist way of life was or needed to be in response to the environmental change that made this region

unsuitable for agriculture. Also the wind erosion of the later loose sandy layers that contained post-hole structures makes understanding what happened between the end of the New Kingdom and an apparently brief Kushite phase uncertain. The absence of extant early Kushite (Napatan) deposits in the areas excavated means that this surface material possibly reflects only a brief occupation after a long period of abandonment. Excavations next season may clarify the situation concerning the later occupation of the site, whilst there are clear and positive indications that extensive New Kingdom and Kerma material awaits discovery at H25.

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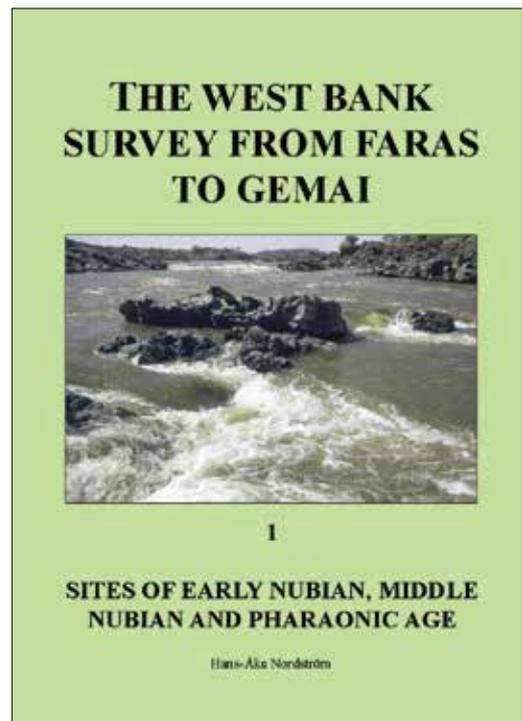
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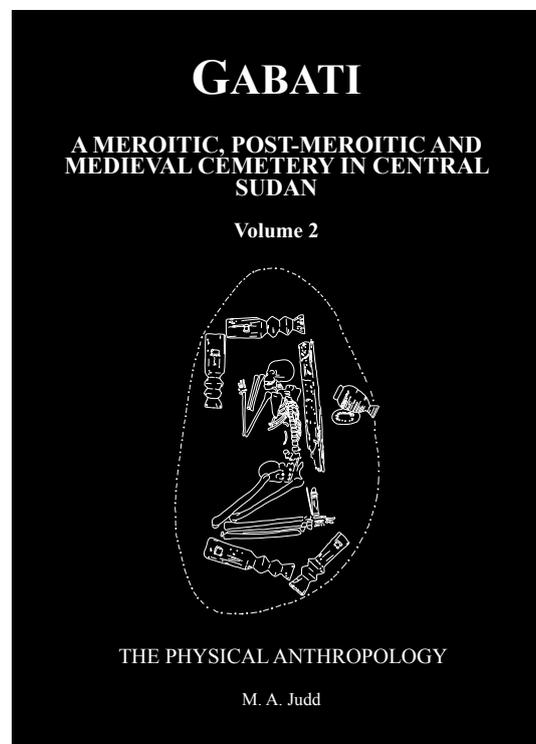
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*View upstream along the Wadi Murrat from the late 19<sup>th</sup> century Anglo-Egyptian fort.  
The pharaonic inscriptions are amongst the trees at the wadi edge in the far centre (photo D. A. Welsby).*



*Horus, Lord of the Desert. A natural rock outcrop along the route from Buben towards Wadi Murrat (photo D. A. Welsby).*