

Report on the Excavations at Elephantine
by the German Archaeological Institute and the Swiss Institute
from autumn 2013 to spring 2014

by

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1. Introduction

The excavations in the ancient town of Elephantine carried out by the German Archaeological Institute Cairo in cooperation with the Swiss Institute for Egyptian Building Archaeology since 1969 were continued in the season 2013/2014¹. Research concentrated on two major areas, namely excavations in the ancient town and in the area of the temple of Khnum.

In the settlement, the German Archaeological Institute started a new project with the aim to reveal, through refined excavation technique and scientific analyses, the full range of actual living activities in the ancient town (see section 2). The Swiss Institute continued its long-standing research on the development of the town walls from the 2nd Millennium BCE onwards (see section 3).

At the site of the temple of Khnum the German Archaeological Institute continued the project on the reconstruction of the New Kingdom Temple of Khnum (see section 4) from re-used blocks found in the foundations of the later temple. Work of the Swiss Institute concentrated on various aspects of this late temple, its precinct and its furnishings (see sections 5-7).

Apart from this excavation work, the documentation and the study of finds played an important part in the work of the last season. Work on the pottery of the New Kingdom was continued and a project on Islamic pottery was started by the Swiss Institute (sections 8-9). In a co-operation with Clara Jeuthe and the IFAO, a new project was started by the German Archaeological Institute to reveal the provenience of silex instruments found on the site. Important work was also done in the re-organization of the magazines of the excavation (see section 11).

Further, conservation work was carried out by the Swiss Institute on blocks of the late

¹ We are grateful to the Aswân inspectorate of the MSA, its director Dr. Fathi Abu-Zeid and the inspectors who accompanied and supported the mission throughout its work.

temple of Osiris Nesmeti as well as on small obelisks from the balustrade of the Roman river terrace of the temple of Khnum which had been damaged (section 12). The German Archaeological Institute worked towards a 3D-digital model of the site of Elephantine in its historical development as a tool to visualize the situation of the settlement and its buildings in the landscape context (section 13).

(St.S)

2. Excavations in settlement

In autumn 2013 a new excavation in the settlement areas on Elephantine was started in the frame of a new methodological concept and new research questions². In contrast to previous work the project aims – in addition to the study of architectural features – at reconstructing the ancient living experience in the town. Therefore, additionally to archaeological standard methods of find processing, microscopic and biochemical approaches will be executed.

The project concentrates on the area southeast of the pyramid (area VI). This area was part of the French concession at the beginning of the 20th century. In order to find papyri the former excavators dug deep holes into the ancient settlement. As a result mainly the recognized walls were left *in situ*, while the floors of the rooms in between were removed.

After smaller investigations in the area during the 2012/2013 campaign, this season a trench of 10 x 10 m was opened. All excavated room-fillings were dry-sieved through a 5 mm mesh. Additionally, soil samples – their size depending on the amount of available material with max. up to 6 kg – were taken of each stratum for wet-sieving and floatation. Test floatation was conducted of parts of these samples. This exhaustive excavation method as well as the cooperation with specialists of various archaeology-related fields of research – e.g. micromorphology, paleoentomology etc. – should result in a thorough understanding of the life in the settlement of Elephantine. Apart from the function of the excavated rooms and houses, the living experience in them shall be reconstructed. The launch for a research group for this project has been scheduled to December 2014.

In the first step of excavation work in autumn 2013 and spring 2014, detached walls of a house of the Second Intermediate Period were documented and removed (H58). Due to the earlier excavations, no adjoining floor levels were preserved; no functional information of the building(s) could be determined.

A better state of preservation was met in two buildings in the next building level (H73 and H166, Fig. 1). The plan of house 73 in the east of the trench shows attributes of a so-called courtyard house with rooms arranged around three sides of an open yard³.

² Participants were R.D. Colman, D. Fritsch, K. Goldmann, P. Kopp, M.-Kr. Schröder und J. Sigl.

³C. V. PILGRIM, *Elephantine XVIII: Untersuchungen zur Stadt des Mittleren Reiches und der Zweiten Zwischenzeit*, AV 91, Mainz 1996, p. 196-204.

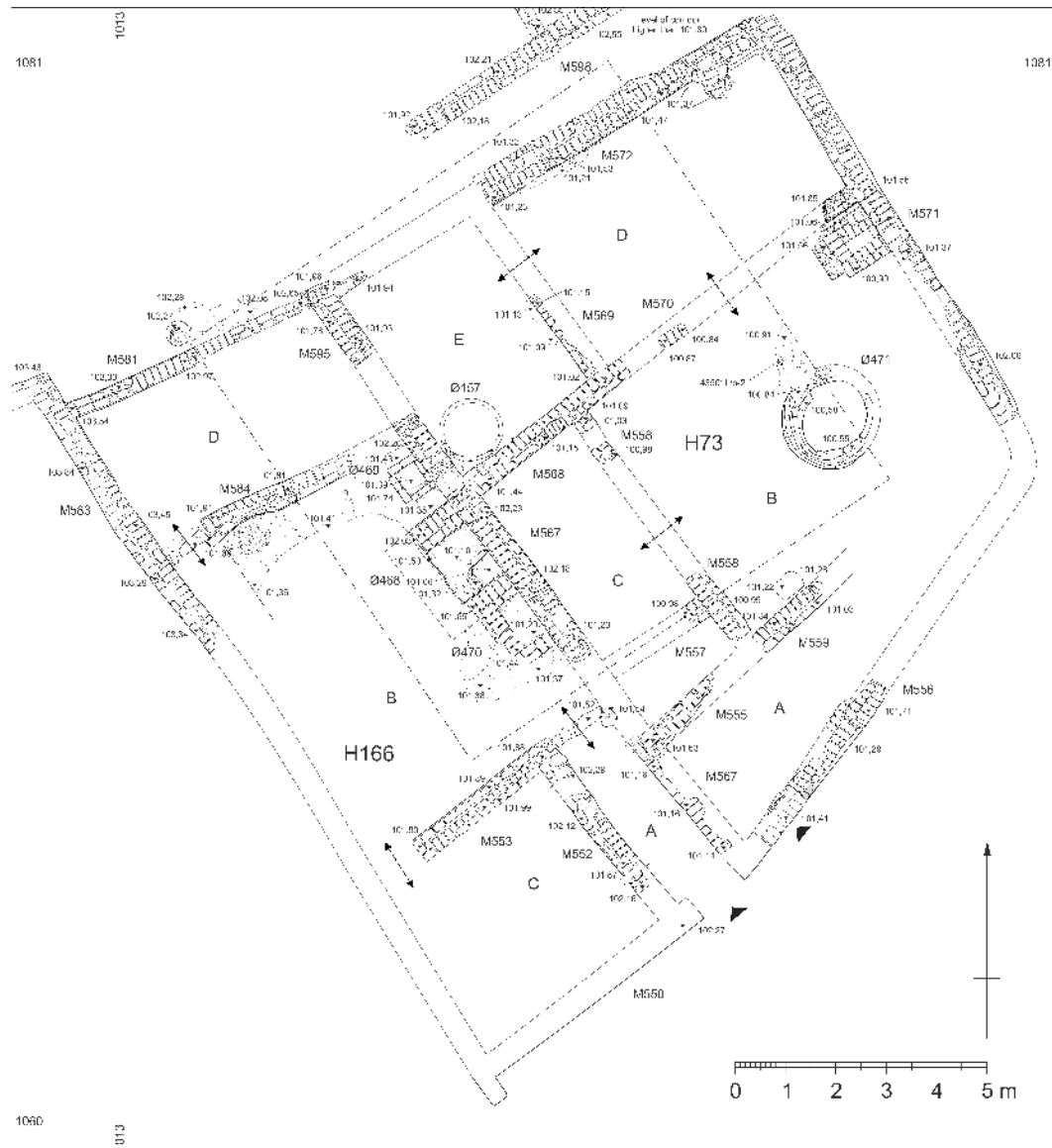


Fig. 1: Houses 73 and 166

An entrance corridor (A) lead to this courtyard (B). In its centre a beehive shaped cellar (Ø471) could be distinguished. Three other rooms were grouped north and west around the courtyard; in the southern corner of room E, a granary of approximately 1.2 m in diameter (Ø157) was found. No floors were preserved.

House 73 shared a wall (M567) with house 166 to its west. The latter contained a series of rooms arranged in three strips and fortunately some parts of the floors were preserved⁴. An entrance corridor (A) was leading to a central room (B). Along the eastern wall of that room a row of three rectangular installations, build of mud bricks and stone slabs

⁴For this type of houses see e.g. M. BOMMAS, *Nordoststadt: Siedlungsbebauung der 1. Zwischenzeit und des Mittleren Reiches nordwestlich des Inselmuseums*, in: W. KAISER et al., *Stadt und Tempel von Elephantine. 21./22. Grabungsbericht, MDAIK 51*, 1995, S. 146; C. von PILGRIM, *loc. cit.*, p. 190-196.

(Ø468-Ø470, Fig 2)⁵, was found. Two further rooms (C and D) lay to the north and south of room B.



Fig. 2: Installation Ø468

Both buildings date, according to pottery finds, to the late 12th Dynasty⁶. Several small blades of carnelian and some pellets of amethyst were found in the use-layers of house 166 right above the floor (Fig. 3). They indicate the production of beads made of semiprecious stones in area VI⁷.

Parts of two further buildings of earlier date were excavated (H167 and H168) in the following strata. These were again badly destroyed by the French excavations (Fig. 4). The houses were built of mud bricks containing a high amount of plant fibres and therefore they were hard to distinguish from the similarly composed rubble that filled the former structures. Obviously, the French excavators had not recognized them at all as remains of architecture, because in contrast to the preserved walls of house 73 most parts of them had been removed. Fortunately several floors were preserved. Animal excrements filled a walled off corner of house 167. Its dimensions – maybe 1 m² – and position in a room opposite of the

⁵C. von PILGRIM, *loc. cit.*, p. 214.

⁶Elephantine pottery sequence F3, see D. RAUE, *Zu den Keramikfunden der fröhdynastischen Zeit und des Alten Reichs*, in: P. KOPP, *Elephantine XXIV: Funde und Befunde aus der Umgebung des Satetempels. Grabungen von 2006-2009*, AV 104, chapter 9 (in print).

⁷In the 6th Dynasty there was a workshop in area XXIV/XXXI: P. KOPP, *Smallfinds of the Old Kingdom*, in: D. RAUE et al., *Report on the 33th Season of Excavation and Restoration on the Island of Elephantine*, http://www.dainst.org/medien/en/daik_ele33_rep_en.pdf, p. 13, 15.04.2014.

entrance to the house make an interpretation as stable for sheep or goats unlikely. Most probably the faeces were stored here to be used later as fuel. Apart from that a beehive shaped cellar was found (Ø478) in the house.



Fig. 3: Carnelian flakes from house 166

The inventory of pottery differed considerably from those of houses 73 and 166. E.g. no drinking cups with a red rim⁸ were found. Therefore houses 167 and 168 must still date to the middle of the 12th Dynasty.

Dating the excavated and surrounding structures was hampered by the natural topography of this part of the settlement. The ground level in the excavated area slopes – following the shape of the former island and the older settlement structures – from the northwest to the southeast. Because of this topography apart from walls dividing rooms and surrounding buildings, several architectural features had the function of terrace walls in order to gain horizontal floor levels. Anyhow, many floors were still not horizontal but sloping. Nevertheless, not only houses and paths within the settlement of a certain period were situated on different levels, but also rooms within the houses themselves. Staircases connected the different levels. Discrepancies were met comparing the chronological data of the recently excavated houses with the results of previous research⁹. Apparently, extensive height differences must have existed between the newly excavated buildings and the

⁸Elephantine pottery sequence F2, see D. RAUE, *loc. cit.*

⁹C. VON PILGRIM, *loc. cit.*, figs. 108-110.

neighbouring houses of the same period.



Fig. 4: Remains of house 168, to the right the pyramid

As a first step towards the aims of the project micromorphological samples have been taken from the eastern profile in the area of house 166 from and underneath the rectangular installations in room B. These samples were transported to the IFAO in Cairo in spring 2014 and are awaiting further processing and study.

(P.K.)

3. The Town wall of the Middle Kingdom and the Third Intermediate Period

The chronological investigation of the town wall was continued in two further areas where various segments of fortification walls had been uncovered in previous seasons.

A segment of about 20 m length has been already uncovered during the 31st field season at the north-western edge of the town (Area XIX). The wall of about 2.7 m width ascends towards a granite ridge just behind a modern house opposite the mission's dig house. At its destroyed northern end the wall is covered by a sequence of layers beneath remains of a later construction phase of the town wall on top (Fig. 5). According to a preliminary evaluation of pottery sherds collected from these layers the older wall was destroyed at the early 18th Dynasty¹⁰. Thus the wall might well be correlated with the town

¹⁰ A comparable date of destruction was attested at the wall segment in Area XIV, see C. von Pilgrim,

wall of the late 12th dynasty studied in earlier seasons in areas XIV and XXXVI¹¹. Only a tentative date, however, may be given at present for the short segment of a later town wall built on top of the earlier one since no layers connected to the wall are preserved. Pottery sherds collected from the mortar, however, point to a date not before the 25th/26th Dynasty.



Fig. 5: Section through stratigraphy above the northern end of the town wall of the Middle Kingdom (Area XIX)

A second area of investigation (Area XXXII) was located at the southern edge of the town on top of a ridge of granite high above the well-known rock inscription of Chufu-anch. The remaining sections of the town wall in this area had been previously dated to the Middle Kingdom (without investigating adjoining stratigraphy) and partially removed during the investigation of the Early-Dynastic layers underneath¹². However, a meticulous investigation of the scarce stratigraphy still preserved in connection to one segment of the fortification wall revealed its correlation to the town wall (B) of the 20th/21st Dynasty¹³. The wall is superimposed from layers dating to the 25th Dynasty after it was destroyed and the bricks were robbed (Fig 6). It is the first evidence for a discontinuity of the fortification in the 1st millennium BC and for a large-scale destruction of the town wall at the end of the Third Intermediate Period.

in: Raue et al., The 37th season of excavation and restoration on the island of Elephantine, ASAE 84, 2010, p. 350.

¹¹ C. von Pilgrim, Untersuchungen zur Stadtbefestigung: Die Stadtmauer des Mittleren Reiches, in: D. Raue et al., Stadt und Tempel von Elephantine. 36./37./38 Grabungsbericht, MDAIK 67, 2011, pp. 198-201.

¹² M. Ziermann, Elephantine XVI. Befestigungsanlagen und Stadtentwicklung in der Frühzeit und im frühen Alten Reich, AVDAIK 87, 1993, p. 128 and *passim*.

¹³ C. von Pilgrim, Zur Stadtummauerung im Neuen Reich, in: W. Kaiser et al., Stadt und Tempel von Elephantine. 23./24. Grabungsbericht, MDAIK 53, 1997, pp. 162-165.



Fig. 6: Area XXXII. Layers of Dynasty 25 above remains of the town wall of Dynasty 20/21

A new fortification (well preserved further to the west) hence followed a different line in this sector. It is presumably to be identified as part of the fortification that was build during the Late Period immediately along the outside of the town wall of the 20th/21st Dynasty.

(C.v.P.)

4. The Khnum temple of the New Kingdom

The investigation of the relief decoration of the Khnum temple of the New Kingdom was continued¹⁴. This season's work focused on the documentation of blocks that had been reused in the Ptolemaic pronaos, in the northern wall of the Roman courtyard and in the Roman terrace of the Khnum temple complex. The thorough study and documentation of relief decoration now visible only in narrow joints between stones greatly increased the number of known blocks. In addition, an inventory of about 500 smaller fragments deriving from the New Kingdom temple was made.

The blocks studied this season derive mostly from the first pylon of the temple. A group of blocks bearing a decoration of Thutmosis III in raised relief can now be attributed to the back side of the pylon, which had been covered by the roof of the adjoining colonnade. The decoration comprises two symmetrical scenes that show the king smiting enemies in Asia and Nubia. Along the lower edge of the scenes remains of a list of foreign cities are preserved. The decoration appears to be a close copy of the reliefs found on the Seventh

¹⁴ For previous work see M. BOMMAS, *Der Tempel des Chnum der 18. Dyn. auf Elephantine*, Ph.D. thesis Heidelberg 2000, and the last preliminary reports, C. v. PILGRIM, 31./32. *Bericht*, pp. 38-44 and M. BOMMAS, 31./32. *Bericht*, pp. 44-51.

Pylon of Karnak. At Elephantine, two niches were arranged between the scenes, flanking the entrance gate. The decoration of the niches suggests that they were dedicated to the cult of the king and probably each housed a seated statue of Thutmose III facing the temple house.



Fig. 7: A newly discovered relief showing the king holding the sacred staff of Khnum..

On the back side of the northern niche the king is being embraced by Nekhbet and Wadjet¹⁵, on the back side of the southern niche by Satet and Anuket. From one of the niches may also derive a newly discovered block showing the king holding the sacred staff (*mdw*) of Khnum (Fig. 7)¹⁶. The front side of the pylon had at first been left undecorated except for an inscription along the top edge. Merenptah and Ramses III later added a large-scale decoration in sunken relief, showing the king before Amun and other gods. The entrance gate was constructed of granite and given the name “Door of *Mn-hpr-R’w*, for whom Ra shines”¹⁷.

Several sandstone blocks can now be attributed to a gate decorated in the name of Thutmose II, but possibly built during the reign of Queen Hatshepsut. A newly discovered block from the front of the gate bears a depiction of Anuket with an elaborate dress of feathers, executed in sunken relief with yellow colour (Fig. 8). The back side of the gate bore an inscription in sunken relief with blue colour. A scene from the passage of the gate shows

¹⁵ The block is now housed in the Berlin museum (no. 1626). K.H. PRIESE, in: *Ägyptens Aufstieg zur Weltmacht*, Mainz 1987, pp. 181-182.

¹⁶ For the meaning of the cult staff see E. Laskowska, 31./32. *Bericht*, pp. 75-82.

¹⁷ Junge, *Elephantine* XI, p. 27, pl. 10.

the king being introduced into the temple by two goddesses, presumably Satet and Anuket. The gate may originally have served as the main entrance to the temple complex, only to be dismantled in the reign of Thutmose III to make way for the first pylon.



Fig. 8: Block from a gate showing Thutmose II adoring Anuket

In addition, several parts of pillars were newly discovered. Pillars with a width of 78 cm bear the name of Thutmose III and can be attributed to the first courtyard. Pillars with a width of 90 cm bear the name of Amenhotep II and derive from the corners of the second, festival courtyard. Pillars of a smaller size, with a width of only 64 cm, are not large enough to be attributed to either courtyard or to the temple house. They bear the names of Thutmose II and Thutmose III and must have been erected very early on in the construction of the temple complex. Their original location remains unclear.

5. The Khnum Temple Precinct in the Late Period

During the spring season the investigation in the Khnum Temple precinct to the south of the temple of the 30th Dynasty was resumed. A major aim of the work is a study of the function and spatial organisation of the district in immediate vicinity of the temple and its role as administrative and economic centre of the town.



Fig. 9: New Kingdom granaries beneath a building of the 25th Dynasty

A further objective is a close examination of the building stratigraphy in order to evaluate the dynamics and possible discontinuities of development. A special focus was put on the

chronology of enclosure walls of which two segments had been discovered in earlier seasons¹⁸.

Fieldwork started in excavation trenches of previous seasons in order to complete investigation of structures which once were uncovered with a different question in mind¹⁹. A sequence of building layers was encountered in the foundation trench of the late Khnum temple's inner enclosure wall and in the baulk separating it from the foundation pit of the temple proper. Three large granaries dating to the New Kingdom represent the earliest buildings in the temple precinct (Fig. 9). Their size (measuring 4 m in diameter) and their alignment in a row as well as their identical construction technique using unusual bricks of trapezoid shape let assume that they belong to a substantial temple estate. No surface layers connected to the granaries are preserved. They had been removed together with all subsequent building layers when the terrain was levelled out before the district was restructured in the 25th Dynasty. Remains of a spacious building of this period with large brick-paved rooms extended to the west as far as the central main street of the town. Eventually the building was abandoned and filled up with wind-blown sand and rubble of the gradually collapsing vaults.

Only poor traces of a subsequent building layer have survived. All buildings had been removed when the whole district was again restructured and a massive temenos (M 495) wall was built. The wall had a width of 3 m and was separating the temple precinct from the main street to the west. The inner area of the temenos was filled up with rubble and debris, possibly in order to align the terrain with the temple to the east. A precise date of construction of the enclosure wall can not yet be determined with certainty and must await further studies in the season to come.

Additional investigation in the same area continued earlier studies in the immediate vicinity of house K19 conducted between the 21st and 36th season. During a limited reinvestigation of a furnace to the east of house K19 an older pottery kiln was discovered (Fig. 10). Distinctive pottery sherds from the construction of the kiln and its fill evidence a date in the early Roman Period. As the kiln is overbuilt by the eastern wall of house K19 the previously assumed re-dating of the house to the early Ptolemaic Period must be corrected²⁰. A re-evaluation of all still available stratigraphical sections connected to the house confirmed a date in the early Roman Period, which was already suggested by H. Jaritz in the early years of the project.

¹⁸ C. von Pilgrim, Das aramäische Quartier im Stadtgebiet der 27. Dynastie, in: G. Dreyer et al., Stadt und Tempel von Elephantine. 28./29./30 Grabungsbericht, MDAIK 58, 2002, pp. 192-197 and Fig. 11.

¹⁹ Cf. W. Niederberger, Elephantine XX. Der Chnumtempel Nektanebos' II., AVDAIK 96, Pl. 17d.

²⁰ Cf. F. Arnold, Der Bezirk des Chnumtempels: Stratigraphische Untersuchungen südlich des Tempelhauses, in: G. Dreyer et al., Stadt und Tempel von Elephantine. 33./34./35 Grabungsbericht, MDAIK 64, 2008, pp. 78-86 and Fig. 6. In fact, the layers nos. 17 and 18 in Fig. 6 are clearly cut by the northern wall of house K19 and predate the construction of the house.



Fig. 10: Early Roman pottery kiln beneath furnace installation of a second phase of industrial activities in the temple precinct

The earliest house erected after the construction of the temple of the 30th Dynasty is therefore house K29. The previously missing northern wall of the house was identified at the edge of the foundation trench of the temple's inner enclosure wall. Its way of construction points to the fact that it was build shortly after the construction of the enclosure wall was discontinued and was left uncompleted at the end of the reign of Nectanebo II. House K29, a tower house with a raised substructure build exceptionally in quarry stone masonry, subsequently guarded the access to the southern temple area and may have housed the temple administration.

(C.v.P.)

6. The stable of the sacred ram

During the investigation of Late Antique houses south of the Khnum temple, the remains of a Ptolemaic-Roman building complex were discovered²¹. The complex comprises an isolated chamber, about 3.6 m wide and 4.3 m deep, constructed of sun-dried bricks and whitewashed (Fig. 11). In front of this building lies a 10 m wide and 15 m long courtyard. The floor of the court is covered by a thick layer of animal dung.

²¹ For previous work in the area see F. ARNOLD, *Elephantine XXX*, pp. 69-72 and 94-98.



Fig. 11: Remains of a Ptolemaic-Roman building complex south of the Khnum temple

A short, slightly curved passage at the north-eastern corner of the court gave direct access to the side entrance of the temple of Khnum. The location of the building, the quality of its execution and the layer of animal dung strongly suggest that the building complex was used to house of the sacred ram of Khnum. So far only the burial ground of the animal had been known, on the opposite, northern side of the temple²². The chamber presumably served as the stable of the ram. Significantly, it lies exactly next to the three naoi housing images of the god within the temple house. The stable appears to have been built after the inner temple enclosure was finished by Ptolemy VI. It continued to be in use during Roman times, being refurbished several times. In the 5th century A.D. the site was built over by a private house (K26).

(F.A.)

7. Cultic Equipment of the late temple of Khnum

The documentation of the sculptures and other equipment discovered during the excavations in the area of the Khnum Temple was continued. In addition to the work conducted in previous seasons, not more than 5 further fragments had to be added, so that the catalogue of fragments was concluded.

²² E. Delange/H. Jaritz, Elephantine XXV. Der Widderfriedhof des Chnumtempels, AVDAIK 105, 2013.



Fig. 12: Examples of reassembled fragments of statues

The assignment of fragments to sculptures has been verified and improved in several cases. Worth mentioning are four new joints. In order to verify whether the fragment K12516 of a backpillar (assigned to the enthroned statue of Psammetichus) fits to the head displayed in the Nubian Museum in Aswan (identified by S. Bickel as Psammetichus)²³, a gypsum copy of the fracture has been taken. The same procedure has been chosen for the feet of an

²³ Referred to in the museum as Nectanebo II, cf. S. Bickel, *La Statue d'un roi Psammetique reconstituee*, Bifao 95, 1995, pp. 93-102.

unfinished statue K13024 (placed in the courtyard of the temple of Khnum) and the legs K12524+K12526 and it is now proven that they fit together.

The main focus of the work was put on completing the drawings, especially of pieces that are difficult to understand when illustrated in photographs only (Fig. 12).

(T.K.)

8. The pottery of the New Kingdom from Elephantine

The study on the New Kingdom pottery from Elephantine was continued²⁴. The ceramic material from Elephantine provides very close parallels to the corpus excavated at Sai (Northern Sudan)²⁵. Because of this marked similarity, establishing chronological correspondences and a fine dating with a particular focus on the period of the early 18th Dynasty (predating Thutmose I), comparing the ceramic manufacture (technology and wares), addressing questions of functional aspects and reconstructing transport routes between Upper Egypt and Upper Nubia during the New Kingdom are the main research questions. The four main working steps conducted during the 2013 season of the New Kingdom pottery study were: 1) continuation of drawing material already stored in the magazine, with a special focus on similarities with Sai Island; 2) documenting the statistics and establish dating for newly excavated material from area XXXII of the 43rd campaign; 3) documenting the statistics and establish dating for material from former campaigns and 4) checking the database and re-organising the current storage of the New Kingdom pottery.

1) A total of 291 significant diagnostic, decorated and imported sherds were drawn during the season in 2013 (both, material from older excavation seasons and newly recorded sherds of the 43th season). In addition, approx. 450 digital pictures of more than 130 sherds (mostly decorated ones) were taken. The pieces studied in detail were chosen according to the focus on material from the early 18th Dynasty (*Bauschicht*/level 10). Fragments of decorated wares in a bichrome painted style, both in Marl and Nile clays, as well as Blue painted pottery are here significant. Oasis amphorae and Mycenaean imports (Stirrup jars), finding close parallels in the town of Sai, were also documented by drawings.

2) Simultaneously to the excavation, the processing of the ceramics from area XXXII was carried out – allowing a more precise dating and also reducing the amounts of material to be stored by sorting out the undiagnostic sherds (which have been documented and will

²⁴ The study of the Elephantinian New Kingdom pottery is conducted in close cooperation with the ERC project “AcrossBorders” directed by J. Budka; see J. Budka, *Die 18. Dynastie auf Sai Island (Nordsudan) – neue Puzzlesteine als Ergebnisse der Feldkampagne 2013*”, *Sokar* 26, 78–87 and <http://acrossborders.oeaw.ac.at/about/about-acrossborders/>.

²⁵ Cf. J. Budka, “The early New Kingdom at Sai Island: Preliminary results based on the pottery analysis (4th Season 2010)”, *Sudan & Nubia* 15, 23–33.

be included in the general statistics). From the New Kingdom levels, 16 find assemblages from area XXXII were studied in the 2013 season. A total of 1.935 sherds were looked at, sorted and counted by ware (fabric and surface treatment) and shape and recorded. Among these sherds, 371 were diagnostics. The most significant and/or unusual pieces were studied in a detailed way (15 new entries in the New Kingdom Pottery Database). The majority of this material is late Ramesside in date.

3) The statistical documentation according to wares and shapes and the dating of material from former campaigns was carried out. A total of 91 find assemblages have been studied in 2013 comprising 2.402 diagnostics sherds. In addition, for 35 other find assemblages from campaigns 41 and 42, area XXXVI, an origin from the 17th Dynasty, predating the New Kingdom, was confirmed.

4) The Filemaker database of the New Kingdom pottery comprises to date 11.002 pieces.

(J.B.)



Fig. 13: Glazed pottery of the Islamic Period from Elephantine

9. Pottery of the Islamic Period

This season at Elephantine a small study was performed on glazed pottery sherds from the early Islamic and Medieval periods. The purpose of this study was to identify the great variety

of types found at the site. Tin-glazed, splashed decorated vessels were some of the most common type (Fig. 13) and form a major part of this study. Because some of these examples were imported from other regions, this is an important study in understanding the commercial networks of the Late Antique and Medieval periods in Egypt.

(G.W.)

10. Anthropological-Paleopathological Investigations on the Human Skeletal Remains

From March 19 – 30, 2014, the human skeletal remains excavated by the Swiss Institute in previous seasons were studied using macroscopic and low power microscopic techniques. The majority of the individuals originates from an extramural cemetery of early Ptolemaic date and was buried in simple pits at the ancient southern riverbank alongside the town wall²⁶.

A total of 37 finds were examined. Of these finds, two represent animal remains, the content of one bag could not be determined and 34 were identified as human remains: two fetuses, one newborn, seven infants (*Infans-Ia*), four younger children (*Infans-Ib*), eight elder children, one juvenile and eleven adults (Table 1).

| | |
|---|----|
| <i>Fetus</i> (before regular birth) | 2 |
| <i>Infans-Ia</i> (newborn to 2 nd year of age) | 8 |
| <i>Infans-Ib</i> (between 2 nd and 6 th year of age) | 4 |
| <i>Infans-II</i> (between 6 th and 14 th year of age) | 8 |
| <i>Juvenis</i> (between 14 th and 20 th year of age) | 1 |
| <i>Adultus-Senilis</i> (older than 20 years) | 11 |

Table 1: Number of examined individuals (n = 34) distributed to the age groups

In several cases, diseases were diagnosed which might be responsible of the death of some infants. Thus, three of the children suffered from hemorrhagic and/or inflammatory reactions of the meninges (meningitis). In these three cases, the disease was not healed up at the time of death, whereas one adult who also had suffered from meningeal reactions, showed vestiges of a healing stage. Furthermore, cases of probable anemia (n = 3), probable scurvy (n = 1), pleurisy (n = 1) and sinusitis maxillaries (n = 1) were diagnosed. Dental diseases were common. In sum, the investigated individuals show a relatively good health condition

²⁶ C. von Pilgrim, in P. Kopp et al., Report of the 40th Season of Excavation and Restoration on the Island of Elephantine, ASAE (forthcoming).

regarding deficiency and infectious diseases in comparison to the individuals excavated from the cemetery of Elephantine dating from the Old Kingdom/First Intermediate Period.

The results provide also some information on the social life of Ptolemaic Elephantine. Osteoarthritis of the extremity joints and the vertebral column was not very frequently found in the adult age group (n = 3). However, in the case of a young adult female who died in the age span of 21 – 24 years, severe vestiges of degenerative joint disease and the vertebral column combined with scoliosis was diagnosed. These diagnostic findings indicate harsh living conditions and pronounced physical strain. Therefore, we can assume that this female was a member of the lower social class. Furthermore, there is evidence of one case of child maltreatment which might shed some light on the quality of the social community of that time period.

(M.Sch.)

11. Re-organization of the magazines

From March 24th to April 10th 2014 the cleaning and organizing of the storage magazines took place.

The first goal was to make a complete inventory of all the stone boxes in Annex 3, which was successfully completed. The second goal was to prepare the transport of the various objects to the New Magazine in Aswan. All wooden boxes with seals (65) and ostraca (13 boxes) were transferred from Annex 5 to Annex 3 and most of them have now been packed into metal boxes with SCA-Box Numbers. All the wooden boxes with various kinds of stones were organized and repacked in order to relocate all the finds from the floor to the metal shelves. It is planned that in autumn 2014, the metal boxes will be transferred to the new MSA-magazine in Aswan next to the Taftish.

(T.P., M.-K.Sch.)

12. Conservation works

The conservation work carried out during the last season on Elephantine focused on two main subjects: the reconstruction of the Osiris Nesmeti temple (Temple Y)²⁷ and the restoration of two obelisks from the balustrade of the Khnum temple terrace²⁸.

Due to their collapse from the rebuilt balustrade several years ago, the two obelisks

²⁷ C. Ubertini, *Restitution Architecturale du „Temple Y“*, in: Dreyer et al., *Stadt und Tempel von Elephantine*. 31./32. Grabungsbericht, MDAIK 61, 2005, p. 64-75.

²⁸ See H. Jaritz, *Elephantine III. Die Terrassen vor den Tempeln des Chnum und der Satet*, AVDAIK 32, 1980, p. fig. 4; H. Jaritz, *Wiedererrichtung der südlichen Brüstung der Chnumtempel-Terrasse und*

were seriously damaged and showed several cracks and losses. Traces of earlier restoration work were removed in order to gain a homogeneous aspect of the surface. The surface was cleaned by applications of humid clay poultices to remove dirt, birds' excretions and salt concretions. In ancient breaks, the powdering of the sandstone's surface due to the cements was locally treated with an ethyl silicate (Syton® W30). Fragments bounding was made with dots of epoxy resin and the main fragments were doweled - given the relative thinness of the obelisks, doweling was made with fiberglass dowels to prevent thermal expansion of the metal in the stone causing cracks. The losses and missing parts were restituted with mortar made of lime and stone powder.



Fig. 14: Conservation works on site

All blocks belonging to the Temple of Osiris Nesmeti ("Temple Y") are currently gathered in two open-air storage areas: to the west of the pyramid (Fig. 14) and to the south of the ancient town next to the site of temple reconstruction started in 2011. All blocks are in a stable condition, no evolving degradation such as severe cracks, disaggregations of the sandstone, or flaking of the scarce remaining traces of paint were observed. Due to their secondary use most of the blocks are fragmented. Minor concretions of salts and dirt are visible on the surface but have not caused damage to the stone material. Thus, any

des Mandulis Tores von Ajuala, in: W. Kaiser et al., Stadt und Tempel von Elephantine. 19./20. Grabungsbericht, MDAIK 49, 1993, p. 181, pl. 36b.

treatments were limited to the bounding of fragmented blocks and superficial cleaning. Fragmented blocks have been assembled with spots of epoxy resin (Araldite® 2015) and the heavier and larger ones were dowelled with stainless steel. Missing parts were filled with a primary lime mortar that will be completed after the anastylosis by a colored superficial mortar.

Tests were also conducted to determine cleaning methods that will be implemented when the blocks are put back together on the temple. Additionally, fragments of capitals and cornices have been sorted out and some of them could be assembled.

(J.F.)

13. A virtual model of Elephantine

The aim of a new project is to create a virtual, three-dimensional model of the ancient city of Elephantine in its topographical setting and in its development over time²⁹. The model integrates information gathered in the past four decades on the evolution of the town, its buildings and its topographical situation. At the same time, the model is intended as a working tool for current and future work at the site. Thus the model allows researchers to test theories on the original appearance of buildings and their relationship to each other. It also offers new possibilities in gauging the visual impression of spaces in their original appearance and check the visibility of elements and images depicted on them from specific angles and across distances. In addition, the model allows the user to reproduce seasonal changes in the water level of the Nile and its effect on the appearance of the island and the visibility of its buildings.

Work in the field was concentrated this season on the documentation of natural rock formations along the eastern shore of the island which have always given the island its characteristic outer appearance. The shape of the rocks was documented using simple photo scanning techniques that have only recently become available³⁰. In addition, inscriptions and images depicted on the rocks were integrated into the virtual model by projecting two-dimensional records of these images onto the three-dimensional model of the rocks (Fig. 15).

The intention of the project is to create a model of the town of Elephantine during all phases of its long history. As a first step, the efforts have been focused on the modelling of two significant stages in the evolution of the city, the early Old Kingdom, at the time the step

²⁹ The project was made possible by special funds allocated by the president of the institute, Friederike Fless.

³⁰ For the documentation the program PhotoScan was used. The model itself is constructed using AutoCAD, the reconstruction of buildings using SketchUp. The rendering of the model was done using Cinema4D and PhotoShop. The project was carried out by Ph. Jansen, St. Amann and A. Hohenadel.

pyramid was built, and the New Kingdom, at the time the temple complexes of Khnum and Satet were completed. The model gives for the first time an impression of spaces that cannot be visualized at the site today, such as the space between the old city in the east and the pyramid in the west, and the topographical situation of the landing stage of the New Kingdom at the northern of the town. Particularly striking in the images gained from the model are the differences in the appearance of these spaces depending on the level of the Nile water (Fig. 16 and 17).

Captions

Fig. 1: Houses 73 and 166

Fig. 2: Installation Ø468

Fig. 3: Carnelian flakes from house 166

Fig. 4: Remains of house 168, to the right the pyramid

Fig. 5: Section through stratigraphy above the northern end of the town wall of the Middle Kingdom (Area XIX)

Fig. 6: Area XXXII. Layers of Dynasty 25 above remains of the town wall of Dynasty 20/21

Fig. 7: A newly discovered relief showing the king holding the sacred staff of Khnum

Fig. 8: Block from a gate showing Thutmosis II adoring Anuket

Fig. 9: New Kingdom granaries beneath a building of the 25th Dynasty

Fig. 10: Early Roman pottery kiln beneath furnace installation of a second phase of industrial activities in the temple precinct

Fig. 11: Remains of a Ptolemaic-Roman building complex south of the Khnum temple

Fig. 12: Examples of reassembled fragments of statues

Fig. 13: Glazed pottery of the Islamic Period from Elephantine

Fig. 14: Conservation works on site

Fig. 15: Projections of rock inscriptions on a three-dimensional model of the rocks (Ph. Jansen, DAI)

Fig. 16: Elephantine at the beginning of the Old Kingdom, seen from the north with a low water table (Ph. Jansen, DAI)

Fig. 17: Elephantine at the beginning of the Old Kingdom, seen from the north with a particularly high water table (Ph. Jansen, DAI)