

Excavations at Amheida, 2004¹

The site of Amheida (Dakhleh Oasis Project site no. 33/390-L9-1) lies a few kilometers south of the renowned Islamic mud-brick village of Qasr, in the northwest part of the Dakhleh Oasis. Amheida was the most important town of northwest Dakhleh in antiquity. Once the excavations by the Dakhleh Oasis Project and Monash University at Ismant el-Kharab, directed by Colin Hope, proved through abundant papyrological discoveries that Ismant el-Kharab was the ancient village of Kellis, it was quickly realized that the ancient city of Trimithis, known from a few documentary sources, must have been located at Amheida, the only remaining site of sufficient significance. The Kellis papyri also showed that Trimithis had become a city by the fourth century. In 368/9, as we know from a Leipzig papyrus, Trimithis (with its district) was responsible for a tax liability about three-quarters that of Mothis or Hibis and was treated on the same level as these cities.

The DOP took a preliminary look at Amheida already in 1979, clearing the upper part of two walls of a single room of a house and finding paintings with Greek mythological figures. These were given a popular description by A. J. Mills in the Royal Ontario Museum's membership magazine *Rotunda* and a much more detailed publication by Lisa Montagno Leahy in the *Journal of the Society for the Study of Egyptian Antiquities* (Toronto). They were reburied at the time, however. Also investigated in those early days of the DOP were several pottery kilns in a workshop area along a major east-west street in the northern part of the site. These kilns formed important sources for knowledge of the pottery industry in the oasis in the Roman period.

Columbia University, as part of the DOP, conducted preliminary survey work at Amheida in 2001 and 2002. (Reports on this work can be found at

http://www.learn.columbia.edu/amheida/html/2002_field_reports/field_reports_2002.html.)

This year excavations were begun with a small team, which will be expanded in 2005. Amheida is a large site, and it is generally in an excellent state of preservation. The one significant threat to the integrity of the site is groundwater and rising damp from the expansion of nearby agriculture. In some places standing walls rise above the surface to a height in excess of 3 meters and a depth of deposit around the buried remains of the latest period exceeding 2 ½ meters. The cover of broken pottery throughout the site is unusually dense. This pottery comes not only from sherds used in mud bricks and as wedges between mud bricks in vaults and from pottery kept on the roofs of houses, but also from jars embedded whole in walls, sometimes upside down. These have no doubt broken as walls have been eroded, producing large sherds. Beneath all this pottery is often a fairly barren layer of wind-blown sand.

¹ The staff consisted of Roger Bagnall, director; Olaf Kaper, associate director; Eugene Ball, field director; Mirjam Bruineberg, archaeologist; A.J.D. Isendoorn, ceramicist; Johannes Walter, archaeobotanist; Constance Silver, conservator; Giovanni Ruffini, papyrologist; Delphine Renaut, art historian; and Abeer Helmi, conservator.

For the first season of excavation, work concentrated on the house of which the painted room was a part. We also carried out some clearance of surface debris from two areas where we plan to work next year. These activities are described in more detail below.

Methodology

Because the extent of the deposit at Amheida remains to be established, an excavation method was chosen with which it would be possible to excavate both a stratified site with tell deposits and a site with visible structures covered in windblown sand. The time depth, as represented by the testing of the site in former campaigns and by surface finds, showed that we might well, at least in some parts, be dealing with a stratified site, with occupation from the Old Kingdom up to the Late Roman Period.

A site with thick deposits can be excavated in squares with sections in between. On the other hand, the most recent occupation levels at Amheida, consisting of Late Roman standing mud brick buildings filled with windblown sands and with deposits of windblown sands in between the buildings, are much more difficult to excavate in squares, as sections do not remain standing.

The excavation method used in the 2004 campaign was based on the system as used in several research projects in the Near East and has been modified to fit local conditions. The basis is the locus-lot system, which makes a stratigraphical reconstruction possible. Excavating in pre-numbered squares and pre-defined areas/sub-areas together with the locus-lot method makes it possible to tie finds and features to exact locations on the site, both horizontally and vertically.

It is here that we would like to thank Prof. Dr. P. Akkermans and M. Bruning from the Dutch National Museum of Antiquities and Dr. M. Verhoeven from the University museum of the University of Tokyo for their help in selecting the excavation method.

The Grid

On arrival at the site a new grid system, utilizing a chessboard pattern, was partly laid out. This was done with a Leica Total Station, using existing points with 3D-coordinates which had been defined during previous survey campaigns. The new grid is orientated exactly North-South - East-West with numbers increasing towards the South, and letters mounting towards the West. The point of departure for the largely fictitious grid is situated just to the North-East of the boundary of the site. The whole site is thus incorporated in the grid and can be meticulously mapped further in campaigns to come.

Only on those parts where work was actually going to be conducted in 2004 was the grid physically placed. This was done by hammering in wooden stakes set out every ten meters, creating 10x10 meter squares over the areas to be excavated or cleared. In areas 1, 2 and 4 small grids, varying from 70x60 m to 60x50 m, were laid out. The squares in it not only serve as excavation units; their corner points are also used as measuring points for drawing and documenting architecture, finds and samples.

In area 1, surface clearing work was conducted in squares K34-L34, K35 to M35, K36 to M36, K37 to M37. In area 2, an excavation was carried out in the squares AC56- AC57. The surface was also cleared in AP49 and AR51 in area 4.

Fig. 1 shows the general layout of the site.

The excavation

During the 2004 campaign archaeological fieldwork was conducted in three areas, in the squares mentioned above. In areas 1 and 4, several centimetres of the wind-blown surface sand were cleared off to reveal the structures underneath. In area 2, part of a large building, part of which had been studied previously by the DOP, was excavated. The results of the work in the three areas are presented briefly in the following pages.

Area 1

This area, located in the northern part of the site, has been defined in previous campaigns. From 2000 onwards surface clearing has been conducted here. The area holds a major street with a series of domestic and industrial installations. Most prominent in the area is a series of Late Roman pottery kilns already examined by Hope in 1980.

The 2004 clearing focused on what appeared to be a large room or a courtyard and also a part of the adjoining street on the east side of area 1. This part was chosen for its potential for study of the stratigraphy of this part of the site in the future. The large room and the fairly wide street were thought to be good locations to dig trenches into possible pre- Late Roman habitation layers. (Fig. 2)

The architecture within the boundaries of the examined squares was found to be more complex than formerly mapped, as several more mud brick walls were discovered. The room or courtyard originally thought to be approx. 17.5 x 14.75 m. is now shown to be divided by badly decayed walls running NNW-SSE.

Excavations in this area will commence only in future seasons, but so far, the clearing of the area has yielded a large amount of pottery and a small amount of other objects, amongst which are two ostraca and part of a hollow terracotta figurine of a saddled donkey or horse.

Area 2

In area 2, sub area 2.1 part of a mud brick Late Roman urban villa was excavated. (Figs. 3, 4) In the 2004 season five rooms were excavated, together called sub-area 2.1. These chambers were all excavated to floor level and testing was done beneath several of the floors. Rooms 1, 2, 4 and 5 certainly belonged to the same building. For room 3 this has not yet been proven. The rooms will be discussed separately here:

Room 1

Room 1 of the house in area 2 is of roughly rectangular size, c. 4.7m EW x 5.3 NS. It is entered from the north, through an axial doorway measuring 1.3 m. in width. (Fig. 5, view from Room 1 to north.) Two small rooms open off this room through its western wall. The maximum preserved height of the walls is 2.95 m in the southern wall; the minimal preserved height of the walls is 90 cm in the southern wall.

The room originally had a domed roof, supported in the corners by four pendentives, the triangular segments that formed the transition between the circular plan of the dome and the rectangular plan of its supporting walls. The pendentives were set into the corners of the room at a height of c. 1.50 m. The dome was constructed of mud bricks of both regular and special size. The special bricks were double the size of the regular bricks (31 x 26 x 7 cm). The curvature of the dome had been achieved by the insertion of chinking sherds between the bricks in the exterior surface. The dome had collapsed into the room and had mostly separated into individual bricks. A few larger sections of the dome survived intact: F4 24 x 36 cm in the NW corner; F11 1.30 x .30m in SW corner. F36 is 3.20 x .30 m. in SE corner. The NE corner had already been removed during the testing of the site by the DOP in 1981.

There were several cupboards (niches) inserted into the walls of this room: in the eastern half of the north wall, at 1.17 above the floor, measuring c. 42 x 42 cm; in the southern wall, at 1.30 m above the floor, measuring c. 48 cm in width and at least 60 cm in height; in the northern half of the eastern wall, at 1.20 above floor level, measuring 40 cm wide and nearly 60 cm in height. The entire south eastern corner of the room has collapsed, so that the former presence of niches can not be ascertained. However, there is reason to believe that the collapse of this section of the room was in part caused by the presence of a larger niche in the eastern half of the southern wall.

The excavations commenced in the north-eastern corner of the room, where testing in 1981 had exposed a part of the painted plaster decoration. The remainder of the room consisted of a layer of sand on top of disarticulated mud brick collapse. Painted plaster was found attached to individual mud bricks and as detached fragments. All fragments of painted plaster were kept together with a record of their find spot. In future it is hoped that parts of the lost decoration of the room may be reconstructed with the help of these fragments.

The entire interior surface of the walls, the pendentives and the dome had been covered with a whitewash, which had largely been painted. A preliminary description of the subject matter of the paintings still extant on the walls is given below.

The fragments collected during the excavations revealed that the dome had received only a partial decoration. The pendentives had been painted with figures of nude winged female figures with outstretched arms. These figures resemble the supports of heaven depicted in the neighbouring tomb of Petosiris at Al-Muzawwaqa (Dakhleh). In this case, however, the figures were depicted holding a floral wreath in their hands, which stretched from one figure to the next. The lower part of the dome, above the

floral wreath, was left unpainted. The central part of the dome survives only in small fragments, which appear to show a geometric design with many small segments in a large number of different colours.

In the collapse of the room, several objects were found. A total of eight Greek ostraca, one coin, an unbaked clay figurine and a bronze ring were all contained in the collapse. The ceramic finds included mostly sherds used in chinking, but also two small intact bowls. The excavations did not penetrate into the floor itself; only the rubble collapse was cleared in this season. From the top layer of the earthen floor, samples were taken for botanical analysis.

Room 2

This room, situated in square AC56, is more or less rectangular and measures approx. 5 m EW and 3.7 m NS. This room has no roof, nor does it show any evidence that a roof was ever present. Room 2 is therefore interpreted as an open courtyard. This courtyard can be entered from all directions through a total of six doors. Two doors on the north side provide entrance to rooms 4 and 5; two doors in the west lead to two so-far unexcavated rooms; a door in the south provides entrance to room 1; and a door on the east side enters into another until now unexcavated room. (Fig. 6, view from Room 4 to Room 2.)

The maximum preserved height of the walls is 2.6 m above the last floor level on the east side of the room. The walls are well preserved. Only those on the northern side are damaged at the top, owing to the removal of the wooden lintels from above the doors leading into rooms 4 and 5. This has caused the upper part of the walls to collapse, resulting in a fan of debris on the floor. This removal of the lintels is certain to have taken place in antiquity. Although several other lintels in the room have also been taken out, this has not resulted in severe damage.

Both on the west side and on the south side of the room niches are present. The one in the west wall, set 80 cm above floor level, is approx. 120 cm high, 80 cm wide and 45 cm deep. It shows traces of lintels and two shelves.

The niche in the south wall, on the west side of the door to room 1, is set 110 cm above floor level and measures approx. 70 x 70 cm x 50 cm. This one also shows traces of lintels and of a shelf. A small pot is mortared into the western corner of this niche. The sandy contents of the vessel were sampled for botanical analysis.

The walls in room 2 had been dressed with mud plaster at least twice. The first layer shows traces of red pigment. This suggests that the walls were once, at least partly, painted. The second coating is a coarser, organically tempered mud plaster.

In the south-western corner of the room a small trench measuring 1.8 x 1.8 m was dug into the floor to examine if different floor levels were present and if other, older habitation levels were present at this location. The trench shows a sequence of floor levels belonging to the same building, but no earlier structures. The top level, as well as several of the earlier levels, is made of compacted loamy material. Directly beneath it are the remains of a broken and ill-preserved 0.5 to 1 cm thick gypsum floor.

Notable is a large, probably round pit, dug apparently just off the centre of the courtyard. It cuts through several levels of the compacted loamy material interpreted as floor levels belonging to room 2 and the underlying undisturbed sands, and it is also covered by several floors, amongst others the gypsum one. The pit has only been partly excavated. It reduces somewhat towards the top in width and it is 1.65 m deep in the excavated part. The pit was filled with pottery fragments, some with traces of red and yellow pigments once stored in the vessels, some painted plaster fragments, pieces of mud brick and a small amount of bone. The pit fill consists of refuse material, and its original function is not yet clear.

Above and in the floor levels of room 2 several objects were found. 10 ostraca were more or less clustered in the south western corner of the courtyard and 3 were found in front of the entrance to room 1. These 13 ostraca were all situated on top of the latest floor level. The somewhat older floor levels excavated in the 1.8 x 1.8 m trench in the southwest corner of the room yielded several more. One ostrakon was situated in the sandy fill of the small pot set in the niche in the southern wall mentioned above, another in the sand which filled the room.

The deposits in the courtyard, room 2, consist virtually only of windblown sands. There is a lack of refuse material on the floor, only consisting of mud brick debris from the collapse caused by the removal of the lintels, as well as some mud bricks from the top of the walls and some mud plaster fragments, which seems to indicate that the sand accumulation took place rather soon after the abandonment of the building.

Room 3

Room 3 is situated in square AC 57. This originally vaulted room is roughly rectangular and measures approximately 3.4 m EW x 3 m NS. These measurements have not been taken at ground level, as only part of the room has been fully excavated. The maximum preserved height of the wall is 3.2 m above floor level on the east side. The north wall, which is also the south wall of room 1, is very poorly preserved. The walls show multiple coats of mud plaster. Several parts of the wall show traces of whitewash.

Parts of the vaulted roof are still in place. Most of this vault and the materials on it have collapsed and were found embedded in windblown sand. The mud bricks used in the vault measure approx. 33 x 20 x 7 cm, and show a distinctive pattern of two concentric impressed open circles. This pattern was made to increase the strength of the connection between the bricks. The insertion of chinking sherds further strengthened the vault.

The room shows traces of three doors, two of which, one in the eastern and one in the southern wall, have been filled in with mud bricks, the bottom of the latter also with baked bricks. One door in the southern wall is still open, with its lintel still in place, albeit badly decayed. There is no evidence of a door leading through the north wall into Room 1, and it is, therefore, uncertain if room 3 belongs to the same building.

A small niche with a rounded top is set in the western wall, which has not been fully excavated. Only the eastern half of the room has been excavated to floor level. Part of this floor has been examined to reveal undisturbed sands underneath. It is clear that there is a sequence of temporary floor levels here, most of them made up of compacted loamy materials. This sequence is set on top of a layer of rubble, within which large fragments of painted thick lime plaster have been found. The floor levels have been extensively sampled for botanical analysis.

On top of, and in the excavated half of the floor in this room, objects of various kinds were found. Apart from eleven small coins, there were five ostraca and a series of items of jewellery. A large copper alloy ornament in the shape of a leaf is the most notable of these. It measures 8.6 cm across and may have served as a clasp of some sort. (Fig. 7) Other items include a bronze pin, some beads, a bit of gold wire and a ring made of bone. In the layers of debris from the collapsed vault of the room, there are again more items within the same category. Here, another five coins and four ostraca were found, and fragments of three different bracelets made of glass and bone (Fig. 8). Two bronze rings (Fig. 9) and one ring of bone were also in this collapse, as well as a bone eye pencil (Fig. 10) and an iron knife. The large amount of jewellery found here combines with the contents of one of the ostraca to suggest a female presence in this part of the house.

Room 4

Room 4 is situated in square A56. This room, entered from the south through a door in the northern wall of the courtyard, measures approximately 3.4m EW x 3.1m NS. The room had a vaulted roof. The southern wall still has a section of the vault in situ; the remainder was found collapsed onto a layer of windblown sand and subsequently covered by such a deposit.

All the walls were plastered with mud and were partly whitewashed.

The western wall has two niches, the southern one approximately 1.3 m above the latest floor level, the northern one at 1.4 m. Both are small and probably secondary additions to the wall. They were probably used as lamp niches. The southern wall has a low but deep niche, with a rounded top, at 1.1 m above the last floor level. It is 40 cm wide, 15 cm and 40 cm deep. The southern wall also shows two holes, approx. 10 cm wide and set 30 cm apart, 50 cm above the last floor surface. The holes were deliberately made in antiquity and were obviously made for attaching something to the wall.

The east wall also shows traces of a small niche. The wall is, however, badly preserved. During the clearance of the outer face of the east wall of room 4 an intact pot was found inserted into the wall as building material.

A small hearth was found, made of four large mud bricks set upon the last floor level and abutting the west wall of room 4. The inside is sooted, and much ash was found around it. The wall behind the feature also shows a strong soot accumulation fanning outwards towards the top. Both the hearth and its surroundings have been sampled for botanical analysis.

Another remarkable feature is an east-west oriented low mud brick wall (F37) running parallel to the north wall of room 4 at a distance of 40 cm. This feature, which is only two mud bricks high, creates a storage space and subdivides the room in two. The low wall is set at a lower level under the latest floor surface, and it therefore belongs to an earlier phase of use of the room than the hearth just mentioned. (Fig. 11)

Room 4 has been excavated to the latest floor surface in the entire room, and in the western half also the deeper levels were examined. The room shows a sequence of often broken floor or surface levels consisting of layers of compacted loamy sand and large amounts of ashes. Mixed in with this are numerous fragments of ceramics and also some pebbles and cobbles. The quality of the floors in this quarter is seemingly poor. Underneath the floor levels there is a thick deposit of clean sand, which measures at least several meters in thickness.

The number of objects collected from room 4 is impressive. The material directly associated with the collapsed vault, including building materials and debris from the roof, contained 17 jar stoppers made of plaster. The floor levels in this room contained another 14 of the same. This stands in stark contrast to the other rooms, where no jar stoppers were discovered. The room also produced a significant amount of coins. 57 coins were found in and directly on top of the floor layers and another nine were found among the roof debris, and one inside the northern niche in the west wall. 64 ostraca were found in the room, most of them (48) from the floor levels, and a smaller amount (11) from within the roof debris and associated material.

The room also yielded three complete vessels. One was built into the eastern wall, mentioned above, and two others were found in the long narrow space between the north wall of the room and the low wall running parallel to it. A pottery oil lamp was also found inside this storage space.

Room 5

Room 5 is a chamber with staircase connecting room 2, the courtyard, with the roof or possibly another storey. The steps of the staircase are partly made of baked brick. The room has not been fully excavated yet.

As has several times been indicated, we do not yet know how large this house was. Its walls are all visible above the surface, and these have been mapped two years ago already. But their excellent state of preservation is in this respect a disadvantage, because they stand to a level above the doorways, the openings of which are mostly not visible at ground level. Only the vaults and domes are gone, and even parts of those are preserved, although often in precarious condition. The result is that we cannot tell without excavation where the doorways were located and thus how the large urban blocks that we find were subdivided into houses. The five rooms partly or wholly cleared so far may have been no more than

third of the total area of the house, and it will take us at least one season and perhaps more before a complete picture of the house emerges.

Coins

As has been noted above, Room 4 yielded numerous coins, all of bronze, with many fewer occurring in other rooms. The total of coins from the season is more than 90. Almost all had suffered badly from corrosion, some to the point of exploding the coins in the middle. Of those coins from the floor of this room that have been able to be cleaned sufficiently to be identified, all seem to belong to a relatively narrow window from 337 to 355, or the reign of Constantius II. As nothing in the handwriting of the ostraca or the character of the pottery found suggests a date any later than this, we may tentatively suggest that the house went out of use around the middle or end of the 350s. Trimithis was still an active center of a prosperous region in the late 360s, as the evidence cited earlier indicates, and the end-date of its occupation is not yet known. Some of the pottery found on the surface of the site appears to be later than the mid-fourth century. This house may therefore not be entirely characteristic of the site as a whole.

The paintings

The undoubted center of attention in this house so far is the painted room (Room 1), with some scenes still in place on the wall, others preserved in fragments of collapsed wall from the upper registers. These are still in the course of being reassembled, like a giant jigsaw puzzle, by Dr. Kaper. An entire room is filled with trays containing fragments of plaster and their mud-brick backing. Among the scenes present on these walls, now or originally, are Ares and Aphrodite taken in adultery, with a whole squadron of gods and a figure representing City, Greek Polis, looking on (Fig. 12); the washing of the feet of Odysseus by Eurykleia when she recognizes him upon his return to Ithaca; Perseus and Andromeda; Orpheus charming the animals; and a satyr pursuing a not-too-reluctant maenad. There are several scenes not identified with Greek inscriptions (as Ares, Aphrodite, and their audience are) and not yet recognized by their iconography.

Below the figural scenes run non-figural designs, originally intended to suggest stonework. The original standard of artistic quality in the painting was high. The same cannot be said of the technical quality of the plastering and paints, which used thin layers of wash and soon began to deteriorate. As a result, there were at least two phases of touching up or repainting, in which the room was “restored” to a more pristine condition. This work has affected different areas to different degrees, with the lower and most easily touched areas the most completely redone. In some places there are three layers. Fortunately, the losses to the figural scenes, which are at face level or higher, were less than to the faux-marbre decor of the lower panels. Still, the cumulative effect of the low quality of work has left us with serious conservation challenges.

Written documents

Reference was made above to one of the ostraca found in Room 3. Caution is in order until the higher deposits have been fully studied and the rest of the floor level is reached—not to mention exploration of the levels below the top floor—but the impression already referred to, that the room was used by the woman or women of the house, is given some confirmation by the ostrakon mentioned, which was apparently a kind of greeting card or tag sent with an object. At the top it reads *to himation*, “the dress,” and after a blank the writer has added the stereotyped greeting found at the end of letters, “I pray for your health, my lady.” The rest of the handful of ostraca from this room are not so domestic. They are business-related; one of them is a short account, and another a small chit, concerned with wells, *hydreumata*, particularly with what appear to be rents from users of the wells and expenses incurred in maintaining them. Chits of this sort are found in every room of the house excavated so far, most of them from Room 4, the kitchen. It seems likely that these chits formed part of the short-term record-keeping, coming in to the house from all of its properties and no doubt being converted into entries on wooden tablets and eventually onto papyrus. The tiny ostraca used to transmit the data about the transactions (often only 2 or 3 centimeters on a side) contained just enough information for the record-keeper to know the essentials that had to be noted in the master record. The full understanding of this unique body of material is going to require considerable study. There is one order for delivery sent by a woman named Demetria, and it is possible that this was the lady of the house at some point in its history and that she took an active role in the estate management.

Obviously the house was a substantial one, and the impression of a portfolio of wells suggests considerable wealth, as they were the key to prosperity in the oasis in any period. One ostrakon from the debris below a niche in the courtyard (Room 2) gives us a deeper insight. It is a letter from Serenos to Philippos, whom he addresses as “brother”—meaning “colleague,” probably, as it usually does in administrative and business correspondence. Serenos says, “Send me the decree which I wrote concerning the liturgy.” (Fig. 13) The word which I render with “decree,” *psephisma*, is the normal technical term for a civic decree in a Greek city, and in a fourth-century Egyptian city it can only refer to an action of the city council. It follows that Serenos and Philippos must have been *bouleutai*, members of that city council. There is another ostrakon containing another letter from Serenos to Philippos (on a much less important matter), but there are also other letters from Serenos on ostraca addressed to other people, suggesting that the letters might have come back to the sender with the object sought, and that Serenos was thus the householder. But the name is of little importance compared to the social standing. This is, as far as we know, the first house actually identified as that of a city councillor of Roman Egypt. There is another curious piece of evidence that points in the same direction, a little memorandum in which a name is given with the title *têrêtês xenôn*, “warden of foreigners”—foreigners meaning people whose registered residence was somewhere other than the district of which Trimithis was the capital. It is hard to imagine anyone but a councillor being concerned with such a superintendency, an office nowhere else attested. It

would presumably have been the city council that appointed this official, the very existence of whom may suggest an active government.

Despite the lack of papyrus documents from the rooms excavated this year, then, the 105 ostraca provide a considerable amount of information to help with the interpretation of the house and its other finds, as well as to contribute to larger questions concerning the status of the Dakhleh Oasis in the fourth century.

Area 4

Area 4 is the highest point of the site, which lies geographically also at its centre. Since the surface here was covered with a remarkably dense scatter of stone fragments, it was chosen for a more detailed examination. During the 2004 season, the site grid was extended to this point and two squares of 10 x 10 m. were selected for a controlled surface clearing. The upper layer of surface material was removed and sieved, in order to gain a first impression of the nature of its original occupation. (Fig. 14)

The large amounts of stone fragments on the surface of the squares consisted of both sandstone and limestone, in a division of 3:1. Beside these, many lumps of gypsum cement were found, probably originating from the core of some original stone walls. Only a few intact stone blocks were found within the squares, and almost nothing remains *in situ* at surface level. In the south-western square the remains of a mud brick wall were found, measuring between 60 and 90 cm in width and c. 3 m. in length, but no conclusions can be drawn from these at present. The finds also consisted of flint tools, possibly of Old Kingdom date, which may have been reused in later mud bricks on the site.

The most notable find consisted of a series of bronze statuettes found during the surface clearance of the south-western square (AR51). Nine bronze statuettes of the god Osiris were found here. (Fig. 15) Five of these were of identical size (3.8 cm high) and there are fragments of two slightly larger figures of the god, of an estimated 4.8 cm, as well as a triple figure of Osiris of 5.7 cm in height. Of the largest figure, only the head of Osiris survives, which measures 6 cm in height. The smaller figures each show a suspension loop in the neck of the god, which would allow them to be used as amulets. The crown of the god is often surmounted by a large solar disk, and also in other respects the iconography of the god conforms to the standard with sceptres held in both hands and a long pleated beard. This collection of bronzes points unmistakably to the presence of a pharaonic temple at this location, as they are comparable to the hundreds of votive bronzes found, e.g., in the Late Period temple of Ain el-Manawir in the Kharga Oasis.

The presence of temple remains is also indicated by a few fragments of stones that bear relief decoration. One stone fragment has the remains of a hieroglyphic inscription from the Graeco-Roman period, which certainly originates from a temple wall.

These preliminary conclusions will be tested during the coming seasons when area 4 will be further explored in excavations.

Stratigraphy

In rooms 2, 3 and 5 of area 2 (sub area 2.1) small trenches were dug through the levels belonging to the building, into deeper levels. The main goal was to observe if there were older occupation layers present under the Late Roman building. In all rooms clean compacted / concreted loamy sands were discovered underneath. The small trench in room 4 was excavated to approximately 3 m beneath the top floor level. Under the floors there is a seemingly natural deposit of approx. 0.5 m of reddish brown-brown loamy sand/loam and a thick layer beneath that of finely laminated, strongly concreted loamy sand. This yellowish brown-yellow sand is most probably an eolean deposit. No signs of habitation or use in the form of archaeological indicators were found in it. Therefore, we conclude that there are no occupation layers pre-dating the Late Roman period at this part of the site. In areas 1 and 4 no excavation was yet undertaken, and no conclusions can be drawn about the stratigraphy in these areas.

Conservation

Because the paintings in Room 1 of the house were already known to exist, provision was made for a plaster and paintings conservator to be present from the beginning of the excavation. Problems of conservation with these paintings in large part result from the component materials and technique of execution. The nature of the architectural support and the ambient conditions of the architectural space further impact the condition of murals.

At Amheida, available materials were used. The reception hall was constructed from mud brick. The shrine that was found during excavation is made from stucco. The murals are executed from a mud plaster and whitewash ground upon which the murals were executed in a tempera paint. These are all Neolithic techniques of construction and wall decoration, but used for a man of substance of the late Roman world.

These materials of construction and mural painting have impacted the condition and prospects for conservation. The mud brick wall is extremely hard. On average, the mud plaster is only about 0.5 cm thick, very soft and not well adhered to the wall. The white ground is more like a whitewash than a true preparatory layer. The paint is a very thin tempera. All of these components of the mural are soft, friable, and easily degraded by impact and abrasion and are highly sensitive to water. As will be discussed further, the very hard consistency of the mud brick and the very soft and friable nature of the murals complicate the prospects for conservation treatment.

One of the most difficult problems in fine arts conservation is the treatment of matte paints, such as those found in the reception hall. Briefly summarized, matte paint is a difficult problem because it inevitably becomes weak and friable as it ages, but generally responds poorly to all categories of consolidants. Aqueous consolidants can damage the materials, cause staining, and leave tide marks. Resinous consolidants almost always change the refractive index of the murals, causing them to appear dark. Thus, the first task of the 2004 conservation treatments was to test possible consolidants.

Not surprisingly, all water-based materials provoked the above-described negative side effects and could not be used. On the other hand, acrylic resin consolidants proved to be very effective and did not cause any of the negative side effects that are usually encountered, such as darkening. At present, it is not clear why the murals of the reception hall proved so resistant to changes in optical qualities following consolidation.

During the excavation of the reception hall, three major problems of conservation were encountered:

1. Conservation of Murals in Situ. This aspect of the conservation treatment was supervised by Constance Silver. As the sand was removed from the room, the murals were revealed on the wall. However, the condition of the murals was so poor that in many areas only the pressure of the sand fill in the room against the walls kept the murals from flaking off. In these areas, the sand was removed inch by inch, in coordination with the consolidation of the murals, using a 10 percent solution of Acryloid B72, which was applied by brush, drop by drop from an eye dropper, and by spraying. In some areas, sections of the mural were so weak that they had to be hinged in place with facings composed of crepe-line (silk) or wet-strength tissue, using a 20 percent solution of Acryloid B67 as the adhesive. The rationale is that Acryloid B67 can be dissolved in weak solvents, so the removal of the facings should not affect the consolidated plaster because Acryloid B72 requires stronger solvents to be dissolved.

2. Collection of Fragments. Because the domed ceiling of the reception hall and sections of the walls had collapsed following abandonment in antiquity, there were extensive fragments of murals in the sandy fill. Wood trays were made so the fragments could be laid directly on a flat surface as found. At each section of the room, and at each level, an individual tray was used for the collection of fragments. At the conclusion of the excavation, more than 50 trays of fragments had been collected. This aspect of the work was supervised by Olaf Kaper.

3. Collection of Masonry Blocks with Attached Murals. Blocks of masonry of various sizes, to which sections of mural paintings were attached, were collected by their location in the room. A very important panel was found, showing Orpheus playing for the animals. This aspect of the work was supervised by Olaf Kaper.

4. Analysis of Ambient Conditions. Analysis of ambient conditions entailed recording the water content of the murals as they were exposed during excavation using a *Protometer*, and removal of samples of the murals and salts for laboratory analysis. Signs of water and salt damage were observed on the lower registers of the murals. It is indeed interesting to note that quite high water readings were recorded, and salts clearly are evident. At present, the source of the moisture content and salts are not clear. This aspect of the work is supervised by Constance Silver. The samples have been sent to Prof. Richard Wolbers, University of Delaware and the Winterthur Museum, for analysis.

Following excavation, the murals exist in three states. Most of the murals have been stabilized in place on the standing walls of the excavated room, which was “backfilled” with a double course of mud

bricks and sand infill between the bricks and the murals. However, highly important fragments are preserved on blocks of masonry that were retrieved during the excavation. Additionally, there are over 50 trays of fragments. Some of the fragments are significant images, but most appear to be from the painted trompe l'oeil. It is unlikely that the fragments can be reconstituted, with the exception of those that have clear figurative and formal compositions. The fragments are extremely thin and fragile, often retaining only a thin stratum of the mud plaster. In some instances, the mud plaster has been lost. Continuing conservation research will be carried out by Constance Silver and Prof. Wolbers. It will address several issues:

1. The Final Disposition of the Murals. This is the most important issues that must be addressed: are the murals to remain on site or be detached and exhibited in a museum? Many determining factors will be brought to bear on this defining question: conservation ethics; the realities of securing and presenting the site the reception hall at the site; the technical challenges of detachment; the exigencies of museum display in the Dahkla Oasis; and the financial ramifications of both system of conservation.

2. Methods of Detachment and Museum Installation. Detachment presents extreme challenges. The detachment of murals generally is effected by cutting between the wall surface and the plaster. Normally, plaster is composed in two sections, a "brown coat" and a finish coat to create a thickness of at least 1 inch. However, in the case of the reception room, the "mud plaster" is generally very fragile. Thus, the common detachment method will not be applicable.

Consequently, other systems of detachment will be explored and tested. Regardless of the final disposition of the murals, substantial detachment will be required in any case because the fragments of murals will have to be removed from the blocks.

3. Methods of Remounting Fragments. Research will be undertaken to develop techniques to secure and remount important fragments of murals and reintegrate them onto the mural paintings.

4. Investigation into the Ambient Conditions of the Reception Hall. Various samples will be analyzed at the Winterthur Museum. The objective is to explain the water and salt-induced damage that is evident on the mural paintings. These data may help determine whether the murals can be left in situ or should be detached in order to separate them potentially destructive ambient conditions.

Archaeobotanical remains

In this season's work 88 soil samples have been collected and studied from area 2.1 (squares AC45–AC57; one additional sample containing hardened soil was taken from an unbroken jar found on the surface eastwards of area 2.1). This sum includes 10 "hand picked" samples with solitarily collected seeds, 3 samples of contents of soil in pots, and furthermore 4 mudbricks were flotated (water flotation) which all come from wall collapse in room 1.

The soil samples were taken mainly from floor levels, only a few from sandfill above floor level. 51 soil samples contain mostly sand and red clay coming from floor, without ashy concentrations, and 20 samples were taken from ash layers.

The soil samples include an average volume of 4,97 litres with a maximum of 10,2 and a minimum of 0,1 litres (the exceptions were the contents of jars).

The soil samples were sieved with a set of sieves, 4 mm, 2 mm, 1 mm, and 0,5 mm mesh. In ashy samples another method was applied, namely the electrostatic extraction.

Results: The few sandfill samples do not contain plant macro remains at all. But also those from the floor level show usually only a (very) low amount of organic remains. In 18 samples no plant remains at all (excluding recent botanical and non botanical remains) could be detected. The samples taken from ash rich layers contain more plant remains but present mostly only charcoal.

The general situation, beside the extensive absence of organic material, is characterized by exclusively charred material. However, only a few plant species are apparent, comprising frequently uncharred seeds and fruits (always in bad condition: grapes, olive). Furthermore, in a few samples only small and very badly preserved fragments of date pits were detected, and as a result of long term effects of humidity existing in these soils (see below) those rare uncharred fragments had already disappeared or they often disintegrate when touched.

The most frequent plant macro remains are pits of olive and seeds of date, of wine grape, and cereals. The two first species occur nearly in all samples containing any other plant remains. But in most of the samples only scattered seeds and fragments of them have been found, and there was never any concentration of cereals or other useful plants, except a low increase of date and/or olive pits. No increased amount of the generally rare weeds could be found, either.

To give a first summary, the cereals comprise grains of bread/hard (durum) wheat, possibly emmer, rachis fragments of bread wheat, hard wheat, and rarely also emmer. Beside wheats, barley is also represented frequently (grains and rachis fragments). So far, the grains of the cereals seems to be more common than the rachis fragments.

Pistachio (*Pistacia vera*) and safflower (*Carthamus tinctorius*), Egyptian plum (*Cordia myxa*), persea (*Mimusops schimperi*) have been detected rarely or in very few samples, whereas the small seeds of fig (*Ficus cf. carica*) are relatively common, found usually in the smallest 0,5 mm mesh.

The natural vegetation is represented by small twigs of tamarisks (*Tamarix* sp.) and mericarps of *Acacia nilotica* and fragments of seeds but also leaflets of *Acacia* sp. Rarely, scattered seeds of the succulent *Suaeda aegyptiaca* and/or *monoica* occur also in samples. All of them probably reflect the use of fuel.

All of the latter species, except *Acacia* sp. but together with an additional species (*Sarcocornia* sp.), which so far has not been recorded for the Roman site Kellis, indicate a salt-rich vegetation. Whereas

Tamarix sp. show a very wide ecological range, *Suaeda* sp. and especially *Sarcocornia* sp. need brackish water.

Seeds of weeds are not frequent. Most of them belong to *Fabaceae* including once fruits of medick (*Medicago* sp.) and also seeds of this genus, as well as seeds of *Brassicaceae* and asfodill (*Asphodelus tenuifolia*).

The amount of macro remains in the mudbricks is relatively low but richer than those in many soil samples and even of some ashy soil samples. However, the highest frequency of plant remains occurs in some ashy samples. Despite the very fine structure of the relatively poor organic material (straw) in the mudbricks the variation of species is surprisingly high. Compared with the mudbricks of the Roman settlement at Kellis, their organic, dominantly straw texture is coarser and richer and even contains big diaspores such as date and olive pits, along with big rachis fragments.

No activities by termites have been noticed in the analyzed mudbricks and hardly any plant impressions of organic textures could be found, either, even though termite activities can be found very frequently at this site.

In the soil samples salt concentrations frequently exist, dominated by gypsum-rich tiny globules. The lack of nearly any organic and uncharred material at this site is eye-catching (cf. above on conservation), at least compared to the enormously organic-rich site of Kellis. In spite of the lack of wells or swamps and irrigation close to the site, there must have been at least a relatively low humidity but for a long time and high enough to decay gradually organic material. No uncharred wood or bark is preserved except some very small pieces; these are also very soft.