

British Mission to Tell el-Amarna

Great Aten Temple Spring 2015 Season

Preliminary Report



Post holes and (towards the top right) larger pits for buried pots, all dug into the mud floor of the early temple phase in Area E. The longer pits filled with sand are modern graves. View to the south-west.

Barry Kemp

April 2015

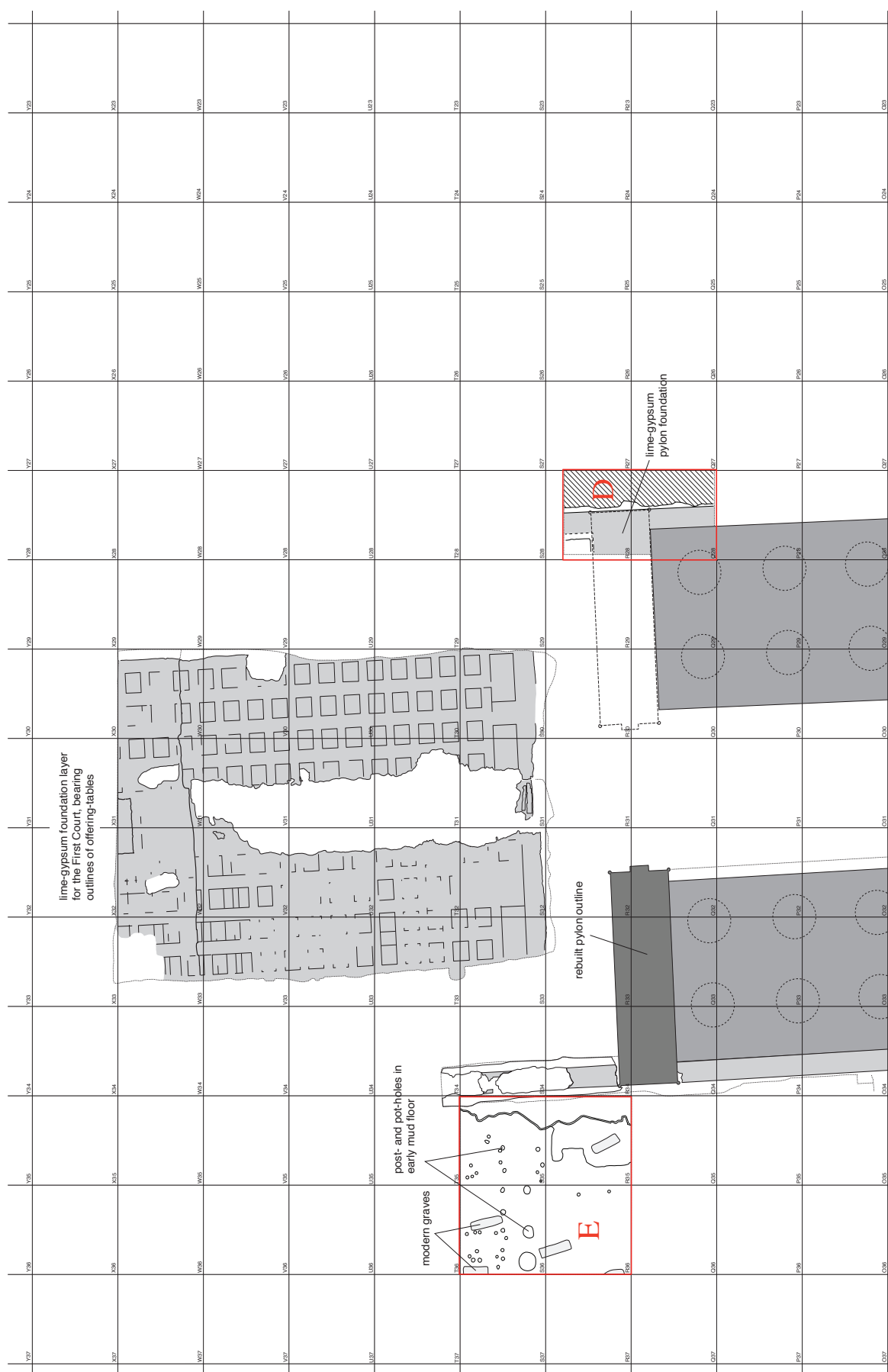
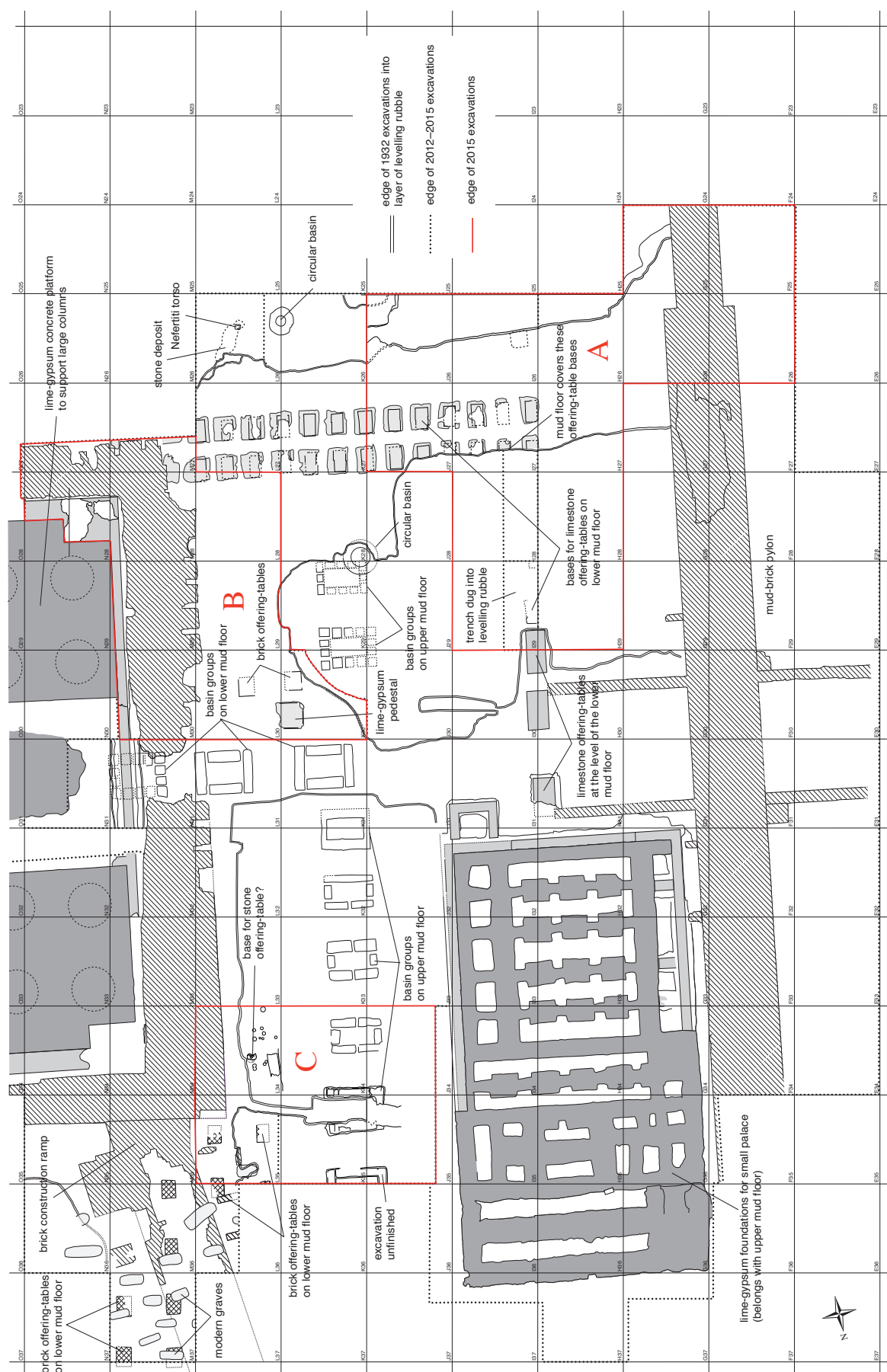


Figure 1. Plan of the eastern half of the excavation, showing the results of work carried out between 2012 and 2015.



Introduction

The work at the Great Aten Temple site of the 2015 season of the British Mission to Tell el-Amarna ran between February 7th and March 26th. The archaeological team comprised Barry Kemp (director), Miriam Bertram, Delphine Driaux, Juan Friedrichs, Anna Hodgkinson, Slawomir Jedraszek, Sue Kelly and Julia Vilaro. Marsha Hill recorded stone fragments. Alexandra Winkels studied gypsum samples. Jim Harrell paid a brief visit to investigate quarries. A group of four trainee inspectors joined the expedition for one month: Mona Abd el-Daim Naan, Martha Atef Eissa, Alzahra Ahmed Abd el-Fadel and Samah Yussef Muftah. Our site inspector was Mr Said Abd el-Malek Abd el-Hamid; the inspector responsible for the magazine was Mr Mustafa Ali Mahmoud. We are greatly indebted to both of them, as to their colleagues in the inspectorate of south Minia.

The work at the temple continued a programme begun in 2012. The whole site had been rapidly dug in 1932 by the Egypt Exploration Society. The present work is a re-examination of the site, combined with a plan to make it more intelligible to visitors and more secure for the future. The work of 2015 covered several areas, designated A to E (which apply only to this season).

The maps (Figures 1 and 2) indicate the location of each area. The excavation was conducted within a grid of 5 x 5 metre squares.

Area A, the excavation area covering squares F25, F26, G25, G26, H26–H29, I26–I29, J26, J27

Area A includes the mud-brick temenos wall and the mud-brick pylon towers and part of two parallel lines of lime-gypsum foundations for offering-tables. The supervising archaeologists were Miriam Bertram and Anna Hodgkinson.

During the seasons of 2012, 2013 and 2014 the areas of work included most of the extent of the two pylons. This year, the southern end of the south pylon was finally reached and exposed, along with a 5.50/5.70-m length of the wall itself (Figure 3). Whereas the pylon had a width of 4.3 m, the wall had a width of 2.3 m. The outer face preserved areas of mud plaster coated with whitewash; but the corners of the pylon were square, with no trace of a torus moulding. On both sides of both pylon and wall the outlines of construction cuts into the existing mud-coated floor were visible.

On the outside, the excavation removed all loose material across F26 until the ancient packed surface was exposed. In F25, however, only around half of the depth of covering material could be removed in the available time; the remainder will be excavated in a future season.

On the inside of the temenos wall and pylon the ancient floor had been exposed in 1932 by a wide and irregular trench which had been cut through the thick layer of mud-brick rubble which had been used to level up the temple ground between the time of the first and second temples. This material will be referred to as 'levelling rubble'. Except for a narrow strip along the south side of H26, the excavation here and in the adjacent squares to the east was limited to removing the sand and other debris that had partly filled the trench since 1932. On the south side, the original trench edge was found to curve southwards as it approached the pylon, which had been done to expose the southern corner of the pylon and a length of the following wall. Much of the original mud floor had therefore been exposed to weathering. In some places the mud layer over the natural desert surface had consequently vanished. Where it was preserved, it bore numerous small holes, some still filled with mud egg-casings from insects (probably a species of wasp). Since they were also noted on the surface of the mud-brick pylon, it is to be concluded that they formed after the 1932 excavation.

In the narrow embayment where the edge of the 1932 trench curved southwards, the floor was well preserved and showed a complex pattern of thin overlying deposits. In the area that lies within G25 the covering layer was composed of limestone chippings. Over a part of this was a smaller area of sandstone fragments. Future removal of the overlying levelling rubble, beyond the edge of the 1932 trench, should reveal the extent of this debris and perhaps shed some light on why it is there. A further patch of stone chippings was exposed when the edge of the 1932 trench was cut back along the south side of H26. It included a small area of pieces of broken gypsum mortar. Some of the pieces bore finger-marks and remains of talatat-block impressions. It is possible that this material derives from one of the gypsum-lime platforms to the north, some of which are badly damaged. Next to this concentration a patch of burnt mud floor was found, which highlights the activity in this area prior to the laying down of the levelling rubble.

After the clearance of grid square H26 of its modern overburden it was decided to remove some of the levelling rubble, which formed the southern boundary of the area. This layer was very similar in nature to the same material removed in 2014 in grid square L26, containing a large amount of mud-brick and muddy rubble, in addition to potsherds, many of which were blue-painted, stone chippings, occasional worked stone pieces, much debitage from chalcedony working as well as numerous incense bowls, some of which still had remains of charcoal adhering to them (Figure 20). It soon became clear that much of the material from the levelling rubble belonged to destroyed workshops, the remains of which, together with the brick rubble, had been used to create the final level of the temple.

The northern part of the excavation area still contained, left over from previous seasons of work, the remains of a large spoil heap from the 1932 excavation. The first half of the 2015 season saw the removal of this, exposing the surface of the thick layer of levelling rubble over a block of four squares, H28, H29, I28 and I29. In the latter part of the season, a 2-m wide trench was dug down into the levelling rubble along the west side of I28 and I29. One purpose was to expose again, at the level of the lower floor, part of a limestone-block pedestal which had been discovered in 1932 and of which the northern part had been exposed again in 2013.

As the work ended, the lower floor became visible in I29. The southern end of the limestone-block pedestal was in place and the edge of the 1932 pit was visible. Immediately south of this pit the mud floor continued along the trench in a good condition. Not far along, patches were visible showing through the mud floor of an underlying layer of lime-gypsum mortar bearing the impressions of talatat-blocks. This points to the presence of another offering-table of the earliest phase. The mud floor south from this seems to be preserved to its full thickness. The possible trace of another offering-table base was visible at the southern end of the trench but verification of this must await a future season. In square I28 the work ended before the earlier mud floor was reached.

The floor of the wide 1932 trench continued eastwards, as far as the thick mud-brick wall which stood in front of the concrete pedestal for the southern group of large columns. Two parallel lines of offering-tables had been built here, from talatat-blocks laid on separate rectangular beds or platforms of lime-gypsum concrete. In 2014 the eastern half of this layout had been excavated. This year the western half was completed (Figure 4). A total of 14 new offering-tables were uncovered, in addition to the western halves of the final two platforms found in 2014.

As in the previous season, the lime-gypsum platforms were found to be cut into individual shallow trenches in the natural desert surface. They had then been topped with a layer of lime-gypsum-lime, into which the talatat blocks had been set. None of these survived (except in three cases where just fragments of limestone remained), the mortar usually bearing only the impressions of these blocks and their chisel-marks (indicating that they were roughly-hewn), and finger-marks around the block impressions, where the mortar had been smoothed out. The block pattern already found in place during the previous season was repeated: two sets of N-S orientated blocks, with space for a smaller, either $\frac{1}{2}$ or $\frac{1}{3}$ sized block in between. No linear string marks in ink to guide the builders

were visible on the lower lime-gypsum platforms, and the block impressions do not all appear to be exactly aligned, indicating a rather hasty style of working. The blocks may have been coated by a layer of whitewash in order to hide any imperfections, although no archaeological evidence of this has been found. Presumably, the outer lips of the lower lime-gypsum platforms, where not covered by blocks, would have been covered with a mud floor, which was then covered with a layer of whitewash, though evidence of this, too, is scarce. Although patches of mud floor and whitewash have been found surrounding the lime-gypsum platforms, there is little evidence of this floor having covered the platforms themselves.

The 2015 season presented fresh information that these offering-tables had been short-lived, possibly even laid out for a single event. Only the southern portions of the northern row of offering-tables had been uncovered in 1932 by Pendlebury (but planned as complete), so that half of each platform was still covered by levelling rubble. Below the levelling rubble, and on top of the lime-gypsum platforms, a thick layer of mud floor was exposed, which covered not only the lips of the offering-tables where not originally covered by blocks, but also the complete platform. This, together with the fact that even these platforms were found without any blocks on top of them, indicates that they had already fallen out of use prior to the laying-down of the levelling rubble and might only have been used for a very brief period of time. In contrast, other platforms in the same row, further east, can be seen in a photograph from Pendlebury's excavations still bearing up to two courses of talatat blocks. It is not clear up to what stage these would have been in use, but since no mud floor would have covered them, it is likely that they were only abandoned when the temple was rebuilt.

Even further east, in grid squares M27, M28 and N27 (in Area B), lime-gypsum platforms for offering-tables were found in connection with a large mud-brick structure, the northern part of which had been excavated during the 2014 season, and which probably functioned as a construction aid. The platforms of two of these offering-tables were found to run underneath the mud-brick structure, although the block impressions in the overlying mortar directly abut this structure, indicating that the offering-tables may have remained in use until the completion of the final level of the temple. Further east, an offering-table platform was found in a gap within the mud-brick structure, which demonstrates that this one fell out of use at an earlier stage.

A square outline, defined by mostly eroded mud floor, natural desert surface and some sub-circular patches of mud, together with a prominent line of whitewash in the south-western corner of grid square I26, may be the remains of a separate mud-brick offering-table. If this is the case, then this example will originally have been similar to those found elsewhere on the site, including in grid squares K30 and L35, with the bricks built on the natural desert surface and the surrounding mud floor and whitewash covering the sides of least the lower courses of bricks in order to create a smooth appearance. The alignment of this offering-table as well as its dimensions (roughly 1 m N-S x 0.8 m E-W) have been compared to those of the other mud-brick offering-tables across the site and have been found to match. Although the original plans by earlier archaeologists (Petrie and Lavers, working for Pendlebury) do not show any offering-tables as far south as the area of I26, this season's work has yielded evidence of such features across other areas of the Great Aten Temple, making this interpretation not altogether unlikely.

Area B, the excavation area covering squares K30, L28–L30, M27–M30, N27, N28

Area B lies between, and joins, two earlier areas of excavation, to the north, a line of gypsum-lined basins that followed the axis of the later temple although they were cut into the floor of the early temple; to the south, the eastern half of the parallel lines of stone offering-tables running on from area A. Area B was itself divided into two distinct parts: on the east, the southern half of the thick mud-brick wall believed to have been a temporary construction feature. Here the supervising archaeologist was Juan Friedrichs. To the west lay an irregular area, composed of squares L28–L30, and the northern half of K30. The supervising archaeologist was Slawomir Jedrasjek.

Within K30 lay a square pedestal of lime-gypsum concrete, 1.5 x 1.6 m and 0.25 m high, which had been made in sections. It had been exposed in 1932. The base of the pedestal rested on the top of a mud floor of several layers which had been preserved only beneath the pedestal. The design of the pedestal suggests that it was created on the floor of a pit dug from a higher level, but this higher level can only have been the top of the levelling rubble. This implies that more than one course of talatat blocks was built above it, to provide a solid foundation for what could have been an isolated stone offering-table.

Close to the south of the pedestal traces were discovered of a mud-brick offering-table which had been built directly on the desert surface and then surrounded by the early mud floor. A thick patch of white plaster lay against the southern side. Further to the east traces were also found of a second mud-brick offering-table, its remains reduced to a thin layer of mud dust (Figure 7). It is clear that, towards the south, they are not part of an E–W line of offering-tables, whilst to the north this line is crossed by the line of gypsum-lined basins of the early period. Only the excavation of the levelling rubble to the north of the basins will show if a corresponding set lies here.

The flat desert which supported this extensive scatter of offering-tables ends to the east with the wide mass of mud brickwork which is probably a temporary revetment to contain the sand which acted as a working surface during the erection of the large columns which stood on the concrete platforms. Last year the northern part of the brickwork was cleaned and planned. This year the southern part was similarly cleaned and planned (Figure 6), together with the part of the brickwork which runs around the southern part of the platform in square N28.

The plan of this part made in 1932 shows two gaps in the brickwork, with straight sides, as if they were doorways. In fact, although more brickwork is missing in these places than elsewhere, the damage appears to be incidental and not to represent deliberately formed spaces. Along the western face of the brickwork the remains were found of wooden beams which had been laid on the ground and which had run into the brickwork, but only for a limited distance (the same must have been true for the northern wall examined last year; it was assumed then that the beams ran the full width of the brickwork but this now seems mistaken). Part of the way along the western face the brickwork and adjacent ground were cut by a deep circular hole which straddled both.

At the same time that the brickwork was cleaned, drift sand and dust were removed from the trench which surrounded the platform on the west and south (within the limits of N28). This revealed that much of the lime-gypsum foundation layer for talatat-blocks was still in place and that, in particular, a significant amount remained within the rectangular space at the south-west corner (Figure 5). By contrast, at the north-west corner of the northern platform, examined in 2013, it was entirely missing. This confirmed that this space had been wholly filled with blocks. Towards the northern end of the west foundation trench a complete talatat-block still remained cemented in position.

Several large pieces of stone lay in the sand which filled the trench at the south-west corner. One of these was part of a large column base made from limestone.

Area C, the excavation area covering squares J34, J35, K34, K35, L34, L35

Area C is at the northern end of the excavation, lying between the Small Palace and the northern of the two platforms for large columns. The supervising archaeologist was Sue Kelly. Square L35, however, was excavated by a group of four trainee inspectors: Mona Abd el-Daim Naan, Martha Atef Eissa, Alzahra Ahmed Abd el-Fadel and Samah Yussef Muftah who worked under the supervision of Miriam Bertram.

In previous seasons a row of three sets of rectangular basins lined with lime-gypsum plaster was excavated to the south. Each had the same general form and dimensions although the detailed layout differed in each case. In the centre, a low rectangular platform had been made from mud bricks and rubble and around the four sides a shallow continuous trough had been constructed, the whole then plastered with lime-gypsum plaster. Once this had been finished, the trough was subdivided by cross walls into smaller basins. It is in the pattern of division that the principal variation is seen. From time to time the surfaces were given a fresh coat of lime-gypsum and perhaps the arrangement of basin dividers was altered.

This year three more such sets of basins were located, continuing the N-S line. The southernmost one continued the same pattern as the others but, when the temple was abandoned, was in the process of being altered by the renewal of the basin dividers, which had not yet been coated with lime-gypsum plaster (Figure 8).

The middle basin had been largely destroyed by the trench of a previous expedition (presumably that of 1932) which had cut through the middle. Only the troughs on the north and south sides remained, with traces of the dividers.

The northernmost set of basins lay in only half of the northernmost excavation squares, J35 and K35. The top edges of the basins lay almost at the present surface, and a length of one side had been visible before the excavation began. The thin surface layer of sand and dust was removed, but time did not permit any further investigation. As the season ended, the basin, along with its neighbours, was covered with a protecting layer of sieved material to await a future season of work.

The basins had been dug within the levelling rubble which created the ground for the second temple. The 1932 expedition had cut a wide trench through it, from north to south, to define the western edge of the wide brick wall which runs alongside the northern column foundations. This left a strip of levelling rubble, about 3 m wide, between the edge of the trench and the basins. The surface of the strip had been altered by human activity that involved distorting the surface of the ground through saturation with water and through removing patches of the surface by shallow digging which had then filled with fragments of limestone, apparently from the breaking up of architectural elements. In L34 the alteration of the mud surface had left a series of small circular holes, of a diameter suited to the common small pottery storage jars of the period (Figure 9). It had also left an irregular shallow trench with smooth, prepared sides that was partly filled with mud containing plant material, and other poorly defined areas seemingly of similar character. It remains unclear what activity had altered the surface in this way and, indeed, what activity had centred on the basins themselves.

In square L35, excavated by the trainees, the levelling rubble occupied the western half of the square but little of the original surface remained. The rubble consisted of loose mud bricks, mud rubble, broken pieces of gypsum and a few potsherds. The eastern half of the square had previously been dug in 1932 and it was from this excavation that the trench westwards had been dug, through the middle of the gypsum-lined basin in K35.

On the floor of the eastern half, beneath a layer of sand containing limestone chippings, gypsum fragments and mud-brick rubble, several architectural features were found. They included the remains of two mud-brick offering-tables. Of the northern one, only a part one-brick wide could be seen, the remainder having been found in 2014 in the next square to the north. It lay close to the edge of an angled wall which belongs to a wide ramp also excavated in 2014. The second offering-table showed more of its method of construction. It had been built on the desert surface by laying out a rectangle of mud bricks to form the edge, and a single row across the middle. The mud floor of the early temple was then added and smeared against the edges of the bricks.

In the north-west area of the western half of the square the levelling rubble was then removed. The section exposed along the western edge of the square showed clear tipping lines, marked by sloping deposits of sandy material interleaved with rubble layers. Beneath this layer was a water-hardened mud surface, damaged in parts. It had, for example, been cut by a pit for a modern grave, filled with loose yellow sand, which was left undisturbed. Close to the western section face, however, it started to extend unbrokenly and was covered with a thin hard layer of white powder and small stones.

The removal of the levelling rubble revealed the remains of a third mud-brick offering-table with mud plaster smeared against the sides, over which, on the northern side, lay the remains of a covering of white plaster (Figure 10). The edge of a fourth offering-table protruded from the northern face of the square but most of it lies within the unexcavated square L36.

Scattered across the square were also fragments of mud-brick walls which belong to an intermediate stage of use, after the mud-brick offering-tables had been destroyed but before the levelling rubble had been put down. They could be connected with the temporary mud-brick construction ramp which crosses the north-east corner of the square.

Area D, the excavation area covering squares Q28, R28

Area D lies at the south-east corner of the southern lime-gypsum concrete platform for large columns. The purpose of excavating across two 5 x 5 m squares was to determine the exact width of the stone pylons which flanked the main entrance to the stone temple. Where the north pylon had stood all trace of the foundations had been destroyed before the 1932 excavation took place. The foundations for the south pylon had, however, remained intact at the southern end, where it joined the south wall of the temple. The sand and dust which had gathered since 1932 were removed, exposing a well preserved area of lime-gypsum concrete on which were marked the impressions of many of the talatat blocks which had formed the lowest course of stones (Figure 11). The width of the pylon could then be fixed as 3.37 m. This measurement was used when setting out the lines for the builders to follow as they reconstructed the north pylon.

The cleaning of the wall foundation trench also clarified how the wide brick wall had been constructed, in part directly over irregular heaps of stone chippings, and how it had been covered by a thick layer of gypsum concrete which must have represented an extension to the south of the floor on which the large columns had stood.

Area E, the excavation area covering squares R35, R36, S35, S36

Area E comprises a block of four 5 x 5-metre squares: R35, R36, S35 and S36. They are located near the northern edge of the site, a short distance to the east of the foundations for the northern pylon and to the north of the area of offering-tables which was examined in 2012. The southern side of the excavation area approximated to the foundation trench of the north wall of the stone temple, which had been emptied of its sand and studied in 2014. The supervising archaeologist was Delphine Driaux.

Before the work began there was the assumption that a field of mud-brick offering-tables extended across the north side of the temple enclosure. This arose partly from observations made by the EES excavations of 1932 and partly from the discovery of mud-brick offering-tables on this side of the temple enclosure but further to the west during the 2014 season. The block of squares for 2015 was laid out leaving a gap of 20 m from the 2014 work, in the expectation that the pattern of offering-tables would continue across it.

The entire area was covered with a thin layer of greyish-brown dusty sand. The removal of this exposed the flat top of a compact layer of rubble made from broken mud bricks and brick dust. It is a continuation of the levelling rubble found across the whole front of the temple. The surface approximates to the ground level of the second phase of the temple although this must have suffered from a degree of erosion. In the western part of R36 a thin but compact layer of limestone chippings underlies a thin layer of mud, which could be the last remains of the mud floor of the second phase of the temple. No other features which could belong to this phase were identified. This surface had, however, been cut by five pits that had been filled with loose yellow sand and pebbles. They are oriented approximately E–W and were found to descend below all of the ancient archaeological layers. They must be graves of the Islamic period, of which several, in an identical condition, had been discovered further to the west in 2014. One of the pits, in the north-west corner of R36, was covered with the tail of a mound of white dust and chippings that is almost certainly a dump from the 1932 excavations. This agrees with the finding, by the 1932 expedition, of ‘modern’ graves inside the first court of the stone temple (some were located in 2012 in square W33). In all cases we have not removed the fill of the grave pits to a significant depth.

The compact layer of levelling rubble had a thickness of between 20 and 30 cm and spread evenly across all four squares. It consisted of rubble made from broken bricks and brick dust with, here and there, thin lenses of sand. Some pieces of worked stone blocks were also present but not a great deal of pottery, except in the south-east part of S35 where a concentration of blue-painted potsherds was discovered. The rubble layer was also coated in some places (especially the south-east corner of S35) with a white layer containing limestone chippings mixed with white powder, perhaps left over from the building (or the demolition) of the stone temple which lay immediately to the south. Three decorated pieces of limestone were found in this layer, more or less where the concentration of blue-painted sherds was found.

Along the south side of the excavation area all of the archaeological layers had been cut by the foundation trench for the north wall of the Long Temple and by the subsequent trenching by archaeologists as they followed the line of the wall foundations.

The layer of levelling rubble covered (and so protected) a mud floor laid over a flat and even surface of compacted desert which showed smoothing marks from a tool. At least two layers of friable mud floor containing much plant material had been laid down. In places, and especially in the south-west corner of R35, were patches of white powdery material. Also covering the mud floors were patches of a separate hard and lumpy mud floor the surface of which was distorted as if it had been extensively wetted.

Across the floor were small and roughly circular depressions with a diameter of between 15 and 20 cm (Figures 12, 13). When examined further they were identified as circular holes with generally vertical sides. They appear to be more numerous in S35 and S36, but the examination of all of the possible holes in R35 and R36 was not completed. Many are likely to be post holes. Squares S35 and S36 are crossed by perhaps ten holes in what is close to a single N–S line. Towards its southern end the holes correspond with a strip where the upper layer of mud floor has been worn away. A similar though not so well defined strip occurs to the west, along the western edge of S35, where a group of four holes occurs.

A second group of three much larger and deeper holes forms a line parallel to the main line of smaller holes in S35 and S36, and about 1 m to the west. They have depths of 1.01, 0.74 and 0.52 m. Traces of mud line the sides, especially in the case of the largest and northernmost. There can be little doubt that these holes were dug to receive pottery jars which were then fixed in place with mud mortar, their mouths flush with the mud floor. The northernmost would have suited one of the large, wide-bellied storage jars sometimes referred to as ‘meat jars’ although they served as general storage jars and were not only for meat.

A better understanding of the purpose of this layout might well come from extending the area of excavation in the future. It might be expected that the area served a purpose related to the main purpose of the spaces that lay around the front of the stone temple, which was to contain offering-tables, both of stone and of mud bricks. Of the food-offerings the most important were joints of meat from freshly killed cattle. Delphine Driaux suggests that the posts might have supported a cord or line on which were hung strips of meat as part of the curing process which preserved meat in the manner of biltong. An example of this scene occurs on a limestone block from the Great Palace at Amarna (*City of Akhenaten* III, Pl. LXVIII.9). Once the curing was finished, the next step (insofar as we understand the process) was to pack the meat into storage jars for transportation and longer-term storage. This does not quite correspond to the picture we otherwise have of the temple cult, that it centred on the presentation of offerings of fresh produce; unless, that is, the offerings were funerary. Strips of meat bearing the impressions of the strings by which they were hung have been found in some royal tombs at Thebes. [See especially S.Ikram, 'Did the ancient Egyptians eat biltong?' *Cambridge Archaeological Journal* 5 (1995), 283–9.] In some of the prayers in the rock tombs at Amarna the wish is expressed to receive offerings in the House of the Aten, thus the Great Aten Temple. But the expectation could have been that pronouncing the name of the deceased at the moment of offering was sufficient, and that carrying cured joints of meat to the tomb was unnecessary.

The detailed pictures of the House of the Aten in the tombs of Meryra (no. 4) and Panehsy (no. 6) at Amarna (and also, it seems, in the tomb of Ahmose, no. 3) show the presence of two slaughtering areas for cattle. Yet these pictures in all likelihood show the temple in its second and final form, when the mud floor that we are considering lay disused and buried. The only likely picture of the temple in its earlier phase is in the tomb of Penthu (no. 5) and this shows no slaughter court.

An alternative explanation for the post holes is that they supported an awning or shelter, in which case the buried pots might have formed a row down the centre, taking into account the possibility that there are more post-holes to be uncovered in R35, R36. This could have been for the benefit of those who were present to participate in ceremonies.

Reconstruction of the northern entrance system

In 2014 the work had begun of recreating in new materials the outlines of the northern part of the entrance system of the stone temple in its second phase. To this end, the western and northern deep foundation trenches had been filled with a network of small limestone blocks which acted as a solid foundation for a final layer of Tura-limestone blocks cut to talatat size. The work was done by a group of builders from El-Till, led by Shahata Fahmy Abd el-Sittar.

In 2015 the scheme for this part of the temple was completed. The internal structure of the north platform had already revealed that eight large columns had stood on it, in two rows of four running E–W. To begin with, therefore, the position of each of the columns was laid out as a square foundation of small limestone blocks figure 14). A circular pad of white cement reinforced with iron rods was created on each of these foundations, using a circular iron mould, 2.5 m in diameter. As they dried, the builders sprinkled damp orange sand over the surface to have a mellowing effect on the colour of the cement so that it matched the colour of the Tura limestone. At the end of the season, a layer of this sand was also spread around each column base, hiding the square foundations (Figure 15).

Once the creation of the eight circular column markers had been completed, the builders turned their attention to the north pylon itself. Nothing of the original foundation survived but, as noted above, the cleaning of the lime-gypsum foundation layer in area D showed that the width of the pylon was 3.37 m. The northern limit of the pylon is fixed by the line of the northern stone wall of the temple. The southern limit has to be estimated,

since the lime-gypsum foundation layer seems to have run fully across the wide space between the two concrete pedestals. In theory, each pylon could have extended part of the way across this gap, so making it narrower. The gap measures c. 8.5 m, allowing for the presence of the stone walls built against the faces of the pedestals. At the Small Aten Temple, the gap between the outermost mud-brick pylons is 11.1 m though each one had a central 'nib' projecting into the space.

Using the Small Aten Temple as a guide, and preferring the simplest solution, the pylon was built as a rectangle, 3.37 m wide and to the full length of the platform (including outside walls), 12 m. A block with a circular moulding on the outer corner was set at each corner, and a small projecting 'nib' added to the middle of the south face. The foundation of the pylon, built as a network of walls of small local limestone blocks, was raised to the same height as the top of the layer of Tura blocks around the other three sides of the platform. The course of Tura blocks outlining the pylon was then built as the next course up, so that it rises above the outline of the platform (Figure 16). As the work progresses, these foundations of rather unsightly local limestone blocks will be entirely buried. This work was completed on the last day of the season (March 26th).

Material found during the excavation

The last of the 1932 dumps and our own cuttings into the levelling rubble produced many fragments of decorated stonework (Figures 17, 18) and the feet of a statue (Figure 19). Marsha Hill continued her study of stone fragments, both groups from the 2012 season and certain pieces from the current season. Her report is given separately, below.

Also notable were pieces of gypsum cement mixed with grit or sand on which designs had been incised and which do not seem to be pieces of architectural decoration themselves. One appears to have the shape of part of a vulture headdress (Figure 21). It is hoped that further study will lead to an explanation as to what they were.

Other studies

Alexandra Winkels continued her study of the use of 'gypsum' at Amarna. Her report is also given separately, below.

Geologist Jim Harrell spent four days visiting several areas in the desert in continuation of his study of how the local geology was utilised during the Amarna period. One was a pitted area which was probably a source of the lime-gypsum widely used at Amarna. Another was a surface quarry for indurated limestone at Hatnub. Accompanied by Marsha Hill, Anna Hodgkinson and Miriam Bertram he made a more detailed record of blocks which were probably intended to be worked further into statues.



Figure 3. Area A: the southern mud-brick pylon. View to the south. The end of the pylon has been reached, leading to a narrowing of the brickwork as it becomes the temenos wall. The south edge of the excavation is the south edge of the 1932 trench.



Figure 4. Area A: the lines of lime-gypsum foundation bases for stone offering-tables. View to the east. The left edge of the excavation is the edge of the 1932 trench. Near the left-hand corner, remains of the mud-plaster floor can be seen covering the bases. Photo by Anna Hodgkinson.



Figure 5. Area B: the line of the southern wall of the temple recedes eastwards into the distance. Mostly it is a straight trench filled with sand. In the foreground the sand has been excavated, revealing the lime-gypsum foundation layer for stone blocks and the south-west corner of the temple. Photo by Juan Friedrichs.



Figure 6. Area B: planning the surface of the brick revetment wall around the south-west corner of the temple. View to the north. Juan Friedrich is the planner.



Figure 7. Area B: final examination of the earlier mud floor. The outlines of mud bricks which belong to an offering-table are emerging to the right of the central digger, Slawomir Jedraszek. View to the north-east.



Figure 8. Area C: a set of basins surrounding a mud platform or pedestal newly excavated in 2015. The basin dividers were in the course of being replaced when the site was abandoned. View to the south-east.



Figure 9. Area C: patch of ground to the east of the newly discovered set of basins. On the left edge of the picture is the remains of a lime-gypsum foundation for a stone block. Beyond are small holes probably to hold small storage jars upright. The mud-filled shallow trench in the foreground is of uncertain purpose. View to the south.



Figure 10. Area C: square L35, excavated by the team of four MSA inspectors as part of their training. The mud-brickwork in the foreground is the remains of a short-lived construction associated with the long building ramp found last year. Beside it is the outline of a modern grave. Just beyond the photographic scale are the remains of an early offering-table made from mud-bricks. A patch of white plaster follows the nearer edge. View to the south.



Figure 11. Area D: the full width of the stone pylon is here revealed, from the well preserved lime-gypsum foundation platform. View to the west.



Figure 12. Area E: the early mud floor and its pattern of post-holes (mainly on the left) and holes for large pots (centre). The full investigation of the right side has not been completed. The sand-filled pits are modern graves. View to the south.

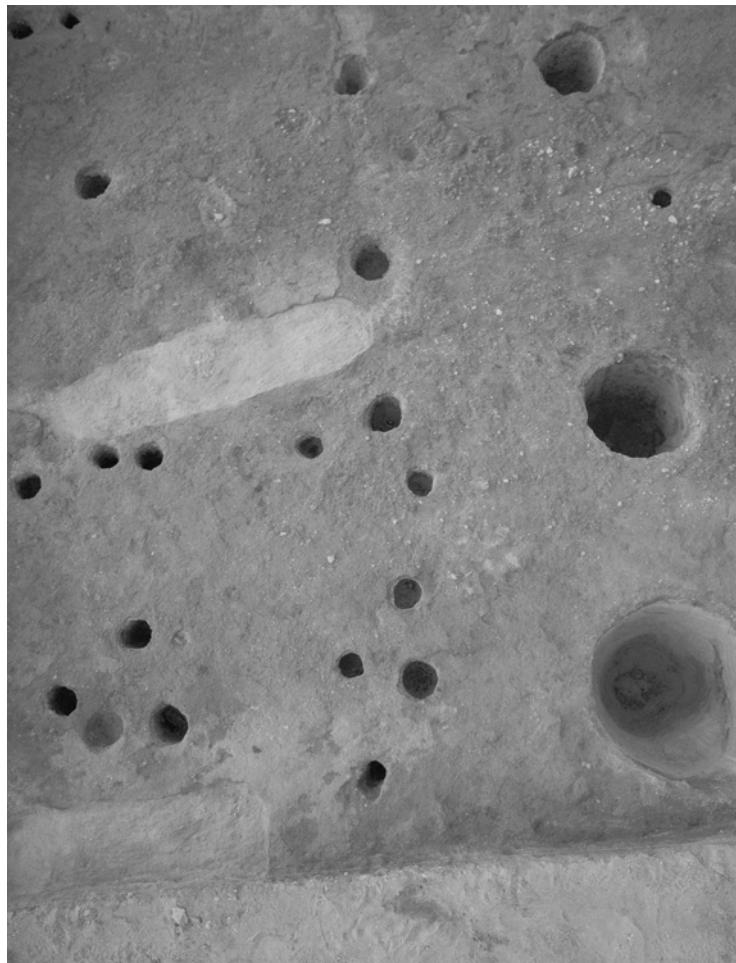


Figure 13. Area E: vertical photograph of much of the same area as shown in Figure 12. Photo by A. Hodgkinson and M. Bertram.



Figure 14. The recreation of the northern half of the monumental front to the temple in a late stage. The easternmost pair of the circular pads (2.5 m in dia.) which mark the positions of large column bases have been laid down. The builders are now laying the blocks of fine Tura limestone to create the shape of the pylon itself. A future stage will be to bury the foundation of small local limestone blocks completely. View to the north-east. Photo by Marsha Hill.



Figure 15. The final stage in the recreation of the northern pylon and its colonnade was to level up the surface with a layer of sand. View to the east.



Figure 16. The north pylon as finished. The rough foundation blocks will be completely buried in the future.



Figure 17. Fragment of limestone block with the head of a calf, an Aten ray behind it. Photo by Miriam Bertram and Anna Hodgkinson.

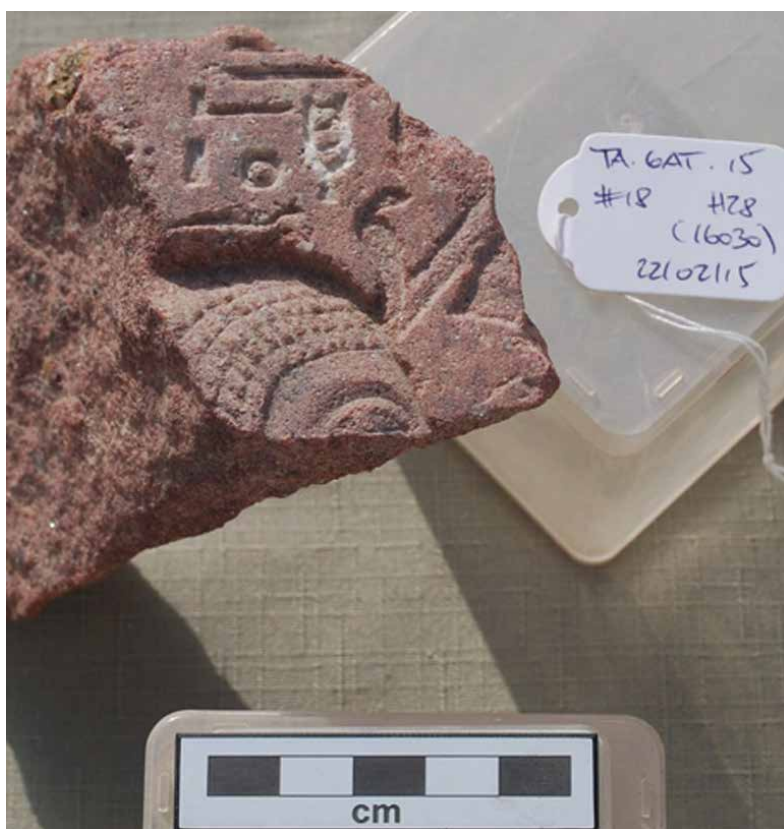


Figure 18. Fragment of relief carved into red quartzite, showing part of a royal face, an Aten ray behind it. The triangular shape below the Aten ray to the right could be a ribbon worn by a king. If that is the case then the head could be that of Nefertiti standing behind Akhenaten. Photo by Miriam Bertram and Anna Hodgkinson.



Figure 19. The feet and part of the base of a limestone statue (S-8351).



Figure 20. Potsherd bearing pieces of charcoal embedded in incense.

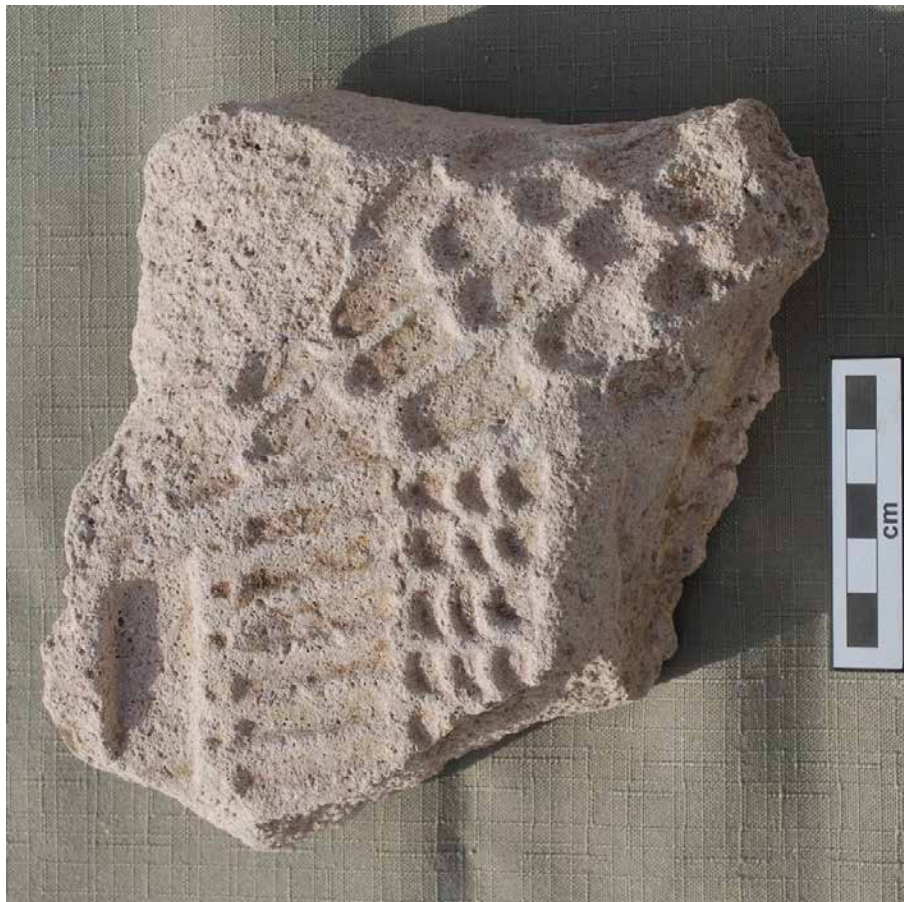


Figure 21. Piece of gypsum mixed with grit, made into a low mound on one side and top of which the feathering of a vulture has been shaped. The surfaces have suffered some wear. Photo by Miriam Bertram and Anna Hodgkinson.