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“Documentation and Conservation of King Khasekhemwy’s Funerary Monument at Abydos”

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Egyptian Antiquities Project

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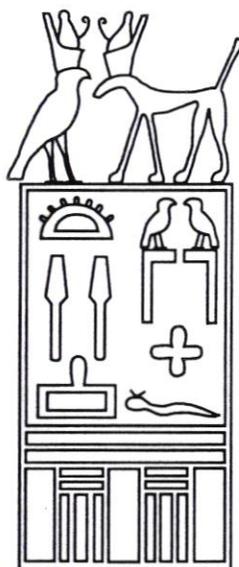
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DOCUMENTATION AND CONSERVATION OF PHARAOH KHASEKHEMWEY'S FUNERARY MONUMENT AT ABYDOS



Progress Report No. 5

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Introduction

This report presents the results of fieldwork undertaken by the EAP funded Sub-project "Documentation and Conservation of Pharaoh Khasekhemwy's Funerary Monument at Abydos" in 2001 and 2002. During this time, two field seasons were conducted, Field Season 3 in Spring, 2001, and Field Season 4 in Fall, 2001-Winter, 2002. The details of the work accomplished in these field seasons are given below.

The contents of this report relate primarily to the archaeological documentation of the Shuneh and its conservation problems; the results of other components of the work have been presented to the EAP elsewhere. The results of the participation of architectural consultants William Remsen and Anthony Crosby in Field Season 3 were incorporated into the Conservation Specifications submitted as part of Progress Report No. 4. The results of the work of the specialist photogrammetry team during Field Season 3 were submitted to EAP in draft form on a set of 13 CD-R disks.

The results included in this report illustrate the fundamental interrelationship of the archaeological and architectural components of the work at the Shuneh. The original sub-project plan of work included systematic archaeological excavation of the standing walls of the Shuneh and a zone extending 20 meters from the walls, both inside and outside the enclosure. Such exposure permits not only the fundamentally important full definition of the walls themselves, but also permits definition of the stratigraphy relating to the history of the walls (erosion episodes, collapse, etc.) and the events and processes that have affected and continue to affect them. In addition, the excavations allow the history of use of the enclosure to be defined, and understanding this history contributes in a significant way to the understanding of the present condition of the structure. The work undertaken in Field Seasons 3 and 4 has made substantial progress toward the sub-project's goals. Excavation has revealed previously hidden but very significant structural weaknesses and other condition problems adversely affecting the enclosure's walls, as well as previously completely unknown but exceptionally well preserved features relating to the history of use of the monument. Newly revealed conditions and features, adding significantly to the record of the nature and current state of the Shuneh, must be taken into account in architectural conservation planning. Continued systematic archaeological work is key to reaching a full understanding of both the present condition of the monument and its original state and will permit the continued development of fully comprehensive stabilization and conservation plans. In some circumstances, architectural stabilization will benefit archaeological investigation, such as where the implementation of localized stabilization solutions will permit the completion of the archaeological excavations necessary for the full definition and evaluation of the walls but that are presently stymied by dangerous conditions.

This Progress Report brings up to date the reporting on the work of the Sub-project undertaken up to the point when a restructuring of the plan of work and budget was proposed to (and subsequently was accepted by) the EAP. Future reports will relate to the reporting schedule laid out in that revision to the plan of work and budget.

The work describe here was undertaken under the authority of and with the kind permission of the Supreme Council of Antiquities. Sincere thanks are due to the members and representatives of the SCA during Field Seasons 3 and 4, Dr. Gaballah Ali Gaballah, Secretary-General, Dr. Yahia el-Masry, Director General, Sohag Governorate, Mr. Ahmed el-Khattib, Chief Inspector, Balliana, Mr. Magdy el-Bedry, Inspector of Antiquities for Field Season 3, and Mr. Fendy Ahmed Mahmoud, Inspector of Antiquities for Field Season 4.

Thanks are due also to the administrators and staff of the Egyptian Antiquities Project of the American Research Center in Egypt, in particular Robert K. Vincent, Jr., Director, Cynthia Shartzter, Grant Administrator, Michael Jones, Project Manager, Jaroslaw Dobrowolski, Technical Director, and Alaa el-Habashi, Assistant Technical Director. The EAP has provided not only substantial funding to make the work reported here possible, but has, in addition, been a source of practical advice, technical guidance and helpful critique, moral support, and, last but certainly not least, scaffolding essential to the stabilization and conservation work at the Shuneh.

Mention should also be made of the essential support provided to the Sub-project during the field seasons covered in this report by the administration and staff of the American Research Center in Egypt, in particular then Cairo Director Mark Easton, Deputy Director Madame Amira Khattab, Finance Director Ray Salamanca, Finance Manager Hussein Abdel Raouf, Assistant Finance Manager Madame Nadia Saad, and Office Manager Amir Abdel Hamid.

Field Season 3, Spring, 2001

Introduction

Supported in part by a sub-grant of the Egyptian Antiquities Project of the American Research Center in Egypt, the EAP Sub-project "Documentation and Conservation of Pharaoh Khasekhemwy's Funerary Monument at Abydos," working under the auspices of the University of Pennsylvania-Yale University-Institute of Fine Arts, New York University Expedition to Abydos, conducted its third field season between 10 February and 1 May, 2001. The work of Field Season 3 consisted of the following components: (1) survey and excavation in the interior and along the exterior perimeter of the Shunet el-Zebib, (2) architectural documentation and conservation work on the walls of the Shunet el-Zebib, (3) conservation and detailed study of the wood of the Early Dynastic boat excavated during the Sub-project's Field Season 2 (Spring, 2000), and (4) documentation and analysis of artifacts recovered during the field season.

The on-site staff of the sub-project for Field Season 3 consisted of: Matthew Adams, Sub-project Associate Director, Laurel Bestock, Michelle Marlar, Heather McCarthy, and Emi Maia Nam, excavation supervisors, Christina Kanani Paraso, surveyor, Robert Fletcher, photographer, Holly Barratt, registrar, Heather Harvey, scientific illustrator, Carla Gallorini and Claudia Farias, ceramics analysts, William Remsen, chief architect, Anthony Crosby, mudbrick conservation specialist, Robert Letellier, Adam Boron, Andrej Wrobel, and Marta Borowiec, architectural photogrammetry specialists, Deborah Schorsch, conservator, and Cheryl Ward, ancient boat expert.

The Work of Field Season 3

Excavations Inside the Shunet el-Zebib

Excavation work in the interior of the Shunet el-Zebib concentrated in two primary areas (**Figures 1 and 2**). The first was in the northwestern part (**Figure 3**). Nine excavation units were located here (Operations 1, 2, 4, 5, 6, 8, 9, 14, and 16), as indicated in **Figure 2**.

The results of the excavations in the local northern part of the Shuneh are very significant for providing important new information about the condition of the walls and for understanding the nature of the interior of the monument during its original period of use in Dynasty 2 and its subsequent history. Excavation revealed the lower portion of the local west wall of the main enclosure (**Figure 4**). A distinct erosion line is evident in the mudbrick masonry of the inner face of the wall, indicating the line of the top of long stable sand deposits that were in place against the wall prior to first excavations in the 19th Century. At the base of the wall in Operations 14 and 16, small areas of the original facing mud plaster and whitewash were preserved, demonstrating that the interior of the

monument was plastered and whitewashed as was already known to have been the case for the exterior. Despite the erosion of the original plaster from the wall that implies exposure to the elements for a substantial period of time, the brick masonry in this area appears to be in relatively good condition. A large area of mud plaster floor was revealed adjacent to the wall, extending some meters to the northeast (**Figure 5**). This floor connects to a large oval basin feature, the interior of which was coated with greyish white plaster, similar to the finishing plaster on the wall faces (**Figure 6**). The northwest portion of this plastered basin was encountered in Operation 5 and the southeast portion in Operation 14. Adjacent on the northeast to the plastered basin was another large basin feature (**Figure 6**), the edges of which were defined by bricks set into the mud plaster floor at an angle. This basin feature was somewhat irregular in shape and was filled with broken mudbricks, brick debris, sand, and gravel (**Figure 7**). The northwestern portion of this feature was encountered in Operations 8 and 5, and it appears to have extended into Operation 6 as well. A section of basin with angled brick edges was encountered in Operation 2, and it is possible that this area represents the southeastern portion of the same feature seen in Operations 8 and 5. Areas of mud plaster floor were also preserved in Operations 8, 6, and 9. In Operation 8, near the northwestern corner of the unit, a large deposit of dark brown alluvial soil was found, piled up in a depression in the mud plaster floor. In Operation 16 in the northwestern portion of the unit, a small area of loosely arranged mudbricks was found.

The combination of features in the northern excavation area suggests that the interior of the Shuneh may not have been formally finished and may have retained the character of a construction site, until the time of the cessation of original activity there. The basin features appear to have been used for, in one case, mixing mud plaster and/or mortar and, in the other, mixing the facing plaster used to finish the interior and exterior wall surfaces of the enclosure. The pile of alluvial soil and the remains of stacks of bricks also almost certainly relate to construction activities.

Significantly, the character of the interior of the Shuneh differs from the situation in other Early Dynastic royal enclosures at Abydos, in which the interiors, where excavated, were characterized by continuous smooth mud plaster floors. The unfinished interior of the enclosure may relate to evidence found during the work of the German Archaeological Institute in the tomb of Khasekhemwy at Umm el-Qa'ab, where it appears that a major expansion of the tomb was planned but not built.

No evidence was found for any major phases of activity after the Early Dynastic period until the late Third Intermediate Period, from which there is abundant activity for the burials of sacred ibises inside the Shuneh. At this time, many large and small pits were cut in the interior, into which were placed ceramic jars containing sometimes a single and sometimes multiple ibis mummies. It is clear that in the approximately two thousand years between its construction and the time of the ibis burials, a significant amount of wind deposited sand had accumulated, since ibis jars were found in situ in some deposits of such sand. In many cases, however, the burial pits penetrated to and cut through the original floor and other features. It seems likely that later episodes of ibis burial disturbed earlier similar deposits, since in many instances deposits were found with many

of the jars broken and the remains displaced. A large deposit of ibis jars was found in Operation 4 (**Figure 8**), and smaller groupings in Operations 6, 8, 9, and 14.

Evidence was found in the northwestern part of the Shuneh for at least two major episodes of pitting, apparently unrelated either to the Dynasty 2 activity or to the burials of sacred ibises. It is likely that these pitting episodes are related to old excavations inside the Shuneh. One set of pits, oriented northwest-southeast, generally penetrates only as deep as the original Dynasty 2 surface and associated features. The other, oriented southwest-northeast, cut through all Dynasty 2 and later features and penetrated quite deeply into the sterile substrate underlying the Shuneh. Although the publication record of old excavations inside the Shuneh is poor, it is tempting to identify those pits that did not cut through the floor and associated features with the work of the Egypt Exploration Society in 1904 and the more destructive pitting with the work of the agents of Auguste Mariette in the mid-19th Century. Without documentary evidence, however, this attribution remains speculative.

The second major area of work inside the Shuneh this season was in the local south, between the south and southeastern gateways (**Figures 1 and 2**). Five excavation units were located in this area (Operations 13, 17, 20, 22, and 27). Just inside the south gateway, in Operation 13, two large areas of grey plastered mud were found, the surfaces of which appear identical to that of the large plastered basin in Operation 5 in the northern excavation area (**Figure 9**). These remains probably represent another similar basin feature in the southern portion of the Shuneh. This feature had been cut through by pits related to the deposition of sacred ibis burials, and a large deposit of ceramic jars containing ibis mummies was found in the northeast corner of Operation 13, continuing into the southeast corner of Operation 17.

Operations 22 and 27 concentrated on the re-excavation and documentation of the cult building (**Figures 1, 10, 11**). This structure was excavated originally by the Egypt Exploration Society in 1904 and again by John Garstang in 1909. The results of the sub-project's re-excavation were significant. In a number of the interior rooms, the original mud plaster floor was found to be well preserved, as well as the original mud plastering and whitewash on some wall surfaces. In the southern portion of the structure, the mud plaster floor appears to have been renewed several times. In the southern corner room, organic stains and the remains of what may be incense on the floor indicate that this room may have been the focus of the cult activity in the structure.

In Operation 27, between the wall of the cult building and the main enclosure wall of the Shuneh, patches of the original mud plaster floor surface of the monument were preserved, covered by deposits which contained many fragments of uninscribed mud sealings and jar stoppers, as well as a few bearing the impressions in the mud of seals. Several were found that bore the name of king Khasekhemwy, and one that had a serekh of Netjer-khet, the Horus-name of king Djoser of Dynasty 3. The presence of the name Netjer-khet here is of considerable historical significance, as it corresponds with the discovery by the German Archaeological Institute of sealings of Netjer-khet in Khasekhemwy's tomb. The evidence from both the tomb and the enclosure indicates that

Netjer-khet conducted the funeral ceremonies of Khasekhemwy and was responsible for his entombment. The obvious implication is that Netjer-khet was Khasekhemwy's direct successor.

Work in Operations 22 and 27 also showed that the cult building was had a niched façade on at least three of its four sides (**Figure 11**). Plastered and whitewashed niches on the front, the local east wall, were known from the British work of 1904 and earlier (1986) work of the Pennsylvania-Yale-IFA Expedition. However, excavation this season revealed the remains of plastered niches on the exterior of the local south and west walls. The local north wall is partly destroyed and the preserved portion is highly reduced, and no evidence of niching was detected. On the local south and west, the niching appears to be the simple variety, whereas on the local east wall, a pattern of three simple and one complex niche, repeated across the façade is the case. This pattern corresponds with that of the niching on the exterior of the main enclosure wall of the Shuneh and the other known Dynasty 1 and 2 funerary enclosures at Abydos.

Excavation Around the Exterior Perimeter of the Shunet el-Zebib

Another important area that was investigated this season lay outside the Shunet el-Zebib on the local east side, south of the Early Dynastic boat graves excavated in Field Season 2. Four excavation units were opened here, Operations 23, 24, 25, and 34. The aim of these excavations was to investigate the conditions characterizing the exterior perimeter of the Shuneh, including the status of the perimeter wall, any adjacent Dynasty 2 surfaces or other features, and whether any additional boat graves are located southeast of Boat Grave 14.

Excavation in Operation 23 revealed the lower portion of the perimeter wall of the Shuneh, which was found to still have large patches of mud plaster and whitewash preserved on the wall face (**Figure 12**). As has been seen in previous work in other areas, the base of the perimeter wall was determined to have been built directly on natural compact desert sand, without any substantial foundation. No original Dynasty 2 floor was preserved in this area, largely due to the presence of a large number of burials in wooden coffins which appear to date to the Third Intermediate Period. Virtually no wood was preserved from these coffins, almost all having been reduced to frass by insects. The surfaces of the coffins had been plastered and in some cases painted. A number of the coffins had been disturbed in ancient times, and there were scattered human skeletal remains found throughout Operation 23. Among the coffin remains there was also found a deposit of dog skeletons and one ibis jar.

Work in Operations 24 and 34 revealed the presence of a very substantial mudbrick structure with a distinctive plan (**Figures 14, 15**). Although not entirely excavated, the exposed remains suggest that the structure was square, with a circular vaulted central chamber. The diameter of this chamber was at least 5.5 meters. It appears to have been floored, at least in part, with mudbricks. Few artifacts were found in clear association with this structure, and its purpose and exact date remain obscure, although it does appear to be much later than nearby Early Dynastic monuments. Comparisons of the plan with

structures excavated by the Egypt Exploration Society in the Abydos North and Middle Cemeteries in the years prior to the First World War (published in *Cemeteries of Abydos I-III*) suggest that this structure is, in fact, the remains of a large vaulted tomb. This type of tomb is known to have been constructed at Abydos from the late New Kingdom through the Late Period. In Operation 25 a mud basin feature was found which appears to have been related to the construction of the large building in Operations 24 and 34.

The coffin burials adjacent to the perimeter wall of the Shuneh and the large vaulted tomb have destroyed any evidence of earlier constructions in the area. Additional excavation east of Operations 24 and 34 will be required to determine whether more boat graves exist in this area.

Architectural Documentation and Conservation Work in the Shunet el-Zebib

As part of the sub-project's program to document and conserve the funerary enclosure of king Khasekhemwy, a number of important tasks were undertaken in Field Season 3. First, a team of photogrammetric specialists undertook the systematic documentation of all exposed architecture of the Shunet el-Zebib (**Figure 16**). After processing and analysis, the result is the fully rectified set of elevations (already provided in draft form on CDs to the EAP) and highly detailed three-dimensional data on the walls of the Shuneh, as they are currently exposed. The results of the photogrammetric survey work provide a precise record of the existing condition of the monument, against which the future condition can be compared, and as a baseline for conservation work.

Architectural conservation specialists also returned this season to continue the evaluation of the conservation needs of the Shuneh. A major temporary stabilization measure was initiated, namely the construction of sandbag supports against the inner face of the local east wall of the main enclosure (**Figure 17**). As reported to EAP previously, this wall is seriously undermined by animal burrows and weakened by structural cracks, and it was determined that the erection of temporary stabilization buttresses would protect the wall in the short term, until the implementation of permanent stabilization solutions in the very near future. (Commencement of the implementation of stabilization solutions in this area is included in the revision to the plan of work approved by EAP in November, 2003.) Four sandbag buttresses were erected, and, in order to provide a stable platform for each, a small excavation was conducted adjacent to the east wall. These are indicated as Operations 15, 18, 21, and 35 in **Figure 1**. These excavations were conducted according to standard archaeological procedures, and the results were fully documented. This area appears to be highly disturbed, and no in situ features belonging to Dynasty 2 were identified.

A void in the local north wall of the main enclosure was also excavated, as Operation 12 (**Figures 18, 19**). A gap had existed in the wall here for many years, as it is visible in photographs from the Egypt Exploration Society work in 1904 (published in *Abydos, Part III*). Additional brickwork collapsed in 1996 or 1997, as a result of torrential rains at that time, and this new collapse was removed. The area was cleaned and the preserved wall fabric in the area closely examined. No remains of plastering or other direct

evidence of the use of the area during the late Roman/Byzantine "Coptic" occupation was detected, although the relatively flat surface left in the brickwork revealed by excavation suggests the gap in the wall may have originated as such. The area was evaluated by the architectural conservation experts and a implementation of a stabilization solution is proposed in the revised plan of work approved by EAP in November, 2003.

In addition, a number of small-scale conservation methods were tested, including (1) the filling of small structural cracks in the local east wall, exterior, with mud mortar of similar composition to the original, with the aim of stabilizing one of the pilasters which form part of the niched façade of the wall, (2) the filling of a small void in the inner face of the local west wall with new brickwork, and (3) the capping of a small section of the perimeter wall with new brickwork, which will form a sacrificial layer, protecting the original brickwork of the wall from water erosion. In addition, experiments were conducted in making new mudbricks, in order to match the original composition of the bricks in the Shuneh as closely as possible. Details of these techniques are included in the Conservation Specifications already submitted to EAP as part of Progress Report 4.

Conservation and Study of Early Dynastic Royal Boat Remains

The wooden remains recovered from Boat Grave 10 during Field Season 2, Spring, 2000, were studied in detail by Cheryl Ward, expert in ancient Egyptian boats. Details of the construction method were studied, the evidence showing that the boat's planks were "sewn" together with ropes passed through mortises cut into the planks, and that the seams between the planks were sealed with bundles of fibrous material which may be reeds. All planks were drawn and photographed in detail, and all wooden remains were cleaned and consolidated by conservator Deborah Schorsch. After the study and conservation treatment were completed for this season, all the wooden planks were returned to specially prepared containers for storage under closely monitored conditions in the magazine of the Pennsylvania-Yale-IFA Expedition's house.