

KAWA

*The Pharaonic and
Kushite town of Gematon*

History and archaeology of the site

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with a contribution by Daniel Antoine



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Historical summary

While the civilisation of ancient Egypt was developing downstream of the First Cataract of the Nile far to the south a new power was arising in the northern Dongola Reach of what is now the Republic of Sudan. That region had been settled for many millennia by hunter gatherers who gradually turned to animal husbandry with the domestication of cattle, sheep and goats in particular and to agriculture by the Neolithic period, in that region dated to approximately 4900-3000 BC. By around 3000 BC there is the first evidence for urbanism with a large fortified settlement being occupied known today as Kerma. This settlement consisted of massive earth and timber defences, circular huts, rectangular buildings and extensive storage facilities. It will have occupied the banks of one of the many Nile channels flowing through the region. By around 2400 BC the settlement shifted 4km to the west probably following a move of the river channels. On the new site a city developed, the metropolis of what was known to the ancient Egyptians ultimately as the Kingdom of Kush. For long a trading partner Kush also posed a significant military threat and in the 17th century BC raided with impunity deep into Egypt. Under the pharaohs of the Egyptian 18th Dynasty Kush was invaded and destroyed, its territory becoming an Egyptian colony under the Viceroy of Kush.

By around 1100 BC Egyptian power was on the wane and over the next few centuries a new state emerged filling the power vacuum, often referred to as the second Kingdom of Kush divided by archaeologists and historians into the Napatan and Meroitic periods. Kush grew rapidly and by the 720s BC was able to conquer the



The defences of Buben, one of the massive forts built by the Egyptians along their southern border with Kush (photo W. Y. Adams, SARS Adams Archive).

whole of Egypt establishing an empire extending from the confluence of the White and Blue Niles to the Mediterranean. Forced to withdraw south of the First Cataract by the Assyrians in the mid 7th century BC Kush remained a major power on the Middle Nile until its final demise in the middle of the 4th century AD. Throughout these periods Kawa played a major role.

Location of Kawa

Kawa sits on the east bank of the Nile 7km to the south of the Dongola bridge and 2km to the south west of the Kareima to Dongola highway. The site consists of a large town visible as a prominent mound immediately adjacent to the river bank and its associated cemetery several hundred metres to the east partly covered by a large sand dune. Other smaller sites lie in the vicinity, some contemporary with the main sites, others are earlier – the Kerma settlements and cemetery – and one is a post-Medieval occupation scatter.

The long narrow ridges extending to the north east from the town are spoil heaps dating from the excavations in the 1930s as is the other small high mound a little to the south.

The whole site is strewn with artefacts, pottery sherds in particular and in some places remains of buildings can be seen on the surface. The site is so well preserved because of the wind-blown sand which has constantly threatened to overwhelm it. Unfortunately this has meant that there are few upstanding buildings for the visitor to see. In the Temple of Taharqo for example the walls visible at ground level actually extend down over 3m to the Kushite ground surface.



Aerial view of the religious quarter of the town looking north east.

History of exploration on the site

One of the earliest mentions of Kawa in modern times is in the journal of Garnett Wolesley, commanding the Nile Expedition of 1884-5. On 13th December 1884 he was forced to stop at the site when his boat developed a leak and he noted ‘... there are the remains of a temple & apparently of copper smelting works - I am told that some good bronze statuettes have been dug up here, also some scarabei.’ The first excavation took place a year later when Colonel Colborne stationed at Dongola persuaded the garrison to undertake a little digging during which they uncovered a painted room. On 4th January 1910 the Egyptologist Frederick Green stopped here and described the site in his notebook which remains unpublished. In 1929 Professor Francis Llewellyn Griffith began excavations on behalf of the Oxford Excavation Committee. Employing over 300 workmen they cleared an extensive area revealing two large and two smaller stone and mud-brick temples. Following Griffith’s death an additional season was undertaken in the winter of 1935-6, Miles Laming Macadam collating the inscriptions within the temples while Laurence Kirwan excavated the temple garden and houses against



Photograph taken by the RAF of the excavations in progress during the winter of 1935-6 (photo courtesy Institute of Archaeology, UCL).

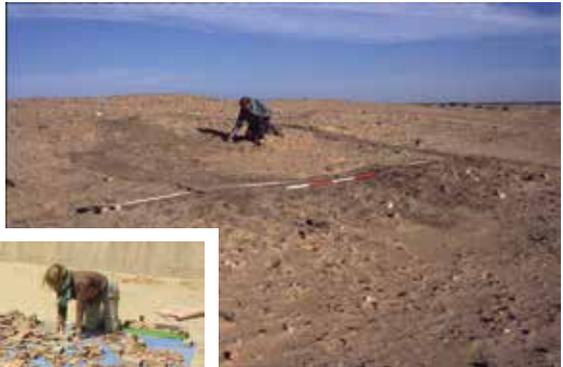


*The SARS excavation team
at Kawa in 2002.*

the temenos wall, the wall around the temple precinct. Thereafter the excavations rapidly filled with wind-blown sand. In January 1993 the Sudan Archaeological Research Society (SARS) began its Northern Dongola Reach Survey focussing in the first season on the environs of Kawa before going on to survey 80km along the east bank of the Nile to the edge of the desert plateau, a maximum of 18km to the east. On completion of this project the Society then turned its attention to Kawa, excavations beginning in 1997 and this work is ongoing.

Aims of the present project

The Northern Dongola Reach Survey set the site of Kawa firmly within its context allowing an understanding of its origins, reasons for its existence at that particular place and for its demise. Focussing on the site itself the current project seeks in its broadest sense to understand what life was like for the Egyptians and their subjects and the later Kushite inhabitants over a period of 2000 years. At Kawa we are very fortunate in being able to excavate within the town and also within the



*Planning buildings visible
immediately below the
present ground surface.*



*An immense amount of pottery
is recovered from the excavations
which is all studied
in detail.*

contemporary cemeteries – we are able to see how people lived and by studying their actual physical remains get an idea of how, why and when they died.



Conserving fragments of wall plaster within the shrine, Building A1.



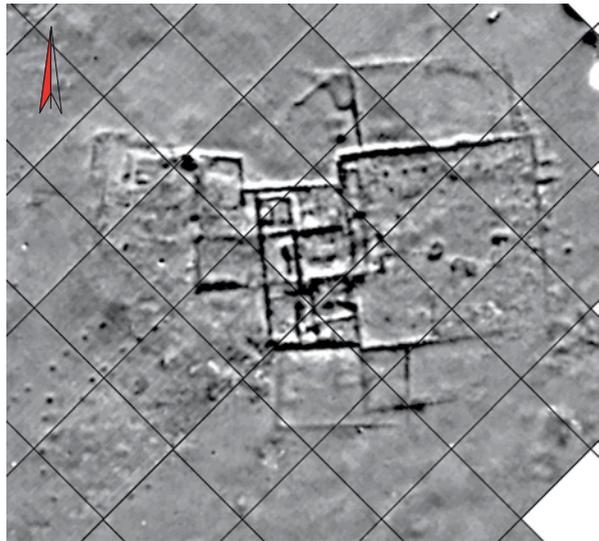
Using a Fluxgate Gradiometer to plot sub-surface features.

Part of the plan produced by the gradiometer survey.

The very dark lines are walls visible on the surface, the others are not visible to the naked eye. The rows of circular features may be tree pits some of which appear to line streets in the town.

To achieve these aims a wide range of specialists are involved in the project from the archaeologists who supervise the actual excavations to the specialists back in the British Museum and elsewhere

who undertake the detailed analysis of the data recovered on occasion using cutting edge technology. The whole project is underpinned by the hard work and hospitality of the local people, particularly those from the village of Kasura.



Kawa before the arrival of the Egyptians

The Northern Dongola Reach Survey revealed the long and rich history of the region particularly during the Kerma period *c.* 2400-1450 BC. At that time the Nile flowed in a number of channels widely spaced across the valley floor. The banks of these channels were lined with small settlements, presumably of farmers, utilising water



Grave excavated in 1993 within the Kerma cemetery at Kawa.

from the river to irrigate their fields. The discovery of numerous store buildings in these settlements, one approximately 11m square, suggests that this area was the 'bread basket' of Kerma. Four settlements of this type were found in the vicinity of Kawa along with an extensive cemetery certainly in use during the *Kerma Classique* phase (*c.* 1750 – 1450 BC).



Sites of the Kerma period discovered by the Northern Dongola Reach Survey on the east bank and by the University of California Santa Barbara's team on the west bank.

The Egyptian town

The Egyptian name of the town was Gematon meaning ‘The Aton is Perceived’ Such a name, with its reference to the god Aton, indicates clearly that it must have been founded late in the reign of the pharaoh Amenhotep III, during the reign of his successor Amenhotep IV better known as Akhenaton or early in the reign of Tutankhaton before he changed his name to Tutankhamun, between approximately 1370-1330 BC. Akhenaton is known to have founded the town at Sesebi 146km downstream although recent excavations by a team from the University of Cambridge and the Austrian Archaeological Institute have shown that there was already an Egyptian presence on the site. It may be that Kawa was also occupied by the Egyptians before the 14th century BC.

Little is known of the Egyptian town apart from the temple built by Tutankhamun which was excavated by Griffith. This temple, 38 x 17m in size, was built of mud brick lined with stone in the door passages on the main axis and in the pronaos (anteroom) and sanctuary chamber. It was aligned north-south, parallel to the Nile. Entered from the north the first court had colonnades to each side with six stone columns. The second court with four columns gave access via the pronaos into the sanctuary roofed with stone slabs, still remaining in place into



The temple under excavation looking south west (photo courtesy of the Griffith Institute).



Photograph taken by the RAF of the excavations of Tutankhamun's temple and Temple B in progress during the winter of 1935-6 (photo courtesy Institute of Archaeology, UCL).



the 1930s, and flanked by rooms to each side.

Later inscriptions added to its walls indicate that it remained in use at least until the reign of the pharaoh Ramesses VI (c. 1143-1136 BC).



The Temple of Tutankhamun is now almost totally reburied in sand. Here the roofing slabs over the sanctuary can be seen.

Plan of the temple constructed in the reign of Tutankhamun (after Macadam 1955, pl. 4).

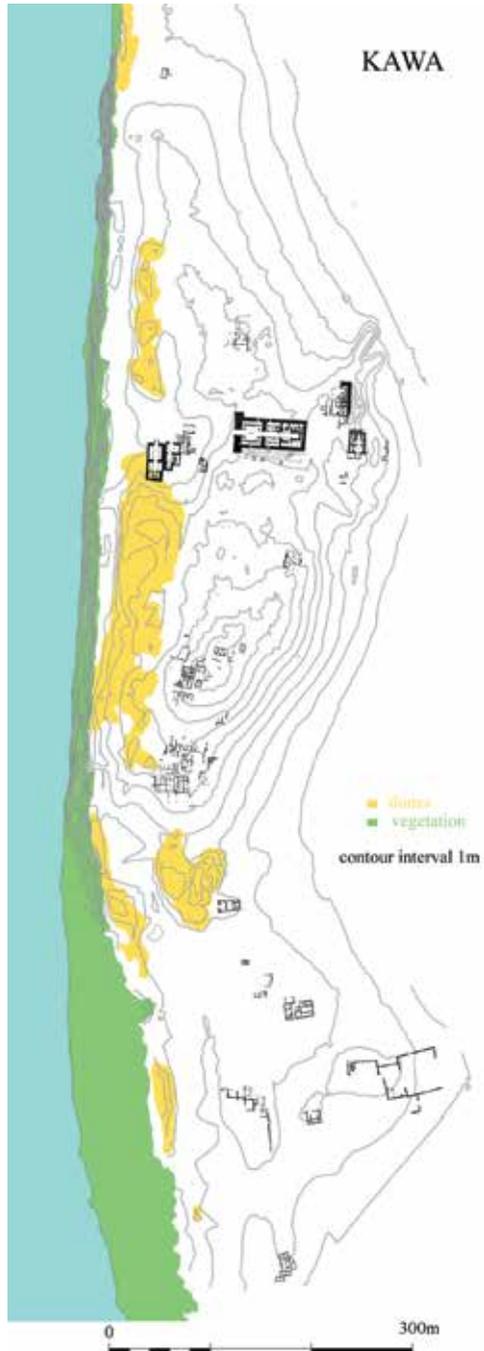
The Kushite town

On the withdrawal of the Egyptians perhaps around 1070 BC the fate of the town is uncertain. Its administrative and religious functions may have lapsed leading to a massive reduction in its population or even its total abandonment. However by the very early Kushite period the town was booming with occupation over a large area. There was much building and rebuilding, the earliest dated structure is from the reign of King Shabaqo (716-702 BC) culminating during the reign of Taharqo in the construction of a large temple close to that of Tutankhamun and, 800m to the south, a small painted shrine, Building A1. Taharqo passed through Kawa in 701 BC on his way to take command of Kush's armies massed on the north-eastern frontier of the empire near present day Gaza. While at Kawa, noting the deplorable state of a temple, he vowed to rebuild it:

‘He found that this temple had been built in brick but that its sandhill had reached to its roof, it having been covered over with earth at a time of the year when one feared the occurrence of rainfall’.

The Temple of Tutankhamun was also refurbished at this time; representations of King Taharqo

Plan of the town at Kawa.





General view across the lower town from the highest point on the site.

were carved on its door jambs. Taharqo built a new stone temple and probably a massive mud-brick wall 4m thick at the base, to enclose the temenos, the sacred space in which the temples lay. He also provided a temple garden containing a vineyard amongst other things.

The Kushite town in the first millennium BC appears to have been densely occupied with temples, official buildings and well built housing spread over an area at its greatest extent approximately 1.22km in length and 300m wide. Houses, some terraced into the hillside and into the river bank, were separated by streets and alleyways.



The mound attains a height of 12 metres, the remains of occupation over many centuries.

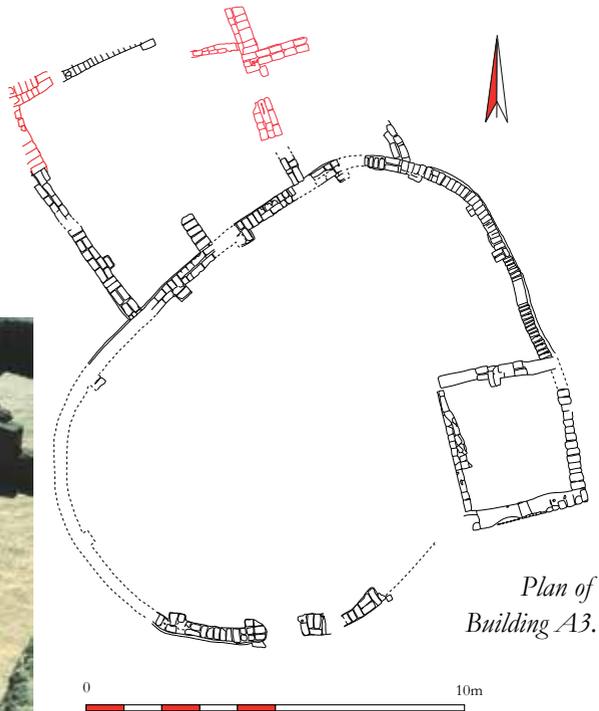
The very earliest Kushite remains

Recent excavations have begun to fill the apparent void between the buildings of the Egyptian town and those temples built by the Kushite kings Shabaqo and Taharqo. In the area of the later gateway into the temenos, at a depth of over 1.5m below levels contemporary with the very early 7th century BC, was a hard earth surface pierced by a large number of post-holes. Too small an area was investigated to allow any suggestion as to what they may have been related to but they were certainly of Kushite date.

Right at the southern end of the site the earliest feature noted was a cylindrical ceramic oven. This was followed by a sequence of four mud-brick buildings all predating the shrine constructed in the early 7th century BC. Very little remained of the first two buildings but their successor, Building A3, was well preserved in places. It was built of mud brick with thin walls strengthened by small internal buttresses. The enclosed spaces were both curvilinear and rectilinear.



Narrow mud-brick walls and buttresses of Building A3.



Plan of Building A3.

The style of construction and the building plan have much in common with the architectural practises in the region before the arrival of the Egyptians over half a millennium before, familiar from the site at Kerma, the capital of the first Kingdom of Kush.

Tabarqo's temple

Ascending to the throne in 690 BC Taharqo remembered his vow and began construction of a new temple at Kawa in 684 BC completing it four years later. Built entirely of stone by skilled Egyptian craftsmen and an architect brought from Memphis it was according to the king a very fine monument

“He [Taharqo] (re)built it in stone of excellent workmanship, the like (of which) has never been seen before since (the time of) the gods until this day. He has made it of fine, high quality sandstone, the columns being set up, overlaid in beautiful gold, their inlays of silver, its pylons built with well executed work, its door being set up in true cedar, the bolts being of Asiatic copper, (the whole) being inscribed with the Great Name of His Majesty by all sorts of skilful-fingered scribes, and inscribed by good craftsmen who (sur)passed what the ancestors had done.....”

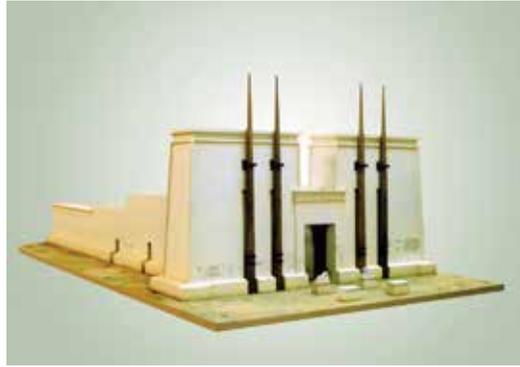


*General view of the temple during excavation
(photo courtesy of the Griffith Institute, Oxford).*

Measuring 68.5 x 38.7m and still surviving to a height of 3.8m it is aligned east-west facing towards the river. The temple has a standard Egyptian plan and is almost identical to those at Tabo 29km to the north and at Sanam Abu Dom 270km upstream.

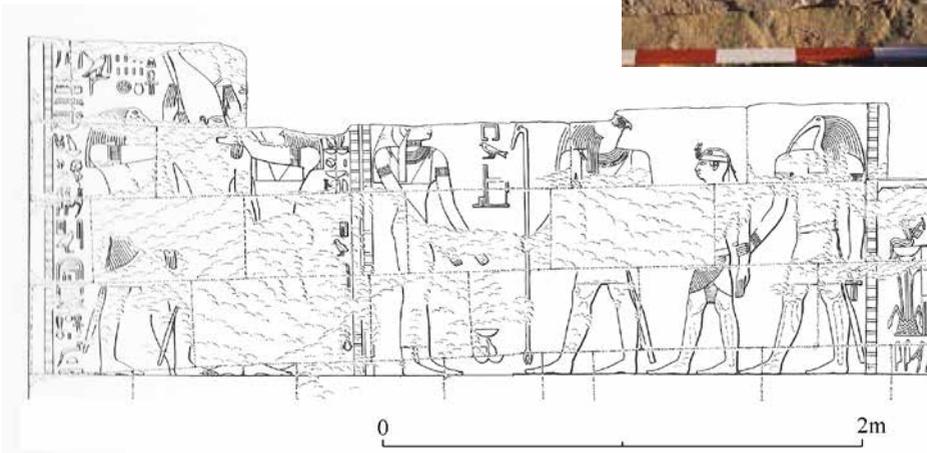
Approaching the temple from the river the visitor passed through a kiosk, a later addition to the complex, by a stone altar ascended by a flight of steps and

four pedestals two crowned by granite rams with small figures of Taharqo between their front legs to the main entrance. This doorway, set centrally in the pylon, leads into a colonnaded court and then between two more rams into the hypostyle hall with 16 columns supporting its roof. Beyond is a pronaos and the sanctuary with small rooms to its north and a large shrine with a dias at its western end to the south. All the internal walls were covered in reliefs and the temple was filled with statuary and stele – large stone slabs bearing inscriptions.



Model of the temple (photo G. Pain).

The temple remained in use for centuries with



Drawing of a section of the reliefs made by Griffith's team. Here Taharqo wearing the Kushite cap crown and double uraei, is being conducted by the gods Horus and Thoth to the 'Great House' where he is received by a goddess (after Macadam 1955, pl. XXII c). The photo is a detail of Taharqo's head.

Kushite rulers dated to around the beginning of the Christian era being recorded on inscriptions among them the ruling queen Amanishakheto. Before the end of the Kushite period the temple was in ruins and was occupied by squatters.

The temenos

Probably contemporary with the construction of his new temple, and the refurbishment of that built by Tutankhamun, Taharqo surrounded the sacred precinct, the temenos, with a massive wall constructed of mud brick. Its full extent is uncertain having only been discovered to the east of the new temple and at its north east corner. Partly excavated by Laurence Kirwan in 1935-6 it was found to be 4m thick at the base and set directly on sand. Eighty-four metres to the south



The temenos wall, one of the few clearly visible structures on the site today.

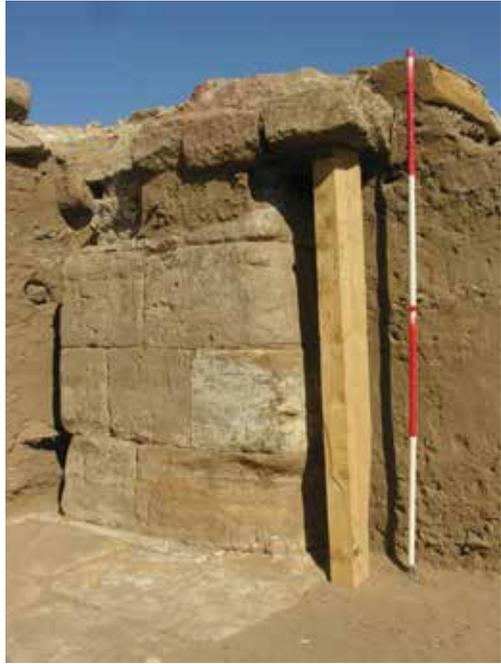
of the angle the wall was pierced by a gateway, an area extensively excavated between 2010 and 2011. The earliest structure here was of timber. Largely obscured by later features three post-holes from the front of what may have been a timber gateway and one from the rear were uncovered. These held massive timbers – one post-hole was well over half a metre deep and 490mm in diameter.

On the construction of the temenos wall a more grandiose gateway was constructed here, 5.6m wide (5.07m between the jambs) and with a gate passage 4.7m in length of mud brick walls faced with well dressed large white sandstone blocks. These blocks rested on the paving slabs within the gate passage, again of white sandstone and up to 882 x 582mm in size and 400mm thick. This gate remained in use for a considerable period as can be seen from the extensive wind erosion its stones had suffered. At some point it fell into disrepair and was replaced by another gate, slightly narrower at 5.1-5.4m, constructed of mud brick and reused

stone blocks including part of a temple cornice. Itself replaced by a timber gateway it was reinstated and repaired presumably late in the Kushite period.

Within the temenos not only lay the temples but also the temple garden and several periods of houses excavated by Kirwan in the north-east corner against the wall. Also in this area are a number of tree pits. On an inscription within the temple Taharqa records –

“Its [the temple’s] wine is trodden from the vines of this city, it being more abundant than (that of) Djesdjes. He has appointed gardeners for them being the Mentiu-nomads of Asia.”



The stone-lined gateway leading into the temenos. The stones particularly close to the ancient ground level have been heavily eroded.



The later Kushite gateway constructed of mud bricks and reused stone blocks.

Temples outside the temenos

Two temples have been discovered so far outside the temenos wall. One of these was excavated by Griffith who inexplicably called it the Eastern Palace. Constructed almost entirely of mud brick it has a stone porch and stone columns, only one of which remains, in its outer room. The entrance was flanked by a small recumbent sandstone lion, a common feature of temples in the Meroe region and also seen in the palace of Natakhamani and Amanitore at Jebel Barkal and palatial buildings at Naqa. The first room had been profusely decorated, only small fragments remained of polychromatic paint applied over a whitewash. The plan is typical of small Kushite temples apart from the two additional long rooms along its western side filling much of the space between it and the outer face of the temenos wall. It dates to the later Kushite period.

The other temple, Building G1, was discovered and planned on the surface by the SARS team. Built of mud brick it appears at first sight to have been extensively damaged by fire. However closer inspection showed that the mud bricks that had been heavily fire damaged were reused from another structure assumed to be one of the two rectangular kilns 45m and more to the south (see pg. 25). Facing towards the Nile the temple consists of a court, a transverse hall and a triple sanctuary. The pylon was much disturbed recently by looters.



The temple, Building G1 after cleaning of the wall tops prior to planning.

The Painted Shrine

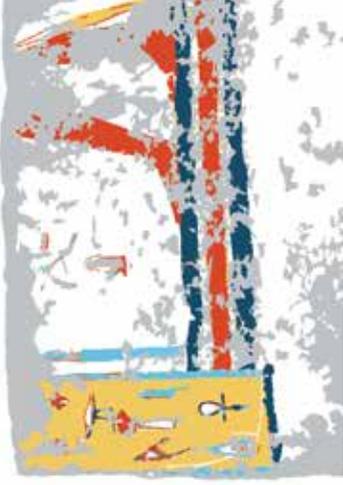
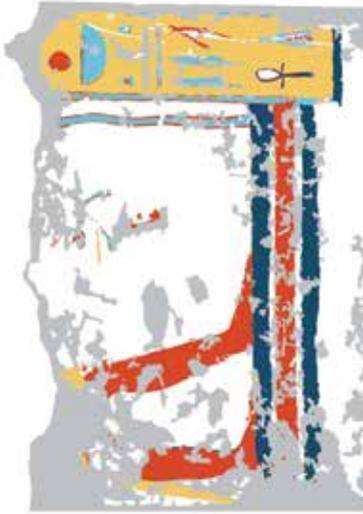
The whereabouts of the painted room uncovered by British soldiers in 1885 is unknown. It presumably lay towards the centre of the site. Far to the south, 800m from Taharqo's stone temple, a shrine was discovered in 1998 and excavated over the next few years. Originally it consisted of a range of three rooms entered from the west. A single step gave access into the first room with a further step up into the second and yet another up into the third room. This was the sanctuary chamber and was provided with a floor of large and thick white sandstone blocks. The lower part of its walls were painted in whitewash delimited at the top by a triple band – dark blue, red and dark blue. Above this were traces of painted scenes, that on the north wall had the feet and ankles of a king shorn in fine gold sandals. In the second room with its lower floor level the wall decoration was better preserved. It has a dado and dado border as in Room 1 and on the north wall probably a very similar scene. Here the figures are preserved to waist



*The altar or barque stand
of Taharqo.*

height with the king with the same type of sandals processing towards a blue painted Amun behind which are two goddesses. A similar scene seems to have occupied the south wall while the west wall had an image on each side of a bare-footed deity with red skin striding towards the door which has a vertical painted inscription on each side ‘... beloved of Amun of Thebes’ on the north side and ‘... beloved of Amun of Gematon’ on the south side. The shrine was clearly dedicated to the Theban god but also to his local manifestation at Kawa itself. Within the sanctuary chamber was a sandstone altar or barque stand bearing two cartouches containing the throne and birth names of Taharqo who presumably built the shrine.

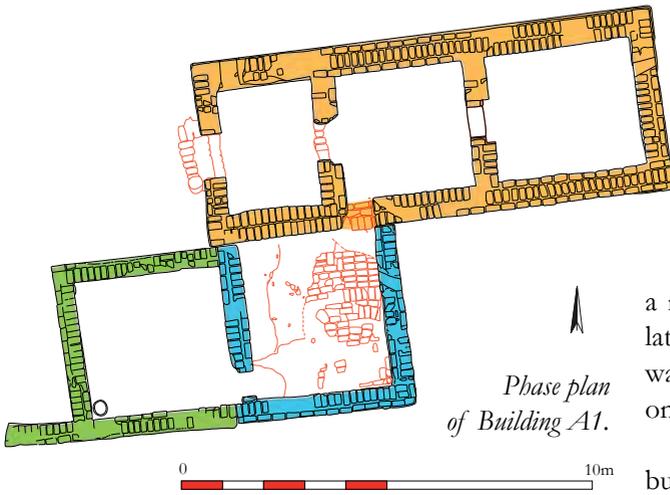
The lintel over the door was decorated with a fine winged sun disc flanked by uraei (rearing cobras). High in the walls there must have been at least two rectangular windows, the stone grilles from which were found during excavation. Four metres to the west of the shrine was a mud-brick altar still preserving on its dished top at the time of excavation the remains of the last sacrifice.



The east wall or the central room with the doorway into the sanctuary.



Paintings on the north wall of the central room.



Phase plan of Building A1.

The building was later modified, a doorway being cut through the south wall of the central room giving access to a new room with a mud-brick floor and later yet another room was added on to this one to the west.

Associated with this building were two very interesting discoveries; ceramic statues 962mm tall of the well known Egyptian and Kushite god Bes and his female consort Beset. They are of a highly unusual form; flat on the back with a projection from the plinth, these were clearly designed to be set into a wall. If they are to be associated with this building they must have been set quite high in the walls as no trace remains of where they were set into the surviving walls.



Ceramic painted statues of Bes and Beset, beneficent deities, protectors of the family, of childbirth and associated with sexuality.

the external altar disappeared beneath the sand and, as the ground level rose, the building was entered down a sloping path and down a flight of three steps.

Houses

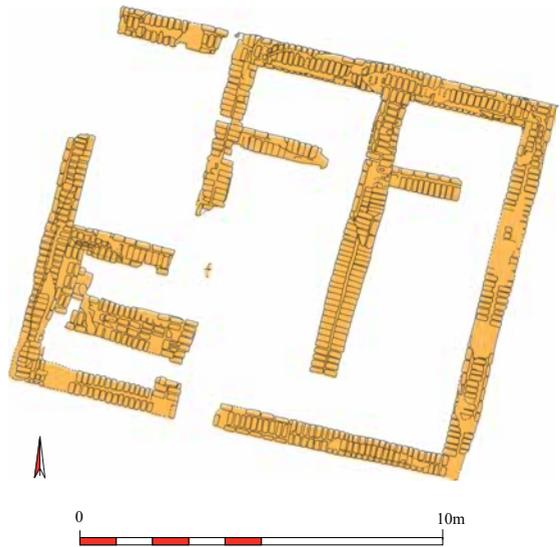
There is always a great temptation for archaeologists to excavate monumental buildings, temples and palaces. However it is essential in order to stand any reasonable chance of glimpsing what life was really like in the past to look also at the more humble structures in particular the dwellings of those far down the social scale who will have made up the bulk of the population. The region around Kawa at the time the city flourished will have had a largely agricultural economy and most people will have lived, as they do today, in small villages and hamlets close to their fields. Some of the inhabitants of the town may also have been farmers with land close by while others will have had commercial interests, have worked in the state administration or been associated with the religious cults. Yet others will have been craftsmen and builders servicing the needs of the resident elites.

Over much of the town there is evidence for dense housing with well-built structures of mud brick. Towards the limits of the town however structures are not readily visible but occupation is. Here may be the less salubrious suburbs with people living in grass and timber huts.

Houses have to date been excavated in several parts of the town, most extensively by Kirwan within the temenos and 350m to the south in what was designated Area B. Three main phases of occupation were found by Kirwan in the houses built in the lee of the temenos wall, the first phase perhaps closely associated with the temple.

On the highest part of the town mound 300m to the south a number of houses are visible. Some of these are substantial structures, Building C2 is 12.3 x 10.7m in size and has a stairway in its south-west corner giving access onto a flat roof or to a second storey.

Part way down the slope to the south excavations have revealed the remains of several houses and the streets and alleyways between them. To the west



A substantial house with stairway, Building C2.



General view over the excavations in Area B.

and south erosion has removed all further traces of these structures. Building B1, consisting of several rectangular rooms was entered by a doorway near its south-east corner. Little can be said of its history although there is evidence for modifications with the blocking of internal doors. Across the alley to the south was a complex of buildings, one being added onto another. The north wall survived above the floor within the building to a height of about 1m at which level was the base of what was probably a tall slit window, designed to let in the cooling



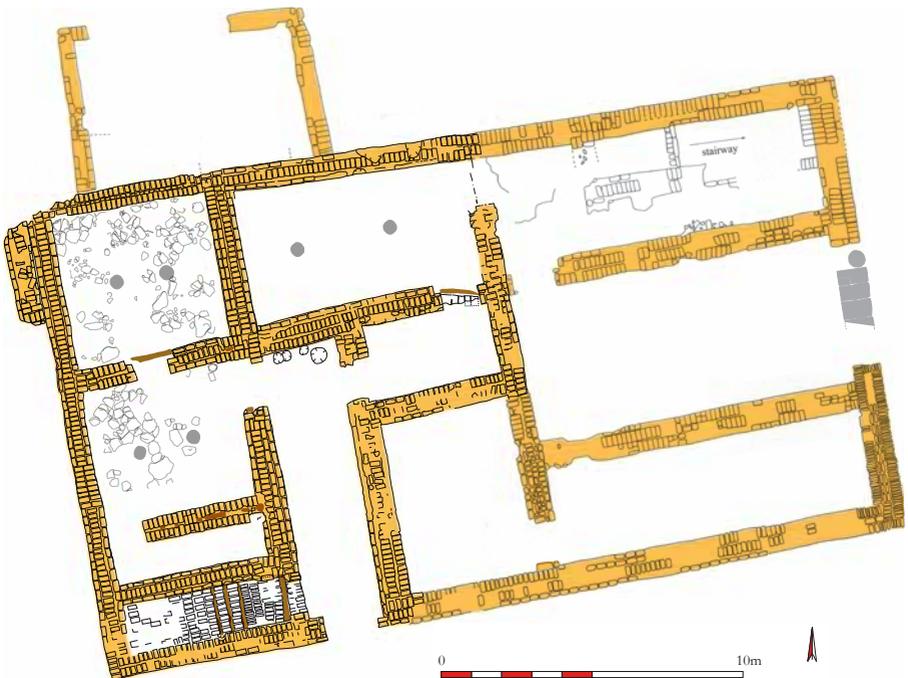
Cylindrical ceramic ovens.

north breeze but to reduce the amount of sand and bright sunlight entering the building. The positions of other windows along this wall could be deduced from the discrete piles of rubbish in the street, presumably tossed out of the windows. Elsewhere when rooms went out of use they were used as rubbish dumps and have yielded important archaeobotanical evidence for the types of crops grown by the Kushite and consumed. Floors throughout these buildings were of sand or earth. Internal features were few but included cylindrical ovens, pottery vessels turned upside down and with their bases removed to serve as braziers, pots set in the floors and hearths.

Store buildings

In the north-east corner of the temenos Kirwan excavated a structure in 1935-6 the south range of rooms being identified as granaries and storerooms. One contained three large storage bins of dried mud with bung holes at the base through which the grain was extracted. Another two rooms contained storage jars and more mud bins.

A large storage building, Building F1, lay towards the centre of the lower town. Measuring 27 x 16m with its long axis east-west it was entered from the east by a gateway 4m wide leading into a long room or courtyard flanked by another long narrow room to north and south. At the east end of the northern room is a wide mud-brick staircase. The western part of the building is entered by a doorway in its south wall into a corridor serving a suite of six rooms. Immediately inside the door on the left is another substantial mud-brick staircase with treads strengthened with timber. Some of the ground floor rooms had stone flagged floors covered in a very large number of circular mats like modern day *tabag* and larger pieces of matting. The north-western room must have been used to store



Plan of Building F1.

*Circular mats
within one of
the store rooms
of Building F1.*



*Large seal
impressions on the
blocking wall filling
a doorway.*

an important commodity as its doorway had been blocked by rubble on the plastered surface of which seals were impressed. The first floor

was supported by stout circular posts of palm set on stone post-pads. Amongst the fallen rubble from that level were bricks bearing painted plaster and one with hieroglyphic signs. The circumstances surrounding the burial of an adult in amongst the debris in one ground floor room can only be guessed.



*Seal
impression
on mud.*



*Painted fragment of brick with plastered
surface bearing hieroglyphs.*

An industrial quarter

In the later Kushite period an area which had hitherto been devoted to housing and intensive occupation with several cylindrical ovens, large numbers of shallow pits and vast quantities of highly fragmented animal bone, was developed for industrial activities. Set in a deep pit cutting through the walls of one building and down into the clean wind-blown sand to a depth of 2m was a rectangular kiln 5.32 x 3.64m in size built of mud brick and with arched flues in each end wall, accessed on the outside by steeply sloping ramps partly delimited by spur walls. Spanning the chamber were six cross walls, each pierced by a wide arch rising to a height of 1.34m above the internal floor. Resting on these cross walls which were



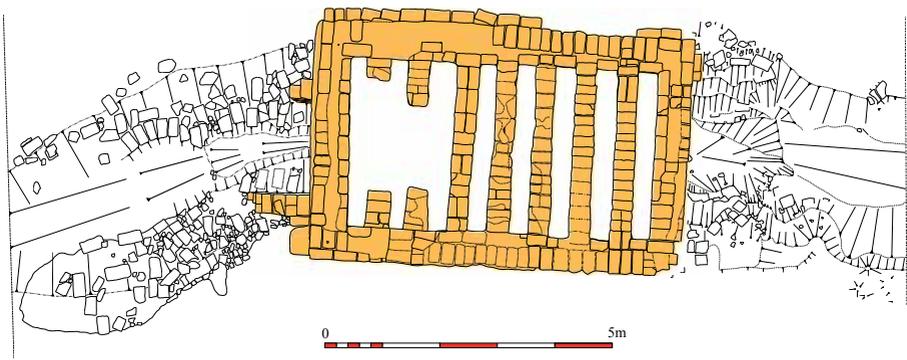
The southern kiln with the arches of the furnace chamber exposed.

only around 300mm apart would have been the now vanished floor above which will have been the chamber where the material being fired was placed. No trace of this remained.

Thirty metres to the north was a very similar kiln, a little larger at 6.63 x

4.24m. It was better built than the other kiln and within its rubble were many pieces of the special floor tiles pierced by rectangular holes to let the hot air circulate out from the furnace chamber. It is possible that this installation is a replacement for that to the south: in its turn its bricks seem to have been reused in the temple, Building G1.

These kilns are of especial interest. When first discovered in 1993 they were unique in the Nile Valley where kilns at all periods were invariably circular in plan. More recently another rectangular kiln broadly contemporary with those at Kawa has been found by the Louvre's expedition at Muweis 400km to the south east near the Kushite capital at Meroe. At Kawa although the kilns had clearly



Plan of the northern kiln with the sloping ramps down to the stoke-holes at either end.

been heavily used no trace remained of what has been fired, baked or otherwise processed within them.

Almost identical kilns are a common feature in the north-western provinces of the Roman Empire where they are usually used to fire tile and brick. The excavator of the Muweis kiln, Michel Baud, did find what he interpreted as overfired bricks associated with the Kushite kiln there. Much fewer such structures are known in the eastern part of the Empire but one used for pottery production has been found at Elaiussa Sebaste (modern Ayaş) in South-Eastern Turkey and there may well be others in the region. We know there were close links between Kush and the Roman



Empire and these Roman-style kilns at Kawa and Muweis may be the result of technological exchange.

The furnace chamber of the northern kiln.

The Kushite cemetery

Several hundred metres to the east of the town is an extensive cemetery. Through the work of SARS the town and the cemetery have been excavated



A prominent black-stone covered tumulus.

in parallel. Although much the areas investigated in the town date to the earlier Kushite period almost all of the graves in the cemetery are much later, dating probably to the first few centuries of the Christian era. The cemetery covers an area of approximately 28 hectares and is marked on the surface



Excavating in the cemetery in February 2013. The site is very exposed and when the gale-force sand laden wind blows excavation is difficult. A locally produced palm-frond fence alleviates the problem.



by a number of what appear to be different types of tomb monuments of which over 1000 were recorded by the survey in 1993. Many appear to be tumuli, mounds of earth covered in small stones, either quartzite pebbles, black stone fragments or a combination of the two. Others are the very denuded remains of square structures, platforms (*mastaba*) or pyramids usually constructed of mud brick sometimes on a stone socle.

Descendary and tomb monument, the stone base of a mastaba or pyramid.

A number of distinct areas have been excavated in the cemetery in an attempt to gain an overview of its development over time. Towards the southern end of the site an area of approximately 20m square was investigated which included two prominent tumuli. However excavation showed that the tumuli did not appear to mark the positions of two graves but that the whole area was covered in graves – 21 were noted in the area of which 14 were excavated. Apart from the ‘tumuli’ all traces of tomb monuments had been removed by wind erosion. Cutting into the natural ground surface were very clearly defined pits filled with

wind-blown sand. These were the robber pits which had been dug into the graves to plunder them, the holes then being left open to fill naturally. More difficult to locate were the original grave features as they had been cut into the alluvium and refilled with the same material as soon as the body or bodies were



A narrow stepped descender.

placed in the grave. Most tombs were of a standard type with a stepped or sloping cut, a descender leading down into the ground to a depth of sometimes more than 2m, at which point a chamber was hollowed out of the western end of the descender. When the burial was made, typically the body was lain in an extended position on its back, head to the west, the doorway



A burial chamber hollowed out of the alluvium. It contained a slightly flexed body placed in a coffin. The body was too long for the chamber and the coffin extended out into the descender.



was blocked with a wall of mud bricks and the descandary was refilled. A tomb monument was then presumably constructed on top in some cases.

Many graves did not contain objects to accompany the deceased into the afterlife while others were quite richly furnished. The most precious objects will have vanished long ago – it seems clear that rich graves were robbed soon after

A well preserved blocking wall of mud bricks.



Multiple burials in a tomb. This one had been used on several occasions finally containing a total of seven bodies. It may have been a family vault.

burial often by people who knew the nature of the material buried with the deceased. Fortunately for the archaeologist the bones, pottery and objects of other metals than gold were of no interest and although frequently damaged and disturbed they still remain in the graves.

Grave (JG2)2 had a barrel-vaulted mud-brick chamber placed at the west end of the descendary. Although very badly plundered it contained two very fine objects, an amphora and a copper-alloy beaker.



Grave of an adult buried with four painted ceramic jars, one with a copper-alloy bowl over its mouth. There was also a scarab and many strings of beads.



The barrel-vaulted chamber of grave (JG2)2.



This amphora from grave (JG2)2 was made in Campania in southern Italy at some time between the late 1st century BC and AD 79 when the kilns were destroyed along with Pompeii and other sites by the eruption of Vesuvius.

Elite burials in the Kushite cemetery

The most prestigious burials discovered so far in the cemetery lie towards its north-eastern edge overlooking a shallow valley. Here are the remains of pyramids constructed of dressed sandstone blocks. Such monuments have a very restricted distribution in Kush and are only known in the royal cemeteries at el-Kurru, Nuri, Jebel Barkal and Meroe where they are also found in the elite western cemetery. Six pyramids have been excavated so far the latest of which although constructed of substantial blocks was only 2.78 x 2.62m at the base. It was set within an enclosure formed of a single row of blocks. The descendery was also small leading to a burial chamber containing the skeletons of three small children.



The small stone pyramid with its enclosure; the large pyramid is visible in the background.

Immediately to the south are the very denuded remains of another pyramid, only the rubble core of which remains. The associated tomb is massive with a descendery 12.94m long, 2.8m wide at the surface and attaining a maximum depth of about 3.2m. At its west end a stone chamber had been built 2.59 x 2.08m in size internally roofed with the only



The skeletons in the barrel-vaulted tomb all but one aligned north-south with the head to the south.



The fine stone doorway leading into the barrel-vaulted tomb.

known dressed stone barrel vault in a Kushite tomb. Entered through a fine stone doorway with a lower lintel much damaged by the robbers and an upper lintel with cavetto cornice, it contained the bodies of seven individuals one of whom wore six copper-alloy bracelets. Another individual may have had silver anklets.



The largest pyramid discovered at Kawa. Only some of the core, the lower part of the south and east walls and the south wall of the offering chapel remain.



Pyramids at Jebel Barkal of similar form and size to Kawa's largest monument.

The tomb of the northernmost pyramid had been totally destroyed by the robbers and the monument was also badly damaged. At over 10.6m square at the base it is larger than many of the broadly contemporary pyramids of Kushite kings and queens. Associated with it was a fine tin-bronze offering table decorated with a scene of incense and libations being offered to the god Osiris (photo on back cover).

The inhabitants of Kawa

by Daniel Antoine

Approximately 70 individuals have been excavated from the Eastern Cemetery at Kawa, all of whom seem to have lived in the town during the first few centuries AD. Those recovered represent examples of all segments of the population, ranging from very young infants to older adults. The skeletons are still undergoing study but they are already revealing some interesting insights into what it was like to live and why people died at Kawa. Of the individuals analysed, approximately a quarter are children or juveniles and the remainder appear to have died between the ages of 20 and 50 years, with only a few surviving into old age. The adults include both males and females but fewer males appear to have lived beyond 35 years.

Fractured bones were found on many adults, including several individuals with depressed fractures to the forehead and top of the skull, as well as one broken nose. These individuals must have been cared for as the fractures had repaired themselves and were fully healed. Interestingly, the skull fractures are small circular shallow depressions (approximately 20-60mm diameter) and are probably the results of some localised trauma, as their skeletons do not show any other signs of violence. These circular fractures appear to be limited to the forehead and top of the skull and are probably the result of daily activities or interpersonal violence but further work is required to determine how widespread these injuries were and their possible significance.

The skeletons also provide unique insights into past diseases and many of the adults show signs of wear and tear associated with osteoarthritis (OA). This joint disease occurs



Two healed depressed fractures, viewed from above, on the foreheads of two adults.

when the cartilage on bone articulations degrades, resulting in bone on bone contact. Direct contact between two bones changes and damages them; it can be very painful. The occurrence and location of OA is usually influenced by several factors including old age, localised trauma, activity and genetic predisposition. Unfortunately, it is difficult to determine what caused the OA observed at Kawa but the vertebrae (especially in the neck and lower back), shoulders and feet in adults of all ages were particularly affected. Healed fractures, as well as fused bones, were also found in several feet, suggesting that the people from Kawa were very active, which may explain why OA is present in many individuals.

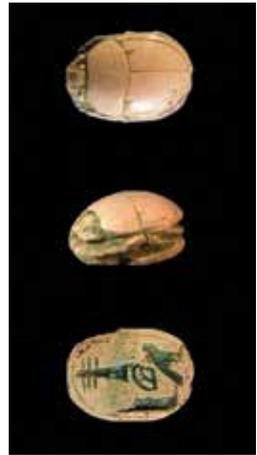
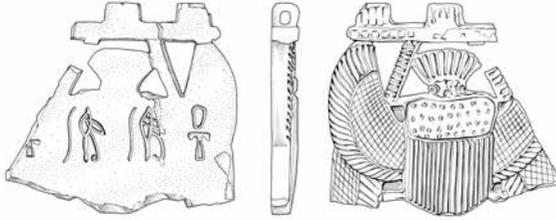
Other signs of ill health include benign tumours of the meninges, called meningiomas, evidence of which was found inside several skulls. The meninges are the protective membranes around the brain and most meningiomas are benign and not life-threatening, making up nearly 1 in 5 of all primary brain tumours in the modern world. The orbits of some adult skeletons were also porous, a condition called Cribra Orbitalia. These changes suggest some individuals suffered from a poor diet and nutritional deficiencies, and life may not always have been easy for some. The teeth in many skeletons also show signs of tooth decay, indicating that sugar – most probably from fruits – was part of the diet. Unfortunately, many crowns are no longer visible due to the large amount of dental wear present in this population. Even young adults have worn teeth, possibly the result of a coarse diet. The severe wear is probably the reason why several teeth became infected, forming dental abscesses in the bone around the roots of many teeth (16 and counting) which, in one case, also infected the sinuses above the dentition. Such infections would have certainly caused great pain and severely affected the individuals quality of life.



Healed fracture of the lower leg bones, with an x-ray of the tibia showing a fully healed but shorter bone.

The objects recovered during excavation

A wide range of material has been recovered from the site of which a very small collection is illustrated below. Among these is one of the granite rams from Taharqo's temple, a figurine of Isis suckling the young Horus, a steatophagus mud figurine of a woman and a basin decorated with appliqué crocodiles on the rim.



Museums with important collections of material from Kawa

The excavations at Kawa by the Oxford Excavation Committee uncovered a large number of artefacts. As was standard practice at the time institutions who had supported the excavations financially were entitled to a share of the finds. It is thus that substantial collections or antiquities from Kawa are to be found in several museums. The most important collections, of which a few key pieces are highlighted here, are in the following museums:

Sudan National Museum, Khartoum

SNM 2678 – Inscription of Taharqo on which he records his visit as a young man to Kawa

SNM 2679 – Inscription of Taharqo recording his gifts to the temple at Kawa.

SNM 2682 and 2681 – Rams from the north side of the approach to the Temple of Taharqo and flanking the doorway into the hypostyle hall.

Ashmolean Museum, Oxford

AN1936.661 – The shrine of Taharqo. The outer decorated face of its walls and roof slabs were removed in their entirety from within the hypostyle hall in the temple and re-erected in Oxford. Also the blocks from the adjacent shrine of Aspelta (AN1936.662) were similarly moved.

AN1931.553 – Ram identical to those in the Sudan National Museum, flanking the doorway into the hypostyle hall in the temple.

The British Museum, London

EA 1779 – Ram identical to those in the Sudan National Museum, from the south side on the approach to the temple

EA 1770 – Sphinx of Taharqo from the shrine in the south-east corner of his temple. Taharqo is portrayed in an Egyptian style but with the distinctive Kushite double uraei (cobras) on the head and the facial features which proclaim him clearly as a man from Sudan.

EA 63585 – Bronze prow-terminal from a ceremonial barque in the form of an aegis of a goddess incised with cartouches of King Arnekhamani (c. 235-218 BC) on the collar.



*The Sphinx of Taharqo
(photo © The British Museum).*

Site protection

As with many archaeological sites in Sudan the site is potentially at threat from a number of agencies. The sand-laden wind which has done so much to preserve the site is also in some circumstances responsible for its destruction. Wind erosion is on some parts of the site continuing to adversely affect the archaeological remains, particularly damaging the very soft Nubian sandstone from which the major monuments are constructed. In order to reduce the impact of this steps have been taken to bury the vulnerable stonework as much as possible to protect it. Should you be tempted to pull back the sand from walls to examine them please do ensure that you replace the sand before you leave otherwise irreparable damage will be caused.

In the past vehicles were driven across the site which, as the archaeological remains are often immediately under the surface, has resulted in destruction. A barbed-wire fence has been provided to stop the ingress of motorised vehicles and also serves to delimit the major archaeological zones. However there are archaeological remains across the whole area so please do keep to the designated tracks within



the buffer zone, the area delimited by the concrete posts.

Erecting the barbed-wire fence around the core archaeological zones, here the main town site.



Marking out the boundary of the buffer zone.

Visiting Kawa

Kawa can most easily be visited by car. From Dongola take the bridge across the Nile and turn right towards Kareima at the T-junction. After approximately 5.5km leave the tarmac road at kilometre post 166 (distance from the start of the road on the outskirts of Kareima) and follow the track southwards which will take you through the Kushite cemetery to the base of the town mound.

By public transport from Dongola take a Toyota box to the *mushra* in Seleim and from there walk south hugging the river bank for 6km to the site passing through the modern village of Kawa. There are no visitor facilities on or in the environs of the site.

Permits to visit the site can be obtained either from the offices of the National Corporation for Antiquities and Museums in Khartoum which is located behind the Sudan National Museum (entrance from Sharia ej-Jamaa) or from the Tourist Police Office at the entrance to the site adjacent to the Visitor Centre.

Although Kawa is one of the most important archaeological sites in Sudan there is relatively little for the visitor to see. In the town the most prominent features are the spoil heaps from the 1930s excavations. A short section of the temenos wall is upstanding while the tops of the walls of Taharqo's temple are clearly visible. Some columns of the temple built by Tutankhamun and its neighbour to the east protrude above the sand as do the walls of the western kiosk. On the summit of the main mound to the south of the temples the walls of a few houses can be seen as can the remains of houses excavated in area B. Elsewhere outlines of walls are clearly visible level with the ground surface which is strewn with pottery sherds and other artefacts. Some tomb monuments are visible in the cemetery particularly at its north-eastern end.



The walls of Building D1 visible on the surface. This was a substantial square building with mud-brick walls over 1m thick.

Further reading

For the earliest ‘excavation’ at Kawa see

Gleichen, A. E. W. 1888. *With the Camel Corps up the Nile*. London, pages 281-2.

The work of the Oxford Excavation Committee was published in detail by Lam-ing Macadam and Kirwan:

Kirwan, L. P. 1955. ‘Account of the Excavations, 1935-6’, in Macadam 1955, 207-237.

Macadam, M. F. L. 1949. *The Temples of Kawa I: The Inscriptions*. London.

Macadam, M. F. L. 1955. *Temples of Kawa. II. History and Archaeology of the Site*. Oxford.

The survey and test excavations at Kawa by the Sudan Archaeological Research Society are reported upon in

Welsby, D. A. 2001. *Life on the Desert Edge. Seven Thousand Years of Settlement in the Northern Dongola Reach, Sudan*. SARS Publication no. 7. London.

Interim reports on later work have appeared in conference proceedings and a number of journals most notably *Sudan & Nubia* where articles by several authors may be found in bulletin numbers 2, 4-6, 12-15 and 17. For further information please visit

<http://www.sudarchrs.org.uk> and <http://www.britishmuseum.org/kawa>

For books providing the broader context see

Edwards, D. N. 2004. *The Nubian Past. An Archaeology of the Sudan*. London and New York.

Török, L. 1997. *The Kingdom of Kush. Handbook of the Napatan-Meroitic Civilization*. Leiden.

Welsby, D. A. 1996. *The Kingdom of Kush, The Napatan and Meroitic Empires*. London.

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An Arabic version of this guide was translated by Murtada Bushara Mohamed.





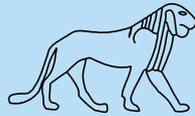
*Large stone pyramid during excavation
in January 2014.*



The tin-bronze offering table associated with the large dressed stone pyramid at Kawa.

SUDAN

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