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**The President's Papyrus**

Greetings Amarnaphiles,

Well, it now summer, and the heat is on. The important Amarna news is that there are no hidden chambers beyond the burial chamber of Tutankhamen. I have to say that for me this has been an emotional rollercoaster ride from the heights euphoria to a complete let down. And I am sure that I am not the only one who feels that way. There is some thinking about the prospect of a major archeological discovery that really gets you so excited that you can taste it. You know what I mean! But alas, it looks like it will be awhile before there is another discovery as major as that as the discovery of Tut's tomb.

However, in truth, of the thousands of artifacts discovered in Tut's tomb only a small fraction has ever been displayed. But that is all about to change. With the opening of the new Grand Egyptian museum the entire contents of Tut's tomb will be on display for the very first time. So, there is yet a treasure trove of artifacts yet to be seen and appreciated by us all. After 96 years since their discovery, all of us will now have the opportunity to experience the "Wow" moment just like Howard Carter when we visit the new museum.

It cannot be overstated that the new Grand Egyptian Museum will be an experience like none other. Covering 5.2 million-square-feet, this will be the largest archaeological museum in the world and entirely devoted to one civilization – that of ancient Egypt. Although, partially open now, if all goes as planned the grand opening should take place in 2022. This should give you time the plan your visit to Egypt.

With best wishes always,

Floyd

# **Borchardt's Amarna glass photographic negatives**

*By Kristin Thompson, Barry Kemp, Anna Hodgkinson*

Archaeological excavations produce objects ('finds') that in most countries remain safe and accessible in museums and storerooms dedicated to that purpose. The same excavations also produce records of what has been done and what has been found but what happens to those records is far less the subject of agreed schemes. They often remain the property of the excavator, even to the extent of being sold at auction after the excavator's death. An excavation archive, containing notes, plans, photographs and digital records, is expensive to curate to modern standards, perhaps more so than the objects themselves. Their long-term survival and accessibility are often uncertain.

The excavations at Amarna directed by Ludwig Borchardt between 1911 and 1914 (with an exploratory season in 1907) is one case of an archive which failed to remain together. Although the Amarna excavations were carried out in the name of the Deutsche Orient-Gesellschaft (DOG, its offices in Berlin), Borchardt's base was the German Institute in Cairo, of which he was the first director and which, to begin with, was housed in a villa which he and his wife owned in the Cairo suburb of Zamalek. He retired as the Institute's director at the end of 1929. Although he continued to live in the villa, he left records and documents related to the work at Amarna to the German Institute, now housed elsewhere in Cairo, its new director being Hermann Junker. Some paper records, including photographic prints, found their way nevertheless to Berlin, to the DOG and to the Egyptian section of the Berlin Museum. By 1931, assisted by his wife Emilie ('Mimi'), he had established a research foundation of his own (the Ludwig Borchardt-Stiftung, based in the Swiss canton of Shaffhausen) to support a Ludwig Borchardt Institute for Egyptian Architectural Research (Ludwig-Borchardt Institut für Ägyptische Bauforschung), its name reflecting its founder's training both in Egyptology and in architecture. Borchardt died in 1938 (and Mimi in 1948). The Amarna archive, which had remained in the German Institute, was shortly afterwards sequestered by the government in Egypt in consequence of the British declaration of war against Germany in 1939. It was not subsequently returned. As for Borchardt's own institute, it was eventually (in 1949) re-founded as the Swiss Institute for Egyptian Architectural Research and the Study of Antiquity (Das Schweizerische Institut für Ägyptische Bauforschung und Altertumskunde) but minus Borchardt's own records.

Through the sequestration, the photographic part of the Amarna archive, comprising loose prints and several hundred glass negatives, became the property of the Service des Antiquités de l'Égypte (now the Ministry of Antiquities). In time it passed to its Documentation Centre, founded in 1956 initially to document Nubian temples before their relocation as a consequence of the construction of the Aswan High Dam, and subsequently developing a wider remit of recording and archiving. The negatives, now part of the Scientific Archives of the Documentation Center (SADC), which is located in the Ministry of Antiquities building in Zamalek, for a long time remained accessible to researchers but without the means of providing good-quality prints.

This situation has recently been remedied through an initiative of the British Museum. The Egypt Documentation Project started in March 2015 as a two-year programme, supported by Arcadia, a charitable fund by Lisbet Rausing and Peter Baldwin, training early-career archaeologists from the Egyptian Ministry of Antiquities in digital documentation of artefacts. In March 2017 a second phase of the project was launched, led by British Museum photographers and documentation specialists and focusing on the digitisation and documentation of glass negatives in the Ministry of Antiquities archives, including those of the Documentation Centre. This remains a continuing project for the Centre.

Over many years, Kristin Thompson (in collaboration with Marsha Hill of the Metropolitan Museum of Art, New York) has been gathering material for a major study of the ancient statuary programme at Amarna. From an earlier visit to Zamalek she had made a list of those Borchardt negatives where the subject was a piece of sculpture from the excavations. The photographs had been taken in the Amarna expedition house (which Borchardt had built in 1907) during each season and so shortly after their discovery.



**Figure 1:** Negative 13.85 = SADC 3172



**Figure 2:** Negative 13.144 = SADC 3161

As a result of a fresh application to the Ministry of Antiquities Permanent Committee for copies of the Amarna negatives on Kristin's list, the general director of the Antiquities Documentation Center, Dr Hisham El-Leithy, was able in the spring of this year (2018) to direct his staff to take high-resolution digital photographs of those negatives on the list which could be located (the number is 90). Photographer Andreas Mesli subsequently enhanced the quality of the images using the Adobe Photoshop program.

Although many of the records of the Amarna expedition made their way to Berlin, so far no manuscript index has been found, either amongst the papers of the Deutsche Orient-Gesellschaft or of the Berlin Museum, although this material is still in the process of being catalogued. The lack of an original index means it is not possible to know what might be missing or how the holdings of the negatives in Cairo or the prints in Berlin compare. Three of the figures used here (4, 5 and 11) are based on Berlin prints rather than on Cairo negatives.

### **Commentary on the Deutsche Orient Gesellschaft photographs of Amarna statuary (Kristin Thompson):**

Many of the pieces of statuary photographically recorded by Ludwig Borchardt's team during their excavation of the Sculptors' Workshop district at Amarna in the pre-World War I era are among the most familiar art objects found in the ancient city. In particular the heads and damaged statues from the Thutmose Workshop have been photographed time and again, in black-and-white and color, on film and digitally. What do we gain from looking at the first photographs taken of these pieces?

For one thing, some images show us statues as they looked when first found, before extensive restoration work had taken place. One example is the so-called Tired Nefertiti, which was excavated in five large pieces (given field-inventory numbers) and perhaps some smaller ones as well (Figure 1; Berlin 21263). We can see clearly that the excavators have already rejoined the head to its body. The process of the reconstruction of other pieces is occasionally demonstrated, as when the upper chest and shoulders of the battered painted bust of Akhenaten is shown first on its own (Figure 2; Berlin 21360) and then attached to an assemblage of other pieces forming the neck and head (Figure 3). Here the view of the piece lying down reveals the concave depression on the flat underside of the bust, not visible when it is on display.

More importantly, some of the photographs from the archive record pieces that have been either destroyed, damaged, or lost. It is not commonly known that a number of pieces from the Thutmose Workshop were destroyed or broken during World War II when bombs hit the castle in which they were stored for safe-keeping. The casualties included two beautiful composite lower arms and hands, probably from the same pair statue (Figure 4; Berlin 21241 [top] and 21242 [bottom]). Fortunately, casts of these two were made before their destruction, so we are not reliant solely on photographs. A plaster foot, perhaps a sculptor's model (Figure 5; Berlin 21236), was also lost in the destruction, without a cast having been made. A pair of beautifully preserved unfinished composite feet was found in the Thutmose Workshop (Figure 6; Berlin 21211 [right foot] and 21237 [left foot]). These were seriously damaged during World War II, and the surviving fragments do not convey the beauty of the originals as displayed in the DOG image.

In one important case, DOG photographs record the original state of an object that was damaged after discovery. The famous painted bust of Nefertiti (Berlin 21300) has a single inlaid eye made of rock crystal with the pupil applied as dark brown wax on the inner side. We know it was wax because *c.* early 1925, officials of the museum removed the inlay and scraped a portion of the wax off, in the process altering the size and shape of the pupil noticeably. Its original appearance is preserved in Borchardt's photographs made at Amarna. A frontal view of the bust was not among the photographs provided to us by the Ministry of Antiquities, but one is reproduced in the catalog of the 2012 Berlin exhibition, *In the Light of Amarna* (p. 181; for a detailed account and comparison, see Rolf Krauss and Hans-Georg Wiedermann, "Das Schwarze in Nofretetes Auge," *Jahrbuch Preussischer Kulturbesitz* XXXIV [1997]: 211-222). Even at the small scale at which the photograph is printed, the difference between its right eye and that of the bust as it is today (compare p. 187) is evident. Thus, the DOG photographs record the original condition of this important piece.



**Figure 3:** Negative 13.144 = SADC 3161

The archive also contains photographs of pieces lost more recently. The looting of the Egyptian Museum during the 2011 revolution included the theft of several Amarna pieces, most of which remain missing. These had been photographed by the Museum and others in the intervening years, but it is good also to have the record made at the time of their finding. These include an unfinished quartzite princess statue (Figure 7; Cairo JE 44873), shown here before the partial restoration familiar to those who have seen the original in the Museum. Also missing is a grey limestone statuette of Nefertiti holding an offering table (Figure 8; Cairo JE 44867). The photographic archive contains views of this piece from all sides.

In some cases, the archival photographs reveal facets of the pieces that are not generally visible, even when they are on display. A quartzite composite head of a queen or princess, now in Berlin, is usually viewed without its tenon being visible, since it has been inserted into a base to support the head for display. The DOG photographs reveal that the tenon survives nearly intact, which is fairly rare for such composite pieces (Figure 9; Berlin 21220); in most cases the tenons are broken to the point where it is impossible to judge their original lengths.

The photographer has posed this royal head so that it appears to be looking slightly upward. The tilt suggests a spiritual gaze that reflects the belief, common at the time, that the Amarna royal couple were visionaries somewhat akin to proto-Christians. More frequently, Borchardt's team also posed some of the heads seen in three-quarter view and tilted slightly downward (Figure 10; Cairo JE 44870). The angle hints at a more melancholy, pensive mood. These heads were also shot in more conventional ways: frontal, side, and three-quarter views with the heads level, which are the most informative poses for images of sculpture. These tilted poses give us little or no additional help in understanding the shapes of the heads. It seems likely that Borchardt chose such an unconventional positioning of the heads because it reflected his own view, shared by many at the time, that the royal family were soulful but tragic figures whose religious beliefs were simply too advanced for their era. These particular photographs offer an interesting insight as to the attitude of the excavator toward the subjects of the sculptures.



**Figure 4:** Negative 13.117 (copy of print in Berlin)

Finally, the DOG photographs solved one mystery that confronted the current expedition. When I arrived for my first season at Amarna in March, 2001, a large unfinished fragment of a good quality limestone statue was lying outside the magazine alongside a number of large, rough architectural pieces. Where it originated was unknown. An Egypt Exploration Society photograph of the original German-built magazine (now long gone) outside the southern expedition house showed the piece lying in the yard beside it. Was it found by the English team in residence at the time, or was it a leftover piece from Borchardt's expedition?

Two photographs taken by the Germans before World War I include the piece (Figure 11; Amarna S-7510), confirming that they found it. Its negative number, 12.188, narrows the date of its discovery to late 1911 or 1912. It probably originated from a sculptors' workshop, since the area which Borchardt's team excavated was part of a workshop district (though it contained private residences as well, such as that of General Ramose). It might be part of an Osiride statue of Akhenaten or possibly an unfinished garment for a composite statue.

Although Marsha and I shall undoubtedly use more recent photographs of many pieces in illustrating our publication on the royal statuary from the site, the DOG photographs will be vital in those cases where pieces have been destroyed. They also serve to allow us to study the pieces as they were when originally found. Finally, the somewhat scuffed dark surfaces on which many pieces were placed to be photographed, as well as the folding centimeter stick used to indicate their scales, help evoke the situation of the photographers as they worked in less than studio conditions at the expedition house more than 100 years ago.

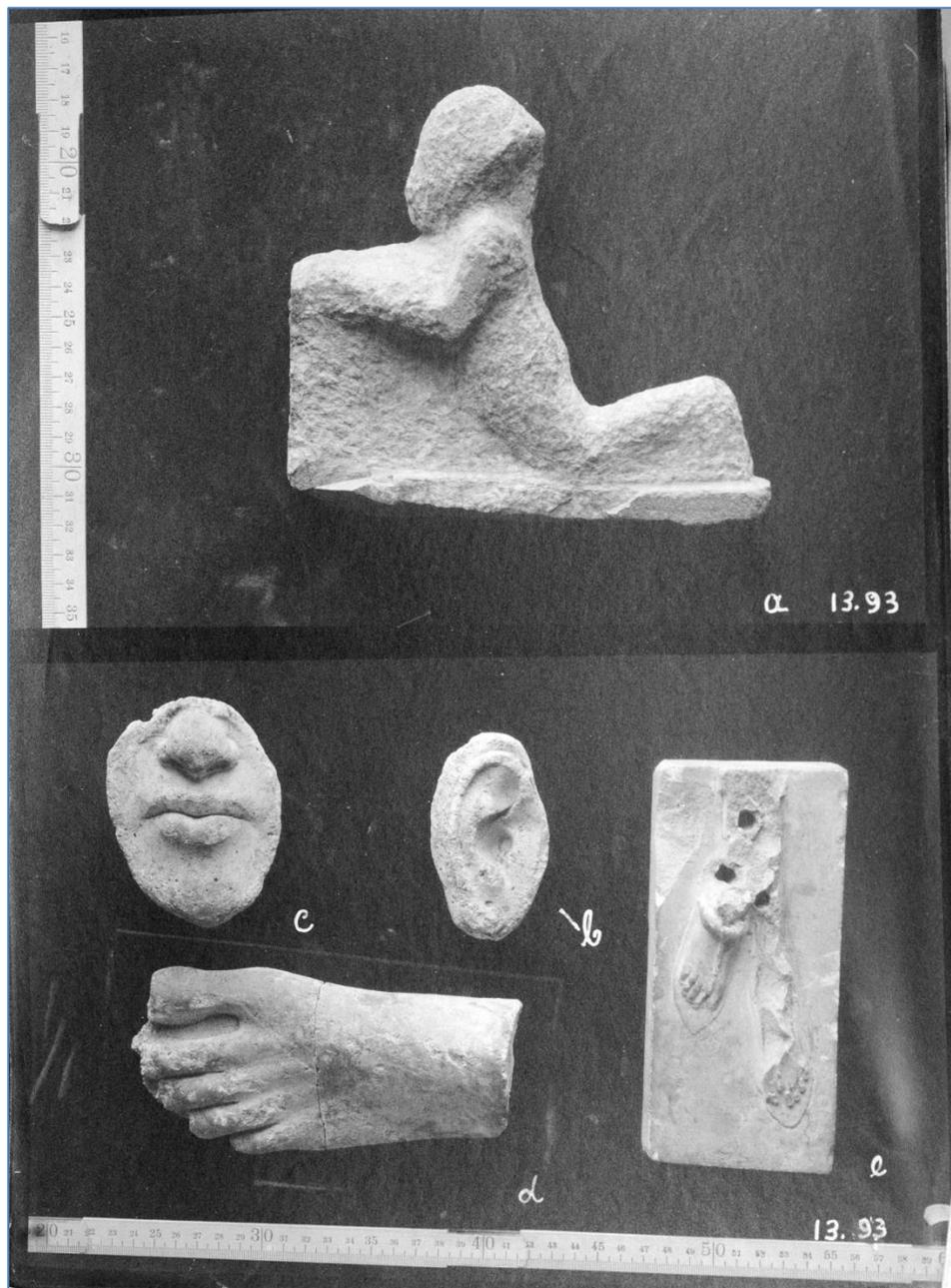


Figure 5: Negative 13.93 (copy of print in Berlin)

**Acknowledgements and further comment:**

Shortly after the completion of this text, Anna Hodgkinson located a list of Borchardt's photographs in the offices of the Deutsche Orient-Gesellschaft.

Thanks also to Cornelius von Pilgrim, Director of the Swiss Institute, and to William Carruthers for helpful comments.

Borchardt's position in Egypt was affected not only by the First World War but also by the ill feeling created by the appearance, in the Berlin Museum after a formal division of his finds from the 1912 season at Amarna, of the painted bust of Nefertiti. See Susanne Voss, 'Die Rückgabeforderung der Nofretete-Büste im Jahre 1925 aus deutscher Sicht.' In Frederike Seyfried, ed., *Im Licht von Amarna; 100 Jahre Fund der Nofretete*, Berlin, Ägyptisches Museum und Papyrussammlung 2012, 460–8 (in the English edition, *In the Light of Amarna: 100 Years of the Nefertiti Discovery*, 'The 1925 demand of the return of the Nefertiti bust, a German perspective', pp. 460–8.



**Figure 6:** Negative 13.119 = SADC 3173

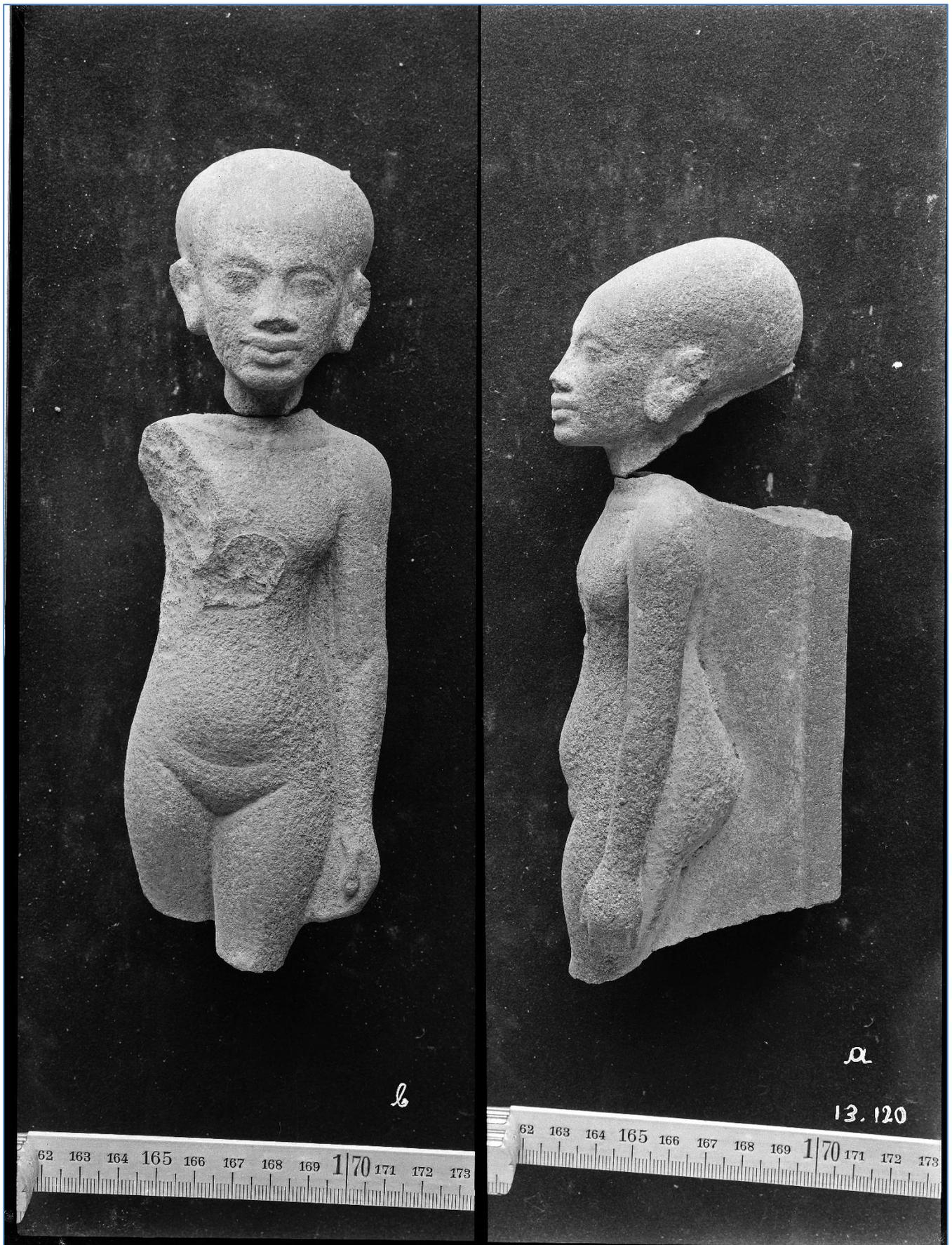
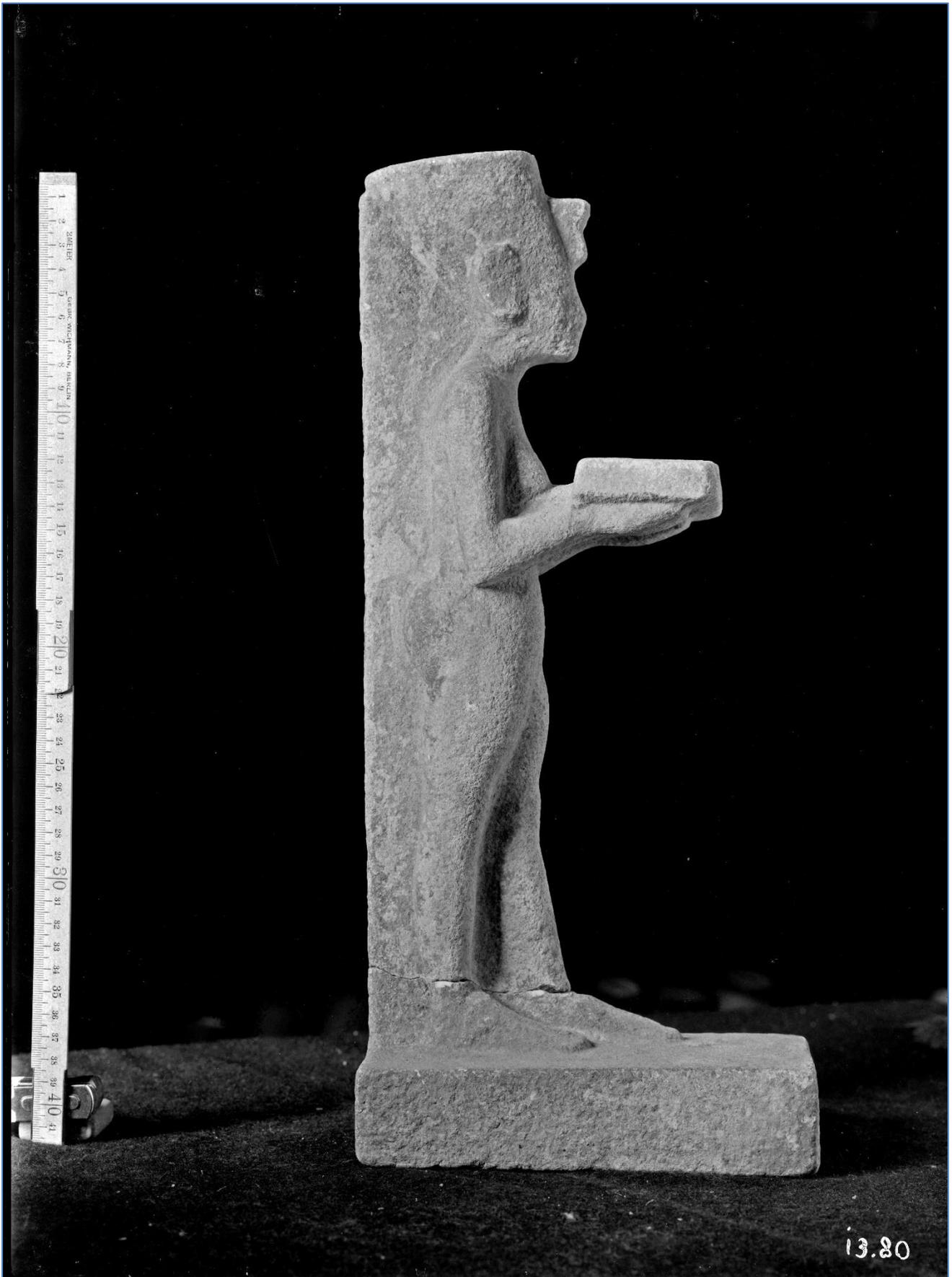


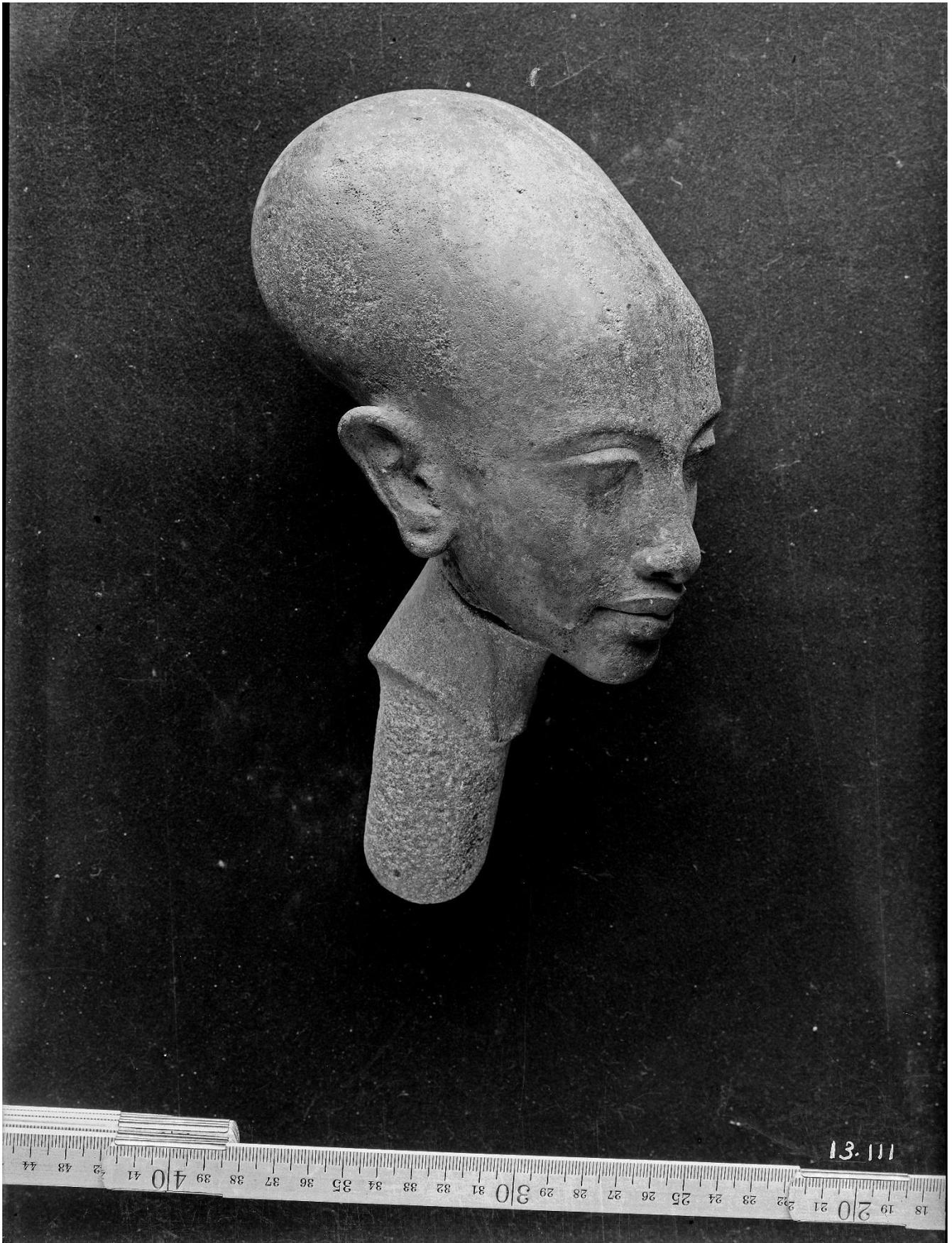
Figure 7: Negative 13.120 = SADC 3156



**Figure 8:** Negative 13.80 = SADC 6840



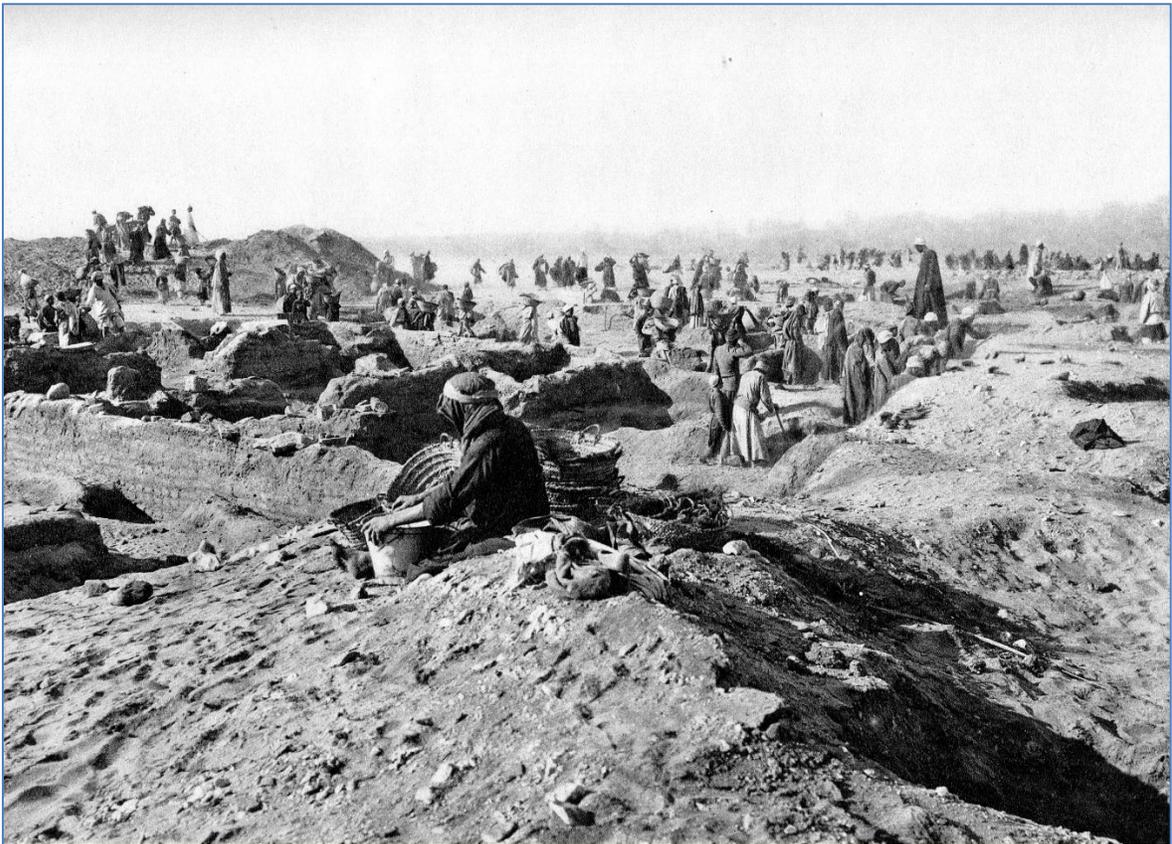
**Figure 9:** Negative 13.98 = SADC 3611



**Figure 10:** Negative 13.111 = SADC 3612



**Figure 11:** Negative 12.188 (copy of print in Berlin)



Borchardt Excavating at Tell el Amarna 1914, Photo *Ägypten* by Borchardt & Ricke (1929) p 111

## **A royal visit to Amarna of another age, and the Fouad head of Akhenaten**

*By Barry Kemp*

One item on display in the Egyptian Museum, Cairo, is a head of Akhenaten (24 cm high) the material of which is the marble-like indurated limestone. Akhenaten wears the blue crown, its surface covered with tiny raised circles. Surface features on the king's right side and the asymmetric back pillar show that the head comes from a statue of Akhenaten beside another figure, doubtless Nefertiti, on his right (as also illustrated by a pair statue in grano-diorite partly preserved in fragments in Berlin and at the Amarna expedition house magazine).

How the Museum came to have the head is explained in an article by Reginald Engelbach in the 1938 issue of the house journal of the government antiquities administration, *Annales du Service des Antiquités de l'Égypte*. It was donated by King Fouad I shortly before his death. 'It appears to have been presented to His Majesty by certain inhabitants of el-Amarna when he was there some years ago, and is said to have been found during the construction of a desert road on the occasion of his visit.'

King Fouad died in 1936, having assumed the title 'king' in 1922 and having previously been holder of the title Khedive. How he travelled on visits to Upper Egypt is briefly captured in a newsreel thought to be from 1934, available on the internet at <https://www.youtube.com/watch?v=QIGumsPejbM>.

As one would expect, one sees him accompanied by an entourage of officials and guards but at the same time he appears relaxed and informal. The film shows him landing at destinations by boat, although whether from having crossed the Nile or actually making the whole journey by boat (rather than by train) is not clear. At a location in the desert (from the appearance of the rugged landscape the eastern desert) at least one automobile was available to collect him after emerging (seated in an armchair set on a small trolley) from a mine tunnel. This helps to set the scene (in our imagination) for his visit to Amarna, crossing the Nile by boat to El-Till, being met by the Omda (the village mayor and a leading landowner) and being conducted on a visit, but to which parts?

A key statement in Engelbach's report is 'the construction of a desert road'. This implies that one or more automobiles would have been brought, a necessity in view of the distances to be covered since his destinations would have been the rock tombs rather than the city. It is possible that the moment of construction of this road is captured on an oblique aerial photograph of the Central City, included in Pendlebury's grand report on his work there, *City of Akhenaten*, III, Pl. XLV.1 (reproduced in *Akhetaten Sun* 23 no. 2, p 23, lower picture). It is dated 17 March 1932. A wide and obviously freshly prepared road winds around the south-west corner of the Small Aten Temple (bottom left of the picture), heading southwards (its destination perhaps the South Tombs). By this time, the EES expedition had excavated the Small Aten Temple and adjacent buildings on the south, but had not yet touched the Great Palace or the Great Aten Temple. The reports of the EES work show that their expedition was not working there in March 1932. Yet the photograph shows groups of people on either side of the road (to a total of perhaps around 50) just south of the Great Aten Temple. Are they engaged in making the road?

From time to time village authorities take initiatives to improve local conditions so we cannot be sure that this road was connected with Fouad's visit, but it is tempting to make the connection. In running past the Great Aten Temple and the Great Palace, both of them centres of statuary and at a time before the Pendlebury excavations, we have a likely source for the head. An important part of a visit by a senior representative of the government (in this case the head of state himself) is the presentation of local requests for support for particular projects. What better way to do so than with the accompanying gift of a recent discovery of an ancient work of art (which eventually and correctly the king passed on to the national museum)?



Fouad Head in the Egyptian Museum, Cairo – Photo B. Kemp



Fouad Head detail – Photo B. Kemp

The main reference is R. Engelbach, 'A limestone head of King Akhenaten in The Cairo Museum.' *Annales du Service des Antiquités de l'Égypte* 38 (1938), 95–107. The grano-diorite pair statue of Akhenaten and Nefertiti is published by Kristin Thompson, 'A shattered granodiorite dyad of Akhenaten and Nefertiti from Tell el-Amarna.' *Journal of Egyptian Archaeology* 92 (2006), 141–51.

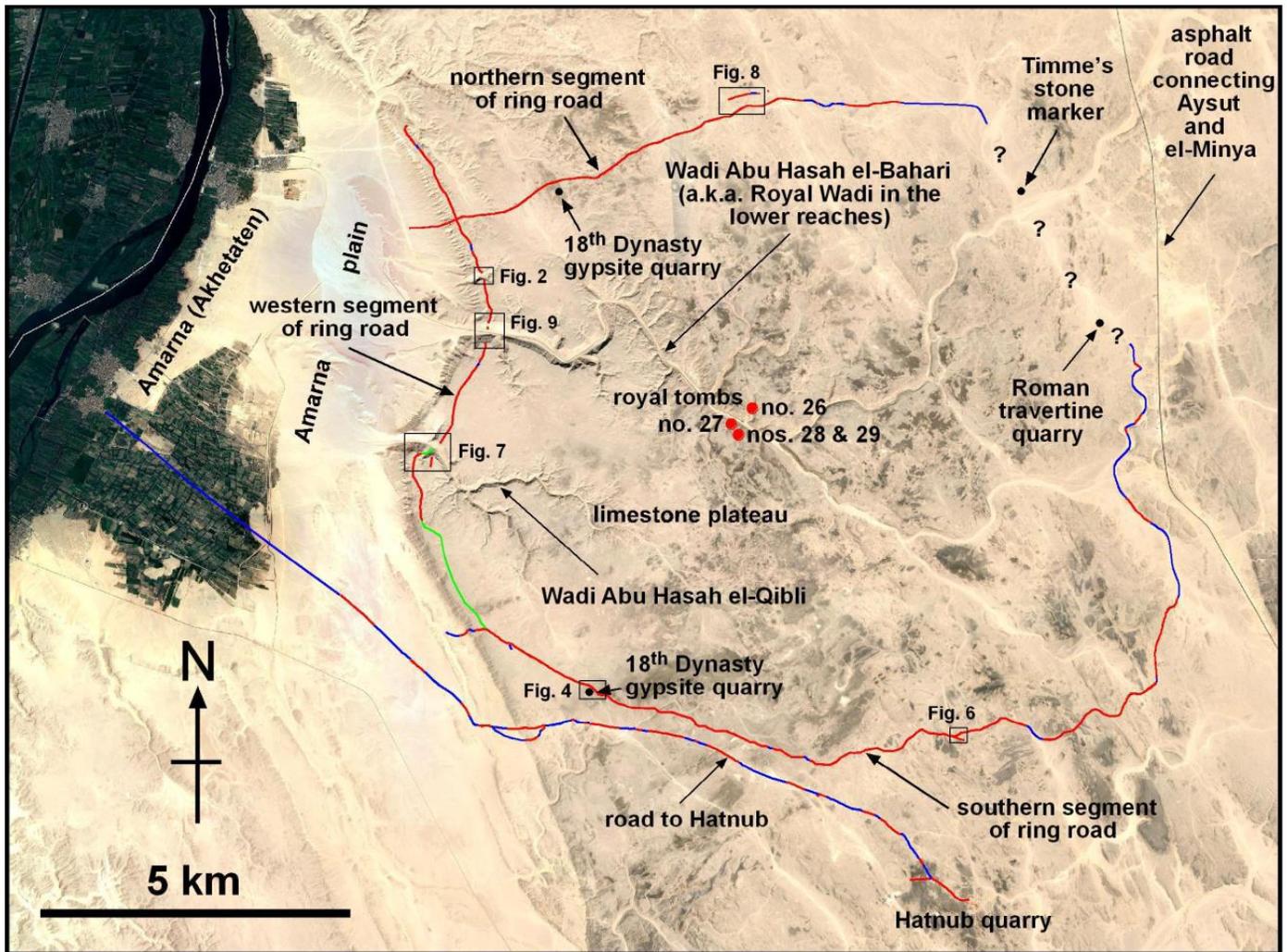
# The Amarna ring road: a new interpretation

*By Jim Harrell*

There are ancient roadways on the limestone plateau east of Amarna (Fig. 1). The best known of these follows a nearly 17 km-long course, with 8 km of it on the plateau, from Amarna to the travertine quarry at Hatnub [1]. Whereas much has been written about this road [2], a longer one just to the north has remained largely unknown and misunderstood. The latter road, with its northern, western and southern segments, originally formed a closed ring that varies from 10 to 12 km across and has a 40 km circumference. Portions of this ‘ring road’ and the track to Hatnub were apparently discovered on 20-21 December 1891 during a joint exploration of the desert east of Amarna by W. M. Flinders Petrie, Percy E. Newberry and Howard Carter, all working for the Archaeological Survey of the Egypt Exploration Fund [3]. Newberry was then directing a survey of the tombs at el-Bersha, Petrie was engaged in his only season of fieldwork at Amarna, and Howard Carter, who was 17 years old and on his first trip to Egypt, served as an assistant first to Newberry (until the end of 1891) and then to Petrie (in January 1892). Petrie subsequently began an investigation of the ring road but did not finish it due to, he says, his “foot being disabled during the last weeks of [his] stay at Tell el Amarna” but he added that “Mr. Carter very kindly completed the survey this year [1892, although] ... his map with all the notes was lost in the post” [4]. Petrie did, however, publish a map of Amarna and the desert to the east that included the northern segment of the ring road [5]. The ring road and the rest of the Amarna area was surveyed in 1911 by Paul Timme, a cartographer and Major (later Colonel) in the Imperial German Army. This was work done in support of the German mission to Amarna, which was led by Ludwig Borchardt. Timme’s map and his description of the ring road [6] is until now the only published study of this feature with his conclusions regarding its purpose unchallenged by later scholars.

Although Timme’s map was excellent for its time, its rendering of the topography is approximate at best. Most of the ring road is visible in satellite imagery, which is the basis of the new map in Figure 1. The roads are color-coded in this figure as follows: red – the road is visible in satellite imagery; blue – the road is not visible, but it was seen by Timme with its position deducible from both his map and the topography; and green – there is no road but rather a footpath that is shown on Timme’s map with short stretches of it also visible in satellite imagery. There are many roads and footpaths on the Amarna plain that connect with the ring road’s western segment, but only the two joining the northern and southern segments are shown on the map. It is generally accepted that the ring road was constructed during the 18th Dynasty’s Amarna period [7] and this dating is supported by the arguments presented below. The Hatnub quarry road, in contrast, is the product of construction and repair activities spanning the 1300-year life of the Hatnub quarry, which was worked intermittently between the 4th and 19th Dynasties.

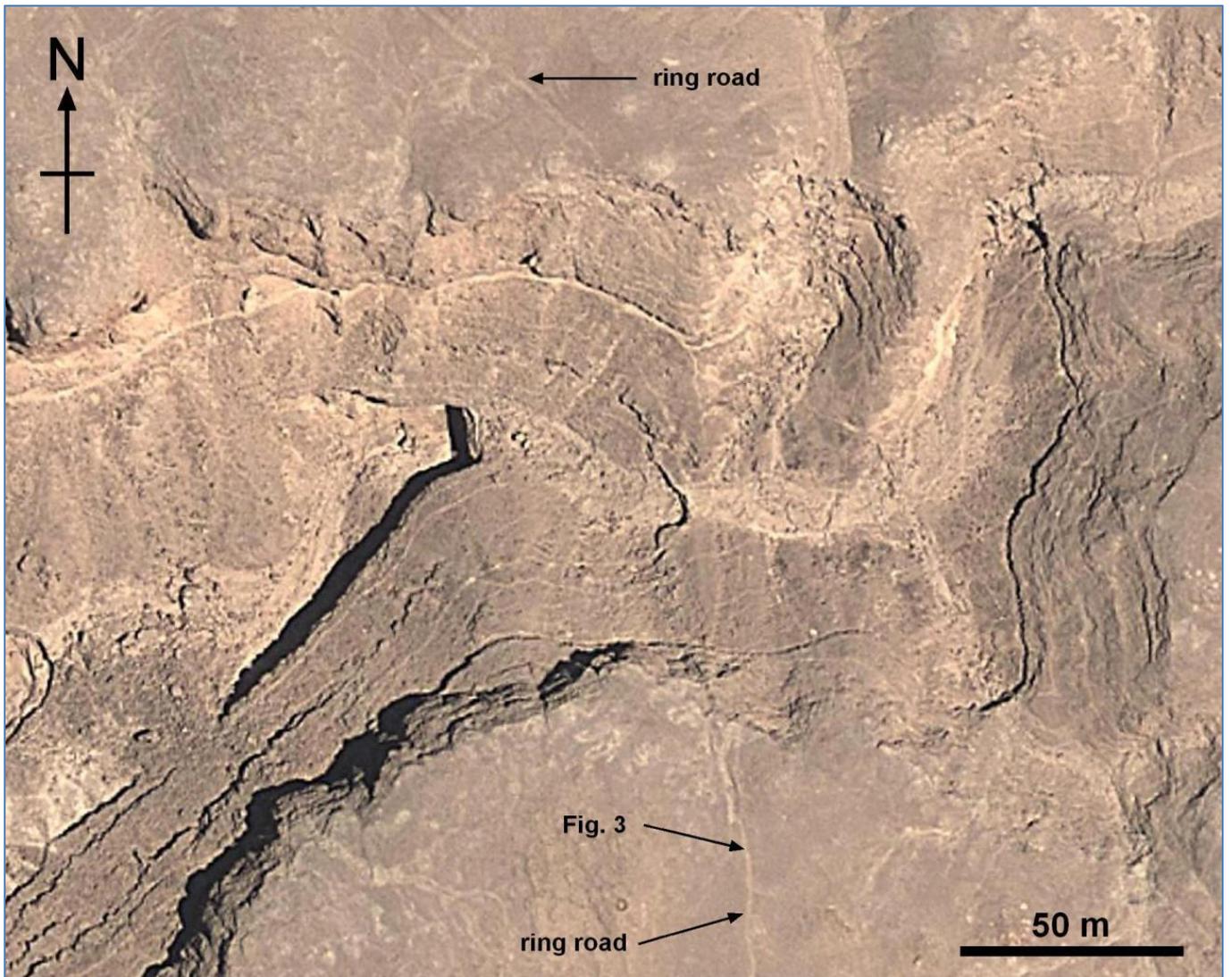
The ring road is a cleared track created by sweeping pebbles and other loose rubble to the sides (Figs. 2-5). It varies from 3 to 7 m across with 4.5-5 m the most common width. Unlike the Hatnub quarry road, which is also largely a cleared track and of similar dimensions, the ring road has no causeways (i.e., built-up sections) where it crosses wadis and swales, or traverses hillsides. As Petrie notes [8] and Timme’s map shows, the northern segment, but not the western and southern ones, has numerous stone markers. There is a large gap in the ring at its northeast corner (Fig. 1). Although it is possible the road was never built here, it probably was originally present but then later removed by erosion. The road in this area could only run along the floors of active wadis where flash floods would periodically wash over it. It is unlikely, therefore, that something as insubstantial as a cleared track could survive in the gap. Timme [9] thought the northern and southern segments were parts of a single road, and this is supported not only by the geometries of these segments (i.e., their ends are directed toward each other) but also, according to Timme’s map, by a stone marker within the gap that may indicate where the road once existed (Fig. 1). There is a second, shorter gap at the ring’s southwest corner (Fig. 1). The road was never built here but in its place there is a footpath that perhaps foreshadowed an extension of the western segment.



**Figure 1:** Google Earth satellite image of the area east of Amarna showing the ancient road network on the limestone plateau. See the text for an explanation of the color coding.

The ring road was apparently built in sections that were joined to make the longer segments. This mode of construction is suggested by four places where road sections had aborted starts. One of these, in the ring road's southern segment, initially headed in the wrong direction (Fig. 6). Timme's map shows a similar but shorter spur near the western end of the southern segment, but it is indistinct on the satellite imagery and is barely visible in Figure 1. There are also sections, in the western and northern segments, that were initially positioned off the road's eventual course (Figs. 7-8). The distances involved are relatively small (200-250 m) in comparison to the variations seen elsewhere along the road. The shifts must be for practical reasons. The offset seen in Figure 7, for example, was apparently due to the need for a footpath down to the wadi floor. This was not possible where the road was initially located given the cliff below it. In Figure 8, on the other hand, it seems the offset was made to avoid rough terrain a few hundred meters further west. The chronological relationship between the ring road's western and southern segments is not clear because of the gap between them, but the northern segment transects the western one and so post-dates it.

Timme did not recognize the configuration of the ring road's northern, western and southern segments as forming an intentional closed circuit. Instead, the western segment was part of his "Rundenweg" ('round way'), so-called because it formed part of a series of patrol roads surrounding the Amarna plain. He refers to the northern and southern segments of the ring road as the "nördlicher Steinbrüchweg" and "südlicher Steinbrüchweg" (the 'northern and southern stone quarry ways,' respectively). He does this in the mistaken belief that these segments lead to three quarries on the ring's eastern side.



**Figure 2:** Abrupt terminations of the ring road at the top edges of the unnamed wadi near Stela U.  
See Figure 1 for location.

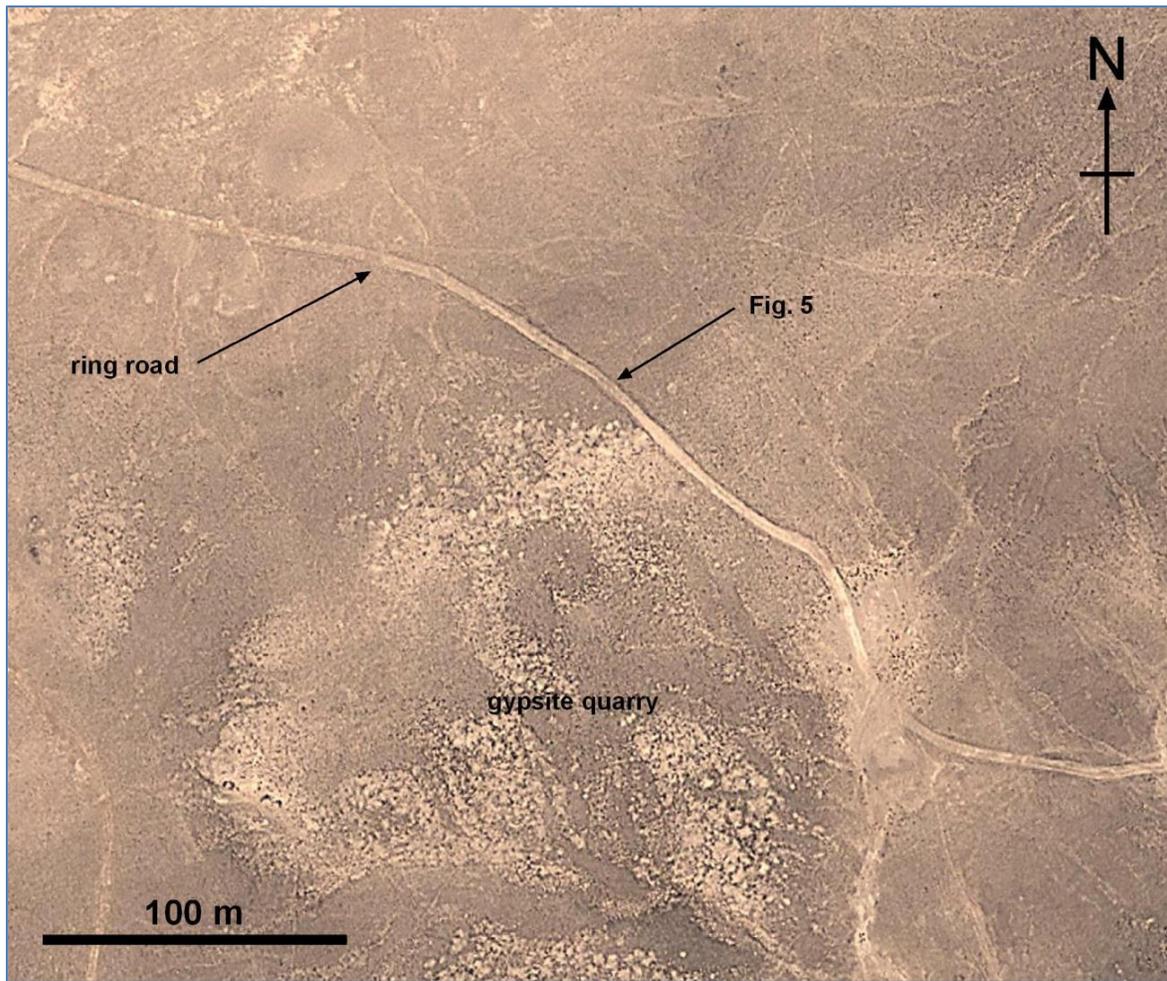
The present author’s fieldwork in March 2018, however, established that two of Timme’s “quarries” are natural erosional scarps. The third is a natural cave in a tributary of Wadi Abu Hasah el-Bahari (Fig. 1), where there was minor travertine quarrying during the Roman period as dated by a rock-cut stela and pottery [10]. This activity, however, greatly post-dates the road, if the interpretation that follows is correct. Additionally, access to this quarry from Amarna would have been by the much shorter route through Wadi Abu Hasah el-Bahari rather than the ring road. The ring road does pass by two 18th Dynasty gypsite quarries (Figs. 1 and 4) [11], which Timme did not know about, but these spatial associations are coincidental. The road does not lead to these quarries, it only goes by them on its way to more distant locales. It could well be, however, that the workers made use of the road when travelling between their homes and the gypsite quarries. A further indication that the ring road was not built to serve quarries is the absence of causeways like those on the Hatnub road. The purpose of these constructions was to even out the gradient along the road to aid the men pulling sledges with their heavy loads of travertine. Clearly no such loads were envisioned for the ring road. In fact, this road is, in places, even difficult to walk along because it goes up and down steep slopes rather than follow a gentler gradient around them [12].

If not for serving quarries, then what was the ring road’s purpose? It is suggested here that it was built primarily as a boundary line for the area surrounding the royal tombs in Wadi Abu Hasah el-Bahari, and secondarily as a patrol road like many others in the Amarna area [13]. The western segment of this

boundary-cum-patrol road runs along the top edge of the limestone escarpment, which overlooks the Amarna plain. It probably initially functioned as part of a network of roads used by the military patrols that guarded Akhetaten's desert borders. If so, it was later incorporated (and perhaps partially rebuilt) into a ring road that was constructed either at the same time as the first royal tomb (no. 26) or when this sepulcher received its first interment (either princess Meketaten or queen mother Tiye). The ring road would thus serve as a warning to would-be trespassers that they were entering a restricted zone but, at the same time, it facilitated the walking patrols that were needed to secure the boundary. That this restriction was enforced is indicated by the fact that nothing other than the royal tombs existed inside the ring during the Amarna period, with the exception of a gypsite quarry on its northern edge but this feature may be earlier than the road (Fig. 1).



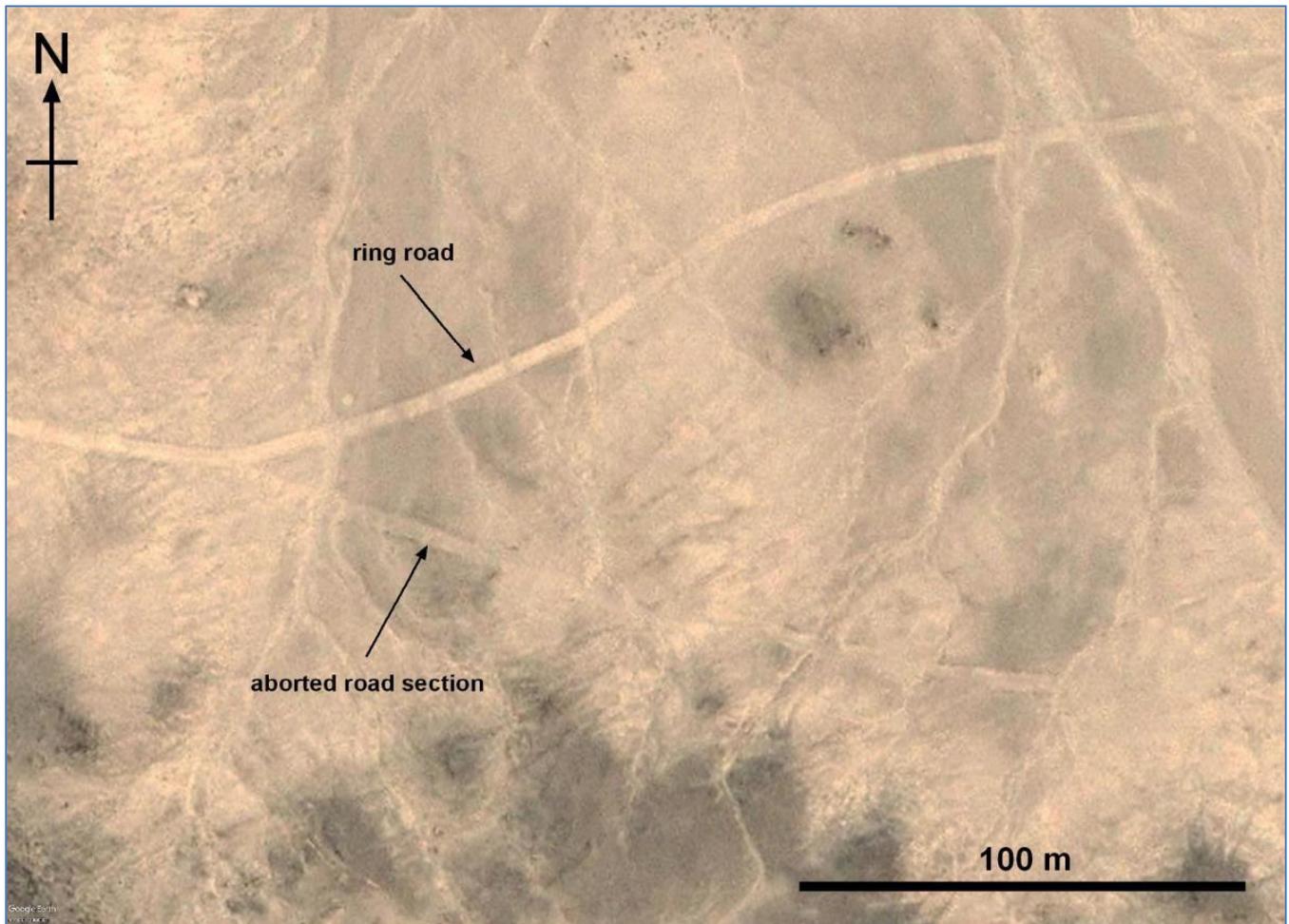
**Figure 3:** Ring road at the south edge of the unnamed wadi near Stela U. The road here is 3.0 m wide. View is to the south. See Figure 2 for location.



**Figure 4:** Section of the ring road passing by an 18<sup>th</sup> Dynasty gypsite quarry. See Figure 1 for location.



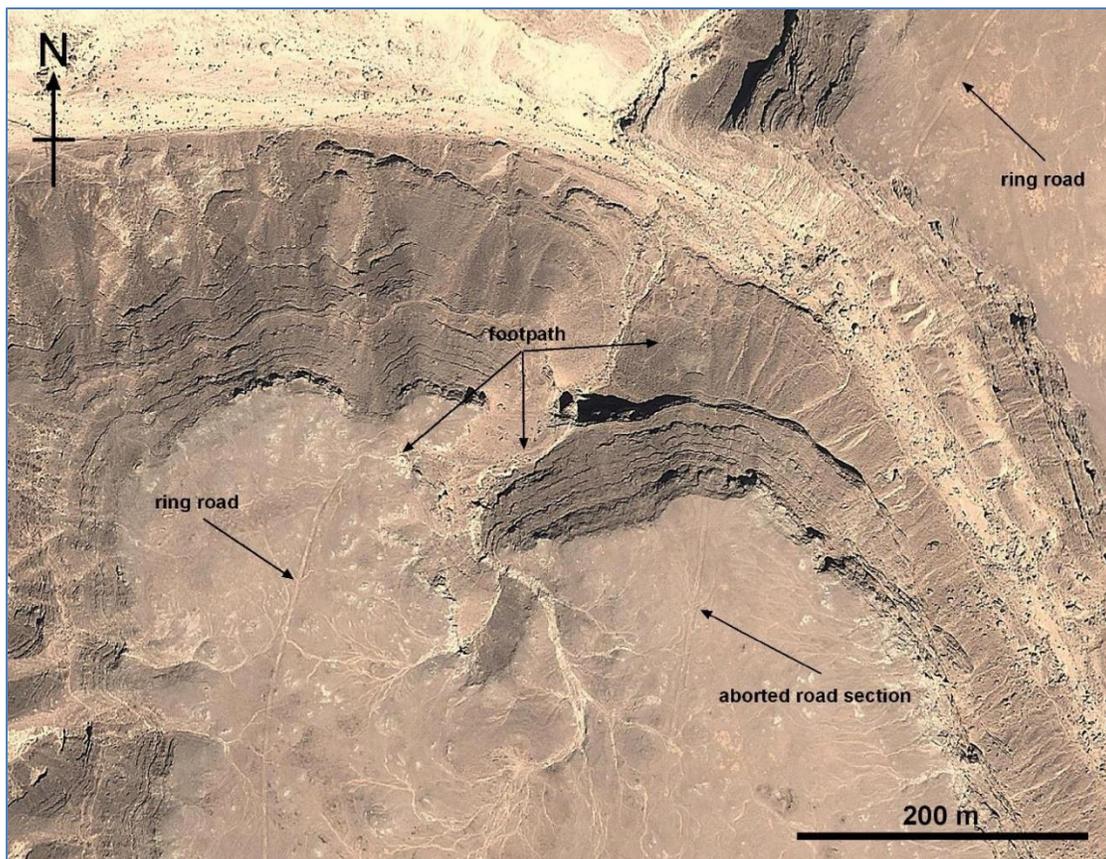
**Figure 5:** Ring road shown in Figure 4. The road here is 4.5 m wide. View is to the northwest.



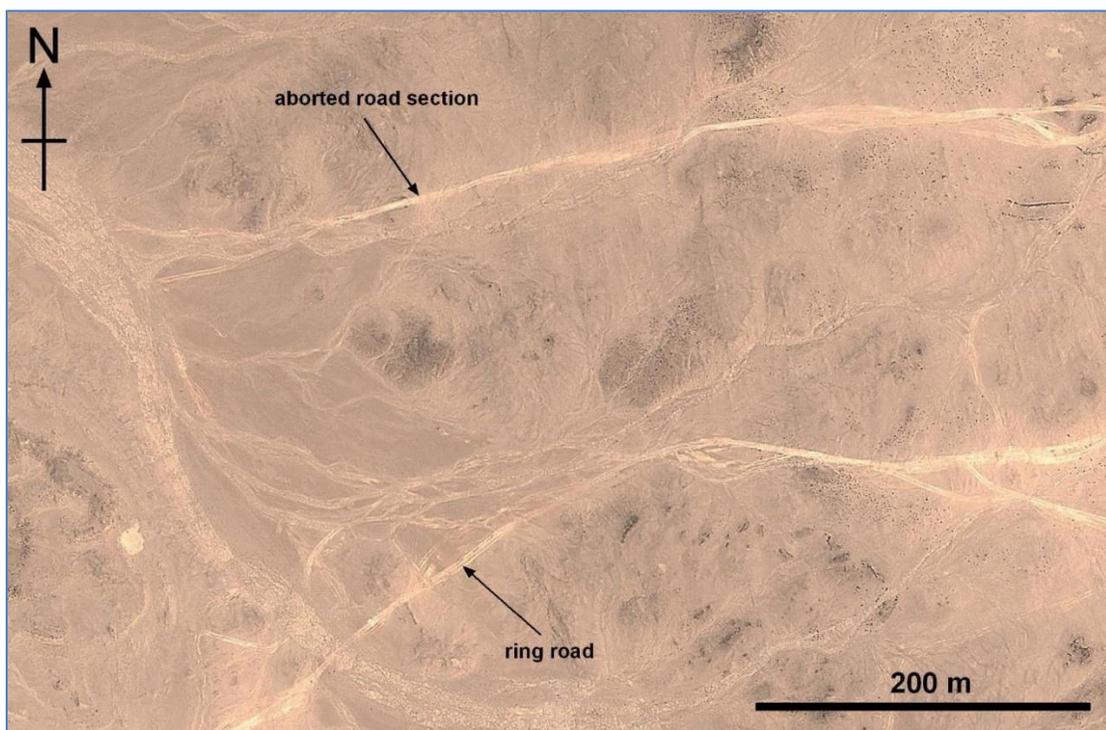
**Figure 6:** Aborted initial and redirected final sections on the ring road’s southern segment.  
See Figure 1 for location.

Whereas the northern and southern segments of the ring road are walkable along their entire lengths, even if not always optimally situated for foot traffic, the western segment cannot be walked from one end to the other. It is built more to look like a boundary line than to function as a thoroughfare. There are two indications of this. First, where the road comes up to the three deep wadis that cut across its course, it ends abruptly at the top edge of one wadi wall and then restarts at the edge on the other side (Figs. 2, 7 and 8). Clearly, this serves no practical purpose if the road was built for traffic. And second, where the road stops at the top edges of both walls of the Royal Wadi, on the floor below there is a line of limestone boulders that marks where the road would have continued across this wadi (Figs. 9-10) [14]. This line of stones, more than anything else, declares the purpose of the ring road: it is a demarcation, not a passage. No similar lines mark the road’s position where it is cut by the other two wadis, but it is significant that it exists in the one wadi that leads to the royal tombs.

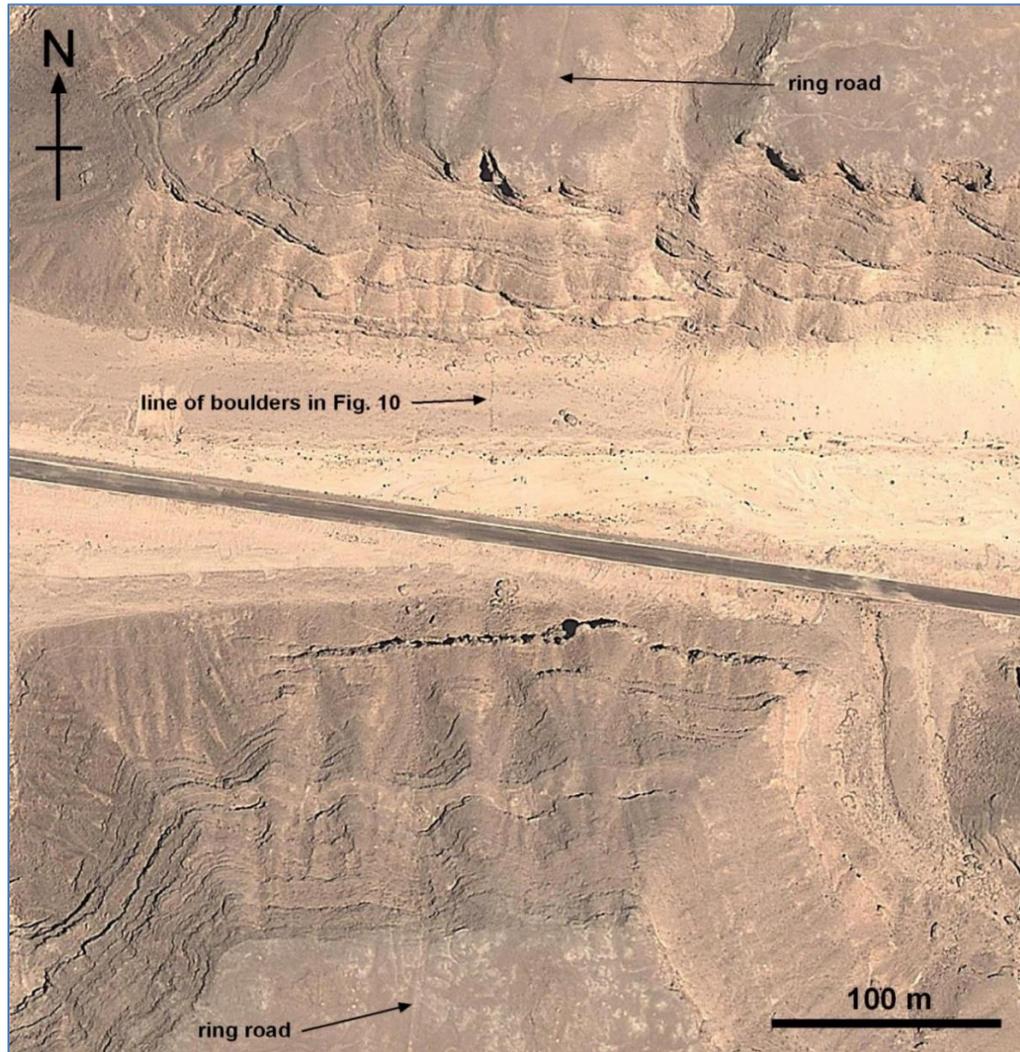
The ring road defines a rough circle with the royal tombs near its center. While it is true that a circle is the most efficient way to circumscribe an area and so any boundary is likely to have this shape, the significance of the circle’s symbolism would not have been lost on the road’s builders: the ring was a representation of the sun disk with Aten’s son, Akhenaten, and his family buried at its center. The original intent may have been to inscribe a boundary line that was closer to a true circle well centered on Akhenaten’s tomb (no. 26). This proved impossible, however, given the necessity of taking detours around topographic obstacles and the primitive surveying methods then available (pacing, perhaps with a rope of fixed length?). Nevertheless, the ring road is an impressive technical achievement and one that is unique among the many ancient Egyptian engineering feats. It is an important feature that deserves more attention than it has yet received.



**Figure 7:** Abrupt terminations of the ring road at the top edges of Wadi Abu Hasah el-Qibli. Note also on the south side of the wadi the aborted road section to the right and the footpath from the ring road down to the wadi floor. See Figure 1 for location.



**Figure 8:** Aborted initial and redirected final sections on the ring road's northern segment. Both tracks are now damaged by modern vehicular traffic. See Figure 1 for location.



**Figure 9:** Abrupt terminations of the ring road at the top edges of the Royal Wadi (Wadi Abu Hasah el-Bahari) with a line of boulders marking where the projection of the road crosses the wadi floor (Fig. 10). Flood erosion and road construction destroyed the continuation of this line on the south side of the wadi. See Figure 1 for location.

**Endnotes:**

- [1] Travertine is the correct geological name for this calcitic rock, but non-geologists commonly refer to it by other names, including Egyptian alabaster, calcite, and calcite-alabaster.
- [2] See, for example, p. 77 in G. W. Fraser, 'Hat-nub,' *Proceedings of the Society of Biblical Archaeology* 16 (1894), 73-82; p. 3 in W. M. F. Petrie, *Tell el Amarna* (Methuen and Company, London; 1894); and p. 37-41 in P. Timme, *Tell el-Amarna vor der Deutschen Ausgrabung im Jahre 1911* (Wissenschaftliche Veröffentlichung der Deutschen Orientgesellschaft 31; J. C. Hinrich, Leipzig; 1917). It is Ian Shaw who has written the most about the Hatnub road and for two of his more recent descriptions, see p. 109-115 in I. Shaw, *Hatnub: Quarrying Travertine in Ancient Egypt* (Egypt Exploration Society, London; 2010); and I. Shaw, "“We went forth to the desert land...”: retracing the routes between the Nile Valley and the Hatnub travertine quarries,' in F. Förster and H. Riemer (eds.), *Desert Road Archaeology in Ancient Egypt and Beyond* (Heinrich-Barth-Institut, Köln), 521-532.
- [3] See p. 80 in T. G. H. James, 'The discovery and identification of the alabaster quarries of Hatnub,' *Cahier de recherches de l'Institut de papyrologie et d'Égyptologie de Lille* 13 (1991), 79-84.

- [4] Petrie 1894: 4.  
 [5] Petrie 1894: pl. 34.  
 [6] Timme 1917: 34, 43-47.  
 [7] For example, see p. 155 in B. Kemp, *The City of Akhenaten and Nefertiti – Amarna and Its People* (Thames and Hudson, London; 2012).  
 [8] Petrie 1894: 5.  
 [9] Timme 1917: 47.  
 [10] See p. 9-12 in L. Borchardt, ‘Ausgrabungen in Tell el-Amarna 1913/14,’ *Mitteilungen der Deutschen Orient-Gesellschaft zu Berlin* 55 (1914), 3-39; and Timme 1917: 46. Shaw (2010: 79) agrees with the dating, but wrongly places the stela in the Hatnub quarry.  
 [11] J. A. Harrell, ‘Amarna gypsite: a new source of gypsum for ancient Egypt,’ *Journal of Archaeological Science: Reports* 11 (2017), 536-545.  
 [12] Petrie 1894: 4; and Timme 1917: 47.  
 [13] Petrie 1894: 4-5; and Kemp 2012: 155-161.  
 [14] For a survey of this line and the stone huts at either end of it, see p. 20 in B. Kemp, ‘Tell el-Amarna,’ *Journal of Egyptian Archaeology* 90 (2004), 14-26.



**Figure 10:** Line of limestone boulders on the floor of the Royal Wadi marking where the ring road ‘boundary’ crosses the wadi. See Figure 9 for location.

## Further results from work at the Great Aten Temple

By Barry Kemp (with a contribution by Marc Gabolde)

The last issue of the *Sun* brought readers up to date with the results of the Fall season of 2017 at the Great Aten Temple. We were able to resume in the Spring, between February 18th and March 21st. We continued to excavate new ground at the front of the temple (with the participation of archaeologists Anna Hodgkinson, Juan Friedrichs, Delphine Driaux, Julia Vilaró and new member Fabien Balestra) but also returned to the area of the wood-framed building described in the last issue, the responsibility of archaeologist Miriam Bertram. Our inspector for the site was Mohamed Abd el-Mohsen and for the magazines Mazen Osman.

### Further work at the site of the wood-framed palace or royal pavilion:

The first task was to remove the protective layer of sand and dust spread across the site as the last season ended (Figure 1). The final cleaning involved brushing and, since one is brushing away a mixture of dust and abrasive sand grains, this is actually the first step in further taking down the mud floor which, it had been seen before, was a composite of several layers. As this was proceeding the remaining post holes from 2017 were emptied of their fill of sand and dust and their positions on the plan carefully checked. No further fragments of painted gypsum plaster emerged.



**Figure 1:** Cleaning the mud floor into which the post holes for the wood-framed palace had been cut

The surface of the mud floor is not uniform (Figure 2; for a plan see *Akhetaten Sun* 23/2, 7, Figure 4). It varies in colour and texture, and displays slight localised undulations, rather like a carpet laid over a bumpy floor. Unlike a carpet, however, the top surface cannot be turned back or peeled off separately. The several layers, some with patches of whitewash present, are thin, brittle and stuck together. They are also very hard. An area at the southern end of the site was marked off, measuring 5.50 x 2 m. Slowly and carefully the top layers were scraped off, down as far as the earliest, which rested directly on the desert, itself a compacted body of sand and small stones. What gradually emerged were the clear outlines of two brick offering-tables which had stood there previously, accompanied by extensive patches of white surfacing plaster. Encouraged by this finding, a close visual examination of the rest of the mud floor picked up traces of other previous offering-tables, suggesting that, before the wood-framed building was erected, the offering-tables had covered most of the available space. This is something to pursue with further removal of floor layers next season, as far as the edge of the pylon in case they extend this far, something which the surface of the floor hints at.



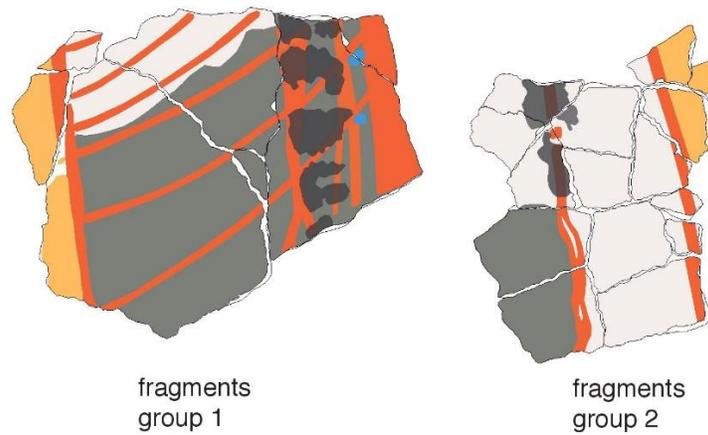
**Figure 2:** Photographic mosaic of the mud floor, with its post holes, assembled by Anna Hodgkinson from multiple vertical photographs. North is towards the left.

Whilst this work was taking place, the workmen removed more of the levelling rubble across two excavation squares to the east, so enlarging the area of exposed early mud floor. No further post holes appeared, proving that the eastern line found last year really does represent the east wall of the building. What quickly appeared were the outlines of five further offering-tables (a sixth remained buried beneath a baulk which protected a structure at a higher level). These had been removed to the lowest traces but had not then been heavily plastered over. This suggests that they were removed to create space around the wood-framed building and that the thick and hard mud plaster floor into which the post holes had been cut was largely confined to the outline of the building (Figure 3).

The posts themselves were likely to have been joined by sheets of cloth (perhaps decorated) or by sheets of matting. The irregularities in placing them and the flimsiness of the building seem to go against the formality surrounding kings and the Egyptian taste for strictly geometrical shapes in architecture. Yet during an earlier visit to Amarna, as recorded on the second Boundary Stelae, Akhenaten is said to have been accommodated in something of this kind: 'One (i.e. the king) was in Akhetaten in the tent/pavilion of matting which had been made for His Majesty (l.p.h.) in Akhetaten, the name of which is "The Aten is Content".' We tend to perceive tents, with their flexible surfaces, differently from buildings of rigid materials; they evoke a different aesthetic. We are more inclined to accept a wider level of tolerance in appearance or deviation from straight lines. Even so, it is clear that those who set up the building did not do so by measurement and survey but by eye and hastily.



**Figure 3:** Simplified plan of the site of the royal pavilion. Plain green lines: reconstructed positions of sheets of cloth or matting; broken green lines: reconstructed positions of upper support poles. Original by Miriam Bertram.



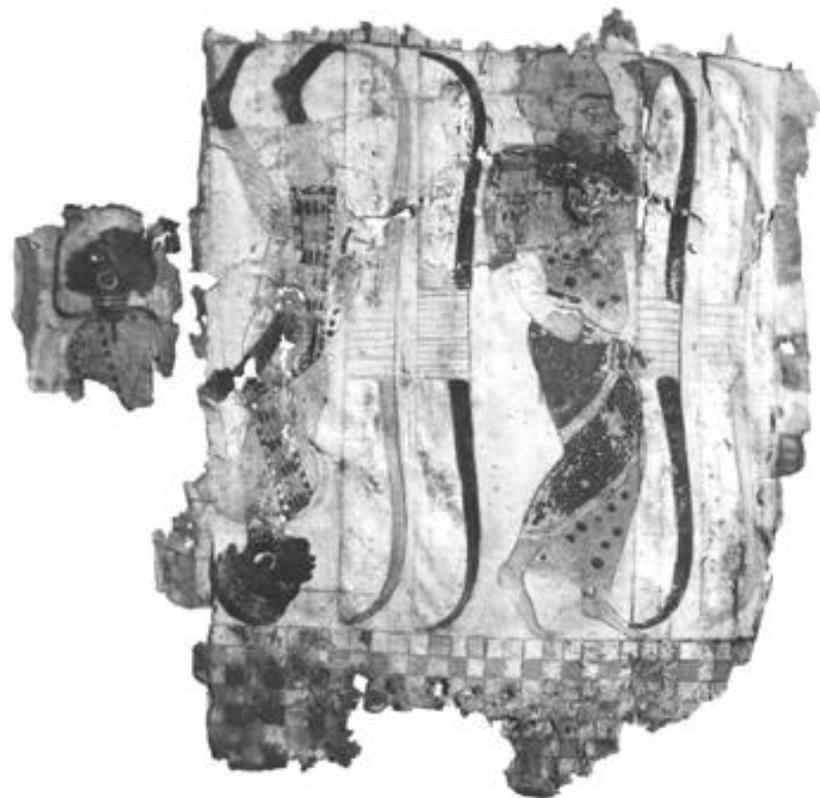
**Figure 4:** Digital rendering (by Miriam Bertram) of the two main groups of painted plaster fragments recovered from one of the post holes. A photograph is in *Akhetaten Sun 23/2*, 8, Figure 5.

Mud bricks are easy to make and can be rapidly laid to make a building. They were available to make the platform at the front. Why complete the building with wooden posts and flexible screens? We have previously encountered post holes from another building belonging to the same phase, on the north side of the temple (*Akhetaten Sun 21*, no 1, 16–19) and they were part of constructions at the site of the large stele excavated by us in 2012 just beyond the back of the main temple building (*Akhetaten Sun 18*, no 2, 11–19). Were posts and matting preferred materials for a time in the temple enclosure? We should recall the special place that they had in the history of stone architecture in ancient Egypt, underlying its shapes and design details and recalling the mythical landscape of *primaeva* time. Was this in Akhenaten's mind? That such architecture might have possessed special significance is suggested by the fact that its counterpart mentioned on the second Boundary Stelae was given its own name, Hetep-Aten, 'The Aten is content'. An example of how temporary and inevitably somewhat irregularly constructed tents can maintain an air of dignity at solemn moments is provided by the ubiquitous timber-framed tents of highly-coloured cotton spreads which are erected nowadays in Egypt on occasions of funerals and *mulid*-celebrations of sheikhs.

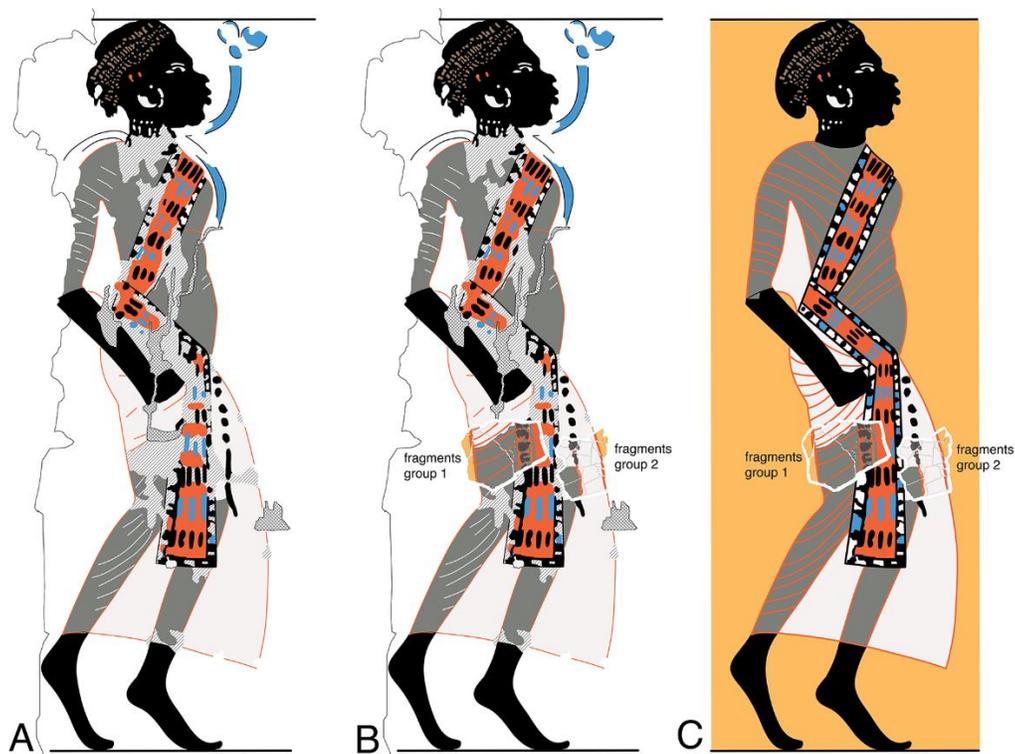
### Further study of the painted gypsum fragments

The fragments of painted gypsum plaster recovered last year from one of the post holes on the north side were further cleaned and then conserved and photographed by conservator Alexandra Winkels. Figure 4 is a new digital rendering. More time has since been spent on finding more precise parallels for the design which, it had been suggested, came from a foreign captive figure. Of particular value is a sheet of painted rushwork which had formed the seat of a chair found in Tutankhamun's tomb (in the Egyptian Museum, Cairo it is JE 62042; Carter no. 457; Figure 5). Figure 6 is a rendering of the Nubian prisoner, its direction reversed to match the direction of our own painted fragments. The archer's bow which stands close to the front of the figure and at the same height has been omitted.

Foreign prisoners in these contexts are not representatives of the peoples whom the Egyptians saw as their enemies; they are representatives of their rulers and so are shown in elaborate attire. In the case of Nubians, they regularly wear two pieces of fine linen, one wrapped around the waist and the other over the shoulders (although this can be omitted). The fineness of the linen sometimes allows a subdued skin colour to show through, which can extend to the whole body except for the lower torso, as if the figure wears a thicker linen loincloth. Lengths of wide coloured sash, predominantly red but with patches of coloured decoration (made from small beads?), are worn over the top. One length diagonally crosses the chest, another is wrapped around the waist and a third hangs down the front. It is possible that all three belong to a single very long sash carefully arranged. One or two long narrow cord-like items also hang stiffly from the waist, painted with a row of small separated black areas (or occasionally red) on a white background and ending in a longer tapering segment which forms the tip. Some representations show clearly that it is an animal's tail (one identification being a giraffe's, giraffe tails being a documented Egyptian import from Nubia). Some figures can wear them attached to the upper arm.



**Figure 5:** The painted rushwork seat of a chair found in Tutankhamun's tomb. The height of the Nubian figure can be calculated from the given dimensions of the painted sheet to be *c.* 34.7 cm. Photograph copyright Griffith Institute, University of Oxford.



**Figure 6:** A somewhat schematic rendering of the Nubian prisoner based on a series of colour images published in 2017 (see reference at the end); B: the same, with our fragments groups 1 and 2 added; C: a full colour reconstruction.

Within the scheme of Tutankhamun's Nubian figure, our fragment group 1 comes from near the top of the man's right thigh, where the lower wrap-around linen piece which reveals the skin colour of the leg adjoins the area where the underlying loincloth conceals it. A red line separates the figure from the yellow background. Whereas on the Tutankhamun figure the creases in the linen are rendered with white lines, on our fragments they are red. The right-hand part of the group 1 fragments is taken up with an area of the vertical sash which hangs down the front. The main panel is red and preserves an area of a wide border which was normally edged with black lines framing a pattern of alternating blocks of colour: black, white and sometimes blue (one certain blue patch has been identified on the Tutankhamun figure by X-ray fluorescence analysis). The painter of our fragments has converted this to a more impressionistic design, dispensing with the black outlines and reducing the pattern to a series of larger black blobs and small blue ones (although much of the blue pigment has not survived).

Our fragment group 2 has been placed not far away and to the right. The outer edge includes the red outer line of the figure, with the yellow background on one side and the greyish-white of the linen on the other. A small area of greyish-blue skin colour occupies the lower left portion of the fragment group. As in fragment group 1, the edge of the skin colour against the linen is not marked with a separate line (this is common on other coloured representations of Nubian prisoners). The remaining motif belongs to the pendant animal tail. The artist has given it a less-than-naturalistic interpretation. The patches of black seem to be strung together on a red line. Instead of a tapering black end, the red line becomes two winding red lines, closely set together.

Foreign captives are often shown roped together by their necks, the 'rope' being one or more stems of the plants which bind them to the 'unification' hieroglyph. The Tutankhamun chair figures are treated in this way. It is not, however, always included. In the case of the painted pavements at the Great Palace at Amarna, the foreign prisoners who are to be trodden on by the king as he processes from one doorway to another are not roped together in this way. (A frontal rope has been added to the reconstructed figures in the display in the Egyptian Museum but this is absent from Petrie's line drawing and seems to be absent from the small surviving original areas of this motif). It is also absent from the figures who were painted on the mud-brick steps — one per step — at the platform building of Amenhetep III at Kom el-Samak, south of Malkata.

Our fragments have been painted swiftly and confidently but with an impressionistic disregard for the details of the Nubian's clothing, especially the sash and animal tail. The artist has instead reduced them to rows of blobs and a mesh of red lines. It is impossible to reconstruct in detail how the artist would have completed the design. In Figure 6C the reconstruction is loosely based on the figure in the Tutankhamun chair covering. If our fragments come from a figure with the same proportions as those on the Tutankhamun chair covering, its height (or length on the floor) would have been 1.20 m. A panel of this size has been introduced into the reconstructed plan of the building (Figure 3), along with a second panel showing an 'Asiatic' prisoner (also derived from the Tutankhamun chair cover).

### **A theory as to why the wood-framed building was set up**

Gradually we are building up a history of the temple, based upon a framework of observations, often stratigraphic in nature. There are obviously two periods of structural activity, separated by the levelling rubble which was put down in or after Akhenaten's year 12 (for the hieratic label, see *Akhetaten Sun* 19/1, 11, Figure 2). But there is also an interim period, represented by the creation of the brick enclosure wall, with its pylon entrance, and ramp which led from the threshold of the entrance down to the first mud floor. This ramp was also buried by the levelling rubble. The pylon entrance was built to conform to the new and higher ground level, which was to be the floor level of the new stone temple. The ramp was built in expectation that it would not be used for long. It made the ground at the front of the temple (soon to be a building site) accessible for a while.

Imagine standing on the threshold at this time, facing along the temple axis. The mud surface of the earlier period would be almost a metre below, although the ground in front of you was now covered by the ramp.

On the left the builders would have started to create the concrete foundations for the small stone palace, building them up to the same height as the entrance threshold on which you are standing. To your right, at the lower level, the wood-framed pavilion has been set up, facing the site of the stone palace-to-be. Suppose — and here we come to a probably unprovable assumption — that the stone palace was replacing one that had been there from the beginning, built either from brick or stone and now demolished. The temple site continues to be used despite the building work. Some provision is needed for the king's presence. The wood-framed palace, hastily erected, is the answer.

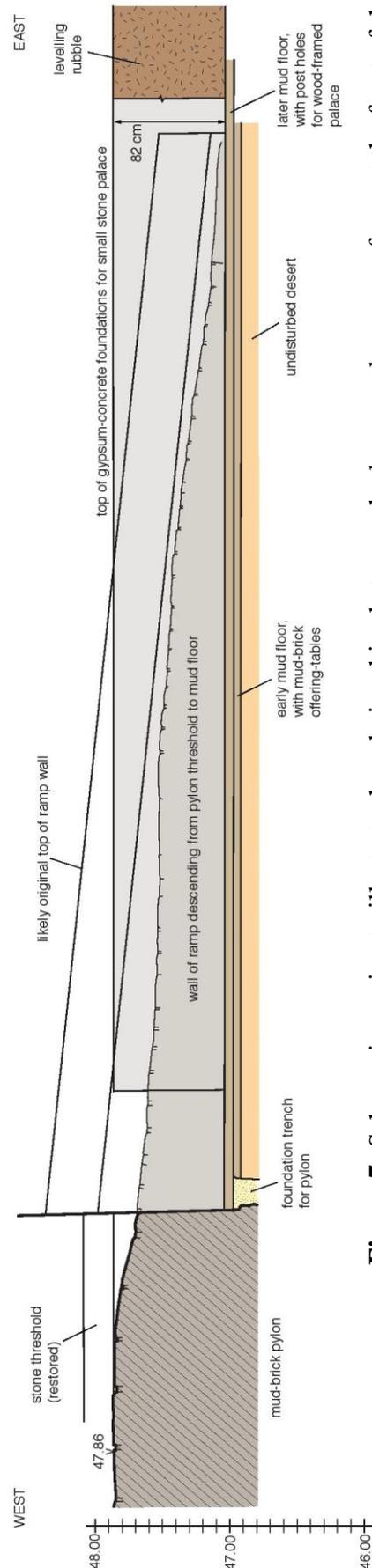
Figure 7 is a reconstructed section which aims to illustrate these relationships. It is based on section drawings (by Anna Hodgkinson and Miriam Bertram) made over the course of the excavations since they began in 2012.

Palaces, even small ones, seem normally to have had provision for appearances of the king, for moments of contact with people outside the royal circle. This could be achieved by a 'Window of Appearance'. The depictions of the temple in the tombs of Meryra and Panehsy include two renderings of the later stone palace, one with a throne and one with such a window (*Akhetaten Sun 23/2*, 11, Fig. 9). The wood-framed palace possessed a mud platform at the northern end, the likely origin of the painted plaster fragments. We cannot tell if a formal wooden window was present here. But the decoration equally fits a picture of the king (with queen and daughters) seated on a canopied throne in a semi-public ceremonial setting. This would provide a base from which the king could move into the open to engage with the cult of the Aten and where, as perhaps with all royal appearances, the moment could be seized for engaging the king's attention on all kinds of matters.

### A link to Princess Meketaten

One item found in the levelling rubble during the Fall excavation season was the complete neck and a large piece of shoulder from a pottery amphora. Written on the shoulder in black ink were two lines of hieratic writing. Prof. Marc Gabolde (Université Paul Valéry - Montpellier III) has kindly supplied the facsimile, transcription and translation (Figure 8). He has added the following brief note:

'The title of the "chief of vineyard" is *ḥry-k3mw*, which means that it cannot have been written after Akhenaten's year 13. This is consistent with my chronology for the Amarna Period since I postulate that Meketaten died in year 13/14. Her sarcophagus (of which fragments were found in the Royal Tomb at Amarna) was no more than 115 cm in length, which means that she was probably very young at death. As her image was added on some of the Boundary Stelae from



**Figure 7:** Schematic section to illustrate the relationships between the lower and upper surfaces at the front of the Great Aten Temple, along the central line of the inner (eastern) ramp which descends from the pylon entrance. Based on a section drawing by Anna Hodgkinson.

year 6, she was probably born in year 5 or the beginning of year 6. So in year 13/14 she was probably between eight and ten years old and not very tall. Wine from her estate does not mean that she was used to drinking alcoholic beverages. The wine was probably intended to be used in temple offerings.



**Figure 8:** Hieratic label on an amphora neck discovered in the levelling rubble in spring 2018. Facsimile, transcription and translation by Marc Gabolde (Université Paul Valéry - Montpellier III).

'The seeming harmony of the royal family was shattered around Years 13/14 when three of the king's six daughters — the two youngest, Neferneferure and Setepenre, and the second eldest Meketaten — died suddenly. The scenes of mourning engraved in the royal tomb show the royal family overcome with grief, weeping before the princesses' (non-mummified) corpses or paying homage to their memory, represented by their statue. Death is depicted in its two real, tangible, aspects: the corpse — that which will disappear; and the statue — that which will survive as a memory. Remarkably, the notion of the afterlife has entirely vanished.'

The Metropolitan Museum of Art, New York, possesses an item which probably accompanied her burial in the Royal Tomb at Amarna (Figure 9). Circular, hollow and made of thin gold plate it measures 4.5 cm (1 3/4 in) in height, with a maximum diameter of 1.5 cm (9/16 in).

Marc has written: 'The so-called gold "situla" (rather probably a terminal of a scepter or part of a handle) of Meketaten in the Metropolitan Museum of Art (Acc. N° 30.8.372, Bequest of Theodore M. Davis, 1915) is probably identical with the "feuille d'or vue par Maspero en 1906 chez l'antiquaire Nahman au Caire" (gold foil seen by Maspero at the antiquity dealer (shop) Nahman in 1906) documented in H. Gauthier, *Livre des rois d'Egypte* II, MIFAO XVIII, 1912, p. 360 n° 3. The conviction is based on the material: gold, and the evidence that the text of the "situla" is exactly the same as that published by Gauthier, including the same rare "error" on the two first signs in the princess's name: the lacking of the hand-sign. It is a very good proof that the object was probably found in the Royal Tomb at Amarna.'



**Figure 9:** A gold terminal from a wooden handle which bears the name of princess Meketaten. Metropolitan Museum of Art, New York 30.8.372. Bequest of Theodore M. Davis, 1915.

### **Odd finds from the temple**

The thick layer of levelling rubble which we remove from the front of the temple in the course of excavation regularly produces 'finds'. One category comprises roughly circular cakes of gypsum (or lime gypsum) mixed with fine grit into which outline shapes have been cut. It is the same material which was used in large amounts at the temple for the foundation layer which was spread wherever stone blocks were to be laid. Its source was local surface deposits on the high desert plateau of loose white powder (gypsite: see Jim Harrell's paper in this issue of the *Sun*). It was, therefore, a material abundantly available at the temple.

Object 41905 is a good example. It is roughly circular, with a diameter of around 19.5 cm. A piece from the top right edge has broken off and is missing. The underside is roughly finished but has a generally convex shape. The upper surface has been smoothed flat with a tool. A design has then been cut into it using a blade. As with most of the pieces of this type the cutting is deep, with many edges almost vertical. The design is that of a man, facing to the left and wearing a 'kilt', stooping forwards, both arms downwards. In his left hand he holds a long thin object which, to judge from parallels (Figure 11), is a plant-fibre brush. He is in the act of sweeping a floor. The foot of the man's forward leg is attenuated so that it merges with the ground line. There seems to be insufficient space at the top, where a piece is missing, for the man's outline to have been completed. The torso is painted red but the pigment does not seem to have been applied to the legs and arms. A part from the break at the top the piece is in good condition with fresh unweathered surfaces. It has evidently been made by holding it in one hand while cutting the design with the other. The fingers of the holding hand have pushed into the gypsum, forcing it up and over the flattened upper surface. This is a characteristic of several similar pieces. In order to complete the piece whilst the gypsum was still moist and workable, the artist must have worked quickly as well as surely.

Object 41905 belongs to a broad category of gypsum pieces which have been found at other parts of Amarna. The Egypt Exploration Society publications describe two groups, one from Maru-Aten and the other from the Great Palace. In both cases they are described as moulds of existing carvings made to offer guidance to inexperienced sculptors. The subject matter includes parts of Aten cartouches and architectural details, both represented amongst our material from the Great Aten Temple. They are not moulds, however. They are, in each case, individually made and illustrate a single detail or small area of design. When broken, as they always are, the design is sometimes hard to identify.

The regular practice in ancient Egypt was that, before a design was carved on a wall, an outline draughtsman would lay it out in black painted line (ink), with perhaps corrections added in red. When a demonstration was needed or practice demanded, design details could be drawn on small drawing-boards or flakes of limestone. Here, at Amarna, it looks as though recourse was instead made to the ready supply of gypsum for the making of guidance pieces for artists. Since the prepared gypsum could not be re-used, one might have expected even more of such pieces since the designs we have are only a tiny sample of the repertoire that was needed for the decoration of the temple.

This assumes, of course, that a utilitarian explanation is the correct one. The temptation is always present to look for deeper meaning when something looks a bit odd. The oddness here is the depth of the cutting, which seems disproportionate to the need to offer guidance in drawing, and the lack of finesse. Would not an ink sketch on a thinner slab of gypsum have served better?



**Figure 10:** Object 41905. Photo by Andreas Mesli.



**Figure 11:** Part of a wall painting from the Great Palace copied by Flinders Petrie. It shows a servant sweeping the floor with a long plant-fibre brush. From W.M.F. Petrie, *Tell El Amarna*. London, Methuen, 1894, Pl. V.

### Notes

A selection of depictions of foreign prisoners found to be useful in the preparation of this text (in addition to those given in *Akhetaten Sun* 23/2, 8–10, Figures 6–8) are: Moamen M. Othman, Mohamed Abd El-Rahman, Eid Mertah, Eslam Shaheen, Mohamed Ibrahim and Ahmed Tarek, 'Il papiro nascosto di Tutankhamon. Indagine Diagnostica Multispettrale sul papiro dipinto della sedia di Tutankhamon.' *Analecta Papyrologica* 29 (2017), 183–98. Thanks to Marsha Hill for bringing this to my attention; N. de G. Davies, *The Rock tombs of El Amarna*, Part V. London, EES, 1908, Frontis (tomb of Parennefer, in colour in the original edition); N. de G. Davies and A.H. Gardiner, *The Tomb of Huy, Viceroy of Nubia in the reign of Tut'ankhamun (No. 40)*. London, EES, 1926, 23–4, Pls XXIII, XXVII, XXVIII; W.M.F. Petrie, *Tell El Amarna*. London, Methuen, 1894, Pl. II; F. Weatherhead, *Amarna Palace Paintings*. London, EES 2007, 19, Fig. 16; 20, Fig. 17; Yasutada Watanabe and Kazuaki Seki, *The Architecture of 'Kom El Samak' at Malkata-South. A Study of Architectural Restoration*. Tokyo, Waseda University 1986, Pls. 3–5. Also W.C. Hayes, *Glazed Tiles from a Palace of Ramesses II at Kantir*. New York, The Metropolitan Museum of Art 1937.

For the shape of open pavilions or kiosks at this time an example is provided in the tomb of Meryra II at Amarna where Akhenaten receives foreign tribute in year 12: N. de G. Davies, *The Rock tombs of El Amarna*, Part II. London, EES, 1905, 38–43, Pl. XXXVII.

On the lexicography of the 'tent/pavilion of matting' see W.J. Murnane and C.C. Van Siclen III, *The Boundary Stelae of Akhenaten*. London and New York, Kegan Paul International 1993, 100, 105, note f.

The online source for Figure 5 is: <http://www.griffith.ox.ac.uk/php/am-makepage1.php?&db=burton&view=gall&burt=&card=457&desc=&strt=1&what=Search&cpos=3&s1=i magename&s2=cardnumber&s3=&dno=25>

For the centrality of wood-and-matting prototypes in Egyptian architecture and early examples from Hierakonpolis: B. Kemp, *Ancient Egypt; Anatomy of a Civilization*, 3rd ed., London and New York, Routledge/Taylor and Francis 2018, 153, Figure 3.21, with cross references.

The parallel material found by the EES is mentioned and illustrated in T.E. Peet and C.L. Woolley, *City of Akhenaten I*. London, EES 1923, 112; Pl. XXXII, figs. 3 and 5; J.D.S. Pendlebury, *City of Akhenaten III*. London, EES 1951, 60; Pl. LXXI.7.

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