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ARCHAEOLOGICAL EXCAVATIONS AT KERMA (SUDAN): PRELIMINARY REPORT ON THE 1997-1998 AND 1998-1999 CAMPAIGNS

By Charles Bonnet

With a history of nearly 25 years at the site of Kerma, the University of Geneva Mission to Nubia was once again able, thanks to the support of both the authorities and the local population, to undertake two new seasons of excavations. Particular attention was given to restoration work to preserve the remains already uncovered. This development of the site, together with the appearance of a work in Arabic on our recent investigations led, a group of government officials to decide to create at the site a museum and a study centre to promote the Kerma civilisation. Thus, on 10 May 1998, the first foundation stone was laid with the patronage of three ministers, most particularly his Excellence Mohamed Taher Eila and his assistant, M. Sir El-Khatim Mohamed Fadel.

As in the previous years, we were supported by grants from the Swiss National Fund for Scientific Research and the Museum of Art and History. The Mayor and the Municipal Council of Satigny also contributed to financing the excavations through the award of a 'prize for merit'. These various grants, which also included a private donation, are essential and we should like to thank each of these authorities for their generosity and loyalty. I am also grateful to Professor Michel Valloggia, President of the Excavations Commission of the University of Geneva, for the interest that he has shown in this work, and also to Mme Danielle Buysens, the editor of the journal *Genava*.

The excavations took place from 7 December 1997 to 6 February 1998 and from 1 December 1998 to 6 February 1999. The Raïs Gad Abdallah, Saleh Melieh, Abdelrazek Omer Nouri and Idriss Osman Idriss ably directed 150 workmen on five different sites. Our task was considerably helped by the support of the Director General of the Antiquities Service, M. Hassan Hussein Idriss and the Director of Museums, M. Siddig Gasm El-Sid. Both the assistant inspector, M. Salah el-Din Mohamed Ahmed, Director of Sudanese Archaeological Excavations, and his replacement for 15 days M. Ali El-Mirghani, devoted themselves with enthusiasm to the research.

The discovery of three Neolithic horizons beneath the layers of the **pre-Kerma settlement** is particularly interesting and is discussed by Mathieu Honegger below. In the **ancient town**, the discovery of the remains of a line of forti-

fications dated to the Middle Kerma period (2050-1750 BC) has considerably enriched our analysis of the development of the town; in some sectors our excavation techniques were modified in order to investigate these ancient layers and to reconstruct the defensive system (fig. 1). In the middle of the **eastern necropolis** some large royal tombs, also dated to the Middle Kerma period, were excavated and we opened a new area (CE 27) in the most ancient zone of the cemetery (c. 2400-2300 BC). As a part of our study of the religious buildings of the cemetery, the funerary chamber of tumulus K III was also cleared. At **Doukki Gel**, some extremely interesting discoveries were made at the site of two superimposed temples of the Napatan and Meroitic periods; their masonry included very many decorated and inscribed stones. Finally, our restoration programme continued at the western Deffufa and it now has a staircase allowing safe access to the upper terrace.

It goes without saying that the good progress made at each of the sites was entirely due to the skill and alertness of the members of the Mission. I should like to record here my very considerable gratitude. Mme Beatrice Privati was able to propose a new ceramic chronology that forms the basis of the dating of the Kerma cultures. Martin Honegger took complete responsibility for the investigation of the pre-Kerma and Neolithic sites. In the ancient town, Thomas Kohler took charge of the supervision of the restoration work while Pascale Kohler-Rummler was responsible for the photographic record. In addition to her work in connection with the restoration of the archaeological finds, Marion Berti drew the funerary chamber of K III, the Ancient and Middle period tombs and several objects. Salah el-Din Mohamed Ahmed worked at the site of Doukki Gel. Louis Chaix and Christian Simon continued their analysis of the animal and human remains, offering further thoughts that provided sometimes unexpected insights into some of our problems. Alfred Hidber, Marc Bundi, Françoise Plojoux and Anne Smits contributed to the excavations of the town or the necropolis, and Nicola Surian undertook the geomorphological study of the Kerma basin. Finally, we should like to thank both Dominique Valbelle, the Mission's epigraphist, whose contribution to the study of the relationship between Egypt and Kerma during the historical periods is essential to our work, and Nora Ferrero for her work on the documentation and her careful editing.

Several members of the Mission presented papers on the subject of the pre-Kerma period, the Kerma pottery, administration and trade and the inscriptions and their significance for the Nubian cultures, on the occasion of the International Conference on Nubian Studies held in Boston in August 1998. The publication of several articles will inform both specialists and a less well-informed public of our aims and the progress of our research¹.

THE NEOLITHIC AND PRE-KERMA SETTLEMENTS

Further excavation within the pre-Kerma settlement confirmed the importance of these deposits and also revealed traces of earlier occupation, belonging to several Neolithic phases. We added to the stratigraphic information, both horizontal and vertical, and consistent dates were obtained by means of C14 analysis². The discovery of postholes belonging to a palisade or a round house were exceptional finds in a 5th millennium context. A number of hearths were found close to structures. Archaeological material is scarce in these layers which had been washed by inundations from the Nile and was confined to potsherds and animal bones.

The plan of the pre-Kerma settlement shows a striking picture of the fortification system of double or triple enclosures. Study of the sediments showed the presence of daub walls, doubtless supported on interlacing branches. New storage pits were located and, taking account of the areas where Middle Kerma tombs had been dug, we estimate that there were around 500 of these. The first pre-Kerma tomb was found in the last season, and contained a remarkable collection of material, including an ivory vessel, a palette, a mortar, pottery roulettes and bronze points.

THE ANCIENT TOWN

An important discovery relating to the urbanisation of the ancient town revealed several phases of development that surface cleanings had left generally inaccessible; our initial decision had been to undertake large-scale horizontal excavations in order to gain rapidly an overall picture of the town and its organisation. Thus the Ancient and Middle Kerma layers had remained virtually unknown, as to excavate them would have required the destruction of later foundations or a proliferation of test pits within these complex buildings. However, by chance, we found that in the south-eastern quarter, part of the Middle Kerma defensive system had been maintained into later periods, and this allowed us to study in detail sections of bastioned walls from this period, and two gateways. The eastern façade

seems likely to have formed part of a rectangular enclosure around 200 metres long by 120 metres wide. In contrast, the western façade had been continuously modified, probably because large residential buildings and the main river-side gates were built on this side. It was thus difficult to reconstruct the plan here (fig. 2).

The Middle Kerma construction techniques were shown to be very different from those of the Classic Kerma period and we had to develop a new approach to their study. These bastioned walls were essentially built of 'galous' or 'tof'³ and not of mud brick. These lumps of mud, of variable shape and thickness, could be used in different ways, in rectilinear or curvilinear foundations or simply through successive additions until a large wall had been achieved. When the mud lumps were very large, a silt mortar was used for better cohesion. Although it was easy to distinguish the consistency and yellow colour of this material, the limits of these structures were very difficult to determine as they did not have a clearly defined shape. On the other hand, the use of 'galous' necessitated the construction of more elaborate foundations to prevent the walls sliding. Mud brick was used in some structures to consolidate an edge, or define the centre line or some architectural detail. In the same way wood, either in the form of posts or planks built into the wall, formed part of the walls. Restorations using posts, like the exterior palisades, showed that there was a mixed architectural form whose details remain to be analysed (fig. 3).

We determined the position of several fortified sections thanks to circular structures that served as the bases of bastions of variable proportions. The majority of these structures were built in pits which reached up to 4 metres in diameter with a depth of 0.50 to 1 metre. The cavity was filled up with silt, strongly compacted and washed, then covered with a circular foundation entirely made from 'galous', around which a solid mass of earth formed a large plinth. It was on these that the semi-circular or bi-convex walls of the bastions were finally built. The reserves of silt that formed part of these structures had not escaped the *sebbakhins* and a number of them had been dug out. It was while recovering the damaged pieces that we gradually found and were able to reconstruct several parts of the east and west of the southern fortifications, which provide the first image of the town which was contemporary with the Egyptian Middle Kingdom (fig. 4).

Several entrances were also located in parts of the enclosure, confirming the line of the bastions and giving us useful information on the roadways. These entrances were usually formed from two elongated walls, from 8 to 20 metres long and 1.50 to 6 metres wide. The passageway measured between 1 and 1.50 metres and was thus rela-

tively narrow. Behind the walls, it was possible in some cases to see the remains of a room which must have been used for the guards; some of the soldiers were probably stationed on top of the walls.

These preliminary observations show the complexity of the problems that such a study brings, for this type of construction, the origin of many architectural forms in Africa, requires much more analysis. If the regular restorations, such as those using mud or wooden posts in order to strengthen the structures or to adapt them to new demands for defensive arrangements, are taken into account one can better understand the limits of our approach.

We have already commented on the discovery, between the houses M 115 and M 46, of an eastern gate, characterised by a large bastion that was enlarged several times and surmounted by a rectangular tower. On the other side a second tower was discovered, which could be slightly older in date. The road, after turning in the direction of the great roundhouse, ended at one of the main gates of the Middle Kerma town, defended by an amazing chicane of wood and, possibly, 'galous' (fig. 5). In removing the upper layers, traces of various constructions were found, very often modified and difficult to interpret. They consisted mainly of postholes of different types and period. A large number of cattle and small livestock hoof prints suggested proximity to an animal enclosure. The traces pointed towards the exterior in the direction of a small narrow opening in the northern wall of the gate.

These successive phases were also found in the gate near the south-eastern corner of the eastern side. Its two narrow elongated walls were modified for the first time in the Middle Kerma period, and then again in later periods. In front of this entrance there was a tower from which to watch the comings and goings along a narrow road bounded by walls. Behind rose an enormous set of fortifications faced with fired brick masonry and edged with a ditch. In its final state, a buttressed wall formed additional fortified *tenaille* that protected the traffic in the area of the urban centre (fig. 6).

Surface excavation of the area a little to the north, near houses M 166 and M 167, revealed that another Middle Kerma gate defined the sector and the main street. This latter continued along the same axis to a control post established in the Classic Kerma period. A vast area seems to have been used for administrative activities, attested by the discovery amongst the rubble layers of many Middle Kingdom and Classic Kerma seal imprints⁴. In the north of this sector was a large building which must have been used for the storage of valuable goods. Houses M 166 and M 167,

like those near the other entrances to the town, perhaps belonged to one or another of the dignitaries in charge of surveillance and the organisation of the movement of merchandise (fig. 7, 8).

In the north-west of the religious quarter, vast potters workshops had destroyed the majority of the remains and in those layers studied it was not possible to trace the Middle Kerma enclosure. Accumulations of ashes, often bearing the impressions of vessels fired at low temperatures, occupied a large area and had certainly accelerated the process of wind erosion. However, on the western side we found roadways that had developed alongside the Middle Kerma fortifications. These new plots created around the town as it expanded were also fortified; thus a network of bastioned walls was established beside the ditch that defended the eastern entrance already discussed (fig. 9). House M 181, a fine construction of the late Middle Kerma and Classic Kerma periods, can also be associated with a dignitary of the kingdom. Its classic plan consisted of a large courtyard opening on either side onto elongated buildings. Its enclosure wall was set at an angle with successive offsets of segments from 2 to 3 metres long. Houses M 179 and 180 were furnished with interior courtyards and spacious rooms; to the south there was usually a garden or an area for kitchens and silos.

THE SECONDARY SETTLEMENT

The research carried out in the religious complex, which was probably devoted to the funerary cult of royalty or persons of importance, was focused on the completion of the stratigraphic analysis. The overall plan of the settlement, which was at first rectangular, had developed in the same way as the main settlement. The defensive system, with its scaled-down bastions was augmented by other constructions whose circular foundations were located all along the edges of the settlement (fig. 10).

THE EASTERN NECROPOLIS

New excavations were undertaken in the eastern necropolis in order to continue the study of the complex topo-chronology of the inhumation. Although the important tombs were laid out on a north-west/south-east axis, and then in the Classic Kerma period on a south-west axis, a series of tombs had collected near to them, and, according to the space available, gradually formed a group of their own. In order to clarify this trend and better understand the funerary rituals, two areas were cleared, one in the Ancient Kerma sector (CE 27) and the other in the Middle Kerma

sector (CE 25). It should be noted that the acronym CE 26 now replaces CE 14b, which is attributed to a zone outside the necropolis, situated to the extreme north (fig. 11).

Our aim was to test the pottery classification proposed by Mme B. Privati for the earliest phase of Ancient Kerma, and to verify the homogeneity of the material and the funerary customs of this part of the cemetery. Thus we investigated a long strip of land linking sectors CE 1 and CE 2. When we first worked in this area, almost 20 years ago, the superstructures of the tombs were still very well preserved and it was easy to distinguish between those made from concentric circles of black stones and those constructed from dressed stele surrounding the pits⁵. Today, alas, all surface remains have been completely flattened by motor vehicles. We were thus able to clear the area until the burial pits or other negative features appeared. The first surprise was the discovery of a hearth which contained Neolithic sherds and lithic material; the main contemporary deposits were several hundred metres away.

Twenty seven tombs were excavated in this new sector CE 27. To the east of small oval graves, upturned bowls from funerary ceremonies were sometimes preserved in fragments; their numbers varied between two and six. Some of the bowls had slipped into the fill of the ditch, probably as a result of the excavations of tomb robbers, and were well-preserved. Very many of these tombs had originally been marked out by a circle of seven stele, held in place with silt and a pile of white quartz pebbles. In one case, a deposit was laid to the north of a grave (t 281) in a narrow and shallow cavity; it consisted of a calcite bracelet and three flint blades that still bore the traces of the adhesive used to fix them to handles. There were four large postholes from a small building, 2.30 metres by 2.60 metres, related to one or other of the neighbouring tombs (t 273, t 278, t 279, t 280). The ends of the two northern posts had been burnt in order to make them more resistant to termite attack or damp. If this building was a funerary chapel, then it would be the oldest religious building found at Kerma⁶ (fig. 12).

This series of tombs was relatively homogeneous. The dead were in a contracted position, more rarely flexed, and were placed in narrow graves (between 1.20 – 1.50 metres and 1.60 – 1.70 metres); some were wrapped in a finely tanned sheep skin. Leather covers, laid in the grave or spread over the corpse, are frequently found in later tombs but have only been found from this period on four occasions. The corpses were clothed in a loincloth; two wore leather nets on their heads. Very rarely, they wore a pair of sandals. These inhumations yielded very few grave goods, but the beautiful stone bracelet showed that objects of quality existed. One tomb (t 267) contained two corpses. One was

a robust male of 45 years, lying in contracted position on his right side, his head to the east and his hands in front of his face. The other, also male, was 15 years old; his unusual position – head to the north, legs bent and arms around the head of the first skeleton – seems to suggest that he had been sacrificed. The dimensions of this double grave (2.14 metres by 1.38 metres) indicate the beginning of a hierarchisation within this modest cemetery. From this perspective it is interesting to note that several of the burials that surrounded this tomb were those of relatively elderly women, between 50 and 60 years old (t 266, t 268, t 269, t 270). We plan to extend the excavation of this burial area, as we have not yet found all the criteria required for classification and further analysis is necessary (fig. 13, 14, 15).

We now have much better knowledge of the middle part of the necropolis, occupied in the Middle Kerma period as the work undertaken to reveal the pre-Kerma remains considerably enlarged sector CE 12 in the direction of sector CE 11; a vast area could thus be studied. Three royal tumuli, measuring nearly 20 to 30 metres in diameter, situated on the west side, at the edge of sector C 25 had for a long time attracted our attention. These graves seem, in the current state of our knowledge, to be from the Middle Kerma 1 period, that is around 2000 BC. The kingdom at this period was enjoying a period of prosperity and the trade with Egypt, if one can judge from the fragments of imported pottery, was developing. Despite the certain robbing of these royal tombs, we decided to excavate at least one in order to study some of the structural details; eight other neighbouring burials were also investigated in this sector (t 238 to t 245) (fig. 16, 17).

The excavation of the royal tomb (t 253) took place over two seasons, not surprisingly given the extraordinary size of the grave: 11.70 meters in diameter with a depth of over 2 metres! It was under a mound of silt, 25 metres in diameter, covered in several rows of small black stones of ferruginous sandstone. The burial chamber had been almost completely emptied but the position of the bones of three individuals indicated that they were not far from their original positions. The principal burial was an adult male; he was accompanied by a woman of between 20 and 25 years whose remains were to the west, and by an adolescent of 15 years placed to the north of the funerary bed. The reconstructed dimensions of the bed were around 2 metres long by 1.30 metres wide. The feet of the bed had square sections with sides of 0.10 metres; the wood was still visible, but reduced to a powder. It was thus a piece of furniture of very good dimensions, embellished, as is often the case, with a decoration of bone plaques engraved with eye motifs. On the perimeter, the cavity bore traces of posts from a small structure in square wood 2.64 – 2.74 metres by 3.04 – 3.28 metres. The posts had 8 to 10 cm sides. This

would seem to be a kind of dais, which could only have been used for a very short period during funerals.

Without doubt, this royal tomb once contained very abundant and rich grave goods, of which the only remains were hundreds of potsherds from the usual Middle Kerma vessels and Egyptian-made jars. There were also many animal bones (from 22 sheep, 2 goats and 2 dogs). There was a circular stone of yellow sandstone and two fired clay offering tables with four compartments, one of which contained many small animals (birds?) schematically modelled. These three objects must originally have been placed flat on the top of the tumulus.

The most spectacular element of this tomb remains, however, the deposition to the south of the mound of several thousand bucrania forming an enormous crescent. Some of them had deformed horns, curving forwards, and others bore traces of red ochre on their frontals or their horns. The metrical analysis of this exceptional assemblage will be undertaken by Louis Chaix in future years.

As for the other, also very disturbed, tombs in this sector, they also yielded a very comparable material, with large storage jars, the very characteristic red bowls with black borders and imported ceramics. Sheep and goats were placed beside the corpse, which was often lying on a bed. Human sacrifices are also indicated by many double inhumations. Finally, we should note that to the south of tumulus 238, there were 378 bucrania, many of which also had deformed horns.

THE FUNERAL CHAMBER OF TUMULUS K III

The large 90 meter diameter tumulus excavated by G. Reisner⁷ in the 1920s can be associated with the eastern Deffufa, the funerary temple, known as K II, which is situated in the centre of the southern extremity of the cemetery. To coincide with the publication of a book on the religious buildings of the cemetery, it seemed appropriate to clear again the royal funerary chamber and to study the preserved masonry in order to verify some of our hypotheses and better understand the movements between the cult building and the tomb. Thus the end of the sacrificial corridor which gave access to the chamber was also cleaned and redrawn. Two large fragments of a statue of a crocodile shaped in quartz and then glazed were discovered there; this sculpture perhaps marked the entrance to the corridor, in which over a hundred human sacrifices were placed.

The funerary vault was constructed in two stages. The vault having no doubt shown signs of weakness, low support

walls were added along the side walls. The bands of yellow painted on plaster (0.40 m high) which decorated the walls had had to be repainted onto the retaining walls. In one of these two parts of a stele were reused. The construction of the vault had no doubt been undertaken during the lifetime of the king, as these restorations must have been carried out before the tomb was closed (fig. 18).

THE SITE OF DOUKKI GEL

The excavation of the **Classic Meroitic temple**, which was undertaken during both the last two seasons, is still far from complete, as the monument extends to at least 55 meters in length. The southern extremity can be found under 'kôm des bodegas', the extraordinary mound, over 5 metres high, of offertory bread moulds, the origin of the reputation of this site. Unfortunately, this sector has been considerably exploited by the *sebbakhins* to fertilise their fields, and the archaeological layers have been destroyed to quite a depth (fig. 19).

The entrance pylon, 25 metres wide, was completely excavated; it was constructed from a core of mud brick faced with fired bricks. On the external face, a wall formed an extra thickness to each of the two piers, perhaps completed by framework of stone masonry. In front of the gateway, very many fragments of a coating painted 'a fresco' together with several reliefs sculpted in sandstone were found in the destruction layers. One can only regret that the decoration was so poorly preserved, for those pieces of a reasonable size attested to an interesting iconography (figures bigger than natural size, with bodied painted in red ochre, elements of friezes, prophylactic signs etc.). Innumerable fragments, scattered throughout the temple, were covered with a yellow coating, a coating that was also found on fired bricks or blocks of stone to emphasise certain architectural elements (fig. 20).

Square foundations allows us to locate the position of the 14 columns that supported the roof of the courtyard peristyle. Several large fragments of sandstone bases were lying here and there, their impressions still visible on the foundations. They perhaps first supported an almost square hypostyle room (12 metres by 11 meters), but had then been thoroughly robbed and there were only a few bricks from the foundations and fragments of column shafts of sandstone painted in yellow. We were less well informed about the following rooms as their walls had been dismantled; however, the presence of a base of grey granite from an altar or *naos*, and the situation of a more ancient chapel, set perpendicularly to the temple on the western side, allowed us to put forward certain hypotheses.

In the temple B 500 of Gebel Barkal, at the back of the hypostyle room, there was a sort of vestibule, which had a plinth of granitic stone, in this case to the name of Taharka, while to the west was a chapel, also placed at a perpendicular axis to the temple. The chapel is attributed to the reign of Rameses II. At Kerma, the stone chapel is dug into the ground at a clearly lower level than that of the Meroitic temple; however, restoration in fired brick proved that the chapel was still being used into the Meroitic period, a period in which it was no doubt reconstructed, as its pillars and the thickness of the walls were modified. The plan of temple B 500 suggests that the sanctuary of our Meroitic temple could well be found beyond the *naos*, but this is yet to be verified.

The dating of the temple remains difficult, as does its attribution to a precise reign. The considerable use of fired brick, the technique of decoration together with the ceramics, place it in the 1st century BC. A supplementary clue is given by a beautiful fragment of a sculpted sandstone plaque, representing a kneeling king, offering his cartouche to the ram-headed god Amon. This relief, found in the vestibule, seems to belong to a small chapel or a stele, and confirms an occupation during the classic period. We should also note the base of a sandstone statuette of an extended figure, whose hands are placed on the sheath of his sword, and which also dates to the same Meroitic period.

Under the destruction levels an **earlier temple** was discovered, characterised by an very elongated plan. The architects of the classic period seem to have taken advantage of this building as the ancient walls of mud bricks had been cut into at the time of the new construction. It is possible that part of these ancient buildings had been maintained during the work as the walls of the Meroitic temple were arranged around the body of the earlier building, preserving some of the façades. This latter was very well constructed with a mixed architecture of mud brick for the walls and stone for the doors or the pillars. It was built against the much earlier stone chapel.

The pylon was elongated (19 metres) and not very thick (1.9 metres). Here we see one of the characteristics of the mud brick cult buildings such as the temple of Kawa known as the 'eastern palace'. The threshold of the double door was made from large reused blocks behind which were the two granite bearings for the pivots; on the western side, a sheet of folded bronze eased the movement of the door pivot. One then entered into a small square room with four columns; two circular bases were still *in situ*, but they had been restored many times. The one on the western side had been surrounded by a circle of reused stones, while on the eastern side the stones were arranged in a square. The

architect's marking out lines engraved on the surfaces of the bases did not correspond to the orientation of the building, indicating that the bases were not in their original positions. The only remains of the other pillars were a small amount of sand from the foundations and a few water worn traces of the settings.

The next two rooms were wider than they were deep. Only the door of the first was preserved under the foundations of Meroitic fired brick. The second was however located by the base of one of its uprights. It was the negative of the first construction course which indicated a partition, almost in the continuation of the side wall of the perpendicular chapel.

Along the western side walls of the ancient temple, other walls showed a connection with an important building belonging to a vast religious complex which stretched in this direction, but, in the present state of our research this remains in practice *terra incognita*. A door led from the second room of the temple to this other building, whose walls had been repaired in the Meroitic period with fired bricks. Between this and the chapel the remains of a small courtyard and a vestibule were again found. Several ovens of a domestic type were found here, and animal bones and numerous moulds showed that they had been used for cooking food and bread offerings. Two of these ovens seem to have been reserved for the smelting of bronze; on the base, in burnt silt, a rounded conduit was preserved surrounding a central darkened area on which could be distinguished traces of ore and smoke. In the fill fragments, a straight nozzle and a sort of joint in fired clay were found. Finally a fragment of crucible still containing metal had been abandoned in the same place (fig. 21).

This workshop is perhaps associated with the manufacture of small objects, the statuettes of Osiris found in quantity in the temple, the heads of rams with sun discs and even pins with decorated shaft, of which many moulds were found. The presence of this workshop in the religious quarter, under the protection of the *temenos*, is not surprising as we have already found the chamber of a kiln used to make much more ancient objects in bronze at the foot of the Deffufa⁹, and we were astonished by the restricted space afforded. The relationship between the chapel and the workshop remains to be analysed.

In the vestibule, close to the granite plinth, the rather unhomogeneous rubble layers yielded several fragments of Middle Kingdom Egyptian statues. These monuments, of which there were five, must have been erected in the sanctuary. A large area still needs to be excavated at this location and we shall then probably be able to complete this inven-

tory. Other deeper and more ancient layers exist but these are poorly preserved and require particularly meticulous excavation. An occupation in the New Kingdom is shown by the ceramic material, amongst which is a high proportion of bread moulds. Thus bakeries were built in this period of colonisation to supply the sanctuaries, and no doubt also breweries, if we can judge by certain characteristic vessels.

One of the most surprising aspects of our two campaigns is certainly the iconographic and epigraphic contribution provided by 120 decorated and inscribed blocks found in the foundations of these two temples. They were from several periods and confirmed the richness of this site. In the central aisle of the ancient temple, trenches dug to exploit the alluvium had disturbed a pavement of reused blocks which had remained more or less in place. This collection demonstrated the diversity of the monuments, and the diversity of the worked sandstone.

Mme D. Valbelle's report below on the first analysis of this material shows several phases of construction, both during the 25th Dynasty and at the end of the New Kingdom, a period for which there are many problems of interpretation in the Nubian regions. The remains dated to the 7th or early 6th century BC show that our first temple must be from a later period as these stones are reused in the foundations. This first temple is thus Napatan and may have been occupied until the 1st century BC, as there is an inscription in Meroitic cursive script engraved on the eastern door post of the entrance.

The reused stones also provided much additional information. They seem to reinforce the idea that there was a fairly systematic occupation of the territory by the Egyptians, who, despite numerous uprisings, progressively took control of the country. Certainly from the arrival of Thutmose II's troops one can be sure that there was frequent traffic along the Nile or more directly towards Kurgus through the eastern desert. But even if the Nubian princes were partially Egyptianised, they retained a certain autonomy. Thutmose II and particularly Thutmose III established a cult to Amon at Gebel Barkal, which became a centre of great importance. The appearance of grandiose monuments under the reign of Amenophis III, at Soleb and Sedeinga, belong to a new stage of construction which continued during the reign of Amenophis IV.

We note thus the interest of a fragmentary scene showing the king standing beneath the sun's rays, which terminate in hands. This representation, which is certainly Amarnan, attests the presence of buildings of the 18th Dynasty. Several foundations from Amenophis IV, the heretic king

Ahkenaton, exist in the neighbourhood of Kerma, such as at Sesebi¹⁰, Tabo¹¹ or, with the ancient name of *Gematon*, at Kawa¹². It is thus not surprising to find at least one or more cult buildings from this period at the site of Doukki Gel.

RESTORATION AND CONSERVATION

Restoration work was undertaken on the stairs of the eastern Deffufa, the palace situated in the interior of the *temenos*, the nearby monumental gateway, and the habitation quarter to the south-east. This work involved the making of 80,000 bricks. This work was primarily undertaken to protect the original masonry which is particularly vulnerable once uncovered, all the more since surveillance of the site remains difficult. It has become necessary to restore to the Deffufa its architectural lines as due to both the passing of time and the plundering that it has suffered it had taken on the appearance of an abandoned hill. From the top of this great temple of the town one can now see the layout of a good part of the town. The clearance of rubble to the west will lead to the rehabilitation of the religious quarter. The results of our research are thus validated and the increasing number of visitors seems a gauge of the interest aroused in the Nubian past (fig. 22).

NOTE ON THE SEAL IMPRINTS DISCOVERED IN 1997-1999

By Brigitte Gratien

Several seal imprints recently discovered in the town are of a new type for Kerma. We once again found a document bearing the imprint of a local seal, a grid pattern in high relief, identical to the 'Kerma' types already published¹³, three imprints bearing fragmentary Egyptian titles or prophylactic signs and a seal mount belonging to this latter category. However, more remarkable were eleven seals dated to the Second Intermediate Period:

- two impressions bearing the name of *ntr nfr M3^c-jb-R^c dj 'nh*, framed by two columns of signs¹⁴;
- nine impressions of the same seal, a scarab of type *'nr^c*¹⁵.

The seals from the Hyksos period are not new in Upper Nubia, but the discovery of imprints, of which some are in the name of a king of the XVth Dynasty, confirms the relations established between the Delta and the kingdom of Kerma in the Second Intermediate Period.

Translated by Annie Grant

Notes:

- 1 Ch. BONNET, "Nouvelles données sur les peintures murales de la chapelle K XI à Kerma. Note d'information", *Académie des Inscriptions et Belles-Lettres, Comptes rendus des séances de l'année 1995, avril-juin, fasc. II, 1995*, pp. 643-650; "The Funerary Traditions of Middle Nubia", *Eighth International Conference for Meroitic Studies, Pre-prints of the main papers and abstracts*, London, July 1996, pp. 2-18; "A-Gruppe und Prä-Kerma; Die Kultur der C-Gruppe; Des Königreich von Kerma", *Sudan, Antike Königreiche am Nil*, Kunsthalle der Hypo-Kulturstiftung, München 2, October 1996 – 6 January 1997, 1996, pp. 37-39, 51-52, 89-95 (translations in French, English and Italian); Ch. BONNET and D. VALBELLE, *Le sanctuaire d'Hathor, maîtresse de la turquoise*, Musumeci Editeur, Aoste, 1996, 199 pages; Ch. BONNET and N. FERRERO, "Les figurines miniatures de Kerma (Soudan)", *Sahara*, 8/1996, pp. 61-66; Ch. BONNET, "Les fouilles archéologiques de Kerma (Soudan), Rapport préliminaire sur les campagnes de 1995-1996 et 1996-1997", *Genava*, n.s., vol. XLV, 1997, pp. 97-137; "Le sanctuaire d'Hathor à Sérabit el-Khadim et la topographie urbaine", *Le Sinaï durant l'Antiquité et le Moyen Age, 4000 ans d'histoire pour un désert*, Actes du Colloque tenu à l'UNESCO du 19 au 21 septembre 1997, texts edited by D. VALBELLE and Ch. BONNET, 1998, pp. 44-49; Ch. BONNET and L. CHAIX, "Le royaume de Kerma au Soudan, Architecture et rituels funéraires", *L'archéologue, Archéologie nouvelle*, no 39, Dec. 1998 – Jan. 1999, pp. 27-32; L. CHAIX, "La integración dels animals en les practiques ludiques, magiques o religioses", *Cota Zero*, 1995, pp. 81-88; "Les boeufs à cornes parallèles; archéologie et ethnographie", *Sahara*, 8/1996, pp. 95-97; L. CHAIX, P. JACUMIN, H. BOCHERENS, A. MARIOTTI, "Stable carbon and nitrogen isotopes as dietary indicators of ancient Nubian populations (Northern Sudan)", *Journal of Archaeological Science*, 25/1998, pp. 293-301; L. CHAIX, "Nouvelles données sur l'exploitation du monde animal au Soudan central et septentrional", *CRIPEL*, 17/1998, pp. 79-84; "Une tombe inhabituelle à Kerma, Soudan", in P. ANREITER, L. BARTOSIEWICZ, E. JEREM & W. MEID, (EDS), *Man and the animal world – Studies in Archaeozoology, Archaeology, Anthropology and Palaeolinguistics in memoriam Sandor Bökönyi*, *Archaeolingua*, Budapest, 1998, pp. 147-155; M. HONEGGER, "Kerma: l'agglomération pré-Kerma", in Ch. BONNET & collab., *Les fouilles archéologiques de Kerma (Soudan)*, *Genava*, n.s., vol. XLV, 1998, pp. 113-118; B. PRIVATI, "La nécropole de Kerma; classification de la céramique", *CRIPEL*, 20 (à paraître); Ch. SIMON, "Kerma: quelques résultats de l'étude paléodémographique des squelettes de la nécropole", in Ch. BONNET & collab., "Les fouilles archéologiques de Kerma (Soudan)", *Genava*, n.s. vol. XLIII, 1995, pp. 60-64; "Premiers résultats anthropologiques de la nécropole de Kadrouka, KDK 1, (Nubie soudanaise). Conférence int. des études nubiennes, (Lille 11-17 Sept. 1994). Vol. 2: Découvertes archéologiques", *CRIPEL*, 1997, pp. 37-53; M. HONEGGER, "The Pre-Kerma settlement at Kerma: new elements throw light on the rise of the first Nubian Kingdom", in R. FREED and T. KENDALL, *9th International Conference of the Society for Nubian Studies (Boston 21-26 August 1998)*, in press; M. RING, A. SALEM, K. BAUER, H. GEISERT, A. MALEK, L. CHAIX, C. SIMON, W. DEREK, A. DI RIENZO, G. UTERMANN, A. SAJANTILLA, S. P. ÅABO, M. STONEKING, "MitDNA Analysis of Nile Valley Populations: a Genetic Corridor or Barrier for Migration?", *American Journal of Human Genetics* (in press)
- 2 See the article by M. HONEGGER in this volume
- 3 See, for example N. H. HENEIN, *Mari Girgis. Village de Haute-Egypte*, *Bibliothèque d'Etude*, vol. XCIV, 1988, pp. 40-41
- 4 See the brief note by B. GRATIEN that follows this report
- 5 Ch. BONNET, "Les fouilles archéologiques de Kerma (Soudan)", *Genava*, n.s., vol. XXX, 1982, pp. 45-57
- 6 The average C14 date from one of the posts is around 2375 BC. Analysis by the Laboratory of the ETH at Zurich no. 20153, sample K. 71
- 7 G. REISNER, *Excavations at Kerma*, Part III, Harvard African Studies, vol. V, Cambridge (Mass.), 1923, pp. 135-189
- 8 M. F. L. MACADAM, *The Temples of Kawa*, II, History and Archaeology of the site, London, 1955, text, pp. 114-115, plate 17
- 9 Ch. BONNET, "Les fouilles archéologiques ...", *op. cit.*, 1982, pp. 41-45
- 10 B. PORTER and R. MOSS, *Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs and Paintings*, VII, Nubia, Deserts and Outside Egypt, Oxford, 1962, pp. 172-174
- 11 H. JACQUET, Ch. BONNET, J. JACQUET, "Pnubs and the Temple of Tabo on Argo Island", *The Journal of Egyptian Archaeology*, vol. 55, 1969, pp. 103-111
- 12 M. F. L. MACADAM, *The Temples of Kawa* ..., *op. cit.*, pp. 8-27
- 13 B. GRATIEN, "Nouvelles empreintes de sceaux à Kerma; aperçus sur l'administration de Kouch au milieu du 2^e mill. av. J.C.", *Genava*, n.s., vol. XLI, 1993, p. 28; "Les institutions en Nubie au Moyen Empire", *CRIPEL* 17/2, 1996, pp. 162-163
- 14 Maa-ib-Rê Sheshy, king Hyksôs of the XVth Dynasty is well known from his numerous scarab seals, of which many have been found in Nubia. Two have been found at Kerma in tumulus K X; they have the graphic Maa-ib-Rê on its own.
- 15 This type, widespread in the Hyksôs period (P. NEWBERRY, *Ancient Egyptian Scarabs*, London 1905, pl. 24, 1 to 9; O. TUFNELL, W. WARD, G.T. MARTIN, *Studies on Scarab Seals* II, Warminster, 1984, class 3 C/3E), is known in Nubia and at Kerma (G.A. REISNER, *Excavations at Kerma*, parts IV-V, 1923, pl. 40, 2, n 69-70).

KERMA: THE NEOLITHIC AND PRE-KERMA OCCUPATION OF THE EASTERN NECROPOLIS

By Matthieu Honegger

The latest work on the prehistory and protohistory of the surroundings of Kerma were focused on the eastern necropolis, a site which has proved to be very important in the study of the ancient settlement. The discoveries made between 1997 and 1999 have thus enriched our understanding of the problems presented when the last report appeared in *Genava*¹. The main focus of our research remains the understanding of the Pre-Kerma settlement, where we continue with a strategy of extensive excavation. However, other centres of interest were progressively extended following the survey undertaken on the site of the ancient cemetery of the town of Kerma. The discovery of several neolithic occupation levels provided the opportunity to establish a chronological framework for these ancient periods, previously almost unknown in the territory of Nubia. Additionally, their state of preservation which was at times exceptional for this region, allowed for the first time a study of the spatial organisation of one of these settlements dating back to the fifth millennium BC. Finally, the unexpected discovery of a Pre-Kerma burial provides a new objective for future seasons of study. If this latter is not isolated and is, as we assume, part of a necropolis, the study of this funerary complex might prove to be of considerable interest in affording the opportunity to make a comparison between the information gained from the world of the dead and that from the excavation of the assumedly contemporary settlement.

THE LOCATION OF THE DISCOVERIES

The ancient necropolis of Kerma is found 5 kilometres to the east of the modern course of the Nile. It is situated on a slight elevation which rises about 2 meters above the surrounding plain. Thanks to the work of the mission of the University of Geneva, it has in large part been preserved from the destruction caused by the considerable expansion of cultivated areas during the last 30 years. During the neolithic and Pre-Kerma periods, the course of the Nile ran further to the east and must have passed close to the site of the necropolis², as is implied by the presence of numerous palaeochannels still visible today (fig. 1). It is possible that the site even formed an island surrounded by two branches of the river. In any case the site must have been particularly favourable for human settlement in view of the number of

phases of occupations discovered. The proximity to water and the fact that the site dominated its surroundings were no doubt crucial advantages at the time. The site was not however always safe from the Nile floods. Stratigraphic information has shown that the Neolithic occupation layers, which were generally water-washed, were often covered by deposits of alluvium brought by the river. One can imagine years of exceptional floods when the water covered right over this site which normally rose above the water. In contrast, in the Pre-Kerma period, there is no indication that the site had been flooded. It seems that the river had by then already moved somewhat to the west.

Despite the presence of several thousand burials from the Kerma civilisation, whose installation had seriously disturbed the earlier levels, the surveys revealed a series of sites, in different states of preservation, spread over the period between the fifth millennium and the beginning of the third millennium BC. No fewer than eleven sites yielding neolithic material were located on the site of the ancient cemetery itself or in its immediate surroundings. Sometimes they were located stratigraphically at a depth of up to a meter. But more often they were found on the surface in areas that were eroded, the later deposits having disappeared through wind erosion or destruction due to the expansion of the areas of cultivation. Some Pre-Kerma pottery also attested the presence of occupation of this period. Some pottery was found ten or so metres from the settlement during excavation, indicating the considerable extent of this habitation. Other pottery was found much further away, to the north of the necropolis and indicated the presence of an occupation earlier or later than the settlement.

THE NEOLITHIC OCCUPATION

The remains of these settlements are characterised by the presence of hearths accompanied by faunal remains and potsherds. The material is always to a greater or lesser extent encrusted with calcium, which shows a humid environment. The hearth structures are eroded and the occupation levels are always water-washed, a consequence of the floods responsible for the inundation of the site. Despite this partial destruction caused by the river, the state of preservation of these sites was exceptional in the context of

Period	Occupation	Dating evidence	Date
Kerma	Cemetery	Chronology based on c. 40 C14 dates and imported Egyptian ceramics	Between 1450 and 2450 BC
Pre-Kerma	Town	ETH-18829: 4365 ± 55 B.P. ETH-18828: 4400 ± 55 B.P.	c. 3000 BC
	Tomb	Grave goods characteristic of the late fourth/early third millennium BC	?
Neolithic	Settlement	Pottery with neolithic and Pre-Kerma characteristics	?
Neolithic	Settlement	B 6626: 5670 ± 30 B.P. CRG 770: 5670 ± 75 B.P.	c. 4500 BC
Neolithic	Settlement	ETH 14935: 5770 ± 65 B.P. ETH-18827: 5815 ± 60 B.P.	c. 4650 BC

2. The chronology of the occupations located at the site of the necropolis

Sudanese prehistory. Until the present time, the Neolithic sites excavated yielded material, often scattered on the surface, but almost never revealed structures still in situ, excepting hearths³. In this context, the perspectives offered by the discovery of these sites are of utmost interest. The study of the lithic and ceramic material, the radiocarbon dating of several hearth deposits, and the stratigraphic information all contribute to the construction of a chronological and cultural framework which serves as a reference for the region.

At this moment in time, we know that the site had been occupied during at least three distinct phases during the Neolithic period (fig. 2). Two are well-dated and are placed in the fifth millennium BC. They are found beneath the Pre-Kerma settlement and also on the surface to the south, at a place where erosion has caused the disappearance of almost 50 cm of alluvium. It is at this site that the excavations this winter revealed, in addition to the usual hearths, a series of postholes describing huts and short palisades (fig. 3 and 4). The stratigraphic information and the presence of a characteristic pottery make their attribution to the Neolithic certain. The huts, of which three were found, are of a diameter equivalent to those of the Pre-Kerma settlement. However, they do not have the same regularity and their shape more often approaches an oval than a perfect circle. Some test pits dug in the surroundings show that this occupation level could in future seasons be investigated over a large area. The third Neolithic occupation is less well preserved. The stylistic study indicates that it was probably a later habitation as the pot forms and their decoration already evoke characteristics frequently found on Pre-Kerma pottery.

All the sites discovered yielded faunal remains in small or large numbers. The first identifications showed the presence

of cattle and domestic ovicaprines (sheep or goat)⁴. To the north of the necropolis, an isolated hearth with pottery was accompanied by the remains of fish, notably *Siluridae*. These discoveries provide information on the way of life during the period. The populations must have practised fishing and animal husbandry, but for the moment we lack finds that allow us to know the role played by agriculture. Was there a complementarity between population groups, some practising animal husbandry with others concentrating more on agriculture? Or should we rather envisage a community with a mixed economy? These questions have implications for the type of habitations present at the necropolis. Are they seasonal settlements for fishing and animal husbandry, the site then abandoned in periods of high water? Or are they villages occupied throughout the year, situated close to cultivated fields? Further test digging and the excavation of more of the habitation site recently discovered should provide at least partial answers to these questions.

THE PRE-KERMA SETTLEMENT AND BURIAL

The opening of new areas in the middle of the settlement discovered more than ten years ago⁵ provides today a picture extending over almost a hectare (fig. 4). The known structures include 281 storage pits as well as many constructions indicated by postholes. These latter are from around 50 circular huts which must have served as houses and, in the case of the smaller ones, possibly grain stores. Two rectangular buildings, quite different from each other, were also identified; the larger building had been reconstructed three times on the same site⁶. These two buildings must have had a different use from the huts; this may have been related to the administrative or religious systems of the community. Numerous palisades were also erected

with wooden posts. Some of these seem to demarcate divisions of the interior habitation area, but the majority were situated on the periphery of buildings and could constitute an encircling fortification. The fact that through many rebuildings these palisades were arranged in parallel rows leads us to suppose that they fulfilled a defensive function. To the north-east of the excavation they formed vast oval structures 20 metres wide by 25 to 30 metres long. These could have been large bastions related to one of the entrances of the town, following a model known in the ancient city of Kerma⁷. However, the form of these structures also evokes a cattle enclosure. Cattle rearing without doubt played a central role in the Pre-Kerma and Kerma societies. Thus it is not possible to exclude this possibility and it is also possible that these palisades had at the same time played the role of both enclosure and fortification. Finally, at the south-west of the settlement, a fairly extensive area was distinguished from the surrounding land by the fact that it was heaped up with earth. It is still difficult to know if this was related to collapsed buildings or to a terracing whose function is as yet unknown.

Two radiocarbon dates were obtained from samples taken from storage pits (fig. 2). They placed the Pre-Kerma occupation around 3000 BC, which is five centuries earlier than the Kerma civilisation. It is not possible to determine the duration of the settlement on the basis of these two dates. However, recuttings and superimpositions of the structures, notable the huts and the pits, lead us to propose a period of two centuries at the most.

In general, the preservation of the Pre-Kerma occupation level was rather poor, although it varied according to particular location. In the south, the layer was completely eroded and the lower Neolithic levels were found at the surface. To the north, the remains were better preserved and it was possible to observe the succession of layers resulting from the destruction of the settlement. Microscopic analysis showed that the sediments covering the original surface were composed of the remains of collapsed cob walls⁸. The buildings and the palisades must thus have been constructed from a framework of wood covered in earth. The discovery of several fragments of wattle reinforces this hypothesis. In section, we observed just above this destruction level the clearly visible traces of ploughing. They may have resulted from the cultivation of this area following the abandonment of the settlement, but it is also possible that the area had been turned over thoroughly when the area was functioning as the necropolis of Kerma. The removal of soil to erect the tumuli, the digging of trenches for the bucharia placed in front of the tombs as well as the various activities related to the funeral ceremonies had probably considerably disturbed the underlying soil.

During the clearing of a new sector on the western edge of the excavations, a tomb appeared on the surface. Partially destroyed by the insertion of two Middle Kerma tombs, it contained the skeleton of an adult female in flexed position, lying on her right side with her head to the east. There were abundant grave goods accompanying the corpse: these included a quartz palette and a copper pin with a square cross section. These two objects are frequently found in A-Group tombs⁹, although they are unknown in those of the Kerma civilisation. They place this grave at about 3000 BC, that is during the Pre-Kerma period. It is not, however, possible to be certain that it is strictly contemporary with the settlement found just beside the tomb: it could be that it is of a slightly earlier or later date. A radiocarbon dating is being carried out which will clarify this question. The remaining grave goods associated with this tomb consisted of a copper awl still embedded in its wooden handle; fragments of malachite placed under the palette and two grinders placed just beside; a comb and a polishing stone; a carefully polished sandstone bowl and a mortar in elephant ivory.

This burial is unlikely to have been isolated and it is very probable that it was part of a cemetery. It remains to define the extent of the cemetery and to determine whether or not it was contemporary with the nearby settlement. It could seem surprising that this tomb was found at surface level while those of the Kerma civilisation were in pits that were sometimes over two metres deep. Were the Pre-Kerma burials placed on the ground surface or were they placed in a shallow pit and then covered with a mound¹⁰? The area slightly to the south heaped up with earth could possibly be related to this phenomenon.



The richness of the discoveries made in recent years raises numerous questions which direct our research to address new problems while still maintaining the programme of excavations already established. Extensive clearing of the Pre-Kerma settlement will be continued in order to establish its layout. Survey work indicates that the site extends over at least two hectares, but it could cover an even bigger area. The area cleared at present is far from sufficient to determine the complexity of the settlement and establish the extent to which it showed analogies with the ancient city of Kerma.

The construction of a chronology for the periods prior to the Kerma civilisation is another focus of research. Surveys and analyses will continue with the aim of filling in the numerous gaps in the sequence of occupation. We will look particularly at the first part of the third millennium BC,

which sees the transition from Pre-Kerma to the Kerma civilisation. One objective is to know precisely when the settlement was abandoned and to determine if it is possible that the occupation of the site of the ancient necropolis continued right up to the beginning of the Ancient Kerma period.

Finally, two new problems emerged with the discovery of the Neolithic occupation and the Pre-Kerma tomb. The exploitation of these unexpected remains will allow us to enrich our understanding of a Sudanese archaeology that was until now unknown.

Translated by Annie Grant

Notes:

- 1 M. HONEGGER, "Kerma: L'agglomération Pré-Kerma", *Genava*, n.s., vol. LV, 1997, pp. 113-188
- 2 See on this subject the study of B. MARCOLONGO, N. SURIAN, "Kerma: les sites archéologiques de Kerma et de Kadruka dans leur contexte géomorphologique", *Genava*, n.s., vol. XLV, 1997, pp. 199-123
- 3 For an indication of the problems of preservation of prehistoric sites, cf. J. REINOLD, "Conservation et préservation des sites archéologiques", in *Actes du VII^e congrès international d'études nubiennes* (Genève, 3-8 September 1990), 1992, vol. 1, pp. 187-192
- 4 Study in progress, Louis Chaix
- 5 The first discoveries are related in Ch. BONNET, "Les fouilles archéologiques de Kerma (Soudan), Rapport préliminaire sur les campagnes 1986-1987 et de 1987-1988", *Genava*, n.s., vol. XXXVI, 1988, pp. 5-20
- 6 The reconstruction of two other rectangular structure was proposed the last report (HONEGGER, *op. cit.*, note 1). Their existence is, however, now in question, as some of their walls consisted of alignments of posts of the Middle Kerma period, situated to the north of some tombs.
- 7 For a description of these structures found in the town of Kerma, cf. Ch. BONNET, "Les fouilles archéologiques de Kerma (Soudan), Rapport préliminaire sur les campagnes de 1991-1992 et de 1992-1993", *Genava*, n.s., vol. XLI, 1993, pp. 1-18; ID., "Les fouilles archéologiques de Kerma (Soudan), Rapport préliminaire sur les campagnes de 1995-1996 et de 1996-1997", *Genava*, n.s., vol. XLV, 1997, pp. 97-112
- 8 M. GUÉLAT, "Analyse micromorphologique de deux échantillons (fouilles 1996-97), Rapport préliminaire", September 1998 (unpublished)
- 9 H. A. NORDSTRÖM, "Neolithic and A-Group sites", *The Scandinavian joint expedition to Sudanese Nubia*: 3:1, Uppsala, 1972; B. B. WILLIAMS, "The A-Group royal cemetery at Qustul: cemetery L", *The University of Chicago Oriental Institute Nubian Expedition*; 3:1, Chicago, 1986
- 10 An analogous situation seems to exist in the Neolithic cemeteries of Kadruka, situated 20 kilometres to the south of Kerma, cf. J. REINOLD, communication to *Table ronde sur les synchronies en Egypte et au Soudan*, Institut de Papyrologie et d'Égyptologie de l'Université de Lille, 31 October 1998.

KERMA: THE INSCRIPTIONS

By Dominique Valbelle

The 1997-98 and 1998-99 seasons brought a promising harvest of epigraphic and iconographic information. A fragment of an Egyptian statue of the Middle Kingdom was found in the Classic Kerma necropolis, near tumulus K X, but it was primarily the Meroitic temple of Doukki Gel that provided the main contributions. These were divided between a new collection of fragmentary Egyptian statues of the Middle Kingdom and architectural elements from the temple that is under excavation. It is still too soon to provide a complete assessment of this material, but some groups have already emerged at this stage of the excavations.

THE MIDDLE KINGDOM STATUES

The most ancient monuments found on the site of the Meroitic temple are some fragmentary statues from the Middle Kingdom. They belong to the same categories as those found by G.A. Reisner in the eastern Deffufa and more particularly in the Classic Kerma necropolis¹ where a new fragment was recovered from the surface close to K X in 1998. The five fragments found at Doukki Gel belong to private statues. Two of them are seated, and a third is in the position of a scribe. They were buried close to each other in the vestibule and the hypostyle chamber, and their location can be compared with that of other monuments from the Middle Kingdom found in various Napatan and Meroitic temples in Nubia – Semna², Tabo³, Kawa⁴, and Gebel Barkal⁵. However, each example needs to be examined separately, as each of these sites has a specific history.

These and the other Kerma statues are from monuments made in Egypt for Egyptians. There is no indication in the surviving inscriptions that they were intended for any Nubian sanctuary. Thus one of the statues (fig. 1 and 2) represents the 'director of sealed things, director of the administrative district, Ren[iseneb]'. These two titles were current in Egypt during the Middle Kingdom⁶. However the first of these – *jmy-r hmt*⁷ – is found on another Kerma statue, that of the Nomarch Amen⁸ and on the stèle of Antef⁹ which dates to the 33rd year of Amenemhat III; the title is frequently held by the men sent by the king on missions to the border regions and beyond¹⁰. They may thus have been brought to Kerma by these men during official missions, and then ultimately reused in various parts of the site.

The presence of these statues in a Meroitic temple at Kerma implies several comments. The abundant Middle Kingdom Egyptian statues at Kerma, whatever the circumstances and the date of their arrival, constitutes a cult material that was reused as much in the Classic Kerma periods as in the Napatan and Meroitic periods. At the current stage of excavations it is not possible to link these Middle Kingdom statues with one archaeological level rather than another. They were found in disturbed layers that might belong either to the basement of the last temple or to the rubble of its abandonment; thus they might have been buried as sacred objects after use, as at Semna, or have been erected in the rooms of the temple, as at Tabo. Nor do we yet know the date of the earliest building at the site of Doukki Gel.

THE ARCHITECTURAL ELEMENTS

Amongst the many blocks and fragments of blocks found up till now in the excavated part of the Meroitic temple, several distinct groups can be more or less precisely identified at present. They each correspond to one or several monuments constructed, either successively on the temple site itself, or in its immediate surroundings. At the time of their discovery some were scattered in the rubble, some were reused in the walls of the Napatan temple, and some formed the paving of the third room.

The New Kingdom elements

The oldest re-used blocks are attributable, by their decoration, to the New Kingdom. Some might date to the beginning of the XVIIIth Dynasty. However, the most remarkable group is incontestably 'Amarnian'. They display the usual measurements of the talatat¹¹. They were all reused in the paving. The most characteristic signs found on these blocks are:

- sunrays figures terminated by hands that descend towards the faces of the royal family or altars heaped with offerings on which were set oil lamps (fig. 3);
- cartouches of kings and of Aton;
- exaggerated silhouettes, enveloped in transparent linen.

Some inscriptions and decorative elements that were less distinctive might date to a different period within the New Kingdom.

The Napatan elements

It is not always easy to distinguish the decorative fragments from Middle Kingdom monuments, especially the Ramessid monuments, from some of the decorative fragments carefully executed during the XXVth Dynasty. However, some elements re-used in the stonework of the Napatan temple had certainly been worked during one of the reigns of the Kush dynasty. One of the elements discovered this year bore an incomplete cartouche beginning with the signs *š3 h3* (fig. 4) which could record the name of the king Shabaka or that of his successor Shabataka.

Another block preserved the upper part of two cartouches containing epithets particularly common in the Third Intermediate Period: *stp.n jmn* and *[mry] jmn*. However, several palaeographic characteristics were also reminiscent of the Napatan period. These epithets were very adaptable in the royal protocol according to the cult places where they were engraved; it is difficult to attribute them to a particular sovereign in the absence of one of the latter's names. Since this block had been re-used in the Napatan temple, it must have been sculpted at the very latest during one of the first reigns of this period.

Meroitic decorative elements

The Meroitic temple was mainly built from mud brick and red brick. However, cursive graffiti and some decorative elements provided evidence for this last stage in the reconstruction of the sanctuary. The most significant was without doubt a fragment of a sandstone plaque from a naos or a stele, representing a king offering to the ram-headed god Amon a cartouche in which the outline of the goddess Maât can be made out, which could correspond to *nb-m3^cl-r^c*, the name born by Amanitenmomide and Amanishataqermo (?)¹². The king is on his knees on a kind of platform while the god is squatting on a lotus, carrying a crook.

The god of the temple

Although it is too early to draw detailed conclusions from these first epigraphic elements, taking into account their richness, their state of preservation and their proximity to other temples, many observations clearly point to the god which is the master of the site. It is difficult to be definite before the Amarnian period: two very fine tall plumes preserved on a block that might have been sculpted earlier

could as likely be part the coiffure of a queen as that of a god. The faces and cartouches of the Amarnian blocks had been systematically hammered.

Several datable inscriptions, some from the New Kingdom and others from the Napatan period, revealed that the patron of the sanctuary from which they came was no other than Amon. Although their original location cannot be certain as the majority were re-used, they provide a coherent documentation that confirms the small Meroitic fragment. Amon is evidently not the only divinity represented on the walls of the temple: a hawk-headed god, a Nubian Horus, is also present in several places.

Despite their fragmentary state, these epigraphic and iconographic documents will, once they have all been recovered, provide an extremely valuable collection of information on the history of the site during a period, particularly the New Kingdom and perhaps the Third Intermediate Period, that remains relatively unknown throughout this region of Nubia, and for which there is also little indication on the corresponding Egyptian politics.

Translated by Annie Grant

Notes:

- 1 D. VALBELLE, "The cultural significance of iconographic and epigraphic data found in the Kingdom of Kerma", *Ninth International Conference of Nubian Studies*, Boston, August 1998
- 2 PM VII, p. 149 and J. VERCOUTTER, *RdE* 27, p. 225-228
- 3 PM VII, p. 180
- 4 PM VII, p. 184
- 5 PM VII, p. 216
- 6 W.A. WARD, *Index of Egyptian Administrative and Religious Titles of the Middle Kingdom*, Beirut, 1982, no. 364 (read *jmy-r šd3w.t*) and no. 411 (*jmy-r gs-pr*), p. 52
- 7 P. VERNUS, "Observations sur le titre *jmy-r3 hmt* 'directeur du Trésor'", in S. ALLAM (ed.), *Grund und Boden in Alt-ägypten*, Tübingen, p. 251-260
- 8 Boston MFA 14, 725: G.A. REISNER, *HAS* VI, fig. 344, p. 525
- 9 G.A. REISNER, *HAS* V, p. 126-127 and 132-134; *HAS* VI, p. 511-512
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ARCHAEOLOGICAL EXCAVATIONS AT KERMA (SUDAN): PRELIMINARY REPORT ON THE 1997-1998 AND 1998-1999 CAMPAIGNS

By Charles Bonnet

With a history of nearly 25 years at the site of Kerma, the University of Geneva Mission to Nubia was once again able, thanks to the support of both the authorities and the local population, to undertake two new seasons of excavations. Particular attention was given to restoration work to preserve the remains already uncovered. This development of the site, together with the appearance of a work in Arabic on our recent investigations led, a group of government officials to decide to create at the site a museum and a study centre to promote the Kerma civilisation. Thus, on 10 May 1998, the first foundation stone was laid with the patronage of three ministers, most particularly his Excellence Mohamed Taher Eila and his assistant, M. Sir El-Khatim Mohamed Fadel.

As in the previous years, we were supported by grants from the Swiss National Fund for Scientific Research and the Museum of Art and History. The Mayor and the Municipal Council of Satigny also contributed to financing the excavations through the award of a 'prize for merit'. These various grants, which also included a private donation, are essential and we should like to thank each of these authorities for their generosity and loyalty. I am also grateful to Professor Michel Valloggia, President of the Excavations Commission of the University of Geneva, for the interest that he has shown in this work, and also to Mme Danielle Buysens, the editor of the journal *Genava*.

The excavations took place from 7 December 1997 to 6 February 1998 and from 1 December 1998 to 6 February 1999. The Rais Gad Abdallah, Saleh Melieh, Abdelrazek Omer Nouri and Idriss Osman Idriss ably directed 150 workmen on five different sites. Our task was considerably helped by the support of the Director General of the Antiquities Service, M. Hassan Hussein Idriss and the Director of Museums, M. Siddig Gasm El-Sid. Both the assistant inspector, M. Salah el-Din Mohamed Ahmed, Director of Sudanese Archaeological Excavations, and his replacement for 15 days M. Ali El-Mirghani, devoted themselves with enthusiasm to the research.

The discovery of three Neolithic horizons beneath the layers of the **pre-Kerma settlement** is particularly interesting and is discussed by Matthieu Honegger below. In the **ancient town**, the discovery of the remains of a line of forti-

fications dated to the Middle Kerma period (2050-1750 BC) has considerably enriched our analysis of the development of the town; in some sectors our excavation techniques were modified in order to investigate these ancient layers and to reconstruct the defensive system (fig. 1). In the middle of the **eastern necropolis** some large royal tombs, also dated to the Middle Kerma period, were excavated and we opened a new area (CE 27) in the most ancient zone of the cemetery (c. 2400-2300 BC). As a part of our study of the religious buildings of the cemetery, the funerary chamber of tumulus K III was also cleared. At **Doukki Gel**, some extremely interesting discoveries were made at the site of two superimposed temples of the Napatan and Meroitic periods; their masonry included very many decorated and inscribed stones. Finally, our restoration programme continued at the western Deffufa and it now has a staircase allowing safe access to the upper terrace.

It goes without saying that the good progress made at each of the sites was entirely due to the skill and alertness of the members of the Mission. I should like to record here my very considerable gratitude. Mme Beatrice Privati was able to propose a new ceramic chronology that forms the basis of the dating of the Kerma cultures. Martin Honegger took complete responsibility for the investigation of the pre-Kerma and Neolithic sites. In the ancient town, Thomas Kohler took charge of the supervision of the restoration work while Pascale Kohler-Rummler was responsible for the photographic record. In addition to her work in connection with the restoration of the archaeological finds, Marion Berti drew the funerary chamber of K III, the Ancient and Middle period tombs and several objects. Salah el-Din Mohamed Ahmed worked at the site of Doukki Gel. Louis Chaix and Christian Simon continued their analysis of the animal and human remains, offering further thoughts that provided sometimes unexpected insights into some of our problems. Alfred Hidber, Marc Bundi, Françoise Plojoux and Anne Smits contributed to the excavations of the town or the necropolis, and Nicola Surian undertook the geomorphological study of the Kerma basin. Finally, we should like to thank both Dominique Valbelle, the Mission's epigraphist, whose contribution to the study of the relationship between Egypt and Kerma during the historical periods is essential to our work, and Nora Ferrero for her work on the documentation and her careful editing.

Several members of the Mission presented papers on the subject of the pre-Kerma period, the Kerma pottery, administration and trade and the inscriptions and their significance for the Nubian cultures, on the occasion of the International Conference on Nubian Studies held in Boston in August 1998. The publication of several articles will inform both specialists and a less well-informed public of our aims and the progress of our research¹.

THE NEOLITHIC AND PRE-KERMA SETTLEMENTS

Further excavation within the pre-Kerma settlement confirmed the importance of these deposits and also revealed traces of earlier occupation, belonging to several Neolithic phases. We added to the stratigraphic information, both horizontal and vertical, and consistent dates were obtained by means of C14 analysis². The discovery of postholes belonging to a palisade or a round house were exceptional finds in a 5th millennium context. A number of hearths were found close to structures. Archaeological material is scarce in these layers which had been washed by inundations from the Nile and was confined to potsherds and animal bones.

The plan of the pre-Kerma settlement shows a striking picture of the fortification system of double or triple enclosures. Study of the sediments showed the presence of daub walls, doubtless supported on interlacing branches. New storage pits were located and, taking account of the areas where Middle Kerma tombs had been dug, we estimate that there were around 500 of these. The first pre-Kerma tomb was found in the last season, and contained a remarkable collection of material, including an ivory vessel, a palette, a mortar, pottery roulettes and bronze points.

THE ANCIENT TOWN

An important discovery relating to the urbanisation of the ancient town revealed several phases of development that surface cleanings had left generally inaccessible; our initial decision had been to undertake large-scale horizontal excavations in order to gain rapidly an overall picture of the town and its organisation. Thus the Ancient and Middle Kerma layers had remained virtually unknown, as to excavate them would have required the destruction of later foundations or a proliferation of test pits within these complex buildings. However, by chance, we found that in the south-eastern quarter, part of the Middle Kerma defensive system had been maintained into later periods, and this allowed us to study in detail sections of bastioned walls from this period, and two gateways. The eastern façade

seems likely to have formed part of a rectangular enclosure around 200 metres long by 120 metres wide. In contrast, the western façade had been continuously modified, probably because large residential buildings and the main river-side gates were built on this side. It was thus difficult to reconstruct the plan here (fig. 2).

The Middle Kerma construction techniques were shown to be very different from those of the Classic Kerma period and we had to develop a new approach to their study. These bastioned walls were essentially built of 'galous' or 'tof'³ and not of mud brick. These lumps of mud, of variable shape and thickness, could be used in different ways, in rectilinear or curvilinear foundations or simply through successive additions until a large wall had been achieved. When the mud lumps were very large, a silt mortar was used for better cohesion. Although it was easy to distinguish the consistency and yellow colour of this material, the limits of these structures were very difficult to determine as they did not have a clearly defined shape. On the other hand, the use of 'galous' necessitated the construction of more elaborate foundations to prevent the walls sliding. Mud brick was used in some structures to consolidate an edge, or define the centre line or some architectural detail. In the same way wood, either in the form of posts or planks built into the wall, formed part of the walls. Restorations using posts, like the exterior palisades, showed that there was a mixed architectural form whose details remain to be analysed (fig. 3).

We determined the position of several fortified sections thanks to circular structures that served as the bases of bastions of variable proportions. The majority of these structures were built in pits which reached up to 4 metres in diameter with a depth of 0.50 to 1 metre. The cavity was filled up with silt, strongly compacted and washed, then covered with a circular foundation entirely made from 'galous', around which a solid mass of earth formed a large plinth. It was on these that the semi-circular or bi-convex walls of the bastions were finally built. The reserves of silt that formed part of these structures had not escaped the *sebbakhins* and a number of them had been dug out. It was while recovering the damaged pieces that we gradually found and were able to reconstruct several parts of the east and west of the southern fortifications, which provide the first image of the town which was contemporary with the Egyptian Middle Kingdom (fig. 4).

Several entrances were also located in parts of the enclosure, confirming the line of the bastions and giving us useful information on the roadways. These entrances were usually formed from two elongated walls, from 8 to 20 metres long and 1.50 to 6 metres wide. The passageway measured between 1 and 1.50 metres and was thus rela-

tively narrow. Behind the walls, it was possible in some cases to see the remains of a room which must have been used for the guards; some of the soldiers were probably stationed on top of the walls.

These preliminary observations show the complexity of the problems that such a study brings, for this type of construction, the origin of many architectural forms in Africa, requires much more analysis. If the regular restorations, such as those using mud or wooden posts in order to strengthen the structures or to adapt them to new demands for defensive arrangements, are taken into account one can better understand the limits of our approach.

We have already commented on the discovery, between the houses M 115 and M 46, of an eastern gate, characterised by a large bastion that was enlarged several times and surmounted by a rectangular tower. On the other side a second tower was discovered, which could be slightly older in date. The road, after turning in the direction of the great roundhouse, ended at one of the main gates of the Middle Kerma town, defended by an amazing chicane of wood and, possibly, 'galous' (fig. 5). In removing the upper layers, traces of various constructions were found, very often modified and difficult to interpret. They consisted mainly of postholes of different types and period. A large number of cattle and small livestock hoof prints suggested proximity to an animal enclosure. The traces pointed towards the exterior in the direction of a small narrow opening in the northern wall of the gate.

These successive phases were also found in the gate near the south-eastern corner of the eastern side. Its two narrow elongated walls were modified for the first time in the Middle Kerma period, and then again in later periods. In front of this entrance there was a tower from which to watch the comings and goings along a narrow road bounded by walls. Behind rose an enormous set of fortifications faced with fired brick masonry and edged with a ditch. In its final state, a buttressed wall formed additional fortified tenaille that protected the traffic in the area of the urban centre (fig. 6).

Surface excavation of the area a little to the north, near houses M 166 and M 167, revealed that another Middle Kerma gate defined the sector and the main street. This latter continued along the same axis to a control post established in the Classic Kerma period. A vast area seems to have been used for administrative activities, attested by the discovery amongst the rubble layers of many Middle Kingdom and Classic Kerma seal imprints⁴. In the north of this sector was a large building which must have been used for the storage of valuable goods. Houses M 166 and M 167,

like those near the other entrances to the town, perhaps belonged to one or another of the dignitaries in charge of surveillance and the organisation of the movement of merchandise (fig. 7, 8).

In the north-west of the religious quarter, vast potters workshops had destroyed the majority of the remains and in those layers studied it was not possible to trace the Middle Kerma enclosure. Accumulations of ashes, often bearing the impressions of vessels fired at low temperatures, occupied a large area and had certainly accelerated the process of wind erosion. However, on the western side we found roadways that had developed alongside the Middle Kerma fortifications. These new plots created around the town as it expanded were also fortified; thus a network of bastioned walls was established beside the ditch that defended the eastern entrance already discussed (fig. 9). House M 181, a fine construction of the late Middle Kerma and Classic Kerma periods, can also be associated with a dignitary of the kingdom. Its classic plan consisted of a large courtyard opening on either side onto elongated buildings. Its enclosure wall was set at an angle with successive offsets of segments from 2 to 3 metres long. Houses M 179 and 180 were furnished with interior courtyards and spacious rooms; to the south there was usually a garden or an area for kitchens and silos.

THE SECONDARY SETTLEMENT

The research carried out in the religious complex, which was probably devoted to the funerary cult of royalty or persons of importance, was focused on the completion of the stratigraphic analysis. The overall plan of the settlement, which was at first rectangular, had developed in the same way as the main settlement. The defensive system, with its scaled-down bastions was augmented by other constructions whose circular foundations were located all along the edges of the settlement (fig. 10).

THE EASTERN NECROPOLIS

New excavations were undertaken in the eastern necropolis in order to continue the study of the complex topo-chronology of the inhumation. Although the important tombs were laid out on a north-west/south-east axis, and then in the Classic Kerma period on a south-west axis, a series of tombs had collected near to them, and, according to the space available, gradually formed a group of their own. In order to clarify this trend and better understand the funerary rituals, two areas were cleared, one in the Ancient Kerma sector (CE 27) and the other in the Middle Kerma

sector (CE 25). It should be noted that the acronym CE 26 now replaces CE 14b, which is attributed to a zone outside the necropolis, situated to the extreme north (fig. 11).

Our aim was to test the pottery classification proposed by Mme B. Privati for the earliest phase of Ancient Kerma, and to verify the homogeneity of the material and the funerary customs of this part of the cemetery. Thus we investigated a long strip of land linking sectors CE 1 and CE 2. When we first worked in this area, almost 20 years ago, the superstructures of the tombs were still very well preserved and it was easy to distinguish between those made from concentric circles of black stones and those constructed from dressed stele surrounding the pits⁵. Today, alas, all surface remains have been completely flattened by motor vehicles. We were thus able to clear the area until the burial pits or other negative features appeared. The first surprise was the discovery of a hearth which contained Neolithic sherds and lithic material; the main contemporary deposits were several hundred metres away.

Twenty seven tombs were excavated in this new sector **CE 27**. To the east of small oval graves, upturned bowls from funerary ceremonies were sometimes preserved in fragments; their numbers varied between two and six. Some of the bowls had slipped into the fill of the ditch, probably as a result of the excavations of tomb robbers, and were well-preserved. Very many of these tombs had originally been marked out by a circle of seven stele, held in place with silt and a pile of white quartz pebbles. In one case, a deposit was laid to the north of a grave (**t 281**) in a narrow and shallow cavity; it consisted of a calcite bracelet and three flint blades that still bore the traces of the adhesive used to fix them to handles. There were four large postholes from a small building, 2.30 metres by 2.60 metres, related to one or other of the neighbouring tombs (**t 273**, **t 278**, **t 279**, **t 280**). The ends of the two northern posts had been burnt in order to make them more resistant to termite attack or damp. If this building was a funerary chapel, then it would be the oldest religious building found at Kerma⁶ (fig. 12).

This series of tombs was relatively homogeneous. The dead were in a contracted position, more rarely flexed, and were placed in narrow graves (between 1.20 - 1.50 metres and 1.60 - 1.70 metres); some were wrapped in a finely tanned sheep skin. Leather covers, laid in the grave or spread over the corpse, are frequently found in later tombs but have only been found from this period on four occasions. The corpses were clothed in a loincloth; two wore leather nets on their heads. Very rarely, they wore a pair of sandals. These inhumations yielded very few grave goods, but the beautiful stone bracelet showed that objects of quality existed. One tomb (**t 267**) contained two corpses. One was

a robust male of 45 years, lying in contracted position on his right side, his head to the east and his hands in front of his face. The other, also male, was 15 years old; his unusual position - head to the north, legs bent and arms around the head of the first skeleton - seems to suggest that he had been sacrificed. The dimensions of this double grave (2.14 metres by 1.38 metres) indicate the beginning of a hierarchisation within this modest cemetery. From this perspective it is interesting to note that several of the burials that surrounded this tomb were those of relatively elderly women, between 50 and 60 years old (**t 266**, **t 268**, **t 269**, **t 270**). We plan to extend the excavation of this burial area, as we have not yet found all the criteria required for classification and further analysis is necessary (fig. 13, 14, 15).

We now have much better knowledge of the middle part of the necropolis, occupied in the Middle Kerma period as the work undertaken to reveal the pre-Kerma remains considerably enlarged sector CE 12 in the direction of sector CE 11; a vast area could thus be studied. Three royal tumuli, measuring nearly 20 to 30 metres in diameter, situated on the west side, at the edge of sector **C 25** had for a long time attracted our attention. These graves seem, in the current state of our knowledge, to be from the Middle Kerma I period, that is around 2000 BC. The kingdom at this period was enjoying a period of prosperity and the trade with Egypt, if one can judge from the fragments of imported pottery, was developing. Despite the certain robbing of these royal tombs, we decided to excavate at least one in order to study some of the structural details; eight other neighbouring burials were also investigated in this sector (**t 238** to **t 245**) (fig. 16, 17).

The excavation of the royal tomb (**t 253**) took place over two seasons, not surprisingly given the extraordinary size of the grave: 11.70 meters in diameter with a depth of over 2 metres! It was under a mound of silt, 25 metres in diameter, covered in several rows of small black stones of ferruginous sandstone. The burial chamber had been almost completely emptied but the position of the bones of three individuals indicated that they were not far from their original positions. The principal burial was an adult male; he was accompanied by a woman of between 20 and 25 years whose remains were to the west, and by an adolescent of 15 years placed to the north of the funerary bed. The reconstructed dimensions of the bed were around 2 metres long by 1.30 metres wide. The feet of the bed had square sections with sides of 0.10 metres; the wood was still visible, but reduced to a powder. It was thus a piece of furniture of very good dimensions, embellished, as is often the case, with a decoration of bone plaques engraved with eye motifs. On the perimeter, the cavity bore traces of posts from a small structure in square wood 2.64 - 2.74 metres by 3.04 - 3.28 metres. The posts had 8 to 10 cm sides. This

would seem to be a kind of dais, which could only have been used for a very short period during funerals.

Without doubt, this royal tomb once contained very abundant and rich grave goods, of which the only remains were hundreds of potsherds from the usual Middle Kerma vessels and Egyptian-made jars. There were also many animal bones (from 22 sheep, 2 goats and 2 dogs). There was a circular stone of yellow sandstone and two fired clay offering tables with four compartments, one of which contained many small animals (birds?) schematically modelled. These three objects must originally have been placed flat on the top of the tumulus.

The most spectacular element of this tomb remains, however, the deposition to the south of the mound of several thousand bucrania forming an enormous crescent. Some of them had deformed horns, curving forwards, and others bore traces of red ochre on their frontals or their horns. The metrical analysis of this exceptional assemblage will be undertaken by Louis Chaix in future years.

As for the other, also very disturbed, tombs in this sector, they also yielded a very comparable material, with large storage jars, the very characteristic red bowls with black borders and imported ceramics. Sheep and goats were placed beside the corpse, which was often lying on a bed. Human sacrifices are also indicated by many double inhumations. Finally, we should note that to the south of tumulus 238, there were 378 bucrania, many of which also had deformed horns.

THE FUNERAL CHAMBER OF TUMULUS K III

The large 90 meter diameter tumulus excavated by G. Reisner⁷ in the 1920s can be associated with the eastern Deffufa, the funerary temple, known as K II, which is situated in the centre of the southern extremity of the cemetery. To coincide with the publication of a book on the religious buildings of the cemetery, it seemed appropriate to clear again the royal funerary chamber and to study the preserved masonry in order to verify some of our hypotheses and better understand the movements between the cult building and the tomb. Thus the end of the sacrificial corridor which gave access to the chamber was also cleaned and redrawn. Two large fragments of a statue of a crocodile shaped in quartz and then glazed were discovered there; this sculpture perhaps marked the entrance to the corridor, in which over a hundred human sacrifices were placed.

The funerary vault was constructed in two stages. The vault having no doubt shown signs of weakness, low support

walls were added along the side walls. The bands of yellow painted on plaster (0.40 m high) which decorated the walls had had to be repainted onto the retaining walls. In one of these two parts of a stele were reused. The construction of the vault had no doubt been undertaken during the lifetime of the king, as these restorations must have been carried out before the tomb was closed (fig. 18).

THE SITE OF DOUKKI GEL

The excavation of the **Classic Meroitic temple**, which was undertaken during both the last two seasons, is still far from complete, as the monument extends to at least 55 meters in length. The southern extremity can be found under 'kôm des bodegas', the extraordinary mound, over 5 metres high, of offertory bread moulds, the origin of the reputation of this site. Unfortunately, this sector has been considerably exploited by the *sebbakhins* to fertilise their fields, and the archaeological layers have been destroyed to quite a depth (fig. 19).

The entrance pylon, 25 metres wide, was completely excavated; it was constructed from a core of mud brick faced with fired bricks. On the external face, a wall formed an extra thickness to each of the two piers, perhaps completed by framework of stone masonry. In front of the gateway, very many fragments of a coating painted 'a fresco' together with several reliefs sculpted in sandstone were found in the destruction layers. One can only regret that the decoration was so poorly preserved, for those pieces of a reasonable size attested to an interesting iconography (figures bigger than natural size, with bodied painted in red ochre, elements of friezes, prophylactic signs etc.). Innumerable fragments, scattered throughout the temple, were covered with a yellow coating, a coating that was also found on fired bricks or blocks of stone to emphasise certain architectural elements (fig. 20).

Square foundations allows us to locate the position of the 14 columns that supported the roof of the courtyard peristyle. Several large fragments of sandstone bases were lying here and there, their impressions still visible on the foundations. They perhaps first supported an almost square hypostyle room (12 metres by 11 meters), but had then been thoroughly robbed and there were only a few bricks from the foundations and fragments of column shafts of sandstone painted in yellow. We were less well informed about the following rooms as their walls had been dismantled; however, the presence of a base of grey granite from an altar or *naos*, and the situation of a more ancient chapel, set perpendicularly to the temple on the western side, allowed us to put forward certain hypotheses.

In the temple B 500 of Gebel Barkal, at the back of the hypostyle room, there was a sort of vestibule, which had a plinth of granitic stone, in this case to the name of Taharka, while to the west was a chapel, also placed at a perpendicular axis to the temple. The chapel is attributed to the reign of Rameses II. At Kerma, the stone chapel is dug into the ground at a clearly lower level than that of the Meroitic temple; however, restoration in fired brick proved that the chapel was still being used into the Meroitic period, a period in which it was no doubt reconstructed, as its pillars and the thickness of the walls were modified. The plan of temple B 500 suggests that the sanctuary of our Meroitic temple could well be found beyond the *naos*, but this is yet to be verified.

The dating of the temple remains difficult, as does its attribution to a precise reign. The considerable use of fired brick, the technique of decoration together with the ceramics, place it in the 1st century BC. A supplementary clue is given by a beautiful fragment of a sculpted sandstone plaque, representing a kneeling king, offering his cartouche to the ram-headed god Amon. This relief, found in the vestibule, seems to belong to a small chapel or a stele, and confirms an occupation during the classic period. We should also note the base of a sandstone statuette of an extended figure, whose hands are placed on the sheath of his sword, and which also dates to the same Meroitic period.

Under the destruction levels an **earlier temple** was discovered, characterised by an very elongated plan. The architects of the classic period seem to have taken advantage of this building as the ancient walls of mud bricks had been cut into at the time of the new construction. It is possible that part of these ancient buildings had been maintained during the work as the walls of the Meroitic temple were arranged around the body of the earlier building, preserving some of the facades. This latter was very well constructed with a mixed architecture of mud brick for the walls and stone for the doors or the pillars. It was built against the much earlier stone chapel.

The pylon was elongated (19 metres) and not very thick (1.9 metres). Here we see one of the characteristics of the mud brick cult buildings such as the temple of Kawa known as the 'eastern palace'¹⁸. The threshold of the double door was made from large reused blocks behind which were the two granite bearings for the pivots; on the western side, a sheet of folded bronze eased the movement of the door pivot. One then entered into a small square room with four columns; two circular bases were still *in situ*, but they had been restored many times. The one on the western side had been surrounded by a circle of reused stones, while on the eastern side the stones were arranged in a square. The

architect's marking out lines engraved on the surfaces of the bases did not correspond to the orientation of the building, indicating that the bases were not in their original positions. The only remains of the other pillars were a small amount of sand from the foundations and a few water worn traces of the settings.

The next two rooms were wider than they were deep. Only the door of the first was preserved under the foundations of Meroitic fired brick. The second was however located by the base of one of its uprights. It was the negative of the first construction course which indicated a partition, almost in the continuation of the side wall of the perpendicular chapel.

Along the western side walls of the ancient temple, other walls showed a connection with an important building belonging to a vast religious complex which stretched in this direction, but, in the present state of our research this remains in practice *terra incognita*. A door led from the second room of the temple to this other building, whose walls had been repaired in the Meroitic period with fired bricks. Between this and the chapel the remains of a small courtyard and a vestibule were again found. Several ovens of a domestic type were found here, and animal bones and numerous moulds showed that they had been used for cooking food and bread offerings. Two of these ovens seem to have been reserved for the smelting of bronze; on the base, in burnt silt, a rounded conduit was preserved surrounding a central darkened area on which could be distinguished traces of ore and smoke. In the fill fragments, a straight nozzle and a sort of joint in fired clay were found. Finally a fragment of crucible still containing metal had been abandoned in the same place (fig. 21).

This workshop is perhaps associated with the manufacture of small objects, the statuettes of Osiris found in quantity in the temple, the heads of rams with sun discs and even pins with decorated shaft, of which many moulds were found. The presence of this workshop in the religious quarter, under the protection of the *temenos*, is not surprising as we have already found the chamber of a kiln used to make much more ancient objects in bronze at the foot of the Deffufa¹⁹, and we were astonished by the restricted space afforded. The relationship between the chapel and the workshop remains to be analysed.

In the vestibule, close to the granite plinth, the rather unhomogeneous rubble layers yielded several fragments of Middle Kingdom Egyptian statues. These monuments, of which there were five, must have been erected in the sanctuary. A large area still needs to be excavated at this location and we shall then probably be able to complete this inven-

tory. Other deeper and more ancient layers exist but these are poorly preserved and require particularly meticulous excavation. An occupation in the New Kingdom is shown by the ceramic material, amongst which is a high proportion of bread moulds. Thus bakeries were built in this period of colonisation to supply the sanctuaries, and no doubt also breweries, if we can judge by certain characteristic vessels.

One of the most surprising aspects of our two campaigns is certainly the iconographic and epigraphic contribution provided by 120 decorated and inscribed blocks found in the foundations of these two temples. They were from several periods and confirmed the richness of this site. In the central aisle of the ancient temple, trenches dug to exploit the alluvium had disturbed a pavement of reused blocks which had remained more or less in place. This collection demonstrated the diversity of the monuments, and the diversity of the worked sandstone.

Mme D. Valbelle's report below on the first analysis of this material shows several phases of construction, both during the 25th Dynasty and at the end of the New Kingdom, a period for which there are many problems of interpretation in the Nubian regions. The remains dated to the 7th or early 6th century BC show that our first temple must be from a later period as these stones are reused in the foundations. This first temple is thus Napatan and may have been occupied until the 1st century BC, as there is an inscription in Meroitic cursive script engraved on the eastern door post of the entrance.

The reused stones also provided much additional information. They seem to reinforce the idea that there was a fairly systematic occupation of the territory by the Egyptians, who, despite numerous uprisings, progressively took control of the country. Certainly from the arrival of Thutmosis II's troops one can be sure that there was frequent traffic along the Nile or more directly towards Kurgus through the eastern desert. But even if the Nubian princes were partially Egyptianised, they retained a certain autonomy. Thutmosis II and particularly Thutmosis III established a cult to Amon at Gebel Barkal, which became a centre of great importance. The appearance of grandiose monuments under the reign of Amenophis III, at Soleb and Sedeinga, belong to a new stage of construction which continued during the reign of Amenophis IV.

We note thus the interest of a fragmentary scene showing the king standing beneath the sun's rays, which terminate in hands. This representation, which is certainly Amarnan, attests the presence of buildings of the 18th Dynasty. Several foundations from Amenophis IV, the heretic king

Ahkenaton, exist in the neighbourhood of Kerma, such as at Sesebi¹⁰, Tabo¹¹ or, with the ancient name of *Gematon*, at Kawa¹². It is thus not surprising to find at least one or more cult buildings from this period at the site of Doukki Gel.

RESTORATION AND CONSERVATION

Restoration work was undertaken on the stairs of the eastern Deffufa, the palace situated in the interior of the *temenos*, the nearby monumental gateway, and the habitation quarter to the south-east. This work involved the making of 80,000 bricks. This work was primarily undertaken to protect the original masonry which is particularly vulnerable once uncovered, all the more since surveillance of the site remains difficult. It has become necessary to restore to the Deffufa its architectural lines as due to both the passing of time and the plundering that it has suffered it had taken on the appearance of an abandoned hill. From the top of this great temple of the town one can now see the layout of a good part of the town. The clearance of rubble to the west will lead to the rehabilitation of the religious quarter. The results of our research are thus validated and the increasing number of visitors seems a gauge of the interest aroused in the Nubian past (fig. 22).

NOTE ON THE SEAL IMPRINTS DISCOVERED IN 1997-1999

By Brigitte Gratien

Several seal imprints recently discovered in the town are of a new type for Kerma. We once again found a document bearing the imprint of a local seal, a grid pattern in high relief, identical to the 'Kerma' types already published¹³, three imprints bearing fragmentary Egyptian titles or prophylactic signs and a seal mount belonging to this latter category. However, more remarkable were eleven seals dated to the Second Intermediate Period:

- two impressions bearing the name of *ntr nfr M3^c-jb-R^c dj^c nh*, framed by two columns of signs¹⁴;
- nine impressions of the same seal, a scarab of type *nr^c*¹⁵.

The seals from the Hyksôs period are not new in Upper Nubia, but the discovery of imprints, of which some are in the name of a king of the XVth Dynasty, confirms the relations established between the Delta and the kingdom of Kerma in the Second Intermediate Period.

Translated by Annie Grant

Notes:

- 1 Ch. BONNET, "Nouvelles données sur les peintures murales de la chapelle K XI à Kerma, Note d'information", *Académie des Inscriptions et Belles-Lettres, Comptes rendus des séances de l'année 1995, avril-juin*, fasc. II, 1995, pp. 643-650; "The Funerary Traditions of Middle Nubia", *Eighth International Conference for Meroitic Studies, Pre-prints of the main papers and abstracts*, London, July 1996, pp. 2-18; "A-Gruppe und Prä-Kerma; Die Kultur der C-Gruppe; Des Königreich von Kerma", *Sudan, Antike Königreiche am Nil*, Kunsthalle der Hypo-Kulturstiftung, München 2, October 1996 - 6 January 1997, 1996, pp. 37-39, 51-52, 89-95 (translations in French, English and Italian); Ch. BONNET and D. VALBELLE, *Le sanctuaire d'Hathor, maîtresse de la turquoise*, Musumeci Editeur, Aoste, 1996, 199 pages; Ch. BONNET and N. FERRERO, "Les figurines miniatures de Kerma (Soudan)", *Sahara*, 8/1996, pp. 61-66; Ch. BONNET, "Les fouilles archéologiques de Kerma (Soudan)", *Rapport préliminaire sur les campagnes de 1995-1996 et 1996-1997*, *Genava*, n.s., vol. XLV, 1997, pp. 97-137; "Le sanctuaire d'Hathor à Sérabit el-Khadim et la topographie urbaine", *Le Sinai durant l'Antiquité et le Moyen Age, 4000 ans d'histoire pour un désert*, Actes du Colloque tenu à l'UNESCO du 19 au 21 septembre 1997, texts edited by D. VALBELLE and Ch. BONNET, 1998, pp. 44-49; Ch. BONNET and L. CHAIX, "Le royaume de Kerma au Soudan, Architecture et rituels funéraires", *L'archéologue, Archéologie nouvelle*, no 39, Dec. 1998 - Jan. 1999, pp. 27-32; L. CHAIX, "La integración dels animals en les practiques ludiques, magiques o religioses", *Cota Zero*, 1995, pp. 81-88; "Les boeufs à cornes parallèles; archéologie et ethnographie", *Sahara*, 8/1996, pp. 95-97; L. CHAIX, P. IACUMIN, H. BOCHERENS, A. MARIOTTI, "Stable carbon and nitrogen isotopes as dietary indicators of ancient Nubian populations (Northern Sudan)", *Journal of Archaeological Science*, 25/1998, pp. 293-301; L. CHAIX, "Nouvelles données sur l'exploitation du monde animal au Soudan central et septentrional", *CRIPEL*, 17/1998, pp. 79-84; "Une tombe inhabituelle à Kerma, Soudan", in P. ANREITER, L. BARTOSIEWICZ, E. JEREM & W. MEID, (EDS), *Man and the animal world - Studies in Archaeozoology, Archaeology, Anthropology and Palaeolinguistics in memoriam Sandor Bokönyi*, *Archaeolingua*, Budapest, 1998, pp. 147-155; M. HONEGGER, "Kerma: l'agglomération pré-Kerma", in Ch. BONNET & collab., *Les fouilles archéologiques de Kerma (Soudan)*, *Genava*, n.s., vol. XLV, 1998, pp. 113-118; B. PRIVATI, "La nécropole de Kerma; classification de la céramique", *CRIPEL*, 20 (à paraître); Ch. SIMON, "Kerma: quelques résultats de l'étude paléodémographique des squelettes de la nécropole", in Ch. BONNET & collab., "Les fouilles archéologiques de Kerma (Soudan)", *Genava*, n.s. vol. XLIII, 1995, pp. 60-64; "Premiers résultats anthropologiques de la nécropole de Kadrouka, KDK 1, (Nubie soudanaise). Conférence int. des études nubiennes, (Lille 11-17 Sept. 1994). Vol. 2: Découvertes archéologiques", *CRIPEL*, 1997, pp. 37-53; M. HONEGGER, "The Pre-Kerma settlement at Kerma: new elements throw light on the rise of the first Nubian Kingdom", in R. FREED and T. KENDALL, *9th International Conference of the Society for Nubian Studies (Boston 21-26 August 1998)*, in press; M. RING, A. SALEM, K. BAUER, H. GEISERT, A. MAIER, L. CHAIX, C. SIMON, W. DEREK, A. DI RIENZO, G. UTERMANN, A. SAJANTILLA, S. P. ÅÅBO, M. STONEKING, "MtDNA Analysis of Nile Valley Populations: a Genetic Corridor or Barrier for Migration?", *American Journal of Human Genetics* (in press)
- 2 See the article by M. HONEGGER in this volume
- 3 See, for example N. H. HENEIN, *Mari Girgis. Village de Haute-Egypte*, *Bibliothèque d'Etude*, vol. XCIV, 1988, pp. 40-41
- 4 See the brief note by B. GRATIEN that follows this report
- 5 Ch. BONNET, "Les fouilles archéologiques de Kerma (Soudan)", *Genava*, n.s., vol. XXX, 1982, pp. 45-57
- 6 The average C14 date from one of the posts is around 2375 BC. Analysis by the Laboratory of the ETH at Zurich no. 20153, sample K. 71
- 7 G. REISNER, *Excavations at Kerma*, Part III, *Harvard African Studies*, vol. V, Cambridge (Mass.), 1923, pp. 135-189
- 8 M. F. L. MACADAM, *The Temples of Kawa*, II, *History and Archaeology of the site*, London, 1955, text, pp. 114-115, plate 17
- 9 Ch. BONNET, "Les fouilles archéologiques...", *op. cit.*, 1982, pp. 41-45
- 10 B. PORTER and R. MOSS, *Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs and Paintings*, VII, *Nubia, Deserts and Outside Egypt*, Oxford, 1962, pp. 172-174
- 11 H. JACQUET, Ch. BONNET, J. JACQUET, "Pnubs and the Temple of Tabo on Argo Island", *The Journal of Egyptian Archaeology*, vol. 55, 1969, pp. 103-111
- 12 M. F. L. MACADAM, *The Temples of Kawa* ..., *op. cit.*, pp. 8-27
- 13 B. GRATIEN, "Nouvelles empreintes de sceaux à Kerma: aperçus sur l'administration de Kouch au milieu du 2^e mill. av. J.C.", *Genava*, n.s., vol. XLI, 1993, p. 28; "Les institutions en Nubie au Moyen Empire", *CRIPEL* 17/2, 1996, pp. 162-163
- 14 Maa-ib-Rê Sheshy, king Hyksôs of the XVth Dynasty is well known from his numerous scarab seals, of which many have been found in Nubia. Two have been found at Kerma in tumulus K X; they have the graphic Maa-ib-Rê on its own.
- 15 This type, widespread in the Hyksôs period (P. NEWBERRY, *Ancient Egyptian Scarabs*, London 1905, pl. 24, 1 to 9; O. TUFTNELL, W. WARD, G.T. MARTIN, *Studies on Scarab Seals II*, Warminster, 1984, class 3 C/3E), is known in Nubia and at Kerma (G.A. REISNER, *Excavations at Kerma*, parts IV-V, 1923, pl. 40, 2, n 69-70).

KERMA: THE NEOLITHIC AND PRE-KERMA OCCUPATION OF THE EASTERN NECROPOLIS

By Matthieu Honegger

The latest work on the prehistory and protohistory of the surroundings of Kerma were focused on the eastern necropolis, a site which has proved to be very important in the study of the ancient settlement. The discoveries made between 1997 and 1999 have thus enriched our understanding of the problems presented when the last report appeared in *Genava*¹. The main focus of our research remains the understanding of the Pre-Kerma settlement, where we continue with a strategy of extensive excavation. However, other centres of interest were progressively extended following the survey undertaken on the site of the ancient cemetery of the town of Kerma. The discovery of several neolithic occupation levels provided the opportunity to establish a chronological framework for these ancient periods, previously almost unknown in the territory of Nubia. Additionally, their state of preservation which was at times exceptional for this region, allowed for the first time a study of the spatial organisation of one of these settlements dating back to the fifth millennium BC. Finally, the unexpected discovery of a Pre-Kerma burial provides a new objective for future seasons of study. If this latter is not isolated and is, as we assume, part of a necropolis, the study of this funerary complex might prove to be of considerable interest in affording the opportunity to make a comparison between the information gained from the world of the dead and that from the excavation of the assumedly contemporary settlement.

THE LOCATION OF THE DISCOVERIES

The ancient necropolis of Kerma is found 5 kilometres to the east of the modern course of the Nile. It is situated on a slight elevation which rises about 2 meters above the surrounding plain. Thanks to the work of the mission of the University of Geneva, it has in large part been preserved from the destruction caused by the considerable expansion of cultivated areas during the last 30 years. During the neolithic and Pre-Kerma periods, the course of the Nile ran further to the east and must have passed close to the site of the necropolis², as is implied by the presence of numerous palaeochannels still visible today (fig. 1). It is possible that the site even formed an island surrounded by two branches of the river. In any case the site must have been particularly favourable for human settlement in view of the number of

phases of occupations discovered. The proximity to water and the fact that the site dominated its surroundings were no doubt crucial advantages at the time. The site was not however always safe from the Nile floods. Stratigraphic information has shown that the Neolithic occupation layers, which were generally water-washed, were often covered by deposits of alluvium brought by the river. One can imagine years of exceptional floods when the water covered right over this site which normally rose above the water. In contrast, in the Pre-Kerma period, there is no indication that the site had been flooded. It seems that the river had by then already moved somewhat to the west.

Despite the presence of several thousand burials from the Kerma civilisation, whose installation had seriously disturbed the earlier levels, the surveys revealed a series of sites, in different states of preservation, spread over the period between the fifth millennium and the beginning of the third millennium BC. No fewer than eleven sites yielding neolithic material were located on the site of the ancient cemetery itself or in its immediate surroundings. Sometimes they were located stratigraphically at a depth of up to a meter. But more often they were found on the surface in areas that were eroded, the later deposits having disappeared through wind erosion or destruction due to the expansion of the areas of cultivation. Some Pre-Kerma pottery also attested the presence of occupation of this period. Some pottery was found ten or so metres from the settlement during excavation, indicating the considerable extent of this habitation. Other pottery was found much further away, to the north of the necropolis and indicated the presence of an occupation earlier or later than the settlement.

THE NEOLITHIC OCCUPATION

The remains of these settlements are characterised by the presence of hearths accompanied by faunal remains and potsherds. The material is always to a greater or lesser extent encrusted with calcium, which shows a humid environment. The hearth structures are eroded and the occupation levels are always water-washed, a consequence of the floods responsible for the inundation of the site. Despite this partial destruction caused by the river, the state of preservation of these sites was exceptional in the context of

Period	Occupation	Dating evidence	Date
Kerma	Cemetery	Chronology based on c. 40 C14 dates and imported Egyptian ceramics	Between 1450 and 2450 BC
Pre-Kerma	Town	ETH-18829: 4365 ± 55 B.P. ETH-18828: 4400 ± 55 B.P.	c. 3000 BC
	Tomb	Grave goods characteristic of the late fourth/early third millennium BC	?
Neolithic	Settlement	Pottery with neolithic and Pre-Kerma characteristics	?
Neolithic	Settlement	B 6626: 5670 ± 30 B.P. CRG 770: 5670 ± 75 B.P.	c. 4500 BC
Neolithic	Settlement	ETH 14935: 5770 ± 65 B.P. ETH-18827: 5815 ± 60 B.P.	c. 4650 BC

2.
The chronology of the occupations located at the site of the necropolis

Sudanese prehistory. Until the present time, the Neolithic sites excavated yielded material, often scattered on the surface, but almost never revealed structures still in situ, excepting hearths¹. In this context, the perspectives offered by the discovery of these sites are of utmost interest. The study of the lithic and ceramic material, the radiocarbon dating of several hearth deposits, and the stratigraphic information all contribute to the construction of a chronological and cultural framework which serves as a reference for the region.

At this moment in time, we know that the site had been occupied during at least three distinct phases during the Neolithic period (fig. 2). Two are well-dated and are placed in the fifth millennium BC. They are found beneath the Pre-Kerma settlement and also on the surface to the south, at a place where erosion has caused the disappearance of almost 50 cm of alluvium. It is at this site that the excavations this winter revealed, in addition to the usual hearths, a series of postholes describing huts and short palisades (fig. 3 and 4). The stratigraphic information and the presence of a characteristic pottery make their attribution to the Neolithic certain. The huts, of which three were found, are of a diameter equivalent to those of the Pre-Kerma settlement. However, they do not have the same regularity and their shape more often approaches an oval than a perfect circle. Some test pits dug in the surroundings show that this occupation level could in future seasons be investigated over a large area. The third Neolithic occupation is less well preserved. The stylistic study indicates that it was probably a later habitation as the pot forms and their decoration already evoke characteristics frequently found on Pre-Kerma pottery.

All the sites discovered yielded faunal remains in small or large numbers. The first identifications showed the presence

of cattle and domestic ovicaprines (sheep or goat)⁴. To the north of the necropolis, an isolated hearth with pottery was accompanied by the remains of fish, notably *Siluridae*. These discoveries provide information on the way of life during the period. The populations must have practised fishing and animal husbandry, but for the moment we lack finds that allow us to know the role played by agriculture. Was there a complementarity between population groups, some practising animal husbandry with others concentrating more on agriculture? Or should we rather envisage a community with a mixed economy? These questions have implications for the type of habitations present at the necropolis. Are they seasonal settlements for fishing and animal husbandry, the site then abandoned in periods of high water? Or are they villages occupied throughout the year, situated close to cultivated fields? Further test digging and the excavation of more of the habitation site recently discovered should provide at least partial answers to these questions.

THE PRE-KERMA SETTLEMENT AND BURIAL

The opening of new areas in the middle of the settlement discovered more than ten years ago⁵ provides today a picture extending over almost a hectare (fig. 4). The known structures include 281 storage pits as well as many constructions indicated by postholes. These latter are from around 50 circular huts which must have served as houses and, in the case of the smaller ones, possibly grain stores. Two rectangular buildings, quite different from each other, were also identified; the larger building had been reconstructed three times on the same site⁶. These two buildings must have had a different use from the huts; this may have been related to the administrative or religious systems of the community. Numerous palisades were also erected

with wooden posts. Some of these seem to demarcate divisions of the interior habitation area, but the majority were situated on the periphery of buildings and could constitute an encircling fortification. The fact that through many rebuildings these palisades were arranged in parallel rows leads us to suppose that they fulfilled a defensive function. To the north-east of the excavation they formed vast oval structures 20 metres wide by 25 to 30 metres long. These could have been large bastions related to one of the entrances of the town, following a model known in the ancient city of Kerma⁷. However, the form of these structures also evokes a cattle enclosure. Cattle rearing without doubt played a central role in the Pre-Kerma and Kerma societies. Thus it is not possible to exclude this possibility and it is also possible that these palisades had at the same time played the role of both enclosure and fortification. Finally, at the south-west of the settlement, a fairly extensive area was distinguished from the surrounding land by the fact that it was heaped up with earth. It is still difficult to know if this was related to collapsed buildings or to a terracing whose function is as yet unknown.

Two radiocarbon dates were obtained from samples taken from storage pits (fig. 2). They placed the Pre-Kerma occupation around 3000 BC, which is five centuries earlier than the Kerma civilisation. It is not possible to determine the duration of the settlement on the basis of these two dates. However, recuttings and superimpositions of the structures, notable the huts and the pits, lead us to propose a period of two centuries at the most.

In general, the preservation of the Pre-Kerma occupation level was rather poor, although it varied according to particular location. In the south, the layer was completely eroded and the lower Neolithic levels were found at the surface. To the north, the remains were better preserved and it was possible to observe the succession of layers resulting from the destruction of the settlement. Microscopic analysis showed that the sediments covering the original surface were composed of the remains of collapsed cob walls⁸. The buildings and the palisades must thus have been constructed from a framework of wood covered in earth. The discovery of several fragments of wattle reinforces this hypothesis. In section, we observed just above this destruction level the clearly visible traces of ploughing. They may have resulted from the cultivation of this area following the abandonment of the settlement, but it is also possible that the area had been turned over thoroughly when the area was functioning as the necropolis of Kerma. The removal of soil to erect the tumuli, the digging of trenches for the buchrana placed in front of the tombs as well as the various activities related to the funeral ceremonies had probably considerably disturbed the underlying soil.

During the clearing of a new sector on the western edge of the excavations, a tomb appeared on the surface. Partially destroyed by the insertion of two Middle Kerma tombs, it contained the skeleton of an adult female in flexed position, lying on her right side with her head to the east. There were abundant grave goods accompanying the corpse; these included a quartz palette and a copper pin with a square cross section. These two objects are frequently found in A-Group tombs⁹, although they are unknown in those of the Kerma civilisation. They place this grave at about 3000 BC, that is during the Pre-Kerma period. It is not, however, possible to be certain that it is strictly contemporary with the settlement found just beside the tomb; it could be that it is of a slightly earlier or later date. A radiocarbon dating is being carried out which will clarify this question. The remaining grave goods associated with this tomb consisted of a copper awl still embedded in its wooden handle; fragments of malachite placed under the palette and two grinders placed just beside; a comb and a polishing stone; a carefully polished sandstone bowl and a mortar in elephant ivory.

This burial is unlikely to have been isolated and it is very probable that it was part of a cemetery. It remains to define the extent of the cemetery and to determine whether or not it was contemporary with the nearby settlement. It could seem surprising that this tomb was found at surface level while those of the Kerma civilisation were in pits that were sometimes over two metres deep. Were the Pre-Kerma burials placed on the ground surface or were they placed in a shallow pit and then covered with a mound¹⁰? The area slightly to the south heaped up with earth could possibly be related to this phenomenon.

■

The richness of the discoveries made in recent years raises numerous questions which direct our research to address new problems while still maintaining the programme of excavations already established. Extensive clearing of the Pre-Kerma settlement will be continued in order to establish its layout. Survey work indicates that the site extends over at least two hectares, but it could cover an even bigger area. The area cleared at present is far from sufficient to determine the complexity of the settlement and establish the extent to which it showed analogies with the ancient city of Kerma.

The construction of a chronology for the periods prior to the Kerma civilisation is another focus of research. Surveys and analyses will continue with the aim of filling in the numerous gaps in the sequence of occupation. We will look particularly at the first part of the third millennium BC.

which sees the transition from Pre-Kerma to the Kerma civilisation. One objective is to know precisely when the settlement was abandoned and to determine if it is possible that the occupation of the site of the ancient necropolis continued right up to the beginning of the Ancient Kerma period.

Finally, two new problems emerged with the discovery of the Neolithic occupation and the Pre-Kerma tomb. The exploitation of these unexpected remains will allow us to enrich our understanding of a Sudanese archaeology that was until now unknown.

Translated by Annie Grant

Notes:

- 1 M. HONEGGER, "Kerma: L'agglomération Pré-Kerma", *Genava*, n.s., vol. LV, 1997, pp. 113-188
- 2 See on this subject the study of B. MARCOLONGO, N. SURIAN, "Kerma: les sites archéologiques de Kerma et de Kadruka dans leur contexte géomorphologique", *Genava*, n.s., vol. XLV, 1997, pp. 199-123
- 3 For an indication of the problems of preservation of prehistoric sites, cf. J. REINOLD, "Conservation et préservation des sites archéologiques", in *Actes du VII^e congrès international d'études nubiennes* (Genève, 3-8 September 1990), 1992, vol. 1, pp. 187-192
- 4 Study in progress, Louis Chaix
- 5 The first discoveries are related in Ch. BONNET, "Les fouilles archéologiques de Kerma (Soudan), Rapport préliminaire sur les campagnes 1986-1987 et de 1987-1988", *Genava*, n.s., vol. XXXVI, 1988, pp. 5-20
- 6 The reconstruction of two other rectangular structure was proposed the last report (HONEGGER, *op. cit.*, note 1). Their existence is, however, now in question, as some of their walls consisted of alignments of posts of the Middle Kerma period, situated to the north of some tombs.
- 7 For a description of these structures found in the town of Kerma, cf. Ch. BONNET, "Les fouilles archéologiques de Kerma (Soudan), Rapport préliminaire sur les campagnes de 1991-1992 et de 1992-1993", *Genava*, n.s., vol. XLI, 1993, pp. 1-18; *Id.*, "Les fouilles archéologiques de Kerma (Soudan), Rapport préliminaire sur les campagnes de 1995-1996 et de 1996-1997", *Genava*, n.s., vol. XLV, 1997, pp. 97-112
- 8 M. GUÉLAT, "Analyse micromorphologique de deux échantillons (fouilles 1996-97), Rapport préliminaire", September 1998 (unpublished)
- 9 H. A. NORDSTRÖM, "Neolithic and A-Group sites", *The Scandinavian joint expedition to Sudanese Nubia*: 3:1, Uppsala, 1972; B. B. WILLIAMS, "The A-Group royal cemetery at Qustul: cemetery L", *The University of Chicago Oriental Institute Nubian Expedition*; 3:1, Chicago, 1986
- 10 An analogous situation seems to exist in the Neolithic cemeteries of Kadruka, situated 20 kilometres to the south of Kerma, cf. J. REINOLD, communication to *Table ronde sur les synchronies en Egypte et au Soudan*, Institut de Papyrologie et d'Égyptologie de l'Université de Lille, 31 October 1998.

KERMA: THE INSCRIPTIONS

By Dominique Valbelle

The 1997-98 and 1998-99 seasons brought a promising harvest of epigraphic and iconographic information. A fragment of an Egyptian statue of the Middle Kingdom was found in the Classic Kerma necropolis, near tumulus K X, but it was primarily the Meroitic temple of Doukki Gel that provided the main contributions. These were divided between a new collection of fragmentary Egyptian statues of the Middle Kingdom and architectural elements from the temple that is under excavation. It is still too soon to provide a complete assessment of this material, but some groups have already emerged at this stage of the excavations.

THE MIDDLE KINGDOM STATUES

The most ancient monuments found on the site of the Meroitic temple are some fragmentary statues from the Middle Kingdom. They belong to the same categories as those found by G.A. Reisner in the eastern Deffufa and more particularly in the Classic Kerma necropolis¹ where a new fragment was recovered from the surface close to K X in 1998. The five fragments found at Doukki Gel belong to private statues. Two of them are seated, and a third is in the position of a scribe. They were buried close to each other in the vestibule and the hypostyle chamber, and their location can be compared with that of other monuments from the Middle Kingdom found in various Napatan and Meroitic temples in Nubia – Semna², Tabo³, Kawa⁴, and Gebel Barkal⁵. However, each example needs to be examined separately, as each of these sites has a specific history.

These and the other Kerma statues are from monuments made in Egypt for Egyptians. There is no indication in the surviving inscriptions that they were intended for any Nubian sanctuary. Thus one of the statues (fig. 1 and 2) represents the 'director of sealed things, director of the administrative district, Ren[iseneb]'. These two titles were current in Egypt during the Middle Kingdom⁶. However the first of these – *jmy-r hmt*⁷ – is found on another Kerma statue, that of the Nomarch Amen⁸ and on the stèle of Antef⁹ which dates to the 33rd year of Amenemhat III; the title is frequently held by the men sent by the king on missions to the border regions and beyond¹⁰. They may thus have been brought to Kerma by these men during official missions, and then ultimately reused in various parts of the site.

The presence of these statues in a Meroitic temple at Kerma implies several comments. The abundant Middle Kingdom Egyptian statues at Kerma, whatever the circumstances and the date of their arrival, constitutes a cult material that was reused as much in the Classic Kerma periods as in the Napatan and Meroitic periods. At the current stage of excavations it is not possible to link these Middle Kingdom statues with one archaeological level rather than another. They were found in disturbed layers that might belong either to the basement of the last temple or to the rubble of its abandonment; thus they might have been buried as sacred objects after use, as at Semna, or have been erected in the rooms of the temple, as at Tabo. Nor do we yet know the date of the earliest building at the site of Doukki Gel.

THE ARCHITECTURAL ELEMENTS

Amongst the many blocks and fragments of blocks found up till now in the excavated part of the Meroitic temple, several distinct groups can be more or less precisely identified at present. They each correspond to one or several monuments constructed, either successively on the temple site itself, or in its immediate surroundings. At the time of their discovery some were scattered in the rubble, some were reused in the walls of the Napatan temple, and some formed the paving of the third room.

The New Kingdom elements

The oldest re-used blocks are attributable, by their decoration, to the New Kingdom. Some might date to the beginning of the XVIIIth Dynasty. However, the most remarkable group is incontestably 'Amarnian'. They display the usual measurements of the talatat¹¹. They were all reused in the paving. The most characteristic signs found on these blocks are:

- sunrays figures terminated by hands that descend towards the faces of the royal family or altars heaped with offerings on which were set oil lamps (fig. 3);
- cartouches of kings and of Aton;
- exaggerated silhouettes, enveloped in transparent linen.

Some inscriptions and decorative elements that were less distinctive might date to a different period within the New Kingdom.

The Napatan elements

It is not always easy to distinguish the decorative fragments from Middle Kingdom monuments, especially the Ramessid monuments, from some of the decorative fragments carefully executed during the XXVth Dynasty. However, some elements re-used in the stonework of the Napatan temple had certainly been worked during one of the reigns of the Kush dynasty. One of the elements discovered this year bore an incomplete cartouche beginning with the signs *š3 b3* (fig. 4) which could record the name of the king Shabaka or that of his successor Shabataqa.

Another block preserved the upper part of two cartouches containing epithets particularly common in the Third Intermediate Period: *stp.n jmn* and *[mry] jmn*. However, several palaeographic characteristics were also reminiscent of the Napatan period. These epithets were very adaptable in the royal protocol according to the cult places where they were engraved; it is difficult to attribute them to a particular sovereign in the absence of one of the latter's names. Since this block had been re-used in the Napatan temple, it must have been sculpted at the very latest during one of the first reigns of this period.

Meroitic decorative elements

The Meroitic temple was mainly built from mud brick and red brick. However, cursive graffiti and some decorative elements provided evidence for this last stage in the reconstruction of the sanctuary. The most significant was without doubt a fragment of a sandstone plaque from a naos or a stele, representing a king offering to the ram-headed god Amon a cartouche in which the outline of the goddess Maât can be made out, which could correspond to *nb-m3^ct-r^c*, the name born by Amanitenmomide and Amanishataqermo (?)². The king is on his knees on a kind of platform while the god is squatting on a lotus, carrying a crook.

The god of the temple

Although it is too early to draw detailed conclusions from these first epigraphic elements, taking into account their richness, their state of preservation and their proximity to other temples, many observations clearly point to the god which is the master of the site. It is difficult to be definite before the Amarnian period: two very fine tall plumes preserved on a block that might have been sculpted earlier

could as likely be part the coiffure of a queen as that of a god. The faces and cartouches of the Amarnian blocks had been systematically hammered.

Several datable inscriptions, some from the New Kingdom and others from the Napatan period, revealed that the patron of the sanctuary from which they came was no other than Amon. Although their original location cannot be certain as the majority were re-used, they provide a coherent documentation that confirms the small Meroitic fragment. Amon is evidently not the only divinity represented on the walls of the temple: a hawk-headed god, a Nubian Horus, is also present in several places.

Despite their fragmentary state, these epigraphic and iconographic documents will, once they have all been recovered, provide an extremely valuable collection of information on the history of the site during a period, particularly the New Kingdom and perhaps the Third Intermediate Period, that remains relatively unknown throughout this region of Nubia, and for which there is also little indication on the corresponding Egyptian politics.

Translated by Annie Grant

Notes:

- 1 D. VALBELLE, "The cultural significance of iconographic and epigraphic data found in the Kingdom of Kerma", *Ninth International Conference of Nubian Studies*, Boston, August 1998
- 2 PM VII, p. 149 and J. VERCOUTTER, *RdE* 27, p. 225-228
- 3 PM VII, p. 180
- 4 PM VII, p. 184
- 5 PM VII, p. 216
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