

CAHIERS DE KARNAK



13

Centre franco-égyptien d'étude des temples de Karnak

Cairo
2010

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CSA/USR 3172 du Cnrs

CAHIERS DE
KARNAK 13

2010



Presses du Conseil Suprême des Antiquités de l'Égypte

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EXCAVATIONS OF THE QUAYS AND THE EMBANKMENT IN FRONT OF KARNAK TEMPLES. PRELIMINARY REPORT

Mansour Boraik (SCA – CFEETK) *

STARTED IN 2006 under the initiative of Luxor City Council in collaboration with the Supreme Council of Antiquities (SCA), the important development project of the area between the temples of Karnak and the Nile entailed the destruction of all structures built in this area of the city: the houses of the village of Karnak, the French village, the SCA's rest house, the park, the Luxor stadium, numerous shops, the Legrain rest house, the Antiquities offices and the SCA's engineering workshops (**fig. 1-2**). The aim of the project was to build a vast esplanade, a visitor center, a car park, a new complex for the Franco-Egyptian center and its rest house.



Fig. 1. General view of the excavations in front of the temples of Karnak. © Sca-Cfeetk.

A monitoring archaeological team began the work on a rescue plan and recorded the archaeological remains brought to light during this fieldwork.¹ A series of test soundings carried out to the south and the north of the tribune located at the end of the avenue of sphinxes had revealed new traces of a great embankment and two quays constructed in front of the temple. These soundings have revealed over 250 m of this great embankment, which was constructed to protect the temples from floods as well as

* I would like to thank Dr Zahi Hawas, SCA secretary General, Mr Sabri Abdel Aziz, Head of Egyptian Antiquities Sector, Mr Ibrahim Soliman, Director of Karnak inspectorate, Mr Hamdy Abd el-Jalil, Chief inspector, Mr Amin Ammar, Chief inspector, Mr Mohamed Hussein, Director of Karnak Restoration, and special thank to Dr Christophe Thiers, Director of Cfeetk-USR 3172, Antoine Marmousez (Cfeetk-USR 3172) for topographic survey, Angus Graham (London Univ.) and Matthieu Ghilardi (Cfeetk-USR 3172) for the geomorphological investigations, Edward Johnson and Owen Murray from ARCE project and my excavation team.

¹ My excavation team consists of the archaeologists: Eltaib Gharib, Moamen Saad, Salah El Masekh, Mohamed Hatem, Saad Bekhit, Shaemaa Montasar, Suzan Sobhy. Conservators: Abdelhakim Elbadry, Saady Zaki. Illustrator: Ayad Barbary.

large areas of inhabitation dating back to the late Ptolemaic period and to the 4th century AD respectively in the upper phase.²

We carried out excavation in six areas according to the master plan of the development Project in front of Karnak Temple. These areas from south to north are as follows:

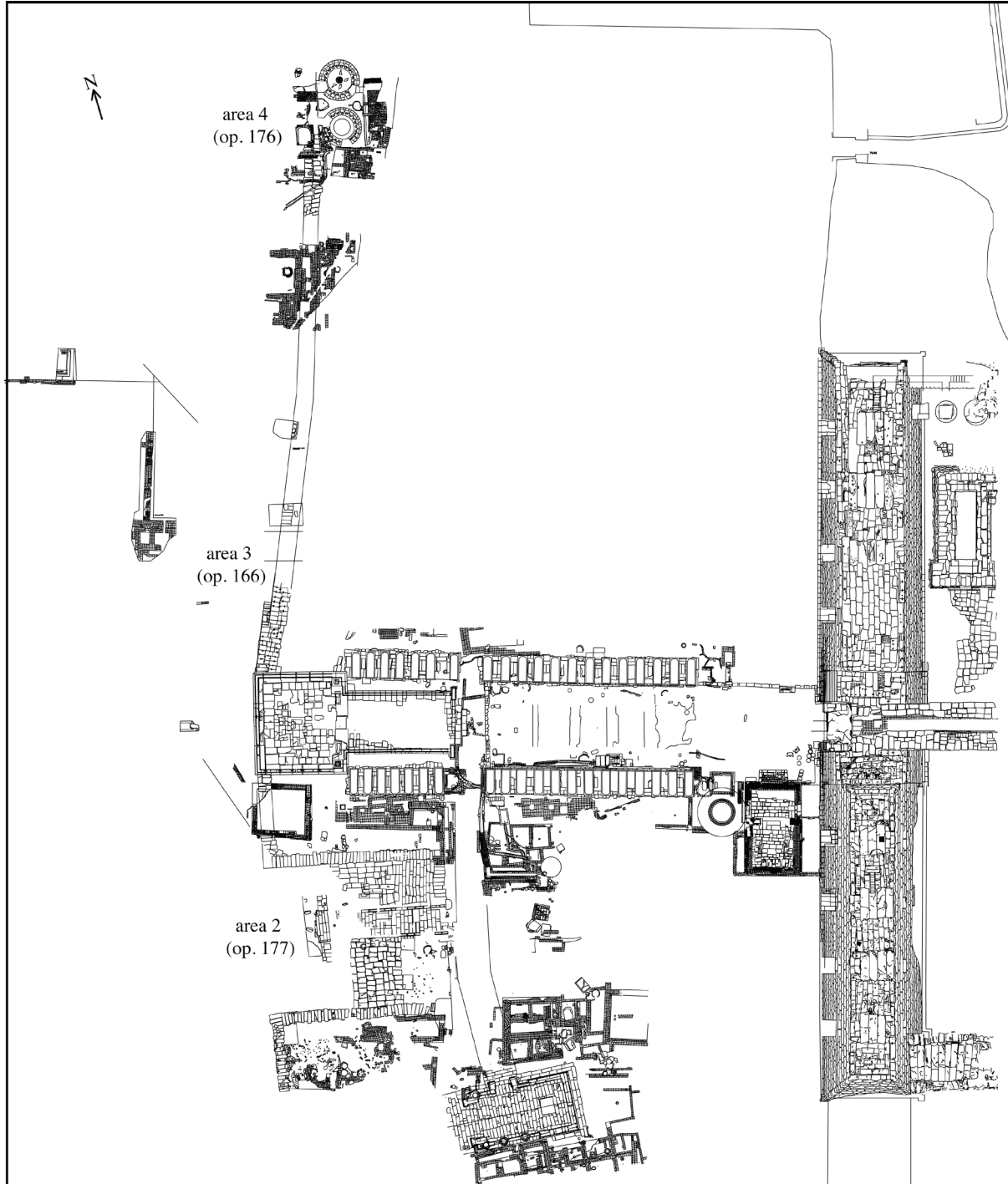


Fig. 2. General survey of the archaeological remains. Area 1 is not included.

² See M. BORAİK, “Découverte de la grande digue protégeant Karnak des crues du Nil”, in G. Zaki (dir.), *Le Domaine d’Amon-Rê. 40 ans de coopération franco-égyptienne à Karnak*, 2nd ed., Cairo, 2008, pp. 76-83.

1. Area 1 (CFEETK operation 167)

Located south west of the first pylon and bordered by asphalt roads to the north and the east sides, area 1 measures 58 x 34 m. It was occupied first by a school demolished recently, so we call it "*El-madrassa site*", and then used by the SCA as parking area.

This site was firstly chosen as a place for the Karnak offices, so the upper phase was removed mechanically and several soundings were excavated by SCA archaeologists headed by Eltaib Gharib in order to investigate any significant archaeological encounters.

Systematic excavation was carried out in the site and inscribed sandstone fragments, mudbrick and redbrick structures, pottery sherds in addition to several other archaeological remains were uncovered.

The excavation revealed a massive sandstone wall over 4.50 m high, 1.60 m wide which was constructed in 14 courses of large blocks (**fig. 3**). The façade of the wall has a slight batter. A trench (4 x 1 x 3.65 m) was dug down the west (outside) of the wall facade reaching the water table at 71.10 m ASL; we found that the first occupation began in Ptolemaic times about 1.20 m from the top of this wall and extended to the west. The stones in the two upper courses of this massive wall have iron chisel marks on them indicating that they were made during the Ptolemaic-Roman period. One of stones in the wall is a reused sandstone lintel measuring 1.20 x 0.66 x 0.35 m decorated in low relief with the winged sun disk and the remains of the titles of Akoris (*[hnm mꜣ'.t] Rꜥ*) painted in red pigment upon erased cartouches; the king was beloved of Amun-Ra. On the other side, the right part bears the Horus name of king Psamuthis (*ꜥꜣ phty Rꜥ mꜣ'r sp.w*) and the left part bears his name in an erased cartouche (*pꜣ šrj n Mw.t*): Akoris's name (*Hkr*) was added in red pigment (**fig. 4**)³.



Fig. 3. General view of the embankment wall (area 1). © Sca/O. Murray.

³ See Cl. TRAUNECKER, "Essai sur l'histoire de la XXIX^e dynastie", *BIFAO* 79, 1979, p. 403-404. The block does not seem to match with the preserved walls of Akoris' chapel. It could belong to the south inner walls but the disposition of the cartouches is quite different as it is on the walls.

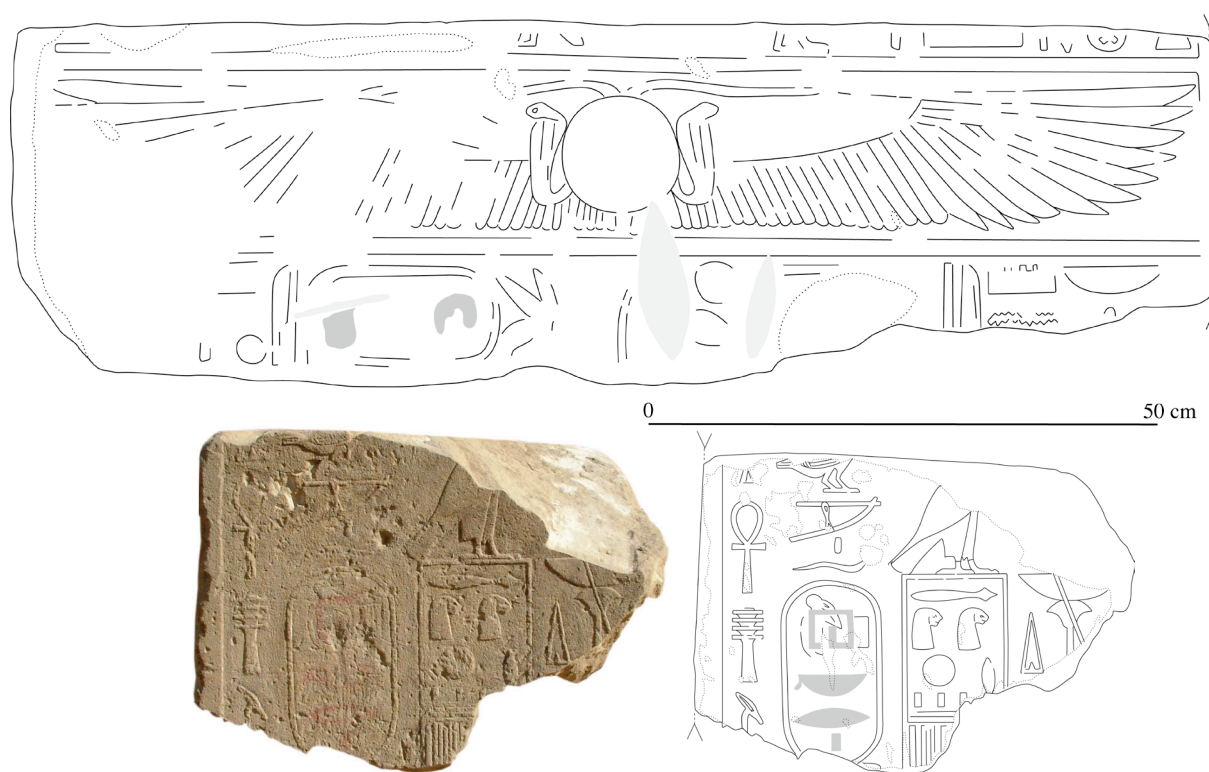


Fig. 4. Lintel of Psamuthis reused by Akoris.

The excavations along the wall have revealed two staircases leading down the outer face of the wall from south to north. The first staircase measures 1.10 m wide, its direction was towards the north-east. We found that it was blocked by redbrick during the Roman time and used as one of the walls of Roman house. A big cooking hearth was discovered at a depth of 1.20 m.

The north staircase located to the north of the first is 25.50 m long and 1.10 m wide. It was also blocked by redbricks to reuse the area to the west for inhabitation. It goes down toward the north-east like the first one. These two stairs suggest that this wall was also used as a quayside. The stairs enabled the embarkation and disembarkation at different heights of the Nile during its annual cycle.

Excavations carried out to the west of the wall unearthed a settlement in two phases. The lower phase dates back to the late Ptolemaic period and the upper to Roman times. The walls of the Roman inhabitation area which were excavated were built of mud brick and some in red brick. A lot of pottery was found and consisted of vessels, jars, bowls, oil lamps, vats, terracotta figurines and cosmetic containers along with Roman columns capitals and inscribed blocks. Two of them have the name of Nectanebo II.

The southern part of the settlement has ashy patches indicating that it was used as an industrial area for making pottery as many unbaked vessels were unearthed along with many remains of domestic hearths and ovens. A water well was also found, made of red brick, with pipes to supply the houses with water.

2. Area 2 (CFEETK operation 177)

This area is located to the north of the first site, and north of the Mausoleum of Cheikh Ali and his son, which is built on the embankment. This area was occupied by the offices of the Karnak Inspectorate, the “Legrain house” and the asphalt roads. The excavation began in May 2007 and we discovered that the site was used as a cemetery in the 19th century.



Fig. 5. View of the ramp linked with the quay. © Sca/O. Murray.

The excavation began after the mechanical demolition of the modern construction as two water pipes were crossing the site.

Previous excavations were done in the site by J. Lauffray⁴ and revealed the north part of the quay and part of Taharqa's ramp, and also a Roman occupation was found during this excavation in the area between Achoris's chapel and the avenue of sphinxes. A team under my supervision revealed that the massive sandstone wall which was discovered in Area 1 is linked to the ramps and subsequently the tribune platform of the first pylon.

The excavation was gradually extended towards the south east of the pylon in the area where J. Lauffray found the eastern parts of two ramps to the south of the tribune which linked with them by the same sandstone wall. Our excavations have extended this work and made the important links between the ramps, the tribune and the wall (**fig. 5**).

Under the top soil we found a big ramp which was constructed of large sandstone blocks and covered by a layer full of Roman occupation containing a lot of ceramic wares, grinding stones and several fragments of offering table and sculptures.

Due to the excavation in the site, we found that the nature of the quay at the time of its construction was a big ramp going directly towards the Nile and was built of large sandstone blocks with a pavement made of rectangular slabs.

The width of the ramp is 22 x 24 m, the length of the south wall is 23.70 m and 25.5 m for the north one, and the height of both walls towards the west is 4 m (till now).

The southern part of the ramp was covered by different layers of Nile sediments. A layer full of sandstone chips occurred at the western end towards the Nile side in the lower part on the top of the pavement and probably derived from the construction of the wall and the dressing of the blocks. This suggests that the quay was constructed over several years with a number of occupations when the blocks were dressed and the debris forming part of the deposits in front of the walls, also as deposits of sediments increased against the wall and suspended silts became part of the composition.

⁴ J. LAUFFRAY, "Abords occidentaux du premier pylône de Karnak. Le dromos, la tribune et les aménagements portuaires", *Kémi* 21, 1971, pp. 77-144; Cl. TRAUNCKER, "Les rites de l'eau à Karnak d'après les textes de la rampe de Taharqa", *BIFAO* 72, 1972, p. 195-236.

It was originally one ramp and during the reign of Taharqa from the 25th dynasty this main ramp was divided into three parts after constructing a ramp in the middle of the quay as following:

The central ramp is located 7 m to the south of the north wall of the main ramp and 15.54 m to the north of the southern one. It is 3.60 m wide, with two parapets 1.30 m high on both sides of the ramp. The length of the northern wall is still preserved at 15.60 m while the southern one is 13.60 m long.

Some soundings were dug through the site revealing that probably Taharqa found that the main quay sloped steeply towards the Nile, so he abandoned the southern part and recycled some of its blocks in the construction of the pavement for his new one before back filling it. The quay turned out have consisted of two ramps, one to the north for the common people, and a royal one next to it. They were connected to the tribune with a wall measuring 4.6 m and still preserved in 4 m height (so far).

This new one was designed to be slightly sloped and most elegantly constructed with low parapet walls that are engraved on one side with the titulary of Taharqa and on the other with an hymn. It could be used by the royal families and the priests during the course of various rituals connected with the Nile and its inundation¹. The names of Taharqa were defaced during the 26th dynasty and two pedestals were positioned flanking the eastern end of this ramp with two sphinxes of Psametik I of the 26th dynasty.⁵

On the surface of blocks of the ramp there are a lot of marks. J. Lauffray⁶ argues that they represent traces of haulage and that this ramp had a purely functional purpose of pulling barks out of the water and unloading of materials; however we think also that they were served for ascending to the temple and it is very clear on the surface of the ramp where it turned out to be a representation of a wooden pavement made of sandstone.

The main ramp was modified in the Greco-Roman times. Two courses on the top of both the southern and northern walls were added after an abandonment of it and not used anymore because the Nile shifted to the west and moved its course. The site showed that the river since migrating west after the construction of the quay and the embankment has not migrated to the east again. Had it down so it would have eroded away the later roman occupation which was found to the north, east and south of the quay. Workshops possibly for making faience were found to the south; they have a circular shape with amphoras neck installed to blow the air inside (**fig. 7**).⁷ Two small water wells were also found, the first to the east of this industrial area and the second within the third abandoned ramp.

Many of mooring loops were found in both of its walls for embarkation and disembarkation of the boats. Indeed, the presence of the water table at 71.30 m above sea level did not allow continuing excavating the area. In order to get the water table in an elevation of 68 m above sea level, it was decided to install pumps in front of the ancient harbor/quay to extract the water with the cooperation of ARCE. Two deep boreholes (up to a maximum depth of 25 m) were drilled at the beginning of May 2009 and pumps were then installed. A piezometric gauge was installed between the two deep boreholes in order to check the evolution of the water table during the next field campaigns.

77 samples from the boreholes were analyzed for visual description in the laboratory of the ARCE by Matthieu Ghilardi (USR 3172-CFEETK). The samples are still stored for further investigations (wood and bone determination, etc.). From the report of Matthieu Ghilardi, the next comments focus

⁵ CI. TRAUNECKER, *BIFAO* 72, 1972, p. 196-198.

⁶ J. LAUFFRAY, *Kémi* 21, 1971, p. 104.

⁷ For a recent overview about faience production in Egypt, see M.S. TITE, A.J. SHORTLAND (eds.), *Productions Technology of Faience and Related Early Vitreous Material*, *OUSA* 72, Oxford, 2008.

of the sediment analyzes in order to distinguish different sedimentary units. The help of radiocarbon dating could help to better understand the complete landscape changes in the neighborhood of the quay/ancient harbour.



Fig. 7. Two ovens (with amphoras neck) and a well. © Sca/O. Murray.

Based on the results, several sedimentary units can be identified and described as follows:

- In the lower part of the borehole (north well), at a depth of approximately 25 m, rounded and angular pebbles were found and this suggests the presence of a bedrock. Indeed, there is a strong evidence that in 25 m in depth (± 2 m) there is no Nile river sedimentation.
- Above the pebbles layers, between 25 and 20 meter in depth (± 2 m) white coarse sands mixes locally with some gravels and small pebbles intercalation. This sedimentary was recorded in all the boreholes and indicates the transition between the bedrock and the Nile river dynamics and we are probably on the margins of the main channel.
- The thickest sedimentary unit is found approximately between 20 and 13 meter (± 2 m) and is characterized by sediments, ranging from clays to coarse sands with a grey color. On the lower part of this layer, in a depth of 17 m (± 2 m), we can observe the presence of important wood and bone remains (samples stored and preserved in the laboratory of the ARCE). The sediments are generally composed by grey medium sands, the color indicates presumably an important content of ferromagnetic minerals. This layer corresponds to the active Nile River channel and the dating of the pieces of wood could significantly help in dating the harbor infrastructure and the installation of the Nile river in front of the Karnak temples.
- The fourth sedimentary unit, identified from 13 m (± 2 m) to the present day topographic surface, is characterized by yellow brownish sands, ranging from clays (most upper part of the layer) to coarse sands/ gravels.

3. Area 3 (CFEETK operation 166)

This area is located to the north of the tribune. A wall, uncovered by H. Chevrier in 1947,⁸ is linked to the north wall of the platform and extends northwards. A large part of this embankment wall has been unearthed and revealed further staircases enabling embarkation of the boats at the changing level of the river during its annual cycle. It seems that this part of the embankment was used as a secondary quayside during the low water of the Nile.

The excavation has revealed that the first occupation dates back to the Late Roman period where some cooking hearths were found with some mud brick structures (**fig. 8**). The embankment was found at about 1.5 m deep from the ground surface and about 45 m from the top existing point of the tribune. The embankment wall exposed in this sounding was constructed in the same technique of the southern part with the same large sandstone blocks.

The secondary quay is located 7.5 m to the north of the tribune and consists of two staircases facing each other, the southern one is 6.6 m long x 1 m wide and has 20 steps, constructed of sandstone blocks, the distance between those two staircases is 31.8 m and the northern one is 8.2 m long x 1 m wide and as the other we revealed 20 steps till the water table. The height of the wall between those two staircases is 4.5 m and was built of large blocks. Many mooring loops were found in the walls for embarkation and disembarkation. An auger made by Matthieu Ghilardi revealed that there is a platform connecting the two staircases 2.5 m below the 20th step of the stairs (**fig. 9**). Many bronze nails were uncovered during the excavation within the Nile deposits indicating that they may have been dropped from the ancient dynastic boats.

We extended the sounding to the north of the secondary quay and revealed the extension of the embankment toward the north.



Fig. 9. The northernmost staircase and one of the mooring loops.

⁸ H. CHEVRIER, "Rapport sur les travaux de Karnak", *ASAE* 46, 1947, pp. 147-161.

4. Area 4 (CFEETK operation 176)

The excavation, carried out by my assistants Salah El-masekh and Mohammed Hatem, was established on the supposed area of the extension of the embankment 75 m to the north of the tribune in a place covered partially by asphalt with the upper 150 cm disturbed by modern houses of the villagers, fresh water pipes and electric cables.

The initial excavation was 10 m east to west and 30 m north to south. It was gradually extended towards the north-east as the amount of discoveries became more and more substantial. Under the top soil at approximately 77.20 m (ASL), a layer was encountered with very rich inclusions mostly full of pottery and probably back fill from older excavations. This layer was covered with traces of masonry consisting of a foundation of red brick and reused blocks of the dynastic periods. These are all perhaps part of a Roman or Medieval settlement and a lot of ceramic wares, grinding stones, fishing net weights, terracotta figurine were found. In addition four pottery ostraka written in black were found during the excavation of these houses indicating that this occupation dates back to the Late Roman period and continued or was re-occupied in the Medieval period.

A large mud brick wall was found in the eastern part of the sounding at a depth of 76.64 (ASL). It was apparently oriented north-south and associated with other brick masonry visible in the eastern and western baulks (**fig. 10**). Against one of these mud brick construction and at a depth 73.46 m (ASL) at the level near foundations, a hoard of 316 bronze coins was discovered;⁹ these enable us to date those mud brick structures to the second half of the second century BC. These features were sealed at the destruction level of *tholoi*-baths;¹⁰ the baths were directly built on the top of the last course of the embankment.



Fig. 10. View of the Ptolemaic baths, from the north. © Sca-Cfeetk.

⁹ See in this volume, M. BORAÏK, Th. FAUCHER, “Le trésor des bains de Karnak”, pp. 79-100.

¹⁰ M. BORAÏK, “Ptolemaic Baths in front of the Temple of Karnak. A Brief Preliminary Report – November 2007”, in Fr. Boussac, Th. Fournet, B. Redon (eds.), *Le bain collectif en Égypte, Études urbaines 7*, 2009, pp. 73-86.

The building is characterized by its *tholoi* circular rooms (1 and 2), each with hip bathtubs (individual seats for washing), surrounded by three rectangular rooms extended towards the west (room 3), the south (room 5) and the east (room 6); it follows a north south orientation. Most of the hydraulic installations have been preserved due to the razing down to foundations and is indeed quite low (70 cm above ground): individual hip bathtubs, basins, drainage channels have been discovered as well as pebble or decorated chipped stone mosaic floor and painted plaster. The red brick masonry apparently bonded with earth, appears to have been subjected to a process of systematic robbing and reuse during the phase of deliberate destruction of the baths. The floor, tubs and basins owe their state of conservation to the quality of the plaster and mortar that either covers or is a constituent of these features.

The diameter of the southern *tholos* is between 5.7 m and 5.8 m for the northern and each *tholos* contains 16 individual hip-bathtubs with entrances separating them in two groups of 5 and 11 each; separated by a masonry wall measuring only 1.1 m width.

The floor of the southern circular room consists of two concentric registers; the internal circle 2.42 m in diameter made of mosaic of small multi-coloured pebbles (white, red, black and brown) set in red mortar; it is separated from the tubs by a second register which has a white band made of mosaic of white stone flakes. The mosaic floor of the northern circular room is made of white stone flakes set also in red mortar and decorated with figures of dolphin and tilapia fish in sequence of a rosette in the centre (**figs. 11-12**). Three figures are made of small colored pebbles and outlined by lead strips which emphasize their shape. An individual bathtub made of limestone measures 1.76 m long and 0.60 m wide next to northern *tholos*.

The baths were probably built between the beginning of the IIIrd century and the first decades of the IInd century BC and were therefore only in use for very short period. They are until now the southern-most thermal installation in Egypt and apparently among the oldest archaeologically attested one.

5. Area 5 (CFEETK operation 176)

This sounding was established on the supposed area of the extension of the embankment. It is located to the north of the area 4 and adjacent to it in a sector which was occupied also by modern houses.

The extension of the wall occurred in this area was found at depth 2.3 m and 6.6 m long has been exposed. It is built with sandstone blocks smaller than those of the other sections of the embankment wall. The width of the wall is 1.02 m and the blocks measure between 1.08 x 0.46 m and 0.80 x 0.44 m. Some inscribed blocks were found reused within the construction; one of these blocks has the name of Amenirdis from the 26th dynasty (**fig. 13**). In front of the embankment in this sector was encountered a layer very rich in pottery remains in ashy area with a complete kiln made of red brick which measures 1.35 m high and 1.15 m in diameter, indicating that this area towards the west of the wall was used for pottery production during the Late Roman and Medieval periods.



Fig. 11. Central rosette. © Sca-Cfeetk.

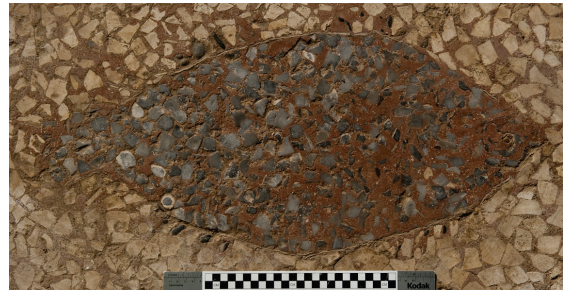
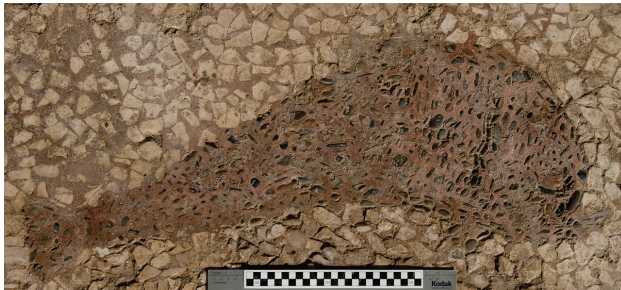


Fig. 12. Dolphin and tilapia fish. © Sca-Cfeetk.



Fig. 13. The embankment wall with reused blocks in the name of Amenirdis. © Sca-Cfeetk.

6. Was the quayside of a harbor basin?

The quayside wall, known from Chevrier's excavations, and the tribune have in the past been reconstructed as part of a harbor basin.¹¹ This is based upon the notion that such a basin, connected to the Nile by a canal, had existed further to the west during the 18th dynasty as illustrated in a scene in Neferhotep's tomb (TT49).¹² This basin was diggen westwards of the 3rd pylon. An auger made at the bottom of a sounding down the outer (west) face of the wall in the "El-madrassa site" (area 1) revealed that it was not part of a basin. The presence of fine sand throughout the auger cores (71.17-68.80 m ASL) points strongly to the wall as part of a revetment for the river rather than a basin. Had the wall been part of semi-closed basin, fine mud deposits would have been expected.¹³ The interpretation is supported by a further auger carried out at the bottom of an excavation down the west face of the wall in the "Ptolemaic baths site", which revealed that the deposits in AS34 are generally finer than those recorded in AS31.¹⁴ This is consistent with the water being a little slower to the north of the tribune is the furthest westerly point of revetment wall and hence the water would have been slacker to the north of it. Recent geomorphological work carried out by Matthieu Ghilardi also supports the notion that this wall was not part of a basin.¹⁵

7. Chronology and Conclusions

The soundings carried out to the west of the first pylon of Karnak temple had brought to light parts of large embankment wall (about 250 m long till now) constructed in front of the temple. The platform / tribune and the ramps to the south were already visible. This excavation revealed the two quays of the temple, the main one to the south of the tribune and the secondary one to the north.

The New Kingdom canal and basin were removed with the construction of the 2nd pylon under Horemheb and the construction of the great hypostyle hall and of the sphinx avenue. The tribune, quay and ramps are quite late in date; the tribune was thought to date to Dynasty XIX, the two small obelisks of Sety II are still standing. However, these are almost certainly not in their original position since one of the inscribed faces of each base is hidden by the tribune parapet wall. Following the discovery of cornice blocks buried within the tribune which come from the great first court of Sheshank Ist, it must be admitted at the very least that the entire ensemble was massively reworked after Dynasty XXII. However the digging of test pits in different sectors of it indicating that it was built during various times. Another sounding was excavated in connection between the southern main quay and the tribune showing that they were constructed at the same time. However the great embankment was constructed at a different time and was used as a quayside supported by staircases built in the same way of the sacred lake but in a larger scale. According to what we revealed of this embankment one could say that its construction was a huge project for this holy place. Maybe the

¹¹ E. g., S. AUFRÈRE, J.-Cl. GOLVIN, *L'Égypte restituée* 1, Paris, 1997, pp. 82-83, 86-87.

¹² E. BLYTH, *Karnak: Evolution of Temple*, New York, 2006, pp. 106, 112-113; N. de G. DAVIES, *The Tomb of Nefer-hotep at Thebes 1*, New York, 1933, pls. XLII, XLIII.

¹³ A. GRAHAM, "Madrasa Site - Auger (AS31). Report", 2007, unpublished report held in the Cfeetk archives.

¹⁴ J. BUNBURY, A. GRAHAM, "Ptolemaic baths' site - Auger (AS34). Report", 2008, unpublished report held in the Cfeetk archives.

¹⁵ In this volume, M. BORAİK, M. GHILARDI, S. BAKHIT ABDEL-HAFEZ, M. HATEM Ali, S. EL MASEKH, A. GHARIB MAHMOUD, "Geomorphological Investigations in the Western Part of the Karnak Temple (Quay and Ancient Harbour). First Results", pp. 101-109.

construction of this embankment began for the first phase during the late New Kingdom and maybe Taharqa from 25th dynasty extended towards the south and the north. One can compare the depiction of a tribune of Karnak (with an obelisk and a sphinx) engraved on a block from the Mut temple, and dating back to the reign of Piankhy.¹⁶ The presence of a tree between the bark of Amun (*i.e.* Nile river) and the quay suggests that the Nile river started at this time to move westwards. (**fig. 14**)¹⁷ Later different extension had been added after the 27th dynasty and lasted till the end of the dynastic period. In area 6, the existence of the inscribed blocks with the name of Amenirdis from the 26th dynasty indicates this theory.



Fig. 14. Quay of Karnak temple (block of Piankhy, Mut temple).
After G. FOUCART, *BIFAO* 24, 1924, pl. IXB.

The excavation suggests that the wall does not form part of a basin such as that depicted in the tomb of Neferhotep from New Kingdom. It was most likely built as a defence against erosion of the site by the river. It may also have functioned as a formal quayside in parallel to the stretch of wall north of the first pylon tribune. The wall reveals the hydraulic engineering skills and activities of the ancient Egyptians during the Late Period. It also adds crucial information on the location of the waterfront at that time in the long history of the site.

Our excavation of the wall and the quays has shed an important new light on the strategies used by the ancient Egyptian to protect one of the most important sites of the day (**fig. 18**). I would suggest that principal function of the wall would not have been to prevent water entering the temple precinct as water would still enter the temple by a rise in the groundwater level subject to the height of the inundation.

It seems most likely that the wall was constructed in response to an observed eastward migration of the river and built as a barrier to prevent the river eroding into the site of Karnak.

The later Roman times material found in the sites shows that the river since migrating after the construction of the embankment has not migrated this far east again. Had it done so it would have eroded away the later occupation and the discovery of this wall shows how the Ancient Egyptians were able to constrain the Nile to a certain degree.

Recently, the Supreme Council of Antiquities funded the Governorate of Luxor to demolish the El Hassasna village located to the north-west of Karnak temples and Abu Assaba Village which is in the area between Khonsu temple and Mut precinct. The work in these areas will add to our knowledge of the extension of this embankment.

¹⁶ PM II, p. 91 (12); M. BENSON, J. GOURLAY, *The Temple of Mut in Asher*, Londres, 1899, pp. 258, 378 and pl. XXII (5); G. FOUCART, « Études thébaines. La belle fête de la vallée », *BIFAO* 24, 1924, pp. 118-119 and pl. IXB.

¹⁷ Noted to the author by Marc Gabolde.



Fig. 15. Roman pottery. © Cnrs-Cfeetk/J.-Fr. Gout.



Fig. 16. Roman pottery and oil lamps. © Cnrs-Cfeetk/J.-Fr. Gout.



Fig. 17. Stone tools. © Cnrs-Cfeetk/J.-Fr. Gout.

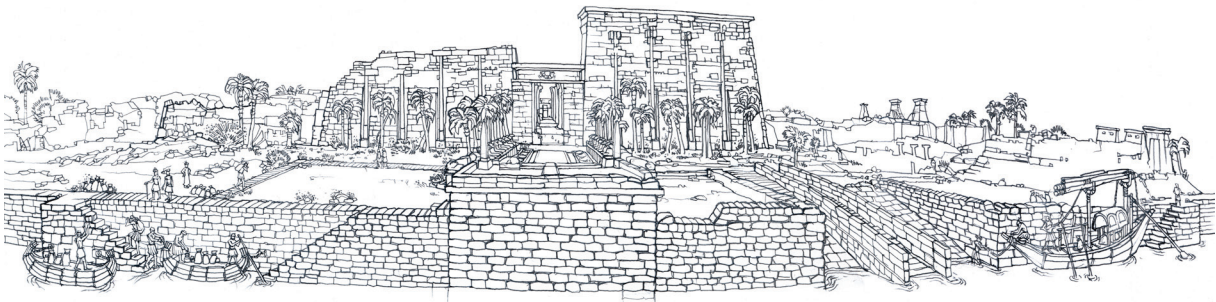


Fig. 18. Artist view of the quay. © O. Murray.