



FRENCH-EGYPTIAN CENTER FOR THE STUDY OF THE TEMPLES OF KARNAK CSA-CNRS USR 3172

ACTIVITY REPORT 2009





*Supreme Council of Antiquities
Centre National de la Recherche Scientifique
Ministère des Affaires Étrangères et Européennes*

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FOREWORD

The work of the Franco-Egyptian Center for the Study of the temples of Karnak in 2009 took place on schedule. The forecast program was proposed to the scientific committee in January 2008.

The excavations led by Mansour Boraik in front of the temple of Karnak (Ptolemaic bath, quay and embankment) were pursued to better understand the history of this area. These last months, a southern part of the quay was found close to the sphinxes of the Khonsu temple. On the Luxor sphinx avenue, the work brought to light new data.

The new program of the temple of Ptah, whose study aims are to provide a comprehensive documentation of the monument by encouraging close cooperation of various departments of CFEETK, started in October 2008. The epigraphic records, architectural and photography surveys have started and are well advanced. The first cleaning and archaeological investigations have already yielded results of importance and this aspect of the program should be widely developed in 2010.

The new Ptolemaic studies were also very active, especially in the chapel of Thoth where excavations brought to light very interesting blocks and on the gate of the second pylon.

The landscape studies of Karnak in ancient times, especially the location on the banks of the Nile, has progressed significantly thanks to the presence of Matthieu Ghilardi, a geomorphologist post-doctoral CNRS. A series of cores and soil analysis were done in front of Karnak temple and at the avenue of sphinxes at Luxor in close connection with the excavations of the CSA. Samples were sent for C14 dating per a scientific agreement with IFAO in Cairo.

The programs of restoration and conservation have been able to develop normally on the site (limestone blocks, archaeological material...). Particular attention was paid to a grano-diorite gate in the name of Tuthmosis II located in the northern rooms of Hatshepsut, in the central area of the temple of Amun-Ra. Finally, the new program started in the temple of Ptah has led to many interventions, especially on the sandstone scattered blocks and on the monument itself (ex. consolidations, restorations, etc.).

Anastylosis activities in the Open Air Museum were devoted to the calcite chapel of Tuthmosis III. The walls were completely rebuilt. Only ceiling blocks, too heavy to be handled with the crane of the center, have not been replaced. A sponsorship could help to finalize this project in 2010. The program of reconstruction of the *Netjery-menu* of Tuthmosis II began with the establishment of new concrete foundations which will support the assembly of the monument. This step will be mainly performed during the year 2010.

Archaeological missions were hosted by the Center and worked especially on the Treasure of Chabaka, on the northern Osirian chapels and on the temple of Osiris from Koptos. Epigraphical and architectural surveys continued on the monuments of Amenhotep I, in the temples of Opet, in the temple of Khonsu and on the gate of the second pylon. The study of ceramics from previous excavations (central zone and priests' quarter) was performed.

An important step in the management of CFEETK archives was reached in 2009 with the changeover from the old database to the new system ArcheoGrid. The migration of the data to the new interface will be completed in 2010. The database will allow researchers to access the Karnak archives from anywhere and, in the future, the access to the documentation collected by the CFEETK during more than forty years will be open to the general public through the internet.

The exceptionally financial means granted by the CNRS allowed the development of a effective data acquisition platform for photography and topography and allowed upgrading the computer system of the Center and the library.

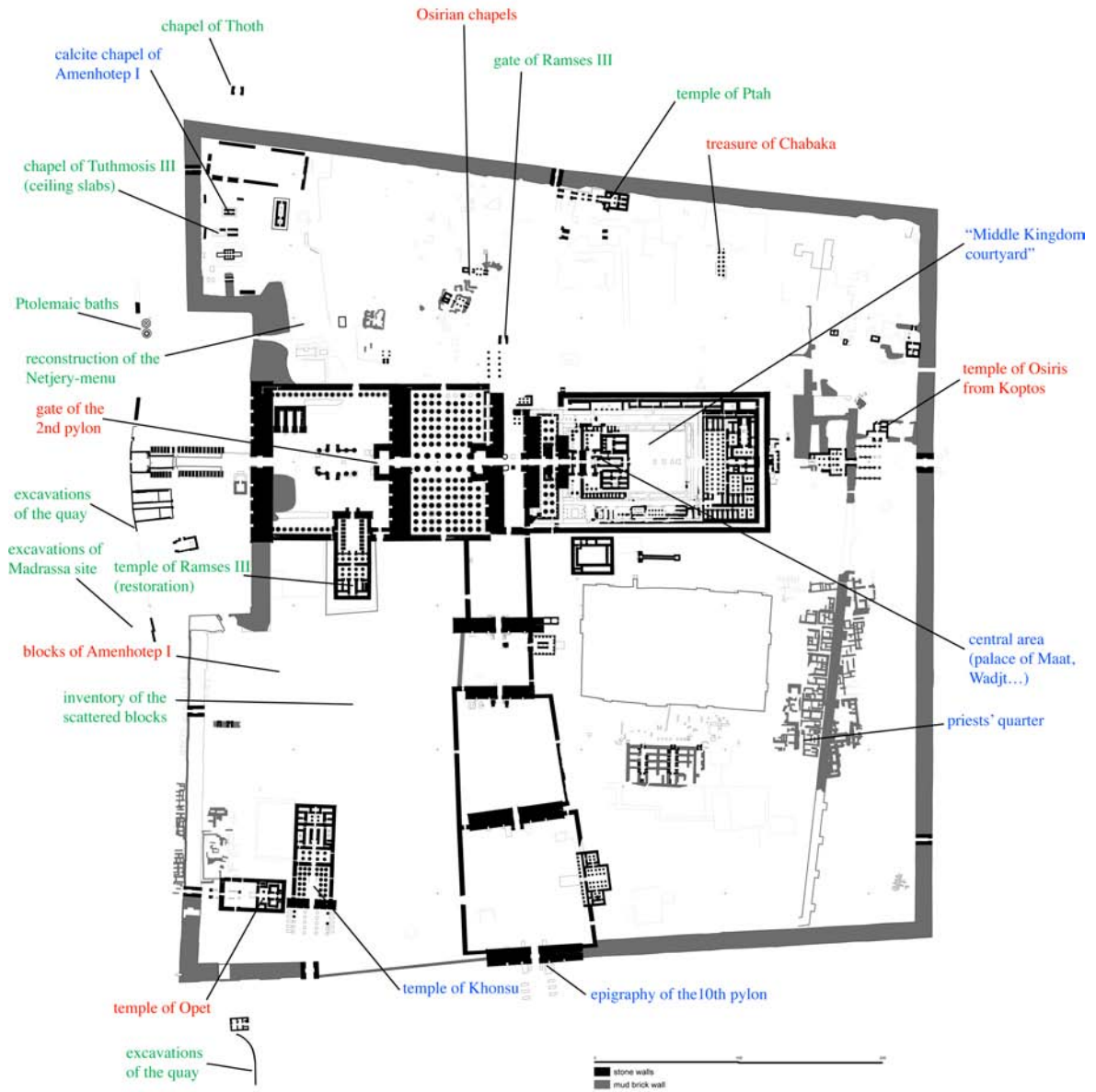
All the projects at Karnak are made possible with the constant help of Ibrahim Soliman, Director of the site of Karnak, Tarek Milad Zikri, Chief architect of Upper Egypt, Mohamed Asem, General manager of Upper Egypt, Al-Jalil Hamdi Ahmed Abd and Amin Ammar, Chiefs inspectors, Mohammed Hussein, Director of the restoration, all the inspectors, Raïs Mahmoud Farouk and all the workers of the SCA. It is a pleasure to thank all of them for their kindly and constant support.

We wish to thank the french authorities of the *Centre National de la Recherche Scientifique* and of the *Ministère des Affaires Étrangères et Européennes* for their constant financial support and interest on the programs led by the French-Egyptian Center for the Study of the Temples of Karnak.

We are always delighted with the excellent relationships between the Supreme Council of Antiquities and the Franco-Egyptian Center for the Study of the Temples of Karnak, and we are pleased to warmly thank the kind support of Dr. Zahi Hawass, General Secretary of the Supreme Council of Antiquities.

Mansour Boraik
General director of Luxor and Upper Egypt (SCA)
Co-director of the CFEETK

Christophe Thiers
Director of the USR 3172 (CNRS)
Co-director of the CFEETK



temple of Ptah : main CFEETK projects
 osirian chapels : projects hosted by CFEETK
 central area : projects currently in publication

Main activities 2009.

1. SCIENTIFIC PROGRAMS

1.1. Excavations in front of the Karnak temple and in Luxor city (Mansour Boraik)

1.1.1. The quay and the Ptolemaic baths

The soundings carried out to the west of the first pylon of Karnak temple brought to light parts of a large embankment wall (about 250 m long) 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 with 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. Evidence shows that these are 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 I, facts point to the entire ensemble massively reworked after Dynasty XXII. The digging of test pits in different sectors indicates that it was built during various periods. 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 was revealed of this embankment, one could say that its construction was a huge project for this holy place. Perhaps the construction of this embankment began for the first phase during the late New Kingdom and possibly Taharqa from XXVth Dynasty extended it towards the south and the north. Later, different extensions had been added after the XXVIIth 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 XXVIth Dynasty supports this theory.

The excavation suggests that the wall does not form part of a basin such as that depicted in the New Kingdom tomb of Nefertiti. It was most likely built as a defense against site 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 today. 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. 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.

The excavations of the ptolemaic baths were also pursued by Saleh el-Masekh, with the occasional collaboration of Bérangeère Redon (IFAO). The eastern foundation trench was uncovered and will give very important chronological data after the study of the pottery.

On the madrassa site, south-west of the first pylon, the excavation continued focused on the roman settlement adjacent to the embankment wall.



The « Madrassa » area with the embankment wall.

1.1.2. The Sphinx Avenue

First, the excavations began in three sectors of the Sphinx Avenue in 2005, as part of the Luxor governorate master plan. In 2009, we began the excavations in the last three sectors which are :

- the extension of the Avenue in front of Luxor temple
- north of El-Adra Church
- from the airport road to the gate of Khonsu temple at Karnak.

The sites were excavated after the removal of the houses which were built over these sectors.

The site of Luxor temple : We completed the excavations to the north of the Police Station site. Many sphinxes were uncovered along with different structures of Roman period. We found that most of the sphinxes were reused during this period. The restorers of the SCA are now working in reassembling the parts of the sphinxes. A new pavement was installed, as the ancient one was reused in late Roman time.

North to El-Adra Church, the area was also occupied by modern houses. We discovered out that the eastern row of the sphinxes was completely destroyed during the Middle Ages and the western one

was partly damaged by the inhabitants. Remains of a chapel from the 21st dynasty was unearthed to the north-east of the eastern row. This chapel was built by Men-kheper-Ra, High priest of Amun. To the western row, we found various buildings of Roman period with reused inscribed blocks, still under excavations.

The third sector is the largest one in the Sphinx Avenue. It extends from Airport Road to Abu Assaba village, then turns toward Mut temple. There is a northern branch which lies in front of Evergetes gate. The excavations began in this sector in november 2009 and it is a work in progress. One of the most important discoveries is located to the west of the ram-headed sphinxes in front of Khonsu temple. We discovered the extension of the embankment which was unconvered in front of Karnak temple, running to the south next the Sphinxes Avenue. Also, many reliefs of Amenhotep III were found on the pedestals of the sphinxes.

In these coming few months, the course of the Sphinx Avenue will be completely free and with the excavations, many new informations will be gathered and added to the history of this sacred road.



The Sphinx Avenue near the S. Moubarak Library.



1.2. History of Karnak temple during the New Kingdom

1.2.1. The monuments of Amenhotep I (J.-Fr. Carlotti, L. Gabolde)

The aim of the mission led from 28 of February to 28 of march 2009 by J.-Fr. Carlotti (UMR 8164- Univ. Lille 3) and L. Gabolde (UMR 5140-Univ. Montpellier 3) was to finish the work of checking and validating the different assemblages, initiated in the first mission of April 2007. This validation was possible through a systematic control of the significant blocks, an accurate measurement of their dimensions and a close architectural analysis.

The niches assemblages, which had been partly checked during the first campaign, have been improved : the arrangement of the southern niches can be considered as definitely fixed. The northern niches compose an arrangement which is, for the moment, not entirely satisfactory, though possible.

The walls of the slaughter-houses have been slightly modified, improved, and validated.

The doors of the medium and large-size chapels have been assembled in a definite state as well as the side walls arrangement of the medium and large chapels.

Great energy was devoted to the brand new assemblage of the blocks belonging to the so-called « copy » of the « chapelle blanche ». A provisionnal solution was found, though very few blocks are preserved.

A plan providing an estimation of the dimensions of the buildings of Amenhotep I, giving an idea of the room which should be devoted to the reconstruction of the monuments, has been submitted, as an archive to M. Ibrahim Soleiman who showed a great interest in the project.

Final improvements on the manuscript of publication of the first volume of the series of the Monuments of Amenotep I at Karnak, devoted to the calcite bark chapel, have been executed.

1.2.2. Survey and study of the columns of the hypostyle hall (J. Revez, E. Laroze)

The data, whose target is to product 134 unrolled photographs of the columns faces still, are in process. The whole documentation should be ready at the end 2009, and the epigraphic survey and drawings of these columns will be able to start.

A short lecture of the state of the work has been given the 15th may 2009 at the Académie des Inscriptions et Belles-Lettres in Paris. A paper summing up the technical process has been recently edited in the magazine XYZ (see below). In addition, the section « zoom » of the CNRS magazine has reported the project: « 134 colonnes à la une », *Le journal du CNRS* 231, April 2009, p. 28-30 ; <http://www2.cnrs.fr/presse/journal/4275.htm>



3D scan of the columns of the great hypostyle hall and unrolled photograph of one of the column.

1.3. The northern area of the precinct of Amun

1.3.1. The temple of Ptah (Chr. Thiers, P. Zignani) ¹

The main objective of this first campaign, which runs all year long, was to establish protocols for a whole survey of the temple, that is epigraphy, architecture, archaeology, photography and restoration. Important cleanings were necessary to start this project, involving consolidation of blocks associated with a first general assessment of needs in restoration-preservation.

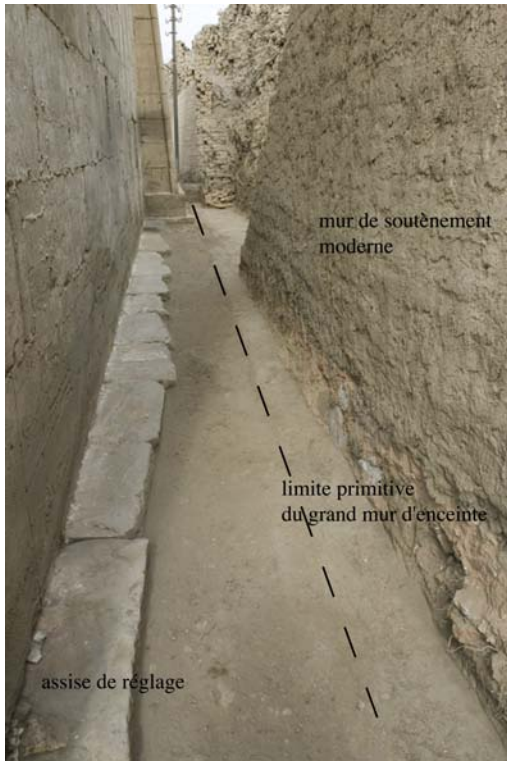
A heavy investment of time was necessary to evacuate the collapse of the retaining wall built modern north of the temple, against the wall of the domain of Amun-Ra. The release of several tons of cubic meters of mud brick collapsed now makes it possible to walk around the temple. The cleaning of a trench previously dug by H. Chevrier has highlighted, in the foundations of the north wall of the temple, reused limestone blocks with the names of Queen Hatshepsut and Tuthmosis III. Some parts of a private stela dating back to the New Kingdom was also found in this area, as it was also the case for a reused royal stela in the lower course of the Ptolemaic kiosk.

The area between the two first entrance gates was cleaned to remove debris left by H. Chevrier. The beginning of the archaeological survey of the first mud-brick wall allows us to clearly show the presence of a Coptic settlement, with three rooms and ceramic still in situ on the ground. Ceramic and coins were uncovered and will be studied in the future. Some artefacts were also found, e.g. a limestone head of a statue, some osirid bronze artefacts (atef crown).

On the southern area of the temple, several blocks were emerging from the debris. They have certainly been kept near the temple during the work of G. Legrain (or H. Chevrier). In very bad condition, many of them have been completely cleared, restored and surveyed.

The restoration program (see below) mainly concentrated on the scattered blocks and two sandstone stelae. Treatment by Ethyl Silicate (Silres-Wacker OH) was used and the blocks were reinforced by metallic stems. One very damaged limestone block was restored. All the blocks were stored on a mastaba after conservation work.

¹ - Sca inspectors : Cheïma Abd el-Sattar, Mo'men Sa'ad, Wahid Youssef, Mohamed Abd el-Khalek Amin ;
- Epigraphy and archaeology: Mamdouh Abd el-Ghassul (Sca-Cfeetk), Sébastien Biston-Moulin, Cécile Lantrain, Laetitia Maggio (scholarships MAEE), Catherine Bouanich, Maude Erhenfeld, Nina Parisot (Cnrs trainees), Pauline Calassou (Cnrs), Mo'men Sa'ad (Sca), Christophe Thiers (USR 3172) ;
- Architectural and topographic survey : Pierre Zignani (USR 3172), Claire Filiaggi (scholarship MAEE), Marion Allier (Cnrs trainee), Antoine Marmousez, Antoine Guillot (MAEE) ;
- Photography: Jean-François Gout (USR 3172), Karima Dowi Abd al-Radi, Ahmed Roubi, Mohamed Saïdi (Sca-Cfeetk), Aurore Bagarry (scholarship MAEE), Pauline Batard (Cnrs trainee) ;
- conservation-restoration : Agnès Obousier (USR 3172), Abdou Qoraïm (Sca-Cfeetk), Mohamed Zaki (Sca-Cfeetk), Alice Wallon-Tariel (MAEE), Agnès Asperti (Cnrs), Charlotte Rérolle, Delphine Gillot (Cnrs trainees), Ornella Berges, Aline Blondiaux (MAEE).



Foundations of the northern wall of the temple of Tuthmosis III.



Private stela found close to the northern wall of the temple.



Ramesside (?) royal stela.



Head of a limestone New Kingdom statue.



Uncovered scattered blocks.



Stela before and during the restoration treatment.



Before undertaking any archaeological investigation, it was necessary to begin the epigraphic survey of the temple walls which provided the essential elements about the history of the monument. The scenes and texts were numbered from outside to inside. The same numbering is used for photographic records. Two thirds (129) of the 193 numbers of scenes and texts were drawn. The northern chapel, dedicated to Ptah, was fully drawn.

This stage of epigraphic records has led to a better understanding of the various stages of engraving / hammerings / plastering and new engraving related to Amarna and post-Amarna times. It was also possible to specify the part played by the Ptolemies in the engraving of reliefs in the name of Thutmose III.

Almost all blocks lying around the temple were topographically located and numbered using metal plates affixed by Qoraïm Abdou and Mohamed Zaki. Approximately 80 blocks were inventoried and 20 drawn and vectorized. Despite the low number of scattered blocks identified, the first campaign has clarified the origin of several of them, especially from the south side of the temple, which is also the most damaged. Two blocks (2516 + 2625) from the inner southern wall of the court feature an offering of Maat to [Ptah, Hathor and Harsomtous]. One block (2606) with the protocol of Ptolemy IV, located east of the temple, was put back to its original location on the top of the north wall of the court. Besides Ptolemy III and Ptolemy IV being well attested among the scattered blocks, one can note the following kings: Tuthmose III (2626); Hatshepsut (2580, 2584 and 2589), Horemheb (2575), Rameses III (a reused block in gate D and scattered blocks); Nitocris (2639); Nectanebo II (2635). Hatshepsut, Nitocris and Nectanebo II are not documented in the temple.



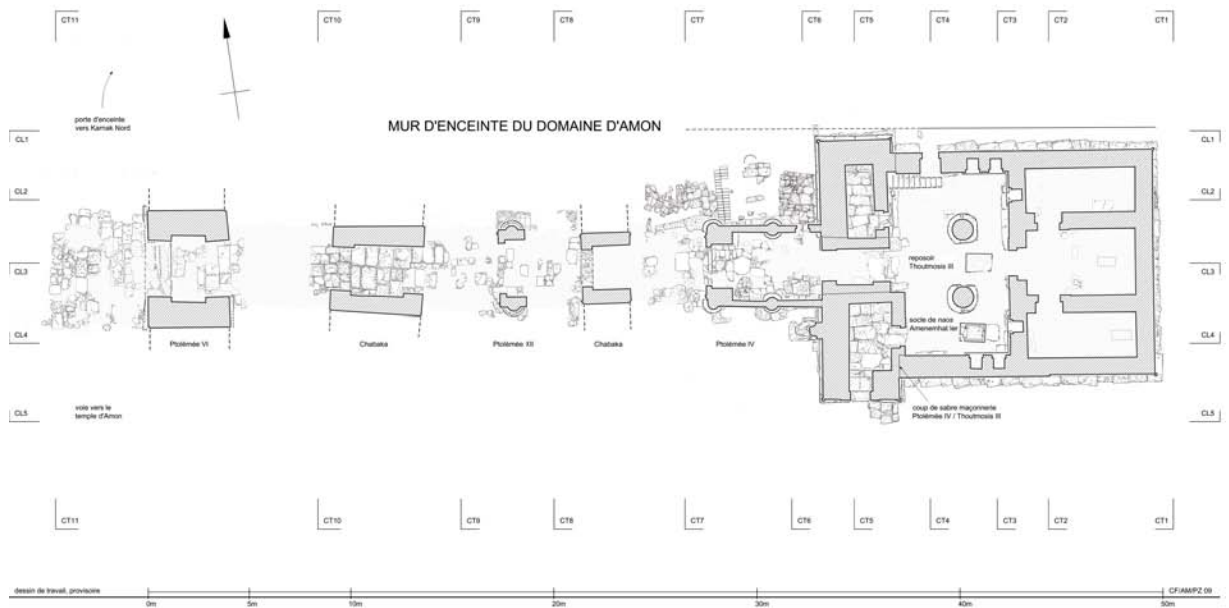
Ptolemaic block (2606) put back on the top of the northern wall of the courtyard.

The research about the architecture of the temple was first focused on a detailed survey. Begun in autumn 2008, the documentation of the stone masonry structures is now achieved according to the following list:

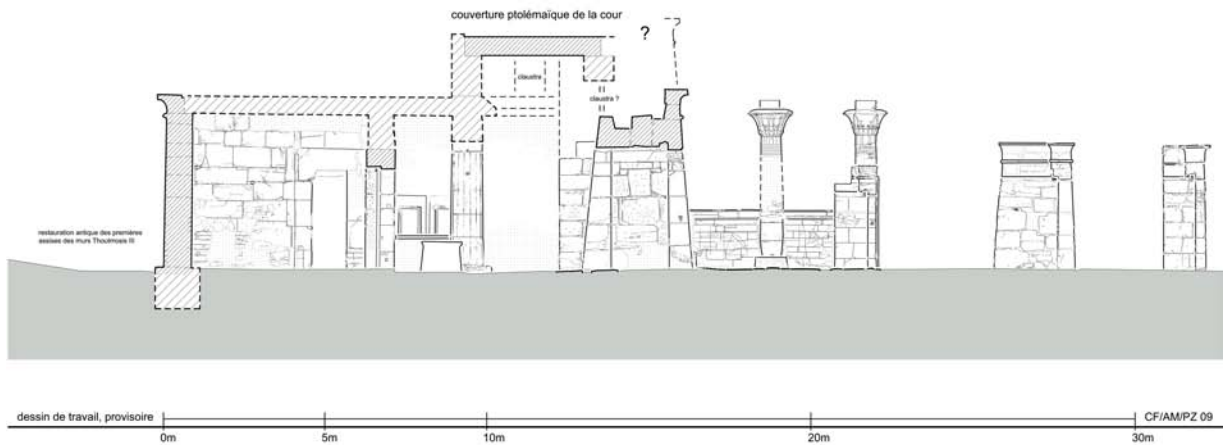
- floor plan,
- roof plan,
- 11 cross sections and elevations,
- 5 longitudinal sections and elevations.

Details of works (capitals, constructions lines or drawings, setting marks) were also surveyed.

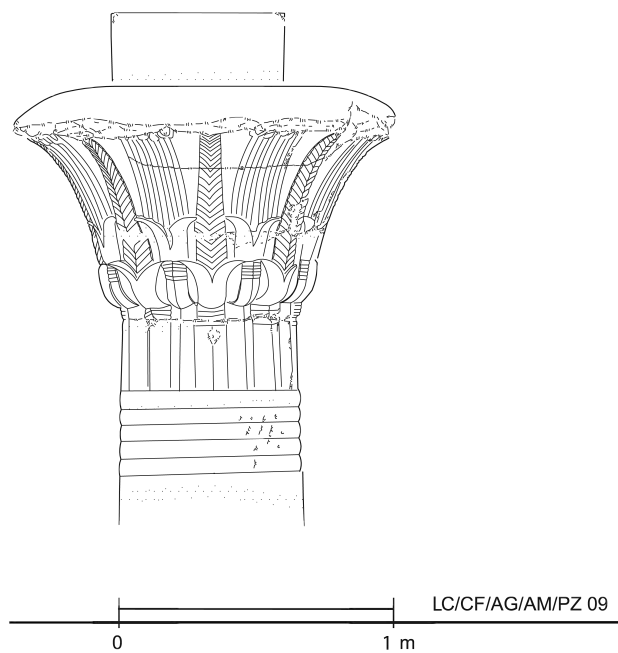
It will be completed with the study of the scattered blocs and the future excavations. We hope that if we are able to recover the mud-bricks structures, we will obtain additional information about the temple precinct.



Floor plan of the temple of Ptah (with location of the cross sections).



Cross East-West section with the two first western gates.

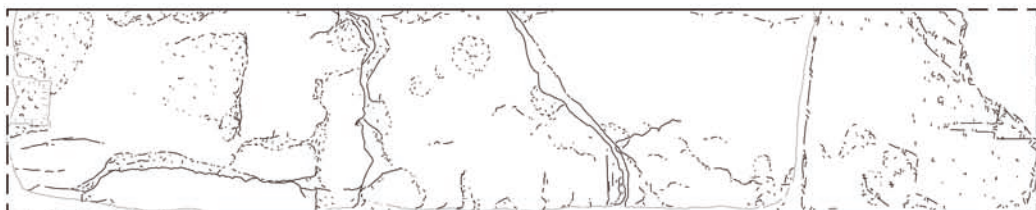


Detail of a composite capital from the Ptolemaic kiosk.

The environment of the vast northern area of the temple of Amun at Karnak is little known. Our survey gave information to cross indices referring to the intentions of the builders in relationship with physical limitations of the construction, but also in terms of spatial solutions, typologies and location. The sanctuary of Ptah is remarkable because it has hosted over thousand years of worship with significant changes in its surroundings. The oldest part consists of the chapels preceded by a portico and courtyard in the name of Tuthmosis III. Surprisingly, the foundations, already excavated by H. Chevrier, were done with reused blocks with a decoration and the names of Hatshepsut and Tuthmosis III. The west side of the Tuthmosis III's building has disappeared in a subsequent redevelopment of the temple.

During the reign of Tuthmosis III, it is noteworthy to observe that the great enclosure wall of the precinct of Amun was much smaller than the last one still visible today (estimated from Dynasty XXX). The original sanctuary was in connection with a way between the domain of Amun and the northern sanctuaries of Karnak.

The construction of the last enclosure wall was deliberately designed to include the temple of Ptah and avoid the structures of Karnak North. Its tangential location with the northern side of the sanctuary of Tuthmosis III destroyed partly the precinct of the temple and severely hampered its side access for the daily activity. This explains the important Ptolemaic renovation of the western side of the Tuthmosis III's building which includes a new side access from the south, two small rooms and a staircase. The New Kingdom courtyard radically changed. It was heightened, covered and became a room lightened by clerestory windows.



Fragment of one of the axial slab (blocks 2525 and 2527) which have covered the Thutmosis III's courtyard.

It is interesting to observe that some of the modern reconstructions are wrong but their impressive effects have become famous. This generates many travellers fascinated by a mystic approach to Pharaonic Egypt. As an example; in the central chapel, one can observe at noon during the summer solstice that the sun's rays shine through an opening of a statue of a kneeling Pharaoh (only the legs are preserved) in front of the god Ptah. In the southern lateral chapel, a re-erected statue of Sekhmet is standing below a small orifice, through which sunlight - or moonlight on certain nights - project on the statue. Unfortunately for mystic lovers, the slabs directly above belong to a modern reconstruction with openings invented to fit the circumstances, without regard to ancient practices.

1.3.2. The Treasure of Chabaka (N. Licitra)

The third excavation campaign of Shabaka's Treasure took place from 28th September to 12th November 2009 under the direction of Nadia Licitra and under the scientific supervision of Professor Dominique Valbelle and Professor Charles Bonnet². The work proceeded on the main lines of research already fixed during the second season; the entrance door of the colonnade (Northern Area), the environment South (Southern Area), and the domestic quarter (Western Area).

The gateway of the colonnade, identified during the previous campaign on the north side, had not been brought to light completely and the north side had been buried under a stratigraphic level of destruction. The research conducted during this third campaign have shown that this area of destruction corresponds to the collapse of the eastern wall of the colonnade. This collapse, from east to west, has swept away sandstone elements of the door, which were sealed under the mud bricks.

Within this level of destruction, a fragment of painted plaster was found still in good conditions. It was consolidated *in situ* and then removed and transported to the CFEEK laboratory for restoration. The excavation of the destruction level has also exposed the northern wall of the colonnade and part of the stone elements of the door. In particular, the two doorjambs, a fragment of the frame painted in blue, red and white, and a fragment that possibly belongs to a lintel. These stone elements, some of which is still below the northern limit of excavation, fell from south to north, outside the colonnade. A few inches north of the eastern jamb, a sandstone polygonal column located beneath destruction level was exposed. The column is located outside the northern limits of excavation and it was not possible to clear the northern half. Nevertheless, it was possible to observe that the column has three bands inscribed at a 90° from each other, so it is likely that a fourth band is located on the north. The southern band is fully visible and all the hieroglyphic signs still have the original blue colour. The inscription draws the text of the cylindrical columns of the colonnade and mentions King Shabaka. Given the position of the column, it is possible that it is connected with a portico at the entrance to the colonnade.

In the southern area, the location of a small room, to south-east of the colonnade discovered during the end of the last campaign, led to additional excavations towards the south. No door has been detected in the south wall of the colonnade, thus no direct circulation occurs between the colonnade and the south area. During the removal of several accumulation layers, two skeletons were found. The absence of any trace of a pit dug to lay the bodies showed that they were simply set down on a layer made entirely of mud brick and covered later by those same bricks. The interments did not have any funerary equipment, witness a later phase of the destruction of the Treasury and the collapse of its walls, when the site, probably in a state of neglect, was thus used for the burials. Below the interments was a broad level of destruction, similar to that found on the northern door of the colonnade. This level of destruction coincides with the collapse of a massive north-south mud brick structure and large 9 m, to south-east of the colonnade. The small room, detected in the previous campaign, was completely excavated and proved to be the landing of a staircase built into the massive structure. Here there were found two steps of this staircase, in a good state of preservation. The removal of the level of destruction of the massive structure, which extends toward west, permitted to us to reach a level consisting of pulverized limestone placed directly on the floor level. The entire area west of the massive structure seems to have been an open area. During the last days of the campaign it was identified with a new room south of the staircase.

² The work was conducted with the collaboration of about ten workers and under the supervision of Wahid Yousef Belal, Inspector of the Egyptian Antiquities Service. The mission also benefited from the help of several members of CFEEK: Antoine Marmousez and Antoine Guillot (topographers), Jean-François Gout and his team, Pauline Batard (photographers), Agnes Oboussier, Ornella Berges and Delphine Gillot (restorers), Antoine Garric (stonemason).



The Treasure of Chabaka at the end of the 2009 season.

For obtaining additional information about the extension of the domestic quarter unearthed during the second campaign, the Western Area was extended northward. It has thus been possible to observe that the series of small rooms continue northwards. The walls of this area are preserved only in the foundation and no traces of flooring was found. These walls seem to have been build directly on a layer of destruction, similar to that found in the northern and southern areas. They are made of mud brick, which could corresponds to the level of destruction at the western wall of the colonnade. This quarter is dated after the destruction of the Treasury.

Research conducted during the third excavation campaign of the Shabaka's Treasury have reinforced the theories proposed at the end of the second campaign. Now, it is certain that the Treasury does not coincide with only the colonnade but that it is a larger building of which the colonnade constitute just one of the elements. On the one hand, the finding of the polygonal column to the north shows the presence of an entrance system, possibly a portico, linking the northern part of the Treasury which is still unexplored. On the other hand, the discovery in the Southern Area of the massive structure of the staircase, inside coupled with the new southern environment proves the existence of a back area to the colonnade. This is dominated by a large massive structure in mud brick with a staircase and at least one room within it. It is linked to a wide open space to the west.

1.4. Ptolemaic studies

1.4.1. The Domain of Thot (G. Zaki, M. Boraik)

Research on the “chapel” of Thoth, located outside to the north of the large enclosure wall of Amun, began in November 2008. The monument, known by R. Lepsius, had never been fully investigated. The gate was built during the reign of Ptolemy IV Philopator and his wife Arsinoe III. Blocks in good condition have already been discovered during excavations and further work will complete the study of this monument. Several campaigns of excavation and cleaning were done around the gate still in place. An epigraphic survey was led by Ayad el-Barbari and Gihane Zaki (CNRS-CSA) providing the Egyptological study of this important monument of North-Karnak. A paper providing the first results was published in the *BIFAO* 109.



1.4.2. Survey of the gate of the second pylon (M. Broze, R. Preys)

The first epigraphic campaign for the study of the Ptolemaic portion of the doorway of the second pylon in the temple of Karnak took place from February 13 until March 5 2009 under the direction of Michèle Broze and René Preys. The project is a collaboration between the CFEETK, le Fond de la Recherche Scientifique belge (FRS/FNRS) and the Centre interdisciplinaire d'Etudes des Religions et de la Laïcité de l'Université de Bruxelles. It is part of the diachronic project of religious anthropology financed by the FRS/FNRS and directed by Michèle Broze. Members of the team include Michèle Broze (egyptologist, FRS/FNRS - Université Libre de Bruxelles), René Preys (egyptologist, Katholieke Universiteit Leuven / Facultés Universitaires Notre-Dame de la Paix-Namur), Audrey Dégremont (egyptologist, Université Libre de Bruxelles), Arnaud Delhove (egyptologist, Université Libre de Bruxelles), Stéphane Fetler (egyptologist / drawer, Université Libre de Bruxelles) and Badawy Adriss Mohamed (inspector CSA). The architectural study will be lead by Pierre Zignani (architect, CNRS-CFEETK).



The project envisages a publication and a study of the Ptolemaic gate of the second pylon of the Temple of Amun at Karnak. This gate fits into the pylon dated to the New Kingdom and was decorated by Ptolemy VI Philometor but the basements bear the names of Ptolemy VIII Evergetes II. Each jamb is decorated with five scenes of offerings and a text on the basement. On the inside of the jambs are four scenes of offerings. The lintel was originally composed of four scenes of which only two remain. From the cornice surmounting the lintel, only the north and south ends have survived.

The texts were first published in the Kurth Sethe in the *Urkunden*. The texts of the bases immediately attracted attention by their cosmological content, as evidenced by a long article Drioton (ASAE 34). The figures have never been published or studied. Similarly, the monument has never been analyzed as a theological unity. The arrangement of scenes on both jambs and the specific graphic particularities in these offering scenes and in the texts of the bases deserve an in-depth investigation.

The first campaign focused on the southern jamb. The CFEETK provided us with a photomontage taken from the first pylon. The quality of engraving and the proper preservation of the reliefs of the monument have allowed preparing a preliminary drawing of figures and texts based on the photomontage. A photographic coverage however, has made it necessary to introduce the many details of reliefs. In some places, particularly the higher registers, the coating is relatively well preserved. This coating hides much of the high quality of figures carved in stone but has the advantage of preserving the colours and details like the figurative decoration of garments and thrones.



The same observation applies to the hieroglyphic texts. The partial retention of the coating allows a study of both the work of the stonemason and of the painter. The hieroglyphic texts have also been photographed and reviewed on site. A number of corrections have been made to the publication of Sethe. The remains of colour have been identified and photographed. This will enable us to reconstitute the original appearance of the monument.

The detailed photographic coverage of the hieroglyphics will also be used for studies of paleography. Thus, differences have already emerged between the texts of Ptolemy VI and Ptolemy VIII. A comparison with other monuments of these two kings could prove to be interesting. We observed at the outset that the quality of engraving and the attention brought to every detail of the hieroglyphics and the figures alike.

The shaping of the figures and the hieroglyphs have also been documented. The absence of reliefs on the lower registers have been noted.

Two unpublished graffiti have been identified. The first on the fourth register is undated and mentions an Arab "Professor Mustapha". The second, on the first register, was created in 1843 by "Olivier".

An initial search was carried out among the blocks retained by the Centre to find a connection with the jamb. A block with the representation of Amun, already mentioned by Sethe in the early 20th century, was founded. No other blocks could be linked with certainty to the gate of the second pylon.

Finally, the mission also gathered previous documentation of the monument. Descriptions, photographs and old drawings that show the general appearance of the building, has shown that the general aspect of the monument has changed little. No mention, for example, could be found of a better state of preservation of the lintel of the gate. Particularly interesting are the documents that precede major restorations of Chevrier in the early 20th century.

After the winter season, the team focused on creating definitive drawings, through photographs of details and observations made visually on the monument, carried out during the successive verifications by the members of the mission.

1.4.3. Karnak during the graeco-roman times

Christophe Thiers started the documentation of the ptolemaic scattered blocks lying upon mastabas or stored inside the Cheikh Labib storeroom. Blocks dating back from Alexander the Great until Ptolemy III Evergetes I were studied and will be published in the next issue of *Cahiers de Karnak* 13.

1.5. Osirian cults

1.5.1. The chapels of Osiris to the North of the hypostyle hall (L. Coulon)

The ninth season of excavation and restoration of the chapels of Osiris to the north of the Great Hypostyle Hall at Karnak was undertaken between the 30th of January and the 5th of March 2009, with the support of the CFEETK and the French Institute of Oriental Archeology in Cairo (IFAO). The members of the team were Laurent Coulon (egyptologist, University of Lyon, CNRS, HiSoMA, UMR 5189), Catherine Defernez (archaeologist-ceramologist, University of Paris IV-CNRS, UMR 8152), Soline Delcros (architect), Hassan el-Amir (conservator, IFAO), Cyril Giorgi (archaeologist, INRAP), Frédéric Payraudeau (egyptologist, IFAO), Cécilia Sagouis (conservator), Laurent Vallières (topograph, INRAP) and Khaled Zaza (artist, IFAO). Thomas Faucher (Paris-Sorbonne, ANR Nomisma) studied the coins found during the previous seasons. Mr. Mohamed Abd el-Khalek Amin and Ms Salwa Fathalla Hassan represented the Supreme Council of Antiquities under the direction of Mr. Ibrahim Soliman.

In order to complete the documentation work concerning the precinct wall and foundations of the chapel of Osiris Wennefer Neb-Djefau, several soundings were undertaken in or at the border of the building. The excavation of the south-eastern façade of the building continued, leading to the discovery of the external south-eastern corner of the building and the external face of the precinct wall, whose edges are perfectly vertical. This result could be obtained by removing the occupation levels posterior to the chapel discovered during the previous seasons. During this operation, a Ptolemaic workshop containing three fireplaces for bronze melting yielded four unseparated coin flans (a "chapelet"), which could allow according to the analysis of Th. Faucher. An interpretation that this installation was a possible workshop for fake money makers. Under this Ptolemaic structure within the

layer of sandstone chips and inscribed blocks coming from the antique restoration of the building at the end of the Late Period, were found several blocks with a decoration of stars. This gave the observer an idea of what the ceiling of the XXVIth dynasty chapel looked like. Under this layer, a discovery along the eastern façade of the wall was an alignment of orthostats made of red brick, very similar to those found by J. Lauffray along the New Kingdom precinct wall to the east of the Sacred lake.

Inside the chapel itself, to the east of the service room, a sounding trench allowed us to further understand the structure of the upper pavement, which is a brick floor built on a older mudbrick structure. Another sounding was undertaken between the first door of the sanctuary and the western limit of the base of the first southern column of the hypostyle hall, in order to better understand the foundations of the doorway and to obtain further data on the foundations layers visible under the ramp. The hypothesis of the existence of a large foundation brick layer under the entrance pylon and the hypostyle hall was confirmed. In the lower layers, discovery of a nearly well-preserved oven circled by mudbricks, contained adjacent pits filled with ashes and many potsherds. Through the preliminary study of the ceramic material coming from these pits, this structure is to be ascribed to the XXth-XXVth dynasties.

The architectural study of the chapel was continued by S. Delcros and L. Vallières. In preparation for the restoration of the mudbrick walls surrounding the chapel during the next seasons, a technical proposal was written by H. el-Amir and C. Sagouis.

Continuing the work undertaken on the northern limit of the chapel of Osiris Wennefer Neb Djefau, we excavated the area surrounding the chapel of Osiris Neb Ânkh / pa ousheb jad (XXVth dynasty), but only the rubbish layers were removed on the south and west sides of the building. Along its south wall, an east-west precinct wall was partially cleared. A large mudbrick wall was also discovered to the east of the chapel, but its limits could not be determined at this time. Between the south wall of the Ethiopian chapel and the northern limit of the Saite chapel, the remains of a rectangular room, containing a buried jar, were uncovered.

The restoration of the paintings of the chapel of Osiris Neb Ânkh / pa ousheb jad, carried out by A. Oboussier and A. Wallon (conservators at the CFEEFK), led to the discovery of hitherto hidden painted motifs. Moreover, through the finding of two reused blocks during the dismantling and rebuilding of the chapel during the previous years, the eastern wall of the northern chamber of the chapel could be completed and rebuilt. All these new elements were included in the epigraphic drawings of the monument made by Khaled Zaza this year. The loose blocks found by Legrain in this area, and kept in the Cheikh Labib storeroom, were recorded by Fr. Payraudeau.

In the chapel of Osiris Neb neheh, the restoration of the fallen blocks was continued by Hassan el-Amir. Only surface cleanings were carried out in order to consolidate the blocks.

As for the ceramological study, the work undertaken this season as a continuation of the previous seasons allowed us to establish a first chronological synthesis on the area excavated to the east of the chapel of Osiris Wennefer Neb Djefau. A precise examination of the material coming from the stratigraphical sequences identified in this sector, particularly in the stratigraphical soundings carried out in February 2008 and later, has led to ascribe it to a time-span between the Late and the Ptolemaic Period.

Clement Gauthier has started the systematic study of a deposit from the beginning of the Late Period (US 5407-5274) found in front of the south-east facade of the chapel and forming an isolated, homogenous and stratigraphically defined ensemble. Many different forms are to be found in this ensemble, which will give a general overview of the ceramic material of the VIIth cent. B.C. at Karnak.

39 coins found between 2000 and 2008 were examined and registered by Th. Faucher. The bronze objects found during the last season were restored by H. el-Amir.



General view of the chapel of Osiris Wennefer Neb-Djefau, with line of red brick orthostats (C. Giorgi).



Sounding in the hypostyle hall : foundation platform upon an oven (C. Giorgi).



Head of Osiris after restoration inv.306 / US 5357.100 (J.-Fr. Gout).

The temple of Osiris from Koptos (Fr. Leclère)

The third excavation season at the temple of Osiris of Koptos, in the north-eastern area of the Amun temenos at Karnak, began March 2nd and finished April 30th 2009, under the direction of François Leclère³. The season's program has been divided in two parts, the fieldwork being followed by studywork in the storerooms.

³ The season has been funded by par the University of Paris IV – Sorbonne. Members of the team were Fr. Leclère (archeologist, egyptologist), Laetitia Gallet (egyptologist, epigraphist), Soline Delcros (architect), Valérie Baudon (conservator), Lorraine Mehl, Laura Galicier et Andrea Pillon (students in egyptology at the university of Paris IV-Sorbonne), Anna Guillou (student in École du Louvre), Moamen Saad, Ahmed el-Nazir et Salwah Fathallah (SCA inspectors of Karnak temples). Already trained at a higher level, Moamen Saad largely contributed to the training of his colleagues. Laurent Coulon (egyptologist, CNRS, Lyon), responsible of the epigraphic part of the project was also present for a couple of weeks. Several members of the CFEETK also contributed to the work: Agnès Oboussier and Charlotte Rérolle (conservators), Antoine Marmousez (topographer), Jean-François Gout, Aurore Bagarry, Ahmed Rouby, Karima el-Dowi (photographers).



The façade of the temple of Osiris of Koptos (128318/J.-Fr. Gout).

Excavations

a. The Ptolemaic and Roman temple of Osiris of Koptos

The foundations have been excavated in two areas of the temple's court : in the foundation trench of the court's wall, better preserved on the eastern side, have been found some more inscribed sandstone chips coming from the cutting of the blocks reused in the building. In the north-eastern angle, a faïence statuette of an seated ape, head missing, had been probably reused as a consecration deposit.

Excavation on the northern side of the foundations of the main entrance portal showed that both gate-posts had been installed on a thick bed of pure sand. After or during the construction, the foundation trench had been backfilled first with several courses of mudbricks, then with layers of sandy silt separated by levels of sandstone chips. The space between the gate-posts to the north of the huge granit threshold, was filled with a thick and independent structure made of sandstone blocks, partly destroyed later by a deep looter's pit, clearly motivated by a "treasure hunt".



Faïence statuette of a seated ape found at the north-eastern corner of the foundation of the court (128357/J.-Fr. Gout).

On the southern façade, the partial removal of fallen blocks from the fill of the central part of the ramp, showed that several blocks from a cornice of Nitocris were reused in the sidewalls of the ramp. This revealed a small structure, possibly prior to the second phase of construction of the temple. It was constructed with small sandstone blocks including part of doorjamb of Psammetik I.

Clearing the west side of the ramp showed that the floor level of the forecourt of the eastern temple was much higher during Ptolemaic times than during the New Kingdom or the XXVth dynasty. It was at least at the top level of the column basis of Taharqa's colonnade. The difference of height between this floor and the entrance of the temple of Osiris was less than suggested by the present topography, after Georges Legrain's and Henri Chevrier's excavations. Some clues suggest the possible existence of an earlier colonnade in the forecourt.



Excavation of the main entrance gate. Foundation trench and deep looter's pit.

To the east of the ramp, a sondage has exposed the foundation of the mud brick façade of the temple of Osiris. Possibly 10 m high, this thick brickwork formed an imposing limit to the north side of the forecourt of the eastern temple, between the ancient eastern enclosure wall of the Great Temple of Amun and the Great enclosure wall built during the IVth century B.C. It completely hid the temple of Osiris (and all the osirian area), except its main stone gateway, which is accessible by a short ramp.

On the northern side of the temple, the excavation revealed additional inscribed sandstone chips and new inscribed blocks of the XXVth dynasty reused in the construction. Near the north-east corner of the temple, a set of around twenty bronze items, made up mainly of fragments of osirian statuettes. Like the faience ape found in the court, this group of objects had clearly been buried as a consecration deposit at the end of the construction.



Bronze items from a consecration deposit found near the north-eastern corner of the temple (128363/J.-Fr. Gout).

b. To the east and the north-east of the temple

To the east, the clearing of the levelled relicts of the thick mudbrick New Kingdom enclosure wall discovered last season has been completed. The wall probably is connected to the initial phases of the eastern temple and its forecourt on which the temple of Osiris was built.

The north-east angle of the northern bastion was finally discovered, in spite of the destruction caused by a modern pipe trench crossing through the area from north to south.



General view of the east and north-east areas, from the east.
Destroyed Ne Kingdom precinct with « bastion ».

The north-east corner of the northern bastion has finally been detected, in spite of the destruction caused by a modern pipe trench crossing through the area from north to south.

To the north-east, despite the drastic levellings performed by Henri Chevrier in the area, a sondage near the Great enclosure wall confirmed the existence of a higher ground to the north of the temple of Osiris, in which the sanctuary was slotted. Probably connected to the nearby Tomb of Osiris, but already existing before the XXXth dynasty, this « hill » had been recut during the construction of the temple, or just before its extension during the reign of Ptolemy XII. It was faced with a long mudbrick wall, to which the foundations of the sanctuary have been abbuted.



Area east and north-east of the temple, from the north-west. Foundation trench of the great enclosure of Nectanebo.

c. To the west and south-west of the temple

To the south-west of the temple, in the area where its mudbrick façade reaches the ancient enclosure wall of the Great Temple of Amun at the north of the eastern temple, the excavation provided better understanding of the chronological succession of the different buildings which was damaged by the levellings done there in the 1950's. The New Kingdom enclosure wall of Amun, in the

forecourt of the eastern temple is still partly visible. It has been largely recut, levelled, and rebuilt during Ptolemaic times, probably before or during the reign of Ptolemy VIII. This work is not in the shape of a pylon, as it can be often read, but is built like a classic mudbrick wall with recesses and undulated courses. The lower part shows several courses of sandstone reused blocks. Because the floor level in the forecourt is higher as observed elsewhere (see *supra*, area of the ramp), these stone courses were buried and hidden in a foundation trench and not visible like they are today due to ancient excavations in the forecourt. The north-west corner of the forecourt, where a vaulted niche had been reserved, with a kind of sandstone structure in front of it, has been completely sealed when the eastern end of the mudbrick façade of the temple of Osiris was built during the reign of Ptolemy XII. It aligned to a recess in the Ptolemy VIII enclosure wall and the northern end of its stone foundations.



Area west of the temple of Osiris from Koptos, against the former enclosure wall of Amun.

Architectural and epigraphic survey

The architectural survey concentrated on sections and elevations of the building. Some mapping of the stone and mudbrick structures were added. The inscriptions of Ptolemy XII and Tiberius still *in situ*, as well as the reused blocks of the XXVth dynasty and the blocks stored on mastabas, have now been completely documented (drawings, photos). This includes the new monuments discovered this year. A large work of vectorization and computerizing of the drawings is now in progress.

Study of the finds

After a first phase of fieldwork, the team moved to the storerooms near the Evergete Gate, where our finds are stored. All the pottery found during the three seasons have been washed and sorted, and a preliminary study of the shapes and wares has been conducted. A specific storeroom for the pottery coming from the osirian area was laid out under the Sound & Light Tribune.

The small items have been re-packed and the fragments of inscribed blocks and chips have been drawn and put in order on the wooden shelves built last year. All the objects and fragments have been entirely photographed and the documentation, computerized in a Database (Filemaker).

Conservation - restoration

The program of consolidation and conservation of the blocks stored on *mastabas* near the temple which started last year, continued this season. The work is about to be completed for the inscribed monuments. Some architectural elements, notably fragments of drums and capitals of fasciculated columns are very much deteriorated by a long stay in the ground.

At the eastern end of the area, part of the modern brick wall joining the western face of the Great Enclosure Wall and the Great Eastern Gateway, has to be consolidated by new brickwork to prevent any risk of collapse.

In the storeroom, several objects and fragments of blocks have been consolidated. The main conservation work there has been a preliminary cleaning of highly corroded elements of bronze coming from the consecration deposit at the north-east corner of the temple. A program of restoration for this group of objects has also been developed.

Fieldschool training

Similar to the two prior years, the season has also been the occasion for three French students from the University of Paris IV – Sorbonne and three Egyptian inspectors, to take part in the excavation and to be trained to the techniques of archaeological fieldwork (digging, architectural and archaeological survey, data recording, ceramic sorting, epigraphic drawing etc.).

Chapel of Osiris Wp-Ished – Evaluation of a program of salvage

The Chapel of Osiris *Wp-Ished* is one of the Osirian shrines situated in the north-eastern quarter, to the north of the temple of Osiris of Koptos and the Tomb of Osiris, and west of the temple of Osiris Heka-Djet. This chapel is very important, as it is one of the first to have been built close to the Osireion at its first stage of development. It was already in bad condition when discovered – and summarily consolidated with cement - by Henri Chevrier in 1950, but its deterioration seems to have severely increased in recent years and the building is now in great danger of collapse. Valérie Baudon, in collaboration with Agnès Oboussier, Antoine Garric and our team, examined the construction and its environs in order to evaluate the operations of dismantling, consolidation of the blocks, and reconstruction, in connection with an architectural and archaeological survey, needed to rescue the chapel in a near future.

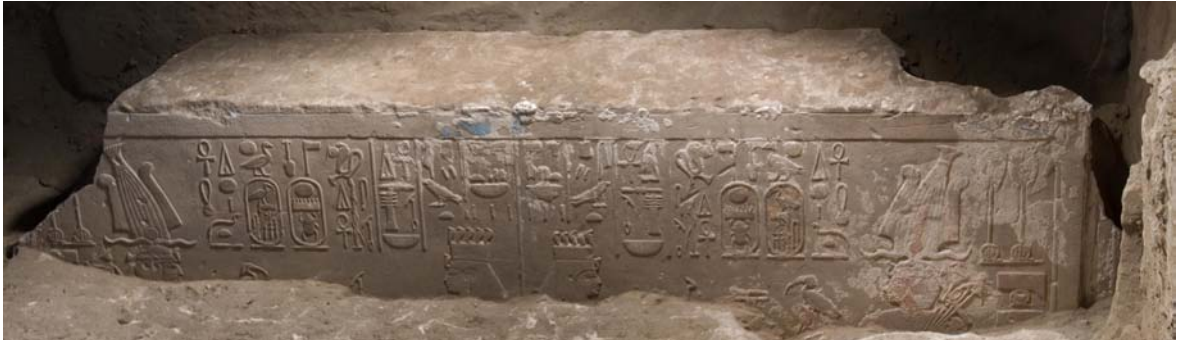


Chapel of Osiris *Wp-Ished* in 2009.

1.5.3. Architectural survey of the Opet temple (E. Laroze)

The architectural study project continued this season with two field campaigns. The first one took place between the 1st and 29th of November 2008. The team was composed of Ghada Ibrahim (inspector / egyptologist), Soline Delcros (architect), Anna Guillou (draftswomen/archeologist) and Sylvie Marchand (ceramologist/IFAO). The targets were various:

- 1) Continuation of the architectural survey at the scale 1/20. The work was mostly dedicated to the externals facade survey and the completion of the drawing of the courtyard. The survey of the externals parts (plan and elevation) is almost completed.
- 2) Epigraphic survey of blocks. A complete recording of the scattered blocks and the blocks reused on the courtyard platform have been undertaken and completed. The numerous fragments, stored inside the temple, have been sorted and organized on shelves. The most interesting ones have been drawn. Some of them, identified as belonging to the temple, have been put back and placed, whenever possible, to their original position thanks to the help of CFFETK conservators.
- 3) Ceramic material study. The prior excavation season had unearthed numerous ceramic material. An assessment and experts report of this materiel was requested. Seven occupation layers have been confirmed. They start from the Dynasty XI to the Byzantine period. Unfortunately, statistic studies for each layer could not be undertaken because of lack of time, however; some corrections and drawings have been completed.



The North-East part of the courtyard, partially back filled was cleared in order to complete the drawings. Numerous reused blocks appeared. Most of them were observed and drawn thirty years ago by V. Rondot, but some were new. They date for the most part from the XVIIIth Dynasty. The oldest ones bear the cartouche of Tuthmosis III. The most striking, the block RO36, was discovered at the bottom of a small sondage, undertaken on the northern side of the platform. Still embedded in the foundations, it measures 1.60 m long at least, but only 0.50 m of the upper part has been cleared. The visible part shows a double offering scene, symmetrically copied on both sides of the block's axis. The scene is original; the pharaoh, crowned with a diadem and an *atef* crown, is offering the goddess Opet an ibis. According to the dimensions, the block was part of a small building; the scene could have been set at the back of the sanctuary of this building.

The second campaign, which took place 17th - 31st January 2009, was exclusively devoted to an internal survey of the temple.

Concerning the great restoration project, the work has been stopped since June 2008 for administrative reasons. Currently, the resumption of the work is not scheduled.

In October 2008, the results of the firsts archaeological campaigns were announced at the Académie des Inscriptions et Belles-Lettres. Two articles will soon be published in the next *Cahiers de Karnak* 13: the first one will concern the restoration project, the second, the Tuthmosis III blocks recently uncovered.

1.6. Geology and palæoenvironmental studies

1.6.1. Landscape evolution and palæohydrological reconstruction of ancient Karnak (M. Ghilardi)

The affiliation of Matthieu Ghilardi (Post doctoral fellow in geomorphology from the 5th November 2008 to the 30th October 2009) was of great benefit, since his approach helped to define the landscape history of ancient Karnak. Multidisciplinary researches in which he was involved mainly consisted in a geomorphological prospection of the Karnak temples, and of the Sphinxes Avenue of Luxor.

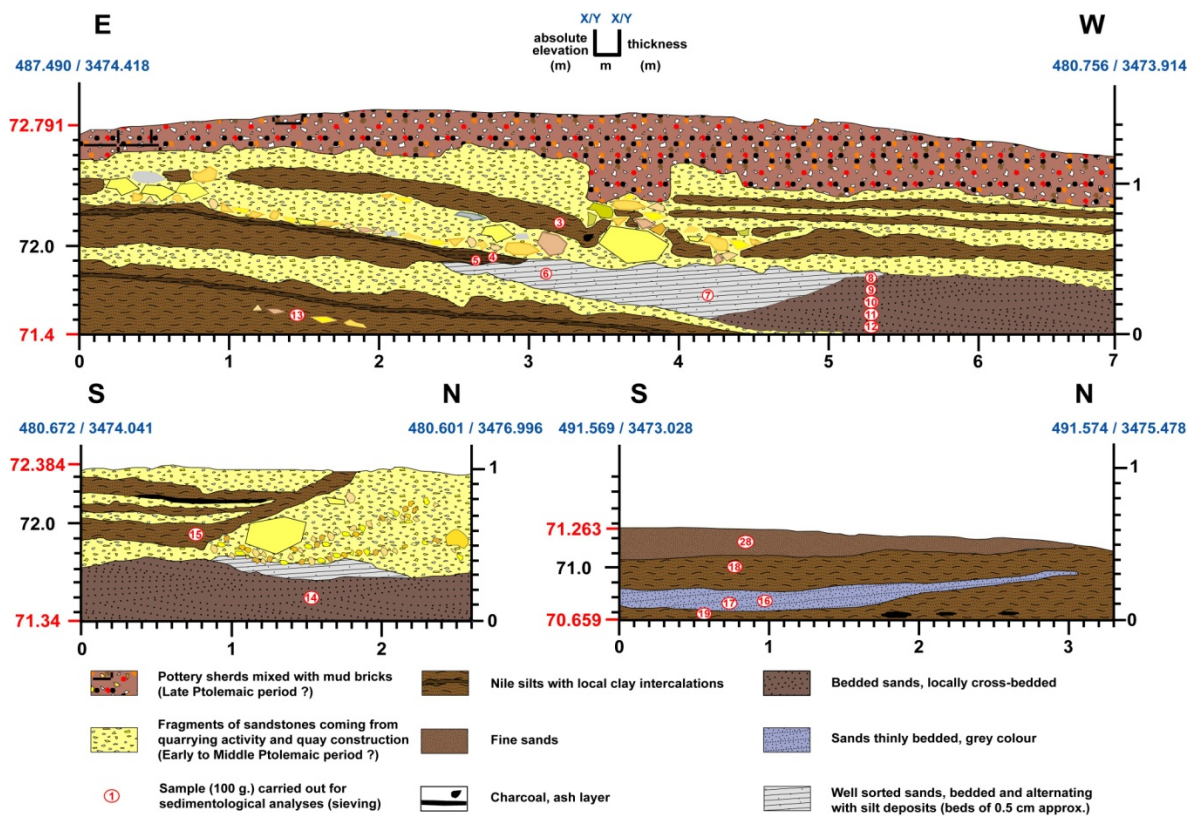
One of the aims of his researches in Karnak was to reconstruct the landscape dynamics around the ancient fluvial harbor located westward of the first pylon (from October 2008 until May 2009). Several boreholes were drilled in the excavations conducted by the SCA (figure 1) in front of the ramp accesses of the ancient harbour, and they revealed the depositional history in the area. Approximately 80 m of sediments were extracted and analysed (at intervals of 10 to 20 cm) for their grain-size distribution and magnetic susceptibility values. A dry method for sieving and Bartington MS2B equipment was kindly loaned by the CNRS (UMR 8591), and the laboratory facilities were provided by the ARCE (American Research Center in Egypt, Dir. Edward Johnson). During January 2009, 300 samples were characterized for their textural class and ferro/ferrimagnetic particles content.

Part of Ghilardi's researches was also concentrated within the perimeter of the Karnak temples, in the Open Air Museum. Two boreholes were drilled in a trench dug by the CFEETK with a hand auger, down to a maximal depth of 4.60 m. Two important layers were identified and can be described as follows: from the surface down to 2.00 m deep, a stratum composed of a mixture of pottery sherds/red bricks (anthropogenic layers), and fine sediments (from silts to fine sands). The second layer, from 2.00 m down to 4.60 m is composed of sandy deposits (probably river channel sediments) where no human activity was detected (lack of sherds).

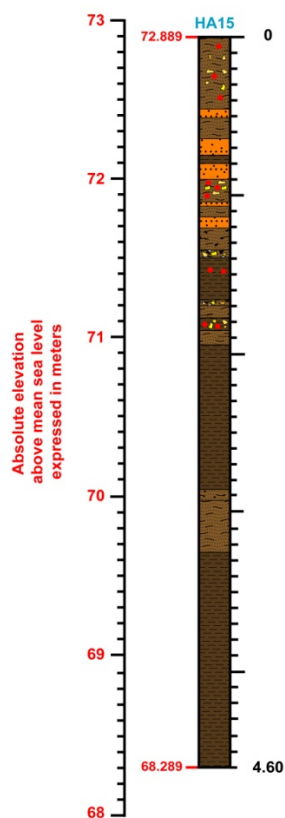
The researches conducted on the ancient harbour of Karnak were completed by a full study of the samples collected during the construction of two wells for the extraction of the water table in the subsoil. In April 2009, because of the water table variations during the year, it was decided by the Supreme Council of Antiquities (under the supervision of Mansour Boraik) to install two pumps and a piezometric gauge in order to reduce the level of the aquifer. The thickness of sediments studied (by Matthieu Ghilardi and Mohamed Hatem, SCA inspector) was about 20 m. In order to establish a landscape reconstruction around the Karnak temples, wood samples (*Acacia* sp.), bone fragments and charcoals were collected for later radiocarbon dating (institutional partnership between the IFAO and the CFEETK). In the meantime, the sediment analyses revealed the palaeoenvironmental settings of the site. At a depth of 20 m, a bed of pebbles (more or less rounded) was clearly identified. From 20 to 16 m below the surface, regular flooding was observed corresponding to *wadi* dynamics and sediment accumulation linked to the Nile River activity. From 16 m to the present ground level, a thick layer of fluvial sediments was revealed, and the variations of the grain size distribution clearly indicated important changes in the river-transport capacity.

The partnership with the SCA (Mansour Boraik) was also conducted in the Sphinx Avenue of Luxor: a geomorphological prospection was done close to the temple of Luxor, at 350 m to the north. Boreholes were drilled and stratigraphic profiles were established, in order to reveal the Nile River sediment accumulation in this area. Rich organic layers (maximum thickness of 1.50 m) were found overlying fluvial deposits.

Matthieu Ghilardi is also involved in the organization of the International Colloquium on Geoarchaeology which will be held in Cairo, 19th-21st September 2010. The colloquium “Landscape Archaeology”, will be dedicated to Egypt and the Mediterranean context. Within the framework of relations between man and his environment, the primary objective of the colloquium is to throw light on the evolution of the River Nile, a major component of the Egyptian landscape, and its impact on the peripheral spaces (coasts, flood plain, desert wadis and their tributaries).



Stratigraphical sections drawn in front of the ramp of the harbour.



Stratigraphic section of a sounding dug in the Open Air Museum.

1.6.2. Karnak Land- and Waterscapes Survey (A. Graham, A. Masson, M. Millet)

Angus Graham⁴, Aurélia Masson⁵ and Marie Millet⁶, working under the IFAO permit at North Karnak and in collaboration with CFEETK and the SCA in the area of the Amun-Ra complex, continued their work on investigating the past land- and waterscapes in and around the temple complex with a study season of the ceramic fragments, and other material retrieved from augering in previous seasons. The work took place 26th March – 10th April 2009, during which ceramic fragments from seven augers carried out in 2007 and 2008 in and around the Mut and Amun-Re complexes were studied. In addition to this a brief re-study of material from four augers, three of which were carried out in 2002 and 2004 at North Karnak, was undertaken.

Aurélia Masson and Marie Millet's research excavations (2001-08) to the south-east of the Sacred Lake have enabled them to produce a ceramic typology from the First Intermediate Period until the end of the Ptolemaic Period. This has been used to provide good chronological parameters of the depositional events recovered from the augering, and check the dating of material studied prior to their local typology being completed.

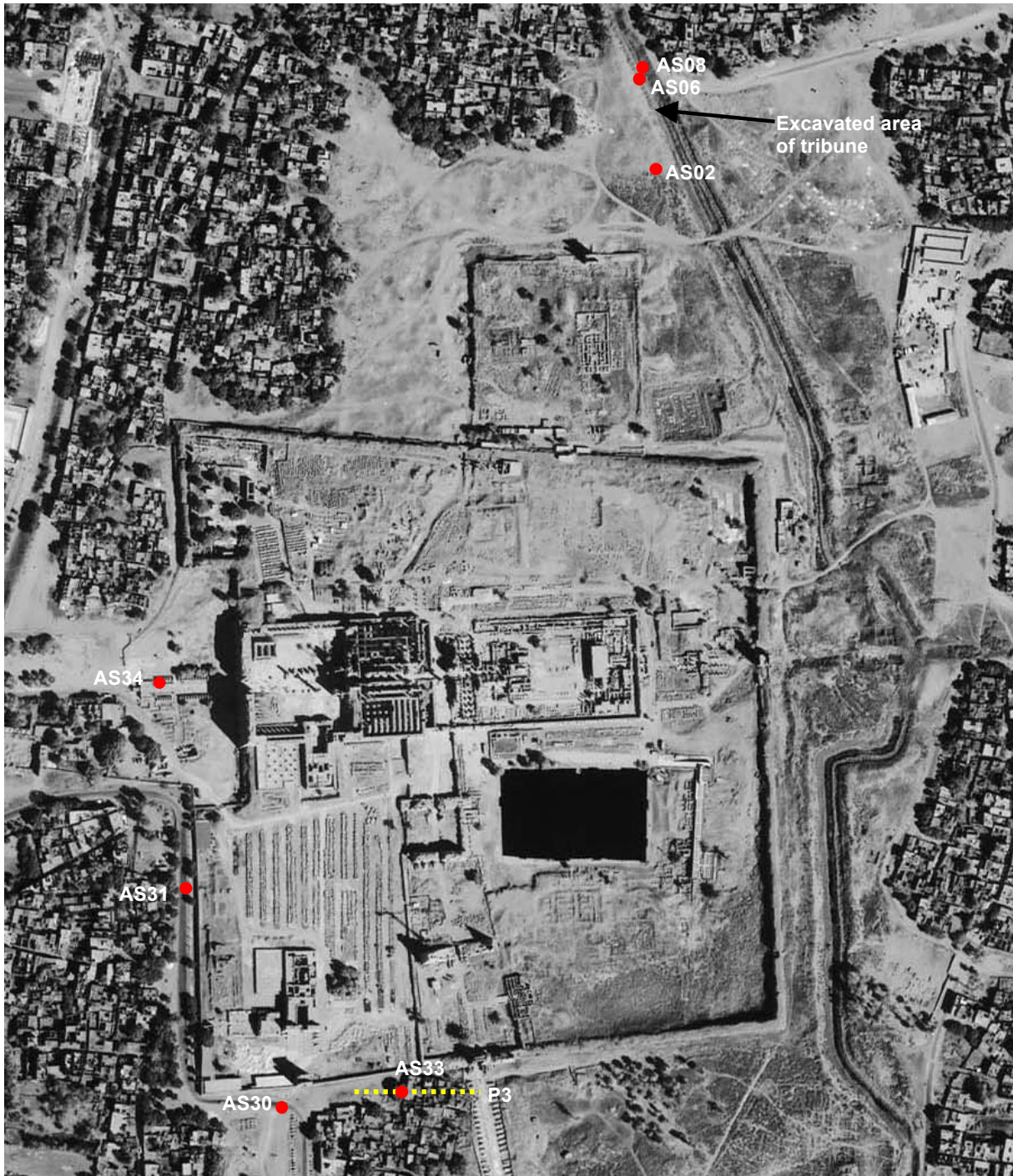
At **North Karnak** the fining-upwards sequences of sediment retrieved from auger site 02 (AS02) in 2002 clearly indicate that a channel had been present in the area north of the Montu enclosure, supporting Jean Jacquet's hypothesis following his excavations of the Treasury of Thutmose I. The initial brief study of the ceramic fragments by Irmgard Hein (University of Vienna), dated the sherds in the lowest levels of the auger to the Middle Kingdom to Second Intermediate Period, and one sherd to the early New Kingdom. A re-examination has revealed that they are too rolled to be certain about their date. The fabrics are known from the Middle Kingdom to New Kingdom, and probably later, leaving the dating of the channel less precise.

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⁵ Dr Aurélia Masson, Centre de Recherches Archéologiques, Université Libre de Bruxelles

⁶ Dr Marie Millet, chercheur associé à la chaire de civilisation pharaonique du Collège de France

Augering (AS06, AS08) just to the north of the North Karnak tribune has shown that a low-lying area existed here in the past, which the project has suggested may have been a waterway connecting the tribune to the river. A re-study of the ceramic material in AS06 reveal that New Kingdom sherds are found between c. 72.4 m and 69 m a.s.l., and are consistent with the process of dumping into a low-lying area. The re-examination of sherds in AS08 reveals ceramic fragments between c. 74.3 and 69.2 m a.s.l. date to the New Kingdom. Once this ceramic material from the New Kingdom was dumped, access to the tribune by water would have been unlikely as the material in AS08 is found up to 74.3 m a.s.l.



Locations of the augers studied and re-studied in 2009 mentioned in the text with the ERT profile 3 (P3) carried out in 2008 (Background image: © Cfeetk image no. 69556)

The sedimentary record of the two augers (AS31 in 2007 and AS34 in 2008) made in front of the revetment / quayside wall **west of the 1st pylon** revealed that the wall was not part of a basin such as

that depicted in New Kingdom tomb scenes, e.g. the tomb of Neferhotep. It was hoped that the study of the ceramic fragments this season would have helped date the construction of the wall. However, this study has not provided definitive evidence for a date of construction.

AS34, augered at the base of excavations in the so-called '**Ptolemaic baths**' site, has not provided any clear evidence for the date of the construction of the wall. AS31, augered in the 'el-Madrassa' site excavations, retrieved sherds that were heavily abraded. This is consistent with the coarse sediment in which they were found. Most of the material is dated to FIPRom as their abraded nature makes tighter dating not possible. There is no material specifically from the Middle Kingdom, New Kingdom, early TIP (21st - 22nd Dynasties), Roman or Late Roman Periods. However, there are sherds dating from the end of the TIP (i.e. 25th Dynasty) to the Ptolemaic Period which suggests a terminus post quem for the construction of the wall. A late TIP / early LP date of construction (25th - 26th Dynasty) would be contemporary with some of the later flood records on the western tribune. However, an earlier construction date cannot be ruled out as the lack of early TIP material may be due to the fact that it is too abraded to date and could be found in the FIPRom material.

Work carried out in the court of the **Temple of Opet** suggests the earliest archaeological material appears to lie on a sandbar that formed when an area nearby (upstream) was occupied. The area between the 7th to 10th pylons and the temple of Opet appears to have been a low-lying area in the late 11th Dynasty and may have only been seasonally occupied during that time.

AS30 carried out in 2007 is located at the base of a deep sondage in the southeast corner of the court of the Opet Temple, below the earliest levels of occupation, which date to the end of the 11th Dynasty - beginning of the 12th Dynasty. The sedimentary record revealed fine to medium-sized sands that were indicative of the formation and subsequent build-up of a sandbar. The sediments are artefact free, with the exception of two heavily abraded and highly rounded Nile silt body sherds. Both can only be dated to FIPRom due to their high abrasion, which is consistent with their transport in the sands. The abrasion suggests that they are not from downhole contamination of the auger, but are contemporary with the formation of the sandbar, indicating that this occurred when the area nearby was occupied.

AS33 carried out in 2008 is located approximately 66 m east of the **Khonsu temple** on the path between the temple and the **court of the 10th pylon**. An Electrical Resistance Tomography (ERT) profile (number 3) carried out in 2008 along this line had suggested a low-lying area between the Khonsu temple and court with an absence of any sand deposits as seen in AS30. The study of the artefacts from this auger has revealed a very coherent stratigraphy that fits well with the general understanding of the occupation of the temple.

There appears to be a change at 71.40 – 71.51 m suggesting a date of the end of 11th to the beginning of 12th Dynasty. Above this, Middle Kingdom sherds are found between 71.5 – 73.31 m. A transitional phase between the Middle Kingdom and New Kingdom appears to lie between 73.31 – 73.71 m. Between 73.61 and 74.40 m the ceramic fragments clearly date to the New Kingdom (probably 18th Dynasty). A second transitional phase between New Kingdom and Roman material occurs between 75.14 and 74.40 m. This phase may correspond to the levelling of the temple at c. 75.00 m to build the 9th and 10th pylons. Finally, Roman and Late Roman sherds were found at 77.39 – 75.52 m a.s.l. The sedimentary record of AS33 between 72.68 – 71.95 m a.s.l. suggests a marshy/waterlogged environment. Below this laminated silts and fine muds deposited by water are found. They suggest that from c. 72.6 m a.s.l. downwards any occupation of this area at the time of the Middle Kingdom and earlier would have been at best seasonal.

In conclusion, our study season of material culture retrieved from our augers was very successful. We were able to clarify a number of issues relating to the previous study of augers at North Karnak and further our understanding of the sedimentary data of the augers that had not previously been studied. We are beginning to understand the formation processes across the site and some of the earliest occupation of Karnak as well as later occupation of the site. However, there is still much to learn and clarify about the movements of the Nile and its relationship with the complex of temples at Karnak. We would like to continue our work in future seasons employing hand-augering combined with Electrical Resistance Tomography Profiles, which proved in 2008 to be an excellent tool for 'seeing' sediment and archaeology in slices across Karnak.

1.7. Varia

1.7.1. The Temple of Khonsu (J.-Cl. Degardin)

The mission which took place from 4th till 23rd April 2009 continued the work undertaken in previous years. It was mainly centred on the checks to be made in the temple of Khonsu, and in some monuments on the West bank of the Theban area, particularly Medinet Habu.

In the context of the continuation of the restoration of paintings, as well as the cleaning of the grounds of the temple of Khonsu, the indispensable meetings with the people in charge of the ARCE and Chicago House took place from the first days of this mission. An agreement in principle for collaboration over several years is envisaged. This includes the exploitation of the documentation recorded during the past campaigns, as well as those which will be conducted in the future.

The work led by ARCE has achieved good results particularly in the preservation of colors in the court of the temple, on the internal face of the pylon and on the south part of the internal wall is of this court, give us a more exact vision of the monument, with important information on paintings, as well as elements concerning the symbolism of colors.

The work in rooms X and XII will complete this information, room X, with the Osirian character, being more likely susceptible to supply new data than room XII where colors were already very well preserved before the current intervention.

A check of the various levels of the roof of the temple revealed the asymmetry between eastern and western sides of the building, because of the staircase giving access to the room of Pinedjem, and to the top of the monument. An asymmetry also exists between the eastern and western sides of the roof above the hypostyle hall.

The scenes of the *hrt-ib* were the object of particular attention, as the inscriptions of the doorjambs, bringing to light certain differences between those were positioned in the east or the west of the temple.

The ritual sequences defined previously and orientation of the scenes which does not seem to follow logically the decoration of the walls were observed again in detail.

After articles dealing with the ritual function of the roof of the temple to appear in the second half of 2009, several other articles will present our analyses concerning the other aspects of the function of the monument.

1.7.2. Pottery from the priests' quarter (A. Masson)

This short three weeks mission, which took place from 5th till 25th April 2009, focused on the ceramics coming from the rescue excavations carried out by the CFEETK, in the Seventies, on the eastern bank of the Sacred Lake. The study concerned more specifically the ceramics originating from the priests' quarter and the Ptolemaic quarter, whose occupation covered almost all the First millennium BC.

The archaeological material from these excavations has been partially studied and published. The majority of the ceramics especially remain unpublished. On one hand, they were known thanks to hundreds of object forms kept in the documentation of the CFEETK (more than 650 forms for ceramics of all periods). On the other hand, several hundreds of ceramics were recovered in the magazines of Sheikh Labib A, during a previous mission in April-May 2008.

Work on the object forms

The object forms, which were unequally recorded, presented quite often photographs and drawings carried out respectively by Alain Bellod and Rachid Megalla. Neat copies of 145 drawings were made with Adobe Illustrator. In the case where the ceramic was kept in CLA, it was possible to verify its drawing.



LS 597 – Big jar with carinated shoulder and ring base; decoration consisting of horizontal bands and leaves painted in black on a white slip (IX N 68) – Ptolemaic Period (Drawing of R. Megalla, copied on Adobe Illustrator by A. Masson).

Study and drawing of the ceramics kept in the Sheikh Labib A

At least 500 ceramics originating from the rescue excavations, were recovered in the Sheikh Labib A (CLA), in April-May 2008. The initials LS (for Lac Sacré) on the ceramics, or the mention of a square corresponding to the sector located east of the Sacred Lake, enabled the origin of the ceramics to be identified. Most of the shapes were complete or almost complete. After a brief inventory and some general pictures, they were stored in the back room of the CLA – west side of the magazine – on the southern shelves.

More than 400 ceramics date from the New Kingdom to the Late Roman Period. However, the majority are characteristic of the Late and Ptolemaic Periods. More than 300 are not recorded on any object forms. About fifty ceramics were published for the priestly quarter and the Ptolemaic quarter. Thus, these ceramics in the CLA represent a great opportunity to improve our knowledge on the material culture of the priests and other personnel working for the Temple.

Each ceramic from these periods was briefly described (conservation state, dimensions and when possible the fabric). Remarks on the uses of some vessels could sometimes be made from remains preserved in the ceramics, burn traces, damage on the internal surface, secondary use of a ceramic...



LS 226 Cooking pot presenting burn traces on the external surface. The bottom, only damaged and not burnt, must have been covered with *mouina* in order to make the pot more resistant to fire (practice observed on other pots discovered in the recent excavations in the priests' quarter) – Late Period (end of the 26th-beginning of the 27th dynasty).

The so-called “incense burners” were of noteworthy interest. Hundreds of them were discovered in the houses of priests. Some of them present traces of burning which indicate probably their use as incense burners (or as lamps?). However, most of them are free of any kind of traces. They could have been used as drinking vessels, lids... A few were altered for a secondary use.

All this information permits a clearer picture of the daily life of the sacerdotal community living in the sanctuary to emerge. All the needs of the priests were most likely covered by the Temple. The study of the material found within the priests' quarter furnishes interesting data on their supplies – food, as well as pottery and other objects of daily life. Some of these results were presented during a conference in Cambridge and a workshop in Brussels:

- “Domestic and Cultic Vessels from the Quarter of Priests in Karnak: The fine line between the Profane and the Sacred”. Paper delivered in *Functional Aspects of Egyptian Ceramics within their Archaeological Context*. Conference at MacDonal Institute in Cambridge, 24th & 25th July.
- “Comparing the pottery production and distributions from a town and a sanctuary in Egypt: preliminary observations on the case of Karnak”. Paper delivered in *Distribution patterns and uses of pottery in the ancient Mediterranean world*. Workshop, Université Libre de Bruxelles. 18th September.

Two articles on the production, distribution and uses of pottery in Karnak are in preparation.

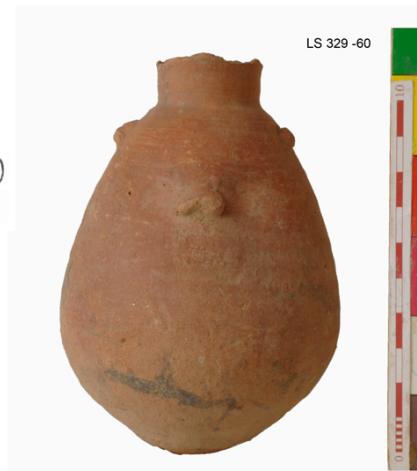
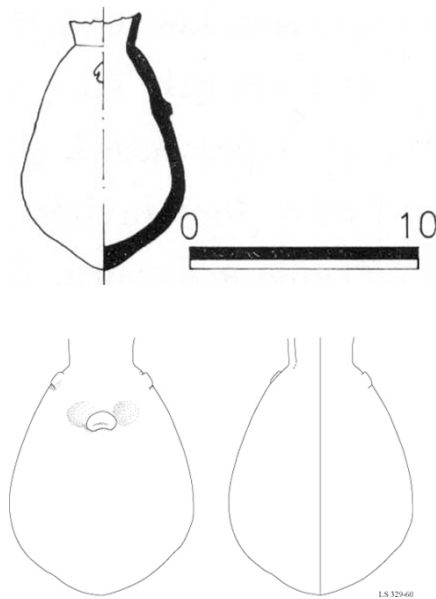


LS 307 – Cup with burnt traces on the inside, used as an incense burner (?) – Late Period.



LS 241-61 – A reused “incense burner”, maybe as a lid (?) – Late Period.

As the mission was very short, only a selection of ceramics kept in the CLA was drawn. Some very standardized productions of the Late and Ptolemaic Period do not need individual drawings. Nevertheless, another mission would be necessary to complete the study of these ceramics. 73 shapes, most of them complete, were drawn. Types absent from the chrono-typology established with the material from the recent excavations east of the Sacred Lake, were drawn as a priority. This is the case of a Bes jar, whose previously published drawing did not allow a good identification. All the imports, quite rare in the Theban region, were documented. One handle of a Rhodian amphora was particularly interesting, LS 514-2. It was discovered with other objects in the square IX N 79, in the Ptolemaic quarter (around Houses D and H). A rectangular stamp shows the Greek name ΦΙΛΑΙΝΙΟΥ. He is a Rhodian potter, Φιλαινιος, who was working between 182 and 176 BC in Rhodes. Rhodian amphorae are amongst the most common imports in Egypt. They usually contained wine, but also sometimes dry figs.



LS 329-60 – Old drawing (published in *Kémi XXI*), new drawing and photograph of a Bes Jar – Late Period.



LS 514-2 – Handle of a Rhodian amphora, stamped with the name of the potter Φιλαινιος (IX N 79) – Ptolemaic Period (2nd c. BC).

The work on these ceramics will be included in the general publication of the research concerning the priests' quarter and its evolution, research which regroups the old archaeological investigations (1970-1971) and the new ones (since 2001). More work on the ceramics coming from these two excavations is needed. The exceptional quality of the ceramic material found in this quarter would greatly improve our knowledge of the Theban material for the first millennium BC.

1.7.3. Pottery from the excavations of the court of the IXth pylon (Ch. van Siclen)

This is the first of a series of study seasons to examine, sort and record the pottery from the excavations of previous years in preparation for the publication of the excavations.

There are three main periods of pottery which relate to the various phases of building in the court: late 17th to early 18th Dynasty, early Ptolemaic, and late (fourth century AD) Roman, with a small amount of pottery from other periods.

At the close of the season, unwanted pottery was replaced in the excavation. Pottery retained for further study was returned to storage next to the excavation.

At the request of the SCA, the camel thorn which had grown up in the area was again removed. During this process, a white quartzite fragment of a drain was noted. This piece may have belonged to the drainage system of the second stage of the bark shrine of Sesostri I when it had been reoriented east-west and raised up at the start of the 18th Dynasty. While cleaning, a complete bread mould was also found in the area of a presumed bakery which once stood west of the Sesostri shrine during the first half of the 18th Dynasty.

1.7.4. Archaeological artefacts from the northern courtyard of the IVth pylon (R. Le Bohec)

The work undertaken during this mission (April 11th - May 21st, 2009) started the preliminary study of the archaeological material discovered during the 2004-07 excavations in the northern courtyard of the IVth pylon. It concerned the ceramic material, from areas Z.175 and Z.18, but also other elements (seals and small objects). All the ceramics from the archaeological excavations in the central zone of Karnak, since 2002, are kept in the storeroom MLSB which was reorganized during this mission.

From 2004 to 2007, the northern courtyard of the IVth pylon was excavated in two areas: the smaller one (Zone Z.175) is an area in the north of the north courtyard and the larger one (Zone Z.18) covers the entire north courtyard. As the 3-month period initially scheduled to study the material of both areas was reduced to 6 weeks, we focused on certain parts of the court: the western one (2006-07 excavations), the northern one (2004-05 excavations) and the central one (2004-05 excavations).

Study of the ceramic material

In general

- * All the ceramic fragments from Zone Z.175 were studied this season, but only a part of the material from Zone Z.18.
- * The sherds studied cover a period from the Middle Kingdom to the late Roman Period.
- * The typology used was established by Marie Millet from her excavations in the area, south-east, of the sacred lake.

The objectives were to:

- * specify the dating of the archaeological layers observed during the excavations;
- * determine the period of construction of the exposed stone and mudbrick structures;
- * specify the nature of the observed strata: geological levels, floors, levels of occupation, working floors; and
- * complete the corpus of the ceramic material found in the central zone of the temple of Amun-Re.

- The systematic study of the data has added considerable precision to the archaeological context:

- * Two very different levels were observed in the whole area (Z.175 + Z.18): an upper level contemporary and/or slightly later than the XIIth dynasty, covering a very different level rich in rudimentary occupation (small hearths, ashy layers...) dated from the end of the XIth to the beginning of the XIIth Dynasty. The top layers, were almost completely destroyed by XVIIIth Dynasty

construction work, except for a few centimetres, just enough to testify their existence in the stratigraphy.

* The foundation trenches of the mudbrick walls cut through the XIIth Dynasty level and disturb the underlying level dated from the end of the XIth to the beginning of the XIIth Dynasty. A wall without visible foundation trench and a small low wall touch the levels of the XIIth Dynasty. All the mudbrick constructions of the area are thus contemporary with and/ or posterior to the XIIth Dynasty. They belong to 2, even 3, 4, or 5 different phases of development.

* No level later than the XIIth dynasty was really found. The material of the XIIIth Dynasty is very sparse even in the foundation trenches of the stone monuments of the XVIIIth Dynasty.

* The lower part of the foundation trenches contains New Kingdom ceramic fragments probably linked to the work floor of this time.

* On both sides of the buried calcite base, the foundation pit contained sherds dated from the end of the XVIIth to the beginning of the XVIIIth Dynasty.

* The foundation sand of the stone constructions of the XVIIIth Dynasty contains many intrusive (?) Roman sherds. The use of this courtyard during this late period is still unknown.

Preliminary conclusions

The preliminary results of this study are quite unexpected. No level of the XIIth Dynasty has been clearly identified. The destruction caused by the foundations of the XVIIIth Dynasty explains the almost complete lack of later levels. It is thought that the continuation of the study will probably confirm this conclusion.

Study of the seals

The systematic sieving of all the layers led to the discovery of 47 imprints of seals and 49 sealings. This material is mostly fragmentary and sometimes burned. Most of the seal fragments were printed by seals with an oval shape and various ornamental motifs. Their backs bear the negative of cords and the fibres of the wooden door.

Studies of other material

During the study of the ceramic material, many small objects were selected, particularly modelled elements applied to pottery or small objects (slices of ceramic (tokens), ceramic pellets, earthen stoppers, pierced sherd, sherds with potter's marks, firedogs). It is interesting to note that this material, which comes from levels dated from the end of the XIth to the beginning of the XIIth Dynasty, shows a number of resemblances to the Middle Kingdom levels found in the south-east area of the sacred lake.

The excavations in the northern courtyard of the IVth pylon have completed the discoveries made by Aurélie Masson and Marie Millet west of the IVth pylon. Both are adding data to the research into the history of *Ipet Sout*. This question concerns as much the construction of the XVIIIth Dynasty as the Middle Kingdom structures.

The archaeological and architectural data relative to the excavations in the northern courtyard of the IVth pylon were given in a M.A, dissertation submitted in 2007⁷. The complete publication of the data is planned for 2012. It will concern the main results given by the study of the ceramic material, the foundation deposits (pottery, copper tools and cartouches in faience), the statuary, the decorated fragments of the IVth and Vth pylons and the seals. The study of this material will require several more missions in both storerooms MLSB and Sheikh Labib B until 2012.

Inventory and transporting to the Cairo Museum of the fragments of the dyade of Horemheb

Two weeks (from March 29th till April 9th, 2009) were necessary to register, photograph and draw the 197 fragments of the Horemheb dyad, which was discovered in the northern courtyard of the IVth pylon between 2004 and 2007. Several thousand undecorated fragments were also collected and their

⁷ R. Le Bohec, *Le temple d'Amon à Karnak. Etude archéologique de la zone située entre les IV^e et V^e pylônes : la Ouadjet Nord. Recherche sur les aménagements et remaniements successifs du secteur, du Moyen Empire au règne de Thoutmosis III*, Master II, Paris IV-Sorbonne, 2007.

origin recorded. All these fragments, weighing nearly 300kg, were shipped to Cairo by truck on April 23rd, 2009.

Other fragments of this dyad, found a long time ago around the IVth pylon, were listed on May 27th 2009 at the request of Hourig Sourouzian and with the authorization of Ibrahim Soliman. They are in three wooden trays stored on the metallic shelves of Sheikh Labib A (CLA). A list of these fragments along with several photographs was given to Ibrahim Soliman and Hourig Sourouzian. Dr Sourouzian will ask the Supreme Council of Antiquities (SCA) to move the fragments to the Cairo Museum in order to continue the restoration of the dyad. Other fragments may well be stored elsewhere in this storeroom.

1.7.5. Pottery from the excavations in the northern courtyard of the IVth pylon (M. Millet)

This mission was carried out from the 11th April to 16th May to study mainly the ceramic material found during the excavations of the north courtyard of the IVth pylon from 2004 to 2007 (Zone 18). In this area, the periods represented are the Middle Kingdom, the New Kingdom and dumpings of Late Roman and modern periods.

Methodology:

For each process, a count of the shapes has been carried out. The diagnostics sherds are essentially rims and bases. The bodies are described succinctly, as they give an idea of the proportion of the different fabrics for each process. With the aim of building a typology for the shapes found in the north courtyard of the IVth pylon, some of the ceramics are registered with an inventory number. Each of them are photographed and/or drawn.

Zone 175 : North of the north courtyard of the IVth pylon

North of the north courtyard of the IVth pylon (Z.175), an area has been cleared where foundation trenches related to the IVth pylon have been highlighted. This sondage gave the opportunity to find layers prior to the pylon. Few artefacts were found in the foundation trenches. They are small in size and date from the Middle Kingdom to the beginning of the 18th Dynasty. The earlier layers are remains of the Middle Kingdom occupation in this area. In fact, the ceramic is dated from the end of XIth to the XIIth Dynasty (in Upper Egypt, the XIIIth Dynasty belongs to the Middle Kingdom, and not the Second Intermediate Period). Only a pit of Roman period seems to disturb the *in situ* layers. In this area, as a test of our study, 170 drawings have been made in order to establish a ceramic typology around the IVth pylon. They contain Middle Kingdom and New Kingdom ceramics. For the ceramics of later periods, only photographs have been taken.

Zone 18 : North courtyard of the IVth pylon

The study of the material of the north courtyard of the IVth pylon, is expected to take three months. This 5-week season has been focused on some parts of the courtyard. This study will be completed at the time of other missions.

This spring, we worked on the north and west parts of the courtyard on layers linked to the stone monuments and prior to them. The artefacts found in the foundation trenches of the stone monuments are dated from the Middle Kingdom to the beginning of the 18th Dynasty, but often with a contamination by sherds of the Roman period. The layers prior to these buildings appear to date to the Middle Kingdom, but further precision needs to be determined in future missions.

In this zone 18, 70 shapes that remain to be drawn have been stored. They will be drawn during the next season with the aim of completing the ceramic corpus for this area.

2. RESTORATION AND RECONSTRUCTION PROGRAMS

2.1. Restoration (A. Oboussier, Mohamed Hussein)

*Conservation works in the temple of Ptah*⁸

In the context of the Ptah Temple project, conservation works began in February 2008.

The first purpose was emergency intervention to consolidate and move sandstone blocks scattered around the temple, in order to allow their epigraphical study.

⁸ Agnès Asperti, Charlotte Rerolle, Agnès Oboussier, Alice Wallon-Tariel (VI MAEE).



Sandstone block uncovered during excavations (with the protocol of Ptolemy IV), before and after conservation work.

All those elements were found partly buried all over the south-western area around the temple. Interventions have been necessary for each of them, before or after their transfer to a safe place :

- Each sandstone block has been consolidated with Ethyl Silicate (Silres-Wacker OH) with the aim to stop their serious deterioration into sand. Silicate has been impregnated by baths, or by infiltration with a dribbling system (the drying time takes around three weeks).
- Others consolidations with epoxy resin have concerned three-quarters of the blocks. The fragment assemblies have been made with thick epoxy (Araldite 2015), a liquid epoxy (AY 103/ HV 930) has been used for infiltrations. Because of their very damaged state, some blocks have been consolidated, before their transfer, with metal rods.
- The missing parts of stones have been filled in with stained lime mortar with the intention of maintaining all the pieces together, and also to enable a better epigraphical reading. The broken junctures have been first isolated with acrylic resin (Paraloïd B44 10% in acetone)
- The consolidated elements have been transferred to appropriate mastabas with the aim of optimizing their conservation in the long term.

During those two months of work, around 15 blocks have been treated.

Secondly, an overall enhancement of the site has been planned : the Ptah Temple is not suffering from serious alterations representing a danger and necessitating heavy interventions. However, some elements of stones and polychromy still *in situ*, may need some refreshment (remove ancient interventions, cleaning and consolidation) with a view to optimizing, the state and the general appearance of this monument.

- In the central area, Ethyl Silicate impregnations have been made at about 2m50 above the ground in order to consolidate the decayed zones of the architecture. In this area, the removal of some black cement mortar was necessary. It has been replaced by lime mortar.

Around six blocks of masonry have been treated in this way.

- At the same time as these structural interventions, in the temple courtyard, cleaning and consolidation have been started on the reliefs conserving some polychrome areas. With this aim, during the months of March and October 2009, some comparative tests of cleaning, consolidation and removing of old restorations have been made in the courtyard. These tests allowed us to decide on an appropriate protocol for the next interventions in the Ptah Temple.

*Conservation works on Tuthmosis II's limestone blocks in the Open Air Museum*⁹

During the years 2008 and 2009 the work on limestone blocks has been dedicated to the Netjery Menu, in the name of Tuthmosis II. First of all, localisation, listing and selection was carried out to determinate which blocks still had to be consolidated in order to start the reconstruction at the end of 2009. For this reason, about twenty blocks, belonging to this whole group, have been taken out of the Sheikh Labib storeroom.

As in the previous years, the purpose in mid-term, was to consolidate the blocks in order to reintegrate them in their whole original location : interventions were to give a coherence to each element of the *Netjery Menu* in order to make it bear various manipulations and insertion in the masonry.

⁹ Abdou Qoraïm, Abdel Nasser, Ornella Bergès (VI MAEE), Mahmoud Said, Mohammed Zaki, Najoua Abd'el Khafour, Saat Zaki, Yasser, Zeineb abd el Muahsen, Agnès Oboussier, Alice Wallon Tariel (VI MAEE).

Many degrees of deterioration were found during this work : it was possible to see only one or two breaks in some cases, big fragmentation in some others, while huge networks of cracks, divided up some blocks into small slices.



Limestone block before and after conservation work.

Despite these different deteriorations, all the blocks have been treated with the same principles of consolidation and the same products : fragments have been bonded with thick epoxy (Araldite 2015) and infiltrated with liquid epoxy (Araldite AY 103/ HV930). The insertion of metal rods, held in place with epoxy resin, has been necessary to maintain big fragments. Fragile blocks, which had serious fragmentation, have been infiltrated without first dismantling; this first intervention was made in order to drill the stone and to make a deeper consolidation.

On some of the blocks, some tests of preliminary strengthening have been made with acrylic resin (Paraloid B44) on the inscribed side, in order to maintain the different fragments during the drilling operation. This was very effective for further consolidation.

The finishing mortars, relief cleaning and other harmonisation treatment should be realised after the gathering of the blocks, when it will be possible to observe the whole monument.

*Conservation works on the diorite gate bearing the name of Tuthmosis II, preceding the north room of Hatshepsout, in the central area*¹⁰.

The work on the Tuthmosis II gate, in the central area took place during May 2009.

On this monument, there was no need to reinforce the structure which was already efficiently maintained. Nevertheless the general state of the stone was still a cause for concern: a large network of cracks covered the two doorjambs, and the lintel in a smaller part; this phenomenon was associated with the wear of the carred faces, and the dust and encrustation. Moreover, some fragments of cement mortar (from old restorations) were found strewn on the floor. In the losses of components, it was possible to see the deteriorations inside the stone (scaling of the faces, crumbling on other layers).

All those factors have justified the intervention of the CFEETK team.

- Two simultaneous actions have been realised for the consolidation:

All cracks and loss have been consolidated by infiltrations with liquid epoxy resin (Kemapox RL 204/HF1024). This consolidation was made in order to reduce the faces parcelling , the scaling, and consolidate the inside reconstruction above all.

The old cement mortar was removed from the doorjambs only ; the lintel was maintained by the mortar reinforced by metal rods. This structural reinforcement was still in a good state. We just removed the superficial mortar, and replaced it with a stained lime mortar.

- Following the consolidations, cleaning has been made twice: some compresses (DMF/clay) have been applied on the faces in order to remove the resin traces.

The soiling and encrustations obscuring the reliefs have been removed by means of a micro-sandblaster.

10 Abdou Qoraïm, Abdel Nasser, Ornella Bergès (VI MAEE), Mahmoud Said, Mohammed Zaki, Najoua Abd'el Khafour, Saat Zaki, Yasser, Zeineb abd el Muahsen, Agnès Oboussier, Alice Wallon Tariel (VI MAEE).

- Overall harmonisation followed, with final lime mortar applied in cracks and gaps. Finally, a light retouching with lime water and pigments was made on the mortar areas.



General view of the gate at the end of the restoration work and détails during the work.

2.2. Reconstruction programs (A. Garric)¹¹

Chapel of Tutmosis III, Open Air Museum

The work, which stopped 10 years ago, restarted in September 2008. Only a part of the north wall, composed of two huge fragments of a few tons each, had been rebuilt. This anastylosis work is based on the study of Emmanuelle Arnaudès-Montélimard : “Un reposoir de barque en calcite édifié par Thoutmosis III dans le temple d’Amon-Rê à Karnak”, *Cahiers de Karnak* 11, 2003.

The north wall

After preliminary measuring, it appeared that it was necessary, before restarting the work, to straighten up the whole part of the wall in order to adjust the inner face on a strict vertical angle.

Thus, with the help of iron wedges distributed on the base of the north side and a chain hoist pulling the top of the wall to the south, the whole wall was straightened up 20mm.

Before putting up the first blocks, other preliminary works were necessary. A 6-ton block was consolidated with Araldite injections and inox goujons. Before moving it to its final position, we had to dig into the concrete of the wall base in order to insert this third big fragment.

Except for the latter, none of the blocks have any resting surface. They are just the remains of a huge monolith which constituted the main part of the wall, so it was necessary to reconstitute a kind of base for each block, in order to be able to adjust them to their precise places inside the wall.

The missing parts of the wall have been restored with brick masonry. In order to rigidify it, we made three iron reinforced slabs distributed on the wall elevation. The first one is situated up the base blocks, the second one halfway down the wall and the last one at the top of the wall, which constitutes also a strong upper surface able to receive the huge ceiling blocks.

After the reconstruction, some small decorated fragments have been replaced, which have facilitated the architectural understanding of the chapel. The anastylosis enabled us to confirm the exact position of the blocks within the chapel, and to determine its general dimensions.

¹¹ Team: Jamal Salem Abdelwares, Moubarak Mohamed Abdessid, Saadi Saadek, Girgis Ernest, Ahmed Fatallah Youssef, Ramadan Yassin Ebid, Hashem Abdelhamid, Walid Mohamed Abdessid, Aline Blondiaux (MAEE), Vincent Cabrol (Cnrs).



The north wall

The south wall

The remains of this wall are totally missing except for two fragments : a part of the base, having three undecorated faces and a resting surface, and a part of the top, having two decorated faces and an upper surface.

The main interest in reconstructing this wall, apart for making a restitution of the chapel's archaeological volumes, was to enable the laying of the monumental ceiling stones, which are mainly surviving. Thus, it was necessary to make an undergirding superstructure. It is composed of three pillars fixed together with three horizontal slabs. This structure has been inserted inside the brick masonry to make it stronger.

The ceiling

The lintel, which was assembled ten years ago (it was broken in three parts), was standing in a vertical position, because the old crane was unable to lay it down. With the CFEETK new crane, we laid it down, and put it provisionally on two bases to await the installation on the top of the chapel. The operation will be realized with the CFEETK crane, even though it will approach the crane's capacities. Indeed, the 17 ton lintel will have to be installed up to 4.28m high and 6m away from the axis of the crane.

On the other hand, the lintel must be installed only after the central ceiling stone which is much bigger. This 45 ton stone stands 300m away from the chapel, near the Amenhotep II chapel, so the installation and transportation are not possible with the CFEETK crane, the stone's weight exceeding widely the crane's capacities.

As a consequence, a 120 ton capacity crane is required for the transportation (on a Decauville railway) and the installation on the chapel roof.

The wire-saw

The wire-saw has been working daily since May 2009 cutting large dimension slabs, 10cm thick, which will be use by the ARCE in the Khonsu Temple as 100m² paving stones. ARCE provided the volume of stone necessary for this work.

The wire-saw is now continuing its work, and is cutting 200m² of stone paving for the *Netjery-Mennu* reconstruction in the Open Air Museum.

The Netjery-Mennu, Tutmosis II

In his 2005 publication, L. Gabolde (*Monuments décorés en bas-relief aux noms de Thoutmosis II et Hatchepsout à Karnak, MIFAO 123/1-2, Cairo*) proposed a plan of the *Netjery-Mennu* and the walls elevation plans. Some of those parts can be reconstructed.

The work started in September 2009 with the filling of the excavation made by Séverine Marchi (UMR 8152) on the reconstruction area at the entrance of the Open Air Museum. The filling was with compacted sand to avoid differential settling. We decided to reconstruct the edifice to the same altitude as the Amenophis II chapel, standing 20m to the east.

The concrete foundation is constituted with longitudinal beams (section 0,50 x 0,50 m) covered up by a slab (0,15m thick). This water-proof foundation covers a 14m wide square and will protect the edifice from capillary seepages.

The anastylosis work will start in January 2010, after the installation of paving stones under the wall places. Salient to the wall face, they will be necessary to form a coherent connection with the final stone paving.

About a hundred blocks, from 1 to 3 tons weight, have to be set up and the CFEETK crane will be able to carry out this operation for all of them.

Various subjects :

- The measurement of a Ramses III door, which is very damaged and situated south of the Hypostyle Hall, have been realized by Aline Blondiaux. The actual condition reading and the straightening up project will be used for a visionary dismantling-reassembly of the door.
- At the request of the SCA, the CFEETK crane has been used for about 10 days for the removal of a hundred bulky stones encumbering the excavations in Monkey Valley. Antoine Garric was in charge of the crane operations.
- The crane removed some bulky stones encumbering the excavation of Nadia Licitra (Treasure of Shabaka)
- Installation with the crane of a stone belonging to a window on the Ptah Temple roof.

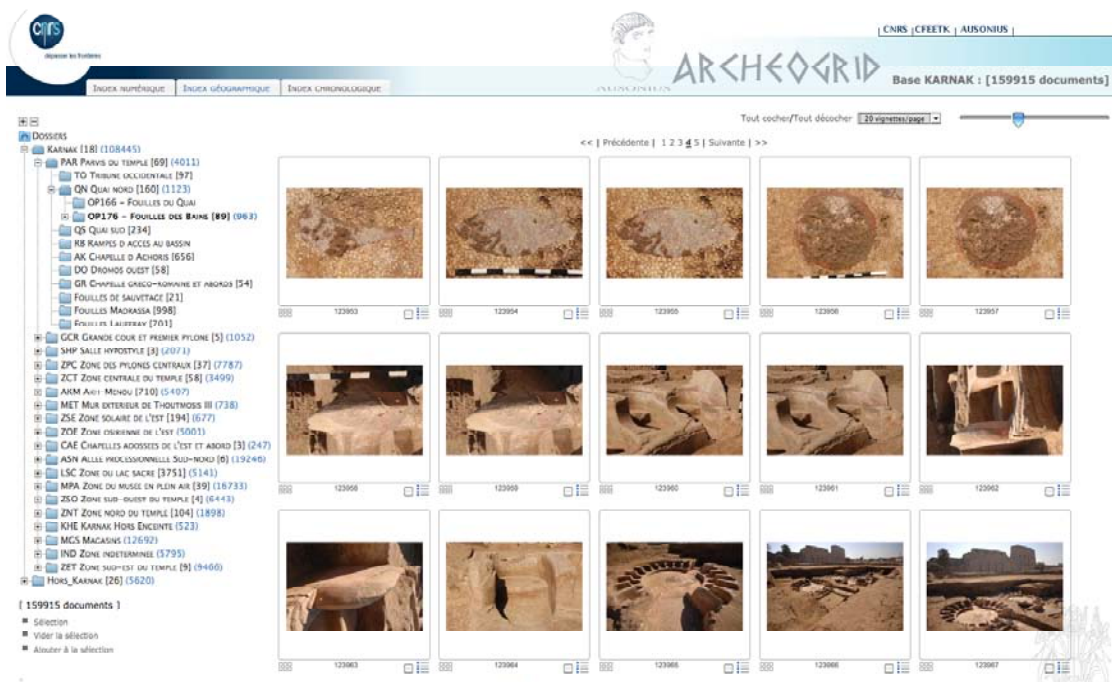
3. ARCHIVES AND SCIENTIFIC DOCUMENTATION

3.1. New archive database ArcheoGrid-Karnak (S. Biston-Moulin)

An important step in the management of CFEETK archives was reached in 2009 with the changeover from the old database to the new operating system ArcheoGrid developed by Nathalie Prévôt (Cnrs, UMR 5607 - Institut Ausonius Univ. Bordeaux 3).

Since the arrival of a new CNRS documentalist on 1st December 2009, the task has been divided into two primary goals:

- completing the migration of all the data collected by the CFEETK during this past forty years (more than 160 000 documents) to the new interface ArcheoGrid-Karnak.
- collecting new data by adding the documentation of the researchers (photographs, databases, etc.) working under the auspices of CFEETK.



Exemple of ArcheoGrid-Karnak database access.

The new database system is hosted in the CFEETK at Karnak and a replica is available through the internet on the server of the IN2P3 in Lyon. The Karnak and Lyon databases are always synchronised. The replica in Lyon also prevents any risk of losing information, as could happen in the past because of computer defections.

Two access points are already in place at Karnak for the members of the CFEETK. Thereby, researchers can access through the internet the unique amount of documents collected by the CFEETK by using a secure account system, and can contribute to the database by adding information or comments.

All documentation (photographs, video, maps, surveys...) will be available through three different entries: by CFEETK number of document, by chronological and geographical request.

Along with this migration comes the introduction of a thesaurus system allowing the standardization of the metadata. The thesaurus system is used for the new data added in the Karnak database (10 000 since 1st December 2009), but the information of the old database (150 000 documents) need to be migrated. The first step of the migration is to add location of the documents to enable search. For this purpose we use the Karnak nomenclature system developed in the CFEETK by Michel Azim (*Karnak et sa topographie*, Paris, 1998). So far, 110 000 documents have been migrated with the nomenclature thesaurus, 50 000 are still to be processed.

The second step will be the migration of the other information (chronological, photographer, intervention number, etc.) into a specific thesaurus. An agreement was signed to use a specific thesaurus tool developed by UMR 6223, CESCO-UNIV. POITIERS.

As soon as the first step of migrating the data into the new system is completed, it will be possible to use a full English interface to access the data.

The second aim of this project is to give access to researchers to the documentation they are working on. The migration to the ArcheoGrid-Karnak database is still in progress, but some accesses were created for researchers and scholars to test the interface and to add new data from their own documentation.

List of test researchers and scholars :

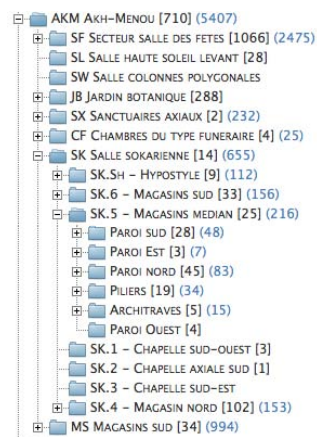
- BICKEL, S. Egyptologist, Basel (Switzerland)
- BROZE M. Egyptologist, Brussels (Belgium)
- CHAPPAZ J.-L. Egyptologist, Geneva (Switzerland)
- COULON L. Egyptologist, Lyon (France)
- FROOD E. Egyptologist, Oxford (United Kingdom)
- KARKOWSKI J. Egyptologist, Warsaw (Poland)
- LECLERE Fr. Archaeologist, London (United Kingdom)
- LOEBEN Chr. Egyptologist, Hanover (Germany)
- PREYS R. Egyptologist, Leuven (Belgium)
- SOUROUZIAN H. Egyptologist, Cairo (Egypt)
- VERGNIEUX R. Egyptologist, Bordeaux (France)

When the first test step is completed, all the researchers working with the CFEETK will have access to the database, and will be kindly asked to add documentation to the Karnak database.

Ultimately, the aim of this project is to open a large part of this documentation to the general public through the internet, to see and benefit from the joint work of the CFEETK.

3.2. Scattered blocks database

The daily inventory work of the scattered blocks lying upon mastabas continued, using the same protocol as in previous years: numbering on a piece of metal, schematic drawings, photography and



insertion into a database. This work is supported by three Egyptian colleagues, Abdou Qoraïm (restorer), Mohamed Saidi (photographer) and Romani Zaki (draftman).

Ultimately, this specific database will be merged with the ArcheoGrid-Karnak database as soon as the field work is completed.

3.3. Photography (J.-Fr. Gout)

The 2009 Photographic program was essentially devoted to the survey of the temple of Ptah. This includes 195 scenes of various sizes. The choice of the technical work was therefore imposed, requiring the collaboration of the entire photographic staff. Although small scenes have been recorded in a single photograph, it was not possible for most large scenes and some have needed up to eighteen shots and required arrangements, taking for some of them several days.

The entire survey will need a few more months of work. The amount of photographs that have been made is about 90 to 150 scenes.

The number of photographs and assembly time has been significantly reduced through the acquisition of a new camera (funded by CNRS 2009), which will enable completion of this program in better conditions.

Assistance with photographic records of temple architecture and the restoration recorded the progress of different kinds of studies.

The service also participated in numerous works, such as field works and recording of objects and pottery found in excavations:

- The quay and the Ptolemaic baths
- The Sphinx Avenue in Luxor
- The chapel of Thoth
- Temple of Osiris from Koptos
- The Treasury of Shabaka
- The Osirian chapels.

Photographic survey of the work anastylosis and restoration:

- Temple of Ptah
- Gate of Ramses III
- Chapel of Thutmose III in the Open Air Museum

Photographic survey:

- Gate of the Second Pylon
- Scattered blocks
- Chapel of Amenhotep I.

3.4. Epigraphic survey and archaeological drawings

The drawings of archaeological artefacts, especially pottery, were provided by Memduh Abdel Khasoul and by Ayad al-Barbari, who also carried out the epigraphic work on the blocks discovered during the excavation of the embankment and on the Sphinx Avenue at Luxor.

Three French fellows (scholarships Universe) have been introduced to the field epigraphy and began the drawing of the walls of the temple of Ptah, under the direction of Christophe Thiers and with the constant help of Memduh Abdel Khasoul (SCA draftman).

From October to December 2009, instead of the loss of scholarships Universe, Cnrs helped welcome two young epigraphists, supervised by Pauline Calassou, freelance designer.

3.5 Library of the Cfeetk (S. Biston-Moulin)

The library was still disorganised since the move of the CFEETK in 2007. One of the first priorities was to organise the library and to register the new books (over than 500 in December 2009 - January 2010). The library is now fully operational. An online catalogue is in progress, and will be available soon through the Karnak website.

We are pleased to thanks, Mrs Nathalie Lienhard and Mrs Marguerite Erroux-Morfin, librarian of the Centre de recherches égyptologiques de la Sorbonne (UMR 8167 du Cnrs) and from the Institut d'égyptologie François Daumas de l'université de Montpellier 3 (UMR 5140 du Cnrs) for the generous donations made to the library of the Cfeetk.

4. TRAINING PROGRAMS

4.1. Trainings

The training of young Egyptian restorers continued within the team led by Agnes Oboussier and Mohamed Hussein on all conservation and restoration work of the CFEETK.

As during the last season, three Egyptian restorers from the CFEETK were trained in the restoration of metal objects in July, in Alexandria (USR 3134 CEAlex directed by J.-Y. Emperor). Travel costs were supported by the CFEETK and hosting by CEAlex.

Similarly, many French students (conservators, architects, Egyptologists) were welcomed to the CFEETK, allowing successful links in different programs and field works.

4.2. French language courses

With financial support from the French Center for Culture and Cooperation (French Ministry of Foreign Affairs, Cairo), courses in French have been provided at the CFEETK office for several SCA inspectors and Egyptian members of the CFEETK. This should be repeated later in the year 2010.

5. PUBLICATIONS AND LECTURES

5.1. Selected publications of the CFEETK members and associated missions (2008-2009)

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Online publication :

Activity reports of the CFEETK 2008 : <http://www.cfeetk.cnrs.fr/index.php?page=actualites-01>

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- 21 october 2008, Paris, University Paris Sorbonne, Centre de recherches égyptologiques de la Sorbonne : P. ZIGNANI, « Architecture culturelle, aspects méthodologiques et perspectives d'études ».
- january 2009, Paris, Egyptian Cultural Center (Egyptian Embassy, Paris) : G. ZAKI, « Karnak, Transition between Pharaonic past and Mythical Present ».
- january 2009, France-Egypt Association, Cannes: G. ZAKI, « Recent excavations at Karnak ».
- 13 february 2009, Lausanne, École polytechnique fédérale de Lausanne, École doctorale architecture, ville, histoire : P. ZIGNANI, « Le temple de Dendara. Une architecture moderne d'une culture disparue ».
- 27 february 2009, Berlin, Deutsches Archäologisches Institut de Berlin. Diskussionen zur Archäologischen Bauforschung 10 (26.02/01.03.2009), Licht – Konzepte in der vormodernen Architektur : P. Zignani, « Light and Function. An Approach to the Concept of Space in Pharaonic Architecture ».
- 15 may 2009, Paris, Académie des Inscriptions et Belles-Lettres : E. LAROZE, « Note d'information concernant l'état des travaux du programme sur les colonnes de la salle hypostyle ».
- 27 june 2009, Montpellier, Association égyptologique Néfrou : Chr. THIERS, « Les travaux du CFEETK en 2008-2009 ».
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- 26 novembre 2009 Basel, Organisation Alliance française de Bâle et Basler Forum für Ägyptologie : P. ZIGNANI, « Une culture des tremblements de terre dans l'architecture des pharaons ».
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- BORAİK Mansour, « Sphinx Avenue Excavations. First Report ».
- BORAİK Mansour, « Excavations of the Quay and the Embankment in front of Karnak Temples. Preliminary Report ».
- BORAİK Mansour, FAUCHER Thomas, « Le trésor des bains de Karnak ».
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- CHARLOUX Guillaume, « Rapport préliminaire sur la première campagne de fouilles du parvis du temple d'Opet à Karnak ».
- DEGARDIN Jean-Claude, « Le fonctionnement du toit du temple de Khonsou à Karnak ».
- GABOLDE Luc, « Mise au point sur l'orientation du temple d'Amon-Rê à Karnak en direction du lever du soleil au solstice d'hiver ».

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- LARCHÉ François (avec la collaboration de Charles van Siclen), « The chapel of Amenhotep II embedded between the obelisks of Tuthmosis I ».
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- PAYRAUDEAU Frédéric, « Nouvelles inscriptions de la Troisième période intermédiaire à Karnak (I) ».
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- VALBELLE Dominique, LAROZE Emmanuel, « Un sanctuaire de Thoutmosis III à la déesse Ipy Ouret, édifié à Karnak par le premier prophète d'Amon Menkhéperréséneb ».
- ZAKI Gihane, « Rapport préliminaire sur le domaine de Thot ».

6. MEMBERS OF THE CFEETK

6.1. SCA permanents members

- | | |
|--------------------------|---|
| - Dr. BORAİK M. | Co-director of the Cfeetk, general director of Luxor an Upper Egypt |
| - SOLEIMAN I. | Director of the temples of Karnak and Luxor |
| - MILAD ZIKRI T. | Chief architect of Upper Egypt |
| - ASSEM M. | General director of Upper Egypt |
| - AHMED ABD ALL-JALIL H. | Chief inspector |
| - AMMAR A. | Chief inspector |
| - HUSSEIN M. | Chief restorer |
| - SA'AD M. | Inspector |
| - HALMI F. | Inspector |
| - ABD AL SATTAR B. | Inspector |
| - GHARIB T. | Inspector |
| - FATHI M. | Inspector |
| - DOWI A. | Inspector |
| - AHMED HASSAN M. | Inspector |
| - AHMED MAHFOUD A. | Inspector |
| - SOUBI S. | Inspector |
| - EL-BALAL F. | Inspector |
| - KADRA I. | Inspector |
| - ABD EL GHASSUL M. | Draftsman |
| - ZAKI R. | Draftsman |
| - LOUIZ M. | Documentation officer |
| - DOWI ABD AL-RADI K. | Photographer |
| - SAIDI M. | Photographer |
| - FOUAD E. | Secretary |

6.2. CNRS permanents members

- | | |
|--------------------|---|
| - THIERS Chr. | Director of the USR 3172, co-director of the CFEETK |
| - BISTON-MOULIN S. | Documentalist, since 1 st December 2009 |
| - GARRIC A. | Stone-cutter |
| - GHILARDI M. | Geomorphologist, till September 2009 |
| - GOUT J.-Fr. | Photographer |
| - OBOUSSIER A. | Restorer, till 1 st December 2009 |
| - ZIGNANI P. | Architect-archaeologist |

6.3. Associated members

Non permanent Egyptian inspectors

- ABU EL FADEL A.
- ALDOSQI I.
- AL NUBI M.

- AL TAWAB H.
- BAKHIET S.
- EDRES B.
- EL HOSAINY M.
- EL MASEKH S.
- ESSAM N.
- ESSAM M.
- FATTALHA S.
- GHANI A.
- HAGGAG MOHAMMED A.
- HATEM M.
- MOUNTASSER C.
- SHAFI H.
- YOUSSEF BELAL W.

International Volunteers (French Ministry of Foreign and European Affairs)

- BLONDIAUX Stone-cutter, till November 2009
- GUILLOT A. Topographer, since october 2009
- BERGES O. Restorer, since september 2009
- SUEL A. Administrator, since november 2009

Franco-Egyptian scholars (scholarship « Univers ») : 2008-2009

- BAGARRY A. Photographer, till june 2009
- BISTON-MOULIN S. Egyptologist, till june 2009
- FILIAGGI C. Architect, till june 2009
- LANTRAIN C. Egyptologist, till june 2009
- MAGGIO L. Egyptologist, till june 2009

Cnrs trainees 2009

- ALLIER M. Architect
- BATARD P. Photographer
- BOUANICH C. Egyptologist
- EHRENFELD M. Egyptologist
- PARISOT N. Archaeologist

6.4. Associated researchers

BICKEL S.	Egyptologist, Basel	X th pylon
BROZE M.	Egyptologist, Brussels	Gate of the II nd pylon
BUNBURY J.	Earth sciences, Cambridge	Landscape studies
CARLOTTI J.-Fr.	Architect, Lille	Monuments of Amenhotep I
CHAPPAZ J.-L.	Egyptologist, Geneva	X th pylon
COULON L.	Egyptologist, Lyon	Osirian chapels
DEFERNEZ C.	Archaeologist-ceramologist, Paris	Osirian chapels
DEGARDIN J.-Cl.	Egyptologist, Lille	Temple of Khonsu
DEVAUCHELLE D.	Egyptologist, Lille	Demotic ostraca and graffiti
FROOD E.	Egyptologist, Oxford	Graffiti (Ptah temple)
GABOLDE L.	Egyptologist, Montpellier	Monuments of Amenhotep I
GHILARDI M.	Geomorphologist, Aix-Marseille	Landscape studies
GRAHAM A.	Doctoral candidate, geomorphologist, London	Landscape studies
KARKOWSKI J.	Egyptologist, Warsaw	Central area
PAYRAUDEAU F.	Egyptologist, Cairo	Osirian chapels
LAROZE E.	Architect, Paris	Opet temple
LECLERE Fr.	Archaeologist, London	Osiris from Koptos
LARCHÉ Fr.	Architect, Jerusalem	Central area
LE BOHEC R.	Archaeologist, Jerusalem	Central area (Wadjyt)
LICITRA N.	Doctoral candidate, egyptologist, Paris	Treasure of Chabaka

MANNICHE L.	Egyptologist, Copenhagen	Amenhotep IV's statues
MASSON A.	Archaeologist, Brussels	Priests' quarter, pottery
MILLET M.	Archaeologist, Paris	Priests' quarter, pottery
PRÉVOT N.	Doctoral candidate, egyptologist and computer scientist, Bordeaux	Talatat and ArcheoGrid database program
PREYS R.	Egyptologist, Leuven	Gate of the II nd pylon
REVEZ J.	Egyptologist, Montreal	Great hypostyle hall
SOUROUZIAN H.	Egyptologist, Cairo	Colossal statues
VERGNIEUX R.	Egyptologist, Bordeaux	Talatat and ArcheoGrid database program
VAN SICLEN Ch.	Egyptologist, San Antonio	Courtyard of the IX th pylon
WIDMER G.	Egyptologist, Lille	Demotic ostraca and graffiti

6.5. Doctoral candidate

LARCHER C.	Égyptologue, univ. Paris-Sorbonne	Talatat (Cheikh Labib)
LORAND D.	Égyptologue, univ. Bruxelles	Statuaire de Sésostri I ^{er}
TERRIER A.	Architecte, univ. Genève	Portes et passages
YOYOTTE M.	Égyptologue, univ. Paris-Sorbonne	Talatat (Cheikh Labib)

7. ACADEMIC COLLABORATIONS

France :

- UMR 5607 – Institut Ausonius Univ. Bordeaux III
- USR 3134 – Centre d'études alexandrines (CeAlex)
- UMR 8152 – Univ. Paris IV Sorbonne
- UMR 8164 – Halma-Ipel Univ. Lille III
- UMR 5140 – Univ. Montpellier III
- UMR 5189 – HiSoma Univ. Lyon II
- UMR 6635 – CEREGE Univ. Aix-Marseille
- UMR 6223 – CESCUM, Univ. Poitiers
- Institut français d'archéologie orientale (Ifao)
- Académie des Inscriptions et Belles-Lettres
- Collège de France (chaire d'Égyptologie)
- École nationale des sciences géographiques (ENSG) / IGN

Others countries :

- American Research Center in Egypt (ARCE)
- Chicago House (Luxor)
- Univ. Libre de Bruxelles
- Univ. of Quebec (Montreal)
- Univ. of Memphis (Tennessee)
- Univ. of Cambridge
- University College (London)
- Univ. of Oxford
- Univ. of Basel
- Univ. of Warsaw
- Museum of Geneva