

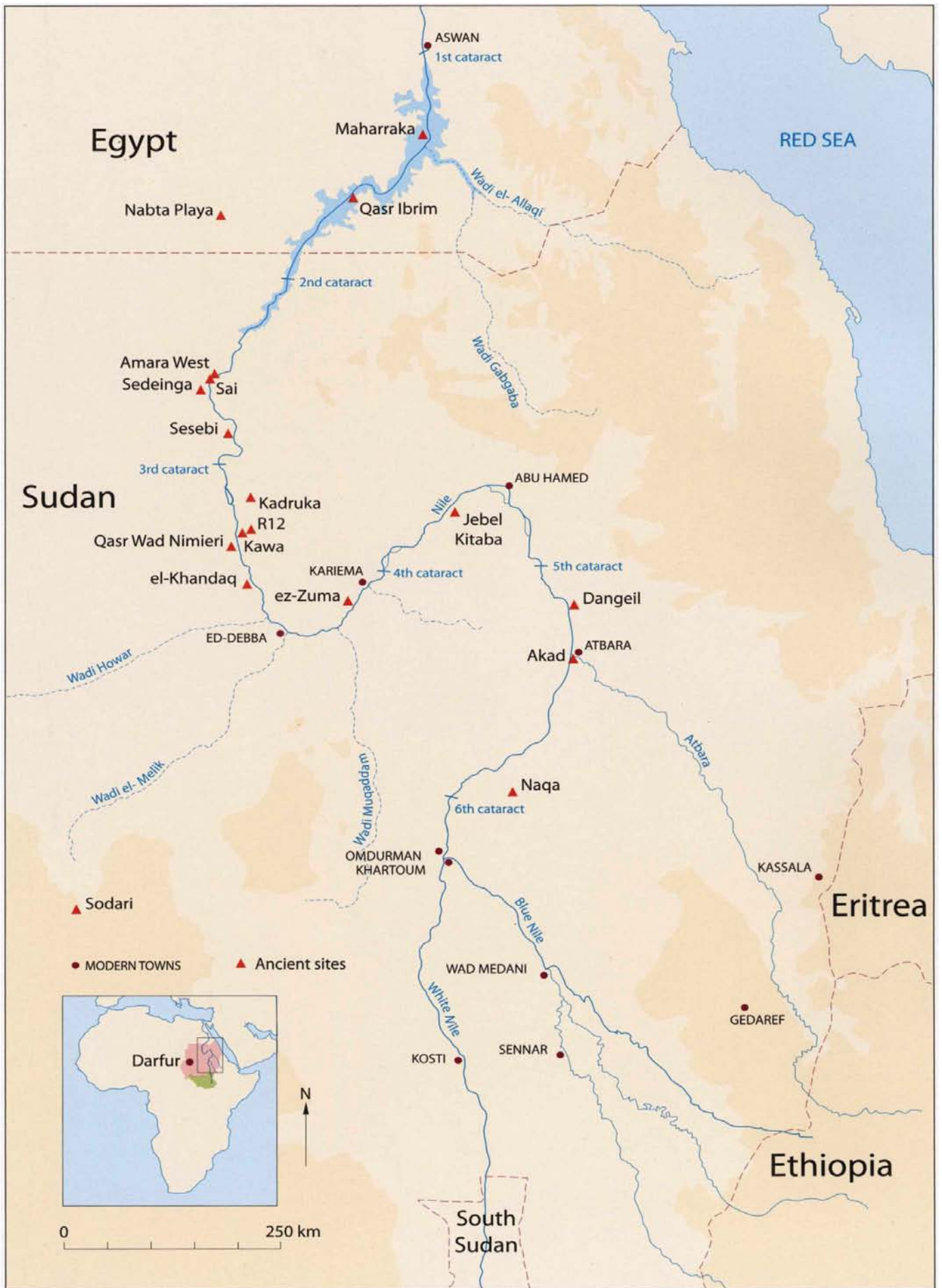
SUDAN & NUBIA

The Sudan Archaeological Research Society



Bulletin No. 15 2011





The map reflects the new territorial situation following the independence of South Sudan in July 2011.

SUDAN & NUBIA

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2011

Contents

The Sudan Archaeological Research Society – An Anniversary Tribute <i>William Y. Adams</i>	2	A Meroitic offering table from Maharraka - Found, recorded, lost or not? <i>Jochen Hallof</i>	105
<hr/>			
The Kirwan Memorial Lecture		Early Makuria Research Project. Excavations at ez-Zuma. The Third Season, Jan.-Feb. 2009 <i>Mahmoud el-Tayeb and Ewa Czyżewska</i>	108
Qasr Ibrim: The last 3000 years <i>Pamela J. Rose</i>	3	Report on burial architecture of tumuli T. 11 and T. 13 <i>Katarzyna Juszczyk</i>	119
<hr/>			
Reports		A preliminary report on mortuary practices and social hierarchy in Akad cemetery <i>Mohamed Faroug Abd el-Rahman</i>	124
Neolithic beakers from North-Eastern Africa <i>Anna Longa</i>	13	Palaces in the Mountains: An Introduction to the Archaeological Heritage of the Sultanate of Darfur <i>Andrew McGregor</i>	129
Pottery from Sites Surveyed in Sodari District, Kordofan Province. An Interim Report 2008-2009 <i>Howeida M. Adam and Abdelrahim M. Khabir</i>	18	The archaeological and cultural survey of the Dongola Reach, west bank from el-Khandaq to Hannek: Survey Analysis <i>Intisar Soghayroun Elzein</i>	142
The early New Kingdom at Sai Island: preliminary results based on the pottery analysis (4 th Season 2010) <i>Julia Budka</i>	23	<hr/>	
Sesebi 2011 <i>Kate Spence, Pamela J. Rose, Rebecca Bradsham, Pieter Collet, Amal Hassan, John MacGinnis, Aurélie Masson and Paul van Pelt</i>	34	Miscellaneous	
The 10 th -9 th century BC – New Evidence from the Cemetery C of Amara West <i>Michaela Binder</i>	39	Obituary John A. Alexander (1922-2010) <i>Pamela J. Rose</i>	146
Excavations at Kawa, 2009-10 <i>Derek A. Welsby</i>	54	Book reviews Elisabeth G. Crowfoot 2011. <i>Qasr Ibrim: The Textiles from the Cathedral Cemetery</i> <i>John P. Wild</i>	147
The Kushite Pottery Sequence at Kawa: Parallels at Home and Abroad <i>Isabella Welsby Sjöström and Ross Thomas</i>	64	Jane Roy 2011. <i>The politics of trade: Egypt and Lower Nubia in the 4th millennium BC</i> <i>Maria C. Gatto</i>	148
The Late Meroitic Cemetery at Sedeinga. Campaign 2010 <i>Claude Rilly and Vincent Francigny</i>	72	<hr/>	
Dangeil 2010: Meroitic Wall Paintings Unearthed and Conservation Strategies Considered <i>Julie R. Anderson and Salah eldin Mohamed Ahmed</i>	80	Front cover: Naga - Amun Temple, the Hypostyle Hall after reconstruction, 2008 (photo: © Naga Project).	
Rediscovery of the Kushite site - Naga, 15 years of excavation (1995-2010). Surprises and Innovations <i>Karla Kroeper</i>	90	<i>Sudan & Nubia</i> is a peer-reviewed journal	



Rediscovery of the Kushite site - Naga, 15 years of excavation (1995-2010). Surprises and Innovations

Karla Kroeper

Since the first report appeared in the *SARS Newsletter* in 1996 (Kroeper 1996, 18ff.), the Naga Project of the Egyptian Museum Berlin (director D. Wildung) has continued work at the Meroitic site of Naga located *c.* 170km north east of Khartoum and *c.* 45km east of the Nile. The excavation was made possible by the most generous and continuous support of the German Research Foundation (DFG) whereas financial support for the restoration undertaken during these years was granted by the Friends of the Egyptian Museum Berlin, private sponsors and by the German Federal Foreign Office's Cultural Preservation Program.

The work at the site which is *c.* 3km in length and 1km wide has concentrated in three areas: the city survey and the areas around the Amun and Lion Temples (Plate 1). So far



Plate 1. View from Jebel Naga over the site, looking west.

no work has been undertaken in other interesting parts of the site such as the *hafirs*, the *hafir* temple, the cemeteries or the quarries.

As originally planned the surface survey was continued over some years and most of the existing buildings were recorded whereby the original plan of the site by Lepsius from 1845 (Lepsius 1859, Abth. I Blatt 143) was expanded and augmented revealing several smaller temples and large administrative buildings (Figure 1). When the city was abandoned is not known. The results of the survey, however, indicate that the city's buildings were abandoned and collapsed forming rubble mounds around them under which many finds are to still to be made. In Building 2100 for example, which was

partly excavated, three complete and two fragmentary lion statues were found near the entrance ramp of the building (Plate 2). A concentrated excavation effort on the city buildings is planned in the future.

Amun Temple Area (Figure 2)

The Amun Temple dated to around AD 50 and built by Amanitore and Natakamani was first made known to a European public in 1823 (Caillaud 1823, pls 4-5). Then as today it was an impressive sight with its decorated stone gates visible from afar, on top of a plateau in front of Jebel Naga. The sandstone used for the gates and the sanctuary was mostly quarried from the top of Jebel Naga where the workmen's traces are clearly visible and unfinished blocks can still be seen *in situ* today.

Most of the walls between the gates of the temple, built of burned and mud bricks and covered outside with white-lime plaster, had already disappeared in the 19th century (Plate 3) so that in 1995, at the beginning of the excavation, the preservation was not much different from that found by Caillaud in 1823 (pl. XII).

The large processional ramp in front (west) of the temple proper consists of a low stone rail on either side, filled with sand and rising *c.* 2m above the original walking surface to the plateau on which the avenue of rams, the kiosk and the temple proper had been built.

In clearing the space to the west of the ramp remains of a high altar (Building 1500) were discovered very similar to those found in Kawa and Meroe (Hinkel 2001, 246; Macadam 1955 pls 10 and 11). The altar in Naga (Kroeper and Krzyżaniak 1998, 206-207) consists of a low ramp which leads to a large burned-brick base on which probably stood a stone altar. The altar also had three small cubicles under the base which probably formed a storage area.

Nearby, a throne dais (Plate 4) was found lying *c.* 18m west of the great ramp of the Amun Temple which possibly was used by the



Plate 2. Partly exposed Building 2100 and discovery of the five lion sculptures.

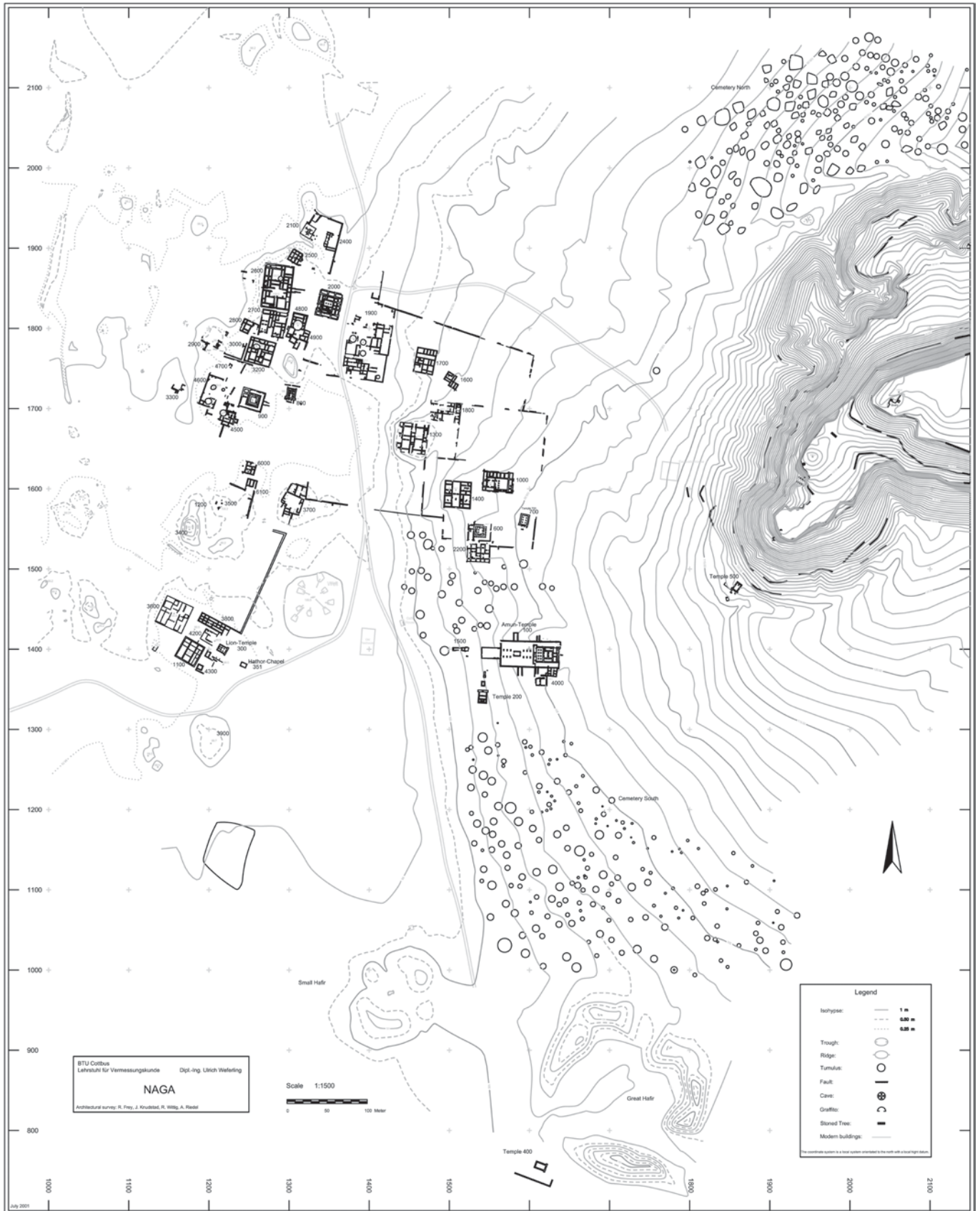


Figure 1. Plan of Naga (U. Weferling).

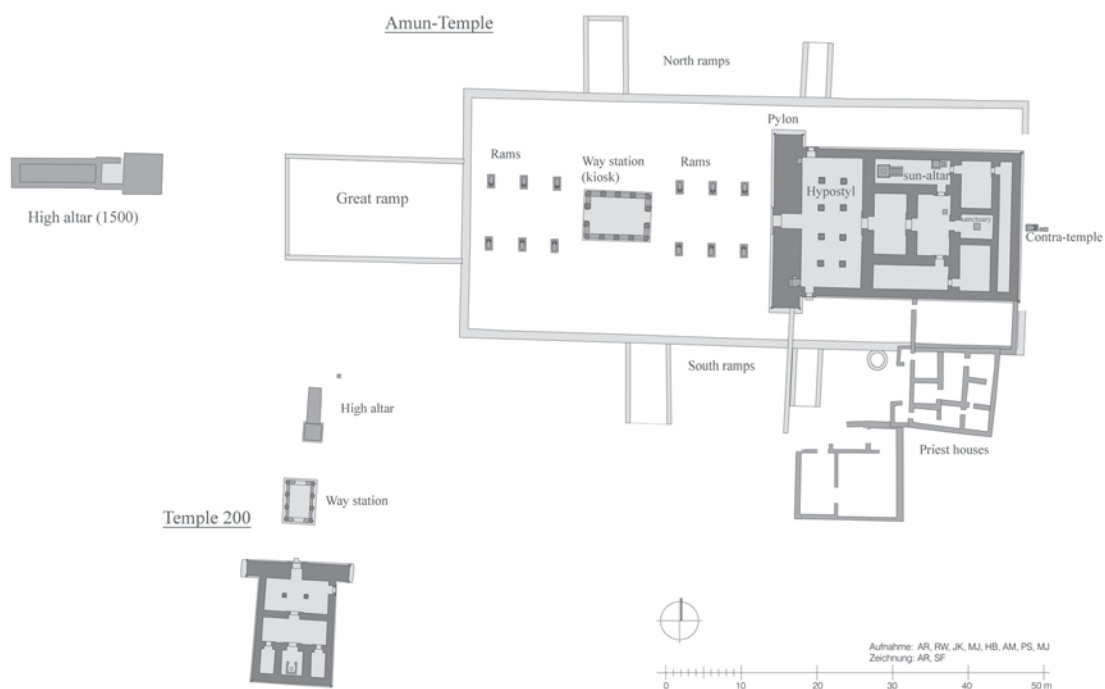


Figure 2. Plan showing the Amun-Temple complex including the high altar and the complex of Temple 200, scale 1:1000 (A. Riedel).

king during royal visits to the site. It is rounded on one side with two steps leading to a platform on the other (length *c.* 1.61m, width *c.* 830mm, height *c.* 435mm). The platform top is decorated with bound prisoners in a kneeling position shown *en face*, whereas the steps and the sides of the base are decorated with a scene of bound prisoners in profile. Ethnic variations are indicated by the hairdo. Very similar pieces are known from Jebel Barkal and Meroe (Hofman and Tomandl 1986, 115). The decorative scheme of enemies below the feet of the king, as a political statement of power, is a popular one throughout Egypt and Kush and occurs in Naga also on the temple pylons.

In front of the temple the ram avenue and the kiosk area were in great disorder, the rams' bases and the rams themselves having collapsed or having been broken (Plate 5). The noses of the animals and the kings' figures which once stood

attached to the chest of the rams between the front legs were all destroyed at a still unknown time. Some of the rams have been forcefully split into two pieces. The statues are made of a particularly hard sandstone and much work and skill have been invested in sculpting the details of different curls of the fleece. Excavation showed that all 12 rams and bases were present under the sand. The bases and rams have been re-erected where possible in order to recreate the original impression of the avenue (Plate 6).

The small kiosk (way station), which separates the 12 rams (six to the east and six to the west of the kiosk), has lost all of its columns and capitals although some have been salvaged and reveal the intricacies of the decorative scheme. The inside was decorated with reliefs of a procession of Nile gods moving toward the east. Inside and in front of the kiosk in the rubble, surprisingly, pieces of the kings' figures from



Plate 3. View of the Amun Temple by Caillaud in 1823.



Plate 4. The throne base decorated with bound prisoners, found near the high altar of the Amun Temple.

the rams were found, wearing typical Egyptian *nemes* (head cloth), beards and a close fitting robe out of which only the hands appear holding two staffs (Plate 7). All the pieces of these statues (Wildung 2004, fig. 170), some of which were found in other parts of the site (so far a total of eight statues), have very distinctive individual facial features. It seems that here as well as in other cases, the broken pieces of statues were transported (to hide them?) all over the site. In the case of two kings' statues from inside the way station it is certain that the sculptures were hidden under a block in the kiosk at some time after its destruction. Radiocarbon dates from samples taken nearby indicate a date of AD 1100 for some post-destruction activity (Kroeper 2007, 240).

Surprisingly, four additional ramps (see Figure 2) leading to the Amun Temple complex were discovered: two from the south and two from the north (Kroeper and Wildung 2002, pl. 1; Kroeper 2006b, pl. 1). In association with one of the ramps from the north-west corner was found, at its upper end, the singular find of a double faced sundial. The large rectangular sandstone block *c.* 440mm high has two sides, one side conical the other flat and angled; both sides carry 12 radially engraved lines. At the top of the stone there is a ledge to place the, now lost, probably metal shadow throwing style. Possibly the two sides were designed in order to register the earliest and latest hours near the summer solstice without adjusting the position of the stone (Kroeper and Krzyżaniak 1998, 204, fig. 1).

The ramp coming from the south east leads to a collection of small buildings surrounded by a wall with one entrance and which includes the southern entrance to the temple building



Plate 5. The Amun Temple in 1995, view from the west before excavation.



Plate 6. The Amun Temple in 2008, view from the west after excavation and restoration.

(see Figure 2). The complex of houses built against the south wall of the Amun-Temple, including various courts, probably represent priests' houses.

The Amun Temple

In the first room within the main gate of the Amun temple only one decorated column remained standing in 1995 (of eight original columns) with a cubical capital as already pictured in 1832. During excavation (Plate 8) many drums and capitals of the other seven columns were found buried in the metre-high rubble having collapsed at some unknown time. During the following years of excavation five columns were re-erected by our restoration team recreating the original impression of the hypostyle hall (Plate 9, Front Cover).

During the excavation in the hypostyle hall a small stele (Plate 10) was found hidden under one of the column drums with very delicate reliefs showing, under a winged sun disk, the queen Amanishakheto to the right and the goddess Amesemi to the left. The goddess with scarification marks on the cheek has placed one hand behind the head and the other on the elbow of the queen. A chain of small *ankh* signs connect the noses of the two women indicating a symbolic transfer of the breath of life by the goddess to the queen.



Plate 7. King's figure, originally attached to the chest of a ram statue from the ram avenue in front of the Amun Temple.



Plate 8. View of the hypostyle hall of the Amun Temple in 1996 before excavation.

The back of the stele and the sides are covered with 15 lines of a Meroitic cursive inscription

(Rilly 2011, 187). Although the script can be read Meroitic texts still await complete decipherment.

Other stone objects found in the hypostyle hall near a small offering place containing ash were non-figurative stone objects as well as a greatly abstracted animal figure with traces of grinding on its surface. One object found in this offering area is a small sandstone figure of a sitting lion which has been worn very thin from both sides. All the figures were

ground until they had lost a large part of the original volume (Wildung 2011b, 93ff). The grinding of stone figures can also be noted on the many small block statues with very individual African facial characteristics, which were found in different parts of the site (Plate 11).

In the following two rooms many pieces of painted plaster were discovered in superimposed layers fallen from the



Plate 9. View of the hypostyle hall of the Amun Temple in 2008 after excavation and restoration.



Plate 10. Stele of Queen Amanishaketo and the goddess Amesemi, found in the hypostyle hall of the Amun Temple.



Plate 11. A collection of block statues from the Amun Temple. All show signs of grinding activity, especially on their sides.

walls. The walls were originally covered with mud plaster and whitewashed then covered with multi-coloured scenes as for example in Room 102 where fragments of a large scene of the king and queen in an offering position, wearing colourful decorative gowns and jewellery, were found (Kroeper 2006a, fig. 16-19). A large amount of charred wood partly from the roof (palm), and from furniture (made of acacia wood), was found on the floor of the rooms. Fragments of large-sized panels decorated with Nile gods in procession are all that remains of decorated shrines or other furniture. When the fire, which marked the end of the religious use of the temple, occurred is not certain; however C¹⁴ dates indicate that the temple may only have been in use for a short time and some of the wooden furniture may be of an earlier date, perhaps reused from another, older temple (Kroeper 2007, 232-233).

During the excavation in 1999 in the Amun Temple, a room covered with masses of collapsed rubble from the pylon, was discovered on its north side. In the long narrow room, at the west end (Kroeper 2010, 234), a platform c. 1.55m square and 700mm high, build of large sandstone blocks, was found. On top of the platform, stood a small square sandstone altar with

Plate 13. The painted dais and small altar in a side room of the Amun Temple.



cavetto cornice (length 540mm, width 540mm, height 450mm) and a sandstone offering plate decorated with *ankh* signs and rosettes, a collection of ceramic offering plates as well as the base of a large faience Isis statue. Although the original setting for the Isis statue must have been here, three more pieces of the statue were found in three different rooms and at different levels in the rubble (Plate 12). The iconographic details especially in the garb of the figure might incline one to consider the statue an import from the Ptolemaic-Roman north. However, the stylistic details in the body shape and form (the statue is much more rounded and compact than a female figure of Ptolemaic-Roman production could ever be) indicates that a local Meroitic artist has here combined his skill with his knowledge of Hellenistic iconography.

After clearing the room completely it was found that the dais and the six steps leading up to it, were covered with very well preserved smooth white lime plaster. The north and



Plate 12. Isis statue of faience in a Hellenistic gown, found broken in pieces in different rooms of the Amun Temple.



south surfaces of the base and the steps are painted with large-scale polychrome scenes (Plate 13). The colours have been applied in the *secco* painting technique, mostly in blue, yellow and red, and some lines of the preparatory drawing from the original design are still visible. On each side two pairs of Nile gods (with blue skin, yellow skirts and *nemes* headdresses) are shown facing each other, tying papyrus plants around a central papyrus bunch. The well known Egyptian motif of the unification of the two lands has here been, stylistically and iconographically, transformed into a local Meroitic theme which is also found in relief form on an altar in the Amun Temple in Meroe (Garstang 1911, pl. VII, 2). The side walls of the stairs are decorated with alternating papyrus flowers and papyrus buds (in red and yellow) on long stems.

Excavation showed that this room in Naga was clearly divided into two parts. The walls of the eastern part of the room were thickly lime plastered in order to cover and protect the walls of mud brick from water whereas the western part of the room was only covered with a thin white painted mud plaster. This differentiation in treatment of the walls indicates that the room was covered with a light roof in the western section whereas it was open to the sky in the eastern section in order to allow illumination of the altar on the platform at sunrise.

Similar elongated rooms containing a high dais with steps leading up to them are known from other sites such as at Meroe (Rondot and Török 2010, fig. 302) and more recently Dangeil (Anderson and Salah eldin Mohamed Ahmed 2010, 51), where, however, no paintings are preserved. A similar elongated room to the south of the central rooms exists in Naga and Dangeil. In Dangeil the sensational find of statues of fine granite dating back to the Napatan period was made in this room (Anderson and Salah eldin Mohamed Ahmed 2010, 53-54). This has no parallel in Naga; however, it is nevertheless astounding that also in Naga one statue base with the feet of a god, also made of fine granite, and probably not Meroitic, was found in this parallel southern room. In both cases the statues date to a time long before the existence of the temples in which they were found.

The function of the room in Naga may be interpreted in two different ways. Similar rooms located in the temples at Sanam, Kawa and Meroe have been interpreted as throne rooms associated with coronation ceremonies; however, open sun sanctuaries are known from Egypt (Arnold 1999, 277-278), with stairs, offering places and altars at which ceremonies were performed at sunrise or on the New Year festival.

In Naga the small altar on top of the platform in Room 106 is placed centrally and offerings (stone offering plate, a faience statue and ceramic offering plates) had been placed around it so that no space for other functions remained. Both the small altar and the east-oriented open forecourt make the interpretation of the room as a sun sanctuary more likely.

The room following the sun-altar room was possibly used as a magazine for discarded cult objects, as a large collection of mostly broken finds was discovered here, including faience objects (Bes figures, “buttons” and a small Isis with Horus

figurine) as well as copper-alloy and stone objects including block statuettes and ceramic vessels.

The central path through the temple was laid out in fine sandstone flags which continue into the sanctuary at the back of the temple. Especially here at the back of the temple the plan envisioned by Lepsius in 1844 (Kroeper, 2006a, fig. 3.) differs greatly from what was excavated, which is much more similar to other known Meroitic temples than to classic Egyptian temples.

The central room at the back of the temple, the sanctuary, was the only room built completely of sandstone; however, all but the south wall had collapsed in ancient times. The sanctuary was cleared of the huge stones of the destroyed ceiling with man-power using the same method probably used to erect the stone walls by the Kushites. By forming a mound of sand around the heavy stones, a ramp was created and the blocks were dragged on wooden planks to a storage area. The sandhill was lowered as necessary in order to remove the lower stones. After clearing the area, unexpectedly, a perfectly preserved skilfully relief-decorated altar (or bark stand) was discovered *in situ* under the rubble in the sanctuary.

The altar is decorated with fine relief panels, with scenes on two sides of the falcon-headed god Horus and the ibis-headed god Thoth tying the emblematic plants around a *sema* sign, on top of which are two cartouches with the name of the king and queen in Meroitic hieroglyphs. The other two sides are divided into two registers. In the lower half two kneeling Nile gods perform the same action as the gods on the other side; above them in a second register following the goddess Merit is the kneeling king with raised arm and three jackal and falcon headed “souls of Pe”.

The whole floor of the sanctuary is covered with stone slabs and standing *in situ* in front of the altar was a large offering plate with a *sa* sign in the middle (see Plate 14). In the rubble around the altar a broken stele, with reliefs on one side and inscriptions on the reverse, was found. The front of the stele (Plate 15) shows a kiosk in which the lion god Apedemak is seen sitting on a throne facing the queen Amanishakheto who is followed by the goddess



Plate 14. The decorated altar in the sanctuary of the Amun Temple as discovered with the offering plate still *in situ*.



Plate 15. Rectangular stele decorated in relief showing three figures, the goddess Amesemi, Queen Amanishakheto and the Lion god Apedemak. Under their feet a group of enemies is depicted.

Amesemi (with the characteristic two falcons on her head), the consort of Apedemak. Why the two stele, one found in the hypostyle and this one found in the sanctuary, contain the name of Amanishakheto (not Amanitore the builder of the temple) is not known for certain. However, the appearance of older articles, perhaps out of piety re-dedicated in a later temple context, is not infrequent and is known also from other temples for example at Dokki Gel (Bonnet and Valbelle 2005), Dangeil (Anderson and Salah eldin Mohamed Ahmed 2009, 78ff) and el-Hassa (Rondot 2010, 236-239).

The last stone gate from the north east of the temple leads to a long hallway $\approx 1.5\text{m}$ wide which spans the entire back part of the temple. Interestingly the outside of the back wall of the sanctuary was decorated in sunk relief, which would normally indicate decoration on an exterior wall. However in this case the long narrow hallway would have kept the reliefs in the dark. The back wall of the long room was built of burned and mud bricks and finished at the top with a cavetto cornice and torus moulding. The cornice made of specially cast bricks was covered with lime plaster and painted in red, blue and yellow. Between the upper cavetto and the beginning of the vertical wall sandstone gargoyles had been mounted at various places. The corners on top of the brick wall were finished with stone cavettos.



Plate 16. View of the back of the Amun Temple (from the east) showing the small contra-temple with ram statue and altars.

Behind the rear wall, which had collapsed in its entirety and still remains *in situ*, a small offering place, which at the beginning of the excavation was completely covered with rubble (Wildung and Kroeper 2006, pl. 17), was found having been built against the outside wall axially to the sanctuary room. On top of a base a ram statue split vertically into two pieces was discovered. The offering place originally consisted of the ram facing east and two stone altars for offerings in front of it. The base for the ram was built flush against the back wall of the temple. After restoration of the ram and the base they were replaced in their original position (Plate 16). Similar offering places named “contra-temples” are known from Egypt (Arnold 1999, 57) and served to permit the ordinary populace to approach a statue which served as an intermediary to the god (in this case Amun) in his sanctuary directly behind.

Although work in and around the Amun Temple can by no means be considered finished, in order to mark a milestone in our work in the Amun Temple a feast of “Re-dedication of the Amun-Temple in Naga” took place under the auspices of the NCAM and the German Embassy in Khartoum on 1st Dec. 2006 with around 600 people present in Naga to join in the celebration.

Temple 200

The second area in Naga which held many surprises for our team during the excavations was that south of the main ramp of the Amun Temple. Here (see Figure 2) Lepsius had already noted in his plans a small temple called temple “e” with a simple Egyptianizing plan of two transverse rooms followed by three small sanctuaries at the back (Hinkel 1996, 401).

In 2001, the very soft, brittle, whitish sandstone blocks which were visible on the surface were cleaned and in the course of the next four years’ work a rather substantial temple, now renamed Temple 200, emerged (Plate 17). Not only



Plate 17. Temple 200 from the north during excavation.

one layer of stones was found as had been expected but a much larger amount of blocks from the collapsed walls remained at a lower level. More than 1,650 decorated sandstone blocks and fragments were excavated, individually recorded and plotted on plans. Additionally a new 3D scanning method to record the decorated sides of each block was used. By this means it was possible later to reconstruct virtually the decoration of the three sides and the pylon of the temple (Kuckertz 2011, 66ff.). The decorative scheme of the pylon is a classic Egyptian design, a political statement presenting the king smiting the kingdom's enemies.

The lower register of the pylon, still preserved to a height of *c.* 1.5m, depicts on each side of the narrow entrance doorway nine kneeling enemy figures; the bodies are abstracted to a shield form but ethnological differences are indicated by the hairstyle. They are tied at the elbows to a stake in the form of the *sema* sign. The rest of the pylon towers, reconstructed to have been about 7.3m high, have collapsed, probably not long after the temple was erected. The quality of the building is rather poor mostly being constructed of small and in part reused blocks. Interestingly it seems that column drums from another (older?) building were cut in half and reused in the face of the wall, the rounded side facing inward whereas the flat side faced outward and was redecorated. Even reused parts of statues were found (block 66 and 1224) which have been reworked and integrated into the wall. All the walls of the temple were faced in dressed blocks and had a core of broken stones and rubble.

Some of the inscribed blocks mention the name of King Amanikarekarem who built the temple and who is pictured on both sides of the pylon in the well known scene of smiting his enemies. In each case the king is facing the god who, up to now, cannot be identified with certainty. Similarly to the decoration of the pylon of the Lion Temple, the king is accompanied by a lion at his feet mauling enemies. The decoration of the pylon of Temple 200 shows the king facing a god on each pylon tower; the queen who is shown in this position on the north pylon of the Lion Temple does

not occur here. The king is represented on the west tower wearing a chain mail gown, carrying various weapons and has grasped a bundle of enemies by the hair. Here as well as at the Lion Temple the prisoners lift their hands in a unique gesture to beg for mercy (Plate 18). The king wears a crown of two high feathers and sun disk and receives a symbol of power and might from the god. On the east pylon the king is represented with the double crown and a falcon gown and richly decorated loincloth again facing a god in the same posture of smiting his enemies (Kuckertz 2011, Abb. 90)

The blocks which previously formed the upper part of the pylon were decorated with a frieze of stars, cavetto and torus whereby the torus stones are decorated with small sitting gods alternating with cartouches. The reconstruction of the east and west walls shows that they were decorated with a procession made up of groups of gods and the king.



Plate 18. Block from the pylon decoration of Temple 200, showing the faces and hands of four prisoners.

On the west side (Kuckertz 2011, Abb. 91) appears a winged Isis following the king facing three gods among them Apedemak and Amesemi. Two more groups continue to the south including the king facing Amun and a goddess and finally the king in front of the mummified Khons in his chapel. The east wall was similarly decorated.

The walls inside the first and second room also carried fine reliefs of which, however, only the lower parts are preserved. The axis through the various rooms continuing into the sanctuary at the back is laid out with white sandstone slabs similar to the Amun Temple. At all entrances to the rooms quarter-circle grooves can be seen in the floor stones providing evidence of the wooden doors. In the central sanctuary was a small structure built of stone, now preserved up to *c.* 700mm high, in the middle of which had been placed an altar or bark stand surviving up to a height of 1m. It was very badly eroded so that no decoration was noted.

In this temple some evidence was found of later re-use of some of the rooms. Small rectangular structures built of red and mud bricks (containing many bread moulds) were found above the original level in the hypostyle hall and the two small rooms flanking the sanctuary. The structural additions have

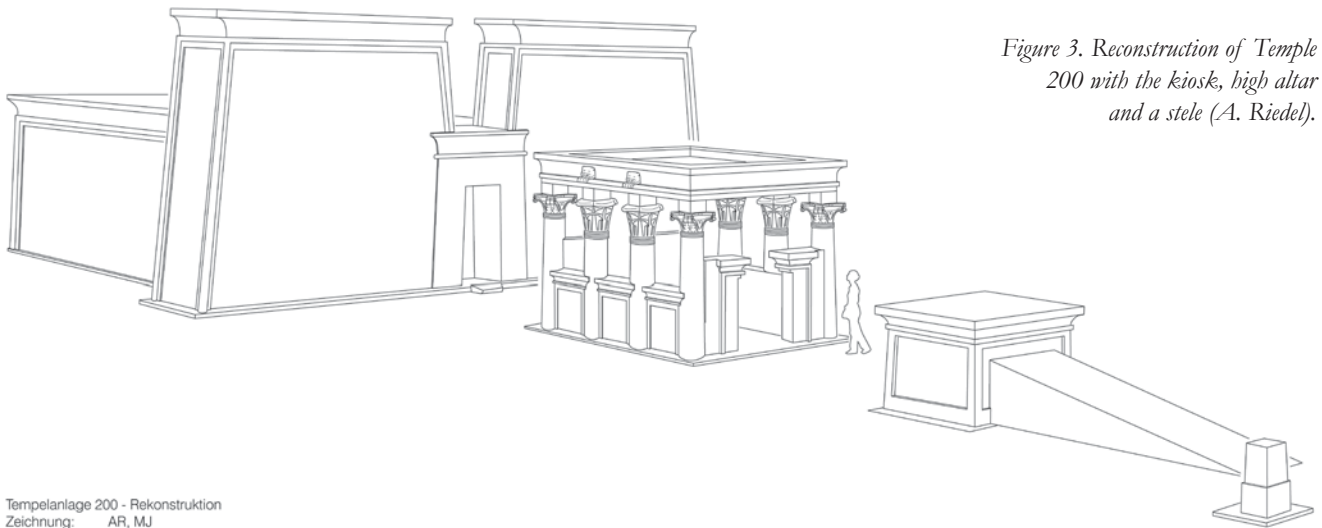


Figure 3. Reconstruction of Temple 200 with the kiosk, high altar and a stele (A. Riedel).

Tempelanlage 200 - Rekonstruktion
Zeichnung: AR, MJ

all been built on top of wind-blown sand or rubble which filled the temple after its abandonment.

In front of the temple (Figure 3), hitherto unknown, a small way station (kiosk) was unearthed with six columns connected by screen walls (6 x 4.5m) slightly out of the axis of the main temple. All the walls and columns had collapsed in antiquity. The screen walls seem not to be decorated but two types of very decorative capitals were found. Yet another structure, a high altar, was also found in front of (north of) the kiosk and temple consisting of a low ramp leading up to a square platform.

To the east of Temple 200 an agglomeration of domestic structures with a large amount of ceramics was investigated. Some small finds, such as the head of a king's statue from the ram statues and a small lion figure, once again as in the case of the Amun Temple, implies movement of finds at some time after the collapse of the temples.

The ensemble of the temple consisting of main temple, kiosk and high altar reflects the arrangement of the Amun Temple whereas the decoration concepts clearly link Temple 200 to the Lion Temple.

Amanikarekarem is a king who was until now dated rather later in time to *c.* AD 300. However, after the discovery of Temple 200 a chronological revision is necessary as the style and the philological evidence clearly place the king very close to the time of Natakamani and Amanitore, in the 1st century AD (Rilly 2011, 198ff).

Thanks to the generous support of our work by the National Corporation for Antiquities and Museums we have received an important loan of relief blocks from Temple 200 on a long term basis. After consolidation and restoration of these blocks, they are now on exhibition in the Sudan gallery in the "Neues Museum" on the Berlin Museum Island.

Lion Temple area

Lion Temple (Plate 19)

Excavations in the area of the Lion Temple and the "kiosk" were undertaken with the main aim of clearing the area

between and around the two buildings in order to determine if any connecting elements exist between them.

Inside the Lion Temple, after removing the rubble in which up to 60 blocks from the walls were found, the bases of four columns and a small rectangular shrine (2.6 x 1.95m) were discovered (Hinkel 1998, 223). Today only the stone foundation in the form of stone slabs with a wide notch in the centre where the wooden panels once stood remains to be seen. Besides a stone offering plate decorated with an *ankh* sign placed in front of the shrine, other loose finds of high quality were present in the rubble, including part of a stele and a decorative offering plate. Possibly associated with the shrine are faience tiles which may have been mounted on the walls of the wooden shrine.

Around the Hathor Chapel and the Lion Temple rectangular enclosure walls made of flagstones were found but as these turned out to be of "modern" date (1914) they were removed. However, during these excavations it was found that the south-eastern part of this modern wall has actually been built on top of an ancient wall of what appears to be an annex building to the Lion Temple.

The space in front of the entrance of the Lion Temple was laid out with large square/rectangular sandstone slabs and was delimited by a low rail. These paving stones rise slightly



Plate 19. Pylon of the Lion Temple during excavation of the porch.



from east to west forming a low ramp.

The clearing of the area in front of the temple led to the discovery of a wall with regular protrusions forming a porch (Wildung and Riedel 2011, 144). However the wall was only *c.* 1.3m high. The central entrance was marked by two large door jambs. The wall itself ended on the small side of the south and north wall of the pylon, directly under the acanthus flower from which the lion-headed serpent rises (Wildung 2011a, Abb. 73-74). Inside and outside the porch, especially to the north of the Lion Temple, a compact layer of mud *c.* 100mm thick was filled with numerous pottery sherds, fragments of faience and fragments of sandstone statues as well as some decorative wall pieces unexpectedly from the Amun Temple! This probably represents a rubble foundation which was laid out under the original walking level.

The Offering Area 360 (Plate 20)

Between the Lion Temple and the Hathor Chapel, very close to the south west corner of the chapel, a small offering area was discovered in recent years. The east-west oriented rectangular space (2.8m wide, 5.2m long) was enclosed by large sandstone blocks *c.* 350mm high. The blocks are covered in lime plaster on the top and sides showing that the wall is preserved to its original, low, height. The rectangular enclosure is accessible from the west through a wide entrance flanked by remains of two sitting lion statues of porous sandstone, plastered white and painted yellow and blue. Only the bases, the paws and hindquarters (with the lion's tail) have survived. The height of these lion statues can be reconstructed at about 1.1m by comparison with the lions found in Building 2100 (see above) which have similar dimensions. The floor of the offering area consists of fine reddish packed sand. On the eastern side of the cult area a large square stone block with an asymmetrical round opening was inserted centrally into the wall, outside of which stood a third large lion statue, facing west.



Plate 20. Offering place (360) found near the Hathor Chapel.

Numerous finds (Kröper 2011, 95ff) including very large pieces of petrified wood, common in the quarry area on Jebel Naga, were discovered outside of the enclosure mostly on the south side of the cult area. Probably the offering-place functioned as a sanctuary for the ordinary populace. More than 140 balls of sandstone and quartzite of various colours and sometimes of peculiar patterns were deposited there. They were mixed with various oddly-shaped natural stones with a high concentration of iron, reminiscent of iron slag in their blackish colour and bubbly structure. These type of stone, concretions eroded from their soft sandstone matrix of the jebel, are found everywhere in its vicinity. These stones were picked for their shape and/or colour and deliberately deposited in the cult area; they may be interpreted as votive offerings from the common people who lacked the means of dedicating valuable gifts to the Lion God. Similar votive stones were found on a smaller scale in the temples at Jebel Barkal and in Kawa. The offering of natural curiosities is a phenomenon of popular devotion also documented in many other cultures outside of the Sudan.

More elaborate votive offerings had also been deposited, as for example several lion figurines of sandstone and faience – some of high stylistic and technical quality. Of particular interest are some finds from this offering area which are several millennia older than the city of Naga, as for example two mace heads and a fragment of another large disk-shaped mace head (Kröper 2011, 101) which date to the Neolithic period of the 5th millennium BC. Stone artefacts and pottery fragments from this period are present on the terraces to the north of Naga, and remains of a Neolithic settlement were found just west of Naga. The donors of these votives could not have been aware of the antiquity of these objects but would have noted the unusual stone material as a product outside their own cultural traditions. In the Temple of Amun in el-Hassa, which was erected contemporaneously to Temple 200 in Naga, by the same king Amanikarekarem, similar prehistoric objects were found in a deposit of votive offerings in the sanctuary itself (Rondot 2010, fig. 315-317). The cult area's functional connection to the Lion Temple is indicated by its orientation, the three large, imposing lion statues and the various votive offerings in the form of lion figurines.

Hathor Chapel (formerly "Roman kiosk")

The Hathor Chapel has attracted much attention from visitors over the centuries. Its combination of Pharaonic, Graeco-Roman and Meroitic architectural features emphasises the chapel's function as a bridge between Africa and the Mediterranean. The building date has been much discussed in the past, sometimes being dated as late as the 3rd century AD; however, excavation has shown that it must have been built very near the time of the Lion Temple (*c.* AD 50) and must be considered as part of the assemblage of the Lion Temple with the offering place (360, see above). The earlier date of the Hathor Chapel is supported by a cursive Meroitic inscription inside the chapel on the north wall which accord-

ing to palaeographic evidence (Rilly 2011, 197) is to be dated to the 1st century AD.

The area around the Hathor Chapel up to the pylon of the Lion Temple was cleared of rubble and collapsed stone (Plate 21). Around the “kiosk” many flagstones laid out in an irregular fashion were found in secondary position and removed. Possibly these were laid out in order to access the chapel during times of rain or mud probably in the 20th century. North of the building settlement remains were found which were not excavated further. In 2003 the first sondage was dug in the so-called “Roman kiosk” as plans for the restoration of this important building were being made. During the process the area around the chapel was lowered \approx 1m. Hereby it became evident that the chapel is about 750mm higher than hitherto visible, which changes the proportions of the building dramatically (Plate 22). Inside the “kiosk” a block decorated with the face of the goddess Hathor (Plate 23) had fallen from the inside of the western entrance (a second parallel piece was also found) and suggests a new



Plate 21. The “Roman kiosk” before excavation and restoration in 1998.

interpretation as to the function of this building, which has been renamed the Hathor Chapel. Interestingly it was found that large architectural blocks which had fallen in antiquity had already been gathered on the original ground surface to the north and south of the building at that time. Various additional architectural elements such as an arcuate lintel and an Ionic capital belonging to the eastern entrance were discovered but only parts of the finds could be re-installed during the restoration. In the area surrounding the Hathor Chapel various small finds, such as the lion head of a gargoyle carved in sandstone, iron nails and other metal objects were found.

Technical innovations and restoration

In recent years the Naga project has begun to integrate a new method of recording objects and architecture in its documentation program. The method has been in use by industry for many years but has now become more and more interesting for the archaeological world and has already been tested in Egypt and elsewhere on art objects (TrigonArt Bauer Praus GbR, www.trigonart.com, Naga Projekt).

By this method a 3D - white light (coded structured light) scanner system is used for measuring the three-dimensional shape of an object, using projected light patterns and a camera system.

Recording of objects by high resolution 3D cool light scanning has several advantages:

- the object need not be touched
- the method is completely non-destructive
- the objects can be recorded with an accuracy of less than 1mm and can be viewed from all sides; decoration on round objects can be presented on a flat surface without distortion (Plate 24)
- from the digital data measurements can be taken from any point on the object without reverting to the original
- fragments of objects can be reassembled on the computer before attempting a reconstruction of the original object
- the data can be used to construct virtual, three dimensional models and computer animations
- the 3D-model can, optionally, be textured with photographs
- the objects can be reproduced at various scales through milling using the available data

Creating a 1:1 reproduction in Naga was undertaken with the altar from the sanctuary of the Amun Temple since it was feared that the



Plate 22. The Hathor Chapel after excavation and restoration in 2010.



Plate 23. Decorated block with the face of Hathor found inside the Hathor Chapel and 'name-giver' to the building formerly known as the "kiosk".

delicate relief might be damaged by visitors if left in place. The stand was scanned and reproduced in Germany in five parts, transported to Naga and there assembled by the restorers; the reproduction can be seen today in the sanctuary at the back of the temple. The original object was transported to the Sudan National Museum in Khartoum for safe keeping.

All advantages of the 3D-recording method were applied in Naga in the dismantling and reassembling of the Hathor Chapel, for reproducing the decoration of the walls of Temple 200 and for viewing individual finds from the temples (see TrigonArt Bauer Praus GbR www.trigonart.com. Naga Projekt).

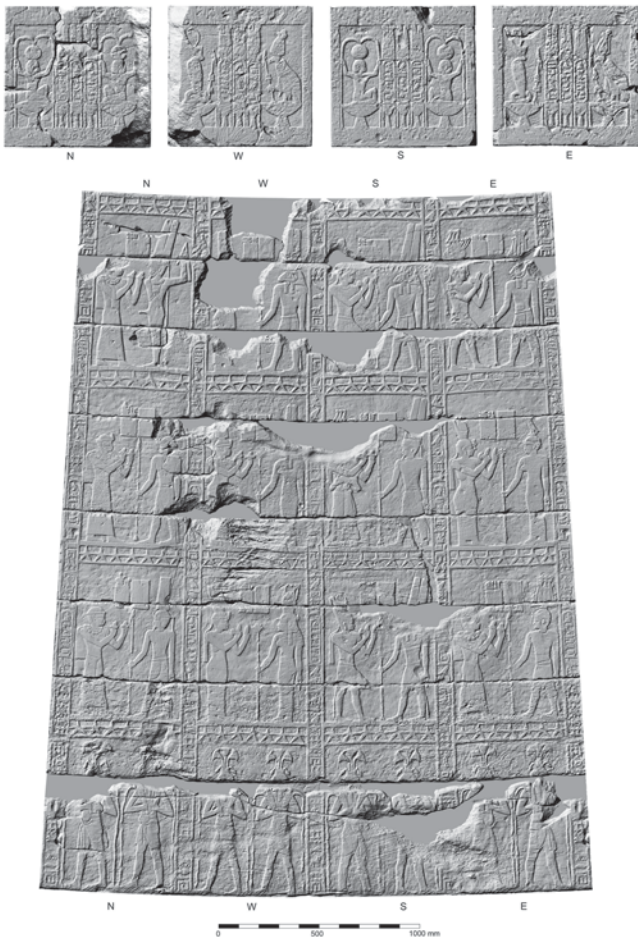


Plate 24. 3D-scan of a column from the hypostyle hall showing the complete decoration rolled out on a flat plane.

The restoration at the site presented a challenge not only due to a lack of infrastructure but also in its aim to do justice to the material and technical demands of climate and conservation ethics. Over the years a restoration concept was developed between the restorers and conservators (Restauration am Oberbaum GmbH - <http://www.rao-berlin.de> – Naga Sudan) and the archaeologists, which tried to take in all aspects of restoration adhering to the UNESCO principles of the Venice Charter. Our reconstruction policy has sometimes to be a compromise of aesthetics and practicality or security but concerns firstly the long term preservation of the objects and architecture without disturbing the overall impression of the site.

Over the years many tests were and are still being carried out at the site and in Berlin with regard to the use of mortar, the carrying strength and the best method for solidifying the local sandstone.

The first restoration work in the Amun Temple consisted of re-erecting the columns of the Hypostyle when the exact original position of each drum was known. In some cases it was necessary to replace parts which were completely destroyed or were so badly damaged that they would not be able to carry the upper layers. These parts were replaced with local sandstone which were sculpted by the restorers in a simplified form so that once they were inserted in the column they are still recognized as new but retreat into the background. Smaller surface defects were repaired with a mortar specially developed for use at Naga.

The Hathor Chapel which at first presented a solid appearance proved, upon detailed examination, to be in an extremely endangered state (Hamann 2009, 171 ff). A detailed recording of the building was undertaken in light of the fact that it became clear that parts of it would have to be disassembled in order to prepare for restoration. Unfortunately some capitals of the chapel had to be removed as they proved to be too fragile and would certainly not continue to carry the extremely heavy architraves for much longer.

On the basis of the 3D architectural recording, the badly damaged capitals were reproduced 1:1 in synthetic stone; a reduced (simpler) reproduction was chosen to secure the visibility of the copies.

The architraves and especially the lower layer of blocks on all four sides of the chapel required stabilization and consolidation. These lower blocks had for centuries been covered with mud, which was washed in during the rainy seasons and which held the moisture after the summer rains for the greater part of the year. This led to a disintegration of these stones. Since the lower part of the Hathor Chapel had never been excavated this condition was only noted after the removal of about 750mm thickness of mud which had accumulated over the years. Thereafter a long process of solidifying (Plate 25) and conserving began which now contributes to the structural solidity of the chapel. In 2010 finally, all possible parts available, those which had been removed during the conservation work and also those parts



Plate 25. Lower courses of stones in the Hathor Chapel on drips with conservation fluid applied over many days.

found during the excavation, were replaced. The chapel now has completely new proportions and stylistic elements, especially the eastern entrance. Some excavated elements such as the Ionic capital could not be replaced for structural reasons, however they can be viewed in the 3-D model (Plate 26). The original capitals are to be exhibited in a local museum to be build in the future according to the design provided by the British architect David Chippefield.

Also in recent years, for the first time a virtual reconstruction of the Naga site was undertaken by the architects Lengyel and Toulouse (2011, 163ff). Since most of its buildings exist now only in plan, a true impression of the ancient site is much distorted, consisting today mostly of large open spaces dotted with low hills and the remains of the larger temples. Even though the reconstruction has to rely in part on archaeological and architectural hypothesis since the height of the walls and roof constructions are not known, the visual impression of the density of the site can only be recreated by a virtual reconstruction based on all the available data.

We estimate that *c.* 15% of the total site has been excavated so far by the Naga Project, and while at the moment the first priority is the publication of the work done so far, excavations in Naga will continue in future for this and many other generations and will probably continue to surprise the excavators with many unexpected discoveries.

The results of 15 years of excavation are being presented in an exhibition: Naga- Royal City - Excavations in the Desert of the Sudan, in Berlin from the 31st August until the 18th



Plate 26. 3D-scan and virtual reconstruction of the Hathor Chapel including all elements found during excavation.



December 2011. Not only are the results of the excavation with approximately 130 objects on display, ranging from monumental statues to reliefs and small finds, but also the exhibition aims at making known the cultural independence of the ancient Sudan to a wider public. The exhibition is made possible by the generosity of the National Corporation for Antiquities and Museums, the financial support of the friends of the Egyptian Museum Berlin, as well as by the support of the Egyptian Museum and Papyrussammlung Berlin and the Ernst von Siemens Kunstfond.

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