

Dakhleh Oasis Project
Columbia University
Excavations at Amheida 2007

The 2007 excavation season started on the 1st of February and continued until the 24th. The main goal of this season was to finish the excavation in area 2.1, a rich house of the 4th century A.D. in the center of the city, and to explore part of the street in front of the house in area 1.3 and part of the courtyard south of the same house. Area 2.1 has been under excavation since 2004. The excavation of the house situated in area 1.3 started during the 2005 season.¹

Area 2.1 (Figs. 1-2)

Paola Davoli, Eugene Ball

Area 2.1 is formed by a domestic structure comprised of 12 primary rooms to which, in a later stage of occupation, one room was added. In this season we completely examined all the rooms to the floor level. In addition, test trenches were dug beneath the floors belonging to this structure in six rooms. The house has a square plan (dimensions approx. 15 x 15 m). The rooms are organized in layout around one more or less centrally situated room (room 2, dimensions approx. 3.17 x 5.1 m). The two main entrances, situated both on the east side and the west side of the villa, gave access into this centrally located room through two barrel vaulted rooms (12 and 7). The most important room of the house could be accessed from a central doorway situated in the south wall of room 2. This main room (room 1) is the largest in the house (dimensions approx. 5.3 x 4.7 m), was fitted with a domed roof, and was painted in registers on all walls. It was clearly the reception room of this structure. Two doors in its west wall gave access to two barrel vaulted rooms that were excavated this season, rooms 14 and 11. From room 2, the east wing of the house could be accessed. The major feature of this wing is room 6 (dimensions approx. 7.1 x 3.6 m), a large rectangular room which had a flat roof. The northern wing of the house was made out of two barrel vaulted rooms with mainly domestic function, probably for the preparation and storage of food, and a staircase with a small room underneath. In the northwest corner of the house a barrel vaulted room was connected with the main entrance room, room 12. A later addition is formed by room 15 which was accessed through a passage north of the staircase. To the north and the northeast of the house, there is one large courtyard which has been under excavation since 2005. We are not sure that it, at any time,

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belonged to the house. This season's excavation activities were mainly concentrated in the west wing of the house in Area 2.1. Rooms 11, 12, 13, and 14 were completely or nearly completely excavated. In several other rooms test trenches were dug to gain information about the number of phases represented by the structure. The large courtyard (rooms 9 and 10) was also completed. The rooms excavated this season are described in more detail in what follows.

Room 13 (Fig. 3)

Room 13 measures approx. 2.8 x 3.1 m. Its doorway was situated in the southwest corner of the room. The east wall of the room has a small vaulted niche set into it. Inside, this is divided into two compartments by a wooden shelf, no longer present. The opening of the niche is 31 cm wide and 33 cm high. Both interior and exterior surfaces were whitewashed. There are traces of soot both on the inside and the outside, probably indicating the use of an oil lamp. The room was covered by an east-west oriented barrel vault. This roof was found to be largely collapsed both in the room and in the alley to the west of it. Both springings of the vault are largely in place. They are situated at approximately two meters above floor level. The inside of the vault was covered by a thin white gypsum plaster. The floor is quite well preserved and is made of grey compacted mud. All the walls were plastered with mud plaster, upon which gypsum plaster was applied. This plaster was painted in purple with paneled decoration. This decoration reached a height of one and half meters. The upper part of the decoration was formed by a thin band of yellow paint. On the walls, a total of six and a half panels are still visible. Decorations of birds and garlands are visible inside the panels. There are several names of Greek gods (Dionysos, Hephaistos, Polydeukes, and Kairos) painted above those decorations. The west wall is badly damaged. The evidence suggests that this happened in antiquity. The wall has shifted inwards. The decoration was covered in two subsequent phases with whitewash. After the room lost its initial use, it was probably used as a storage space. This is indicated by the presence of two bins built in the northern part of the room (the first bin is 1.43 by 0.76 m, the second 1.27 by 0.74 m). They were partly built into the already existing damage on the west wall of the room. The primary decoration of the room was executed in purple, yellow, white, green, and black.

Room 12

Room 12 forms the main entrance of the villa. Its dimensions are approximately 3 x 3.7 x m. A large 1.60 m wide doorway was present in its west wall. It had an east-west oriented barrel vault which has collapsed. The springings of the vault are, however, still in place. They are placed 1.90 m above floor level. The floor is composed of compacted mud. The walls were faced with mud plaster.

Room 11 (Fig. 4)

Room 11 is a barrel-vaulted room with an east-west orientation. Its dimensions are approximately 2.8 x 3.6 m. It was entered from room 1, the main room of the house, the doorway being situated in the southeast of room 11. The east wall of the room has partially collapsed, and the west wall has shifted inwards. A sequence of collapses has in parts badly damaged this room. Room 11 was a painted room, with a white plastered vault. The walls were decorated in panels up to approximately 1.72 m above floor level. The top part is formed by a white cornice decorated with two interwoven yellow and red lines forming specular spaces in which decorations of either birds, bunches of grapes, or flowers are present. The main panel is delineated by a black cornice. In the corners of the room, columns executed in red and white paint with Corinthian capitals are present. The main decorative motif is formed by patterns of yellow tangential and intersecting circles (diameter 17-18 cm) adorned with rose petals and flowers. At the bottom of the wall there is a band of marbled panels. In the middle of the north wall a vaulted niche is situated (40 cm wide, 43 cm high, and 44 cm deep). The dominant colors used in the decoration of the walls are green, yellow, red, black, and white.

Room 14 (Fig. 5)

Room 14 is an east-west oriented room covered by a barrel vault. Its dimensions are approximately 2.7 x 3.5 m. The room was entered from room 1, its doorway situated in the northeast corner. The floor is made of compacted mud, badly preserved by the collapse of the vault and walls above it. The south wall is completely hidden and probably largely destroyed by a collapsed vaulted roof of the room directly to the south of room 14 belonging to the neighboring house, not yet excavated. Room 14 has been decorated; the vault, however, was only adorned with white plaster. The walls were decorated in panels up to 1.54 m above floor level. The panels were surrounded by a cornice in red, with yellow decoration representing vines. The main decorative motif is formed by patterns of yellow tangential and intersecting circles (diameter 19-20 cm) adorned with rose petals and flowers. At the bottom of the wall there is a band of red paint. The dominant colors used in the decoration of this room were red, yellow, and black. At the center of the north wall, a vaulted niche was built (dim. 46 cm wide, 52 cm high, and 42 cm deep). The interior of the niche was white washed. In the northwest corner of the room, two small walls were built perpendicular to each other forming a bin of approximately 1 by 0.60 m.

The occupational debris above the last floor level contained many interesting finds including coins, ostraka, and animal bones, in which many bird bones could be recognized.

Test Trenches within the perimeter of the house

This year test trenches were dug in rooms 6 and 15. A trench excavated in room 4 beneath the floor levels in 2004 was expanded. In the southern part of room 6 a trench was dug to gain insight into the number of phases of habitation represented in this part of the house. In addition to three floor levels, we found a foundation trench of the western wall of the room which was cut through several layers of

occupational debris down to *gebel*. In the southern part of room 15, north of the staircase, a trench was excavated, its main goal seeing if the room once contained a subdividing wall. In the trench, two previous building phases were recognized.

The trench in room 4 covered the larger part of the room. In it layers of debris, mainly used for the filling of the space between the foundations of the wall, were excavated. They covered a foundation trench of an earlier wall located directly beneath the east wall of the room. An unexpected find composed of 5 objects buried next to the entrance of room 4 was uncovered. This cache consisted of a pewter dish with a composite ivory and metal object placed in it, a small bronze *situla* turned upside down and located over it, and two bronze lamps. The lamps were decorated with a lion's head on the handle. Also included were chains for hanging the lamps and tools for cleaning them.

Rooms 9 and 10 (North courtyard) (Fig. 6)

This year the excavation of room 10 was completely finished. Under the later layers of habitational debris, a square structure was encountered together with several surrounding walls in baked brick, approximately under the course of the walls of the later phase of room 10. The main feature in the excavated room is the square structure (approx. 2.75 x 7.8 m) made up of four walls executed in sandstone blocks and slabs, with some baked bricks added in some places (Fig. 7). The core of the structure is formed by a layer of strongly concreted sandy mud. It is not clear if this material is actually *gebel* or if it is a deliberate fill of the structure. Surrounding the sandstone structure are four channels gently sloping from one direction to another. The channels are approximately 60 cm deep and 45 cm wide. The outer boundaries of the channels are formed by baked brick walls also forming the boundaries of the room. The eastern channel was covered by a series of seven sandstone blocks, partially still covered with mud. Probably these mark the location of an entrance into this early phase of room 10. These channels were probably for the passage of water. In the northern and western walls square openings have been observed. It is thought that the water would have entered from these openings into the channels, circulating counter clockwise around the square structure and being drained through an arched opening in the northeast corner of the room. It is thought that this structure is part of a much larger building used as *thermae*.

The main feature excavated in room 9 is the circular structure (Fig. 8) recognized first in 2005 (approx. 5 m across). From the excavation it is clear that we are dealing with a round building with a hypocaust situated under the floor. The building is built in mud brick with a floor of baked brick slabs covered in lime plaster resting on 18 baked brick pillars set on a mud brick floor. From the hypocaust five channels lead outwards to six *fistulae*, four of them built into the circular structure above the hypocaust, and two others to the south, outside of the circular structure. The main channel enters the hypocaust system from the south. It is thought that its furnace is situated somewhere in the area of the later house,

2.1. The hypocaust and round building above it were most probably part of the same *thermae* as to which the square structure in room 10 belongs.

During the excavation of rooms 9, 10, and 15 many walls were found both in mud brick and in baked brick. From these walls, it becomes clear that at least five main building phases are represented here, all of these preceding the building of the house in area 2.1.

At the end of the excavation we started the clearing of sand in a new room to the north of room 10 and 15. On its western wall, patches of lime plaster, both white and painted, have survived. On the white part of the plaster, several lines of Greek texts written in red are still legible. One of them represents the first few lines of the *Iliad*.

Area 1

Anna L. Boozer

Area 1 clusters around the major east-west road in the northeastern extent of Amheida. The structures in this area are primarily domestic and industrial in nature. In the 2005 and 2006 campaigns, excavation focused upon Area 1.3, a domestic context. The 2007 excavations were carried out in two areas in the vicinity of Area 1.3. The first area was the east-west oriented street, Area 1.2, located north of Area 1.3. The second area was a large open space, Area 1.4, interpreted as an exterior courtyard probably belonging to house 1.3. The purpose of these excavations was to complete the documentation for Area 1.3, clarifying its chronology, economic situation, and relationships to other features in Area 1.

Area 1.2

Area 1.2 is located north of house 1.3, in front of the entrance, and functioned as a major east-west oriented street into Amheida. We laid out a 6 x 2 meter east-west oriented trench in this area, aligning it against the north wall of Area 1.3.

Three surfaces were exposed, all three composed of compacted mud. Ash was found between these street surfaces in the southern half of the trench. By contrast, the northern part of the trench showed a continuous replastering of street surface levels with little to no refuse in between. It is noteworthy that insignificant quantities of windblown sand were found between these surfaces, indicating that the accumulation of sand was not a considerable problem in Area 1. It is possible that the structures on the north side of the street served as a barrier to the sand-laden wind from the north.

During the course of excavating this trench, a prior trench was found in the southern 2.15 meters of our trench and aligned with the north wall of house 1.3. It was 0.50 meters wide. This trench cut through all depositions and features until it reached the ash below the third (from top) surface. It appears to be an excavation trench, given the precision of the cut and the standard width of the trench. It is unknown to what campaign this trench belongs, since it did not occur during the Dakhleh Oasis Project work at the site.

The first (top) surface was highly variable in elevation, rising up on either side of the doorway into Area 1.3. The location of these elevated sections indicate that they may have been used as barriers to hold back the refuse that filled the lower areas on top of this street surface. This refuse contained several noteworthy objects: fragments of a terracotta statuette, donkey hoofs, and an ostrakon in Greek that dates to before 275 AD (see **Greek Epigraphy and Papyrology** section of report). Moderate densities of ceramics, slag, bone, and glass were also represented.

The second (from top) surface was found in fragmentary condition to the south, due both to its thinner construction in the south and also to the presence of the prior trench in this vicinity. This surface was covered in ash to the south. The floor contained high densities of plaster fragments within the matrix of compacted mud. Few objects were found within the ash and surface.

Another layer of ash was found between the second and the third (from top) surface. Again, few objects were found within the ash, but those that were recovered included ceramic wasters that probably derived from the kiln area on the north side of the street. This third surface was dark grey and covered with sherds broken into small fragments from heavy usage of the street. It was quite flat, although it rises slightly in elevation between the southern and the northern extent of the trench, indicating that the natural terrain of Area 1 rose to the west in this vicinity.

Ash and high densities of objects were found between the third street level and clean yellow sand, including several reconstructable ceramic vessels. A foundation trench for the north wall of house 1.3 was cut into the natural deposit of sand. The data collected in this trench allow us to state that the north wall of house 1.3 and the third floor surface of the street were contemporary and that the floor level of the street was raised by the accumulation of waste and not of wind blown sand.

Area 1.4

Area 1.4 is a large L-shaped open space (20 x 21 m) south and east of house 1.3. It is thought to be an exterior courtyard belonging to Area 1.3. We laid out a north-south oriented 10 x 2 meter trench against the south wall of house 1.3 and the west wall of Area 1.4. This trench was later expanded by an additional 1.5 x 1.5 meters to the east, against the south wall of Area 1.4.

Thus the trench covered the entire length of the wall that borders the courtyard to the west and its south-west corner. Here one poorly preserved floor surface was found, composed of compacted mud, above which were found significant deposits of dung and other organics. The coprolites of donkeys, camels, and cows were represented in addition to apricot, olive, and date pits. In addition to these organic remains, a bread oven and an oven platform were found built into the southwest corner of the courtyard. They were in a poor state of preservation, with only the bottom course of bricks remaining. The northern 6 x 2 meters of the trench contained low to moderate densities of material remains and included a complete bowl, a loom weight, and an ostrakon dating to the third century AD. Object densities were

greater in the southern 4.2 x 2 meter trench addendum and included a miniature lamp, a clay figurine head, loom weights, and several complete vessels.

Area 1 Summary

Area 1.2 served as a street into Amheida and consisted of three surfaces. Little refuse and sand was found between these surfaces, indicating that the area was largely kept clean and that the structures on the north end of the street served as a barrier to windblown sand. The street excavation clarified Area 1 chronology; Area 1.2 was built at the same time as the domestic context, house 1.3, which was occupied during at least part of the time that the kilns on the north side of the street were in use. The two ostraka with third-century dates confirm the impression offered by preliminary study of the ceramics from Area 1.3 that the building and occupation of the house date to the third century, ending in the fourth.

Area 1.4 served probably as a multi-functional exterior courtyard for house 1.3, with cooking features as well as sufficient space for stabling animals such as donkeys, camels, and cows.

The courtyard would need more investigation to fully understand its function and its relation with the surrounding buildings.

Greek Papyrology and Epigraphy

Roger S. Bagnall

The 2007 campaign produced an abundant harvest of written material, including 187 ostraka, the largest number by far of any year so far. All but a few came from Area 2.1. The discoveries there included a second small archive of material like that of Serenos found in 2004, only larger; this one is centered around a man named Domnion, who was already known from earlier textual finds. He may have been the last owner of the house. Much of the other material came from refuse dumped below floors in various places and cannot be connected directly with the inhabitants of the house. The contents of these ostraka, however, are very similar to what we find in the ostraka from habitation levels. In both cases, we are dealing above all with texts concerned with the management of the flow of goods coming from agricultural properties, above all from the various well-centered rural properties in the hinterland of Trimithis. What is perhaps most striking is that Domnion and Serenos both, along with many others, seem to be in the business of estate management. It is possible that their wealth rested in part on the management of the property of still wealthier individuals living elsewhere, whether in Kharga (as in the case of the owner of the property with which the *Kellis Agricultural Account Book* is concerned) or in the Nile valley. The house in Area 1.3, although much less productive of texts, seems typologically similar, perhaps the home simply of a much less wealthy and high-ranking manager.

A second textual concentration notable in 2007 but also detectable earlier is a number of exercises, some of writing (letters of the Greek alphabet and personal names, particularly), some in drawing. These came above all from fill below the late floors in the north court area and cannot be connected with the

occupation of the house. It is possible, however, that more than coincidence is involved, and that this material has some connection with the school that seems to have been operating in the vicinity. Future work to the north of Room 15 may shed some light on this question.

As usual, the texts offered a host of miscellaneous details of interest. These included two texts concerning quantities of flaxseed dispatched to the pigeon house, where it seems likely that they were used as part of the birds' feed. Two other texts refer to *lith()*, a measure used in the Kellis Account Book only with respect to cotton and perhaps equal to ten Roman pounds. If this is correct, large amounts of cotton (200 kilos) are at stake, shedding new light on the sources of wealth in the oasis in the Roman period and raising a host of interesting questions. The enigmatic *tiphagion* attested in other texts from the oasis appears in a considerable number of ostraka. The only new light on its nature is that it is consistently paired in ration accounts with loaves of bread and usually comes in the same number. One might suppose that it was another form of baked good, rather than a raw foodstuff. From the military and official domain, the ostraka mention a centurion, an actuarius, a stationarius, a camelarius, and an officialis. On the cultural front, an early ostrakon from fill mentions a komodos (a comic mime) and a flute-player, while the second clay tablet found at Amheida deals with disbursements, probably of oil, for "the God", a cult official, and a festival. The abundant harvest of personal names offers novelties every year. The most interesting of those from 2007 were Hephaistammon, a new -ammon compound, Agesilaos, another contribution to the roster of classical Greek names, and Ephrem, a startling appearance of this Syriac name from a period contemporary with the famous hymnodist.

In Area 1.3, ostraka were few, but two of them were datable to the third century, an important point for the chronology of the house. One of these has a value for wheat that could not be encountered after AD 275; the other has the honorific month name Hadrianos, on present evidence not attested after about AD 240.

Graffiti turned up in several rooms in Area 2.1, usually difficult to interpret. Egyptian month names appeared in several places in Room 13, devoid of context. The dipinti in Room 19, the room to the north of Room 15 with its elegiac couplets, may be left for discussion in next year's report, as only a small amount of this room has so far been opened. But it is worth mentioning that they include the opening line of the Iliad.

Raffaella Cribiore and David Ratzan pursued their study of the important dipinto in Room 15 with elegiac couplets and hexameters belonging to poems exhorting students to compose rhetorical works in verse and serving as a model for such compositions.

Egyptian epigraphic work

Olaf E. Kaper

Work on the blocks with relief decoration from the temple at Amheida. About 100 building blocks with relief decoration remained from previous seasons (2004, 2005 and 2006), which had been

photographed but not fully recorded and drawn. In the 2007 season, these blocks were nearly all retrieved from storage at Ain Birbiyeh and the student Carina van den Hoven (Leiden) prepared drawings of them under the supervision of Kaper. In addition, a total of 162 fragments of decorated blocks were drawn, recorded and photographed, leaving only a limited number of fragments to be recorded in future seasons. One block had not yet been cleaned from a layer of gypsum cement that had covered it since Roman times. Once cleared, this block could be dated to the 26th Dynasty on the basis of parallels and its subject matter could be established as a food and incense offering to the god Thoth depicted as an ibis seated within a papyrus thicket. Another new discovery among the blocks was the fragment of a limestone stela inscribed with parts of four lines in hieratic script that can be dated to the Third Intermediate Period. The stela had been cut down for reuse in the Roman period, under Domitian, but the thickness of the block (30 cm) suggests that the stela had been of monumental proportions. The surviving text mentions the god Thoth as well as the name for Amheida, sA-wHAt (“The back of the Oasis”).

Work also began on the decorated blocks at El-Qasr. On 24 February 2007, the reused blocks at the house no. 354 were recorded. These blocks were first remarked upon in publication by Ahmed Fakhry, who considered the blocks to be the *in situ* remains of a temple. Recent excavations at Amheida, however, have shown that this site must be the original location of all pharaonic reliefs at El-Qasr. The case of house 354 is singular, because it preserves two complete columns of hieroglyphic inscription upon blocks from a temple doorway that had been reused integrally as found. This doorway can now be dated to the 26th or 27th dynasty, judged by the comparable material found at Amheida. A total of five loose blocks remain to be copied during future seasons at El-Qasr.

Fragments of painting from Room 1 (Olaf E. Kaper)

Work on fragments from room 1 of the house in area 1 at Amheida. Because of unforeseen circumstances, two weeks could be devoted in 2007 to the assemblage of figurative scenes from the trays of fragments stored in the conservation laboratory. In 2006 these trays had been cleaned of superfluous dust and sand and it was therefore possible to reconstruct many elements of the decoration. Among these were figures of Europa (Fig. 9) and Ganymede from the east wall and one of the supporting female figures from the southwestern corner of the room. The scenes were prepared for assembly by Kaper and then joined by Laurence Blondaux, so that the assembled tiny fragments would not be lost again. Helen Whitehouse assisted in this effort, and she also studied the resulting iconography. Delphine Renault later organized photographed the trays systematically and uniformly.

Topographical Work

Simone Occhi and Fabrizio Pavia

The topographical work carried out during the 2007 excavation season was preceded by the verification and re-definition of fixed survey points, due to the impossibility of identifying all the stakes

used as benchmarks during the previous seasons of survey (2001–2006); this situation required the elaboration of a new and permanent traverse in which it was possible to include the whole site, beginning from the already extant points S1 and S2 and adding three new station points (S3–5) that were cemented to the ground.

General Plan (Fig. 10)

While working at the new site plan, it was possible to verify the level of precision of the previous one, which showed a significant difference in the area between the temple and area 2.1, investigated in the 2001 and 2002 topographical campaigns; Therefore, it was necessary to re-map all the buildings above ground level.

Area 1.2, 1.3, 1.4

The previous topographical survey of this area was improved and integrated with the new features uncovered during the 2007 excavation season.

Area 2.1 (Fig. 1)

Following the conclusion of the archaeological excavation within this area, a new and complete 2D plan was drawn, together with a detailed 3D survey (rooms 1–2, 4–8, 11–17 and perimetral walls of rooms 9–10); in both cases, particular attention was paid to the representation of all architectural features (niches, thresholds, vaults, staircases, etc.);

Also for Area 2.1, a photogrammetric survey of almost all the visible walls was carried out. In short, it consists of a series of non-compressed photographs that, once exported and geo-referenced using coordinates taken with the help of a Total Station, are rectified and joined together in a photomosaic; the final result is a single high-definition photogram, which can be used once imported and scaled in CAD environment as a graphic base layer for vectorial drawings. Following is a list of the photogrammetric images that were joined together in a photomosaic and vectorialized in CAD:

- Room 2 (North, South, West, and East walls);
- Room 4 (North, South, West, and East walls);
- Room 6 (North, South, West, and East walls);
- Room 7 (North, South, West, and East walls);
- Room 8 (North, South, West, and East walls);
- Rooms 9 and 10 (North wall);
- Room 11 (North, South, West walls);
- Room 12 (North, South, West, and East walls);
- Room 13 (North, South, West, and East walls);

Room 14 (North, South, West, and East walls) (Fig. 11);

Room 15 (North, West, and East walls);

Cartography (Fig. 12)

The map that was created shows territorial units that were identified on the basis of archaeological and geo-morphological data, with the goal of identifying the boundaries of the site and understanding the evolution of the area in relation to anthropic occupation.

The cartographic survey included a wide area delimited by the modern village of Amheida to the North, by the currently cultivated fields to the West and to the South, and by the modern road to the East.

Recovery and conservation treatment of objects composed of bronze, pewter and ivory

Constance Silver

We have referred above to the discovery of a cache of objects in Room 4 of Area 2.1 (Fig. 13). Following its recovery, treatment and examination at the conservation facilities, the cache was revealed to be composed of five highly significant objects:

1. A substantial bronze vessel of a “bucket” shape called a *situla*.
2. An elegant oil lamp (“Oil Lamp 1”) composed of bronze, with a handle in the form of the head of a lion. A bronze ring remains in the mouth of the lion. A bronze chain is attached to the ring. Attached to the chain are the lamp’s stopper and a tool designed to clean residues from the lamp.
3. A smaller bronze oil lamp (“Oil Lamp 2”) composed of bronze, with a handle in the form of the head of a lion. A bronze ring remains in the mouth of the lion. A bronze chain is attached to the ring. Attached to the chain is a tool designed to clean residues from the lamp. The body of the lamp is decorated with three flute-like designs. The spout appears to be in the form of a grape leaf.
4. A small pewter plate that appears to be made from pewter or some type of alloy that is heavily composed of lead. This plate is in very poor condition. It was recovered from the bronze *situla* in the conservation room.
5. A highly unusual object composed of carved ivory, a bronze finial, interleaves of a ferrous metal, and a possible wood handle.

At the time of its discovery, it was possible to discern only the form of the *situla* turned upside down in the ground, with oil lamp 1 attached to it. Another bronze element was evident but not identifiable. The pewter plate and ivory object were not visible. After considerable discussion, it was decided that the cache had to be removed by the end of the day and taken to the conservation room for treatment. This report will summarize the conservation treatment undertaken in the field, the system used for extrication of the cache, and the conservation treatment carried out in the conservation room.

The initial field treatment almost always entails measures designed to stabilize the very friable and corroded metal so that it can be lifted without causing it to collapse and shatter under its own weight. In

the case of the cache of Room 4, the heavy mineral concretions and the fused state of all the bronze objects heightened fears that the weight of the cache combined with its poor condition would cause it to implode as it was being lifted from the ground.

The following field treatment was developed and implemented successfully. All the dirt was removed from the *situla* and oil lamp 1. The visible bronze surfaces were first consolidated with a 5 percent solution of Acryloid B72, as wetting agent, followed by infusion with a 15 percent solution to act as the consolidant. The surfaces were visibly strengthened. Following consolidation, the objects were supported with cyclododecane. The soil under the cache was carefully excavated with a flat tool and a piece of metal moved into place under the cache. The cache was then safely removed from the ground and placed within a supporting basin of sand for its transport to the conservation room.

In the conservation room, measures were undertaken to separate and individually treat all the objects. It was assumed that the cache was composed of the *situla*, an oil lamp, and a probable ornate handle for the *situla*. Oil lamp 1 was removed from the *situla* and oil lamp 2 by mechanical means, primarily dental tools. Oil lamp 2 eventually was revealed as the heavy mineral accretions were removed with mechanical means.

Oil lamp 2 also had fused to the *situla* and had to be removed by mechanical means. Because the corrosion was so heavy and unstable on oil lamp 2, it was also consolidated with Acryloid B72, to ensure no loss of surviving surface details that might be preserved within the corrosion.

After the oil lamps were separated, it was determined that the *situla* was strong enough to be removed from the supporting sand. Once removed, it became evident that another vessel and object had been under the *situla*. The vessel -referred to in this report as the pewter plate- clearly was in many pieces. A documentation system was devised for removal of the pieces so that they may eventually be reconstructed. Briefly described, each piece was located on a photograph and given a number identification. The number was then written on a small sample bag and the piece placed in the bag. Pieces numbered 1-27 appear on Fig. 14.

After removal of pieces 1-27, soil and other detritus were removed, revealing more pieces. These were photographed before removal and are identified with letters, A-X. Each piece was placed in a sample bag with its designating letter written on the bag. These pieces are shown on Fig. 15.

Following removal of pieces A-X, more soil and detritus were removed, until the large sections of the pewter plate were revealed, as was the ivory object that had been placed in the plate. The large pieces of the pewter plate were identified as 1A-11A. These pieces are shown on Fig. 16. The pieces were placed in individual sample bags with identification written on the bag.

Some pewter pieces were located within the *situla*. The pieces *in situ* were photographed and designated A1-A5. They were collected and placed in individual sample bags. These pieces are shown on Fig. 17. The pieces of the pewter plate received no conservation treatment.

The ivory object proved to be in very unstable condition. The ferrous metal interleafs had rusted and the bronze finial had corroded. The ivory element had fractured and delaminated. Several tests of possible conservation treatments were undertaken on pieces of coeval bones found in the Villa. The following treatment was selected. The entire object was carefully cleaned with a sable brush and a blower. It was consolidated with a 10 percent solution of Acryloid B72. The delaminating back of the object was next held in place with small pieces of crepaline adhered with Promacto, a pH neutral adhesive that is strong but remains soluble in water. With this reversible treatment, the object is stabilized at present but can be treated definitively in the future.

The five objects that compose the cache were packed in acid-free tissue and placed in boxes that also include any associated fragments. The pieces of the pewter plate have been placed in four individual bags that reference their location on Figs. 14-17. Oil lamps 1 and 2 are packed in a single container that also includes their associated fragments and elements. The four bags that contain the pieces of the pewter plate also are in this container. The *situla* is in its own container, with associated fragments. The ivory object also is in its own container, with associated elements and fragments.

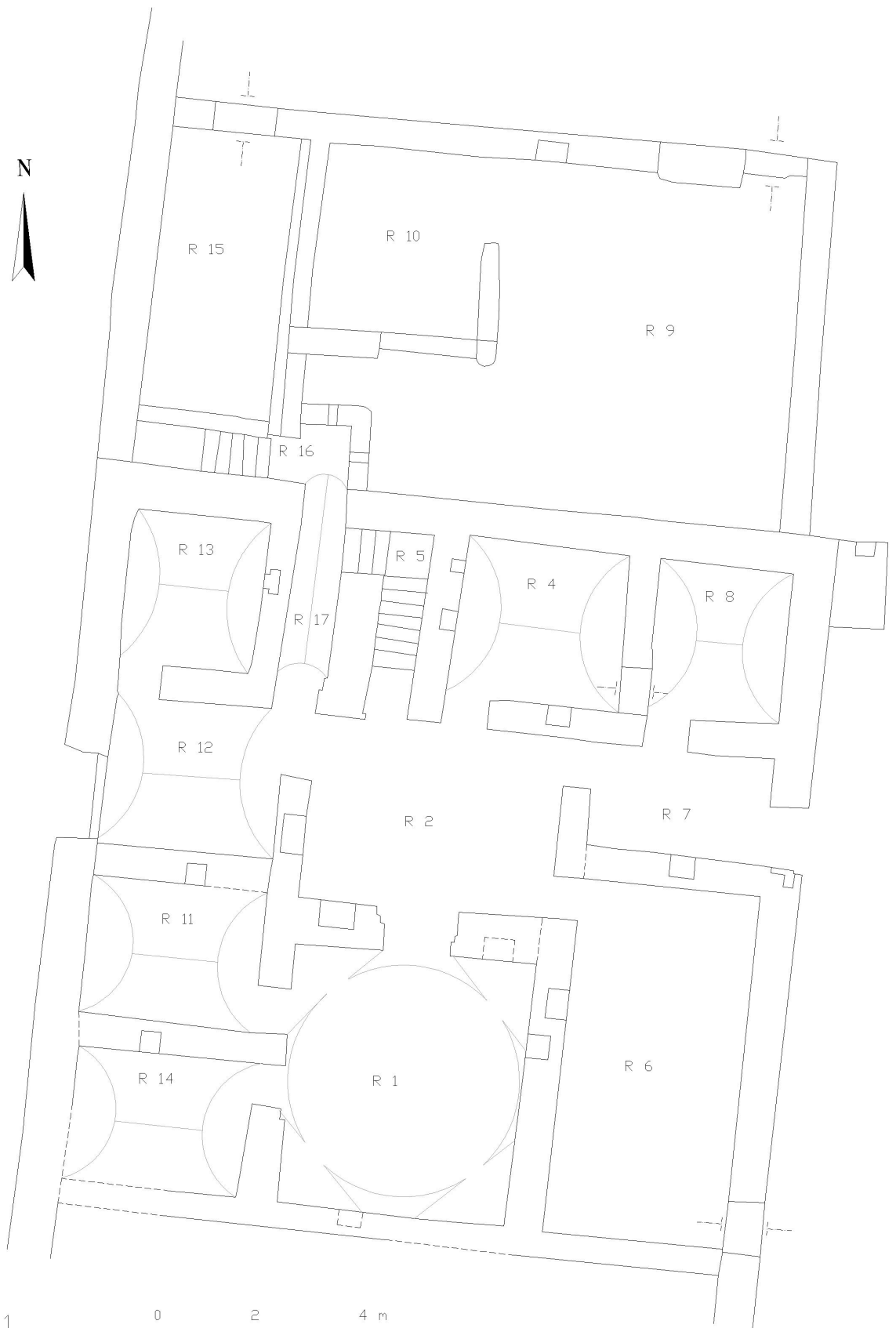


Fig. 1





Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9
18



ROOM 14



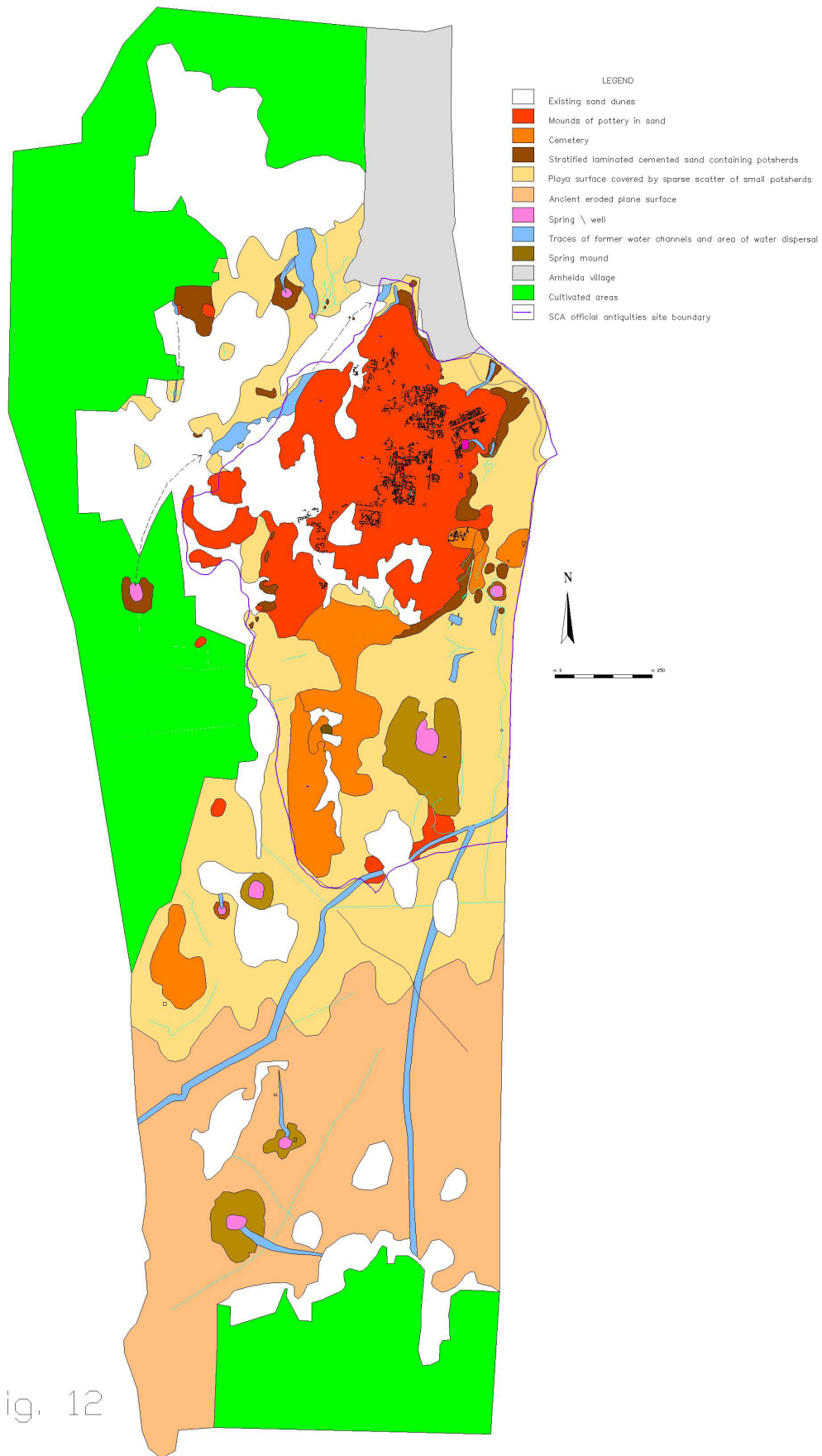


Fig. 12



Fig. 13

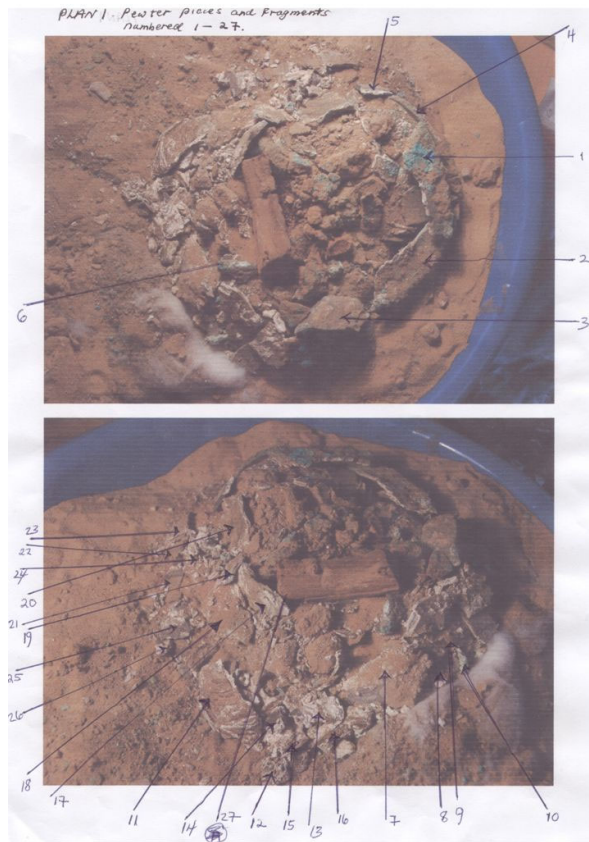


Fig. 14

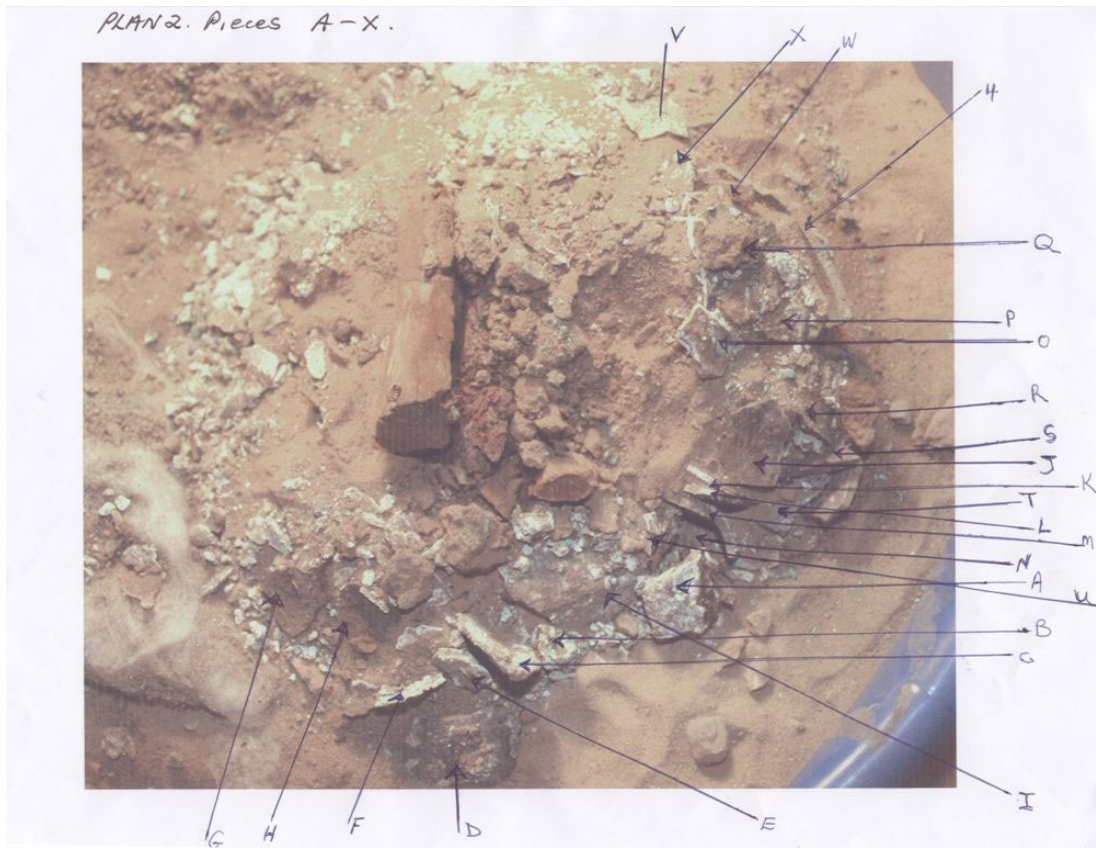


Fig. 15



Fig. 16

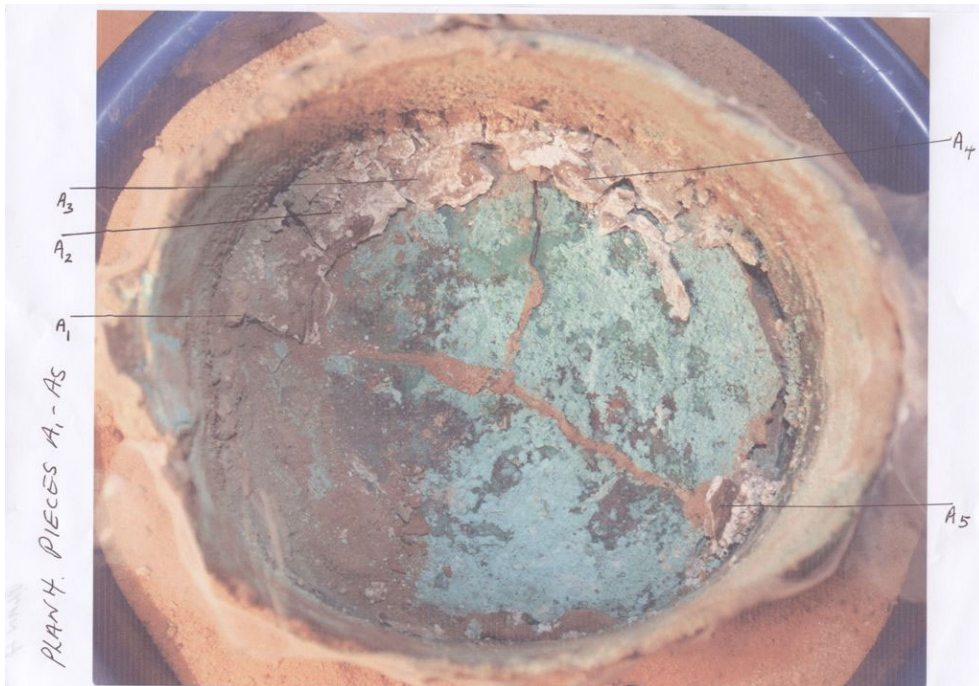


Fig. 17