

K E R M A

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SOUDAN

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G E N A V A

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The conditions for our research on the sites of Kerma were good, and some excellent discoveries each year broadened our knowledge of both the prehistoric periods and those of the great Nubian kingdoms. Finds made at the Egyptian town of Doukki Gel were particularly interesting in respect of the period of transition between the Kerma period and the arrival of the Pharaonic armies. Public interest in our archaeological work brought about a significant increase in the number of visitors, which necessitated further work to preserve and display the remains. Restoration work is underway, and also the construction of a site museum to provide the complementary information that is indispensable to a full understanding of the antique city.

The last season was marked by the visit of the Federal Minister, Pascal Couchepin, who, accompanied by his family, spent four days at Kerma. M. Couchepin came to support the creation of a museum close to the western *deffufa*, the main temple of the Nubian town, thus manifesting in concrete form his interest in the 40 years of work on the Sudan. During his visit, a number of events were organised and attended by several ministers of both central and regional governments (Fig. 1). Their Excellencies Al Hadi Boushra, Abdelrahim Mohamed Hussein and Sir El Khatim emphasised to a gathering of local inhabitants the historical implications of the research undertaken by the Swiss mission. During this period, Charles Bonnet was awarded an honorary doctorate by the University of Dongola-Karima. These festivities did not make us forget all that the Mission owes to the National Corporation for Antiquities and Museums, Sudan (NCAM), which each year reiterates its confidence in our work. We are thinking in particular of the director, M. Hassan Hussein, and also of M. Salah El Din Mohamed Ahmed, who has contributed on both the scientific and organisational fronts on behalf of the mission. We should also like to use this opportunity to thank them and all the inspectors who have contributed to the excavations over the years.

The Swiss National Fund for Scientific Research has regularly provided the grants that support the programme of work. We also acknowledge the contribution of the Museums of Art and History of Geneva and the loyal support of Michel Valloggia, President of the Commission for Excavations of the University of Geneva. Finally, the Institute of Prehistory of the University of Neuchâtel has played an increasing role in the project through its logistical support and the participation of its students in the excavations of the earliest periods. Matthieu Honegger set up a comprehensive study of the region¹ which provides the setting for our work on the historic periods. The complexity of the archaeological assemblage at Doukki Gel has focused our efforts on this Egyptian town which, at about 1400 BC, took over from the ancient Nubian town. The religious monuments and their associated buildings together with the remains of the enclosure offer an exceptional research potential.

The two excavation campaigns took place from 4 December 2003 to 7 February 2004 and from 1 December 2004 to 6 February 2005. The Raïs Gad Abdalla, Saleh Melieh, Abdelrazek Omer Nouri and Idriss Osman Idriss directed around a hundred workmen.

1. HONEGGER 2003

The restoration of ancient walls and the protection of several sites, in particular by means of painted panels, were entrusted to the inspectors Al Kazafi Youssif Is'Hag and Mohamed Saad Abdallah. We must once again thank the inhabitants of Kerma and our friends in Khartoum for their magnificent hospitality. It was a great privilege to see the flags of Sudan and Switzerland flying from the top of the *deffufa* and in the streets of the modern town on the occasion of the visit of the Federal Minister.

The survey undertaken by Matthieu Honegger has provided a much clearer picture of prehistoric settlement. However, the first stages of an irrigation project – the creation of an enormous embankment at Tumbus to direct Nile water 8 to 10 kilometres into the desert, and the excavation of new canals at Burgeig – are very worrying, and in the future it will be necessary to take account of this new situation. The information already collected from the site of El-Barga and its surroundings warns against the total destruction of this heritage. The report of Matthieu Honegger² confirms the richness of this area. Surface cleaning in the Kerma necropolis revealed evidence of an extensive proto-historic occupation which explains the extraordinary development of the Kingdom of Kerma. We would like to thank all those who worked in the field: Louis Chaix, Daniel Conforti, Marion Berti, Aixa Andretta, Christel Jeanbourquin, Sophie Maytain and Schahinda Omer Ahmed.

At the site of Doukki Gel, the excavations were extended to the west where there was a large complex of bakeries, breweries and butcheries dating to the Napatan and Meroïtic periods. Very eroded traces of a defensive system dating right to the beginning of the 18th Dynasty were found under 4.5 m of sand. More detailed investigations were undertaken around two large wells that had already been partially excavated. In respect of the religious buildings, we were surprised to discover a cult edifice even earlier than the remains of a gate attributed to Thutmosis III. The diversity of these finds necessitated the collaboration of several specialists. Dominique Valbelle continued her analysis of the decorated and inscribed blocks and the statues; her report can be found below³. Marc Bundi and Françoise Plojoux-Rochat contributed to the recording of these finds, which now number 950. Jean-Michel Yoyotte was responsible for the photographic record of all the material. Philippe Ruffieux studied the ceramics; his initial reflections are given in a separate report⁴. Gérard Deuber, Alain Peillex and Françoise Plojoux-Rochat established the architectural record of the mud brick structures, whose interpretation is particularly difficult.

Nicolas Faure was responsible for the particularly difficult task of making the photographic record required for the publication of the royal statues from the *favissa*; this was undertaken with great skill. Four of the statues were restored by Markus Bloedt, a man of considerable experience in such work. Finally, Dominique Valbelle, Françoise Le Saout, Béatrice Privati, Nora Ferrero and Patricia Berndt undertook a range of editorial tasks in relation to the publication or preparation for publication of various papers and articles⁵. Computerised management of the documentation was undertaken by Marion Berti and Jean-Phillippe Yoyotte. As is evident, the investigation of an archaeological site is a pluridisciplinary task that cannot be achieved without close collaboration between everyone. Our thanks are due to all for their enduring commitment.

2. See below, HONEGGER 2005

3. See below, VALBELLE 2005

4. See below, RUFFIEUX 2005

5. BONNET 2003.1; BONNET 2003.2; BONNET 2004; BONNET/VALBELLE 2003; BONNET/VALBELLE 2004; BONNET/VALBELLE 2005; BONNET/VALBELLE, in press (1); BONNET/VALBELLE, in press (2); BONNET *et alii* 2004; VALBELLE/BONNET 2003

Discoveries at the site of Doukki Gel have revealed the importance of this town, identified as the ancient Pnoub. The analysis of the remains of the fortification walls built at the beginning of the 18th Dynasty, at the time of the foundation of the town, indicated phases of development in which Nubian traditions were clearly visible. This town is the most southerly of the Egyptian settlements known to date, and without doubt the earliest. The towns further north belong to a later phase of the 18th Dynasty or perhaps even later; all are characterised by a rectangular plan defined by an enclosure wall with small rectangular buttresses. We know almost nothing of the systems of fortification established under Tuthmoses I at the time of the conquest. At Doukki Gel, the enclosure wall does not follow a rectangular path but returns back at a right angle towards the west: the pre-existence of the northern well doubtless forced this deviation. We decided to enlarge the excavations in this direction, beyond the dependences of the temple (Fig. 2).

The variations noted in the different sections of the enclosure in respect of both the thickness of the masonry and the dimensions of the small rectangular buttresses, indicate different stages of construction. In effect, the wall consisted of several walls butted up against one another, each with a thickness of 1 to 2 m, which together made up a wall that was almost 6 m thick (Fig. 3). Excavations uncovered the foundations of a wall made of bricks distinguished by their yellowish colour; this was set at a slight angle. Here there was almost a hill of debris, which led us to hope that the condition of the remains might be better than in other sectors. We thus excavated to the west a trench 14 m by 20 m, perpendicular to the line of the wall. The mound consisted of an enormous accumulation of aeolian sand transected by two layers of fragmented bread moulds, one of Napatan and the other of Meroïtic date (Fig. 4).

Once the mound was cleared, the traces of very eroded mud brick structures were revealed. Much further clearing is required to gradually reveal the plan of a curious defensive system of bastions and massifs, in the centre of which a narrow passage seems to have been provided. On the northern side, relatively small bastions seem to be associated with this passage, while to the south two enormous rounded structures, turned towards the exterior, may indicate a monumental entrance. This preliminary interpretation is limited by the scale of the excavation. Differences in materials (mud brick, large lumps of mud clay or *galous*) and reorganisations of the plan corresponding to several phases of use, remain to be better defined (Fig. 5). The number, and the layout or form of the bastions are reminiscent of some of the military systems in the ancient Nubian town of Kerma. It is also plausible that there is a local hand visible in the construction of this fortification. It would be premature to date it to the reigns of Tuthmoses I or his immediate successors, but the ceramic material recovered from several circular deposits in the same sector can be dated to the beginning of the 18th Dynasty.

While the religious quarter of Doukki Gel is well known, this is not the case for the urban topography as a good part of the town has been destroyed by the neighbouring palm grove. However, the different phases of development that are in process of being analysed offer

a unique opportunity to understand the establishment of an Egyptian town on foreign territory. The fact that the New Kingdom levels around the temples are separated from those of the Napatan and Meroitic periods by a thick layer of sand, between 0.8 m and 4 m thick, is particularly interesting. The period of abandonment that this accumulation of sand suggests is surprising, as the cult areas such as the ceremonial palace indicate continuous use. The existence of this layer of sand may be related to changes that took place during and at the end of the Egyptian occupation, implying, for example, a dispersion of the settlement or another mode of urbanisation.

The northern well

Judging by the number of refurbishments that had been undertaken, the two wells at Doukki Gel had important functions. Both seem to have been constructed using the same technique, which employed a juxtaposition of five or six concentric walls made in *galous*, with large lumps of earth (40 × 60 cm) arranged in two rows. The total thickness of the wall thus constructed is 3 m to a height of around 7 m. Although the precise dating of the *northern well* is still not possible, the majority of sherds found in the mud clay masses are of Classic Kerma date. The ceremonial staircase found to the west of the well during the 2003-2004 season was studied in detail. It was constructed on a base of large blocks of unsquared sandstone from the quarry of Tumbus in the 3rd cataract, such as are found in many of the late fortifications of the ancient town of Kerma. In the levels excavated there were many Kerma sherds mixed in with the Egyptian sherds. This stair may have been thought of as the access to a sacred lake, a hypothesis somewhat weakened by the rounded form and the somewhat restricted dimensions of the well, but which nonetheless cannot be discounted.

At the top of this ceremonial staircase, an important building 10 m long comprising several elongated rooms was uncovered (Fig. 6). In the south-eastern room, opposite the stairs were several deposits of pottery, mainly concentrated in its corners; some of the plates and vases were turned upside-down. The deposits increase in number in and around the building. Continuing to the west, a protected path descended on a slight slope towards the bastions found along the line of the enclosure. Deposits of offerings also surrounded the base of a silo or workshop. This path must have been used for some time, as many water evacuation channels were visible on its surface, and also cattle hoof-prints. Rounded walls and other constructions date to the end of the New Kingdom, a period during which the well remained a focal point.

In the Napatan and Meroitic periods, the sector was completely reorganised, but the well retained its importance. A vast ceremonial courtyard was constructed to the west. To the north, the only access to the water was a narrow passage passing between two large walls. The mud brick staircase, which widened out from this passage, was subjected to numerous modifications; from the outset it seems to have provided access to a kind of terrace. Two years ago, a Meroitic censer was found at the top of the stairs. The remains of a second staircase were found to the east, leading to the front of the eastern pylon. Originally the stair made a right-angled turn and after 4 or 5 steps gave access to an upper terrace. One of its steps, in fired brick, was preserved under a mass of *galous*. It is likely that the lower flight continued to ground level, perhaps partially consolidated by stones. Close to the bottom of the well, which has not yet been excavated, there are three steps *in situ*. One of them is edged to the south by a large block of yellow sandstone and is dated by Clas-

sic Meroitic pot sherds. There was also a stair to the south, associated with the outbuildings of the Napatan and Meroitic periods.

The southern well

The southern well (Fig. 7) had two partly subterranean entrances; pottery finds comprising Kerma sherds and Egyptian wheel-made pottery date them to the first decades of the 18th Dynasty. Both the quality of their construction and their preservational state are astonishing. The traces of these two entrances first describe a circle and then extend in a straight line right up to the stone facing of the well. A kind of doorway, only 80 cm high, opened into the rectilinear channel. While this was originally relatively long (10 m), it had soon been cut by the second stair on the same alignment but at a higher level. The stair descended evenly with steps approximately 25 cm high and 80 to 90 cm wide. At the level of the vault, the space cleared was around 1 m. Within the fill of the two conduits were numerous fragments of a white plaster deriving from the destruction of an earlier floor.

The brick foundations below these entrances suggest that the two curved segments were divided either by a closed structure or by a kind of parapet. The stair could thus have been above ground, only going below ground to depth of 2 m. Furthermore, the evidence suggests that these structures were built on the site of a deconsecrated temple sanctuary. The relative chronology established so far suggests that they are of the same date as the remains of the side entrance of a temple attributed to Tuthmoses III.

The temples of Doukki Gel

Whereas there is little evidence for the layout of the eastern New Kingdom temple, the cult building constructed by Tuthmoses IV at the centre of the religious quarter is now much better known (Fig. 8). Although the Amarnian and other later alterations seriously complicate interpretation, the architectural analysis is of great interest. Resumption of the excavation along the eastern wall of the temple of Tuthmoses IV uncovered enormous mud brick foundations which showed that the Pharaoh had had built a new religious building in the middle of an earlier structure. In the rectangular pit fills were countless fragments of very degraded sandstone belonging to the decoration of a door. The study of the brick foundations and these fragments suggested, as a preliminary hypothesis, that they were associated with Tuthmoses III, who seems certain to be involved (Fig. 9). Several other wall sections around and inside the Tuthmoses IV building must be taken into account in reconstructing part of this earlier structure, but further excavation is still required to complete its plan.

During the last season, work in front of the doorway to the west revealed, against all expectation, the existence of an even earlier temple (Fig. 10). Three column bases were found still *in situ* under an accumulation of spoil and a brick floor related to the Tuthmoses III entrance. To the north-east, the two circular bases had been reworked to take square columns with sides of 65-70 cm. Within the alignment, to the west, the rectangular bases of an engaged column were revealed deeper down. The site of other columns is known from foundation pits surrounded by bricks and filled with a packing of earth and fragments of sandstone (Fig. 12). The orientation of these pillars and the layout of the well-preserved bricks of the floor showed that this building was set at a fairly pronounced angle. In the

light of these observations, we have realised that it is now necessary to reinterpret some of the excavated structures as part of an urbanisation that took place soon after the foundation of the town.

Other excavations in this sector showed that a hypostyle room had been dismantled before the construction of the Tuthmoses III gate. The access roads to the western well had destroyed the sanctuary of the temple, while the transverse Meroitic chapel had probably cut through the portico courtyard; as in the hypostyle room, filled-in pits indicated the location of at least two pillars. We can be certain that from that time onwards there was a third large temple at Pnoub; further work will need to be undertaken to verify its plan. We must also ask ourselves if at this period, close to the beginning of the 18th Dynasty, there was not also a cult monument in the middle of the religious centre. The two *in situ* bases of the hypostyle room were inserted in cavities that cut through a mighty foundation made of large blocks of stone situated on the central axis of the temple.

The Napatan and Meroitic outbuildings

Large number of ovens and grain silos concentrated around the New Kingdom sanctuaries indicated the presence of workshops for the preparation of bread offerings, beer and joints of meat. In the 25th Dynasty, a period of great renewal, there were significant works undertaken in the religious centre of Doukki Gel, probably ordered by Chabaka and also Taharqa. On the western side, the town wall was demolished in order to construct new buildings to increase the productive capacity of temple offerings (Fig. 11). Opting for an orthogonal orientation, the master builders designed an elongated building of almost 45 m, housing several workshops and flanked by a service courtyard. The workshops, consisting of 3 or 4 small rooms and a small interior courtyard, were independent units, and each could be shut off from the rest. Access was provided through a central vestibule (Fig. 13).

Various types of ovens were installed in a more elongated courtyard (Fig. 14). The most common type consisted of a cylinder of fired clay with a slightly flared base and a ventilation hole. Here they placed the mould filled with bread dough. The morphology of the moulds evolved from the time of the New Kingdom onwards, and they changed from cylindrical to conical. After baking, the mould had to be broken to release the bread, and the fragments of broken moulds ultimately formed mounds several meters high. Since activity was intense, the ovens must have been replaced or consolidated regularly. It is not unusual to observe in the same spot, several ovens overlapping each other. There were also many water jars and sunken granaries, some of which had been dug to a depth of 1.20 m. One room, accessed by a small door from the courtyard, contained a thick layer of animal bones (30-40 cm) indicating butchery. These were studied by the archaeozoologist, Louis Chaix, who showed that there had been a deliberate selection of young cattle less than 2 years of age.

The supply of water was both from the southern well and the northern well and access to these could be reconstructed. A corridor led from the elongated courtyard right to the main entrance of the well. No doubt a southern passage also existed, but we have not yet been able to excavate this zone. Several superimposed levels show permanent occupation over several centuries, or even a millennium. Here too, sherds of pottery document this evolution. Gradually, surfaces of compacted earth covered over the earlier workshops and the original plan became modified. The two passages also led to a central administrative build-

ing where the temple offerings ceremonies must have been organised. Unfortunately the walls are in a very poor state and it is difficult to reconstruct the complete plan of the eastern residential wing, which had a kitchen and a granary. The architectural assemblage to the west extends over a much greater area, as is shown by the beginnings of walls of a complex that extends from a building studied to the south. This appears to curve toward the east to rejoin the outbuildings of neighbouring temples. The enormous mound of bread moulds that occupies this area indicates the extent of the buildings devoted to the preparation of offerings. Several very large silos are also connected with this activity.

Conservation and restoration

The task of preserving and displaying the remains of mud brick and earth constructions is a very difficult one, and at present there is no ideal solution. We have covered over the excavated foundations with layers of modern brick in order to prevent the wind erosion that is very severe in this country. This allows a re-examination of the excavated structures at any time in the future. However, each year we have to redo some of the restoration work, because further damage is caused by the traffic of locals and visitors, who do not seem able to resist the temptation to stand on top of any raised structure. This work is demanding and, like the display of the site, requires much know-how.

Each season there is the enormous task of manufacturing around 60,000 bricks: this involves the transport of lorry loads of mud clay and sand, preparing and working the clay, and moulding and drying the bricks which are finally brought to the site by two-wheeled wagons pulled by donkeys or small horses. The questions of the masons in charge of building the protective facings must be answered, the plans and the functions of the excavated buildings clarified, and a watch kept to ensure that the brickwork is not over-thickened, which is suggested over and over again because of the constant damage to recent restorations.

Although several parts of the Nubian town have already been protected, there is still a great deal more to achieve. Sweeping alone is sufficient to reveal the remains, and the surface area cleared during the excavation campaigns is now very considerable. The panoramic view from the top of the *deffufa*, the main temple, shows the extent of this site, which is unique in its proportions. In what we hope will be the near future, the understanding of the site will be enhanced by information (detailed surveys, reconstructions, etc.) provided in the site museum, together with some of the finds discovered in both the town and the necropolis.

The same difficulties regarding its restoration are encountered at Doukki Gel. The fragility of the local sandstone due to an intensive exploitation of the site by *sebbakhins* makes restoration rarely possible. Since the beautiful paved ceremonial walkway linking the temples and the New Kingdom palace was very exposed, we decided to build here and there low walls in *galous*, which, while they do not prevent people passing through, at least impede them (Fig. 15). The southern part of the enclosure near where it passes very close to the foot of the *kom* of the *bodega* was treated in the same way. It is this mound of bread moulds that gave name to the site: Doukki Gel means literally "red mound". A difference in level marks the three main construction stages of the fortified wall, which was almost 6 m thick in its latest phase; 30,000 bricks were required to restore a section 25 m long.

While we were undertaking work prior to the publication of the *favissa* of royal statues discovered in 2003, we made contact with the restorer, Markus Bloedt, who has a long experience of Egyptian statues. On his initial visit in January 2004, he was able to determine the scale of the work required. Four of the statues, two representing Senkamanisken, and those of Anlamani and Aspelta, had already been reassembled (Fig. 16-17); the few missing fragments have not been reinstated. The three remaining statues, which are very much larger and of colossal weight, can only be restored once a room for them has been built in the new museum. Many further details were revealed when the various pieces were cleaned and reassembled: a plaster fragment and a particle of gold on the pecked surface of the cap of Aspelta; a red line marking an edge of the waistband on the hem of the loin cloth; and yellow colouring preserved in an incised hieroglyph. Traces of gold leaf and red and black paint were also found on a fragment of an arm of one of the statues of Senkamanisken. The statue of Anlamani was entirely covered with a black wash, with the exception of the dorsal pillar, the left bracelet, and the pendent, on which traces of yellow or red were noted. All the traces were stabilised prior to long-term conservation. This work also provided the opportunity to study the manner in which the royal effigies had been destroyed. A series of blows had been made with a bronze chisel with a relatively narrow blade (1 cm) around the head or along the arms, in order to shatter the stone.

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The research program on the prehistory of Kerma continues, following the previously stated strategy¹:

- archaeological survey to establish the settlement dynamics of the Kerma Basin. Additionally, this process allows for the evaluation of both the region's potential and the condition of the sites, as well as the threats of destruction that might affect them;
- trial excavations of various settlements, collection of material remains and C₁₄ dates in order to establish the chronological and cultural framework of the region;
- long-term excavations of important sites in order to understand the major evolutionary stages of Nubian societies: sedentarisation, transition to stockbreeding and agriculture, urbanisation and state formation. Over the past few years, two sites have been the objects of intense excavations. These sites are El-Barga, which yields precious information regarding sedentariness and Neolithisation issues, and the Pre-Kerma agglomeration, which reveals a stunning example of an African settlement on the path to urbanisation.

Following a short presentation of the main survey and excavation results from the Pre-Kerma settlement, we shall concentrate on this winter's discoveries, which bring important information on the origins of the Neolithic period in Africa. Indeed, research conducted at El-Barga and its vicinity has revealed the presence of a large settlement and cemetery dated to the earliest phase of the Neolithic period on the continent (between 7000 and 6000 BC). The Egyptian site of Nabta Playa is the only other site that yields such early dates and this currently makes the Middle Nile Valley area the first centre of African Neolithisation (Fig. 1).

Archaeological Survey

As the survey continued, a wide sector within the Kerma region was surveyed, particularly in areas located near the alluvial plain where Mesolithic and Early Neolithic settlements can be found. The area south of the eastern necropolis has yet to be surveyed (Fig. 2).

More than 110 archaeological sites have been identified until now. A great number of them are eroded and partially destroyed by agricultural fields, but others are better preserved and, occasionally, are of significant archaeological interest. During the last excavation season, for example, a vast Kerma period necropolis was discovered. This 250 m long cemetery was brought to light by the construction of a large irrigation canal, which will cut through the alluvial plain from north to south, approximately 10 km east of the Nile. The necropolis, which is almost entirely destroyed, contains burials dated to the ancient and middle Kerma periods. As with the eastern necropolis associated with the ancient city of Kerma, this burial ground was used rather early on (from 2500 BC) and shows interesting links

1. HONEGGER 2003, p. 281

with tombs of the early C-Group phase. The construction work did not make possible any archaeological intervention on site.

This example shows that the archaeological remains of the greater Kerma area are threatened. The development of agricultural fields following the completion of the irrigation canal will be, without a doubt, fatal to a number of ancient or prehistoric settlements and cemeteries. Needless to say, a series of rescue operations will be needed in the next few years in order to fully document the principal sites under threat.

The spatial distribution of sites dated to all periods shows a distinctive split between the occupations located on the alluvial plain and those outside, along the desert edge (Fig. 2). Indeed, the settlements of the Middle Palaeolithic, Mesolithic and Early Neolithic are located outside the alluvial plain and correspond to an older and more humid climatic phase. Access to the alluvial plain might have been difficult and human groups thus preferred settling on little mounds near its edge, safe from the Nile flood. They also settled around a wide depression, which must have been filled by a lake or an ancient swamp fed by rainwaters. On the other hand, more recent occupation periods correspond to a more arid climate and, logically, they are found within the alluvial plain, nearer to then-extant Nile channels. There are, however, a few exceptions to this rule, notably a few Palaeochristian or Kerma sites located in the desert zone. The most spectacular example is a large fortified settlement of Classical Kerma date (ca. 1500 BC), which had been already identified ten years ago². This oval-shaped structure covers approximately one hectare (Fig. 3) and is surrounded by thick sandstone-block walls that stand over one metre in height. Within this precinct, three internal dividing walls, one square cell and two circular structures (wells or towers?) can be distinguished. Other than the stone structures and a few ceramic sherds, no other remains are visible from the surface. Numerous buildings made of mud-bricks were probably erected within the walls, but only excavations can reveal them – unless wind erosion has already destroyed them completely³. The important defence system of this structure leads to the belief that it might in fact be a fortress. Its location appears to have been chosen to control access to the alluvial plain. Indeed, it is located in close proximity to the traditional roads and tracks that lead to the Kerma Basin from the north, thus bypassing the rocky Third Cataract area via the desert.

Moreover, the survey conducted during the last two years has allowed the identification and the dating of a series of sites of the Mesolithic and Early Neolithic periods. The chronological and cultural framework of the Kerma region has been greatly enriched in this respect (Fig. 4). Despite a few gaps, the rhythm of human occupation is now known from 8500 BC until the present era with exceptional continuity. Carbon14 dates are regularly obtained from sites that show original cultural features and ceramic samples are taken in order to establish the sequence of cultural layers. Kerma presents today the most complete Prehistoric sequence in Nubia. The data gathered clarify the question of the invention of ceramics in the African north-east, offer new bases to study the question of domesticated oxen on the continent, establish the appearance of social inequities and, thanks to the excavation of the Pre-Kerma site, provide new information on the beginnings of urbanisation

2. BONNET/REINOLD 1993

3. Similarly, the ancient city of Kerma is entirely built of raw earth (brick or earth), except portions of walls, column bases and the foundations of certain stone granaries.

Pre-Kerma Agglomeration

Excavations continued in the northern sector of the Pre-Kerma occupation, which is located in the middle of the eastern necropolis. Two years ago, we had thought that the site was a

village and that its basic organisation had been understood in its entirety⁴. It was not certain, however, that the limits of the agglomeration had been reached and thus, during the winter 2003-2004 season, trial excavations were conducted on a 1000m² surface area north of the largest cattle pen, the supposed edge of the settlement. Surprisingly, a large number of postholes were discovered within the research area (Fig. 5). Significant quantities of clay remnants were discovered with the wooden foundations; these were either laid over wattle walls or were part of rammed earth structures⁵. The posts were arranged in circular arcs or in parallel rows and, in certain areas, are organised in circular or oval concentrations several metres in diameter (Fig. 6). The two largest concentrations are divided by an 8 metres wide passageway devoid of posts.

The enlargement of the excavation area during the winter 2004-2005 season has allowed us to understand the meaning of these ruins. The passageway devoid of posts marks one of the entrances to the agglomeration. It is flanked by two “towers of posts”, up to 20 m in diameter, that correspond to buttresses most likely representing door stiles⁶. West of this entranceway, the excavation has shown that the width of the buttresses is reduced and these then form two to three undulating parallel rows of posts. These correspond to defence palisades, indicating that the agglomeration was walled. This architecture is original and has no archaeological equivalent. At present this situation is unique and it is therefore difficult to make any comparison that could help us fill the gaps in our knowledge. Only ethnology and traditions of Black Africa can be of help at the moment.

The palisades and the buttresses are composed of posts placed at 0,5 to 1 m intervals, between which branches must have been woven into a wattle. The structure does not appear to have been covered with cob. In fact, the only ethnographic examples available for comparisons are palisades devoid of daub. The added-on earth observed during the excavations might correspond to heaps placed at the foot of the palisades in order to consolidate them. At the end of the 19th century, this same device was used by the Nyika of Tanzania to surround small forts⁷.

At this stage, the determination of the precise status of the Pre-Kerma agglomeration remains a delicate question. Is it a simple village or an archaic form of African urbanisation? Already, as shown by the presence of a few rectangular buildings⁸ near the habitation huts, a certain degree of specialisation of inhabited space (religious or administrative function) is visible. This, however, is unprecedented in the few known Neolithic villages of the Nile Valley⁹. This is the first step down the path of a certain form of social complexification. The defensive devices located at the entrance of the settlement give another interesting clue. Compared to the known surface area of the settlement, their size is disproportionate; however they could be part of a series of fortifications surrounding a vast agglomeration, of which only a single district is known. Based on other Pre-Kerma remains found on the surface of the eastern necropolis, it is possible to offer an estimate of the maximum size of the agglomeration. Its acreage could be as much as 10 hectares. Should the excavations confirm the hypothesis of a large site surrounded by fortifications, we would have evidence of an important step in the urbanisation process of Nubia. Indeed, fortified sites or those enclosed by walls are unknown before the emergence of the first cities in the Nile Valley. In Egypt, the first representation of a city itself is symbolised by a crenellated precinct reminiscent of the contemporaneous precincts at Hierakonpolis, Elephantine and El-Kab¹⁰.

In addition to the work at the agglomeration, we have resumed excavations of burials in the eastern cemetery at Kerma. In order to better understand the transition between the

4. HONEGGER 2003, pp. 282-284

5. The use of mudbrick is not attested on site. Micromorphological analysis of the earth samples showed that clay came from the walls (GUÉLAT 2004).

6. These buttresses show at least two construction phases. Their original diameter must have been close to 8-10 m.

7. DENYER 1978, p. 115

8. HONEGGER 1999

9. MIDANT-REYNES 2000, pp. 100-166

10. VALBELLE 1990, p. 265

end of the Pre-Kerma period and the beginning of the Kerma civilisation, a surface area of 350 m² was opened in the presumed oldest sector of the site, near sectors 1 and 27¹¹. These sectors had revealed influences from the C-Group of Lower Nubia, a civilisation located further north that blossomed contemporaneously to that of Kerma and of which the origins and relations to Upper Nubia remain obscure. The C-Group material remains were then always associated with that of the Kerma ancien period.

The excavation of the new area has revealed a sector exclusively inhabited by a population of the Early C-Group phase, without any evidence of Kerma traditions. Furthermore, numerous burials were surrounded by stelae, a custom of this population. The graves must have been richly furnished, notably with gold, because they stirred up looters' imagination and greed. More than 70 burials were cleared from the surface and not a single one remained intact. On the other hand, the nearby Ancient Kerma graves were very rarely looted. Continued research in this sector should bring to light important data on the origins of the Kerma civilisation.

The Origins of the Neolithic at El-Barga

Over the last 4 years, a surface area of over 1700 m² has been cleared at El-Barga and the excavations have revealed a Mesolithic settlement (ca. 7300 BC), over 20 burials a few centuries more recent and a Neolithic cemetery comprising close to 100 graves (6000-5500 BC). This is an exceptional assemblage to help understand the transition from the last hunter-gatherers to the first stock farmers in Nubia. Moreover, the surveys conducted in the area have revealed the presence of several settlements, many of which yield particularly early dates in regards to the invention of pottery (ca. 8300 BC) and the domestication of oxen (ca. 6900 BC).

At El-Barga, the excavation of the Mesolithic sector was enlarged southwards in order to establish a link to the sector occupied by the Neolithic cemetery (Fig. 7). This extension did not bring to light new habitation structures, but led to the clearance of several burials. Like earlier ones, these graves are generally hewn from Nubian sandstone¹² (Fig. 8). Digging in the bedrock must not have been easy, even if it is composed of harden levels alternating with sandy beds. The burials contained, in most cases, tall adults with strong muscular attachments placed in a flexed position. With the exception of a grave containing a Nile bivalve, the burials are devoid of funerary offerings. Only one burial was dated to approximately 7000 BC¹³, three centuries after the site was occupied as a settlement. Associating the habitation structure with the Mesolithic burials is rather problematic because they do not appear to be contemporaneous. Additionally, a link between the twenty or so graves with the Neolithic cemetery cannot be established because the latter came into being a millennium later. Still, the two cemeteries partially overlap; at least two Mesolithic burials are located amongst the later graves.

The principal investigation of these past two years focused on the Neolithic cemetery, where wide surfaces were cleared in order to identify the pits hewn from the rock (Fig. 9). Until now 95 burials were exposed, 50 were adult graves and 45 children's. The relatively balanced adult/child ratio shows that a predetermined selection of the individuals to be interned was not in effect¹⁴. The population of the necropolis would appear representative of the structure of the human group, if not for the imbalance between men and women. Nine male burials were identified against 35 female graves; this might be interpreted in

11. For the chronology of the eastern cemetery, see BONNET 2000

12. HONEGGER 2004

13. Carbon 14 analysis of Mesolithic burials is difficult because no datable material is associated with the deceased and the skeleton's bones are devoid of collagen.

14. Most necropolis give a distorted vision of the original population, in so far as there almost always is a selection of individuals having access to the cemetery.

two ways. It is possible that either most men were buried elsewhere, in the necropolis or another site, or the population was actually structured in this manner (exogamy, polygamy, infanticide?).

In numerous cases, the burial pits were hewn from the sandstone, occasionally at impressive depths (Fig. 10). The position and the orientation of the bodies are varied, even if the flexed position is the most common. Several individuals must have been tied or inserted in a skin or mat before having been placed in their graves because their limbs were folded on the abdomen. Two-thirds of the graves were furnished with objects, mostly adornments such as hippopotamus ivory bracelets (Fig. 11 and 12), necklaces, pendants (Fig. 14), earrings or lip plugs. Utilitarian objects are not as frequent, but axe blades (Fig. 15), ceramic vessels (Fig. 16), awls, harpoons have been discovered.

Conclusions regarding the general layout of the necropolis cannot be drawn at this time; however, two concentrations seem to be emerging. According to C_{14} dates, they are contemporaneous and do not indicate successive use of the site. In the midst of these two concentrations, the two or three most richly furnished graves occupy a central position: already they demonstrate a certain level of hierarchical organisation of society. With the exception of that of a child, all graves belong to women. The richest grave in the entire cemetery belongs to a woman more than 20 years of age (Fig. 13). Among the numerous objects found within it are several tools and weapons, such as axes and harpoons, generally associated with male activities. The predominance of certain women's status within prehistoric necropolis is already attested elsewhere in the Nile Valley¹⁵. This might possibly translate into the existence of matrilineal societies or, at least, societies where the status of women was placed at the forefront.

The differences between the graves attributed to the Mesolithic period and the Neolithic cemetery are fundamental. On one hand, small numbers of graves without any furnishing and all with identical status and, on the other, a genuine necropolis containing at least 100 burials, often furnished and indicative of the emergence of social distinctions. Within a millennium, the type of organisation of Nubia society completely changed. This transformation must be credited to the introduction of animal domestication, of which the earliest evidence on the African continent was discovered in the Middle Nile Valley at Nabta Playa, in Egypt, and at Kerma (Fig. 1).

Until this winter, the El-Barga cemetery was presumed of Neolithic date because of the presence of polished stone tools (axes, pendants, earrings, lip plugs) unusual in a Mesolithic context (Fig. 14-15). This hypothesis was confirmed by the last discovery of the 2004-2005 season: the burial of a man, facing a child, besides whom the skull of a domesticated ox had been placed (Fig. 17). Two C_{14} samples produced similar dates of ca. 5750 BC, making this cemetery the most ancient Neolithic site in the Nile Valley. These dates, however, do not correspond to the earliest phase of the Neolithic in the region. Indeed, this cemetery reveals perfectly completed technical and social transformations, and there is no doubt that the introduction of stockbreeding occurred at an earlier stage.

This was confirmed with the discovery of two sites located 5 km of El-Barga: two very well preserved settlements revealing a large quantity of objects on the surface as well as circular stone structures indicating the location of huts. Objects and faunal remains were collected and a 2 m² trial trench was dug in order to understand the stratigraphic sequence. Chronologically speaking, the sites present a homogenous occupation that yielded several

15. This situation has already been noted at certain Neolithic cemeteries of the fifth millennium BC at Kadruka, 20 km south of El-Barga (REINOLD 2000), as well as certain A-Group cemeteries of Lower Nubia during the fourth millennium (NORDSTRÖM 2004).

bones of domesticated oxen. Some of them, found in the trench, were associated with ostrich eggshell remains and shells that were carbon-dated. The results of these analyses gave dates around 7000 BC.

In Africa, only one other site offers such early dates: Nabta Playa¹⁶, the discoveries of which have long been disputed because of their isolated characteristics¹⁷. In this light, the results yielded by the Kerma region become of utmost importance in the understanding of the origins of the African Neolithic, the originality of which – compared to that of the Near East and Europe – has often been pointed out¹⁸. These results confirm the age of domesticated oxen on the continent and reinforce the notion that Africa could have known an autonomous centre of domestication of this animal, which lived in the wild in the Egyptian section of the Nile Valley.

16. WENDORF/SCHILD 2001

17. WENGROW 2003

18. See GARCEA 2004 and GIFFORD-GONZALEZ 2004

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Figure captions

- Fig. 1 [page 239] Location of principal sites and regions of the African Northeast that have long prehistoric occupation sequences, from the end of the Mesolithic to the beginning of the Neolithic. Together with the Egyptian site of Nabta Playa, Kerma yields the earliest evidence of the beginning of the Neolithic.
- Fig. 2 [page 240] Map of the distribution of archaeological sites identified in the Kerma region. At present, over 110 sites dating from the Palaeolithic to the Islamic periods have been discovered. Their location clearly shows that occupations corresponding to ancient humid climatic phases are situated outside the alluvial plain, while settlements contemporaneous with arid phases are found nearer to the current course of the Nile.
- Fig. 3 [page 241] Bird's eye view of a Classical Kerma structure located on the edge of the alluvial plain. It might be identified as a fort controlling access to the Kerma Basin. Approximate dimensions: 90 × 120 m. North points towards the bottom of the page (kite photography).
- Fig. 4 [page 241] Chronological chart of occupations in the Kerma region within the last 10,000 years. C_{14} dates area shown as probability curves (1 sigma). The study of the occupation sequence enables the identification of the rhythm of great social transformations, marked by the appearance of innovations. Climatic variations played an important role in the peopling of the Nile Valley and its relationship with neighbouring arid zones.
- Fig. 5 [page 242] Clearance of the dense concentration of postholes at the entrance of the Pre-Kerma agglomeration
- Fig. 6 [page 242] Multiple palisades ending in a buttress marking one side of the entrance to the Pre-Kerma agglomeration
- Fig. 7 [page 243] Plan of the El-Barga *kôm* indicating the location of the excavated burials and various occupations of the site
- Fig. 8 [page 244] View of the Neolithic cemetery of El-Barga with burial pits in the foreground
- Fig. 9 [page 245] Mesolithic burial pits hewn from Nubian sandstone containing two tall men
- Fig. 10 [page 245] Neolithic burial of a man over 40 years old containing a ceramic vessel and a necklace with a polish stone pendant (cf. Fig. 14). The pit, which is carefully hewn from the Nubian sandstone, is 70 cm deep.
- Fig. 11 [page 246] Burial of a woman approximately 25 years of age, wearing four bracelets on her left wrists and a fifth on the right
- Fig. 12 [page 246] Hippopotamus ivory bracelets from three different burials
- Fig. 13 [page 246] Burial of a woman over 20 years old. Her grave is actually the richest in the cemetery: it is furnished with three axe blades, two rather rudimentary palettes associated with pieces of hematite, two Nile bivalves, two harpoons, three awls, two flint nuclei and a lip plug.
- Fig. 14 [page 247] Polish stone pendant with hole in its centre
- Fig. 15 [page 247] Blade of a large votive (?) axe found in the richly furnished burial of a six-year old child
- Fig. 16 [page 247] Comb-decorated pottery from the burial of a four-year old child
- Fig. 17 [page 248] Burial of a man over 35 years of age facing a two-year old child. The skull of a domesticated ox was placed on the child's burial, face down with the horns towards the East (shown in grey; drawing M. Berti).

Blocks and fragments

The latest two seasons of excavation increased the number of decorated blocks and fragments recovered at Doukki Gel from 750 to 950; this is an average of a hundred new epigraphic or iconographic elements for each season. Some of these add to sets that have already been identified, while others are from new monuments.

In January 2004, a modest but indisputable element of the birth name of Tuthmoses III was recognised on a small block of sandstone sculpted in relief¹ (Fig. 1). This was found amongst the stone debris from the northern jamb of the western lateral door of the mud brick temple built prior to that of Tuthmoses IV². Up until now, a number of fragments could be equally well attributed to either Tuthmoses III or Tuthmoses IV³. Here, the body of the ibis is followed by the sign *héqa*, which can be associated exclusively with several Tuthmoses III epithets: “governor of Heliopolis” (*héqa Iounou*), “governor of Thebes” (*héqa Ouaset*), “divine governor” (*héqa nétjérj*), or “governor of Maât” (*héqa Maât*).

In January 2005, a cartouche of Tuthmoses I⁴ was found on a fragment of sandstone sculpted in sunken relief and painted (Fig. 2); this was found close to the columns of the hypostyle room to the west of the Tuthmoses III doorway. We should note that among the blocks found in this sector there were representations of a smaller size than those from the temple of Tuthmoses IV. The faces of a king and of a queen belonged to this series, which also includes several beautiful fragments of royal loincloths. Many fragments of a cavetto cornice decorated with crudely incised palms revealed a systematic breaking-up of the external wall of this first temple; the sunken relief decoration, painted in yellow on a white background, is preserved on many of the fragments.

There is also a number of other fragments characterised by a very deep sunken relief belonging to a distinct architectural assemblage that remains to be identified.

1. N° 801

2. See BONNET/HONEGGER 2005, p. 224 [ii] and BONNET 2005, p. 231 [v]

3. VALBELLE, in press

4. N° 864. A first fragment of a cartouche of Tuthmoses I (n° 644), in relief and of a larger size, was found in 2002 in the western part of the hypostyle room of the temple of Tuthmoses IV; we believed that we could detect traces of re-engraving on it (see VALBELLE 2003.1, p. 292, fig. 2).

5. VALBELLE/BONNET 2003; VALBELLE 2003.2, p. 202 and pl. XII

6. See for example, representations of Tuthmoses IV holding these two categories of sacred object in BRYAN 1987, pp. 18-19.

Stelae and private cult monuments of the 18th Dynasty

Pieces of a collection of monuments related to a private cult of Amon were first discovered in January 2000 in several rooms situated to the west of the temple of Tuthmoses IV⁵; they can be associated, with levels dated to the beginning of the 18th Dynasty. This assemblage has been particularly enriched during these last two campaigns. Alongside several stelae that were without epigraphy or bore only unidentifiable traces of painting, there were several others with their decoration preserved. One of these, dedicated to Amon of Pnoub by one of his priests, represents a ram accompanied by a fan of feathers. Another shows a praying figure in front of a very faded outline of a goddess. The same collection includes a *protomé* of Amon's ram in painted sandstone, on a base (Fig. 4), and a small bronze ram's head from a sacred staff of Amon (Fig. 3)⁶. Found not far from these were a fragment of a sandstone stela with traces of four incomplete lines of text and the rear part

of a seated statue also in sandstone with seven columns of text on the back and the remains of three others on the left side. These are part of an autobiographical text by a man called Penrê, who was director of southern foreign countries.

The Ramesses period at Doukki Gel

Several blocks dated to the reign of Sethos I were found right from the start of this excavation⁷, although no building from this period has yet been precisely located at the site. The stamped handle of a jar bears the inscription “The Mansion of Menmâatrê in Abydos” (Fig. 5), a phrase frequently found at Deir el-Medineh on stamped jar stoppers⁸. According to L. Bavay’s study of the ceramics, these stamp imprints are all associated with Palestinian imports, and probably correspond to different categories of oils (*bak* and *neheh*)⁹. The same phrase, “The Mansion of Menmâatrê in Abydos”, is also found on seal imprints found in the warehouses of the Ramesseum¹⁰. A sherd from the body of a similar large jar bears the local place name “*Pa-nébes*” (Fig. 6).

Particularly interesting is the fragmentary stela of Ramesses II (Fig. 7) found at the bottom of the pit to the south of the *favissa*: the king, who had so far been absent at the site of Doukki Gel, is here represented making an offering of an upright bouquet to Amon of Pnoub. The outline of Amon has almost completely disappeared, but the name and epithet are largely preserved.

The Egyptian statues from the Middle Kingdom and the Second Intermediate Period at Kerma

The fragments of Egyptian statues from Doukki Gel that antedate the New Kingdom¹¹ are the subject of an international project¹² entitled “The Egyptian Statues of Kerma”; in addition to the Archaeological Mission of the University of Geneva at Kerma and the Centre for Egyptological Research of the Sorbonne (University of Paris-Sorbonne – Paris IV), this brings together the Khartoum Museum, the Boston Museum of Fine Arts, the British Museum, the Egyptian Museum of Berlin and the Carsten Niebuhr Institute of the University of Copenhagen.

7. BONNET/VALBELLE 2000, pp. 1113-1114, fig. 11; VALBELLE 2001, pp. 232-233 and fig. 6; BONNET/VALBELLE, in press

8. P. Tallet has informed me that at Deir el-Medineh this phrase has been found on 9 stamped jar stoppers preserved in the warehouses of Deir el-Medineh. B. Bruyère has illustrated one of these (BRUYÈRE 1952, p. 54, n° 66).

9. See TALLET 2033, pp. 260-262

10. Two similar seal imprints are published by J. E. Quibell (QUIBELL 1896, pl. XI, n° 9 and 10); see also LECUYOT 1997.

11. VALBELLE 2004

12. Financed by the Fonds National français pour la Science.

The statues from the *favissa*

Restoration of the four smallest statues from the *favissa* undertaken last winter made it possible to make many new joins with fragments of various sizes, including part of the left cheek of the first statue of Senkamanisken. The majority of these fragments came from the pit in which the dismembered statues had been deposited. However, a large fragment of the shoulder of the second statue of Tanoutamon had already been discovered in 2002, one year before the discovery of the “*favissa*”, in the Meroïtic levels of the eastern transverse chapel. This find, if confirmed by other similar discoveries in the same area, could provide a crucial indication of the original location of some of these statues. We should also note that several statuettes and fragments of statues dating to the Middle Kingdom and the Second Intermediate Period were found in the floor of this same chapel.

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Figure captions

- Fig. 1 [page 251] Doukki Gel | Fragment of sandstone with element of the birth name of Tuthmoses III
- Fig. 2 [page 251] Doukki Gel | Fragment of sandstone with the lower part of the cartouche of Tuthmoses I
- Fig. 3 [page 252] Doukki Gel | Ram’s head from a sacred staff of Amon, bronze
- Fig. 4 [page 252] Doukki Gel | *Protomé* of Amon’s ram, painted sandstone
- Fig. 5 [page 253] Doukki Gel | Stamped handle of a jar with the inscription “The Mansion of Memmâtrê in Abydos”
- Fig. 6 [page 253] Doukki Gel | Sherd from the body of a jar with the local place name “Pa-Nebès”
- Fig. 7 [page 253] Fragmentary stela of Rameses II showing the pharaoh offering an upright bouquet to Amon of Pnoub

During the last two excavation campaigns of the University of Geneva at Kerma, work on the site of Doukki Gel recovered around 19,000 pieces of pottery (mainly sherds) from fourteen sectors. A first study of this material¹ indicated relatively homogeneous assemblages, confirming the dating that had until then been based on structures and stratigraphy².

The sanctuary of Tuthmoses IV

A vast deposit of fragments of bread moulds and pots and a group of large pipes were found during excavations of the sanctuary of the temple of Tuthmoses IV and of its two lateral rooms in the levels that predated the building. The pottery included remains of small plates, vases, a large bowl with a rope impression, and a complete plate 18 cm in diameter, with a rim decorated in red slip. All these pieces date to the New Kingdom. The presence of many sherds of Nubian pottery of the Classic Kerma period is particularly interesting. Particularly notable are two fragments of large red bowl with a black rim and a silvery stripe, two other fragments of vessels with an almond-shaped rim³, as well as some decorated sherds. The association of these two types of material – Kerma and New Kingdom – places the date of the assemblage at the beginning of the 18th Dynasty.

This deposit also included flat bread moulds, made of very coarse clay with a vegetable temper. Only one complete example was found: this has a diameter of 35 cm at a maximum height of 8 cm, and a thick base of 5 cm. We also found another piece of identical form and size, but with a cylindrical appendage with a rounded end, 4,5 cm in diameter and in height, in the centre of the underside of the flat surface. The two most complete – including the one with the appendage – had been very carefully placed in a horizontal position; one of these had been broken in two and while the two halves were placed side by side, one part was the right side up, and the other upside-down.

The pipes referred to above, partially excavated from under the foundations of the *naos*, were immediately striking because of their size, being 80 cm long, 10-12 cm in diameter at one end and 30-40 cm at the other; they were hand made (Cat. 20). They were lying horizontally, directly below the first setting of stones, some with their larger opening touching the underside surface of the masonry, but not crushed by it. Three had been placed parallel to each other, close to the south-eastern corner of the sanctuary, pointing to the north-west. One of these, lacking its smaller end to a third of its length, contained a fourth encased inside it. A fifth, pointing to the south, was found in the centre of the structure; it also lacked its smaller end.

1. We warmly thank Françoise Plojoux-Rochat, Gérard Deuber and Jean-Michel Yoyotte for their invaluable help in this research.

2. See BONNET 2003, BONNET 2005

3. For parallels see PRIVATI 1999, pp. 49-50 and fig. 20, p. 69

4. The known examples used as conduits and associated with temples are of a cylindrical form, mortared together. See for example, SPENCER 1997, pl. 14 and 15; SPENCER 1996, pp. 40-41, pl. 14 and 15.

The function of these pipes or nozzles is the inevitable question. It seems that one can exclude their use as conduits as their rather conical form is not well adapted to this function⁴. Their association with bread moulds does not provide any explanation. In fact, nothing would justify the use of nozzles in the manufacture of bakery products (bread and dough for beer making), where very hot temperatures are not necessary. On the other hand pottery manufacture, which in some cases required temperatures around 1000° C or more,

does not seem to have recourse to such devices. There is no example of a pottery workshop where such pipes have been found. However, there is evidence of their association with metallurgy, notably from Egypt, in scenes of a smith's workshop painted in the tomb of the vizier Rekh-mi-Re⁵. Examples of pipes used for metal work were found during excavations at Pi-Ramses/Qantir⁶. Our material may have been employed in a metal workshop used, for example, for the maintenance of bronze tools required for the construction of a building that preceded that of Tuthmoses IV. Other hypotheses are also possible.

Deposits associated with a private cult of the New Kingdom

In the area immediately to the west of the western wall of the temple, several pottery deposits were uncovered, probably associated with offerings in a private cult context. The most remarkable of these deposits is without doubt a collection of plates with flat bases – twelve could be reconstructed – associated with two stelae⁷. Although they were wheel turned they were all irregular in shape, but they were very similar to each other in size (Fig. 1 and 2). There were no traces of decoration or coating found on their surfaces. The other deposits principally comprised of: a large roughly thrown bowl, with finger imprints near the base and a thick red slip on the interior, the base of a similar bowl, also with finger imprints, the base of a miniature plate, a fragment of a cup with thin walls, decorated with black lines on a red and white ground⁸, a fragment of a vessel – probably a vase – decorated with black motifs that resembles the scales of a fish on a beige ground, a plate decorated with red slip on the outer rim and a red coating covering the interior, and an incomplete conical bread mould⁹.

Finally, there was a group comprising two complete and well-preserved vessels that had been carefully placed side by side. One is a cup with a rounded base, entirely covered with a red coating, with thin regular walls¹⁰ (Cat. 3); the other is a bowl with a flat base, decorated with a red slip in the interior and exterior (thicker on the exterior; cat. 4).

The Tuthmoses III gate

Excavations in the area along the western façade of the temple of Tuthmoses IV revealed the remains of a gate in the masonry of an earlier building¹¹, and a large quantity of pottery. Mixed in with the debris of the doorway, to a depth of around 50 cm, the pots seemed to have been deliberately placed upside-down, particularly in the case of the many beer jars (the majority had perforated bases!) that represented the most common type. Several examples were complete or almost complete. A few bowls of *flower pot* type were also found, all of them in good condition (Cat. 1). The remainder comprised: large and medium-sized jars; jar stands, of which one large example seems to have once been the neck of a large jar, but had been saved and adapted as a stand; plates, cups, small dishes and an incense burner; conical bread moulds; a fragment of a footed vessel; an almost perfectly cylindrical pipe, 35 cm long and 13 cm in diameter; two fragments of painted vases¹²; and finally some Classic Kerma sherds.

This collection of pottery probably belongs to the building that preceded the temple of Tuthmoses IV, of which we currently know only a very small part.

In the immediate surroundings to the west and northwest of the remains of this gate there were column bases that probably belonged to a building earlier than the reign of Tuth-

5. See DAVIES 1943, pl. LII

6. See PUSCH 1990

7. See VALBELLE 2005, pp. 251-253 [xvii-xviii]

8. For parallels see NAGEL 1938, pl. III, type IV, n° 359.235 and 359.234

9. To be compared with type D of the Jacquet-Gordon typology (see JACQUET-GORDON 1981)

10. For parallels see NAGEL 1938, pl. III, type IV, n° 356.82

11. See BONNET 2005, p. 231 [v]

12. One has a geometric decoration of brown lines on a creamy-white ground; the second is decorated with a brown and dark brown floral motif on a beige ground. The absence of blue in the decoration of these pieces is characteristic of the period before the reigns of Amenhotep II and Tuthmoses IV, see HOPE 1996, pp. 31-32.

moses III. In this level there were fragments of jars, beer jars, a fragment of a footed incense burner, a plate with a red coating on the interior and a thick slip on the exterior, and finally Kerma sherds.

The Napatan building to the north of the southern well and the New Kingdom stairs

Excavations in this sector revealed the presence of a building of the Napatan period; the ceramic material mainly comprised jars with a ridged rim¹³, but also bowls, plates, and fragments of faience. In the south-eastern part of this area the finds included several small jar stands hand made from a coarse clay with a mat impression on their exterior circumference, and also an amphora fragment of “torpedo” type of foreign origin¹⁴.

Bases of silos were found immediately below the building, in a level well-dated to the 25th Dynasty by many fragments of jars with moulded ridged rims and striated bodies, typical of this period¹⁵.

In the western part of this same sector, a pit containing many New Kingdom sherds was excavated. A fragment of an amphora handle, made from a greenish-beige fabric, bears the imprints of a seal-cartouche with the name of Sethos I¹⁶; another inscribed fragment was also found in the same location¹⁷. This find comprises the first pottery in this religious complex attributable with certainty to the 19th Dynasty.

Two vaulted flights of stairs, linking the southern well to the temple, were discovered¹⁸. The more southerly stairs appear to be the most recent. The excavation of the western part of its mud brick vault first revealed a beer jar (Cat. 8), of New Kingdom type, placed horizontally in the masonry. The base of this vessel was damaged, with the result that it is difficult to determine whether or not the base was perforated. Wear on the broken edges suggests that this damage is ancient.

The accumulated rubble under the structure also contained modest quantities of pottery. In addition to New Kingdom vessels, this included a fragment of the tip of a pipe, which, once again, can be compared to the discoveries under the sanctuary, and two fragments of *Kerma* pottery.

The excavation of the entrance to the second flight of stairs paints a similar picture: a small amount of New Kingdom material and some Kerma sherds. On stratigraphical and architectural grounds this assemblage is probably associated with the Tuthmoses III door discussed above.

To the north of these two flights of stairs and in the area of the Tuthmoses III doorway (see above), column bases that were once part of an earlier temple were found. This level – the lowest reached in this area of the excavation – contained ordinary pottery from the New Kingdom and several Kerma period sherds. At the time of the excavation of two column bases situated on either side of the axis of this building, to the north of the transverse chapel, we discovered, in particular, the foot of an incense burner (Cat. 16) and also a fragment of an censer with an everted¹⁹ rim (Cat. 14), probably from the same object¹⁹.

13. In particular, examples corresponding to n^o I A4e, I A11, I A12b of M. Salah El-Din Mohamed Ahmed, dated from around the end of the 7th century to the middle of the 6th century BC. See MOHAMED AHMED 1992, figg. 15 and 16.

14. This type of amphora was widely circulated throughout the eastern Mediterranean basin: see SAGONA 1982. Parallels: PAICE 1987, p. 104, fig. 2, date : 5th century BC. See also GRATIEN 1996, p. 61 and fig. 7 a and b, date : 6th to 4th century BC.

15. See type n^o I A1b of MOHAMED AHMED 1992, fig. 15 and tabel 2. See also two complete examples in MYSLIWIEC 1987, p. 61, n^o 399, and VINCENTELLI LIVERANI 1997, p. 125, fig. 3, n^o 8.

16. This type of impression, well known from the reigns of Sethos I and Ramesses II, identifies a product from the royal domains or subject to the royal monopoly over commerce. See *Umm El-Ga'ab* 1981, p. 124, n^o 245.

17. See VALBELLE 2005, p. 252 [xviii] and fig. 5

18. See BONNET 2005, p. 231 [v] and fig. 7

19. Parallels: HOLTHOER 1977, type BU 4, pl. 23; KELLEY 1976, n^o 105, pl. 58.6 (date: the reign of Amosis); NAGEL 1938, n^o 79, fig. 66, p. 85.

The bakery quarter

To the west of the temple precinct, a vast building, orientated north-south, was uncovered just below the modern ground surface, and within its many subdivisions was an impressive quantity of bread moulds; there were also butchery zones indicated by faunal remains. The excavation was continued down to the Napatan levels. We thus collected two ceramic assemblages, one Napatan and the other Meroïtic, together with samples from the Christian period, the presence of which is explained by the proximity of the Meroïtic levels to the surface.

The Napatan pottery comprises a large number of jars (of at least a dozen different types), of which some are very large and associated with the activities of the bakery (storage, fermentation of beer, etc.). A handle was preserved on four examples. There were also other vessels such as bowls and large bowls, but also, as would be expected in such a context, conical bread moulds. Some fragments of miniature vessels of faïence complete the picture.

The Meroïtic presence is principally attested by remains of jars with painted decoration. Sherds with red horizontal bands bordering a wavy line, thin diagonal stripes cross-cutting each other, or even plant decorations are mixed with globular jars, as well as an almost complete plate of oval section, made from a thick clay with an organic temper.

We were also fortunate to discover a fragment of a lid with its handle lying on the bottom of an oven in the northern part of the building. This association confirms that the object functioned as a cover²⁰.

Finally, for the Christian period, there are two thrown bowls with flat rims²¹, covered with a creamy-white or yellowy-beige paint; a jar decorated with parallel bands, incised in zig-zags²²; a fragment of a bowl with a wavy decoration in relief, bordered by parallel bands above and below²³.

The sector to the west of the northern well

The excavation of this sector consisted first of the clearing of the upper level, followed by a deeper excavation that was meant to uncover a stone structure. The upper level corresponds to the Napatan occupation of the site, where there is a structure that is a continuation of the bakeries building to the north, and borders the northern well on its western side; it is very likely to have been a ceremonial courtyard related to the well. Most of the pottery here was hand made and of poor quality consisting of large bowls (sometimes pierced with holes in their upper parts, or decorated with an irregular red slip) and jars of coarse clay, but there were also some wheel-made pots; the assemblage was clearly of Napatan date.

Like the bakery building, this structure also once included bread ovens, and we found in it the lid of an oven associated with the remains of what was once the oven itself. This lid, although not complete, was fairly well preserved. It had a central handle and a diameter of 30-32 cm; its lower surface bears the clear traces of a straw mat. A very similar example was discovered at the site of El-Ashmunein²⁴, in a zone with a very heavy concentration of ovens made from fired clay. This object, associated with other, smaller, lids, is dated between 800 and 625 BC. Other examples of lids are known, notably in Egypt at Elephantine²⁵, Memphis²⁶, Tell el-Balamun²⁷ and Armant²⁸.

20. See also the Napatan lid from sector 10, p. 260 [below]

21. Parallels : ADAMS 1962, p. 257, class "F".

22. See identical decoration: ADAMS 1962, p. 259, class "M4"

23. A decoration known as "*Wavy Body Grooves*" in ADAMS 1962, p. 270.

24. SPENCER 1993, p.47 and pl. 74, type M1.40

25. ASTON 1992, n° 1633, p. 178 and pl. 53, lid dated to phase IIb (1000-700 BC)

26. ANTHES 1965, n° 612, p. 157 and pl. 66

27. SPENCER 1996, type H2 p. 95 and pl. 70 (dated to 5th century BC)

28. MOND/MYERS 1940, pl. LXVI, oven n° 1

The deep excavation in the eastern part of this sector uncovered the stairs accessing the well. Pottery was relatively abundant in the upper levels, and included ovoid jars, large bowls and small dishes. In contrast, the deep layers related to the stone construction contained very little pottery, amongst which was the neck of a jar and a large bowl with rope impression dated to the New Kingdom, and a large bowl made of a black fabric of Classic Kerma date and a fragment of a vessel of the same period.

This stone structure linked, almost directly, the well and a building of early New Kingdom date, which was situated under the northern part of the Napatan ceremonial courtyard. This building had a sacred character, indicated by the many offerings that had been placed in it. The pottery (Cat. 6 and 7), which had mostly been placed in the corners of the rooms, consists of many wheel made plates, shallow or deeper in form, some of which are decorated with a red slip, and almost complete. Some of them had been placed upside-down.

To the north of this small building, other deposits were spread over an excavated area of about 50 m². Although these were not really ordered, they belong to the same horizon as the former. Apart from plates and hollow dishes, we were able to identify many censers (footed incense burners or simple shallow bowls: cat. 12, 13, 15 and 17), jar stands, of which many were of a small size²⁹ (Cat. 10 and 11), some elongated and regularly-shaped conical bread moulds³⁰ and miniature plates of foundation deposit type. Several of the plates had been decorated with a red slip, and others were entirely coloured, sometimes displaying a black slip. Amongst the most interesting pieces is also a small vase with an elongated ovoid body, the outer surface of which had a red coating³¹ (Cat. 9), and lastly a dish with a diameter of 52 cm at a height of 12 cm, with a lightly marked ring base and a square moulded rim 4 cm wide, decorated with many rope impressions (Cat. 18).

Finally, in the southern part of this sector, is a thoroughfare bordered on its southern extremity by the remains of fortifications. The pottery here is also from the beginning of the New Kingdom.

The fortification sector to the west of the site

This zone, situated in the extension of the New Kingdom precinct wall to the west, housed a complex system of bastions of mixed mud brick and *galous*, giving the structures a local character. The pottery was mainly concentrated in three circular deposits. Considering the position of these deposits and the coherence of their contents, we are inclined to consider them as contemporary, probably dating to the beginning of the 18th Dynasty.

The first deposit (12/1), situated immediately to the east of what seems to be a passage way, contained around 70 sherds, the majority belonging to a jar the entire shape of which could be restored. This vessel, with a rounded base, is 45 cm high with pleasing proportions, and was decorated with two rope impressions on the body and covered with a red coating³² (Cat. 19).

The two other deposits had been excavated from the masonry that extended the fortifications towards the north east. The second (12/2) contained more than 800 sherds, mainly from beer jars, bowls with a perforated base (“flower pots”) and plates frequently decorated with a red slip. There were also some cattle bones. The third deposit (12/3 [Fig. 3]) situated some two meters to the north of the previous one, comprised around 500 sherds.

29. Parallels : PETRIE 1907, pl. XXVII D, n^o 36-40 (pottery from Rifeh dated to the reign of Tuthmoses I)

30. These can be compared with the types dated by M^o Jacquet-Gordon to the reigns of Tuthmoses I, Hatshepsut and Tuthmoses III, see JACQUET-GORDON 1981, p. 18, fig. 5, n^o 1-4.

31. See the examples from Rifeh, dated to the reign of Tuthmoses I: PETRIE 1907, pl. XXVII D, n^o 49-56.

32. Possible comparison with: SEILER 1995, p. 201, fig. 3, n^o 1. Although this latter is larger, the neck elongated and the decoration painted.

Its composition was very similar to that of its neighbour, with the majority from beer jars. One sherd in particular attracted our attention: it is a body fragment with a horizontal handle, made from a fairly fine pinkish beige fabric, with a mineral temper, and probably an Egyptian import (Fig. 4). Its decoration, comprising a thin horizontal pink line between two dark brown bands below a handle flanked on both sides by three dark brown vertical bands scored regularly across, has a resemblance to the vases of the first half of the 18th Dynasty³³. In terms of their composition, deposits 12/2 and 12/3 seem to be the remains of ritual food offerings or perhaps of a celebration related to the completion of part of the fortifications.

It should be noted that several points of detail in this brief survey remain to be clarified, including, for example, the presence of the pipes beneath the sanctuary of Tuthmosis IV, or the function of the deposits found within the body of the fortifications.

From a more general perspective, despite the presence of fairly well dated ceramic assemblages, there is still a relative imprecision within the long New Kingdom period. While the ancient levels are well identified, this is not the case for the periods following the 18th Dynasty, mainly because of the quasi-absence of preserved structures for these periods. Additionally, there is a glaring absence of evidence from the end of the New Kingdom to the beginning of the 25th Dynasty, and one is under the impression that the Napatan pottery succeeds that of the 18th Dynasty! While it is difficult to envisage the abandonment of the site for six centuries, one can assume an absence of major periods of construction resulting from the lack of strong political will, a common phenomenon in an “Intermediate Period”.

33. For this type of decoration, see *Hildesheim* 1987, n^o 73-75, pp. 162-163. For the shape: *Hildesheim* 1987, n^o 150, p. 220. Parallels: NAGEL 1938, p. 93, n^o 43A and 43B.

Further work will perhaps provide solutions to these problems. The discovery of a clear stratigraphy spanning all periods would be extremely fortunate.

CATALOGUE

[plate I, page 264]

1. Bowl with a perforated base, "flower pot type" Pinkish-beige fabric. Medium mixed temper | Sector 3 (2004) | Inv. DG.04.03-4
2. Bowl with a perforated base, "flower pot type" Reddish-brown to brown fabric. Core dark brown. Medium mixed temper | Sector 12 (2005), deposit 3 | Inv. DG.05.12.d3-1
3. Cup with a rounded base Beige fabric. Red coating over the whole surface (interior and exterior) | Sector 3 (2004) | Inv. DG.04.03-1
4. Bowl with a flat base Beige fabric. Red slip (interior and exterior) | Sector 3 (2004) | Inv. DG.04.03-2
5. Beer jar Reddish-brown fabric. Medium mixed temper | Sector 12 (2005), deposit 3 | Inv. DG.05.12.d3-6
6. Plate with a flat base and slightly rounded bottom Badly fired beige fabric. Core beige to dark grey. Medium mixed temper. Red slip (interior and exterior) | Sector 11C (2005), deposit 2 | Inv. DG.05.11C.d2-2
7. Bowl with a flat base and a rounded bottom Beige fabric. Medium mixed temper | Sector 11C (2005), deposit 2 | Inv. DG.05.11C.d2-1
8. Beer jar with a perforated bottom Beige fabric. Medium mixed temper | Sector 4 (2004) | Inv. DG.04.04-1

[plate II, page 266]

9. Small vase with elongated ovoid body Reddish-brown fabric. Medium mixed temper. Red coating over the exterior surface | Sector 11E (2005), deposit 1 | Inv. DG.05.11E.d1-1
10. Small jar stand Beige fabric. Medium mixed temper. Partial red coating | Sector 11E (2005) | Inv. DG.05.11E-18
11. Small jar stand Beige fabric. Medium mixed temper. Partial red coating | Sector 11E (2005) | Inv. DG.05.11E-19
12. Small censer with a narrow flat base and rolled rim Brownish-beige fabric. Reddish-brown core. Medium mixed temper. Traces of soot in the interior | Sector 11E (2005) | Inv. DG.05.11E-17
13. Censer with perforated base (narrow central pipe) and oblique concave moulded rim Pinkish-brown fabric. Black core. Medium mixed temper. Traces of soot in the interior | Sector 11E (2005) | Inv. DG.05.11E-4
14. Incense burner with everted rim Beige fabric. Medium mixed temper | Sector 14 (2005) | Inv. DG.05.14-2
15. Incense burner without foot, with hanging lip and rounded bottom Beige fabric. Beige to pinkish-brown core. Traces of soot in the interior | Sector 11E (2005) | Inv. DG.05.11E-1

16. Incense burner foot
Beige fabric. Core beige to black. Medium mixed temper | Sector 14 (2005) |
Inv. DG.05.14-1
17. Incense burner foot
Very friable beige fabric. Core grey-black. Medium mixed temper | Sector 11E (2005),
deposit 2 | Inv. DG.05.11E.d2-1
- [*plate III, page 268*]
18. Large plate with a square moulded
rim, flat bottom, lightly marked ring
base and rope impressions
Beige fabric. Beige core. Medium mixed temper | Sector 11E (2005), deposit 1 |
Inv. DG.05.11E.d1-12
19. Large jar with a rounded bottom and
cord impressions
Pinkish-beige fabric. Medium mixed temper. Red coating on the exterior | Sector 12 (2005),
deposit 1 | Inv. DG.05.12.d1-1
20. Pipe
Length: 80 cm. Width: 10 cm/38 cm. Coarse pinkish-brown fabric | Sector 1 (2004) |
Inv. DG.04.01-1

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