Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2017 to summer 2018

by Johanna Sigl, Bettina Bader, Michael Fielauf, Clara Jeuthe, Ewa Laskowska-Krusztal, Peter Kopp, Claire Malleson, Marie-Kristin Schröder, Cornelius von Pilgrim

Abstract

In the 2017-2018 season the German Archaeological Institute Cairo and the Swiss Institute for Architectural and Archaeological Research in Cairo continued their field research on Elephantine Island. The work covered settlement investigations of the late Middle and New Kingdom as well as studies on the Late Period Khnum temple precinct. Field research on the decoration of the Greco-Roman temples of Elephantine and the anastylosis of the temple of Osiris-Nesmeti was also continued. To present the long-term work of our Egyptian colleague M. Abd el-Latif on Arabic ostraca, the German Institute prepared a special exhibition in the Annex-Museum on the island, which will be accessible to the public between April and October 2018. Lastly during the past season, the DAIK provided four successful field-training courses, several discussion tours of the site and a study day for Egyptian colleagues.

Keywords

Elephantine, Middle Kingdom, New Kingdom, Greco-Roman temples, settlement excavation, temple of Khnum, Osiris-Nesmeti temple, Arabic ostraca, exhibition, field-school

Content

1. Introduction (by J. Sigl)

The German Archaeological Institute Cairo (DAIK) in cooperation with the Swiss Institute for Egyptian Building Archaeology (Swiss Institute) has undertaken investigations of the ancient town and temples of Elephantine since 1969. The 2017-18 season began on October 17th, 2017 and finished on May 4th, 2018*.

The DAI continued its archaeometric project 'Realities of Life' in the ancient north-western part of the town of Elephantine (section 2). Between autumn 2017 and summer 2018, two seasons of excavation were conducted as well as the study of small-finds. The Swiss Institute finished excavations in the centre of the New Kingdom and Late Period town of Elephantine (section 3).

In addition, several projects were aimed at the study of single objects and object groups. Field research on the decoration of the Greco-Roman temples of Elephantine was continued (section 4). The Swiss Institute undertook further work on the conservation and rebuilding of the temple of Osiris-Nesmeti (section 5).

We can also report with great pleasure the opening of a special exhibition on Arabic ostraca found on Elephantine Island (section 6). The exhibition is in the excavation museum (the so-called Annex Museum), which was built by the DAI and its cooperation partners in the late 1990s and was only recently refurbished.

Lastly, the DAI was able to provide four successful field-training courses for Egyptian colleagues in the past season (section 7), using the auditorium and library of the German excavation house on Elephantine Island.

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

a) Introduction (by J. Sigl)

The 'Realities of Life' project was initiated in autumn 2013 in order to establish a new approach to settlement excavation on the island of Elephantine. The scientific focus of the project lies on the exploration of everyday life in the Middle Kingdom town. In this project, daily life is understood as being marked by the actions of people to ensure their bodily and general well-being and by their reception and alteration of the environment to benefit these ends. These activities occur mainly within homes and their immediate surroundings. They become apparent in the archaeological record from the material culture, and study focusses on three major categories: I) the production and storage of food and drink, II) the acquisition and manufacture of inedible goods or tools, and III) the building, development and use of the living and working environment. Important factors in those activities are connections between peoples and places through trade and exchange on a local, regional and supra-regional basis.[1]

The project also includes a methodological aspect. Through the integration of archaeometric procedures to support the standard archaeological investigation from the start of the fieldwork onwards, the range of results from the excavated material should be increased. The Elephantine project of the DAIK provided for this purpose the sustained infrastructure for a long-term excavation. Building on this solid base, the 'Realities of Life' project was planned to proceed in three major steps: excavation, analytical processes and interpretation (fig. 1).

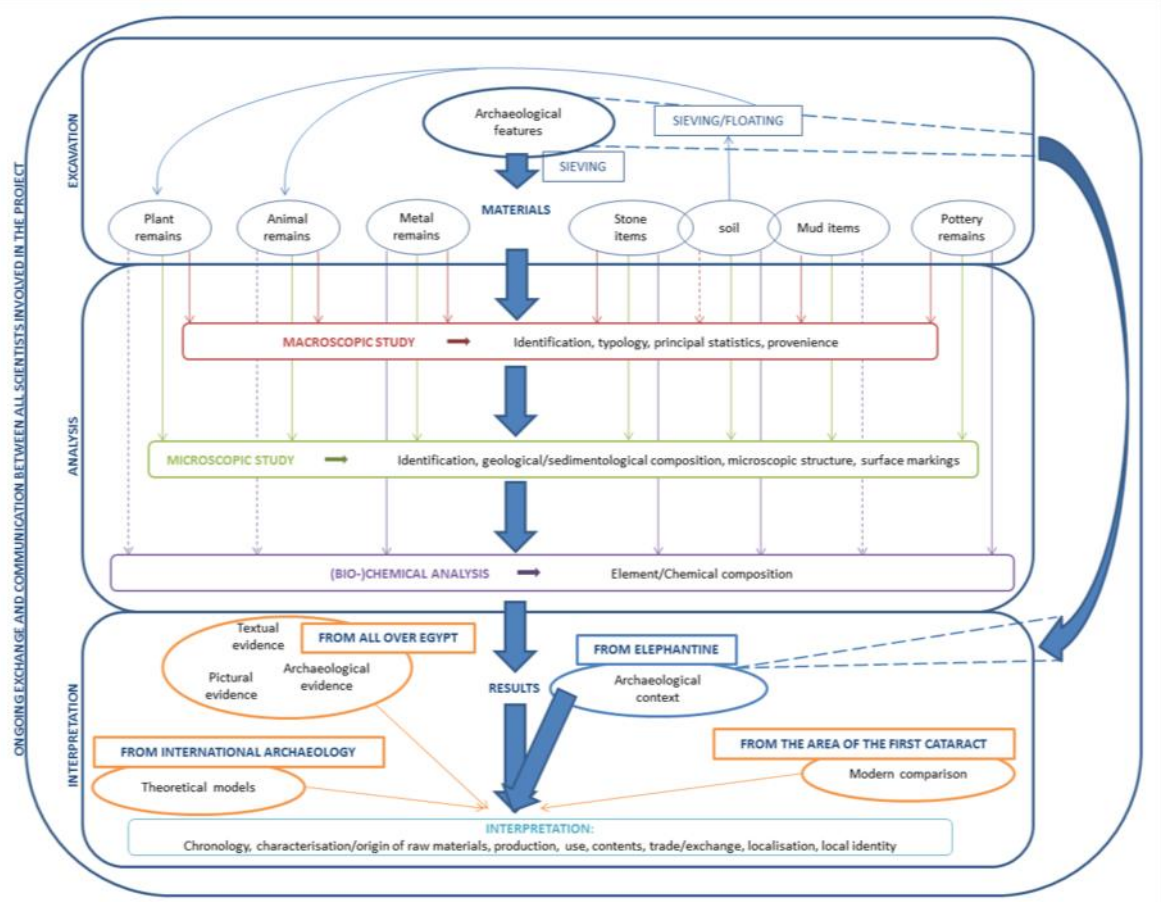

Fig. 1: Research concept of the project 'Realities of Life' (graphics: J. Sigl © DAI Cairo).

The aim of the seasons since the start of the new excavations was to revise fieldwork techniques and primary find processing. Changes to the excavation method and sampling process focussed on:
i) preventing contamination of finds and samples, especially those intended for (bio-) chemical studies,
ii) collecting and processing the amounts of material appropriate for statistical analyses, as well as collecting suitable samples for archaeometric studies such as residue analysis of pottery vessels and stone tools, component analysis of pigments and binders as well as metal objects, use-wear analysis of stone tools, bone objects and reused pottery, etc. and
iii) ensuring adequate working and safety conditions for workmen and scientists alike.
These new sampling, sorting, storage and safety measures have been successfully integrated into the fieldwork routine for several seasons.[2]
A principal aim of the 2017-2018 and following seasons is to further the analytical work on all find materials in the storage rooms on site and in laboratories. Some preliminary results of this work will be reported below (sections c-f).

b) Excavations in the Middle Kingdom settlement of Elephantine (by P. Kopp)
In autumn 2017 and spring 2018, the German Archaeological Institute continued excavations in the north-western part of the town in the framework of the project 'Realities of Life'. The project's excavations started in 2013, in a trench measuring 10 x 10 m and located next to the south-eastern corner of the Old Kingdom pyramid of Elephantine. Over three and a half years, four main building layers spanning the First Intermediate Period to the early 13th Dynasty were excavated.[3] A second trench, located south-west of the first one, has been the focus of

investigation since spring 2016. Excavations within this trench exposed approximately half of the floor area of house 169.[4]

Fig. 2: Houses 73, 166b and 169b (middle of Dynasty 13), (original drawings: R. Colman, P. Kopp; digitalisation: P. Kopp © DAI Cairo).


Fig. 3: House 169b (photomerge: P. Kopp © DAI Cairo).

This season, investigation focused on one occupation phase of house 169, dating to the middle of the 13th Dynasty (figs. 2 and 3). House 169 is one of the largest Middle Kingdom houses on Elephantine. The entrance is in an alley to the south-east. A corridor (R02) featuring

several stone steps led from the entrance to the first court (R04), which was the working area of the house. In its south-eastern part was a room (R05) enclosed by a wall only half a brick wide. To the west of the room was a rectangular storage device about 1 m in length (installation 602). In front of it were several fireplaces. One of them, located in the southern corner of the trench, had as a special feature dozens of small holes in its surface (fig. 3, bottom left and fig. 4). These holes were of varying diameters of a few centimetres only. Due to the fact that bread baking has been attested in immediate proximity to this fireplace in the same courtyard and occupation phase, a first idea was that the holes might represent negative impressions of bread mould bases. However, in comparison with the bread moulds discovered in this area (see below) neither size nor shape fit. Thus, an explanation for this unusual hearth is still pending.

More than 450 amethyst fragments were found in this court close to the mentioned fireplace with the holes. They clearly indicate that manufacturing of amethyst items took place in this part of house 169. It is still questionable, if a connection between these finds and the fireplace exists.

Next to an only partly-preserved wall (M1981) to the north-west of the court were a circular granary (instl. 604) and two rectangular rooms filled with ash. The smaller room was built first (instl. 603), and the room in the north-east was added later (R05). One of the possible uses of the latter space was for the baking of bread, as at least the youngest layers in the long sequence of ash deposits filling the room contained high concentrations of bread moulds.[5]

In the north-western half of the trench was a second court (R08), reached by passing a room located in the western corner of the trench (R09). In this court, a sequence of more than 15 floors was preserved. By comparison with the other court, they were relatively clean and lacked fireplaces or any kind of production residues. An installation (instl. 600) against the south-western wall may have been used for storage. On the opposite side of the court was a mud-brick staircase similar in construction to the better-preserved flight of steps in house 70.[6] Under a now-lost arch supporting the steps was a storage space (instl. 84). In front of the staircase was one of the room's two column bases. The second base was situated next to the above-mentioned instl. 600 on the opposite site of room 08. The column bases indicate that at least the north-western half of the room had a second storey, as probably did the room in the western corner of the trench (R09).

Fig. 4: Fireplace in room 04 (photo: P. Kopp © DAI Cairo).

A distribution map of the number of amethyst fragments in the area shows a high concentration of this material in house 169 in the phase dated to the middle of Dynasty 13 (fig. 5). While in house 73 only one piece was found and in house 166b only nine fragments,

house 169b yielded 527 amethyst pieces, most of them in the court R04. This concentration cannot be explained only by the good preservation of use strata in house 169. The house must have featured a workshop that produced amethyst objects. This material was used in ancient Egypt mainly for the manufacture of scarabs and jewellery. A fragment of an unfinished scarab, also found in house 169, supports this hypothesis.[7] It had an unfinished drill hole and must have broken during manufacturing and thus was discarded. Additionally, a few beads made of amethyst were found.[8]

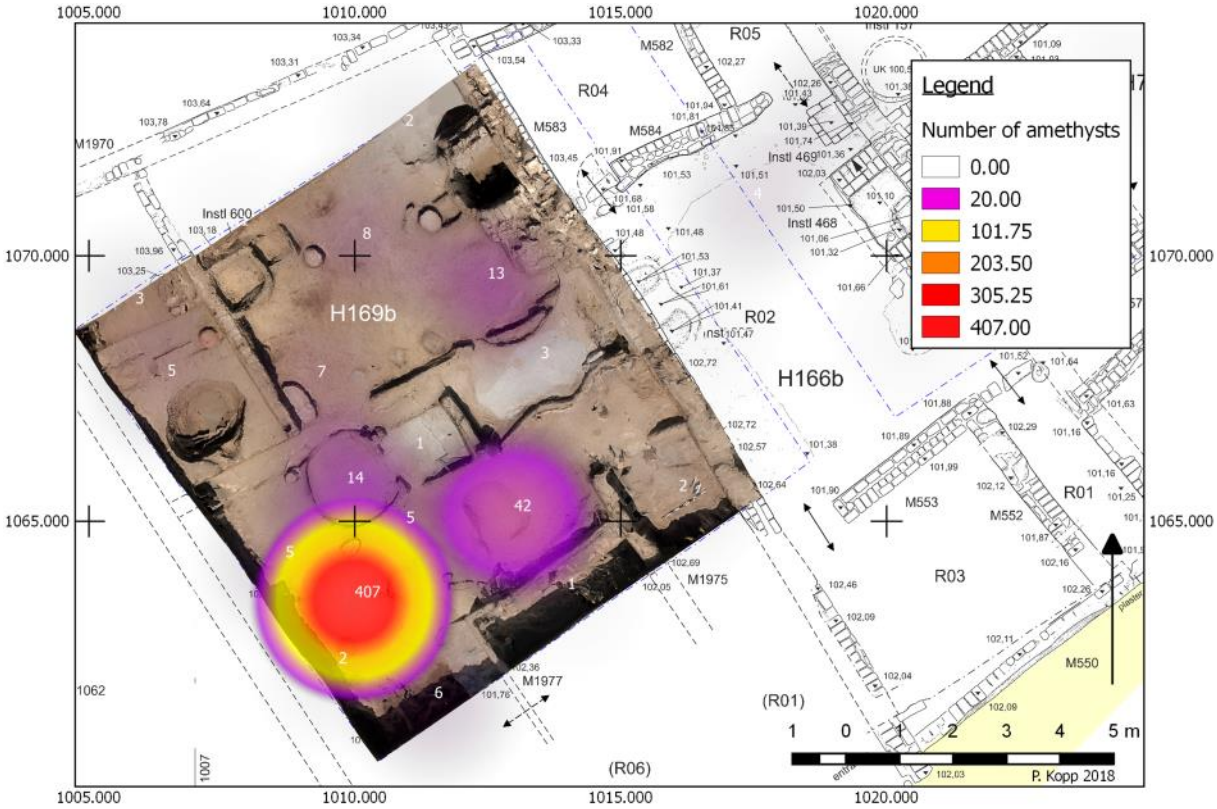

Fig. 5: Amethyst fragments in houses 166b and 169b (middle of Dynasty 13), (graphics: P. Kopp © DAI Cairo).

Fig. 6: Location of the amethyst mines in Wadi el-Hudi and at Gebel el-Asr (satellite photo: Google Earth, graphics: P. Kopp © DAI Cairo).

Amethyst is a translucent violet-coloured form of quartz. There are two possible sources for it in the wider vicinity of Aswan:[9] The closer one is Wadi el-Hudi, about 35 km to the southeast, and the other is Gebel el-Asr to the southwest, approximately 65 kilometres northwest of Abu Simbel (fig. 6).[10]
Wadi el-Hudi, situated in the Eastern Desert, was the primary location for amethyst mining from the 11th Dynasty until the end of the Middle Kingdom.[11] Here the amethyst occurs in cavities in the granite. The mines were rediscovered by the geologist Labib Nassim in 1923, but first archaeological investigations did not take place until 1939, when the Egyptian Topological Survey visited the site and found three stelae dating to the reign of Senwosret I.[12] Incorporated into the walls of the adjacent settlement were numerous rock-carvings and inscriptions, five of which dated to the reign of Mentuhotep IV.[13] During his reign in the late 11th Dynasty, the mining settlement was officially founded, while another inscription shows that it was still in use in the reign of Sobekhotep (IV) Khaneferre of the 13th Dynasty[14]. The pottery found in large quantities throughout the settlement also dates to the Middle Kingdom. It is difficult to determine the precise characteristics of the amethyst from Wadi el-Hudi because the stone is today completely worked out. Judging from Middle Kingdom jewellery thought to have been made from stone coming from this quarry, it had a dark violet hue.[15] The mines in the Stele Ridge area of the Gebel el-Asr gneiss quarry yielded Middle Kingdom pottery and stelae recording expeditions for 'precious material' under various kings.[16] Alongside the Wadi el-Hudi mines, these mines were possibly the principal Egyptian amethyst mines during the 12th Dynasty.[17] The inscribed objects from Gebel el-Asr bear the names of 12th-dynasty kings from Amenemhet I to Amenemhet III. A group of marl C storage vessels discovered in a group of dry-stone huts on the quartz ridge dates the main workers' settlement site in the area to the middle of the 12th Dynasty.[18] In contrast to the dark-coloured amethyst of the Wadi el-Hudi, the material from Gebel el-Asr was much paler and similar in appearance to rose quartz.[19]
The material found in layers of the middle 13th Dynasty in house 169 on Elephantine includes both colours of amethyst. It seems, therefore, that in this period Elephantine received amethyst as raw material for jewellery production from both mines.[20]

c) Studies on Nubian pottery (by M.-K. Schröder)
Following on from the report of the 2016-2017 field work[21], the study of Nubian pottery excavated in the north-western town in the settlement of Elephantine Island was continued. Up to now, more than 1300 fragments of Nubian pottery have been studied, which is only a small fraction (around 1-2 %) of the total ceramic assemblage. Of these, the majority of the identified material can be classified as domestic ware, and the remaining finds are fine wares, both decorated and undecorated. One main focus of the study is the qualitative analysis of the appearance of Nubian pottery. Therefore, analysis of fabrics, vessel and rim shapes and the various decorative patterns are important. In the classification of the Nubian pottery ten different ware types can be distinguished.[22] For these, the characteristic features (e.g. fabric, temper, vessel and rim shape, surface treatment, decoration) are studied. No detailed classification, for example, of the vessel shapes can be undertaken, since the preservation of the rim diameter lies only between 3-7 % and the sherd height is only few centimetres. Nevertheless, the comparison of the material with that from other sites with Nubian pottery, enables the overall shape of the vessel to be reconstructed as hemispherical, either with a restricted or unrestricted orifice and rounded base (fig. 7). The vessel sizes are as follows:

small (< 12 cm)
medium (12-20 cm)
large (> 20 cm)

The rim shapes show a relatively high variance with three main groups:

A: direct (10 sub-groups)

B: modelled (2 sub-groups)
C: recessed (1 sub-group)

One of the main diagnostic features is the decorative pattern regularly occurring on fine as well as domestic wares. As already mentioned in the last report,[23] the two main pottery traditions belong to the so-called C-Group and Pangrave cultures. These pottery groups differ in various aspects from each other, especially regarding the decoration. While, for example, C-Group domestic wares mainly show decoration of triangles with many variations (fig. 7), Pangrave pottery is characterised by patterns of criss-cross lines (fig. 8). However, the main characteristic feature is the recessed rim on almost all Pangrave vessels (fig. 9). From this feature, a C-Group or Pangrave affiliation can be established. So far, the occurrence of C-Group and Pangrave pottery is not contemporaneous. Before the sudden appearance of recessed rims in the Nubian pottery assemblage, C-Group pottery is present, although in smaller numbers than in the middle of the 12th Dynasty. Due to a detailed chronological study of the Egyptian pottery from the north-western town by P. Kopp, the appearance of the recessed rims can be shown to start in the mid-13th Dynasty.[24]

Fig. 7: Nubian hemispherical domestic decorated ware. C-Group (Photo: J. Garzon © DAI Cairo).

Fig. 8: Nubian hemispherical domestic decorated ware. Pangrave (Photo: J. Garzon © DAI Cairo).

Fig. 9: Nubian hemispherical domestic decorated ware. Pangrave (Photo: J. Garzon © DAI Cairo).

The appearance of Nubian pottery in the settlement of Elephantine Island can be explained by its location in the area of the first cataract, the natural northern border of Lower Nubia. The first cataract from the late Neolithic period is known for both Egyptian and Nubian sites in close proximity such as Shellal and Wadi Qubanieh. Therefore, Nubian and Egyptian groups interacted here more than in other parts of ancient Egypt or Nubia.[25] The frequent occurrence of Nubian pottery at Elephantine from the 4th to the 2nd millennium BC shows the continuous presence of a Nubian population at least close to the island if not in the settlement itself. Whether the production of Nubian wares took place in Elephantine or at another site is one of the broader research questions currently being addressed by a petrographic study by M. Ownby. However, St. Seidlmayer states that amongst the population of Elephantine a certain percentage was indeed Nubian, as is evident from at least one burial in the necropolis and the occurrence of few Nubian small finds in the settlement.[26]
The study of Nubian pottery from Elephantine is of great importance for the study of Nubian cultures at a whole, especially since Elephantine is one of the last remaining sites with common Nubian pottery from the 4th to 2nd millennium BC in Egypt. Furthermore it consists mainly of domestic ware, contrary to the many pottery assemblages from Nubian cemeteries in Nubia and Egypt.

d) Report on archaeobotanical studies (by C. Malleson)
As part of the 'Realities of Life' project currently under progress on Elephantine the study of plant macro-remains began in February 2016, and has continued regularly during the subsequent work seasons.[27] Plant remains are well preserved on Elephantine Island. The arid climate and lack of rain, combined with the fact that the settlement on the island was always above the level of the annual inundation, and is well above the water table, means that organic preservation by both charring and desiccation is possible - unlike the majority of flood-plain settlements in Egypt at which desiccated remains are extremely rare.

i) Goals
The principal research questions in this project relate to daily-life activities within one building in the Middle Kingdom – Second Intermediate Period town on Elephantine. For this reason, the sampling strategy is designed to identify routine practises. In addition to the collection of all plant remains collected from on-site bulk sieving, samples are taken from every feature, and processed via both fine dry-sieving and flotation.

ii) Methods
At present the method is as follows:-
- A c.10 litre sample (one *muktaf*) is taken from every feature during excavation for archaeobotanical analysis
-- Of the 10 litre 'flotation' sample, 1 litre is kept for dry-sieving. During the autumn 2016 season it was noted that the <1mm portion of the sample contained a restricted number of different taxa, and so since then a sub-sampling protocol has been used. All material >1mm is sorted and identified, 10% of the <1mm material is sieved though a 500µm, 250µm geological sieve stack, sorted and identified. This allows a larger number of samples to be studied, gaining a broader picture of activities in the settlement
-- The rest of the flotation sample is sieved through 500µm mesh (to remove the fine silt which hampers flotation), and processed via machine flotation (250µm mesh, with 1mm mesh for the heavy fraction) and carefully sun-dried. Samples are randomly selected for analysis. Between 20-100% of each sample selected is studied.
- Other than material taken for various different analyses by specialists, all remaining spoil from every deposit is dry sieved through a 5mm mesh onsite during excavation (bulk-sieve samples). Any plant remains (including wood) found in the sieves, are collected by the

excavation team. All samples are sorted by the archaeobotanist and any non-wood items are identified and quantified.
- During the 43rd and 44th campaigns bulk-sieve samples were collected, during the 45th - 47th campaigns, bulk-sieve, flotation and dry-sieve samples were collected.
- All remains are sorted and identified in the Elephantine work-rooms under a BMZ zoom stereo microscope at 6–30x magnification. All specimens are identified on the basis of morphology and comparison with modern reference specimens and reference illustrations.[28] Nomenclature of wild plants follows Boulos.[29]

iii) Species identified in samples to date (listed by taxa group)
Cereals:
6-row hulled barley – *Hordeum vulgare* subsp. *vulgare* L. (awns, lemma, palaea, spikelets, grains, rachis internodes)
Emmer wheat – *Triticum turgidum* subsp. *dicoccum* (Schrank) Thell. (spikelets, grains, spikelet forks, glume bases)

Wild grasses:
Halfa – *Phragmites australis* (Cav.) Trin ex Steud. / Desmostachya bipinnata (L.) Stapf. (culms)
Wild sorghum – *Sorghum* cf. *halepense* (grains, rachis)
Millet – *Panicum sp*. (grains, rachis)
Canary grass – *Phalaris sp*. (grains)
Ryegrass – *Lolium sp*. (grains, rachis internodes)

Fibre / oil crops:
Linen (flax) – *Linum usitatissimum* L. (fruits, seeds, pedicels)

Legumes:
Fava bean – *Vicia* cf. *faba* (seeds)
Clover – cf. *Trifolieae tribe* (seeds)

Reeds and sedges:
Sedge – *Cyperus sp*. (nutlets)
Rush – *Schoenoplectus sp*. (nutlets)
Annual fimbry – *Fimbristylis bisumbellata* (Forsk.) Bub. (nutlets)
Spikerush – *Eleocharis sp*. (nutlets)

Other wild / weed species:
Hairy glinus – *Glinus lotoides* L. (seeds)
Sea ambrosia – *Ambrosia maritima* L. (seeds)
Nightshade – *Solanum sp*. (seeds)
Berrys – *Rubus sp*. (seeds)
Catchfly – *Silene sp*. (seeds)
Borage – *Boraginaceae family* (seeds)

Fruits, trees and palms:
Sycomore fig – *Ficus sycomorus* L. (fruits, compound fruits)
Christ's thorn – *Ziziphus spina-christi* (L.) Desf (endocarps)
Colocynth melon – *Citrullus colocynthis* (L.) Schrad (seed)
Date palm – *Phoenix dactylifera* L. (seed)
Desert date – *Balanites aegyptiaca* (L.) Delile (epicarp, endocarp)

Dom palm – *Hyphaene thebaica* (L.) Mart. (endocarp, seeds)
Argun palm – *Medemia argun* Wuert. ex H. Wendl. (fruit)
Nile acacia – *Acacia nilotica* (L.) Delile (fruits, seeds)
Nile tamarisk – *Tamarix nilotica* (L.) Delile (leaflets)
Tamarisk – *Tamarix aphylla* (L.) Karst. (leaflets)
Persea – *Mimusops laurifolia* (Forssk.) Friis (seeds)

iv) Study of mudbricks
Four mudbricks from different walls were studied in the autumn 2017 season. For each brick both dry-sieving and flotation were conducted. Each brick was split roughly in ½. One ½ was crushed up and dry-sieved though a 2mm, 1mm, 500µm, 250µm geological sieve stack. The remaining ½ was soaked in water for approximately 30 minutes – 1 hour and gently broken up. The water was poured through a 250µm mesh which collected all light floating materials from within the brick matrix. There was so little plant material in the bricks that the conclusion has to be that the bricks were un-tempered. This is a helpful conclusion as it indicates that disintegrated mud-bricks will not be contributing any materials to the botanical assemblage – therefore the remains found in the samples do all probably derive from household waste.

v) Study of sheep/goat faeces contents
A sample of sheep/goat faeces was selected for study from feature 47501A/a during the autumn 2017 season. The desiccated pellets were soaked in order to gently break them down and examine the contents. The results very strongly indicate that the diet of local sheep / goats was dominated by grazing on local shrubby plants – as is the case today on the island. There was no evidence of foddering with either cereal processing by-products or cultivated fodder crops (marked by the total absence of any identifiable remains of any plants other than heavily masticated woody pulp), although it will be necessary to continue this study and look at samples of sheep/goat pellets from other features before any firm conclusions are reached.

vi) Botanical materials collected from heavy fraction
The process of flotation involves collection of the ‘heavy fraction’ – materials that do not float during flotation. This material includes gravels and all material culture remains in the sample such as ceramics, stone items etc. It also includes a number of plant remains which are too heavy to float. In the spring 2018 season botanical remains from heavy fraction were studied. Almost all the specimens recovered were fragments of the woody endocarps of *Ziziphus spina-christi* (Christ thorn / nebak fruit stone). This is illuminating and emphasises the importance of looking at remains from all stages of recovery / sampling. If we were not checking the heavy fractions we would be ‘missing’ this species - it would be under-represented in the samples.

vii) Discussion
The picture of Elephantine as being an area in which agriculture was dominated by barley cultivation is now without question. In addition, it is almost certain that the inhabitants were growing flax (linen) for the fibres, and possibly also for the oily seeds. Halfa grasses probably grew wild, and abundantly, as they do today, and were collected for multiple uses in the settlement. The island and areas around were certainly rich in fruit-bearing trees, but analysis of the wood samples from the excavation is now critical. Some of the tree species are very well-attested from sites elsewhere and are well-known to have grown abundantly throughout Egypt, for example *Ziziphus spina-christi*, *Acacia nilotica*, *Ficus sycomorus*, and *Phoenix dactylifera*. Some of the trees are less well-attested, and although they are known to favour the more southern climate, it is possible that the fruits may have been imported to the area

from further south (Nubia). If the wood samples include these species (e.g. *Balanites aegyptiaca*, *Medemia argun*), then we can perhaps conclude that these trees were growing in the area, if not, then the fruits must have been imported. One question of specific interest is the identification of the palm leaf 'rib' fragments which are found in many samples – as yet un-studied. If these are from doum palms (*Hyphanae thebaica*) then we can conclude that this palm grew in the area (as it does today), if they are date palm (*Phoenix dactylifera*) then this leads into the issue of the role of the date palm in Egypt prior to the discovery of the need for artificial fertilisation of the palm (in order to produce significant quantities of fruits – without human intervention these palms produce only a few fruits per tree). It is generally thought that the change in use of date palms took place during the Middle Kingdom, but remarkably few specimens are recovered from settlement sites in Egypt generally, from all periods. However, what is of great interest is the fact that excavations in the tombs of the Elephantine inhabitants, at Qubbet el-Hawa are yielding significant numbers of date palm seeds,[30] suggesting perhaps that these fruits were highly valued and reserved for funerary purposes.

e) Report on small find processing (by J. Sigl)

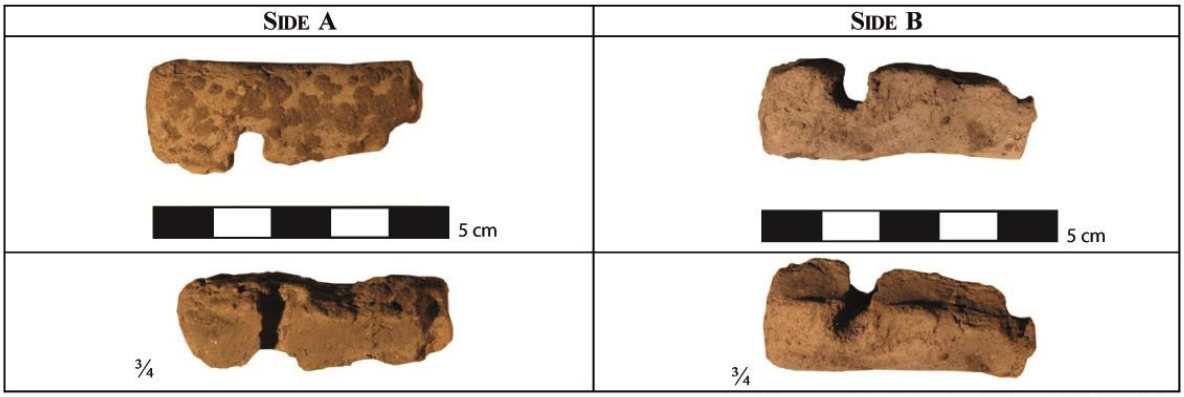

Fig. 10: Unusual mud seal with the negative impression presumably of a shrine door bolt (photos: J. A. Roberson © The University of Memphis for DAI Cairo).

The revised excavation technique of the project 'Realities of Life' creates an important opportunity but also a challenge for the archaeological work. Through dry and wet sieving with mesh sizes down to 250 µm, a much greater quantity of very small items are recovered from the archaeological strata than by using only standard recovery techniques. This additional material provides a deeper insight into the actions that once took place in the excavated houses. However, the preliminary and secondary recording of all of these finds is time-consuming and demands addition personnel during the season. The DAIK is therefore grateful that it was able to secure not only the services of many international specialists[31] to work on various types and materials, but also of students and graduates from Germany, Switzerland, Egypt, Spain and Brazil,[32] who are essential for the pre-processing and preliminary database recording of all the excavated items. Furthermore, several of our workmen from Quft, who have been specially trained in aspects of the sorting and recording process, provide essential support for the scientific work.[33]
In the following text, some results of this season's work on the finds are summarised.
In the spring season 2018, an unusual mud seal was found and identified by J. A. Roberson[34](fig. 10). This can possibly be attributed to a shrine, and might therefore have come from the late Old Kingdom or early Middle Kingdom temples of Satet or Heqaib. The object was excavated two years ago. It came from a levelling layer connected to construction works for houses 170 and 172 in the first trench excavated by the 'Realities of Life' project, which was dated through pottery and stratigraphic sequencing to the 11th dynasty.[35]The

sealing as preserved is 4.48 cm long, with a maximum width of 1.5 cm from the exterior edge to interior edge. It has a somewhat irregular, rectangular rod-shape, which is not impressed on the exterior sides and edges, but which bears a semi-circular impression along the full length of the interior edge (fig. 10: lower two images). The impression indicates that the mud object had been affixed to the upper third of a round surface that was approximately the width of a modern pencil and probably longer than the mud object itself. The most intriguing feature is the presence of two smaller, semi-circular holes (fig. 10), approximately 0.61 cm wide and 2.37 cm apart, which run perpendicular to the lengthwise impression, piercing the mud object from one side to the other.

This curious artefact is, so far, without clear parallel in the corpus of mud objects at Elephantine. One possible function is that it might have been affixed as a seal to a small door-bolt, comparable in shape to the z-hieroglyph (), and perhaps installed on a portable shrine or similar object with bolted double doors. Door bolt seals with comparable pierced impressions have been identified by Josef Wegner in the late Middle Kingdom levels of the town site of *Wah-sut* at Abydos[36] and might also have been found by George Reisner in the fortress of Uronati in Nubia[37]. The Abydos door-bolt seals always bear seal impressions stating names of institutions and kings, which the object from Elephantine unfortunately lacks. Furthermore, the clear flat surface of the door that it once sealed does not show up as clearly as in the seals from Abydos. Explanations for these variations might be either that the Elephantine seal is the result of an earlier and simpler sealing practice or that this way of sealing is an example of local variation in technique.

Apart from being a so-far unparalleled sealing type, the find position of the mud object reveals important information as to the practice of town planning on Elephantine Island in the early Middle Kingdom. Because of its location on granite rocks, which were subsequently covered by layers of settlement and necropolis from the early dynastic period,[38] the town of Elephantine can be described as a hill settlement with two peaks, one on each of the former islands. To achieve level building ground and horizontal floors within houses, the ancient inhabitants moved amounts of rubble from broken architectural elements, rubbish heaps and other sources from one part of the settlement to another. In most cases it is not possible to determine how far these fillings were moved. In the case of the sealing, which might have come from a shrine or shrine-like object, an educated guess as to the provenience of the debris can be made. Prior to and in the 11th dynasty, the temple of Satet was one of the main functioning institutions that would have practised regular sealing on its shrine or shrines. Broken sealings from the daily opening of the shrine would probably have been discarded in the vicinity of the temple.[39]At a later stage the rubble containing this object then was retrieved from the area of deposition to be reused as fill and levelling material in the area currently under excavation. Alternate proveniences may be the early sanctuary of Heqaib(?)[40], which is situated close to the Satet precinct, or the Old Kingdom necropolis, on which the houses currently being excavated are situated. Further investigation of the contents of the fill layer may reveal additional evidence to determine the location of its primary deposition and therewith also the function of the mud item.

Fig. 11: Stamp sealing naming king Amenemhet III (photo: J. A. Roberson © The University of Memphis for DAI Cairo).

Sealing impressions and seals are abundant in Elephantine excavations. Those bearing names and titles of administrative officials, kings or estates may be used for dating ancient strata and objects. Thus, a partly-preserved impression of a stamp seal (fig. 11) bearing the cartouche and throne name of king Amenemhet III (*Ni-Maat-Ra*), one of the last rulers of the 12th dynasty (approx. 1818-1773 BC), was found underneath a wooden threshold of the door connecting rooms 08 and 09 in house 169 on Elephantine Island (see section 2b). From this find and the analysis of the pottery deposits and stratigraphic sequence, the occupation layers around the find spot can be dated to the 13th dynasty.[41]
Of the total of 366 mostly fragmentary seal impressions, which number includes those mentioned above, and other objects made from sealing mud processed by J. A. Roberson in spring 2018,[42] summary data concerning impression types (scarab, oval and cartouche, button, shield, cylinder, pomegranate, other, incised, unclear / none preserved) and back types (peg, fabric, wickerwork, wood, cord, leaf/plant, unclear, not applicable [i.e. other object without back type]) are presented in tables 1 and 2.

Table 1: Preliminary numeric data from sealing impressions (table provided by J.A. Roberson).

impression type	**# (%)**
scarab	152 (41.5%)
oval and cartouche	2 (0.5%)
button	14 (3.8%)
shield	10 (2.7%)
pomegranate	1 (0.3%)
cylinder	5 (1.3%)
other	14 (3.8%)
incised	1 (0.3%)
unclear	36 (9.8%)
none	131 (35.8%)

Table 2: Preliminary numeric data from sealing back types (table provided by J.A. Roberson).

back type	**# (%)**
peg	136 (37.2%)
fabric	30 (8.2%)
wicker	6 (1.6%)
wood	40 (10.9%)
papyrus	7 (1.9%)
cord	27 (7.4%)
unclear / none preserved	105 (28.7%)
leaf / plant	1 (0.3%)
n/a	14 (3.8%)

Not all of these objects bore inscriptions or decoration from which to determine chronology . But of those on which remains of stamps could be distinguished, the overwhelming majority came from the Middle Kingdom / Dynasties 12–13. Additionally, five cylinder seal impressions date to the Old Kingdom.[43]One characteristic 'An-Ra' sealing from the Second Intermediate Period / Hyksos era was discovered, which could be dated to the same period through pottery and stratigraphic evidence.[44]Of the 16 impressions that preserve portions of private names and titles, object 47501 Z/h-13, bearing the titulary of a certain Sobek-hotep[45], object 47501 Y/i-13, on which the name of one Ankh-Hor (or Horus-ankh), son of Horus-nakht[46] is discernable, and object 47501 V/m-21, recording a certain Khememi,[47] who bore the high-status title 'Great one of the Tens of Upper Egypt' and would have reported directly to the office of the vizier[48], are notable.

f) Report on the find of a stork wing and its zoological and entomological investigation (by J. Sigl)

During spring season 2018 the wing of a black stork (*Ciconia nigra*)[49] was found between floor levels of the late Middle Kingdom (13th dynasty) house 169 (feature 47501V/m; figs. 12-13). It is rare that feathers can be retrieved from archaeological excavations even under the excellent conditions for the preservation of organic materials in Egypt and on Elephantine Island. Therefore this find of half a wing including bones, remains of soft tissue and especially feathers is exceptional.

Fig. 12: House 169, feathered remains of a stork wing (photo: P. Kopp © DAI Cairo).

Fig. 13: House 169, detail of preserved stork feathers (photo: P. Kopp © DAI Cairo).

Storks migrate annually through the cataract area, at which thermal upwind, caused by heated air above the granite bedrock, enable them to reach their preferred travelling height from or to their winter quarters in central Africa. From studies of archaeozoological material from the excavations of the DAIK and the Swiss Institute in collaboration with scientists from Ludwig-Maximilians-University Munich, storks were regularly hunted and eaten by the ancient Egyptians living on Elephantine Island.[50] However, in recent times the sighting of black storks in Egypt has become extremely rare, although white storks still pass through Aswan in great numbers.[51]
Insects from within and around the black stork wing were studied by Dr Eva Panagiotakopulu from the University of Edinburgh in spring 2018. Preliminary research has recovered dermestids (*Attagenus sp*.), which feed on a variety of material including skin and bone and puparia of house flies (*Musca domestica*), common from pharaonic domestic contexts. As no species which can be associated with early stages of decay of the bird were recovered, the wing was likely dried out when discarded and was not the leftover remains of a freshly-butchered animal. It is probable, as the ethnographic record suggests, that it could have been used in the household as a brush or a broom for cleaning and sweeping or as a fan for cooling or fanning fires[52]. As the tips of the wings were quite well preserved, the latter interpretations are most likely.

3. Archaeological investigations in the centre of the town

During this season, the Swiss Institute completed a long-term excavation programme focussing on the structure and development of the Khnum Temple precinct in the New Kingdom and in the Late Period.[53] Final excavations were conducted in two areas to the north (Area XXIX) and to the south (Area XXVI) of the Khnum Temple (fig. 14).

Fig. 14: Location of working areas (photo: C. von Pilgrim © SIK).

a) A temple workshop of the 30th Dynasty north of the late Khnum temple (Area XXIX; by C. von Pilgrim)

Ever since the inception of the Elephantine project, the Swiss Institute has focused its work on the area to the north of the Khnum Temple. In the early 1970s, initial research was conducted by G. Haeny.[54] Based on very limited sondages he recognised the extremely complex stratigraphy and offered preliminary considerations on the topography and general development of the area. In 2006, F. Arnold started an extensive investigation of the late-Roman occupation layers and eventually uncovered a scanty layer of Ptolemaic date between the remains of a Roman tower house at the northern edge of the area and the inner enclosure wall of the Khnum Temple to the south of it.[55] At this time, however, a small part of the area was still covered by a modern burial ground of the late 19th century, which was eventually moved in 2009.

The investigation of the earlier strata started in 2014, beginning in the foundation trench of the temple enclosure wall and subsequently extending towards the north to the steep edge that was mainly caused by the excavations of the French mission along the western enclosure wall of the Satet Temple in 1908.

A complex and discontinuous archaeological sequence characterises the general stratigraphy of this area. This can be explained by the specific topography of this area of the town. Since the Khnum Temple was built on the highest point in the old town centre, the ancient surface sloped down towards the north as well as towards the west. The slope was then differently shaped in various periods. It was either modified by dumping debris in order to extend the horizontal surface on top or it was artificially terraced. The latter resulted in an enormous loss of sequences of earlier accumulations and explains the lack of all building layers of the Second Millennium BC at the northern slope.

Fig. 15: Overview of workshop H210 next to older processional route (photo: C. von Pilgrim © SIK).

This season the fieldwork concentrated on final excavations at the northern limit of Area XXIX, where a workshop (H210) related to the Khnum Temple had been identified during the previous seasons. The workshop borders the Middle Kingdom enclosure wall of the Satet temenos to the east and a boundary wall of a processional route of the Late Period to the south (fig. 15). The processional route was created in the late 25th/early 26th Dynasty and connected the Main Street (central north-south axis) with the open space between the temples of Satet and Khnum. It was originally paved with slabs of local sandstone and was kept in use as an unsurfaced street until the Roman period.

The workshop H210 was built after extensive excavation works north of the processional route and is limited on two sides by older walls. On its western side, however, the workshop borders the huge transportation route which once connected the construction site of the Khnum Temple with the northern harbour of the town in the reign of Nectanebo II. The transportation route links the internal building sequence of H210 with the well-dated building phases of the Khnum Temple[56] and provides significant evidence for a chronological evaluation of H210.

Only one room of workshop H210 escaped ancient and modern destruction. It covers a space of 4m x 7m and it once gave access to two long rooms extending northwards. These rooms were uncovered in the second season of the French mission in 1908 but gradually disappeared over the last century. In one of these rooms Clermont-Ganneau discovered four large storage containers (*pithoi*) of a 30th Dynasty type placed in a row along the internal dividing wall.[57] The pithoi and some demotic inscriptions on one of them led him to the question whether this building may have been a "*maison de quelque artiste*?"

In fact, apart from a specific period of time when a stable was installed in the remaining room, all use layers and deposited waste in the southern part of the building clearly derive from working processes. The majority of waste derives from woodworking and from processing diorite. Large quantities of iron slag, crumbs of rusty iron and sherds of crucibles indicate the production of iron objects in the workshop.

The whole sequence of use in H210 can be subdivided into six phases. The three oldest phases (c-e) clearly predate the transportation route leading to the construction site of the Khnum Temple. Accordingly, these phases may be contemporary with the temporary Temple A and may be dated to the early years of the reign of Nectanebo II.[58]

The earliest phase e is represented by a pure layer of wooden chips followed by a working surface with diorite chips (fig. 16). It is tempting to assume that the wooden chips derive from the preparation of scaffolding for the demolition of the older temples at the allocated construction site, but a closer examination of the chips is still pending.

Fig. 16: Working surface with diorite chippings of Phase e (photo: C. von Pilgrim © SIK).

Subsequently (phase d) the room was divided by a narrow wall and both rooms served as stables for goats. The dividing wall was later removed (phase c) but the room continued to be used as a stable. Thick layers of clean chaff and goat droppings cover the room during this phase (fig. 17).

Fig. 17: Detail of accumulations in the stable (photo: C. von Pilgrim © SIK).

All use layers of the subsequent phases accumulated only after the transportation route came into existence. The route ran immediately beside the western wall of the workshop and may have destroyed any additional rooms of the building on its western side. The transportation route was created after the demolition of the New Kingdom temples on the designated construction site of the new Khnum Temple. Its lower part is consolidated with demolition rubble containing numerous fragments of decorated temple blocks and other architectural elements. The walking surfaces above consist of extremely sandy accumulations. They are most probably to be linked with the transportation of the huge amount of river sand for the construction pit of the new temple.

Fig. 18: *Tuyères* of furnace *in situ* (photo: C. von Pilgrim © SIK).

A doorway at the southern end of the workshop's western wall gave direct access from the transportation route into the workshop of phase b. The dense sequence of working floors and accumulated midden deposits points to a continuous operation of stone processing and the processing of iron. The latter is clearly proven by remains of a melting furnace in the

southeastern corner of the room - the first direct evidence for the processing of iron at Elephantine. Whereas the actual furnace was most probably destroyed by a deep sondage during earlier excavations, a set of three tuyères of the furnace were found still in situ at the edge of an empty deep circular pit (fig. 18).

A major remodelling of the building took place in phase a. The inner division walls were torn down and the southern room was considerably enlarged. Working floors and steadily-dumped layers of waste material (mainly diorite chips and waste from iron processing), however, indicate continuous working processes in the building. Three main subphases can be distinguished: a layer comprising of predominantly diorite chips and waste from iron processing (a3), a filling comprising predominantly sandstone chips (a2), and a sequence on top with mud floors and thin layers of drift sand (a1). The two upper subphases are most probably already of early-Ptolemaic date (Bauschicht 2B) and may be considered to be contemporary with the suspension of construction on the inner enclosure wall of the Khnum Temple.

Construction at the temple was not resumed before the reign of Ptolemy VI (Bauschicht 2A).[59] At this time, the doorway of the workshop's western wall was robbed, the trench was backfilled and the surface of the transportation route was newly arranged. In the area of H210, however, no layers of this period have survived. They were all removed before the tower house H200 was built on the same lot in the early Roman period.

The entire sequence of layers in H210 contains a vast amount of waste material from working processes but no unfinished products nor tools were found which would allow an identification of the kind of objects that may have been produced in this workshop. However, the location of the building and its close relation to the transportation route leading to the construction site of the temple strongly indicates that the workshop was an integral part of the whole construction site. Thus, it may have been an installation for craftsmen and artists involved in the construction and decoration of the temple and in the production of temple equipment.

The only assemblage of objects found in situ is unrelated to any specific working process but perhaps reflects the needs of recreation and pleasure balancing the work. A game board including three dice and six gaming pieces deposited underneath it was left on the surface of phase e before the room was converted into a stable (figs. 19-21).[60] The game board was painted in ink on the reverse of a former writing board on which was a list in demotic. The board shows a field of 3x11 squares with an inner circle in some of them and a rosette in the central square. This kind of "game of thirty-three squares or circles" is not attested before Dynasty 20, and in the Late Period it is often found on the reverse of senet-boards made of stone.[61]

Fig. 19: Game board *in situ* (photo: C. von Pilgrim © SIK).

Fig. 20: Dice and gaming pieces *in situ* after turning the board (photo: C. von Pilgrim © SIK).

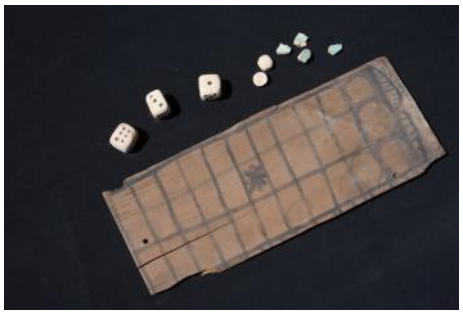

Fig. 21: Board game with pieces and dice (photo: C. von Pilgrim © SIK).

The dice and two gaming pieces are made from limestone while four small fayence sherds were used as gaming pieces of a different (blue) colour. These sherds have roughly broken edges without any secondary treatment. The find nicely illustrates the use of such unworked sherds as gaming pieces and may explain the frequent occurrence of single fayence sherds in other archaeological contexts of the town.

b) The temple precinct south of the late Khnum temple (Area XXVI; by C. von Pilgrim)
In addition to the work in Area XXIX, final excavations were conducted on the southern side of the Khnum temple (Area XXVI). The fieldwork concluded a long-term research programme dedicated to the development of this town quarter throughout the New Kingdom and the Late Period. The main tasks of this season's work were twofold: firstly, a close examination of the floor layers of a spacious building complex (H 205) of the 23rd/25th Dynasty (*Bauschicht* 5), and secondly, to establish the stratigraphical relationship of superimposed building layers with the enclosure wall of the temple precinct in the 26th Dynasty (*Bauschicht* 4).
House 205 covers an area of more than 900sqm immediately to the north of the main East-West street in the eastern part of the town. On the western side it was bordered by the central North-South street of the town. The whole complex was built into the slope of the eastern town mound after extensive measures to remove older settlement layers. Whereas the eastern part of the building is cut into strata of the First Intermediate Period, the western part directly overlies a stratum of the early 18th Dynasty.
The plan of H 205 is divided into three major parts and displays a clear arrangement of rooms. The eastern part consists of at least five adjacent oblong rooms, all vaulted and provided with a pavement of mudbricks (fig. 22-23). Separated by a long, 5.50m wide central courtyard, the western part comprises a large courtyard with three circular granaries each on its northern and southern sides and another group of two oblong rooms to the northwest which were used as stables.
H205 may be considered as the main administrative and economic building in the temple precinct of the Late Period. The linear arrangement of similar-sized rooms in the eastern wing supports the assumption that they served as workshops. The pavement and floors in these rooms show traces of heavy wear. Kernels, fruits and other botanical remains on the floors indicate that some of the rooms may be linked to food preparation and processing. Cereal grains and husks on the floors of the silos in the southwestern courtyard prove they functioned as granaries. The lower part of each granary was below floor level and the top was most likely constructed as a cupola.
Before the whole building was abandoned the rooms were carefully cleaned, all fixtures and working installations were removed, and the entrances to the eastern rooms were bricked up. Not a single vessel was left behind. The abandoned area was not immediately built over and some granaries and the stable in the western part slowly filled up with wind-borne sand before

all walls were intentionally torn down. The rooms in the eastern part were completely filled up with the demolition rubble of the vaults. At present the demolition of the building can be tentatively dated to the early Saite period. It is correlated with a radical reorganisation of the town centre that extended beyond the central main street into the residential areas. Demolition waste was levelled over a wide area and new larger granaries were built above it. In the second half of the Saite period (*Bauschicht* 4B) this part of the town was again re-structured. All buildings were removed and a massive enclosure wall was built along the central north-south street in order to delimit the Khnum Temple precinct. Above the working floors linked to the construction of the wall, a massive fill was dumped in order to level the new building ground. The fill contains hundreds of mud sealings with impressions of seals of temple priests. The evidence from royal names on the seals shows that the temple enclosure was not built before the time of Amasis, and most likely during his reign.

Fig. 22: Overview of H205 from the east (photo: C. von Pilgrim © SIK).

Fig. 23: View of H205 from the west with granary in front (photo: C. von Pilgrim © SIK).

c) Additional work in house 55 (Area VIII; by C. von Pilgrim)

In Area VIII, the documentation of house 55 was continued.[62] Drawings of elevations of the walls were completed and a full photogrammetric documentation for an image-based 3D modelling of the entire building was conducted by M. Fera and S. Stuhec. Additional excavations were restricted to two limited operations. The upper threshold in the main entrance to house 55 was removed in order to expose fully the face of the southern wall in the entrance corridor. Additionally, a completely-preserved subterranean storage installation (silo 0505) was emptied and studied in detail. The silo evidently remained in use after a wall had been partly built above it. The wall rests on a wooden plank which covers half of the silo's hatch (fig. 24). The silo was only backfilled in a subsequent phase in one event (H55b1). Apart from one ceramic bottle, no objects were left in the silo before its filling.

Fig. 24: Silo 0505 in H55 (photo: C. von Pilgrim © SIK).

d) Study works (by C. von Pilgrim)

The Swiss Institute continued the study of pottery and small finds originating from two excavation areas, in particular from house 55 (Area VIII) and from Area XXXVI where the north-eastern sector of the town wall of the Middle Kingdom was investigated in the 41st and 42nd season of excavation (s.b.). The study of pottery and small finds from House 55 was continued by J. Budka.[63] Additional pottery assemblages from the last season (46th season) and all new assemblages from the current excavations (47th season) were processed and studied. With the exception of the Nubian pottery, the recording and drawing of all pottery from the house were completed. The small finds from house 55 were all inventoried, and selected object groups (e.g. net sinkers, re-used sherds) were studied and recorded in detail.

The excavations in the southern precinct of the Khnum Temple revealed a sequence of layers of particular chronological significance as it includes two well-defined strata of the Saite period. Based on a first evaluation of seal impressions, the chronologically-later layer (4B) can be tentatively dated to the early reign of Amasis. Since pottery from the second half of the 26th Dynasty is largely missing from earlier excavations in the residential areas, the new material will help to fill a gap in the earlier pottery studies from Elephantine.[64] Continuing his previous research from the 1990s, D. Aston undertook this task and started work during a two-weeks stay on site.[65] He focussed on the material from stratum 4B in Area XXVI which may represent a transitional phase between Phase IV and Phase V in the sequence of pottery from the residential areas.[66]

e) Pottery and small finds from Area XXXVI (by B. Bader)

The analysis of the archaeological find material excavated in the 41st and 42nd season at Elephantine in Area XXXVI was conducted in cooperation between the Swiss Institute and the Institute of Oriental and European Archaeology (Austrian Academy of Sciences) in the framework of the project 'Beyond Politics: Material Culture in Second Intermediate Period Egypt and Nubia'.[67] Work lasted from 17th October to the 3rd of November 2017 and was conducted by B. Bader and L. Hulková.

The finds derive from dumps deposited on the eastern (outer) side and of the western (inner) side of the town wall as well as from strata under the wall.[68]

The material selected for study included a sequence of dumped material on the east side of the wall (41003P/a-h) in order to gain an overview of its nature and date range. This sequence dates from the late Middle Kingdom to the early New Kingdom, as expected. Due to its nature deriving from dumps the sherds were mostly small and often eroded. It was only possible in rare cases to reconstruct complete profiles. The special benefit of the material lies in the sequence it provides from the Middle Kingdom to the New Kingdom and its potential to be compared with similar pottery from the same time range but in more northern regions of Egypt. As regards to the raw material, it is clear that the surface of finer wares such as Nile B1 and B2 often contains more mica particles than seen on examples from northern sites, and is even macroscopically visible in the sunlight. Also, the presence of Nubian pottery and pottery influenced by Nubian styles of manufacture is an interesting aspect of this material (e.g. incised criss-cross patterns on coiled and (wheel) turned pottery, whilst "real" Nubian pottery is usually handmade). The results of the overlap of manufacturing traditions of two different social groups and the study of products coming out of such a mixed tradition can be usefully compared to areas where similar conditions were observed.[69]

Of special interest was context 41003P/d, which included the large number of c. 200 bread mould fragments, and these were all documented as a comparative sample. As the typology of bread moulds is generally taken as a secure means of dating, this group was of specific interest,[70] because although all of the bread moulds were tall and narrow, they did not have the usual flat base with a hole in the centre, but sometimes a single elongated incision made pre-firing, or an incised cross on the base also made pre-firing[71]. A third feature was a finger imprint on the base. The final possibility was a simple flat base.[72] The fabric used for this vessel type is a Nile C with ample lime and mineral (i.e. quartz) inclusions although there are variations in quantity, which hints at several pottery workshops or at least several potters with different raw material recipes. The rim diameters vary from 4.0 to 6.0 cm, while the base diameters range from 1.7 to 4.0 cm, the latter of which is rare. The most common measurements of the base range between 1.5 to 2.0 cm. The dry conditions at the site led to the splendid preservation of the layers of very fine clay with abundant mica, with which the inside surfaces of many fragments were covered ('Schlicker'). Interestingly traces of such a layer were not uncommonly found on the exterior of the fragments.

In assemblage 41003P/g, an example of a hemispherical cup (fig. 25) was found, with a very interesting detail of manufacturing technology, namely a relatively deep groove made during the trimming of the base of the cup. It seems that the circular groove around the base was the last step in the *chaîne operatoire*. Such a manufacturing detail can also be noticed in other hemispherical cups from Elephantine, especially in Bauschicht 11.[73] It remains to be seen whether this is a trait that can be assigned to one specific period or if it is a wider phenomenon. At other sites, however, nothing similar has yet been noted.

The series of four contexts, 42021F/b-d, is also situated on the western side of the wall, and fits in date very well into the period towards the end of the Middle Kingdom. Of special interest in the lowermost context 42021F/d, is the top part of a Marl C jar (fig. 26, bottom right sherd), which is an interesting example of a medium-sized?? jar with a folded bulbous rim. It is important to note that the details of manufacture of this rim differ from material

found in the northern part of Egypt, from where this material was supposedly imported to the south.[74] Whether this might hint at local production or represents a variation that has not yet been noticed in the north will require future research.

Fig. 25: Base of hemispherical cup, Nile B1 (photo: B. Bader © Austrian Academy of Sciences).


Fig. 26: Marl C globular jar (photo: B. Bader © Austrian Academy of Sciences).

Preliminary study of one context below the city wall (42021U/a) suggested that it may date to the Middle Kingdom, but it was not conclusive enough to be certain about this dating. Analysis of all of the ceramic material under the city wall may provide a better basis for dating in the next season.
Altogether 13 contexts were fully processed, where the processing includes documentation of the body sherds by sherd count and weight, as well as a survey of the diagnostics. In this first season 285 drawings were made, which contain all details of shape, manufacture, fabric, colour, weight, rim/base diameter and degree of preservation.

f) Small finds from Area XXXVI (by B. Bader)
One day of the season was devoted to evaluating the small finds from Area XXXVI, now kept in the magazine of the Ministry of Antiquities at Aswan. Special attention was given to secondarily re-shaped sherds recycled as net sinkers, and, especially, purpose-made net sinkers. Nine re-used sherds, recut to slightly oval or rounded trapezoid shapes were documented, i.e. drawn and photographed. These net sinkers came from a variety of contexts in Area XXXVI.


Fig. 27: Marl C net sinkers (photo: B. Bader © Austrian Academy of Sciences).

Two of them consisted of Marl C (first from the right and second from the left in fig. 27), which is a fabric supposedly imported to the south from the north of Egypt[75]. These net sinkers also showed use traces on their breaks from intentional smoothing as well as incised ridges (2-3) from the strings of fishing nets tied around the sherds. These net sinkers belong to Type C of the net sinker typology previously established at the site.[76] One of the net sinkers was, by contrast, especially made and equipped with a red slip. It corresponds to the Type A net sinkers previously found at Elephantine.[77] Such objects include two holes at the top although in this case only one was preserved. The fragment of this purpose-made net sinker was heavier that the re-cut sherds used for the same purpose.

4. Sacral buildings from Elephantine erected in the Ptolemaic and Roman periods - A report on works conducted on Elephantine from March 11th through 24th 2018 (by E. Laskowska-Kusztal)

The current stage of Elephantine exploration, characterized by a restricted inflow of newly uncovered fragments coming from temples raised on the island in the Ptolemaic and Roman periods, deserves a publication presenting the materials gathered in *lapidaria* after the year 1996. As signalled already in reports on seasons 2016 and 2017,[78] the publication would constitute the *Addendum* to the volume E. Laskowska-Kusztal, *Elephantine* XV. *Die Dekorfragmente der ptolemäisch-römischen Tempel von Elephantine, AV* 73(Mainz 1996). Preparatory works in this respect, carried out in the 2018 season, will be described in the following.

Fragments constituting the decorative assemblages showing the phases of the Khnum temple decoration, and supplementing, or verifying as the case may be, the existing body of knowledge on the chronology and scope of the decoration programme, were selected from the *lapidarium* and documented. Particular attention was devoted to fragments from complex XVII, representing decoration of the Khnum temple from the period of the reigns of Trajan, Hadrian and Antoninus Pius – the last phase of the temple courtyard enlargement.[79]

The fragments in question comprise pieces of columns decorated with sunken relief and covered with a thick layer of plaster upon which polychrome painting was applied (fig. 28). These features constitute reliable criteria for establishing the chronology and location of complex XVII fragments which appear, as secondary material, in various locations on the *kom*. To illustrate the dispersion of the reused material one may quote the example of parts of the colonnade from the Khnum temple courtyard, recently discovered in the area adjoining the new museum building.

Fig. 28. Column with Antoninus Pius decoration (fragment), courtyard of the temple of Khnum (E. Laskowska-Kusztal © Polish Academy of Science).

The reason behind this task, i.e. presenting the documentation complete with new fragments, was, first and foremost, to assess the extent to which, if at all, they fit inthe courtyard colonnade decoration programme put forward in *Elephantine* XV. Furthermore, the need to identify the reliefs which would testify to the diversity of the column decoration programme associated with the subsequent phases of the courtyard enlargement, as already noted and presented in *Elephantine* XV, was another drive for the study.[80] The documented whereabouts of the courtyard column fragments, incorporated into complex XVII, as well as distinctiveness of the recurrent decoration programmes of those columns make us, after years of methodical excavations, realise the extent of incompleteness of the remains of the temple of Khnum as discovered so far. The same, alas, can be stated with regard to the temple of Satet, not to mention the temples associated with northern cult enclosure (called „Tempel Y"), which are hardly appreciated.

The chronology of the temple of Khnum courtyard enlargement is, and one needs to mention this, a recurrently-debated research theme. And inevitable, too, since evidence about the Ptolemaic phase of the courtyard enlargement and decoration of this part of the temple has been, consistently, looked upon as a factor crucial for linking complex IX, representing decoration by Ptolemy VIII Euergetes II, with this courtyard (fig. 29).[81] Complex IX has been successively complemented with new chips of blocks, while its pronounced stylistic features call its links to the pronaos into question. The complex is hard to locate, which has been an ongoing issue in the debate on the chronology of the Khnum temple.

Fig. 29. Decoration of the temple of Khnum (fragment) dated to Ptolemy VIII Euergetes II (E. Laskowska-Kusztal © Polish Academy of Science).

Preparatory works of previous seasons, undertaken with the aim of contributing to the *Addendum*, made the necessity to conduct an architectural study clear. Such research would cover a selection of fragments originating, essentially, from the temenos of the temple of Khnum, whose links with the Ptolemaic and Roman parts of the building are hard to identify, or seem to have been excluded.

Works conducted in the *lapidarium* in 2018 also aimed, therefore, at identifying study areas to be incorporated into the research programme, and recognising the fragments of highest cognitive potential. This was linked to the main cognitive challenge, namely the need to consider the interior of the pronaos in the context of three chronologically diverse sets of decoration: reliefs from the times of Ptolemy VI Philometor, decoration of Ptolemy VIII Euergetes II, and decoration from the time of Domitian. Advocating the pronaos as the sole location of the three high relief sets of decoration mentioned above, results from the current body of knowledge about the chronology of the Khnum temple decoration connect the Nectanebo II decoration with the interior of the naos (Tempelhaus).[82] A probability of presence of a Ptolemaic decoration in the naos of the Khnum temple is purely hypothetical though.[83]

Eliminating, at the present stage, the naos of the temple of Khnum as a possible location of the above-mentioned three sets of decoration is to be considered in the context of an

unidentified location of two other groups of decoration. These represent Ptolemaic wall decoration in sunken relief, as well as decoration of columns, stylistically varying from that of columns associated with the pronaos of the Khnum temple (fig.30).

Fig. 30. Column decoration (fragment) dated to Ptolemy VIII Euergetes II (E. Laskowska-Kusztal © Polish Academy of Science).

A *wabet*, a room inside the naos of the Khnum temple situated north of its axis, looks like the best candidate for architectural analysis, as rooms of that kind, with columns in the façade and with a distinct ritual function, feature decoration which can be executed both in high and sunken reliefs.[84]
A catalogue of elements associated with the Khnum temple, selected for architectural analysis, comprises relatively many small fragments of doors or gates which, once their probable relation to door openings, already defined and marked on the plans, has been verified, would possibly testify to the presence of accompanying structures hitherto unknown. The presence of such structures could be assumed, in the first place, based on fragments of columns of a smaller diameter, attested in the *lapidarium* on many occasions.
Another group of artefacts, crucial for defining the phases of the courtyard enlargement as well as for confirming the Ptolemies' participation in the naos decoration as well as for verifying the hypotheses on the Ptolemaic structures accompanying the main temple, comprises fragments of architraves and abaci. Their decoration, however, may differ from that of the walls.
An account of the preparatory works within the *Addendum* presentation draws the attention to the unique nature of the Ptolemaic and Roman decoration fragments from the Satet and Khnum temples, protected in the *lapidaria* after 1996, and as such, not originating directly from the temples' exploration. Small fragments of blocks, rather useable building material, predominate. Being moderate in size, and thus with only scarce decoration preserved, they constrain, to a considerable extent, any possibility to recognise their role in temple decoration programmes, and, consequently, their location. Bearing the above in mind makes the need for architectural analyses fully justified.

5. Anastylosis of the Osiris-Nesmeti temple (by M. Fielauf)
The Swiss Institute continued work on the anastylosis of the Osiris-Nesmeti temple (fig. 31) from November 12 until November 26, 2017 and from March 7 until March 17, 2018.[85] The anastylosis is based on the virtual reconstruction of the temple presented by Chr. Ubertini in the framework of an architectural study of the blocks which were recovered in a Late Roman river wall next to the Roman stairway, close to the Nubian village.[86]

Fig. 31: Façade of Nesmeti temple after final positioning of blocks (photo: C. von Pilgrim © SIK).

The main substance of this season was 1) the completion of the lintel of the doorway into the sanctuary (wall E/D, row 9) and the final positioning of blocks in the side wall and in the façade of the pronaos, and 2) the stabilisation of the stone blocks of the columns beside the door leading into the pronaos (wall M, row 2, 3, 4 and 5). The latter was a precondition for the further positioning of stone blocks in rows 6 and 7 conducted in the spring season of 2018. Missing parts in the screen-wall of the façade were bricked up with sand-limestone bricks. For structural reasons, the reassembled capital of the column was eventually placed on a brick base next to the front area of the temple.
Additionally, samples were made to test the final wall plaster to cover the brickwork between the original stones. Four samples of plaster were made to compare different colours and surfaces using different binding agents and recipes. The plaster consists of three layers (1st layer – roughcast, 2nd layer – flush mounting, 3rd layer – final rendering). Each layer was applied wet on wet on the preceding layer.

a) The completion of the lintel to the sanctuary (wall E/D, row 9): First, the reinforcement was built out of stainless steel bars (Ø 12mm). Therefore, holes were drilled into the adjacent stone blocks and the bars were bonded with epoxy resin (Araldite 2000) and connected with stainless steel wire (Ø 2mm) to a reinforcement mesh. Subsequently, a formwork was built using cut wooden planks and plates secured with planks attached crosswise. Additionally, the whole formwork was braced with wooden beams between the ground plate and the scaffold underneath.
The inside corners were sealed with foam material and the adjacent stone surfaces were covered with plastic foil to save them from direct contact with the concrete. In addition, the stone surfaces underneath the formwork needed to be secured with plastic foil against cement possibly leaking out. The filling of concrete took place stepwise with buckets while compressing the pouring with a thick wooden stick.[87] A few days later, the removal of the formwork took place (the side walls after 2 or 3 days, and the ground plate after approx. 10 days). The adjacent stone surfaces were cleaned and the surface of the poured concrete was

prepared for further plastering (fig. 32). Throughout this entire period, the concrete was wetted permanently and covered with foil.

Fig. 32: Finished lintel after formwork removal and cleaning (side E) (photo: M. Fielauf © SIK).

b) A precondition for positioning further stone blocks at the door into the pronaos at wall M/A was the stabilisation of the columns in the wall.
After final adjustment, the loose applied stone blocks were reinforced with stainless steel rods between the blocks using epoxy resin (Araldite 2000). Then, gaps and wide joints were closed with lime mortar in combination with bricks for bigger gaps.[88] White cement was strictly avoided due to direct contact with the stone surface. Small joints (less than 2 mm) were temporarily closed with plastic foil. The remaining gaps were filled with fluid mortar.[89]Ledan TA1 (mineral-based injection mortar) was used to fill the small cracks and joints of less than 2 mm (fig. 33).
The masonry next to the columns and above the eastern column was completed by using cement mortar[90]or lime mortar in case of direct contact with the stone surface (figs. 34-35).

Fig. 33: Filling smaller cracks and joints with Ledan TA1 (photo: M. Fielauf © SIK).

Fig. 34: Masonry completion of row 3 of the eastern column (photo: M. Fielauf © SIK).

Fig. 35: Masonry completion of row next to the eastern column (photo: M. Fielauf © SIK).

6. The temporal exhibition 'The monkey by 4 dinar…' in the Annex-museum on Elephantine based on the results of research by M. Abd el-Latif (by J. Sigl)

On April 11th, 2018, the exhibition 'The monkey by four dinars…' was opened to visitors to Elephantine Island and the Annex-museum.[91]This small special exhibition is based on the work of M. Abe el-Latif, who for many years has studied the Arabic ostraca excavated by the DAIK and Swiss Institute.

The city of Elephantine, according to common perception, was slowly abandoned in the first millennium AD in favour of the city of ancient Aswan, Syene, which had developed on the eastern mainland. However, correspondence in Arabic language on pottery and stone fragments reveals new insights into life on the island after the Arabic conquest. Arabic became the official language for the administration in Egypt shortly after 642AD, even though Greek and Coptic were still used alongside it.[92] The people in Aswan must have adapted to the new language quickly, due to Arabic-speaking soldiers and merchants passing through and settling in the border town. Written sources of the Early Islamic Period generally focus on the new upper class of society residing in Alexandria and Fustat (today a district of modern Cairo). Otherwise mostly early Christian texts deal with events in Upper Egypt.[93]This makes the Arabic ostraca found on Elephantine Island a highly valuable historical source. About 300sherds with Arabic inscriptions dating to the Early Islamic period in Egypt (7th–9th centuries AD) have been studied so far by Dr. Mohamed Abd el-Latif.[94] They reveal insight in the social and economic life of the inhabitants of Elephantine. Marriage contracts and school texts, written records for trade in exotic goods, such as monkeys, and for peaceful coexistence between Muslims and Christians were recorded by the people.

Education is one of the corner stones of early Muslim civilisations. Children were taught how to read, write and memorize the Koran in so-called '*kuttabs'*, Koranic schools, which were located in or near mosques. On Elephantine Island no mosque of the late first millennium AD is preserved, but the ostraca tell us that the children practiced writing on pottery sherds: inexpert handwriting, missing words, spelling mistakes, overlapping or reversed letters, repetitions of words, etc. show their level of experience.[95]

The inhabitants of Elephantine Island traded in many different goods. Especially food supplies such as livestock, wheat, raisins and figs, meat, leather, wool, fur and milk products are attested by several receipts and price lists on ostraca. Amongst these goods exotic merchandise such as the monkey are occasionally attested.[96]Fishing seems to have been one of the island's major economic pillars,[97] of which the state took its share in the form of a fishing tax. Elephantine seems to have had large storage facilities[98], which were essential for the travelling merchants, who otherwise would have had to bring all their goods on the long and often dangerous journeys up and down the Nile and place them at risk of losing an entire stock.Debts were considered a very important economic agreement, and were always recorded on ostraca to guarantee the rights of the debtor. Muslims and Christians are evident from the written sources as merchants, debtors and witnesses to legal agreements, engaged in peaceful and flourishing trade.[99]

Apart from economic matters, there are also texts that shed light on the personal and social life of the people of Elephantine Island. Simple drawings were used to emphasize the content of the receipts[100]and letters. Thus, on ostracon O 337 (amongst others) a six-pointed star can be found. In this context the hexagram is an exclusively Islamic decoration that was in use since the Umayyad era and was used by Muslims in the ornamentation and adornment of many buildings and places of worship such as schools and mosques (e.g. in the Prince Mithqal's School, located in Cairo, built in 1361-1363 AD, and dedicated to the Shafi'i rite).[101] It also appears on several tomb stelae from the Fatimid Cemetery in Aswan, where it may be understood as a symbol of protection for the deceased.[102]

Marriages were documented and contracted since pharaonic times on ostraca and papyrus. While the exhibited texts reveal insight into such contracts on ostraca[103], a Demotic marriage agreement[104] written on papyrus and found on Elephantine has been on exhibition in the Annex-museum for many years. Less enjoyable concerns, such as court verdicts, were also recorded on ostraca. Early documents related to crime and prosecution show that whenever possible, the involvement of authorities was avoided, especially that of state prosecution. Conflicts were solved inside the village and town communities. Court was held in mosques during special sessions. Christians were assigned certain days, on which they could enter the mosques to present their cases.[105] The court verdict preserved on ostracon O 2684 states a final sentence against someone called Muhammad Ali Moussa.This indicates the presence of a court on Elephantine that issued enforceable judgments.

This small exhibition shows that the long-term involvement of Dr.Abd el-Latif in the study of the archaeological evidence from Elephantine as a member of the international team of the DAIK, is one of the best examples of Egyptian-German cooperation in the field of Egyptian historical research.

7. Fieldschools and a study day of the German Archaeological Institute in the season 2017-2018 (by J. Sigl)

The advancement of our local colleagues in archaeological methodology and the provision of training in subjects that are not part of the Egyptological curriculum, is one of the major aims of the DAIK in its work in Egypt. Therefore, in course of the refurbishment of the excavation house on Elephantine in autumn 2016, a study and lecture room as well as a library were built into the older structures of the work area of the house. The study room had was officially opened in spring 2017 with a study day.[106] The training program was started in autumn 2017 and spring 2018 with four field schools on various topics, which were received with enthusiasm by local colleagues.

a) Field training on archaeological recording methodology

The training was conducted by archaeologist P. Kopp at the German excavation house and on the site. Four colleagues from the Aswan inspectorate took part in the training from October

23rd until November 16th, 2017. During the training the participants covered the following topics:
- establishing a local grid
- geo-referencing with GPS
- using total station and dumpy level
- measuring of archaeological features
- drawing of archaeological features in planum and profile

b) Training on the recording of archaeological small finds
The second training was conducted by draftsman P. Collet in parallel to the above-mentioned program from November 14th until November 30th, 2017, also in the study room of the German excavation house. Five colleagues from the local inspectorate took part. During the training the participants covered the following topics:
- positioning and measuring of several different kinds of objects with rulers and calipers
- transferring these 3-dimensional measurements to 2-dimensional paper in front, side, top and bottom views
- determining and making sections through objects
- drawing small objects to a larger scale (2:1)
- tracing and copying incised or painted graffiti and/or inscriptions and placing these on the object drawings.

c) Training on the recording of pottery finds
From February 11th to March 13th, 2018 a pottery field school was offered for inspectors of the inspectorate in Aswan. Five participants took up the offer and were trained by M.-K. Schröder. The participants were given an introduction to Egyptian and Nubian pottery, and carried out pottery sorting. The main focus was on methods of pottery classification (fabric, technology, shape, surface treatment and dating). Furthermore, the drawing of different shapes was practiced using modern pottery. The participants were very eager to learn and to practice and therefore the field school was a huge success.

d) Training on the archaeozoology – level 1: mammals
The training in archaeozoology with the focus on mammal remains was undertaken from April 1st until April 26th 2018 by the author. Two inspectors from each of Edfu, KomOmbo and Aswan inspectorates took part in this training. The attendance of this course is obligatory for the future planned field school archaeozoology – level 2.
During the training the participants covered the following topics:
- History and basics of archaeozoology
- Taxonomy and taxonomic research in the internet
- Recovery, storage and cleaning of animal remains
- Scientific description of body parts and skeletal elements of mammals
- Species identification of all bones in the mammal skeleton with focus on household mammals in Egypt (*Camelus dromedarius, Sus domesticus, Bos taurus, Capra hircus, Ovisaries, Equus asinus, Equus caballus, Feliscatus, Canisfamiliaris*)
- Basics of aging and sexing of mammals
- Basics of taphonomic and pathological alterations to animal remains
- Archaeozoological recording of animal remains from excavations
- Work with reference collections and reference publications
All candidates completed the field school with great enthusiasm and success, and were encouraged by the trainer to participate as volunteers in their own areas at excavation projects that conduct archaeozoological investigation. Only through this permanent work with

archaeozoological remains will the knowledge resulting from brief field school be recalled and the candidates may in the future become specialists in this field.

e) Study Day at the German excavation house

On March 6th, 2018 the DAIK organized the second study day at the auditorium of the excavation house on Elephantine on the topic 'New Methods in Archaeology and Heritage Protection'. Twenty-four colleagues from the inspectorate and the museum sector in Aswan attended this day to listen to university-style lectures on:

- Pigments and binders from archaeological contexts (by B. Gehad, Ministry of Antiquities, Egypt)
- Micromorphology – the study of stratigraphic layers under the microscope (by D. Fritzsch, Goethe-University Frankfurt, Germany)
- Heritage protection with the mobile phone (by D. Anderson, Radford University, USA).

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[1] See in more detail: J. Sigl, 'Introduction and project aims', in: J. Sigl *et al.*, 'Stadt und Tempel von Elephantine. Methodological Approach to the Project "Realities of Life" (Lebenswirklichkeiten) and its First Application During the 43rd and 44th Excavation Campaign on Elephantine Island', *MDAIK* 74 (in press); J. Sigl, 'The project "Realities of Life" – excavations in the north-western town of Elephantine. Aims and methodology of the project', in: J. Sigl et al., 'Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2015 to summer 2016', https://www.dainst.org/project/25953, 2-6 (25.09.2018): Elephantine – Report on the 46th Season (ENGLISH).

[2] See for more detail: J. Sigl, *MDAIK* 74 (in press); L.A. Warden *et al.*, 'Stadt und Tempel von Elephantine. Pottery studies in course of the project "Realities of Life" (Lebenswirklichkeiten) – a methodological summary and pilot project', *MDAIK* 74 (in press); J. Sigl, 'Result from a Methodological Workshop in 2014', in: St.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', https://www.dainst.org/project/25953, 2-4 (25.09.2018): Elephantine – Report on the 44th Season (ENGLISH).

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[8] E. g. find no. 47501M/k-20.

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[10] Aston *et al*., in Nicholson and Shaw, *Ancient Egyptian Materials and Technology*, fig. 2.2, no. 3 and 4.

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[30] Pers. Comm. Eva Montes 2018
[31] An important part of the project is the close collaboration between all scientist, which is why a work meeting was held in March 2018, at which all members participated: Sh. Abdellatif El-Shafaey Attia (freelance) – phytolit and starch research; B. Bastos (Bradford University) – residue analysis in pottery; D. Fritzsch (Goethe University Frankfurt) – micromorphology and sedimentology; B. Gehad (Ministry of Antiquities) – pigments and binders; C. Jeuthe (DAIK) – flintstone tool typology; H. Khozeym (Aswan University) – geology and support of micromorphplogy; P. Kopp (DAIK) – excavation, small finds and pottery chronology; M. Looney (Bern University) – jar stopper typology and function; C. Malleson (American University Beirut) – macrobotany; G. Mutri (Rome University) – use wear and residues on stone tools; M. Ownby (freelance) – pottery petrography; E. Panagiotakopulu (Edinburgh University) – insect remains; J. A.. Roberson (University of Memphis) – seals, sealing impressions and other textual evidence; M.-K. Schröder (DAIK) – Nubian pottery; J. Sigl (DAIK) – zooarchaeology; L. A. Warden (Roanoke College) – pottery typology and function.
[32] Preliminary recording and numbering of finds as well as sorting and storing was mainly carried out by K. Goldmann with the assistance of K. Golombiewski and R. von Bremen as well as F. da Silva Lozada. This season the DAIK was able to secure the time of the professional draftsman P. Collet who made pencil drawings

of several especially beautiful small finds from the seasons since 2013. Other finds had been drawn by P. Kopp in the previous years. Sealing impressions were drafted by M. Ragheb Sobhy and J. Garzon Rodrigues in this season, and the latter also functioned as an assistants for K. Goldmann. All small finds were photographed by P. Kopp. M. Adel and S. Gubler worked as assistants for zooarchaeological identification with J. Sigl. M. Estermann did digital drawings from animal bones and helped in other illustrative tasks.

[33] While senior workmen A. Abu el-Hamed has been for many years an important assistant for pottery work, deputy *rais* A. el-Amir leads a small team, that is engaged in the re-organisation and re-labelling of find materials from all seasons since the onset of work in 1969 under the supervision and guidance of M.-K. Schröder. The workman K. Siraq has been specially trained by the botanist C. Malleson and the entomologist E. Panagiotakopulu to undertake floatation and dry sieving including all necessary record keeping. A. Kher has been trained by J. Sigl in the careful cleaning of animal remains, which on Elephantine suffer from heavy salt inclusions and can therefore to be treated only with distilled water and cotton pads. He is also skilled in pre-sorting animal remains by zoological family level. All named workmen have been trained in recognizing and sorting finds coming from the heavy fraction from floatation, including stone splinters, which are residues of ancient local bead or flintstone tool production and are hard to distinguish from general soil debris.

[34] All following data on sealing impressions were collected in spring 2018. The impressions are processed by J. A. Roberson.

[35] For records of the excavation work in this area at the time when the sealing (45501B/k-14) was discovered, see: P. Kopp, 'Excavation in the Middle Kingdom Settlement of Elephantine', in: St.J. Seidlmayer *et al.*, 'Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2015 to summer 2016', https://www.dainst.org/project/25953, 6-9 (25.09.2018): Elephantine – Report on the 45th Season (ENGLISH).

[36] There called "Double-Leaf Door Bolt Sealings": J.W. Wegner, 'Institutions and Officials at South Abydos: An Overview of the Sigillographic Evidence', *CRIPEL* 22 (2001), 84. See as well: N. Picardo, 'Hybrid Households: Institutional Affiliations and Household Identity in the Town of Wah-sut (South Abydos)', in M. Müller, *Household Studies in Complesx Societies*, Chicago: The University of Chicago, 2015, fig. 11.8.

[37] J.W. Wegner associates the above-mentioned Abydos sealings with the here-designated "slot form" of box or door sealings: G.A. Reisner, 'Clay Sealings of Dynasty XIII from Uronarti Fort', *Kush* 3 (1955), 28.

[38] M. Ziermann, 'Südstadt: Tiefschnitt im Bereich der ehemaligen Senke zwischen Ost- und Westinsel (SWS)' in: W. Kaiser *et al.*, 'Stadt und Tempel von Elephantine. 21./22. Grabungsbericht', *MDAIK* 51 (1995), 128-140.

[39] Excavation record shows that sealing impressions were collected and discarded in close vicinity to the place where they were broken (J. Wegner, 'Excavations at the Town of *Enduring-are-the-Places-of-Khakaure-Maa-Kheru-in-Abydos*. A preliminary Report on the 1994 and 1997 Seasons', *JARCE* 35 (1998), 32-33 and fig. 15). It remains open to discussion whether the lack of further sealing finds of similar type to the present object in contexts from Elephantine is due to the re-use of the mud to produce new ones or has to be attributed to coincidence.

[40] Within the shrine of the deified Heqaib built by Sarenput I, the founder of the existing sanctuary refers to an older cult structure, which seems to have been badly ruined (L. Habachi, 'Sarenput I: The Shrines and Statues', in: L. Habachi, *Elephantine* IV. *The Sanctuary of Heqaib*, *AV* 33 (Mainz: Philipp von Zabern, 1985), 28). Archaeologically no traces of this earlier shrine have been found (G. Haeny, 'The Architectural History of Heqaib's Sanctury', in: L. Habachi (ed.), *Elephantine* IV. *The Sanctuary of Heqaib*, *AV* 33 (Mainz: Philipp von Zabern, 1985), 140). It is therefore questionable, if it ever existed. The provenience of the present sealing is unlikely to come from a context that is dated like that ofthe filling layer in which it was found. A connection to the cult area of Heqaib is therefore questionable.

[41] Chronological sequence established by P. Kopp, spring 2018.

[42] Further three seals and 145 sealing impressions have already been studied and reported upon in 2015 by J. A. Roberson: J.A. Roberson, 'The seals and sealing impressions from the north-western town area of the Middle Kingdom', in: St.J. Seidlmayer *et al.*, 'Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2015 to summer 2016', https://www.dainst.org/project/25953, 13-18 (25.09.2018): Elephantine – Report on the 45th Season (ENGLISH).

[43]Objects 44501S/e-8, 44501S/g-8, 44501S/q-7; 44501Q/a-9 and 44501Q/z-21, which were excavated in the 2014-2015 season in the first of the two trenches. They came from Dynasty 11/12 fill strata that levelled the architectural remains of the Old Kingdom necropolis, on which the Middle Kingdom settlement was erected (see: P. Kopp, 'Excavation in the Northern Town', in: St.J. Seidlmayer *et al.*, 'Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2014 to summer 2015', https://www.dainst.org/project/25953, 4-10 (25.09.2018): Elephantine – Report on the 44th Season (ENGLISH)).

[44] Object 45502B/m-8: The floor level, to which this find number refers, was excavated in the second trench under investigation. The floor was disturbed by early modern *sebbakh* digging and had already been partly removed by earlier investigations (W. Honroth, O. Rubensohn, F. Zucker, 'Bericht über die Ausgrabungen auf

Elephantine in den Jahren 1906-1908, *Zeitschrift für ägyptische Sprache* 45-46, 162-209; vonPilgrim, *Elephantine XVIII*, figs. 108-110).

[45] For the corresponding hieroglyphic version of this name, see H. Ranke, *Die ägyptischen Personennamen* I (Glückstadt: Augustin, 1935), 305, no. 6 (Middle Kingdom).

[46] For these names, see Ranke, *Personennamen* I, 66, no. 1 (Old Kingdom and later), 246, no. 12 (Middle Kingdom), and 249, no. 10 (Middle Kingdom).

[47] For this name, see Ranke, *Personennamen* I, no. 22, first spelling (Middle Kingdom).

[48] For this title, see S. Quirke, *Titles and Bureaux of Egypt 1850–1700 BC*, *GHP Egypt* 1 (London: Golden House Publications, 2004), 87.

[49] Identification due to morphplogical features as well as measurements, though in comparison tomeasurements from juvenile Black storks (see A. Gruber, *Vergleichende Morphologische Untersuchung an Einzelknochen in Ägypten Vorkommender Ciconiidae* (Munich: University Press, 1990), 74: table 10: Ciconia nigra and 81: table 11: Ciconia nigra) the present bones (Humerus and Ulna) seem to be slightly smaller.

[50] A. von den Driesch, Joris Peters, 'Störche Über Elephantine', in E.-M. Engel, V. Müller and U. Hartung (eds.), *Zeichen aus dem Sand*, *Menes* V (Wiesbaden: Harrassowitz, 2008), 676-677.

[51] Own observation since 2010; modern migration can be followed through animals with tracking devices on the website of the Nature And Biodiversity Conservation Union: https://blogs.nabu.de/stoerche-auf-reisen/.

[52] Merchants for sweet potatoes from street carts in Cairo use feather-fans today on their fires: own observations since 2012 in Cairo.

[53] C. von Pilgrim, 'The spatial development of the Khnum Temple precinct in the Late Period', in J. Sigl et al., 'Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2016 until summer 2017', 36-39: https://www.dainst.org/project/25953: Elephantine – Report on the 46th Season (ENGLISH).

[54] G. Haeny, 'Die Bebauung nördlich des Chnumtempels', in F. Arnold, *Elephantine* XXX. *Die Nachnutzung des Chnumtempelbezirks, AV* 116 (Mainz: Philipp von Zabern, 2003), 194-207.

[55] F. Arnold, 'Untersuchungen im Bereich nördlich des Chnumtempels', in Raue et al., 'Stadt und Tempel von Elephantine. 36./37./38. Grabungsbericht', *MDAIK* 67 (2011), 201-205. Some preliminary remarks on the chronology of the buildings given by F. Arnold in his report may now be corrected: House 200 was built in the early Roman period, after the new arrangement of the street and the construction of a mud brick ramp in front of the older stone gate. The small ramp was built in the Ptolemaic period before the construction works at the temple enclosure wall were resumed in the reign of Ptolemy VI. And finally, the retaining wall („*Hangmauer*") built against the stone gate was constructed in the Late Period earlier than Dynasty 30.

[56] Cf. W. Niederberger, *Elephantine* XX. *Der Chnumtempel Nektanebos' II, AV* 98 (Mainz, 1999), 63-65 and additional remarks in C. von Pilgrim, 'Untersuchungen im Bereich des späten Chnumtempels', in G. Dreyer et al., 'Stadt und Tempel von Elephantine. 31./32. Grabungsbericht', *MDAIK* 61 (2005), 51-57.

[57] E. Delange (ed.), *Les fouilles francaises d'Élephantine (Assouan) 1906-1911*, *MAIBL* 46 (Paris, 2012), 174-177; C. von Pilgrim, 'Anmerkungen zu den französischen Grabungen von 1906-1911 im Kontext der neueren Forschung in Elephantine', in *op.cit.*, 275.

[58] On Temple A see, C. von Pilgrim, 'Ein Tempel der Spätzeit zwischen Chnum- und Satettempel (Tempel A)', in W. Kaiser et al., 'Stadt und Tempel von Elephantine. 25./26./27. Grabungsbericht', *MDAIK* 55 (1999), 145-148.

[59] Niederberger, *Elephantine* XX, 65; C. von Pilgrim, in G. Dreyer et al., '31./32. Grabungsbericht', 53.

[60]Exc. No. 47704S/b-7.

[61] P.A. Piccioni, *The Historical Development of the Game of Senet and ist Significance for Egyptian Religion*, UMI Diss. Chicago, Ill. 1990, 8 and 441. This type of game is also depicted in the tomb of Petosiris, cf. N. Cherpion, J.-P. Corteggiani, J.-F. Gout, *Le tombeau de Pétosiris à Touna el-Gebel. Relevé photographique*, *BiGen* 27 (Cairo, 2007), 40.

[62] On previous work in H55 see C. von Pilgrim, 'House 55: A workshop of the late 17th and early 18th Dynasty (Area VIII)', in J. Sigl et al., 'Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2016 to summer 2017': https://www.dainst.org/project/25953, 27-35 (25.08.2019): Elephantine - Report on the 46th Season (ENGLISH). The study of House 55 is conducted by the Swiss Institute in close cooperation with J. Budka and her ERC project AcrossBorders (http://acrossborders.oeaw.ac.at/about/about-acrossborders/).

[63] Further members of the working group (AcrossBorders) were D. Penzer, L. Sedlakova and O. Stephan. The photographic documentation of small finds was conducted by Patricia Mora Riudavets.

[64] D. A. Aston, *Elephantine* XIX. *Pottery from the Late New Kingdom to the Early Ptolemaic Period, AV* 95 (Mainz 1999), 162 and 180.

[65] The Swiss Institute is very much indebted to B. Horejs, Dirctor of the Institute for Oriental and European Archaeology at the Austrian Academy of Sciences, for her continuous support and fruitful cooperation.

[66] See also the preliminary study of B. von Pilgrim who referred to the same gap in the sequence of pottery phases and presented a chronologically similar assemblage of pottery from a closed context in Area VIII, B. von Pilgrim, 'Zu Keramikgefäßen aus einer spätzeitlichen Abfallgrube des Sepeicherbezirks H118', in W. Kaiser *et al.*, '25./26./27. Grabungsbericht', 124-141.
[67]Funded by the Austrian Science Fund (FWF) Start-Project no Y754 G19, PI: Bettina Bader.
[68] C. von Pilgrim, 'Die Stadtmauer des Mittleren Reiche's, in S. Seidlmayer et al., 'Stadt und Tempel von Elephantine, 39./40./41. Grabungsbericht', *MDAIK* 72 (2016), 207-212.
[69] Cf. B. Bader, 'Cultural Mixing in Egyptian Archaeology: The "Hyksos" as a Case Study', *Archaeological Review from Cambridge* 28.1 (2013), 257-286.
[70] H. Jacquet-Gordon, 'A Tentative Typology of Egyptian Bread Moulds', in D. Arnold (ed.), *Studien zur Altägyptischen Keramik, SDAIK* 9 (Mainz, 1981), 11.24.
[71] Cf. T. Rzeuska, 'Pottery of the Middle Kingdom', in: D. Raue *et al.*, 'Report on the 34th Season of Excavation and Restoration of the Island of Elephantine', 2005: https://www.dainst.org/project/25953, fig. 6.11 and p. 14 (27.08.2018): Elephantine – Report on the 34th Season (ENGLISH) – date range from the 13th-17th Dynasty or Bauschicht 12.
[72] Cf. C. von Pilgrim, *Elephantine* XVIII, fig. 157.j. The average height could not be reconstructed, as there was no complete profile preserved among the fragments.
[73] Cf. C. von Pilgrim, *Elephantine* XVIII, fig. 143.e, in Bauschicht 11, fig. 146.h in Bauschicht 11.
[74] Cf. B. Bader, *Tell el-Daba* XIII. *Typologie und Chronologie der Mergel-C-Ton Keramik. Materialien zum Binnenhandel des Mittleren Reiches und der Zweiten Zwischenzeit*, *DAW* XXII (Vienna, 2001), 112-121, type 36, medium jars. But see the discussion on the origin of Marl C Ibid. 30-36. Unfortunately, material tested scientifically so far only comprises material found in the north, so that a northern origin cannot be proved just yet. Quantitative studies, however, suggest the Memphis Fayoum region as the original source area, because of both thequantity and earliest appearance so far are observed there. Cf. B. Bader, *Tell el-Daba* XIX. *Auaris und Memphis im Mittleren Reich und in der Hyksoszeit Vergleichsanalyse der materiellen Kultur*, *DAW* LIII (Vienna, 2009), 646-652. B. Bader, 'The Late Old Kingdom in Herakleopolis Magna? An Interim Interpretation', in T. Rzeuska, A. Wodzinska, *Studies on Old Kingdom Pottery* (Warsaw, 2009), fig. 7 for the First Intermediate Period/early Middle Kingdom. Cf. also T. Rzeuska, *Saqqara* II (Warsaw, 2006), 44, from the very late 6th Dynasty onwards.
[75] Cf. C. von Pilgrim, *Elephantine* XVIII, fig. 143.e, in Bauschicht 11, fig. 146.h in Bauschicht 11.
[76] C. von Pilgrim, *Elephantine* XVIII, fig. 121.d-i.
[77] C. von Pilgrim, *Elephantine* XVIII, fig. 120.a-b.
[78] E. Laskowska-Krusztal, 'Study of the remains of Ptolemaic and Roman temples from Elephantine', in St. Seidlmayer *et al*., 'Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2015 to summer 2016': https://www.dainst.org/project/25953, 36-38 (25.08.2019): Elephantine - Report on the 45th Season (ENGLISH); E. Laskowska-Krusztal, 'Study of the remains of Ptolemaic and Roman temples from Elephantine', in J. Sigl *et al*., 'Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2016 to summer 2017': https://www.dainst.org/project/25953, 39-41 (25.08.2019): Elephantine - Report on the 46th Season (ENGLISH).
[79] E. Laskowska-Kusztal, *Elephantine* XV. *Die Dekorfragmente der ptolemäisch-römischen Tempel von Elephantine*, *AV* 73(Mainz, 1996), 115-121.
[80]Laskowska-Kusztal, *Elephantine* XV, 8-9, 120-121.
[81]Laskowska-Kusztal, *Elephantine* XV, 70-74.
[82] H. Jenni, *Elephantine* XVII. *Die Dekoration des Chnumtempels auf Elephantine durch Nektanebos II*, *AV* 90 (Mainz, 1998), 11-71.
[83]Laskowska-Kusztal, *Elephantine* XV, 68; E. Laskowska-Kusztal, The Contribution of Graeco-Roman Elephantine to the Theology of the First Cataract Region, inD. Raue, S.J. Seidlmayer, Ph. Speiser (eds), *The First Cataract of the Nile. One Region -Diverse Perspectives, SDAIK* 36 (Berlin, 2013),106.
[84] W. Niederberger, *Elephantine* XX. *Der Chnumtempel Nektanebos' II. Architektur und baugeschichtliche Einordnung, AV* 96 (Mainz, 1999), 44-46; F.Coppens, *The Wabet. Tradition and Innovation. Temples of the Ptolemaic and Roman Period* (Prague, 2007), *passim.*
[85] Work was conducted by engineer A. Krekeler and stone conservator M. Fielauf. The technical work was made possible by the support of the German Archaeological Institute who provided the Unimog-car and its driver Maher.
[86] Chr. Ubertini, 'Restitution Architecturale du "Temple Y"', in G. Dreyer et al., '31./32. Grabungsbericht', 64-75.
[87] The concrete consisted of the following recipe:one part white cement, two parts powdered lime (calcium carbonate) and four parts sand and gravel.
[88] The mortar consisted of one part lime putty [calcium hydrate/calcium hydroxide] as binding agent, two parts powdered lime, three parts sieved sand.

[89] One part lime putty as binding agent, three parts sieved sand and one part powder made out of red bricks as hydraulic component.
[90] One part white cement as binding agent, two parts powdered lime, four parts sieved sand.
[91] The opening took part in the presence of Dr. Mohamed Abd el-Latif, then director of the Department of Islamic, Coptic and Jewish Antiquities in Egypt, of Mustafa Hassan Khalil, director of the Elephantine Museums, of Prof. Dr. Stephan Seidlmayer, the director of the DAIK, and of Rauia Toama, director of the science department of the German Embassy in Cairo. Also present were the directors of the Islamic sections in Upper Egypt and in the Aswan area Mustafa Mahmoud and Abdelsalam Hassan, as well as the directors of the pharaonic department of the Ministry of Antiquities Sherif Abdelmoneim Said and Ahmed Salah, to whom we want to extend our special thanks: without the great help of Ahmed Salah the exhibition's last minute problems could not have been solved.
[92] P.M. Sijpesteijn, 'The Arab conquest of Egypt and the beginning of the Muslim rule', in R.S. Bagnall (ed.), *Egypt in the Byzantine World, 300-700* (Cambridge: University Press, 2007), 444-445.
[93] H. Kennedy, 'Egypt as a province in the Islamic caliphate, 641-868, in C.F. Petry (ed.), *Islamic Egypt, 640-1517, The Cambridge History of Egypt* 1 (Cambridge: University Press, 1998), 63.
[94] Contributions in preparation for publication: M. Abd el-Latif, 'بعض الشقافات الفخارية المكتشفة (ق 1-3 هـ / 7 – 9 م)' and M. Abd el-Latif, 'حديثاًفى العصر الإسلامى فى ضوء نصوصفى العصر الإسلامى فى ضوء نصوص (ق 1-3 هـ / 7 – 9 م)'.
بعض الشقافات الفخارية المكتشفة حديثاًبأسوان فى العصر الإسلامى فى ضوء نصوصالرواج التجارى والإقتصادى فى جزيرة الفنتين'.
[95]E.g. ostraca O 342 and 420 shown in the exhibition.
[96] The name of the exhibition was chosen from a direct translation of one of the ostraca studied by M. Abd el-Latif: O 3658.
[97] This corresponds nicely with results from the current excavations, which reveal that Nile fish was one of the most important food sources of the inhabitants of the island in the Middle Kingdom (see section 2).
[98]E.g. ostracon O 3335 shown in the exhibition.
[99]E.g. ostracon O 419 shown in the exhibition.
[100]E.g. ostracon O 3335 shown in the exhibition.
[101]Personal information by M. Abd el-Latif, spring 2018.
[102]Personal information by R. Bodenstein, spring 2018.
[103]E.g. ostracon O 1111 shown in the exhibition.
[104] Exhibition no. 27, find no. 17224 E. Found with seven further papyrus rolls that belonged to a family archive, hidden in an old oven of a house of the 30th dynasty (ca. 350 BC) on Elephantine. The document dates into the 8th year of the reign of Nectanebo II and is signed by at least 10 witnesses. Published in: Adel Farid, 'Ein demotisches Familienarchiv aus Elephantine', *MDAIK* 46 (1990), 251-261.
[105] L. Reinfandt, 'Crime and Punishment in Early Islamic Egypt (AD 642-969): The Arabic Papyrological Evidence', in T. Gagos, A. Hyatt (eds.), *Proceedings of the Twenty-Fifth International Congress of Papyrology, American Studies in Papyrology* (Ann Arbor: Scholarly Publishing Office 2010), 633-640.
[106] See J. Sigl, 'Renovation work at the public and private facilities on Elephantine Island', in: J. Sigl et al., 'Report on the Excavations at Elephantine by the German Archaeological Institute and the Swiss Institute from autumn 2015 to summer 2016', https://www.dainst.org/project/25953, 43-44 (25.09.2018): Elephantine – Report on the 45th Season (ENGLISH).