Report on the Excavations at Elephantine
by the German Archaeological Institute and the Swiss Institute
from autumn 2015 to summer 2016

by Stephan Johannes Seidlmayer, Felix Arnold, Roxane Bicker, Richard Colman, Dagmar Fritzsch, Clara Jeuthe, Ewa Laskowska Krusztal, Peter Kopp, Martina Renzi, Joshua Aaron Roberson, Johanna Sigl, Cornelius von Pilgrim, Leslie Anne Warden

1. Introduction

The investigation of the ancient town and temples of Elephantine carried out by the German Archaeological Institute Cairo (DAI) in cooperation with the Swiss Institute for Egyptian Building Archaeology (Swiss Institute) since 1969 was continued from October 13th, 2015 to May 31st, 2016[1].

In the settlement the DAI continued its archaeometric project “Realities of Life” in the ancient north-western town (section 2). Between autumn 2015 and summer 2016, two seasons of excavation and one study season dedicated to the finds were conducted. The Swiss Institute resumed the excavation of a building to the south of the sanctuary of Heqaib in the framework of its study of the New Kingdom town of the island. In the Khnum temple area work concentrated on various aspects of the late temple, its precinct and its furnishings (section 3).

In addition, several projects were conducted aimed at the study of objects and object groups. The DAI completed the investigation of the relief blocks from the New Kingdom temple of Khnum (section 4). During the clearance of debris a stela of Senwosret III was found (section 5). The study of the decoration of the Greco-Roman temples of Elephantine was continued (section 6). The Swiss Institute continued the conservation and rebuilding of the temple of Osiris Nesmeti (section 7). In cooperation with the IFAO the DAI conducted a project on the context and objects of the early periods of the history of Elephantine through functional settlement analysis (section 8) and a project on flint objects and their functional analysis (section 9).

In addition the DAI, in cooperation with the Aswan inspectorate and the Nubian Museum, made major efforts this season to improve the relationship between the archaeologists and the inhabitants of the area of Aswan and to provide training for our local colleagues in archaeological fieldwork and public relations (section 10–11).

(S.J.S.)

1 We are grateful to the members of the Ministry for Antiquities for their continued support, in particular the Directors of Aswan Inspectorate Dr. Nasr Salama, Ahmed Saleh and Osama Abdel Latif as well as the chief inspector Shazli Abdel Azim and our inspectors Abeer Abdel Rady, Ahmed Tawfik Mustafa, Asmaa Mohamed Beshir, Azhar Mohamed Saleh, Fathia Ahmed, Fayzal Hafny, Heba Saad Harbi, Mahmoud Abdellah Abdalla, Mohamed Abdel Daim, Mohamed Abdu, Mustafa Hassan, Ranja Tag Eldeen Barsi, Rehab Sabry, Shimaa Awd Allah, Someia Mansour, and Yousra Harafalla.

2. The project “Realities of Life” – excavations in the north-western town of Elephantine

a) Aims and methodology of the project

During its now close to 50 years of excavations on Elephantine the DAI has been able to obtain a thorough overview over the history and development of the ancient town, its temples, fortifications and settlement. However, a more detailed insight into the daily life of the inhabitants of this long-term settlement is still wanting. Therefore, the DAI initiated the project “Realities of Life – A Synthesis of Archaeology and Natural Sciences (Archaeometry)” in autumn 2013. General aims and methods were set during a workshop in 2014, described in the report of the excavation of the previous year[2]. The project focuses in its principal research stage on a so far unexcavated area of the Middle Kingdom town of Elephantine in the north-western section of the ancient settlement (**Fig. 1**). Additionally to the above stated aim, its methodological framework is an update to the so far practiced archaeological fieldwork of the DAI on Elephantine Island. The same archaeological and archaeometrical methods may then be applied on other excavations of the DAI all over Egypt, of course with adjustments to the individual circumstances of each site and project. Through this the DAI hopes to enable comparison of the Aswan area to other Egyptian settlements, and vice versa, both in results[3] and in methodology[4].

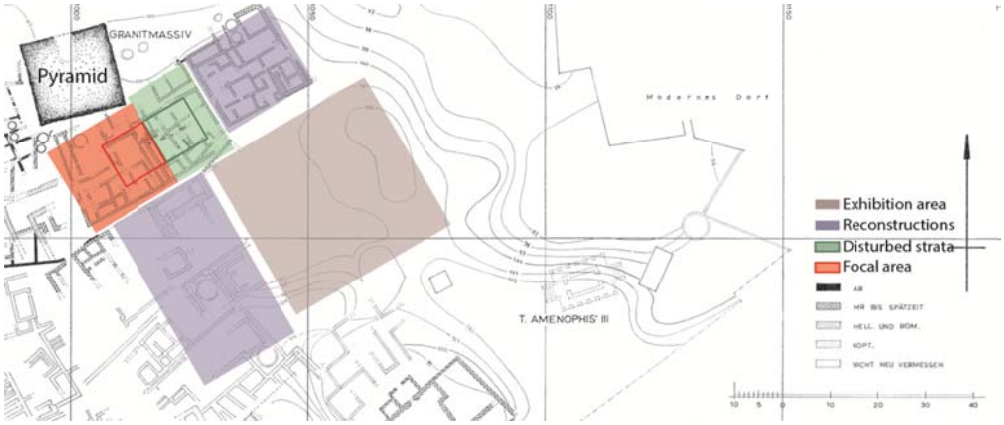

Fig. 1: Plan of Elephantine archaeological site with showing features around the focal area of the “Realities of Life”-project. Outlined in green: trench excavated from autumn 2013 until autumn 2015; outlined in red: trench worked in since spring 2016.

Within the past year not only could the methodological background of the project be further developed, but the archaeological research questions could also be sharpened and focused. These research aims hereby provide a general framework under which all scientists involved in the project work. However, individual research questions and interests are encouraged, to expand the overall results of the project as much as possible. As mentioned above, the project centers on archaeological analysis of the everyday life in the town of Elephantine during the Middle Kingdom, focusing specifically on a few houses in the north-western perimeter of the ancient city.

---

2 J. SIGL, *The Project “Realities of Life”*, in: S. J. SEIDLMAYER et al., *Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2014 to spring 2015*, Cairo 2015, p. 2–4: http://www.dainst.org/project/25953 (accessed: 05/06/2016; hereafter: SIGL 2015).

3 Here especially in comparison to planned excavations in the pyramid settlements of the Middle Kingdom at Dahshur.

4 In this aspect the historic setting is less important than the results of the used methodology in general, therefore any project may be comparable.

In the scope of the "Realities of Life"-project, daily life[5] is understood as marked by the actions of people to ensure their bodily and general well-being, as they took place within both home and town. The whole is influenced by the regional and international connections of the actors. Actions and setting can be summarized as three major foci that can be studied through material culture. These aspects are also reflected, with a certain degree of ideological, religious and individual adjustment, in contemporary tomb paintings and written documents. The three foci, and the "Realities of Life"-project's main research aims, are:

- Food and drink: Nourishments in liquid and solid form is essential for life in general. The production, preparation and acquisition of food takes up a good deal of each day's waking hours. The circulation of food and drink items themselves is embedded in a highly complex system of production and trade. Ceramic, stone vessels and tools, as well as less well-preserved leather and skin objects, baskets and similar items aided in the production and distribution of organic foodstuffs. Organic waste and the faunal commensals which come with it, flies, mice, rats, are major factors when it comes to assessment of the conditions under which people lived in ancient times, including the influences of smell, noise, dirt and other factors on daily life.

  Therefore, the "Realities of Life"-project asks: How did people feed themselves in Elephantine during the Middle Kingdom? Which activities can be determined connected to food? Which tools and vessels were used for food production and distribution? The focus lies on the whole cycle of use of organic resources (**Fig. 2**), from agricultural activities through the preparation and storage to the consumption of food. It includes as well the study of all items connected to the handling of food including trade and exchange on a local and international basis. The function of vessels and tools are especially investigated. The question will be answered not only by the archaeobotanical and archaeozoological evidence but also by the study of use-wear in weapons and tools and the analysis of residues in vessels. The use of spaces in the excavated houses will be determined through a combination of the interpretation of the archaeological record and the study of soil samples through micromorphology and on a chemical basis.
- Work: Next to the production, trade or preparation of food, other occupations mark the daily life of human beings. To state it bluntly: apart from eating, drinking and sleeping, women and men did work, including (but not limited to) the production of clothing, weapons, tools, vessels, jewellery and other luxury goods. The materials used to produce these items came from inorganic as well as organic sources. Some of these items are linked to food and drink, relating the question of work to the question of food discussed above. Both production and use of the object resulted in waste, even though recycling to a certain degree may precede the final dumping of an object (**Fig. 2–3**). Items like tools and jewellery can be used to follow trade routes that connected people and places nationally and internationally through investigations of style and raw material. While "work"- and "recreational" activities were one of the central motifs in art and can be followed by textual evidence, the location of production and an object's use within a household, town or rural hinterland are less well known[6]. The placement and dimension of their production and use in terms of space, noise, dirt emission and other factors again had a direct influence on the living

5 The study of daily life is positioned in the archaeological research under the subfield of "Household Archaeology". See a summary of recent research and background as well as the papers of a workshop on that topic from 2013: M. MÜLLER, *Introduction: Household Studies in Complex Societies*, in: M. MÜLLER, *Household Studies in Complex Societies* (*Oriental Institute Seminars* 10), Chicago 2015, xiii-xlii: https://oi.uchicago.edu/sites/oi.uchicago.edu/files/uploads/shared/docs/ois10.pdf (accessed: 08/01/2016).

6 Many scholars have developed different concepts for the study of social, economic and symbolic aspects of settlements and showed how spaces were created and used. Two of the most recent works dealing with Egyptian architecture are: A. KOLTSIDA, *Social aspects of Ancient Egyptian domestic architecture*, *BAR Inter. Ser.* 1608, Oxford 2007; K. SPENCE, *Ancient Egyptian Houses and Households: Architecture, Artifacts, Conceptualisation, and Interpretation*, in: M. MÜLLER (ed.), *Household Studies in Complex Societies. (Micro) Archaeological and Textual Approaches*, *OIS* 10, Chicago 2015, pp. 83–99.

environment of people, and may be used to further assess daily life and living conditions in ancient Egypt.

In summary at this point the "Realities of Life"-project asks: What did people do apart from eat, drink and sleep? Where did these activities take place? Which role did they play in the household? What can they tell us about the connections of the inhabitants of a house or town? Especially for the determination of the provenience of raw materials and objects, next to established macroscopic study methods, microscope- and chemical analyses on various materials, at the foremost pottery and metals, will play an essential role in the project. Production techniques may be studied through microscopic analysis as well as anticipated through experimental archaeology.

- Living environment: The last question of the "Realities of Life"-project is about the stage on which the above mentioned activities take place. This stage is the architectural surrounding of each human being: the house, the rooms in it and the street and town around it. How did people in the Middle Kingdom town of Elephantine use this space for work, activities connected to food and sleep and recreation? How was the architecture made to fit certain purposes? How did the activities connected to food, drink and work, influence the quality of life through noise, light, heat, smell and waste emission during production and preparation? These considerations are investigated through the established methods of building architectural studies, the application of analytical methods like micromorphology and the study of the deposition of waste around the whole Pharaonic city of Elephantine, but also by the use of theoretical models on ground plans concerning the spread of odours or the measure as to how much of the interior of a house was visible from the street or doorways[7]. The comparison of the archaeological record of the excavated area of Elephantine to contemporary paintings, texts and other archaeological excavations from all over Egypt may lead to the formulation of interpretations with supra-regional importance. Ethnoarchaeological and ethnological studies on recent communities can be used as further comparison material to suggest measures people in ancient times took to reduce or control disturbance[8].

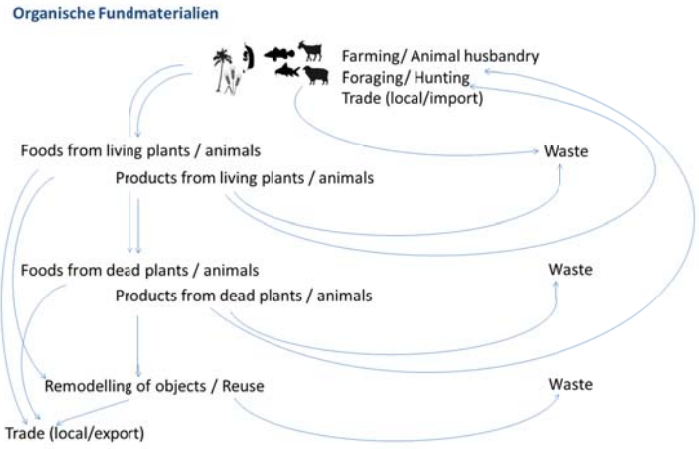

Fig. 2: "Life"-cycle of organic materials before becoming archaeological finds (diagram: J. Sigl, DAI).

7 See to the application of such theories e.g.: D. SANDERS, *Behavioral Conventions and Archaeology: Methods for the Analysis of Ancient Architecture*, in: S. KENT (ed.), *Domestic Architecture and the Use of Space*, Cambridge 1990, pp. 43–72; P. KOPP, *Realities of Life (Lebenswirklichkeiten) - Excavation work during the 43rd (2013/2014) and 44th (2014/2015) excavation seasons*, in: S. J. SEIDLMAYER et al., *Stadt und Tempel von Elephantine. 42./43./44. Grabungskampagne* (MDAIK), in preparation.

8 The current architectural and ethno(archaeo)logical study of the vacated villages on Biggeh Island near Aswan, undertaken by the DAI in cooperation with the TU Berlin with the same aims as the project "Realities of Life", may be used as the most direct comparison and interpretation material in this aspect.

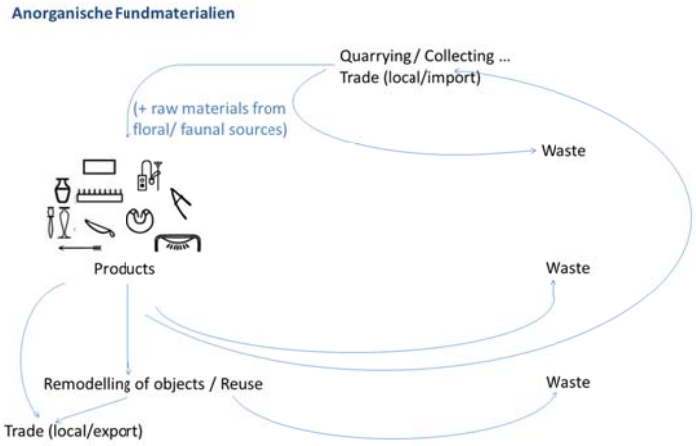

Fig. 3: "Life"-cycle of inorganic materials before becoming archaeological finds (diagram: J. Sigl, DAI).

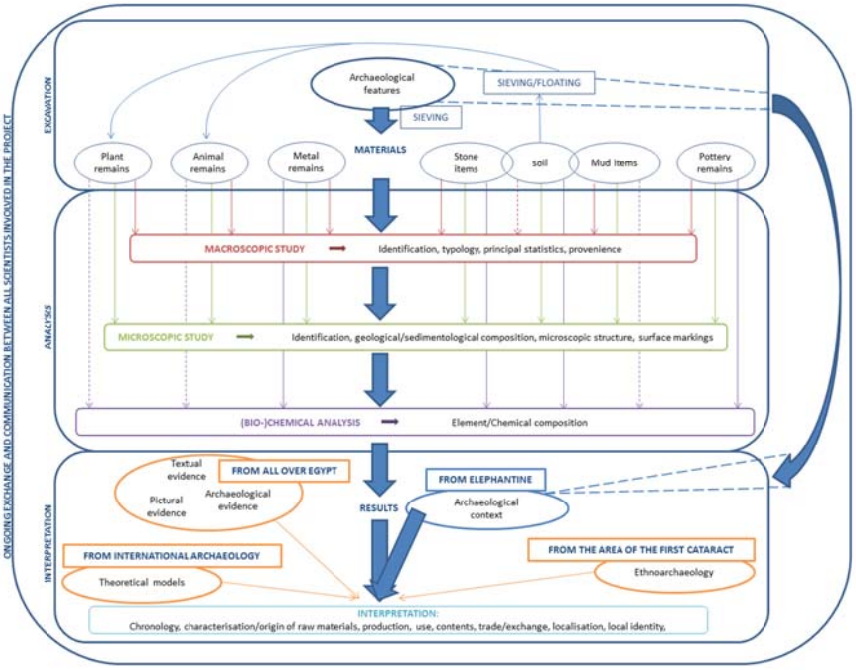

Fig. 4: Research strategy and basic method of the project "Realities of Life" (diagram: J. SIGL, DAI).

The rules for the excavation and primary find processing were already described in last-year's report in this journal[9]. Since then and thanks to the presence of specialists for various groups of materials[10] on the excavation and in the magazine rooms, several adjustments could be made in the past year (see descriptions of methods in passages c–g). Furthermore, co-operations with various research institutions in Egypt[11] were initiated to support the analytical methods, which are used in the project on

9 SIGL 2015, 2–4.

10 Present in the field in this season were: J. SIGL (project director), P. KOPP (field director), R. COLMAN (archaeologist), D. FRITZSCH (micromorphologist), C. J. MALLESON (botanist), M. RENZI (metallurgist), J. A. ROBERSON (specialist for seals and seal impressions), M.-K. SCHRÖDER (ceramicist – Nubian pottery), L. A. WARDEN (ceramicist – pharaonic pottery); student members of the team were: F. ABDELHAY, N. BROWN, K. GOLDMANN, H. KAMAL, M. LOONEY. Concerning details methodological details for soil, pottery, metal, animal bones and botany remains see contributions c, d, f, g, h.

11 Main cooperation will exist between the DAI and the Faculty of Science of Aswan University and the Nubian Museum in Aswan as well as with the French Institute for Oriental Archaeology (IFAO) in Cairo.

the basis of laboratory equipment. The ongoing exchange between scholars from various disciplines participating in the project will be essential for the final formulation of results (**Fig. 4**).

(J.S.)

b) Excavations in the Middle Kingdom settlement of Elephantine

In autumn 2015 and spring 2016 the German Archaeological Institute continued in the frame of the "Realities of Life" project, excavating in the area southeast of the Old Kingdom pyramid. Within the last two years, three building layers of the 12th Dynasty to the early 13th Dynasty were studied here in a trench of 10 x 10 m. During the current season, features of the 11th Dynasty and the Old Kingdom were excavated.

The oldest houses in this area were parts of three buildings dating to the 11th Dynasty (H170–H172, **Figs. 5 and 6**). These detached buildings stood approximately one metre apart. The ground level of the excavated area slopes from the northwest to the southeast, following the former shape of the island and of older structures. Due to this topography, several walls of houses also played the role of retaining walls used to achieve horizontal floor levels. The floor of house 171, for instance, was nearly one metre higher than the oldest floor in the neighbouring house 170.

Most of the walls were preserved to a height of only a few courses of mud bricks. An exception was house 170 with a working platform in the corner (instl 483/486). Here the walls were still more than 1.5 m high. The outer corner of this house was protected by a wooden post with a square section of 11.5 x 12.0 cm[12]. An L-shaped platform in the inner corner was on one side approx. 3 m long and 1 m wide, while the other side was only partially preserved. Most probably it was not a quern emplacement for a saddle quern, like the ones commonly found in the houses of the Middle Kingdom, since these consisted of a square frame of four walls filled with soil[13]. In contrast, the platform in house 170 was a massive brickwork structure, which lacked a smaller compartment in the front, a feature found in most of the quern emplacements.

Fig. 5: Buildings of the 11th Dynasty (Foto: P. KOPP, DAI).

12 This feature was also found in other houses, e.g. houses 11 and 18. C. VON PILGRIM, *Elephantine* XVIII: *Untersuchungen zur Stadt des Mittleren Reiches und der Zweiten Zwischenzeit*, *AV* 91, Mainz 1996, pls. 8a and 8b (hereafter VON PILGRIM 1996).

13 See VON PILGRIM 1996, p. 213.

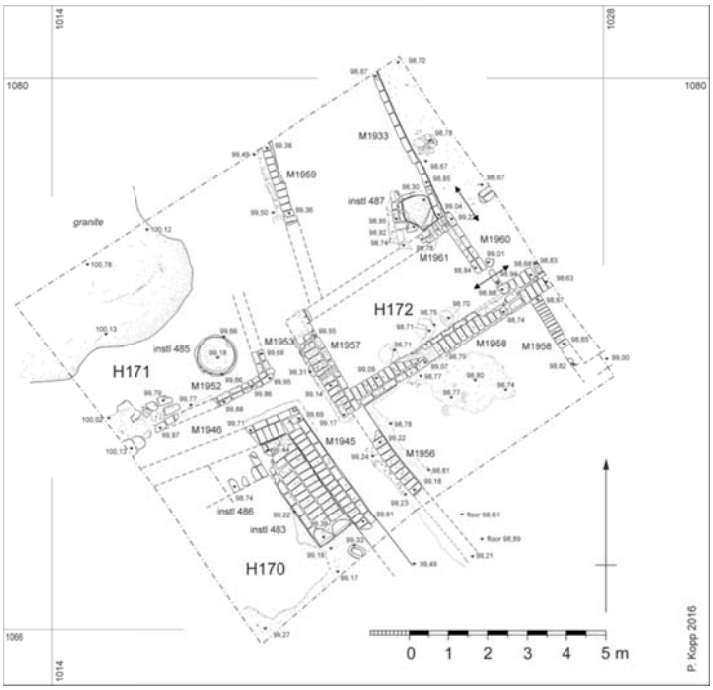

Fig. 6: Houses 170, 171 and 172 of the 11th Dynasty.

Another feature was an underground installation in the corner of walls M1933 and M1961. Originally it might have been a kind of storage device like the circular cellar (instl 485) in house 171.

Below these houses was an industrial area of the late Old Kingdom. The area was levelled by retaining walls and debris fills to get a horizontal working place. Several layers of ashes and charcoal were excavated (**Fig. 7**), suggesting that whatever activity took place in the area required heat. Remains of goat faeces showed that they were used as fuel. In between these layers were hard loam horizons with characteristic small holes of about 7 cm in diameter and some centimetres in depth. In these layers, four wooden pegs were also found still standing in the ground. These working horizons were the oldest settlement layers in the area; therefore the excavations of the “Realities of Life” project were completed here in the autumn of 2015.

Fig. 7: Working horizons with ash layers in the profile (Foto: P. KOPP, DAI).

In spring 2016 a new trench of 10 x 10 m was opened southwest of the first one (**Figs. 5–6**). The first investigations of this area were carried out by a German mission of the Berlin Museums at the beginning of the 20th century, and another research project took place around 1990 by the German Archaeological Institute[14]. The two trenches were separated by a slot of approximately 1 m, an area that was excavated by French archaeologists at the beginning of the 20th century[15].

At the start of the current investigations, this area was preserved significantly higher than the features in the first trench, therefore yielding younger features. One of these was a granary of the New Kingdom (instl 64, **Fig. 8**), a circular structure of about 3.1 m in diameter. The lower part was embedded into the ground for at least 70 cm, and the granary was divided by a central wall into two compartments.

Fig. 8: Granary of the New Kingdom (instl 64; Foto: P. KOPP, DAI)

In contrast to the few loci of the New Kingdom, the remains of the 17th Dynasty were preserved on a much larger area (**Fig. 9**). The walls of two houses (H56 and H57) still had a height of up to 1 m. House 57 in the west was L-shaped and had two small streets to its southwestern and south-eastern side. The house had access to both of the streets by means of doors with stone thresholds. It is not possible to say whether these doors were contemporary in use or one was used after the other, since the floor levels that could provide this information were not preserved. The house had in the first phase seven rooms. Only three of these rooms contained parts of the original flooring, with up to two renovation layers preserved.

14 W. HONROTH/O. RUBENSOHN/F. ZUCKER, 1910, *Bericht über die Ausgrabungen auf Elephantine in den Jahren 1906–1908*, *ZÄS* 45–46, pp. 162–209 ; VON PILGRIM 1996, figs. 108–110.

15 C. VON PILGRIM, *Anmerkungen zu den französischen Grabungen von 1906–1911 im Kontext neuerer Forschungen in Elephantine*, É. DELANGE, *Les fouilles françaises d'Èléphantine (Assouan) 1906–1911*, Paris 2012, p. 280.

Fig. 9: Building of the 17th Dynasty (H57; Foto: P. KOPP, DAI).

Evidently, the house was built with a certain measure of architectural planning, as most of the walls appear to be constructed along a grid (**Fig. 10**). The sides of the single squares of this grid had a length of 5 *nbj*-cubits, equal to 3.25 m[16]. The walls were not built on the centre of the grid lines but stand next to them[17]. Starting at the eastern door, a wall of 20 *nbj*-cubits (M770) was built at the southern street. At its southwestern end, a wall of 15 *nbj*-cubits (M547) began along the western alley. The other walls follow this scheme, but mostly on a shorter distance of 5 or 10 *nbj*-cubits. The entrance room at the door to the west is only half a unit wide, and measured 2.5 *nbj*-cubits. Wall M526 is possibly the latest addition to the house, as it is the only one that does not follow the grid system at all.

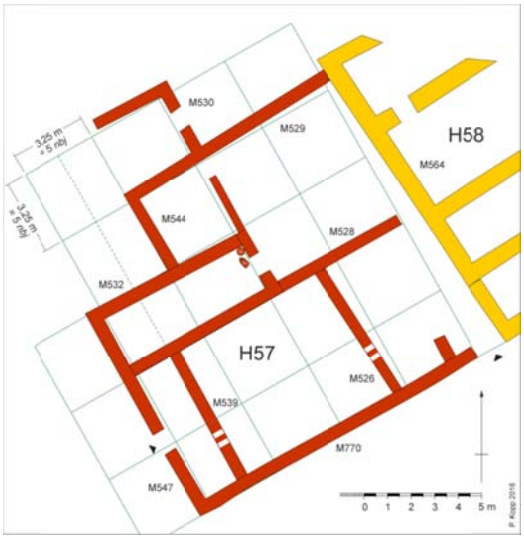

Fig. 10: Grid of house 57 (phase 1)

(P.K.)

16 E. ROIK, *Unter der Lupe: die Handhabung antiker Längenmaße*, *GM* 172, pp. 73–94.
17 Compare P. KOPP, *Frühzeitliche Bebauung nördlich von Sechmawy*, in: U. HARTUNG, *Tell el-Fara'in – Buto. 8. Vorbericht*, in: *MDAIK* 59, 2003, p. 208.

c) Micromorphology – Method, Aims and Sampling Strategy

Micromorphology is a method of analyzing undisturbed, oriented sediment samples with the aid of a petrographic microscope. Therefore thin sections with a size of 90 x 60 mm have to be prepared. To analyze them in transmitted light they need to be nearly transparent – they have to have a thickness of 25 – 30 µm. For this kind of preparation a thin section laboratory is needed.

In the archaeological field the methodology was first used to investigate floors, ashes and hearth by I.W. CORNWALL[18] (1953). But up to 1989 there was only little work on archaeological sediments. Then M.A. COURTY/P. GOLDBERG/R. MACPHAIL[19] published "Soils and micromorphology in archaeology", which is still a basic work used for the interpretation of samples based on an archaeological context. The most recent work is a compendium of examples concerning the interpretation of soils and sediments published by G. STOOPS/V. MARCELINO/F. MEES[20].

Anthropogenic influenced sediments and occupation layers contain much information of daily life of ancient peoples. For the project "Realities of Life" on Elephantine island micromorphological analysis is an excellent chance to get as much information as possible out of the dirt of buried layers within the settlement. It will be possible to identify different treated bone fragments: e.g. burned, heated or fresh. Charcoal fragments, plant ash, plant fragments like organ residues and tissues can be detected. Phytoliths, excrements, foreign rock fragments (e.g. from grindstones) and heated material such as slags and vitrified phytoliths can be characterized. As listed not only the different components but also the alteration of the components can be discovered.

On top of the various constituents the mutual relation of different particles to each other can be studied and interpreted. Particles are visible in their sedimentation position. Either they are deposited *in situ* or they are translocated. Furthermore different microstructures tell us about trampling processes by humans and/or animals, as well as the influence of water while deposition can be discovered. Post depositional processes such as bioturbation can be recognized and distinguished from ancient activity features.

The combination of characteristics and distinctive features ideally bear a lot of information of the daily life within space and time.

For the aim of identifying changes and continuities in daily life in the settlement of Elephantine first diachronic and synchronic micromorphological samples were taken in 2013. A trench of 10 by 10 m was opened during the last seasons to give a better understanding of the development of the settlement. In February 2016 the sampling of micromorphological samples and bulk samples continued in area VI southeast of the pyramid. 55 sediment monolith (M21 to M75) and 152 bulk samples (MB20_1 to MB75_4) were taken during 4 weeks. The sediment monoliths for the micromorphological analysis were sampled in aluminum shins or boxes sized 50 mm to 80 mm (e.g. **Fig. 11**). From every layer (**Fig. 12**) located in these micromorphological samples subsamples (bulk samples) were taken for smear slides. Smear slides are easy to prepare and give a first view into the contents of the sediments. The smear slides could be looked at under a petrographic microscope in the field laboratory in the magazine of Elephantine immediately[21].

18 I.W. CORNWELL, *Soil science and archaeology with illustrations from some British Bronze Age monuments*. Proc. Prehist. Soc. 19, 1953, 129-147.

19 M.A. COURTY/P. GOLDBERG/R. MACPHAIL, *Soils and Micromorphology in Archaeology*, Cambridge 1989.

20 G. STOOPS/V. MARCELINO/F. MEES (Edt.), *Interpretation of Micromorphological Features of Soils and Regoliths*, Elsevier 2010.

21 Many thanks to Prof. ABDEL AZIZ TANTAWY and Dr. HASSAN KHOZYEM, Geology Department, Faculty of Sciences, Aswan University


Fig. 11: Sampling of M44 – M47; **Fig. 12**: Sample with laminated sediments (Fotos: D. FRITZSCH, Uni Frankfurt).

The smear slides showed typical contents such as mineral grains, charcoal fragments, organic material and phytoliths. Phytoliths in these samples could be described in different states of preservation what can be based on heat influence or digestion for example. The micromorphological samples will show the same contents. Additionally you can see all contents in their original context.

(D.F.)

d) Studies on Middle Kingdom Pottery

A large part of the May 2016 study season focused on analysis of select ceramic finds recovered during the 43rd, 44th, and 45th campaigns. During each excavation season, P. KOPP had processed the pottery in order to arrive at preliminary dates ('primary processing'). A secondary processing system was established this season, creating a robust recording system enabling data-rich ceramic analysis. Each locus contains ceramics of multiple dates, as the loci are rarely closed contexts; ceramics from each locus were studied as an assemblage.

Over 40 loci were investigated this season as a test sample of the methodology. These loci were specifically selected as they represent the vertical, diachronic change found within our excavation area, dating from the late Middle Kingdom through the First Intermediate Period. Recording encompasses ceramic material from the entire locus rather than separating material by period, preservation, or simply handling diagnostics. The majority of ceramic processing focused on late- to mid-Middle Kingdom contexts, though as all contexts are mixed some First Intermediate period material was also included. In order to better assess ceramic forms, we also selected loci from the cellar in house 73 (instl Ø471), excavated during the 44th campaign, for analysis (**Fig. 13**)[22]. These loci contained larger, better preserved sherds than found in other parts of our excavations, thus enabling the typology to be expanded with more detail. However, it should be stressed that the typology includes not only the most complete or best preserved vessels, but is also supplemented with sherd material.

22 P. KOPP, *Excavations in the Northern Town*, in: St. SEIDLMAYER et al., *Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2014 to spring 2015*, Cairo 2015, p. 6: http://www.dainst.org/project/25953 (accessed: 05/06/2016).

Fig. 13: Select ceramics from cellar instl Ø471 (photo: P. KOPP, DAI).

During secondary processing, body sherds were coarsely sorted into fabric and ware groups, then counted and recorded in a data sheet. Diagnostics were grouped by type and recorded (number of sherds, diameters, and, when possible, broad fabric attribution); strong examples of a given form were drawn by N. BROWN and M.-K. SCHRÖDER. Inspectors M. KAMAL and G. ABDEEN SIAM HASSAN were trained in drawing and ceramic recording during this season and also contributed to the drawn corpus. The data collected from the secondary processing were first recorded in forms, which were then input into a Filemaker database created by P. KOPP.

In tandem with this work, the ceramic fabrics found at Elephantine in the third and second millennia BC were codified into a typology, work on which was begun during the 44th campaign.[23] This system allows for identification of regionally specific clays, inclusions, and treatments. Other fabric typologies have been used on the island;[24] however, these typologies were not well enough documented to be applied by a new ceramicist to current materials. Happily, independent analysis of the fabrics using a x10 hand lens appears to have substantiated many of the divisions briefly noted by D. RAUE; hence, the new system includes correlations to D. RAUE'S typology where possible to allow for linkage to older Elephantine materials. Rough correlations to the Vienna system were also made in order to allow for comparison to ceramics from other Egyptian sites. Reference chippings were taken, organized by fabric type, context, and in some cases drawing numbers; these chips have been stored in the Elephantine magazines order to allow for easy cross-reference and comparison, as well as and refreshers of fabrics in future seasons.

Future aims include petrographic analysis at the pottery, by J. GAIT; we hope that by carrying out petrography fairly early in the documentation process it will be possible to use the thin section results to further enrich and refine our macroscopic fabric typology. Body sherds and diagnostics representative of all fabric groups were selected from two specific contexts that went through secondary processing this season; the sample was further extended through targeted collection of potentially interesting sherds from other loci. These sherds are currently stored in the Elephantine magazine awaiting future analysis.

---

23 E. KHALIFA/L. A. WARDEN, *Studies on Middle Kingdom Pottery,* in: S. SEIDLMAYER et al., *Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2014 to spring 2015.* http://www.dainst.org/project/25953 (accessed: 05/06/2016).

24 These systems tended to be both period-specific and scholar-specific, due to the division of study of Elephantine ceramic material. See D. RAUE, *Zu den Keramikfunden der frühdynastischen Zeit und des Alten Reichs,* in: P. KOPP (ed.), *Funde und Befunde aus der Umgebung des Satettempels. Grabungen von 2006-2009*, Mainz (in print), pp. 241-243 (hereafter: P. KOPP (in print)); T. RZEUSKA, *Elephantine – A Place of an End and a Beginning,* in: R. SCHIESTL/A. SEILER (eds.), *Handbook of the Pottery of the Egyptian Middle Kingdom*, Vienna 2012, pp. 331-334.

Though the goals of this season were fundamental issues of ceramic processing, implementation of a data-rich processing and recording system will allow ceramic analysis to investigate questions above the basic issue of date or typology, including questions of diachronic change in ceramic manufacture and change in domestic and regional economies over time.

(L.A.W.)

e) The seals and seal impressions from the north-western town area of the Middle Kingdom

Excavations during the 2013–2015 digging seasons at the North-Western town of Elephantine, near the Old Kingdom pyramid, have produced three seals and 145 mud sealings. Iconographic and textual analyses have been employed, wherever possible, to establish a chronological framework for these objects. As a whole, the corpus falls overwhelmingly within the spectrum of the First Intermediate Period and Middle Kingdom[25]. In addition to analysis of the seal impressions themselves, back types for all mud sealings have also been recorded, in order to establish the kinds and relative quantities of objects to which the the sealings were affixed originally, prior to being unsealed on site.

Stamp/button and scarab(oid) seals

Two square, stamp/button seals and one partial scaraboid seal have been uncovered, each of which was decorated with simple linear designs. The general class of inscribed stamp/button seals ("design amulets," in WARD's terminology) emerged over the course of the later Old Kingdom and First Intermediate Period[26]. The pyramid-backed object illustrated at **Fig. 14**, left, belongs the earlier phase of this tradition[27]. The shank-back, true button-seal, illustrated at **Fig. 14**, right, belongs to its later phase[28]. The scaraboid seal, at **Fig. 15**, belongs probably to the early-mid First Intermediate Period[29].

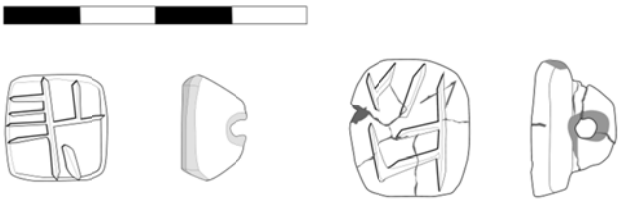

Fig. 14: Stamp/button-seals (1:1 cm; drawing: J. ROBERSON, Uni Memphis).

25 The chronological range is well represented and consistent with the broader seal impression corpus on Elephantine, for which see C. VON PILGRIM, *Elephantine XVIII: Untersuchungen in der Stadt des Mittleren Reiches und der Zweiten Zwischenzeit*, Archäologische Veröffentlichungen Deutsches Archäologisches Institut Abteilung Kairo 91, Mainz 1996, 252–253, and *passim* (hereafter C. VON PILGRIM, *Elephantine XVIII*). Note that clearance of un-stratified *sebakh* digging areas near the North Western town site has revealed also a number additional impressions, dated on the basis of iconography to the New Kingdom and/or Late Period, which do not relate contextually to the North-Western town site; these objects will be published at at a later date.

26 W.A. WARD, "The Origin of Egyptian Design-Amulets ('Button Seals')," *JEA* 56, 1970, p. 78 (hereafter W. WARD, "Design-Amulets"); L. PANTALACCI, "Sceaux et empreintes de sceaux comme critères de datation: les enseignements des fouilles de Balat," in L. PANTALACCI and C. BERGER-EL-NAGGAR, eds., *Des Néferkare aux Montouhotep: travaux archéologiques en cours sur la fin de la VIe dynastie et la première période intermédiaire; actes du colloque CNRS-Université Lumière-Lyon 2, tenu le 5–7 juillet 2001*, Lyon and Paris 2005, pp. 229–235 (hereafter L. PANTALACCI, "Sceaux et administration"); and see generally A. WIESE, *Die Anfänge der ägyptischen Stempelsiegel-Amulette: eine typologische und religionsgeschichtliche Untersuchung zu den "Knopfsiegeln" und verwandten Objekten der 6. bis frühen 12. Dynastie*, OBO Series Archaeologica 12, Freiburg and Göttingen 1996.

27 Object nr. 44-5-01Q/h-8. See W. WARD, "Design-Amulets," pp. 77–80, and fig. 7;

28 Object nr. 44-5-01Q/z-14. See W. WARD, "Design-Amulets," 77–80.

29 Object nr. 44-5-01Q/k-18. Note that the scarab-shaped base has been sheared from its top, leaving no trace of back or side morphology that might shed additional light on the object's full, original form. For the design preserved on the base, see W.A. WARD, *Studies on Scarab Seals Volume One. Pre-12th Dynasty Scarab Amulets*, Warminster 1978, 47, Class 1A (hereafter W. WARD, *Scarab Seals One*). The present scarab design is unique but cf. a similar, simplified designs at *ibid*., pl. 2,44–45.

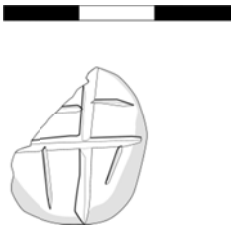

Fig. 15: Scaraboid seal, preserved base (1:1 cm; drawing: J. ROBERSON, Uni Memphis).

Mud sealings and seal-impressions

The corpus of 145 mud sealings include 102 scaraboid seal impressions (70%); three shield-stamp impressions (2%); eight round, button-stamp impressions (6%); three cylinder-seal impressions (2%); one irregular, pomegranate-shaped seal impression (1%); three unclear impression types (2%); ten linear designs incised with a reed or stick (7%); and fifteen pieces of sealing mud, on which no impression has been preserved (10%). Most of the sealings excavated thus far include only a single seal impression. However, seventeen sealings (12%) included two or more impressions, always from the same seal. No counter-sealed objects, i.e. stamped with multiple impressions from different seals, have been excavated thus far. The three cylinder-seal impressions—all too fragmentary to permit reconstruction of their texts or iconography—might date from the Old Kingdom or later[30]. The remainder of the excavated seal impressions may be assigned broadly to the First Intermediate Period and Middle Kingdom (see "Decorative and amuletic seal impressions" and "Non-amuletic text impressions," below).

Seal impression back-types

The most frequently occurring back type was of the peg/dowel variety (50 exemplars, 34%). The high incidence of impressions affixed originally to pegs or dowels is consistent generally with a Middle Kingdom date, reflecting the ubiquity of sealed wooden boxes and doors as artifacts of the administration during that period[31]. The remaining diagnostic back types included fabric (17 exemplars, 12%), jar-stoppers (4 exemplars, 3%), and papyrus (3 exemplars, 2%), some representative examples which appear at Fig. 3, below[32]. The remaining impressions consisted of non-diagnostic wood (22 exemplars, 15%) and/or cord (19 exemplars, 13%), many of which probably represent fragmentary peg/dowel sealings, as well as unclear types (30 exemplars, 21%)[33]. In at least one case, a seal impression affixed originally to a fabric bag was tied with cord after having been

30 Object nrs. 44-5-01S/s-8 (back type: jar stopper); 44-5-01S/y-11 (back type: jar stopper); 44-5-01Q/a-9 (back type: fabric). For the heirloom use of cylinder seals, particularly those which include royal names, generations after their original manufacture, see L. PANTALACCI, "L'administration royale et l'administration locale au gouvernorat de Balat d'après les empreintes de sceaux," in B. GRATIEN, ed., *Le sceau et l'administration dans la Vallée du Nil: Villeneuve d'Ascq, 7–8 juillet 2000*, Villeneuve-d'Ascq 2001, pp. 153–160.

31 C. VON PILGRIM, "The Practice of Sealing in the Administration of the First Intermediate Period and the Middle Kingdom," in B. GRATIEN, ed., *Le sceau et l'administration dans la Vallée du Nil: Villeneuve d'Ascq, 7-8 juillet 2000*, Villeneuve-d'Ascq 2001, p. 168, noting that peg impressions account for some 90% of the previously excavated totals at Elephantine; compare 65% at south Abydos (J. WEGNER, *The Mortuary Temple of Senwosret III at Abydos*, New Haven 2007, pp. 302–303); and 33% from the Opet precinct at Karnak (J.A. ROBERSON, "The Seal Impressions," in G. CHARLOUX ET AL., *Le parvis du temple d'Opet à Karnak: exploration archéologique* (2006–2007), Cairo 2012, pp. 141–142).

32 Object nrs., from left to right, 43-5-01C/c-18; 43-5-01C/u-11; 43-5-01E/a-13; 43-5-01D/c-9; 43-5-01D/c-8; 43-5-01B/e-15.

33 Unclear exemplars include 5 fragments (3%) showing only the impression of a leaf or plant matter on the back.

sealed (**Fig. 17**)[34], indicating clearly that administrative sealing was not always the final step in securing goods.

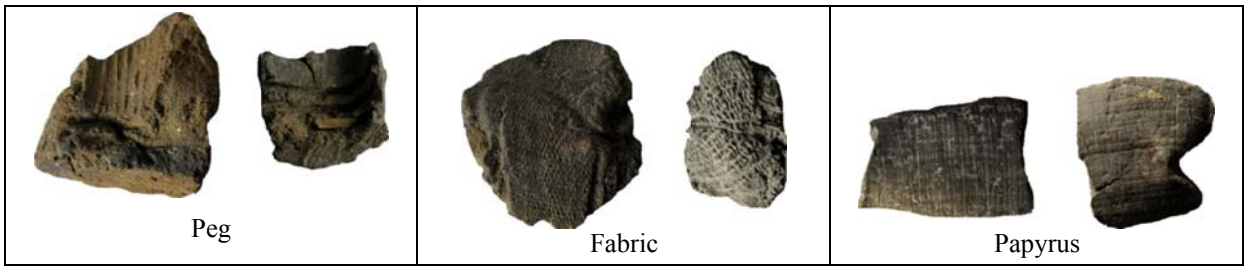

Fig. 16: Selection of diagnostic seal impression back types (1:1 cm; fotos: J. ROBERSON, Uni Memphis).

Fig. 17: Seal impression, tied after sealing (2:1 cm; foto: J. ROBERSON, Uni Memphis).

Decorative and amuletic seal impressions

So-called "decorative" and "amuletic" designs types represent the largest class of seal impression excavated at the North-Western town site (63 exemplars, 43%)[35]. Unfortunately, such design motifs do not, by themselves, constitute a particularly accurate dating criterion, although their iconography can be classified broadly as characteristic of, e.g., the First Intermediate Period and early Middle Kingdom (pre-Senwosret III), late Middle Kingdom (Senwosret III through Dynasty 13), Second Intermediate Period *et cetera*[36]. Preliminary analysis suggests that all of the decorative impressions excavated thus far belong to the former two phases, with no certain examples of Second Intermediate Period designs. Figures 5–6 include a small selection of diagnostic motifs. These include, for the earlier period, two examples of geometric patterns displaying a cross and chevron pattern[37], as well as a single

34 43-5-01-D/o-2 (back type: fabric). In the case of this unique object, the impression from the cord cuts directly through the front of the stamped seal impression itself. All other examples of cord marks occur either on the back or in the middle of the sealing mud.

35 These numbers include 44 designs featuring amuletic hieroglyphs, as well as 19 exemplars featuring various scroll motifs only.

36 D. BEN-TOR/S.J. ALLEN/ J.P. ALLEN, "Seals and Kings," *BASOR* 315, 1999, p. 69, n. 20; also see generally D. BEN-TOR, *Scarabs, Chronology, and Interconnections. Egypt and Palestine in the Second Intermediate Period*, OBO Series Archaeologica 27, Fribourg and Göttingen 2007, pp. 7–8, 10–41 (hereafter D. BEN-TOR, *Scarabs*); *idem*, "The Absolute Date of the Montet Jar Scarabs," in L.H. Lesko, ed., *Ancient Egyptian and Mediterranean Studies in Memory of William A. Ward*, Providence 1998, 1–15; O. TUFNELL, *Studies on Scarab Seals Volume Two. Scarab Seals and Their Contribution to History in the Early Second Millennium B.C.*, Warminster 1984, pp. 28–31, 115–140 (hereafter O. TUFNELL, *Scarab Seals Two*); and W. WARD, *Scarab Seals One*, 23–24.

37 Object nrs., left to right, 44-5-01S/x-10 (back type: wood); 44-5-01L/c-12 (back type: wood). See W. WARD, *Scarab Seals One*, p. 49, Class 1B, and pl. 4,100–103; also see W. WARD, "Design-Amulets," p. 73, for the cogent observation that the cross-with-chevron design parallels the orthography of the njw.t-hieroglyph, depicting the crossroads of a simple village (Gardiner O49); with additional discussion, regarding the pseudo-Hieroglyphic character and probable administrative significance of the design in L. PANTALACCI, "Sceaux et administration," p. 231, nn. 12–13.

concentric circle design[38]. Examples illustrated from the later period include one decorated oval[39], two interlocking scroll/spiral patterns[40], and a design incorporating paired *udjat*-eyes .

Fig. 18: Selection of First Intermediate Period to early Middle Kingdom seal impression design motifs (1:1 cm; drawing/fotos: J. ROBERSON, Uni Memphis).

Fig. 19: Selection of late Middle Kingdom seal impression design motifs (1:1 cm; drawing/fotos: J. ROBERSON, Uni Memphis).

Non-amuletic text impressions

Two scaraboid impressions and one shield-shaped stamp impression bearing non-amuletic text have so far come to light. One of the scaraboid impressions was too fragmentary to permit any further interpretation[41]. The two remaining exemplars, although preserved only partially, include identifiable parts of non-royal titles and/or names (**Figs. 19–20**). Their occurrence provides a useful dating criterion, insofar as the general class of private name and title seals is characteristic of the latter half of the Middle Kingdom, from the late-Twelfth Dynasty reign of Senwosret III (c. 1837–1819 BCE) through the Thirteenth Dynasty (c. 1759–1630 BCE)[42].

38 Object nr. 43-5-01c/x-7 (back type: peg). See W. WARD, *Scarab Seals One*, pp. 56–57, Class 4, and pl. 14,353,365,367; O. TUFNELL, *Scarab Seals Two*, pp. 124–125, Class 4B2, and pl. 21, with exact parallel at sequence 1937A, fourth example from the left (hereafter O. TUFNELL, *Scarab Seals Two*). For the early Middle Kingdom date of this design type, contra O. TUFNELL, see D. BEN-TOR, *Scarabs*, pp. 22–23.

39 Object nr. 43-5-01D/e-19 (back type: peg). See D. BEN-TOR, *Scarabs*, 25–26, Class 6B3, with exact parallel at *ibid*., pl. 27,4.

40 Object nrs. 43-5-01D/e-20 (back type: peg); 43-5-01D/e-18 (back type: cord). See D. BEN-TOR, *Scarabs*, 13–14, Class 2B, with exact parallels at *ibid*., pl. 3,45 an 3,64, respectively.

41 Object nr. 43-5-O1C/f-33 (back type: peg), including walking legs (?) above the Htp-sign (or a tie-less book roll?) and pr-house (determinative?), following by a quail chick and seated or speaking man.

42 W. GRAJETZKI, "Setting a State Anew: The Central Administration from the End of the Old Kingdom to the End of the Middle Kingdom," in J.C.M. GARCIA, ed., *Ancient Egyptian Administration*, Leiden and Boston 2014, p. 251; D. BEN-TOR, "Two Royal Name Scarabs of King Amenemhet II from Dashur," *MMA Journal* 39, 2004, p. 27, nn. 116 and 123; S. QUIRKE, *Titles and bureaux of Egypt 1850–1700 BC*, London 2004, pp. 8–9, (hereafter S. QUIRKE, *Titles*), noting also survival of the generic titles "king's son" and "treasurer" into the Second Intermediate Period; J. JOHNSON, "Private Name Seals of the Middle Kingdom," in M. Gibson and R.D. Biggs, *Seals and Sealing in the Ancient Near East*, Bibliotheca Mesopotamica 6, Malibu 1977, p. 141; G.T.

Fig. 20: "Mayor's sea[ler?] [...]" (1:1 cm; drawing/fotos: J. ROBERSON, Uni Memphis).

The first, legible text impression bears the stamp of a shield-shaped seal with the title, *ḫt*[*m?*] *ḥ3tj-ʿ*, "mayor's sea[ler?]"[43]. Numerous individuals bearing the title *ḥ3tj-ʿ*, "mayor," are known from excavations at Elephantine[44]. However, the subordinate office of "mayor's sealer," if interpreted here correctly, would be newly attested at the site.

Fig. 21: "Keeper of property, Ni-Ma'at" (1:1 cm; drawing/fotos: J. ROBERSON, Uni Memphis).

The second, legible text exemplar bears the impression of scarab-shaped seal with a cramped inscription, arranged into a left-facing row at the top, with two columns below, facing left and right, in confrontation[45]. The upper row reads (*j*)*r*(*j*)-*ḫ*.t *N*(*j*)-*M3ʿ.t*, "Keeper of property, Ni-Ma'at." The title "keeper of property" occurs as a title in its own right[46], as appears to be the case here, as well as in conjunction with a following substantive in either a direct or indirect genitive[47]. However, it appears unlikely that the present example exists in a genitive relationship with *ḥw.t-wr.t* group beneath it, insofar as the upper row and column on the left were oriented in opposite directions. The group following *jrj-ḫ.t*, interpreted here as a name, Ni-Ma'at, literally "He who belongs to Ma'at," appears to be unique, although names with similar patterns occur already in the Old Kingdom[48]. The right-facing column (on the left) reads *ḥw.t-wr.t*, "Great Court," [49] before breaking off. The left-facing column (on

MARTIN, *Egyptian Administrative and Private-Name Seals. Principally of the Middle Kingdom and Second Intermediate Period*, Oxford 1971, p. 3 (hereafter G. MARTIN, *Private Name Seals*).

43 Object nr. 43-5-01D/e-12 (back type: peg). For the title "mayor's sealer" on a shield-shaped stamp impression, cf. G. MARTIN, *Private Name Seals*, pl. 43,5. For the partially preserved, phonetic spelling of xt[m], also cf. *ibid*., pl. 43,6–7, 9; for the title of "sealer" generally, see W.A. WARD, *Index of Egyptian Administrative and Religious Titles of the Middle Kingdom*, Beirut 1982, p. 138, nr. 1185–1186 (hereafter W. WARD, *Index*); and S. QUIRKE, *Titles*, pp. 111–112.

44 DAI Siegeltypen 1–3, 50–51, 53–55, 115, 277.

45 Object nr. 43-5-015/c-5 (back type: cord). The orientation is noteworthy, insofar as the vast majority of name and title seal and seal impressions were oriented either entirely to the right or to the left; for a confrontational example, cf. G. MARTIN, *Private-Name Seals*, pl. 3,14 (two columns, separated by a tA-wr fetish). For hieroglyphic confrontation generally, see H.G. FISCHER, *The Orientation of Hieroglyphs Part I. Reversals*, Egyptian Studies II, New York 1977, pp. 9–13.

46 W. WARD, *Index*, p. 65, nr. 533; S. QUIRKE, *Titles*, p. 108. For phonetic spelling employed here, see also W. WARD, *Index*, p. 65, nr. 537, jrj-x.t n pr-HD, "Keeper of the Property of the Treasury."

47 W. WARD, *Index*, p. 65, nrs. 534–537; S. QUIRKE, *Titles*, pp. 51, 86–87, 107–108.

48 Cf. thus, H. RANKE, *Die Ägyptischen Personennamen*, vol. 1, Glückstadt 1935, pp. 172, nrs. 13 (Nj-Pjpj), 14 (Nj-PtH), and 23, (Nj-Ra); p. 173, nr. 2 (Nj-@p); p. 180, nrs 7 (Nj-%bk) (hereafter H. RANKE, *Personennamen*).

49 For this office, understood usually as a legal court and attested primarily from the Old Kingdom, see N. STRUDWICK, *The Administration of Egypt in the Old Kingdom. The Highest Titles and their Holders*, London 1985, 176–198; for the possible relationship between the Hw.t-wr.t and the office of the vizier, see also E. MARTIN-PARDEY, "Richten im Alten Reich und die sr-Beamten," in B. BRYAN and D. LORTON, eds., *Essays in Egyptology in Honor of Hans Goedicke*, San Antonio 1994, pp. 165–166. For the survival of the Hw.t-wr.t, "great court," on late Middle Kingdom seal impressions, cf. jmj-r Hw.t-wr.t 6, "overseer of the Six Great Law-Courts," in W. WARD, *Index*, p. 34, nr. 248; for use on seals and seal impressions specifically, cf. also G. MARTIN, *Private-Name Seals*, p. 10, nr. 49.

the right) includes a *t*-bread loaf above a *nw*- or *ḥz*-vessel (or *tp*-dagger?), followed by a s.t-throne, before the break. The relationship between the upper row and the following columns is not clear[50].

(J.A.R.)

f) Study of copper and bronze finds from the north-western town of Elephantine

The excavations at Elephantine have yielded a relatively abundant number of metal fragments and a few metallurgical wastes. The presence of this material in many of the features excavated at the site highlighted the need for investigating more in depth its nature and characteristics. In particular, the find of production waste, which here are fragments of crucibles (**Fig. 22**) and slaggy lumps, indicates that some metallurgical activities were carried out at the site. However, the relatively small amount of residues found so far, together with their characteristics, suggest that we are dealing with small-scale activities for melting metals, and probably also for recycling scrap metal and repairing broken objects.

These activities are further confirmed by the find of several copper-based drops, prills and other small spills (**Fig. 23**) resulting for casting operations and from the pouring of the metal melt into the moulds for manufacturing finished objects. However, it has to be noted that no metallurgical installations, firing structures or fragments of moulds have been found so far.

Fig. 22: Fragment of a crucible with slag attached; **Fig. 23**. Melting drops and prills (Fotos: M. RENZI, UCL).

With the aim of understanding the type of alloy used at Elephantine, non-invasive analyses have been conducted on a selected group of materials to achieve a preliminary characterisation of the metal finds. A portable XRF spectrometer (pXRF; **Fig. 24**), property of UCL, has been used to determine the bulk composition of the selected samples.

One hundred fifty analyses were carried out on eighty-five objects; when the size of the samples allowed it, more than one area was analysed to ensure a better representability of the nature of the whole material.

50 The left-facing n(j)-mAa.t group might continue with the left-facing column on the right, but the sense of those broken signs cannot be reconstructed with any confidence. If the column was part of the name, then the appellation was probably not of the "Ni-Ma'at-Re" type, insofar as the final theophoric element usually precedes "Ni-Ma'at," in honorific transposition (cf. thus H. Ranke, *Personennamen*, 172, nrs. 15–20). If the column on the left represents sw.t, we might propose a reading as Nj-sw.t-MAa.t, for which cf. *ibid*., 173, nr. 11 (Nj-sw.t-PtH), although the jar (?) beneath the phonetic complement t remains problematic in such a case.

Fig. 24: The pXRF spectrometer used for analysing the metals from Elephantine.

A great part of the samples analysed is constituted of melting residues. In particular, we examined metallic lumps, prills and droplets. All of them were fully corroded and do not preserve the original metal core, hindering the characterisation of the metal/alloy produced or processed at Elephantine. Very few metal artefacts, mostly fragments of rods, have been also found and, again, they are fully corroded.

In addition, ten small fragments of crucible were selected for analysis. All of them show a slaggy/vitrified layer attached to their interior but, unfortunately, have an incomplete profile and there are no diagnostic elements preserved – such as rim, base, handle and/or pouring mouth – that help to determine their original shape. Only in one case is it possible to say anything about form. The fragment's triangular section seems to suggest that it was part of a handle. A unique fragment, which is a surface find and cannot be attributed to any specific occupation phase, this piece corresponds to approximately half a section of the vessel and allows us to define its original morphology. It was a small vessel, with a flat rim and a cup-like shape. A thick layer of slag is attached to its inner wall and englobes several copper-based lumps, now fully corroded, suggesting that it could have been used in recycling operations. This practice was an important alternative source of metal throughout the ancient world, especially in settlements where no primary metal production was carried out, due to the lack of metalliferous deposits in the near surroundings.

Concerning the fabric used for manufacturing the crucibles, so far only one type of fabric seems to have been used. It is difficult to determine the original colour of the ceramic paste as all the fragments hardly preserve part of the clayey layer. When preserved, this is strongly affected by the firing temperatures and have a dark-blackish colour. However, it can be safely stated that abundant organic temper was employed for increasing its refractory properties, as often documented for metallurgical vessels.

We also identified six ceramic sherds with lumps/corroded prills attached on the surface. However, at least two of those vessels do not seem to have a metallurgic function, as indicated by their fine fabric, thin walls and finished surface. These prills are probably an unintentional contamination occurred during the metallurgical activities. The other four fragments, according to the type of fabric that is coarse and rich in organic material, could have been parts of crucibles but do not have visible slaggy layers.

Up to now, no proper slags have been identified at the site, but only five small lumps of slaggy materials that probably formed into the crucibles.

From this preliminary examination of the metallic material from Elephantine, a surprising scarcity of tin bronzes stands out. At contemporary sites in other areas of the Mediterranean and the Levant, this alloy was commonly used while, interestingly, here there is persistent use of arsenical copper. This might have been a regional choice or it could have depended from problems in tin supplies.

A larger sampling and more in depth analysis are needed for answering these questions and understanding what type of metallurgical activities were conducted at the site. Some future microscopical and microstructural tests on the crucible fragments and the slaggy lumps could help to clarify this question.

(M.R.)

g) Further animal remains from the Middle Kingdom settlement

Next to pottery, animal remains form one of the biggest groups of finds during the archaeological excavations on Elephantine. Due to the short time and other responsibilities of the author, only few animal remains could be studies within the last year. As a focus the finds from the first excavation campaigns of the project “Realities of Life” in the north-western town of Elephantine near the small pyramid were chosen.

Faunal remains are identified to species level, if possible, and each skeletal element is weighed individually. Unidentifiable fragments are weighed as groups and the minimum number of skeletal elements, which they represent, is estimated. Apart from the weight, the identification of the species and skeletal element the following markers are recorded from each fragment: the condition of the epiphyses and teeth for the determination of the animal’s age at death; the side of body; pathologies; skeletal elements, which might have come from the same individual; measurements; size estimations in fish compared to the bones from individuals, which are present in the reference collection on Elephantine Island; taphonomic markers such as breaks, cuts and other indications of the slaughtering and dismembering process, surface preservation, discolouration, gnawing etc.; a description in case of the bone or shell being worked by humans and used as a tool or jewellery item.

Animal bones are handled with nitrile gloves and first studied macroscopically. The gloves are to prevent contamination by human skin fats or crèmes. The prevention of contamination is based on the hope to at least be able to use some of the bones for isotopic analyses[51], to determine the areas where especially mammals were raised and slaughtered. Microscopic study is done mainly on very small remains, e.g. fish vertebra down to 1 mm in diameter can be identified to a certain extent under magnification. Additional microscopic (SEM) studies might be done in the future on animal remains, which were used as tools to identify use-wear marks.

The following results can be summarized for this work in progress: Until now around 7147 (NISP) fragments of bones, teeth, shell, horn and scales, which derived from about 4220 individual skeletal elements (MNE) and bring a total weight of about 10 kg were studied. In this material mammals, bird, reptiles, fish and molluscs were identified to species level. The majority of bones could be identified as fish (3137 MNE; 6.8 kg; therein Pisces indet.: 1630 MNE with a weight of about 650 g) with the second largest group being mammals (527 MNE; 2.9 kg; therein Mammalia indet: 288 MNE with a weight of about 500 g). Birds, reptiles and molluscs form the smallest groups.

51 So far isotopic analysis is determined to be impossible in Egypt. However, recent research might have opened new chances for this in cooperation with laboratories for biology of e.g. Aswan or Cairo University.

In contrast to studies in previous seasons on material from lower/older levels of the same area[52], slight differences could be attested in the composition of the species: while in the 12th Dynasty the species *Lates niloticus* and *Auchenoglanis sp.* seems to have been favoured as food, the inhabitants of the late Middle Kingdom and early 2nd Intermediate Period seem to have preferred the catfish *Bagrus docmac* and *Synodontis membranaceus*. All four species are some of the biggest fish living in the Nile and yield a considerable amount of tasty meat. These results have to be considered preliminary, as further animal remains have to be studied to achieve statistically significant interpretations.

More astonishing and to be followed closely in the future are the preservation conditions of the material. The bones from the 43rd campaign (autumn 2013 – spring 2014) came from topmost layers of left over stratigraphic "pillars" crowned by walls. The bones studied from the 44th campaign (autumn 2014 – spring 2015) came from lower layers of the same stratigraphic "pillars" and from the first layers of wider covering features near the bottom of the former trenches of the French and German excavations[53]. While the first mentioned animal remains have only slight incrustations of sediment and are free of salty crystallisation, the last mentioned ones are of a much worse state of preservation: salt crystals of around 0.5 mm had formed on the surface but even more in the interior of many bones during their long deposition. The salt had expanded so far that it ruptured many bones from within, which were then only held together by the crystals themselves. Additionally many fragments were encrusted with a cement-hard layer of sediment, which could not be removed mechanically. The application of water for the cleaning of the bones resulted in their immediate fracturing into tiny pieces. These circumstances often made species or even just skeletal element identification impossible. Apart from that, a higher weight has to be considered for these bones in comparison to others, which are not encrusted. What caused this phenomenon still has to be determined.

(J.S.)

h) Report on archaeobotanical assessment of finds from the north-western town of Elephantine

Work was conducted between January 31st – February 18th, 2016 by Dr C. MALLESON in the DAI / MSA magazine on Elephantine Island. The goal of this season was to conduct a brief assessment - to establish a sampling protocol, organise the work flow of processing samples, and to outline recommendations for future work.

Results

A sampling strategy was set in place. For the ongoing DAI/MSA excavations a c.5–10 litre sample for (primarily) botanical analysis will be taken from every single individual locus excavated, and 100% of plant material visible to the eye will continue to be hand-collected on site. The botanical samples will all be processed by flotation, with a 1 litre sample being retained for dry-sieving. The flotation process caused no apparent damage to the desiccated remains.

All hand-collected botanical samples from units 44501, 45501, and incoming material from 45502 up to 18th February were studied during this assessment period. Additionally a portion of the flotation samples from the 2016 season (mission 45502) were also studied.

52 See J. SIGL, *Animal remains from the Middle Kingdom settlement*, in: S. J. SEIDLMAYER et al., *Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2014 to spring 2015*, Cairo 2015, p. 2–4: http://www.dainst.org/project/25953 (accessed: 05/06/2016).

53 See P. KOPP, *Excavations in settlement*, in: S. J. SEIDLMAYER et al., *Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2013 to spring 2014*, Cairo 2014, p. 2: http://www.dainst.org/project/25953 (accessed: 05/06/2016).

The botanical remains on Elephantine Island are exceptionally well-preserved, both desiccated and charred. The species identified in these samples thus far are as follows – list in order of frequency of occurrence from most common to least

Halfa Grass (*Desmostachya bipinnata / Imperata cylindrica*) - culms
Sugar date (*Balanites aegyptiaca*) - fruits
Nebak / Christs thorn (*Ziziphus spina-christi*) - fruits
Emmer wheat (*Triticum turgidum subsp. dicoccum*) - grains and chaff
6-row Hulled barley (*Hordeum vulgare subsp. vulgare*) – grains and chaff
Dom palm (*Hyphane thebaica*) - fruits
Nile acacia (*Acacia nilotica*) - fruits
Argun palm (*Medemia argun*) - fruits
Melon family (Curcubitacae) - seeds
Persea (*Mimusops laurifolia*) - seeds
Common fig (*Ficus carica*) – seeds and fruits
Flax / Linen (*Linum usitatissimum*) – capsule fragments
Ryegrass (*Lolium sp*.) - grains
Knotweed family (Polygonacae) - seeds
Tamarisk (*Tamarix nilotica*) - leaflets
Caryophyllacae - seeds
Sedges (cf. *Carex sp*.) - seeds
Carpetweed (*Glinus lotoides*) - seeds
Legumes (Fabaceae, Trifolieae tribe) – pod fragments and seeds
Canary grass (*Phalaris sp*.) – grains

As might be anticipated, the staple cereals cultivated in ancient Egypt are present in this assemblage, as are the most commonly found fruits and other crops (e.g. Linen / Flax). There is a high presence of cereal processing by-products (chaff) within the samples, of both emmer wheat and hulled barley, charred and desiccated.

Future work

The results from this assessment are very promising. The level of preservation of botanical materials is truly exceptional, and the strategy of conducting flotation for every locus will be very rewarding. Without doubt, whilst the full analysis of all this material will be time consuming, the results of such high resolution sampling will undoubtedly make a major impact on our understanding of the realities and complexities of life on Elephantine. The continuity of settlement activities in the area being studied (First Intermediate – Second Intermediate period) provides an exciting opportunity to trace changes through time. With sufficient time available for analysis of the samples there can be no doubt that study of the Elephantine botanical assemblage has great potential to make a major contribution to studies of agriculture, domestic activities and diet in ancient Egypt.

(C.J.M.)

3. Excavations of the Swiss Institute on Elephantine

a) Excavation of House 55 (18th Dynasty)

The Swiss Institute continued fieldwork within the framework of investigations on the development of the town in the New Kingdom and the Late Period. Excavations were conducted in three areas: in H55

to the south of the Sanctuary of Heqaib, in Area XXIX to the north of the late Khnum Temple and in Area XXVI to the south of the Khnum Temple (see section 5)[54].

Fig. 25: Overview on House 55 at the end of season (Foto: C. VON PILGRIM, SI).

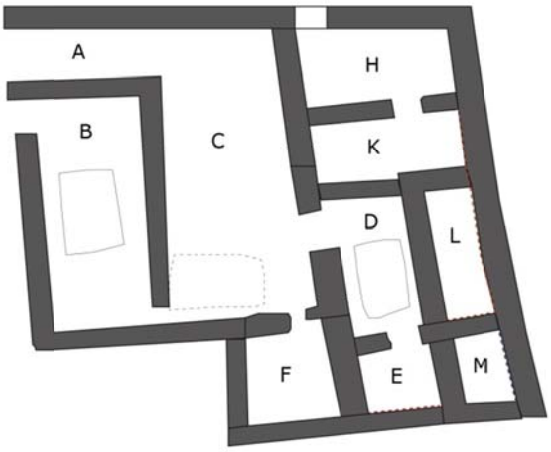

Fig. 26: Sketch plan of H55.

After completion of a meticulous investigation of massive deposits dumped over the ruin of House 55 in the previous season it was the main task of the season to further clarify the building development of the house and to study the fill of the rooms.[55]

At first, the southern limit of the area was cut back for about 1.5m in order to re-examine the recorded stratigraphy above the building and to expose the southern outer wall of the house (**Fig.25–26**). The wall is still preserved up to a height of about 3 m and was fully plastered. Traces of red and yellow paint on the plaster indicate further depictions of boats.

54 Further members of the team were the photographer A. KRAUSE, the archaeologist B. VON PILGRIM, and the artists O. VON PILGRIM and B.-C. SCHIEBE.

55 On the work of the previous season cf. C. VON PILGRIM in: Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2014 to spring 2015, 10-12.

Figural paintings (ships and figures) on plaster had been already uncovered at the building's eastern outer wall in the previous season. A continuation of the scene was expected to appear beyond a wall, which was built in a later stage of the house in order to delimit a separate housing unit in the north-eastern quarter of the house. This unit consists of two rooms (H and K) and it was made accessible from a little alley between House 55 and the Heqaib Sanctuary by a new entrance. The narrow doorway led directly to the mid-landing of stairs continuing down to the floor-level of Room H and to an upper floor respectively. Both rooms were completely filled with debris deriving from walls of the upper floor and remains of the collapsed ceiling and flooring. A column base in the rubble indicates the existence of a large room with a central support in the upper floor. The collapse of the upper floor was apparently caused by a heavy fire in Room K. A closed layer of charcoal and burnt wood covered the floor level, and the faces of the walls were blackened from smoke and fired by strong heat (**Fig. 27**). Unfortunately, the eastern wall was badly affected in particular so that only few traces of red colour survived on the plastered face of the wall. They are sufficient, however, to recognise at least one further boat completing the scene which had been uncovered on the southern continuation of the same wall in the previous season.

Fig. 27: Fire debris in room K (Foto: C. VON PILGRIM, SI).

The separation of rooms H and K from the rest of the house was part of a major restructuring when the entire building was split up into three separate room units during the reign of Thutmosis III. The paintings on the mud plaster belong evidently to the oldest building stage of H55 which show clear evidences for a non-domestic use. The coloured paintings, however, were executed only after a first modification when a separate room was created in the south-western corner of the building. In this room an earlier phase of plaster is preserved on the same wall (dotted blue line in room M in **Fig. 26**). It shows traces of a graffiti-like painting executed in black, different in style from the paintings on the second phase of plaster beyond the newly built wall.

Only after the entire building was divided in three individual room units domestic installations like quern emplacements, ovens and underground storage facilities were built in.

The latter were rectangular vaulted cellars accessible by square hatches from the top. After the house fell into disuse the empty cellars slowly filled up with air-borne sand and loamy dust from erosion. The cellar in room C, however, remained empty and the vault collapsed only later. In the debris that had

slipped into the cellar a well-preserved stela turned up which may have been once deposited in a layer above the cellar (**Fig. 28**). Due to its secondary position it now remains unclear whether the stela was part of the original equipment of the building.

Fig. 28: Stela 45603K/b-10 after discovery (Foto: C. VON PILGRIM, SI).

The stela (Excavation No. 45603K/b-10) is made of fine limestone and measures 55cm x 32,5cm x 10-11,5cm (**Fig. 29–30**). As the reverse side of the stela is decorated with stars in raised relief it was made from a former ceiling slab. The slab may derive from a small chapel of the Middle Kingdom when limestone was the preferred material of stone constructions in Elephantine.

The stela is inscribed with an offering formula evoking Osiris and Anubis and was dedicated to a certain *Pn-3bw* by his mother *Jwntjw*.

Fig. 29: Stela 45603K/b-10; **Fig. 30**: Reverse of Stela 45603K/b-10. (Fotos: A. KRAUSE, SI).

(C.v.P.)

b) Studies on New Kingdom Pottery

The study of the New Kingdom pottery from Elephantine was continued in the framework of a joint project of the Swiss Institute and the ERC project *AcrossBorders* directed by J. BUDKA (LMU Munich)[56]. The focus of work was put on recording and studying the pottery from House 55. During fall 2015 all pottery from the previous season as well as from the first half of the current season was processed.

(C.v.P.)

c) The spatial development of the Khnum Temple precinct before the 30th Dynasty

Since long time the evolution of the Khnum Temple precinct pre-dating the fundamental re-structuring in the reign of Nectanebo II has been a focal research of the Swiss Institute. After F. ARNOLD had completed a large-scale investigation of the Late Antique and Roman remains in the respective areas to the north and to the south of the temple some years ago further excavations in the preceding layers were resumed in the previous season[57]. At first the work had been limited to the robbed foundation trench of the enclosure wall of the late temple. This season work concentrated on the areas beyond the later enclosure wall. The nature of deposits and occupation on both sides of the temple differs fundamentally. On the southern side (Area XXVI) remains of extensive storage installations and stables were attested ranging in date from the New Kingdom to the 30th Dynasty. Layers on the north side (Area XXIX), however, consist predominantly of rubble from the construction and the destruction of stone buildings and mudbrick walls. Both areas can be correlated with each other through remains of the same temple enclosure built in the early 26th Dynasty (C in **Fig. 31**).

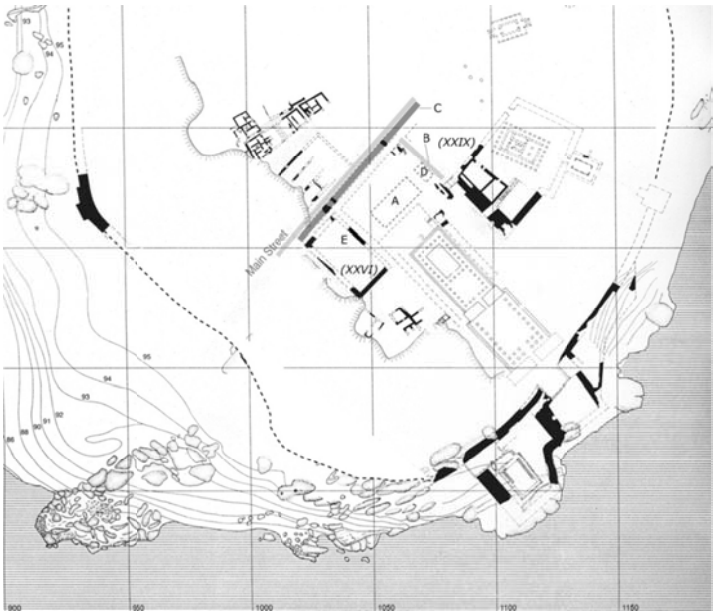

Fig. 31: Sketch map of Late Period town. A: Presumed location of 18th Dynasty chapel; B: Processional route of 25th Dynasty; C: Temple enclosure of 26th Dynasty; D: Location of chapel of Psametik II; E: Enclosure of 27th Dynasty.

56 Cf. see http://acrossborders.oeaw.ac.at/about/about-acrossborders/. Further members of the team were M. EL-AZAB, G. D'ERCOLE, M. GUNDLACH, E. HEMAUER and O. STEPHAN.

57 C. VON PILGRIM, in: Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2014 to spring 2015, 15-17.

Area XXIX: Due to the fact that all layers are sloping towards the north and towards the west a precondition of any archaeological analysis was a system of sections in order to control and to record the stratigraphic structure of the area. Taking account of earlier sondages work was conducted in a series of small trenches in order to gain sections in several lines across the area.

Regarding infrastructure and special organisation of the temple precinct this area is of particular interest. It may be assumed that a major processional route is crossing this area from west to east at all times dating back at least to the early New Kingdom. The street is already attested on the back of House 55 at the western limit of Area XXIX and is proven again on the same line in the late Ptolemaic Period.[58] Since a similar situation can be expected in the intermediate periods a stone pavement on the bottom of an old robbery trench attracted our particular attention. In the course of this seasons work it turned out that the pavement belongs to a street of c. 4.5 m width. The street runs from west to east and may have been a major processional route connecting the town's central main street to the west of the area with the open space in front of the main entrance of the Satet Temple precinct to the east (B in **Fig. 31**). The street is paved with roughly trimmed slabs of sandstone (**Fig. 32**), and it is limited on its northern side by a mudbrick wall with a whitewashed plaster. On its southern side an inclined retaining wall marks a higher level further south. The retaining wall is built with undressed stones and is well plastered on its northern face. The original floor level of the raised terrace-like area to the south is not preserved. The street can be preliminarily dated to the 25th/early 26th Dynasty.[59] A dating before the 7th cent. BC is also indicated by the fact that the retaining wall was destroyed by the foundation trench of the surrounding wall of a chapel of Psametik II (D in **Fig. 31**).[60] The construction of this chapel was most likely the reason to enlarge the terrace and to shift the street to the north. The street was filled with densely packed layers of mudbrick rubble and sandstone chippings. The latter may originate from the destruction of a modest stone building which was replaced by the chapel of Psametik II.

The chapel of Psametik was eventually destroyed during the reign of Nectanebo II, at the latest when the enclosure wall of the new temple was to be built. The foundations of the temple were completely robbed down to the foundation sand, and the emptied foundation pit and trenches were backfilled with demolition waste originating from the destruction of earlier temples and chapels on the projected construction site. The filling contains numerous fragments with temple decoration of the 18th Dynasty. The majority of fragments can be attributed to pillars, door jambs and cavetto cornices and may originate from a temple of Hatshepsut recently identified by F. ARNOLD (s.b.)[61]. Surprisingly, among the fragments and chippings of NK temple blocks two small statues of the late Middle Kingdom showed up (**Fig. 32**).

58 Cf. F. ARNOLD in MDAIK 67 (2011), p. 202-203, fig. 19. ARNOLD suggested a dating of the street in the time of Ptolemy VI/VIII after the stone enclosure wall of the temple had been completed, a date which can be confirmed by further pottery evidences attested in the adjoining layer in spring 2016. The proposed earlier date of the adjacent House 200, however, can be now corrected. The house was clearly built only after the new arrangement of the street comprising of side walls and a low ramp was finished. The house cuts into one of the walls consolidating the step in the terrain, which descends towards the west. Therefore House 200 was most likely build in the early Roman Period, as it was already shown for the similar house K19 to the south of the temple, cf. C. VON PILGRIM, in: Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2013 to spring 2014, p. 12-13.

59 Corresponding to Phase III of pottery sequences in Elephantine established by D. ASTON.

60 Cf. C. VON PILGRIM, Ein Kultbau für Chnum aus der Zeit Psammetichs II., in DREYER et al., Stadt und Tempel von Elephantine. 31./32. Grabungsbericht, MDAIK 61 (2005), 43-44.

61 F. ARNOLD in: Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2014 to spring 2015, 12-15.

Fig. 32: Statues of the MK in the filling of robbed foundation trench cutting into an older retaining wall. At lower right paved processional route of 25th Dynasty bonding to retaining wall.

Both statues are made of grano-diorite, and were found in the (secondary) fill of the robbed Saite temple foundation in Area XXIX. The larger statue depicts a man in a coat sitting on a chair (**Fig. 33**). The head is missing, and the statue bears no inscription.[62] The statue may be dated to the early 13th Dynasty.[63]

The smaller statue depicts a squatting man and is inscribed with an offering formula evoking the prince Heqaib (**Fig. 34**).[64] It is dedicated to the representative of the high steward (*Jdnw n jmj-r' pr-wr*) Jrgemtef, born by the house-mistress Dedj, dedicated by the "follower who loves him" *J'w-rrj*. [65] The same Jrgemtef is already known from other monuments from Elephantine. Among these the most interesting one is an offering plate discovered by L. HABACHI at the entrance of the anteroom of the Sanctuary of Heqaib.[66] It shows two small bassins and a larger recess beyond, which apparently was cut to hold a small statue.[67] HABACHI suggested that it was a statue of the same man now kept in the Egyptian Museum in Berlin that belongs to this offering plate. [68] That statue is indeed very similar to ours though it bears a higher title of Jrgemtef. The dimension of the statue's pedestal, however, is slightly larger and may not fit to the size of the recess in the offering plate. [69] Considering additionally the corresponding titles it is most likely the newly discovered statue that belongs to the known offering plate.

Both statues may have been originally placed in the Sanctuary of Heqaib. It is hard to explain how they ended up in a late context such as a filling dumped in the time of Nectanebo II, and in a different sacred precinct such as the area of the Khnum Temple. After the destruction and plundering of the Heqaib Sanctuary both statues were possibly rescued and transferred to the Khnum Temple, perhaps even to enable a continuation of the cult. Due to traces of yellowish mortar sticking at the anepigraph

62 Excavation No. 45701L/c-2. Measurement: preserved height 38cm, base 33cm x 15 cm.
63 Compare f.e. the statue of Imen-aa in L. HABACHI, Elephantine IV. The Sanctuary of Heqaib, pl. 111.
64 Excavation No. 45701L/c-3. Measurement: preserved height 14cm, base 18cm x 18cm.
65 The name is otherwise not attested. It is possibly a double name consisting of *J'w* and *Rrj* both attested in the Middle Kingdom, cf. RANKE PN I, p. 12 [3] and p. 225 [3].
66 L. HABACHI, op. cit., p. 84-85, No. 57, pl. 139b.
67 The first part of the title (*jdnw*) on the offering plate is almost illegible and was subsequently doubted by D. FRANKE, Das Heiligtum des Heqaib auf Elephantine, SAGA 9, 1994, p. 64 note 211. The newly found statue, however, now confirms the correct reading of HABACHI.
68 HABACHI, op. cit. Museum number ÄM 22463, bought in 1925 by H. SCHÄFER in Aswan.
69 The pedestal measures 23,9cm on the front and 18,7 on the back side, see L. HABACHI, Studies on the Middle Kingdom, Stud. Aeg. X, 1987, p. 192, pl. XXXII. Although HABACHI did not specify the size of the recess the stated width of the offering plate (32cm) allows a reasonable estimation. However, this assumption should be physically confirmed with the original objects.

statue it may be assumed that at least this statue was eventually incorporated in a stone construction, possibly a foundation. Mortar of the same quality is also to be found on decorated fragments of NK pillars and door jambs discovered in the same filling (**Fig. 35**). Hence it may not be excluded that at least some of the NK blocks may have been reused in the foundation of the chapel of Psametik II.

Fig. 33: Statue 45701L/c-2; **Fig. 34**: Statue 45701L/c-23 (Fotos: A. KRAUSE, SI).

Fig. 35: Mortar on decorated face of a NK pillar fragment (Foto: C. VON PILGRIM, SI).

Area XXVI: After completing and collating several drawings of sections in the area to the south of the late Khnum Temple further excavations were conducted in front of the Late Roman house K20. A main objective of the work is to connect stratigraphically a highly distinctive and well-dated layer with sondages excavated in earlier seasons further to the west. The layer in question fills a large pit of former mortar production (*mkhmarra*) and continues beyond the pit as a levelled thin layer. It contains numerous mud sealings with cartouches of Psamtik II and Amasis besides other significant waste related to temple economy. Although this layer of the 26th Dynasty is immediately superimposed by the earliest layer to be connected with temple construction activities of Nectanebo II remains of two

building layers in between are discernible. The distinctive layer of Saite date is cut by the foundation of a wall which belongs to a large separate enclosure south of the temple (E in **Fig. 31**). The deep foundation of its northern wall was completely robbed. Whereas this enclosure was presumably build in the 27th Dynasty a mortar bedding of a subsequent mudbrick wall may be correlated with the period when the new temple project was already underway. The mortar bedding was uncovered above the backfilled foundation trench of the robbed enclosure and may belong to a subsidiary building contemporary to construction works at the temple of Nectanebo II.

In addition to the excavation in the town centre some further documentation work was conducted at some sectors of the town wall such as at the north-eastern limit of the town (Area XIX) and at the eastern edge of the town immediately to the south of the museums garden (Area XXIV).

(C.v.P.)

d) Research, Conservation and Restauration work on bronze artefacts and mortars

Further conservation works conducted by the Swiss Institute comprised the following:

In the period from March 15th until March 22nd E. PEINTNER continued cleaning and restoration of heavily corroded small bronze objects found during the current season of excavation. Additionally, he cleaned the newly discovered stela 45603K/b-10 from salt incrustations.

During a one-week stay lasting from March 23rd until March 31st A. WINKELS continued a study on building mortar from various building phases of the Khnum Temple. The samples stem from blocks of the Khnum Temple of the 18th Dynasty and the Ramesside Period as well as from the Saite Period, 30th Dynasty and Ptolemaic Period. Additional samples had been collected during the current excavation and are related to the Khnum Temple precinct of the Middle Kingdom.

(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 continued by the German Institute[70]. The aim of this season was to complete the documentation of the blocks that had been reused in the temple house of Nectanebos II. In total some 80 blocks and fragments of blocks have been recovered from this area. The blocks originate from at least two different buildings of early Thutmosid date. The first building was a small barque station built by Queen Hatshepsut for the processional barque of Khnum. The second building was probably founded by Thutmosis I and finished or enlarged by Thutmosis II. Both buildings originally stood to the west of the main temple of Khnum, in the area later occupied by the temple house of Nectanebos II. During the ongoing excavations to the north of the Khnum temple some 300 additional relief fragments were found in the building debris from the time of Nectanebos II (see contribution of C. VON PILGRIM, above). The majority of these fragments can be attributed to the same two buildings.

Barque station of Hatshepsut

70 Members of the team were F. ARNOLD, J. IWASZCZUK and T. PERKINS. 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; M. BOMMAS, *31./32. Bericht*, pp. 44-51; F. ARNOLD, *39./40./41. Bericht*, in print.

Many of the blocks found in the foundations of Nectanebos II appear to originate from a small barque station, measuring about 8.5 m in width and 10 m in depth. The building was composed of a central chamber which was surrounded by an ambulatory, with at least four square pillars on each side. Best preserved are the monolithic pillars, which were 64 cm wide and about 277 cm high (**Fig. 36**). So far four almost complete pieces have been identified, as well as several dozen fragments. Seven relief blocks and several fragments can be attributed to the 68 cm thick walls of the inner chamber[71]. In addition, three fragments of architraves have been found, as well as many pieces of the cornice, painted in blue and green.

On the pillars and walls of the barque station the names of Thutmosis II, Hatshepsut and Thutmosis III are mentioned, the latter with the throne name *Mn-ḫpr-k3-Rś*. Hatshepsut was depicted with her complete royal titles. Later her names were erased and either left blank or replaced by those of her deceased husband Thutmosis II. In all cases the queen had originally been depicted as a woman. The female figures were later replaced by figures of a male king. The building must therefore have been erected early in the reign of Hatshepsut, possibly shortly after her coronation. Few other buildings are known thus far from this early stage of her career[72].

Fig. 36: Three sides of a pillar from the barque station of Hatschepsut, found reused in the foundation of the temple of Nectanebos II. (Darwing: F. ARNOLD/L. MAJERUS, DAI).

On the inner walls of the barque chamber the king is shown presenting offerings to a processional barque of Khnum. An inscription identifies the owner of the barque as *Ḥnmw nb Ḳbḥ.w ḥrj-jb 3bw* "Khnum, lord of the Cataract, guest in Elephantine". The barque itself is inscribed with the name of

71 Among them the block published in W. NIEDERBERGER, *17./18. Bericht*, p. 193, pl. 39a and b.
72 Hatshepsut was active in the region of Aswan already early in her reign. Cf. L. HABACHI, *Two graffiti at Sehel from the Reign of Queen Hatshepsut*, *JNES* 16, 1957, pp. 92-96.

Thutmosis I, suggesting that the actual barque had been dedicated by this king. On one wall an extensive offering list was depicted.

On the pillars surrounding the barque chamber a range of gods are represented. Most are different versions of the god Khnum, including *Ḥnmw nb Ḳbḥ.w ḥrj-jb 3bw*, *Ḥnmw nb Snmwt* and *Ḥnmw Ḥw-šs3w*, the latter one of the gods of Kumma in Nubia[73]. On one of the pillars an ithyphallic god is depicted, identified as *Mjn-Jmn T3-Stj* "Min-Amun of Nubia". In addition several very rare gods are represented, including *Nb.t-Mnj.t* "Lady-of-the-mooring-pole" and *Jmj-pr=f* "He-who-is in-his-house".[74]

Most of the preserved scenes form part of an offering ritual. In fact, a complete version of the ritual appears to have been depicted on the pillars and the walls of the barque station. Preserved are the preparation of white bread, the offering of wine, the purification of the offering table, a libation, the presentation of the *nmst*-jar, the burning of incense and the presentation of the offerings[75].

The direction of the decoration and the distribution of Nekhbet and Wadjet birds above the king show that the building was oriented toward the west. The barque station appears to have been attached to the western enclosure wall of the main Khnum temple. From this back wall several blocks have been found, decorated in raised relief. The barque station was probably erected on a raised stone platform, with low balustrades placed between the pillars.

The building appears to have served during processions in which the barque of Khnum was lead from his temple to the river. Because of the topographical situation of the temple high above the Nile, the landing stage was not located in front of the temple but further north, near the area now occupied by the monumental staircase of the Roman period. In order to reach the river the procession apparently first lead westward, to the back of the temple, where the barque was placed in the newly identified way station of Hatshepsut. It then proceeded downhill to the north, possibly along the main street of the town. Near the landing stage Amenophis III later built a second barque station.

Building of Thutmosis I and Thutmosis II

A number of relief blocks found in the foundations of Nectanebos II cannot be attributed to the barque station just described. They appear to originate from at least one other building. One of these blocks shows king Thutmosis I presenting an offering of ointments to the goddess Anuket, lady of Nubia (**Fig. 37**). The name of the same king can also be found on a lintel of a doorway[76] and on several fragments of door jambs, possibly forming part of the same doorway. The pieces attest to a building constructed by Thutmosis I, the first building of this king to be found in the First Cataract region. Thutmosis I is known to have conducted a major military campaign in Nubia and the building may have been part of his efforts to pacify the region. On Elephantine he apparently also dedicated a barque to the god Khnum, as mentioned above.

73 R. A. CAMINOS, *Semna-Kumma* II. *The Temple of Kumma* (London 1998), pp. 85-88, pl. 70-73 (Room H).
74 Possibly identical with *Jmj-pr-jt.f.* CH. LEITZ (Hrsg.), *Lexikon der ägyptischen Götter und Götterbezeichnungen* I (Leuven 2002), p.236.
75 For the ritual see N. TACKE, *Das Opferritual des ägyptischen Neuen Reiches*, *OLA* 222, Leuven/Paris/Walpole 2013.
76 H. RICKE, *Die Tempel Nektanebos' II. in Elephantine und ihre Erweiterungen*, Cairo1960, pl. 20a.

Fig. 37: Thutmosis I offering ointments to the goddess Anuket, lady of Nubia. Block reused in the foundation of the temple of Nectanebos II. (Foto: F. ARNOLD, DAI).

A group of nine large relief blocks bear a decoration in raised relief of similar size and style. The blocks were part of scenes showing the introduction of the king into the temple, the presentation of cattle to the god Khnum-Ra (fig. 38), the king adoring a male god, the coronation of the king and the presentation of years to the king by Anuket and by another female god. The themes revolve around the role of the king and would be typical for a hall of appearances or another space in the front part of a temple. None of the blocks has a decoration on two sides. Apparently the walls of the building were 90 cm thick or more and were composed of two faces. On one of the relief blocks the name of Thutmosis II is preserved, and he may be assumed to have been responsible for the decoration. In one case, the decoration replaces an earlier one in smaller scale, which had been arranged in two registers. It is possible that Thutmosis II enlarged or finished a building erected by his father, quite possibly the building of Thutmosis I described above.

Several more building elements preserved in the foundations of Nectanebos II date to the time of Thutmosis II. These include parts of at least two architraves decorated with large-scale inscriptions in sunken relief. The inscriptions all start with the *dd mdw*-formula, followed by the names of Satet, Anuket and Thoth. In the central axis of each architrave a miniature, vignette-like scene shows Thutmosis II presenting offerings to the god Khnum. This unusual decoration scheme appears to have no parallel elsewhere. The architraves rested on square pillars, which were also decorated with large-scale inscriptions. On one of the preserved fragments the names of Khnum and Anuket are preserved. The architraves and pillars could originate from a portico at the façade of the building, or from an ambulatory surrounding the building.

One of the relief blocks originates from the outer corner of the building, with a torus at the corner. One side shows a decoration in sunken relief, the other a decoration in raised relief. The decoration in sunken relief was delimited by a kind of frame with the titles of Thutmosis II, beloved by Khnum-Ra. The original location of the block is not clear. It could originate from the outer corner of a sanctuary that was surrounded by an ambulatory. In this case it would be surprising, however, that one side was decorated in sunken relief.

Fig. 38: Thutmosis II presenting cattle to Khnum-Ra. Block reused in the foundation of the temple of Nectanebos II. (Drawing: F. ARNOLD, DAI).

It is still unclear whether all building elements described above originate from a single building. Even less clear is the layout of the building. It may have comprised inner chambers decorated by Thutmosis I, a front hall decorated by Thutmosis II and either a pillared portico or an ambulatory decorated by Thutmosis II. The function and meaning of the building likewise remains elusive. The god mentioned most frequently is Khnum-Ra, a syncretic god rarely attested before the New Kingdom. In the temple erected further east by Thutmosis III only Khnum, lord of the Cataract is mentioned, never Khnum-Ra. In contrast to the main temple of Khnum the building of Thutmosis I and II may thus have been dedicated to Khnum-Ra. The themes of the decoration highlight the role of the king, a possible hint that the building was intended to serve the rejuvenation of the king in some manner.

(F.A.)

5. Stela of Senwosret III

During the clearance of debris (*sebbakh*) near the southern city wall a fragment of a stela made of sandstone was found (Fig. 39, object number K13708). The fragment is 20 cm wide, 13 cm high and 7 cm thick. Preserved is the curved top of the stela and part of its right edge. The stela must originally have been about 28 cm wide. On the front side are the remains of an inscription in incised lines, with traces of blue paint. The center of the preserved part of the stela is occupied by the throne name of king Senwosret III (*ḫˁ-k3.w-Rˁw*), written vertically. The right half of the stela appears to have been occupied by the Horus name of the king. Only the tail of the falcon is preserved, as well as a corner of the frame surrounding the name. To the left of the royal names are traces of the first three lines of a text written horizontally. The first line and the beginning of the second line may be reconstructed as *mrjj St*[*t*] *nb*[*t 3bw*] “beloved of Satet, lady of [Elephantine]”. Of the rest of the second line only two

signs are preserved (possibly *jwn*…). The third line begins with a date, to be reconstructed as *rnpt 8* […] "Year 8, […]."

Senwosret III is known to have conducted a major military campaign to Nubia in his 8th regnal year, the first of four such campaigns[77]. Two rock inscriptions found on the neighboring island of Sehel mention a channel cut in the same year to facilitate the procession of the goddess Anuket from Sehel to Elephantine[78]. On Elephantine itself a stela was found which commemorates the construction of a fortification on the island in the same year[79]. The newly discovered stela may have been erected on the same occasion. It is the more to be lamented that not more of the stela has been found so far.

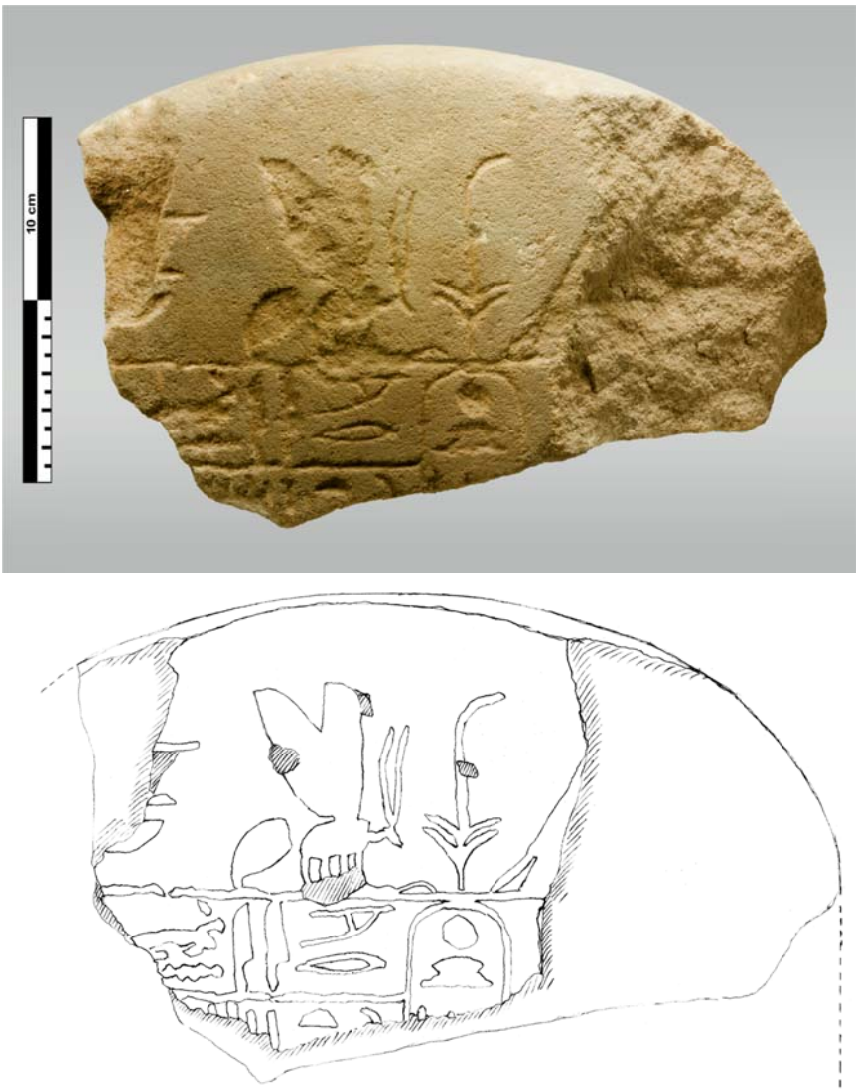

Fig. 39: Stela dated to year 8 of Senwosret III (Foto: P. KOPP/Zeichnung: F. ARNOLD, DAI).

(F.A.)

77 J. W. WELLS, *Sesostris III's First Campaign in Nubia*, in: B.M. BRYAN/D. LORTON, *Essays in Egyptology in Honor of Hans Goedicke*, San Antonio 1994, pp. 339-347.

78 A. GASSE/V. RONDOT, *Les inscriptions de Séhel*, *MIFAO* 126, Cairo 2007, pp. 77-80.

79 The stela, now in the British Museum (EA 852), is of similar size, 30 cm in width, 38 cm in height and 7 cm in thickness. *HTMB* IV, pl. 10. Cf. C. VON PILGRIM, *36./37./38. Bericht*, pp. 198–201.

6. Studying of remains of Ptolemaic and Roman temples from Elephantine

The objective of this year's participation in the work of the mission on Elephantine was to continue the research on the Ptolemaic and Roman temples erected in the cult centre that had functioned on the island. The subject matter of the research is a part of the project called „Ptolemaic and Roman Temples of the First Cataract Region (Kalabsha, Elephantine)", which has been in progress for several years.

1. The aim of the research conducted at the moment is, above all, to recapitulate the results of the studies on the remains of the Ptolemaic and Roman temples on Elephantine conducted since 1996 and compare the results with the presentation of these buildings in the monograph *Elephantine XV*, published in 1996. Such Addendum for the volume would provide feedback for the statements related to the chronology and decoration of the temples suggested in the monograph, as well as for the interpretation of the issues related to theology and the gods represented in temple iconography.

The works conducted in February 2016 within the framework of the above-mentioned project focused on the fragments representing the Ptolemaic and Roman phases of the decoration process in the temple of Khnum and the buildings in its temenos. It is the material collected in the lapidarium, which is dedicated to this portion of the religious centre of Elephantine, with systematically added spolia from the excavations or cleanup of the area of the *kom*. More fragments were added to the register of the remains of Khnum and Satet temples (amounting to 1166 items after this season), which are subjected to study and documentation (photographs and facsimiles). These fragments provide valuable information for the research of several issues, including:

- Distinguishing the figural decoration made during the reign of Ptolemy VIII Euergetes II from the stylistically almost-identical decoration dated to the time of Domitian. It was another phase of the study on these groups of decorations situated in the temple of Khnum and belonging to Complex VIII described in Elephantine XV years ago (p. 67-70). This study phase contributed to the modification of the conclusions drawn from previously analysis of the texts that indicated the paths for the identification of the material associated with different chronologies. Regardless of the issue of distinguishing between the two groups of decorations, their location within the temple of Khnum is still open for discussion. It must be remembered that the only room which raises no doubts as to its suitability for the placement of the decorations made in high relief, either Ptolemaic or Roman, is the pronaos. Taking into consideration the fact that the decorations from the times of Ptolemy VIII Euergetes include a fragment that belongs to the cycle of scenes of "walking out of the palace" (GR 545), characteristic for the ornamentation of the pronaos, it seems likely that the decorations of that king were situated in the pronaos. It would make one inclined to put forward a hypothesis locating Domitian's decoration inside the naos (=Tempelhaus) of the temple of Khnum. It would be possible, assuming the exclusion of some rooms of the naos from the decoration programme of Nectanebo II.

- Drawing conclusions on the issue of the decoration made in sunken relief on the external side of the façade of the naos in the temple of Khnum. The key element for this identification was a fragment of the screen wall GR 140 which constituted a part of the scene of the so-called „baptism of the king", belonging to the aforementioned (in the context of the decoration of the inner part of the pronaos) cycle of scenes that represented "walking out of the palace". The characteristic thick plaster present on that fragment implies that the portion of the temple was renovated in the Roman period (on the subject of renovation of Ptolemaic reliefs in the Roman period[80]. The fragment, crucial for the identification, also provides information related to the colour palette of the secondary painted decoration and its other stylistic traits. It was also helpful for the identification and documentation of a

80 Cf. Elephantine XV, p. 115-116, 153-156.

fragment of jamb GR 1105, which belonged to one of the three doors of the pronaos and suggested the presence of the so-called motif of papyrus and lotus swamps on its façade. It paved the way for establishing the location of another few fragments featuring plant decoration, collected in the lapidarium, in the pronaos façade. The addition of other fragments displaying identical stylistic traits of the painted decoration was critical for distinguishing the fragments belonging to the columns of the pronaos façade and the walls. The walls should be identified, above all, as screen walls. It was also possible to indicate fragments of cornices topping the screen walls of the façade on the basis of analogies in the painted decoration.

- The solution of the case of the so-called thick Ptolemaic plaster, which has been analyzed for a long time. The key element for its identification is architrave GR 202 with decoration made during the reign of Ptolemy VIII Euergetes II, associated with the pronaos of the temple of Khnum. Some fragments of columns covered with similar thick plaster, which represent different friezes of the decoration, were distinguished and compared to the architrave mentioned above as well as to the plaster covering the remains of inner columns of the pronaos preserved *in situ*. As a consequence, it was concluded that the fragments might have constituted parts of those inner columns.

- Progress in the work on the series of fragments from an unidentified room which belonged to the architectural complex of the temple of Khnum: a fragment of the lintel and ceiling of a fairly small gate decorated in the times of Ptolemy VIII Euergetes II (GR 1148) is an exceptionally important artefact that was documented this season. The only surviving part is the red colour of its painted decoration, which makes it stylistically close to the group of fragments of the doors to the room associated with the cult of medu (the theory of such identification is based on fragment GR 309). The location of that room in the temple of Khnum itself or its temenos remains unknown.

- Solution of the case of the Ptolemaic decoration in high relief with a marked flattening of the surface:

- More fragments were added to the group of decorations from the times of Ptolemy VIII Euergetes II made in high, strongly flattened, relief. The location of the group and its connection with the marked presence of decorations commissioned by that ruler in Complex VIII need further study.

- The continued study on the theological message of the sacral buildings on Elephantine resulted in recording newly-discovered spolia which came from the naos (Tempelhaus) of the temple of Khnum and belonged to the columns featuring decoration made in high relief, carved during the reign of Nectanebo II. They confirm the presence of Hathor frieze made in high relief on these columns, as suggested in Elephantine XV. It is extremely important information concerning the theology of the temple of Khnum at all stages of its existence.

2. The stay on Elephantine also involved cooperation with Dr. A. KREKELER, who worked on the next stage of the project aiming to reconstruct the temple of Osiris Nesmeti, initiated by Dr. C. UBERTINI years ago.

Our joint research on architecture and epigraphy in February 2016 focussed on the sanctuary of the temple, decorated by Vespasian, as well as the façade of the pronaos decorated by Domitian. The location of blocks from rows 4-7 in sanctuary walls A and C, and of the blocks placed in the façade was adjusted and verified. This process included row 1 of the right screen wall of the temple and the previous placement of block 810 which belonged to row 4 of the right portion of the façade.

Identification and description of the blocks from the façade of the pronaos, collected in the lapidaria, and above all, establishing their location in relation to particular construction layers, was an important aspect of the cooperation. That part of the work served the purpose of coordination of the reconstruction works planned for the next season. The coordination concerning the materials from the

lapidaria also encompassed groups of fragments excluded from the reconstruction. They belong to the architrave of the façade and the lintel of a small unidentified building. In the future they will be displayed at an exhibition that will accompany the reconstructed temple.

(E. L.-K.)

7. Restoration work on the temple of Osiris Nesmeti and other conservation work

The Swiss Institute has continued the reconstruction of the Osiris-Nesmeti temple ("Temple Y")[81] in the period of February 13th until March 10th, 2016. Works were conducted in the field by A. KREKELER and the conservator J. FAYEIN.

The walls of the sanctuary were rebuilt up to layer 7, the walls of the pronaos are finished up to layer 5. Missing blocks were replaced by masonry consisting of lime-sandstone bricks. The joints of the original masonry were filled with lime mortar (**Fig. 40**). For this purpose a method was developed and implemented on the upper layers of blocks. After closing the joints at the faces of the blocks, a gravity grout mortar was injected into the original pouring holes after a preliminary wetting with water. With this method, the gaps and joints could be filled at once on a height of several layers.[82]

Fig. 40: Filling of joints with lime mortar (Foto: C. VON PILGRIM, SI).

On the right jamb of the door of the sanctuary, in layer 7, a block was assembled to the lower stone layer by means of three stainless steel dowels in order to release the load of the block which weighs on a partly reconstituted block.

The lintel block (Y 64) of the western side entrance (wall F; **Fig. 41**) was prepared by inserting stainless steel anchors in the broken side. The missing part of the block will be completed next seasons with a casted prosthesis made of Araldite concrete, in order to guarantee a sufficient structural resistance of this architectural element.

81 Cf. CHR. UBERTINI, Restitution Architecturale du „Temple Y", in: DREYER et al., Stadt und Tempel von Elephantine. 31./32. Grabungsbericht, MDAIK 61, 2005, p. 64-75. We are grateful to the German Archaeological Institute for providing crucial equipment without which the presend work could not have been carried out.

82 The grouting mortar was formulated as following: 1 part of putty lime, 2 parts of sand, ½ part of fired brick powder (for hydrolyzing of the lime). Sand and brick powder was sieved to a grain size inferior to 1mm.

The adjoining block Y 44 continues the unfinished torus of the lintel. Additionally, it bears on its outside face secondarily incised ornaments depicting two six-pointed stars (**Fig. 42**)[83]. The block had been at first discovered for the first time by H. JARITZ of the Swiss Institute during the 14th season of excavation in February 1985 in the uppermost preserved layer of a retaining wall of the 6th cent. AD next to the Roman stairway north of the museum. It was uncovered again in November 2000 (Exc. No. 30304P-10) and transferred together with all other blocks of the Nesmeti Temple, which had been reused in the same construction, to the open-air storage of the site by the Swiss Institute on March 21st, 2001[84]. Since the block was found in the inner part of the retaining wall the symbols must have been incised before the block was used as construction material. Most likely they were engraved after the Nesmeti Temple has fallen in disuse and before it was dismantled in the 6th century AD. Six-pointed stars (hexagrams) are known as decorative and magic symbols from various objects (f.e. amulets, coins, lamps) in early-Christian and Islamic context as well as on buildings of the Islamic Middle Ages[85]. The stars engraved in the lintel of the side entrance of the temple of Osiris Nesmeti may be considered as one of the earliest examples.

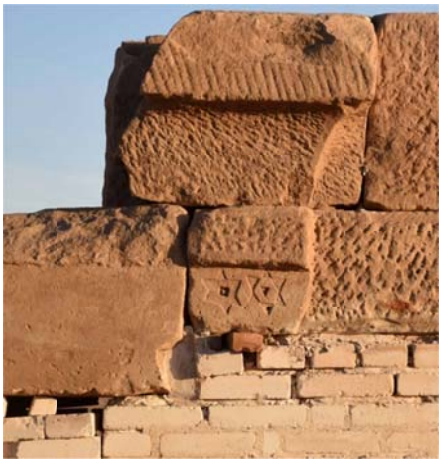

Fig. 41: Side view of Osiris Nesmeti Temple; **Fig. 42**: Lintel of side entrance: Block Y44 with unfinished torus and secondary engravings (Fotos: C. VON PILGRIM, SI).

Besides the anastylosis of the temple the reconstruction of both capitals and columns of the entrance into the pronaos was continued. All fragments with joining surfaces were reassembled. Bonding of the fragments is conducted with Araldite 2015, locally thickened with stone powder and/or gravels if a structural connection is required in some gaps. Dowelling is made with fiberglass dowels of 6mm in diameter for the smaller fragments, and with stainless steel dowels of 12 mm for the bigger groups. On one of the two lower blocks, a large part of the bedding side was restituted by a prosthesis of white cement mortar, attached with stainless steel dowel and Araldite concrete fillings (**Fig. 43**).

83 According to the order of MAHMOUD AFIFI, Director General of the Department of Pharaonic Antiquities in the Ministry of Antiquities, the block was disassembled on March 23rd, 2016. It was transferred to the storage area next to the museum of Elephantine on March 28th, 2016.

84 S. SCHÖNENBERGER, *Untersuchungen im Südosten der Monumentaltreppe*, in: DREYER et al., *Stadt und Tempel von Elephantine. 28./29./30. Grabungsbericht*, MDAIK 58, 2002, p. 200-210.

85 Cf. C. FLUCK, G. HELMECKE, E. R. O'CONNELL, *Egypt. Faith after the Pharaos*, London 2015, p.195. Graffiti of hexagrams are also known from the Hibis Temple at el-Kharga, cf. E. CRUZ-URIBE, *Hibis Temple Project Vol. 3. The Graffiti from the Temple Precinct*, San Antonio 2008 (Graffiti 223-228).

Fig. 43: Consolidation of column with stainless steel dowels (Foto: C. VON PILGRIM, SI).

(C.v.P.)

8. Objects and space – functional settlement analyses

This study is part of a larger research project by P. KOPP and C. JEUTHE. In collaboration with the IFAO, it includes different settlement areas from Elephantine Island and Ayn Asil (Dakhla Oasis), dating from the Old Kingdom to the earlier Middle Kingdom. The project aims to address the (functional) differences of building complexes and/or settlement areas as expressed by the combination of finds, features and architectural elements. Other sub studies have been integrated (such as the lithic finds, for example, see below), whereby questions of quality, selection and access within a settlement are addressed.

The project work at Elephantine Island started with a case study of the buildings from the area 'Satet West'. [86] There, a rapid sequence of building (building phases X to P), dating from mid 2nd dynasty to early 4th dynasty, was selected. These buildings consist mostly of one or two central rooms with the addition of varying numbers of smaller rooms. These rooms were only partly excavated, as was the court area outside the building. P KOPP kindly allowed access to the complete excavation documentation, and on this basis, the fine stratigraphical development has been followed. Altogether it consists of 31 sequences. As an individual room may have undergone several renewals during a building phase, no changes were recorded for others at the same time, and not all floors and features can be easily related. Thus a 'sequence' can either contain precise features which were used contemporaneously (i.e. during the first state of use, for example, or connected floors and short-living installations) or, on the contrary, contain all those which existed during a certain time frame (i.e. deposits situated between complete renewals, for example, or larger fill deposits and so on). In addition, sequences between the main building phases (i.e. between building phase S and R for example) have been separated. The deposits and features were classified as, for example, 'secured' contexts, whose inventories should clearly relate to activities taking place inside the room. On the other hand there are large fill or leveling deposits, for which a lot of material was brought from outside. However, the biggest problem is the definition of accumulation layers, which are indicated best by the composition, homogeneity and thickness. The number and nature of finds may help to distinguish the nature of these deposits.

86 See P. KOPP ET AL. in print for the excavation and general presentation of the finds. This season's work has been generously founded by a research scholarship of the Deutsches Archäologisches Institut.

Apart from integration of the lithic tools into the main database (see below), other find groups were also reviewed to standardize the terms and descriptions used at Elephantine and Ayn Asil. That applies especially to the various small finds made from dried mud and the often slightly cryptic 'varia' finds, but also to the tools. With regards to distribution, it soon became obvious that certain find groups almost exclusively came from construction phases, and mainly from large fills. Hence, finds such as sealed jar stoppers, model boats, gaming pieces and figurines (to name a few) seem to be related to the debris from the (temple?) activities outside the research area. More notably, if they came from deposits related to the building, they mainly date from earlier building phases, as, for example, in the case of the stone vessel sherds.

The largest find groups related to building use are the tools, which, in this case, include most of the re-used ceramic sherds. A strikingly large number show traces implying 'rubbing' on something, as well as, in some cases, indicating use as a burin. This contrasts with the finds in Ayn Asil, where the number of re-used sherds is much smaller. Instead, the local and directly available soft sandstone was used for this kind of ad-hoc tool.[87]

Within the group of stone implements, in some cases the concentration of certain tools (such as hammer stones) clearly displays particular activities; however, these concentrations are more frequent in the construction levels. The lithic finds only show a poor inventory, and, though production debris is present, larger stone knapping activities did not take place. However, a more detailed analysis still has to be carried out for possible limited or ad hoc local tool production, or if, alternatively, debris and debitage were the dislocated remains of production taking place elsewhere.

(C.J./P.K.)

9. Lithic studies

The recording and photographic documentation of the study collection of this project was completed during the autumn season of 2015.[88] The lithic finds which come from a building sequence of a third settlement area, 'Satet West' (see also above), have been added, so the original documentation by R. COLMAN was modified and enhanced according to our now established recording system[89].

Consisting of 3081 pieces, almost 2/3 of the collection originates from chosen contexts of the 2nd/3rd Dynasty. Contexts from this date were chosen from the excavations of M. ZIERMANN, mainly from the area designated as Satet-North (STN) and, to a lesser extent, from the so-called north-eastern town (NO)[90]. The newly added research area Satet-west, recently excavated by P. KOPP, mostly originates from the same date, with only a small amount coming from the 4th dynasty[91]. The finds from the late Old Kingdom and early First Intermediate Period, mainly come from the settlement south of the main town[92], (excavated by D. RAUE) and from a small trench in the central town area (CTV), (excavated by M. ZIERMANN.[93]) However, the later cluster still lacks some detailed information on the fine

87 C. JEUTHE, *Balat X. Ein Werkstattkomplex im Palast der 1. Zwischenzeit in Ayn Asil, FIFAO* 71, Kairo 2012, pp. 240, 273.

88 See for an introduction and preliminary results C. JEUTHE/R. COLMAN, *9. Silex Studies*, in: S. SEIDLMAYER et al., *Elephantine - Report on the 44 the season (English)*, Cairo 2015, pp. 19-21, http://www.dainst.org/project/25953 (accessed: 05/06/2016).

89 R. COLMAN, *Flint*, in: P. Kopp (in print).

90 M. ZIERMANN, *Elephantine XXVIII. Die Baustrukturen der älteren Stadt (Frühzeit und Altes Reich). Grabungen in der Nordoststadt (11.-16. Kampagne) 1982-1986, AV* 108, Mainz 2003.

91 P. KOPP (in print).

92 See for the excavation area D. RAUE, *Untersuchungen im Stadtgebiet südlich des Chnumtempels,* in G. Dreyer et al., *Stadt und Tempel von Elephantine. 31./32. Grabungsbericht*, *MDAIK* 60, 2005, pp. 18-35.

93 See S. Müntel, *Siedlungsbebauung des späteren Alten Reiches und der frühen 1. Zwischenzeit im Bereich des ptolemäischen Chnumtempels (CTV)*, in W. Kaiser et al., *Stadt und Tempel von Elephantine. 21./22. Grabungsbericht, MDAIK* 51, 1992, pp. 109-120.

stratigraphical development, which is mostly completed for the collection, which is why the collection is currently still being studied as ensemble.

Around 80 % of the finds are classified as either debitage (incl. preparation flakes), debris, or as core, and, to a lesser extent, as indeterminate small fragment. Therefore finds referring mainly to local production are well represented. They occur in all research areas, though the amount dating to later deposits is slightly higher, but more than a third date to the 2nd/ 3rd dynasty. Although these are only preliminary observations, they clearly show the importance of local production as it seems the quantity is rather similar in all of the research areas despite their differences in date. We feel, therefore, that the role of local production in relation to the find contexts during the Old Kingdom on Elephantine Island will have to be re-viewed in detail. In contrast, as was already stated last year, most import groups and certain tools are lacking in the later deposits, which is why the imports might be understood as a diachronic element. But their occurrence rate in the area west of the Satet Temple is almost as low as in the later deposits, while they appear frequently and with much greater variation in the STN/NO area. The same applies to tools (such as bitruncated tools) which are related to specific kinds of raw materials. They are also hardly present in the area west of the Satet temple. To sum up, while it seems safe to suggest that imported tools only played a very small role in the late Old Kingdom, they have so far appeared in varying quantities in earlier Old Kingdom contexts. We hope, therefore, to follow these questions up in the future, to shed a different light on the distribution inside the settlement, and possibly to undergo a functional analysis of the individual building complexes.

(C.J./R.C.)

10. Training of inspectors and museum staff in museum education and an open day for pupils from Aswan in the Nubian Museum

From October 25th to 29th, 2015 a training course in “Museum Education” took place in the Nubian Museum in Aswan[94].

Modern museology demands museum education. A museum should offer access to its pieces to all visitors. Children are essential for museums, because they are the future visitors: make a museum attractive and interesting for children and they will come back when they grow up. The main focus of this training were therefore the children (age 6 to 12) and how to involve them in a museum or an archaeological site.

Fourteen curators from the Nubian Museum, the Island Museum on Elephantine and the inspectors’ offices of the Ministry of Antiquities for Pharaonic and Islamic Archaeology in Aswan took part in this training.

The first day was used for getting to know each other and the collection of the Nubian Museum. The participants learned how detailed objects can be seen. There are different angles on which to present an object to children and how to embed it in different themed guided tours.

This continued in the next two days: the participants selected objects from the collection which they thought interesting and presented them to the rest of the group, further viewpoints were added by

94 This course was held by R. BICKER, from the State Museum of Egyptian Art in Munich, Germany on invitation of the German Archaeological Institute Cairo, who is an Egyptologist and works since 10 years in the field of museum education. Help and translation support was given by H. SONBOL, who is working in the project “Teaching Materials on the Archaeology of Egypt” at the German Archaeological Institute Cairo.

Roxane Bicker, including how to engage children with the object. Children need variety in presentation, the need to see, to hear, to feel, to touch. It is also important not only to talk to the children, but to ask them and help them to find things out on their own. Children should be seen as equals to adults and should be treated so. The view on an object from a child differs from that of an adult. The participants of the training soon took this approach to heart. A lively exchange between them happened, the difference between children in Egypt and Germany was discussed and the (not so different) problems of museums in both countries. Roxane Bicker also showed examples from various activities for children in museums in Germany, for example holiday activities, workshops for one or more days, games and contests.

Fig. 44–48: (top left to second row right): Children during the open day at the Nubia Museum doing activities in the museum and learning about objects (Fotos: J. SIGL, DAI).

The fourth day was a field trip to the excavation on Elephantine, because the involvement of children on archaeological sites is also important, even though the conditions under which to work are very different from museums. Unsupervised activities for children like museum-quizzes or an archaeological backpack (which is very successful in the Munich museum) were discussed. The participants also guided one another on the excavation.

The fifth and last day was for practical work and the preparation of the Children's Day in the Nubian Museum on November 1st. On this day the participants transferred the theoretical knowledge they had learned in the past days into practice. Five stations were prepared, where one object should be

presented to the children followed by a small workshop. These workshops included writing in hieroglyphics, designing pectorals, making an Egyptian mask, playing the board-game Senet and crafting a little diorama. The participants were responsible for the realization of the day. Nearby schools were invited to come to the Museum in four groups of each 50 children at each morning-hour.

During the whole training all the participants were very interested and eager to learn. They were excited, very intent and reliable. All recorded a great deal of what was said and done.

The Children's Day was a great success. Nearly 200 children took part in it and the Nubian Museum bustled with activity. The participants showed what they learned, encountered the children on eye-level, showed a great variety of presentation and mastered also occurring challenges in the interaction with the children independently. The questioned themselves after the first group of children and tried to improve with the following groups.

Let me add a personal note at last: I am very proud of all of my attendees! They did a very good job.

Fig. 49: Participants of the training in museum education and with their trainer and the directors of the Inspectorate and museum (Foto: J. SIGL, DAI).

(R.B.)

11. Training of local colleagues in archaeological field drawing

The two week long fieldschool took place from the 5th to 17th March with six inspectors from the Aswan Inspectorate. The lessons dealt with field documentation and, in particular, with the drawing of sections, including stratigraphic analysis and description. There were both theoretical and practical lessons. For the latter, an area next to the pyramid was selected, where larger sections remained from previous excavations, while the theoretical background focused on the presentation of different systems of documentation. During the second week the focus moved towards establishing a grid system and how individual drawings can be related thereby. We intensively trained the members in different methods of creating a general grid and drawing lines, such as by using Pythagoras, the leveling instrument (‘dumpy’) and by triangulation. Finally, in the last days of the field school, we integrated the drawing of plans into our work, and discussed the problems of stratigraphy evident in different areas of Elephantine.

(C.J.)

List of depiction

Fig. 31: Sketch map of Late Period town. A: Presumed location of 18th Dynasty chapel; B: Processional route of 25th Dynasty; C: Temple enclosure of 26th Dynasty; D: Location of chapel of Psametik II; E: Enclosure of 27th Dynasty.

Fig. 32: Statues of the MK in the filling of robbed foundation trench cutting into an older retaining wall. At lower right paved processional route of 25th Dynasty bonding to retaining wall.

Fig. 33: Statue 45701L/c-2; **Fig. 34**: Statue 45701L/c-23 (Fotos: A. KRAUSE, SI).

Fig. 35: Mortar on decorated face of a NK pillar fragment (Foto: C. VON PILGRIM, SI).

Fig. 36: Three sides of a pillar from the barque station of Hatschepsut, found reused in the foundation of the temple of Nectanebos II. (Darwing: F. ARNOLD/L. MAJERUS, DAI).

Fig. 37: Thutmosis I offering ointments to the goddess Anuket, lady of Nubia. Block reused in the foundation of the temple of Nectanebos II. (Foto: F. ARNOLD, DAI).

Fig. 38: Thutmosis II presenting cattle to Khnum-Ra. Block reused in the foundation of the temple of Nectanebos II. (Drawing: F. ARNOLD, DAI).

Fig. 39: Stela dated to year 8 of Senwosret III (Foto: P. KOPP/Zeichnung: F. ARNOLD, DAI).

Fig. 40: Filling of joints with lime mortar (Foto: C. VON PILGRIM, SI).

Fig. 41: Side view of Osiris Nesmeti Temple; **Fig. 42**: Lintel of side entrance: Block Y44 with unfinished torus and secondary engravings (Fotos: C. VON PILGRIM, SI).

Fig. 43: Consolidation of column with stainless steel dowels (Foto: C. VON PILGRIM, SI).

Fig. 44–48 (top left to second row right): Children during the open day at the Nubia Museum doing activities in the museum and learning about objects (Fotos: J. SIGL, DAI).

Fig. 49 Participants of the training in museum education and with their trainer and the directors of the Inspectorate and museum (Foto: J. SIGL, DAI).