



NEKHEN NEWS

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Photo: J. Reissler

Fifth Dynasty Findings

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Hierakonpolis in 2015

Time Line	
Period	Date BC
Badarian	4400-4000
Naqada I	4000-3800
Naqada II	3800-3300
Naqada IIIA	3300-3050
Unification/Narmer	3050
Dynasty 1	3000-2890
Dynasty 2	2890-2686
Old Kingdom	2686-2160
First Intermediate	2160-2055
Middle Kingdom	2055-1650
Second Intermediate	1650-1550
New Kingdom	1550-1069
Third Intermediate	1069-656
Late period	664-332
Ptolemaic	332-30
Roman	30-AD 395

Site of Fifth Dynasty inscription, looking west.

El-Kilh sites investigated by Wendorf in 1967 (Wendorf Archive, British Museum).

Thank You for Everything!

We are deeply grateful to our loyal Friends of Nekhen for support that has allowed us to conduct fieldwork without interruption for 20 years! In particular, we wish to express our gratitude for the generosity of Tom & Linda Heagy, Grier Merwin, Joe Majer, Bonnie Sampsell, Patricia Perry, Crennan Ray, Dolores Schiffert, Art Muir, Dagmar Bird, Lyn Stagg, Mel & Joann Hunt, Netty & Bill Adams, David Aid, Richard Fazzini & Mary McKercher, Eileen Nash, Andrew & Elizabeth Beeston, Barry Fitzpatrick, Mike Stammers, John Wall, Angie Gillespie, Leanna Gaskins, Robert Metzger, and Peter Robinson. We pay tribute to the memory of Daphne (Rikki) Breem for her support over the years and for the legacy she left us for the future. We are also grateful to grants from the Japanese Academy for the Promotion of Science for excavations at HK11C, the White-Levy Program for Archaeological Publication for study of the Nubian cemeteries, and the Institute of Bioarchaeology for the much needed new storage boxes. We thank the Ministry of Antiquities for permission to undertake our work at Hierakonpolis. The assistance of our inspectors is also gratefully acknowledged along with that of our colleagues at the Edfu Inspectorate and the magazine at Elkab. Thank you one and all!

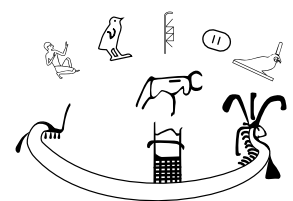
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Boxing Day

—Renée Friedman, Director, Hierakonpolis Expedition

First and foremost: Thank You! With your support and a grant from the Institute for Bioarchaeology, we were able to take delivery of new plastic storage boxes on 3 March 2015. The truck arrived late that night (they got lost), so we had to wait until the light of day to appreciate what truly splendid containers they are—thanks again! Then we got to work, reboxing as much of our skeletal and faunal collection as time allowed. We couldn't do it all this year, but we managed to replace the worst of the old termite ridden boxes and get them hauled away for immediate burning. Hurray!

The boxes were the icing on the cake of a long and informative season. Highlights include the spectacular, if perplexing, discoveries made by the rock art survey (cover, page 18) along with the many stimulating insights from the investigation of a wide range of materials.

Excavations to close the gap at HK6 yielded not only new views on the complex arrangements within the elite cemetery (page 4), but also—at long last—a giraffe (back cover), even if it is not necessarily the one we wanted! Progress was a little slower than usual this year since a rather eye-watering pay increase for the workmen (times are tough in Egypt) limited our crew size. Nevertheless, we were still able to find the time (and afford the manpower) to try out some new technology on an old tomb. An accurate 3D model of Tomb 2 has now been created, which we think is quite effective (page 10). Give it a try.

Meanwhile, over at HK11C, things in the food factory remained decidedly fishy (page 12), yet the destination of all that fish remains a mystery. We thought an area at the north end of HK6 looked a promising place

for a fish feast, but limited test excavations there produced only ash. While this discovery is certainly intriguing, it doesn't answer the question. So, the search continues.

Throughout the season, a number of specialists studied various aspects of the Nubian C-Group cemetery as we prepare for the final publication. We have the space in this volume to share with you only a small portion of the large body of fascinating information this work has generated. Summarizing some of the latest and most stimulating findings are articles on their lovely leather (page 19), the Egyptian pottery they used (page 21), and their experience in life according to the analysis and comparison of their bones (page 23).

The study of material in the field continues to provide a better understanding of this remarkable site, but objects from Hierakonpolis that have found their way to museums around the globe also have interesting stories to tell. In this issue we feature an overview of the marvellous collection in Oxford (page 24) and some new additions to the list in Berlin (page 26).

We can count many gains this season (including a new well, see page 30), but we also acknowledge some tragic losses (pages 28–29). In addition, Dusty, our cat, went AWOL from the haven of Chicago House in March and has yet to return. We will miss them all.

With the highly productive season of 2015 we mark our 20th year of continuous research and excavation at Hierakonpolis. As we look toward the future, we thank all of our Friends for their continued interest, trust and support. 🐾



Dustin Peasley on box replacement duty.



Chucking out the old.



Bringing in the new.

Complex Arrangements: HK6 in 2015

—Renée Friedman, Director, Hierakonpolis Expedition; Xavier Droux, Lincoln College, Oxford, UK

After all of the excitement last season caused by the discovery of Tomb 72, the work this year inevitably seemed somewhat sedate, but this belies the significant amount of information gleaned from the architectural traces uncovered. We had two objectives in 2015: 1) investigate the architectural surroundings of Tomb 72; and 2) complete the east-west transect across the cemetery by excavating the remaining 8m-wide strip.

The environs of Tomb 72 were first on the agenda. This tomb is situated somewhat off-center within the large rectangular enclosure, called Structure F. We had long known there were two construction phases for this structure from the two rows of small wooden posts set within two different trenches that make up its walls. But other than the tomb itself, what was within these walls was only vaguely understood.

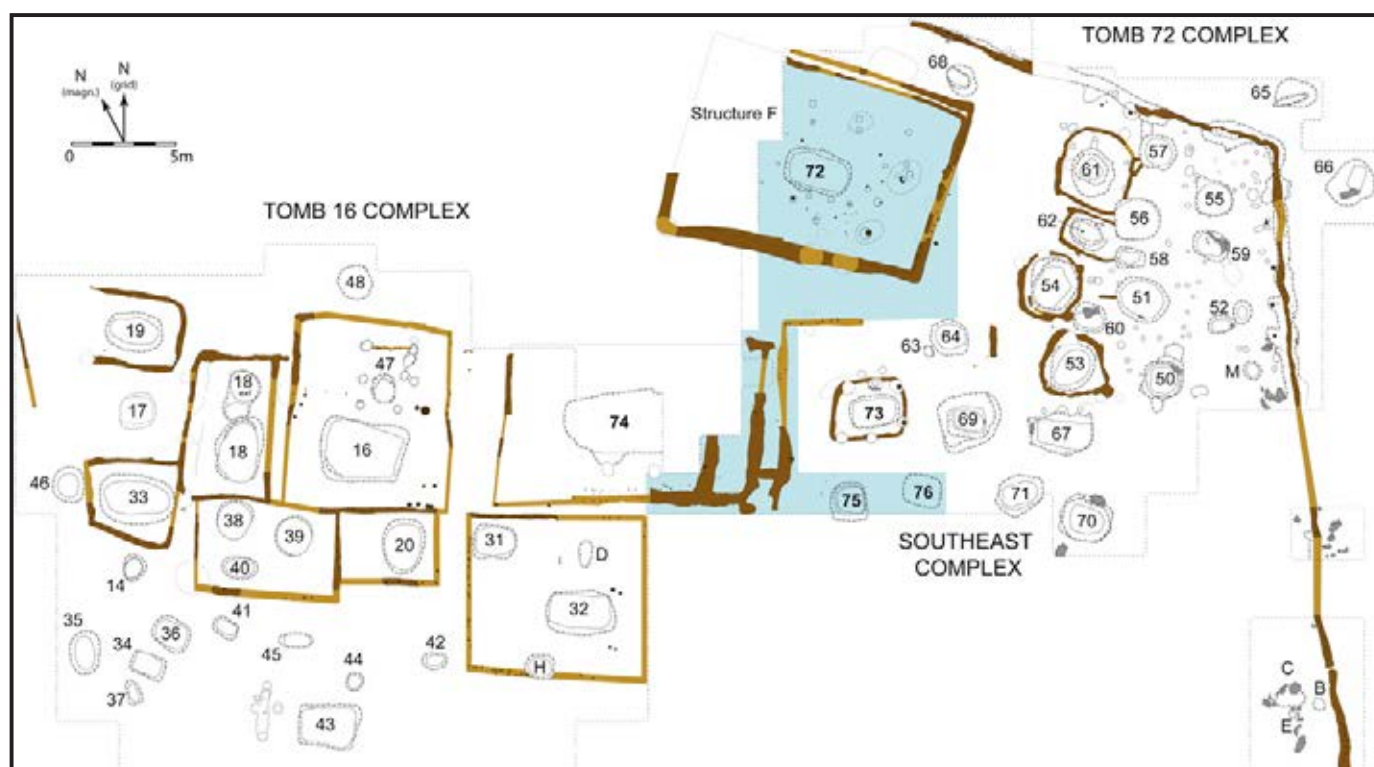
Concentrating on the eastern half, we gradually stripped away the gravels down to the underlying brown silts (the chocolate layer), where postholes could be more easily detected—and detected they were! Many (too many) postholes were found, some still with remnants of their wooden posts. Detecting their original arrangement proved much harder, since no clear pattern could be observed. Complicating the issue, posts and postholes at different depths (some with evidence of burning) indicated

there were at least two phases, but newly-made disturbances had obscured much of the evidence.

For the moment, it *appears* that there were originally four large wooden posts on the north side and east side of Structure F. Some had been clearly replaced by new ones in somewhat different positions and at different depths. These posts most likely supported a roof or walls for an internal building. The configuration on the south side remains confused and the western side is still to be investigated.

Further evidence of architecture was also found close to the edge of Tomb 72. Here, several wooden columns had presumably supported some sort of structure above or around the tomb. Smaller posts, not reaching down to the silt layer, were also detected in section, suggesting some sort of fence, but their association with the larger posts is vague at best, and alignment remains elusive. It is hoped that once the interior of Structure F is entirely explored, things will become clearer.... Fingers crossed.

During the second part of the season, we concentrated on closing the gap. Excavations were undertaken in the area between Tomb 73 and the feature we now call Tomb 74. Both were uncovered last season, but with so much else to report we did not discuss Tomb 74. This was mainly because



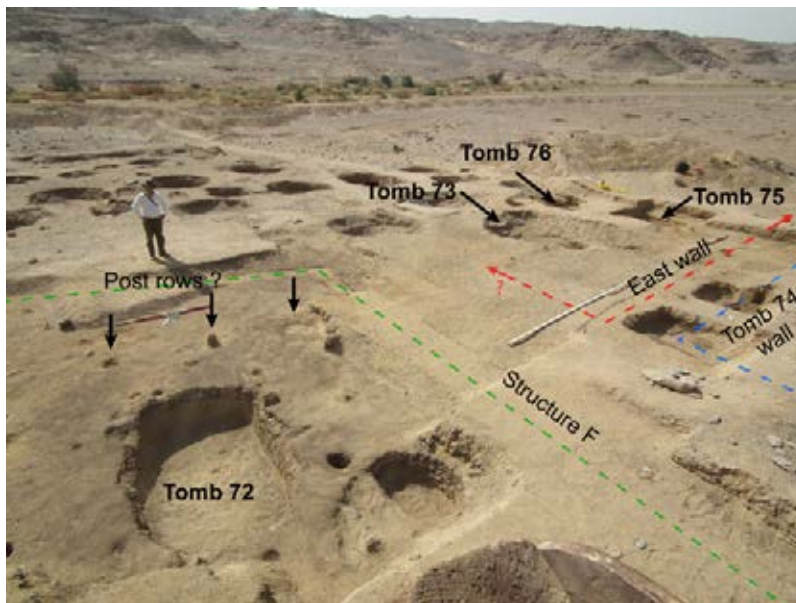
Map of HK6 showing complex arrangements. Areas investigated in 2015 are shaded.

there wasn't much to say then, but there is now!

In 2009, investigations directly east of Tomb 16 revealed part of a post wall and indications of a large depression filled with rain-laid silts. This clearly plundered depression didn't look very promising, so we ignored it for as long as we could. In 2014 we bit the bullet.

Exceeding our already low expectations, the excavations revealed a large crater (at least 4.75 by 3.0m) extending down 1.3m all the way to the irregular natural bed rock. No clear indication of the original tomb edges could be determined with certainty and, except for one black-topped beaker in the upper fill, it was essentially empty. This left us puzzled. Is what we now called Tomb 74 really one large tomb, or does the crater incorporate several smaller graves? How did it come to be in this sorry state? Is this the result of hyperactive looters, or was the tomb being prepared for reuse, with the crater intended for a brick-lined chamber (like Tomb 16) that was never completed? Given its demolished condition, it seemed we would never know more about it.

Therefore, it came as a bit of a surprise this year to find that the enclosure wall for Tomb 74 was remarkably well preserved (at least in part). Approximately 4.5m to the east of the presumed tomb edge, indications of a wall trench running north-south emerged. Even more astonishing, a section of about 1m in length was completely intact! By carefully cutting a section we were able to see how the wall had been constructed from two rows of posts and three layers of matting (see box on page 6). Originally 20cm wide, this was a strong wall and represents more than ephemeral architecture.



View from the ladder of the area investigated this season at HK6.

was discovered but was more difficult to trace because the posts were poorly preserved. The foundation trench, however, suggests that this wall continues southward beyond the excavation area, while, in the north, it turns a corner toward the east and runs along the north side of Tomb 73. It may therefore form part of an enclosure surrounding Tomb 73, the newly discovered Tombs 75–76, and potentially much more.

Tomb 75, small and square, was found badly plundered and pretty empty, except for one winged arrowhead. Happily, Tomb 76 was more satisfying. This larger rectangular tomb (1.75m by 1.5m; 1.13m deep) was also disturbed, but the lower legs and feet of one of its occupants

were still in situ on matting that had been sprinkled with red ochre. Finds included 11 arrowheads (one tanged and ten transverse) along with fragments of several pots, including one beautiful red polished bottle, which was mended to completion through the perseverance of Dustin Peasley.

But the real treasure came from above the tomb: a tiny ivory figurine of a giraffe, which may have originally been carved atop a comb (see back cover). Although we'd been hoping for something larger—more



Arrowheads from Tombs 75 and 76.



A giraffe, at last?

along the lines of a real full-sized giraffe—until that turns up, this little guy will do just fine. It may only be 3.2cm high, but its eyes have been carefully drilled on both sides. The delicate extensions on the head appear to com-

bine the giraffe's ear with its ossicones (horn-like projections from the skull). Although one is broken off at the tip, the other is complete and cannot be confused with the horns of an antelope, leaving no doubt about its identity, even though combs with undisputable depictions of giraffes are not common. In fact, only two are known, both discovered in Lower Nubia. So it seems that the only thing rarer than a giraffe comb is an actual giraffe (only a few bones are known

from Adaima)—a situation we hope to remedy very soon!

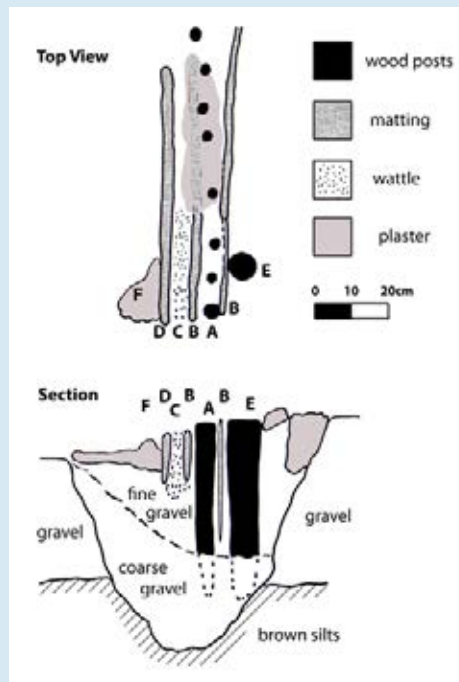


Red polished bottle from Tomb 76.

In the meantime, the architectural traces discovered this year have provided important new information about the layout of the cemetery and given us much to ponder. The many walls suggest that there may be three separate funerary complexes within our transect: the Tomb 16 complex, the Tomb 72 complex, and part of another one to the south, perhaps focussed on a main tomb currently hidden beneath our spoil heap. Adding to this complexity is Tomb 74. Since its enclosure walls do not connect with any other walls in the Tomb 16 complex, it may be a later addition to this complex or a separate entity altogether. All this suggests that the layout of the cemetery was neither straightforward nor static. Thus, as we close the gap and expose the interfaces, it looks like arrangements are set to become even more complex (with even more complexes) than we had originally anticipated. 🏠

How to Build a Wall at HK6

First, dig a deep (c. 50cm) trench through the gravels into the brown silts. Make it about 80cm wide at the top and 20cm wide at the bottom. Place a series of small wooden posts (a) in the center of the trench about 10cm apart and then tie reed mats (b) onto both sides. Pack with fine gravel for support. To the eastern face add a layer of wattle made from the stems of the river plant, *ceruana pratensis*, mixed with mud (c). Make this layer about 10cm thick. Cover the wattle with another layer of matting (d). Along the west face, install a row of larger posts (e) at 1m intervals to provide stability. Finally, coat the outer faces of the wall with white plaster (f). Your wall should now be about 20cm thick and its foundations should last for 5000 years (money-back guarantee not included). 🏠



The intact wall segment of Tomb 74 in plan and section.

Clean and Consolidated: The Statue from Tomb 72

—Richard L. Jaeschke, PACR Accredited Conservator, UK

Modern ivory is such a hard, strong material that it may seem surprising how seldom it survives on archaeological sites; however, its chemical composition and structure mean that it has inherent weaknesses. Egyptian ivory comes from the tusks of elephants and the teeth of hippos, which are built up in concentric layers of hydroxyapatite, a dense form of calcium phosphate, interspersed with radiating tiny tubules. These tiny openings make the ivory porous and susceptible to moisture, causing it to swell unevenly and for the different layers to fissure and break. Meanwhile, the phosphate material is prone to chemical attack by acids, which can be formed from the decomposing organic matter in burials, leaving it powdery and weak. Salts, which migrate with groundwater, can penetrate the ivory and crystallise out as the surface dries, twisting its internal structure and creating fissures and flakes. Many of the salts are hygroscopic, trapping moisture from the atmosphere, and accelerate the destruction. Faced with all these potential threats for more than 5000 years, it is astonishing how well the fine ivory objects discovered last season in HK6 Tomb 72 have survived.

This season I was asked to check on the condition of these ivories, now kept in the Ministry of Antiquities store-room at Elkab. In particular, I was asked to stabilize the amazing ivory statuette and clean out the compacted dirt that had been left in place between its legs and in the pulp cavity at the head.

Once set before me, I did my best to make the patient comfortable while I checked the vital signs. I then carefully cleaned away the surface salts and sand grains still

in the cracks that might be hiding potential issues. For this delicate procedure, small swabs of cotton wool were lightly moistened with a cleaning solution composed of distilled water with a tiny bit of a non-ionic detergent and a small amount of a water-softening agent to loosen the calcareous deposits. The solution was mixed with an equal amount of acetone which reduced the quantity of water present and helped to remove harmful salts. Once cleaned, areas that looked weak or questionable were consolidated with a solution of Paraloid B72 (a very stable acrylic resin copolymer) in acetone, which was readily absorbed by the porous ivory. This was allowed to set hard and then the delicate work of cleaning out the compacted sand between the legs could begin.

Using the tip of a polished scalpel and the fine point of a bamboo skewer, grains of sand were gradually picked loose. Acetone was used to help soften the deposits and a fine brush lifted up the loosened grains.

Once the sharp saw marks on the legs and the rather delicate curve at the groin were revealed, cleaned, and consolidated, I moved to the head. This was a little trickier. The opening was harder to access and there was no way of knowing how deep the natural pulp cavity of the hippo's tooth would be or what secrets it might hold. Luckily, its depth was moderate and the sand came out of it easily. Phew!

The operation was a resounding success, and it was now time to address the long term welfare of the patient. To promote stability, some of the deeper cracks and fissures were filled with a mixture of glass micro-balloons and a Paraloid B72 solution in acetone. As well as making it easier to see and understand the object, this provides support without adding much weight and can be easily removed with acetone in future.

Now cleaned, consolidated, and treated to just a tad of cosmetic surgery, he already looks like he has the confidence to handle the dangers that face an ivory object. Who knows? With any luck, he might just survive for another 5000 years! —



The statuette cleaned and conserved.



Richard cleaning the ivory statuette.

Hierakonpolis Hippo Round Up!

—Xavier Droux, Lincoln College, Oxford, UK

Wild animals were often represented in the material culture of the predynastic period. Amongst them, the most popular was the hippopotamus, which was depicted on more than 70 provenanced objects dating to the Naqada I–IIB period and on another 100 artefacts without known find spots. The hippopotamus carved atop the ivory comb found last year in



Hippo on the comb from HK6 Tomb 72.

Tomb 72 is only the latest addition to this large corpus of material, but it is perhaps the most elegant. While only a small number of other hippos have been found at Hierakonpolis over the years, what makes them remarkable is the variety of media used by the artisans as well as the quality (in most cases) of their craftsmanship.

The first hippopotamus-shaped artefact from Hierakonpolis was uncovered in 1899 by F.W. Green in grave 153, which was located in or near the cemetery we now call HK43. The pendant, carved out of orange-veined calcite (Egyptian alabaster), was the only element of personal adornment left in this large, disturbed tomb. At least 15 pots were also recorded and provide a date of Naqada IID for the burial, but the pendant itself may be older. No other hippopotamus depiction can be securely dated to this period, so this object may have been an heirloom.

Our next hippo was collected by Michael Hoffman from the desert surface near the ceremonial centre HK29A. It is the almost fully preserved head from a stone vessel made of calcite. Similar hippo-shaped stone vessels are known, but this example is one of only two with recorded provenance.

The other, a lid of limestone, comes from Naqada Tomb 1427 and is dated to Naqada IIB. Both are carved in a similar way, with large drilled eyes and an unnatural upturned snout. This feature has led to varying identifications of the animal involved (see *Nekhen News* 8: 10–11), but was probably only meant to represent the hippo's nostrils raised above the water, and can be compared to the pendant from grave 153.

Leaving aside a few questionable representations from the settlement, the remainder of the Hierakonpolis hippo round up takes us back to the HK6 elite cemetery. First to be counted is the figurine knapped from flint discovered in 1979 near Tomb 1, but an association with that First Dynasty tomb is unlikely. One of eleven flint animals now known from the cemetery, it was probably made at about the same time as the others during Naqada IIA–IIB. Although the fragmentary body with leg found at HK11 Operation G was initially considered to derive from a hippopotamus (see *Nekhen News* 12: 14), this was before the range of flint animals that could have similar legs was known.

Two more spectacular additions to the corpus come from the southeast corner of the pillared hall, Structure



Photo: P. Hayman

Head from the calcite vessel found at HK29A



Lid for a stone vessel from Naqada 1427 (Ashmolean Museum 1895.218).

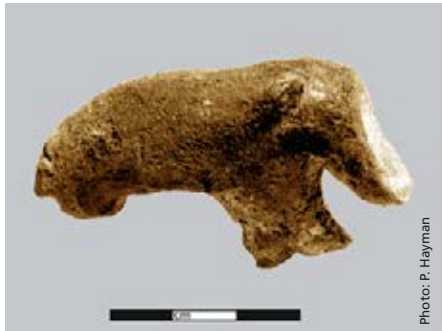


Photo: X. Droux

Calcite amulet from grave 153 (Cambridge Museum of Archaeology and Anthropology Z1157).



Flint hippo from HK6.



Clay hippo from HK6 Tomb 11.



Detail of the wand from HK6 Structure 07.



Steatite figurine from HK6 Structure 07.

07 (see *Nekhen News* 19: 7–9). One is a curved wand made from the lower canine of a real hippopotamus, with four small hippo silhouettes carved along its edge. The other is a tiny steatite figurine, just 3.2cm long. The wand has no parallel in the material culture of predynastic Egypt. Figurines of hippos in stone are much more common, but almost all of them have a hollowed out projection or a knob protruding from their back. Of the four exceptions to this rule, ours is the only one to have been scientifically excavated. Two other exceptions, a pair of figurines carved of porphyritic stone (Berlin, *ÄM* 15717–18), are said to have come from ElKab, but may well originate from Hierakonpolis (see page 26).

Found near Tomb 11, a highly stylised hippopotamus figurine of clay may once have adorned the rim of a pot. Its date is uncertain. Although Tomb 11 dates to Naqada IIIA2, deposits around it produced Naqada I–II pottery, suggesting the site of an earlier tomb had been ‘reused.’ The figurine, especially if once attached to a pot rim, is more likely to have been part of the funerary assemblage of an earlier tomb owner. Freestanding clay hippo figurines are not especially rare, but those appended to pots are limited to five examples dating mainly to Naqada IIA.

The last hippopotamus object from the cemetery (so far) is, of course, the ivory comb found in the rich assemblage of Tomb 72 (see *Nekhen News* 26: 4–7). Complete hippos are preserved on only three other combs, none of which come from archaeological excavations, and only one (New York MMA 55.144.2) can be considered with certainty as predynastic.

The number of objects from the site may be small, but this doesn’t mean the hippopotamus was less significant at Hierakonpolis than elsewhere. The burials of three young hippos at HK6 (Tomb 12, Feature H, and near Tomb 2) makes their importance clear, and also suggests the elite had a preference for the real thing over imagery. Further evidence of their greater appeal is supplied by five hippo petroglyphs recently found around the site (see *Nekhen News* 22: 12–14,

25: 18–19). This prevalence stands in contrast to their relative rarity in the rock art repertoire elsewhere.

To round things up, the hippo finds from Hierakonpolis, though limited in number, are exceptional. They are often the only examples of their respective types with known origin, making this group of artefacts very important for the study of hippopotamus imagery in predynastic Egypt. However, perhaps even more interesting than what we do have at Hierakonpolis is what we don’t (at least, not yet). Both white cross-lined (C-ware) vessels with hippo motifs and stone figurines with projections on their backs are missing. Together, these two types represent nearly half of all known predynastic hippopotamus depictions. The reasons for their absence are unclear. For C-ware, it may be due to the limited sample size, since we only have five fragments with figural decoration. On the other hand, regional tastes may also have played a role.

Generally speaking, hippopotamus imagery is closely linked to the local elites during the Naqada I–IIB, after which time such imagery ceases. The hippo, the largest animal in the riverine environment, was a symbolic source of power for the elites. By including representations of this animal in their funerary assemblages, and perhaps also by using, during their lifetime, figurines and pendants depicting hippos or made from their ivory, they expressed their desire to appropriate the strength and power of the hippopotamus and gain its protection.

Based mainly on concepts from later times, the hippopotamus has been viewed as a negative, chaotic force that had to be symbolically destroyed by hunting. While scenes of hippo hunting are known, such scenes are not as common as you might think. Among 36 C-ware vessels depicting hippopotami, only 14 show this animal as prey, and all but one of those come from the Abydos region.

The elite of Abydos may have had different ideas, but at Hierakonpolis they seem to have considered the hippopotamus in a mostly positive light, encouraging the production of fine (if few) artefacts in hippo form that continue to be a source of both intrigue and delight. 🐘

Tomb 2 at HK6: Now in 3D (No Glasses Required)

—Joel Paulson, San Diego

Hierakonpolis is a city of ‘firsts’, as has been demonstrated many times in the *Nekhen News*. The HK6 cemetery contains many of these firsts, one of which being Tomb 2. Perhaps the earliest known rock-cut tomb in Egypt, it has been fascinating and baffling excavators for years. Ambrose Lansing of the New York Metropolitan Museum of Art was the first to ‘scientifically’ clear the tomb in 1935, but it was already in a plundered state and surrounded by huge piles of backfill. What he may have found within it is unknown, since the only documentation are two photographs taken after the tomb was cleared.

In 1979 Michael Hoffman re-cleared the tomb, and in 1980 removed the spoil heaps along the north side in order to explore the adjacent area. Here he found burials containing humans and animals (Tombs 3–6, 9), as well as posts and post-holes attesting to the wooden architecture now familiar from the HK6 mortuary complexes.

Because the tomb had already been emptied by Lansing, sherds recovered from the spoil heaps were used to date it to Naqada IIIB (early First Dynasty), but the surrounding graves were clearly earlier (Naqada IIA). Hoffman was initially baffled by the apparent association of tombs of such different date, but in his summary he presciently suggested a solution: Tomb 2 had been placed within a mortuary complex of an earlier period. Recent excavations at HK6 have demonstrated the high probability that he was correct. We now know that several tombs (e.g., Tombs 16 and 72) have been ‘restored’. Given the pride later Egyptians took in renewing the monuments of their predecessors, these activities at HK6 may represent yet another first for Hierakonpolis. However, owing to the level of plundering within the cemetery, it is difficult to determine whether subsequent building activities always represent restorations rather than outright usurpations.

Whether Tomb 2 is a mark of respect for an ancestor or an act of self-interest, it is impressive. Measuring 6.5m long and 2.1m wide, with a depth of 4.15m, its builders first dug through 65cm of topsoil and gravels to expose a sandstone stratum, about 1.5m thick, through which they then cut a shaft with precision. Their skill can also be seen in the 20cm deep recess, or ledge, they carved around the edges of the shaft, presumably to hold roofing beams. But they didn’t stop

there. Once through the sandstone they continued down into the soft underlying shale, where they dug out more features.

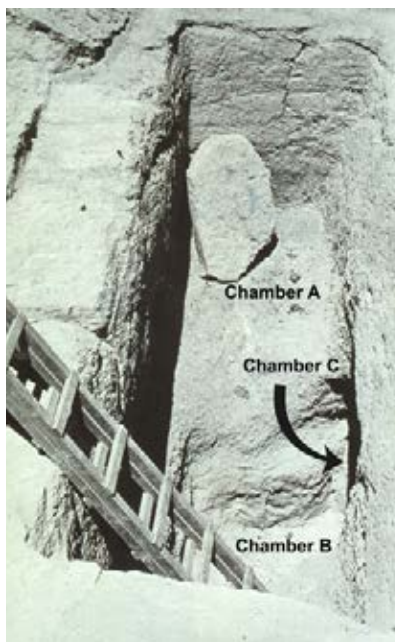
Hoffman described the tomb as having three chambers: Chamber A is the main shaft; Chamber B, the portion of the shaft dug deeper in the loose shale on the east side; and Chamber C, a side chamber cut into the shale on the (grid) north long wall. In 1979, this side chamber measured about 1.75 by 1.5m with a roof sloping down from 1.6m to only 50cm at the far end. Two large slabs of limestone, still in the

grave, were presumed to have sealed this side chamber, and have been hailed as Egypt’s earliest portcullis stones. The architecture of the tomb, with its side chamber, has also attracted much attention for its similarity to elite tombs of the Nubian A-Group and is often cited in discussion of interaction with the south. Thus, Tomb 2 is impressive for many reasons, and some even suggest it belonged to King Scorpion!

In 2015, we briefly revisited the tomb to check some of its features, especially in light of our experience of the significant damage plunderers can do. We did not have the time or manpower to completely re-clear the tomb of debris, but we did want to examine the side chamber for evidence of actual stone working in its construction. We also wanted to check the measurements of the stone slabs and assess their potential to seal the side chamber.

Unfortunately, the results were inconclusive, mainly due to the deterioration of the shale stratum. In contrast to the shaft, Chambers B and C now seem rough-cut (at best) into the poor quality shale, and no remnant of the mud plaster mentioned by Hoffman could be observed. Judging from a limited number of archival pictures, the side chamber and the opening into it were originally smaller and more neatly cut than is now the case, but their original dimensions can no longer be established.

Another reason we wanted to look at the tomb was to try out some new technology. Most tomb plans are highly simplified and ‘flattened’ for publication, but with computers we are now able to create three-dimensional models allowing for fuller visualization. The ability to obtain 3D views from stereo images was realized early on in the history of photography. From the stereoscopes of the Victorian period to the View-Masters of our childhood, stereo images have been popular entertainment. The use of stereo images for measuring (photogrammetry) has



Tomb 2 after Hoffman's 1979 clearance, showing Chambers A–C.



The entrance to the side chamber in 1979.



The side chamber entrance in 2015.

also been long known, especially in cartography, but the cameras and equipment were expensive and necessitated years of training. In recent years though, software development has made 3D modeling from digital photographs available to everyone with any camera. So, we thought we would try to create a 3D publication of Tomb 2 for general use.

To make the model, we took over 180 photographs of the tomb from almost every angle and direction. As time was limited, we took two series of shots: one of the lower portion prior to cleaning the upper ledge, and another of the upper portion after we cleared the ledge by pushing the dirt from it into the tomb. This turned out to be a mistake. Because of the different lighting conditions, connecting the two series of photographs in an aesthetic manner in the 3D model proved to be difficult. A lesson learned.

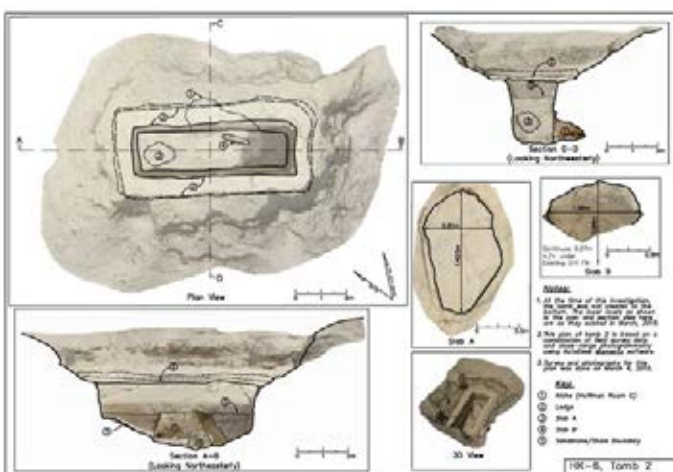
To process the images, I tried out four different software programs. Each had advantages and disadvantages with regard to ease of use, licensing restrictions, pricing and results. Because I had set control points in the corners at various levels within the tomb, I was able to verify the geometric accuracy of each product. In the end, I worked primarily with Autodesk Momento; other software may have given equal or better

results, but needed camera calibrations that were unavailable, or had other limitations. From the computer model, we were able to create a new plan of the tomb in its current condition and, for the first time, cross-sections of it. Although, the new plans and model only reflect the bottom level of the fill in the tomb at the time of the survey, they provide a better view of its enigmatic features than ever before.

Check out the result for yourself. The 3D model (reduced from the original 4.26 million triangles, 3336 megabytes file) can now be downloaded from our website. An accompanying document tells you how to view, measure and manipulate the model in Acrobat Reader. Have fun!

Being able to provide our supporters with a more accurate view and better feel for this impressive monument is a good start, but we hope in future to be able to re-clear the entire tomb and investigate more of its surroundings. Certainly a tomb fit for a king (if not necessarily King Scorpion), it deserves further examination not only so we can better evaluate its complex architecture, but also better understand its place in history. 📷

Download the model at www.hierakonpolis-online.org, under Explore the cemeteries, HK6, Rendering-Tomb-2



New views of Tomb 2 after the 2015 survey.



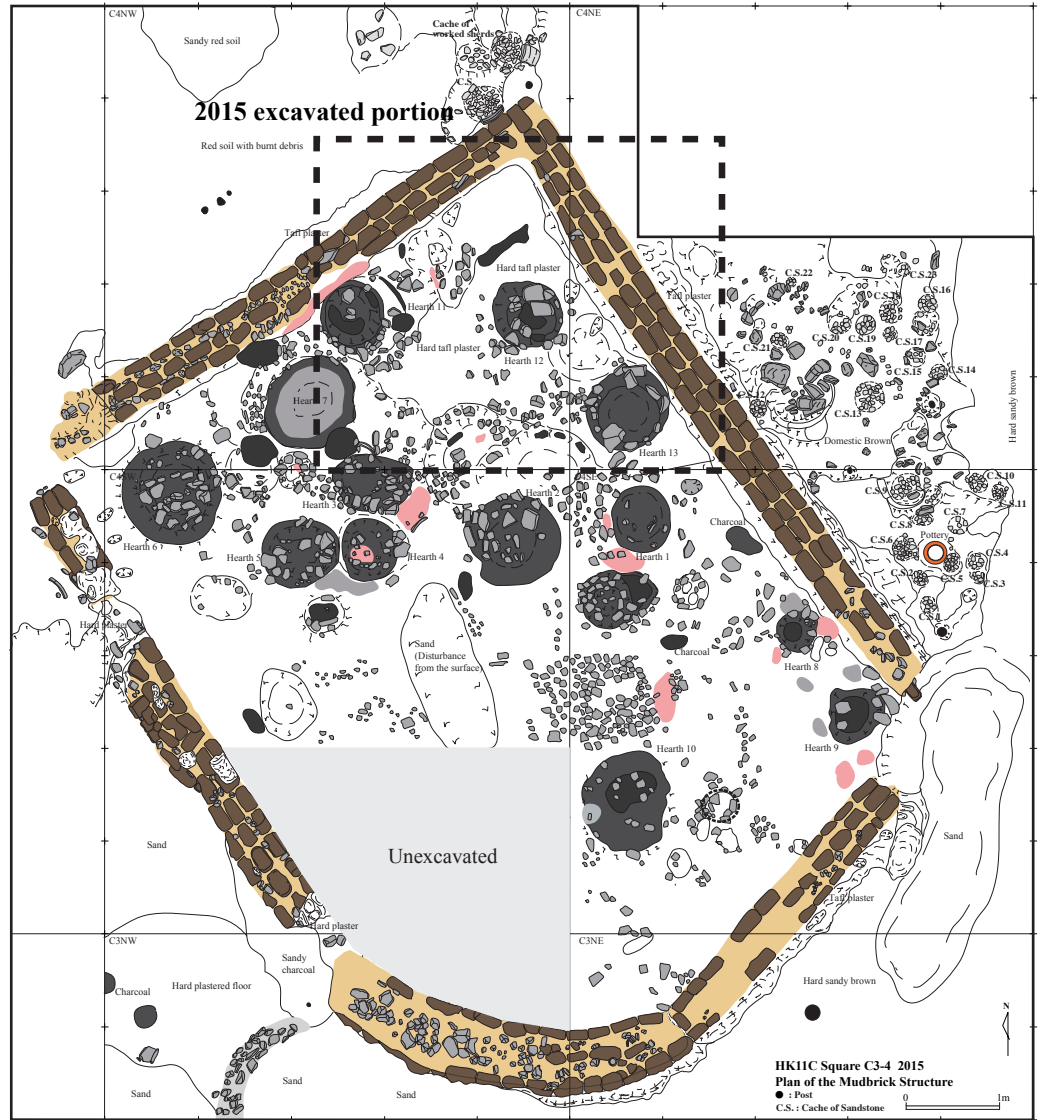
Joel checking out Tomb 2.

Industrial Scale Food Preparations at HK11C

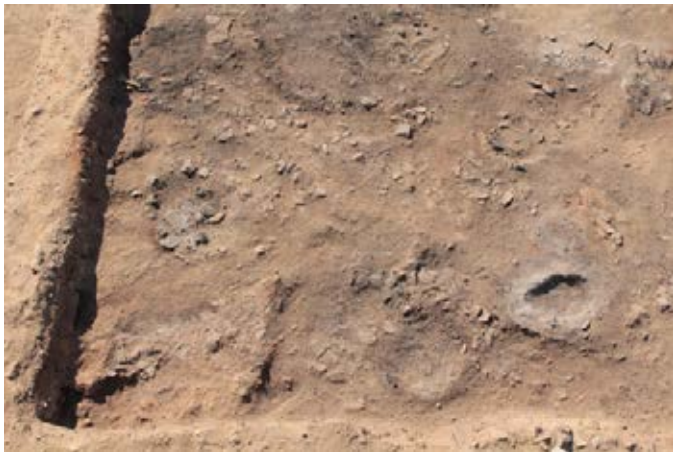
—Masahiro Baba, Waseda University, Tokyo, Japan

HK11C is now proving to have been an area of intensive industrial activity during the Naqada II period. Excavations over the years have uncovered the world's oldest brewery and its associated pottery kilns at Operation B, and now an installation for the industrial-scale preparation of meat and fish in nearby Square C3–4. What was going on in the huge walled structure in Square C10–11 still needs to be determined, but the sheer quantity of ash deposited in it after it fell out of use is an eloquent indication of the scale of activities in this area. Since the latter two structures had not yet been fully excavated, during the 2015 season we returned to find out more.

The food factory in Square C3–4 is situated within a roughly rectangular mud-brick structure measuring about 9 by 7.5m. Last season we removed the debris layers down to the original floor in the west and east. As a result, at least ten hearths were identified,



The latest plan of the meat processing installation in Square C3–4.



Close up on the new hearths in Square C3–4.

surrounded by large amounts of bones and fish scales (see *Nekhen News* 26: 20–1). Faunal analysis showed that these belonged predominately to Nile perch and domestic cattle (see *Nekhen News* 26: 22–3), which seem to be the main animals processed in this factory.

This season we investigated the north corner of the interior. Below the usual accumulation of burnt debris, the original floor, partly coated with hard plaster, was revealed. On this floor, three distinctive hearth features were discovered surrounded by large stone slabs and pottery sherds. Ranging in size from 70 to 90cm in diameter, these hearths took the form of shallow holes filled with ash and charcoal. As expected, large amounts of bones and fish scales were collected around them, but Hearth 11 also produced bird feathers,



Mending fragments of the Lower Egyptian bowl from Square C3-4.

which was a nice change. Although the faunal remains have not yet been studied, the bones recovered by trowel and sieving seem little different from those of last season, but we might be surprised when the analyses are complete.

Aside from bones and scales, finds from the interior were the usual pottery and lithics. Notable, however, were three fragments of a large brown polished bowl, decorated with impressed crescents under the rim, which mended with a sherd found last season. Such bowls are known from several Lower Egyptian sites dating to Naqada IIB-IID and finds like these may help us to date the factory's activities.

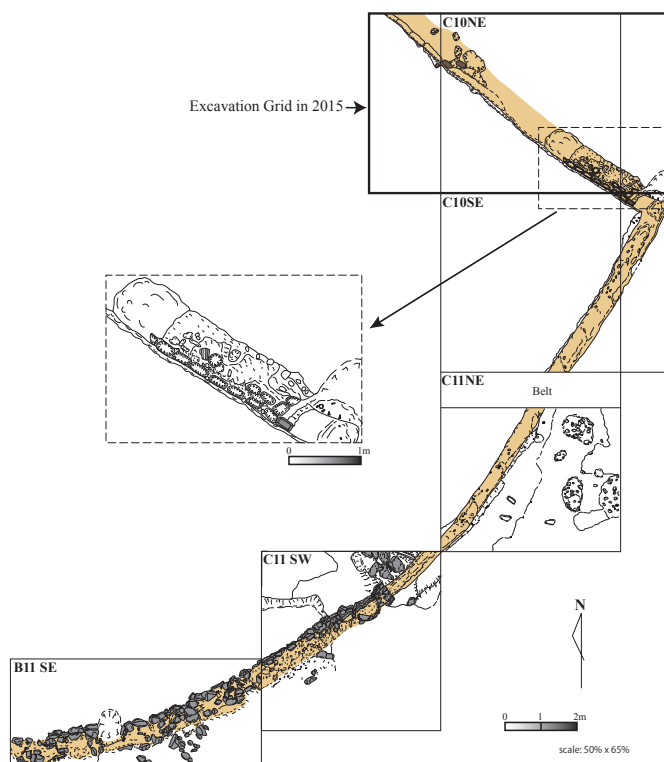
After working in the food factory, we moved to the structure in Square C10-11. The freestanding walls of this large building were constructed with mud-bricks in the northern and eastern parts and with stone slabs in the south. From radiocarbon dating and associated objects, it can tentatively be dated within the Naqada IIB-IIC period, making it one of the oldest mud-brick buildings in Upper Egypt.

Previous excavations had revealed 25m of the curving eastern wall of this structure and 4m of the northern wall. Since further exploration toward the south is currently hampered by the presence of an old spoil heap right over the wall's path (see *Nekhen News* 26: 21), this season we worked in the north. Brushing away the surface sand revealed five more meters of the north wall. This segment is less well-preserved than the eastern wall: aside from a few mud-bricks

coated with thin white plaster, only the interior face of the wall could be recognized. In the west, it was preserved to a height of only 6cm! Disappointed with these results, we concentrated on the construction method at the seemingly better preserved east corner. Yet, when we removed the hard mud coating the top of the wall, we found not bricks, but only the impressions thereof in mud mortar! This surprising discovery suggests that at some point part of the north wall was dismantled to lower its height. The purpose of this alteration is unknown, and like everything else in this unparalleled structure, it will need further research to understand.

Despite some still outstanding questions, all of the installations discovered so far indicate that HK11C was a specialized industrial zone for food production. But why did such big business emerge in the Naqada II period? Considering their proximity to HK6, it seems likely these industries were closely associated with that cemetery, i.e., the elites controlled the production activities, and the workers (specialists) produced what the elites demanded and received their patronage. However, proving that the food produced at HK11C was meant for elite feasting will be a challenge: the location of that exclusive restaurant seems to be a closely guarded secret and clearly they don't take reservations! 🍷

This work is financially supported by the Japan Society for the Promotion of Science.



The latest plan of the large structure in Square C10-11.



Just the impression of bricks at the north corner in Square C10-11.

Drilling Stone Vessels at Nekhen

— Kazuyoshi Nagaya, Kanazawa University, Japan

Stone vessels are relatively common amongst the funerary goods of the Predynastic period. Their distinctive forms are well known and the efforts taken to obtain the different stones and then shape them have been discussed in the context of craft specialization and the state formation process. However, the craftsmanship, i.e., the actual technology and method of manufacturing the vessels, has not been fully clarified. Still shrouded in mystery is just how stone vessels were drilled with stone tools before the wide-spread introduction of metal (copper) implements.

Use-wear trace analysis on a series of stone drilling tools excavated from the ancient town mound of Nekhen has provided a new key for understanding stone vessel drilling methods in the Pre- and Early Dynastic periods. For this article, a flowchart detailing the suggested manufacturing steps, focusing especially on how to drill a stone with stone tools, has been created based on microscopic observations on archaeological samples and on experimental drillings.

The stone tools used for drilling stone vessels are typically known as crescent drills and figure-eight-shaped

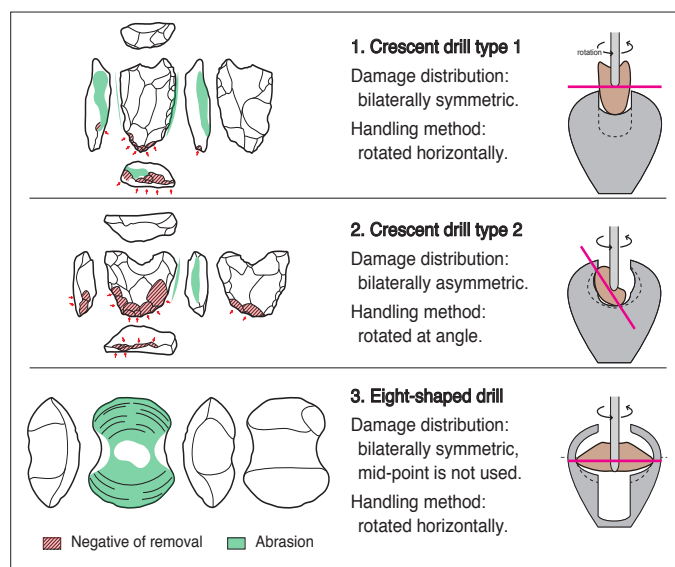
drills. Crescent drills are mainly made of flint and, as their name suggests, have a concave upper edge, while the lower cutting edge is curved. These drills can be divided morphologically into two types according to their proportions: type 1 is taller than wide, and type 2 is wider than tall. Figure-eight-shaped drills are normally made from cobbles of hard limestone, sandstone or quartzite. They are characterized by notches on their long sides, giving them a figure-eight shape.

Both types of drills were found in the town at Nekhen. For this study I was able to examine the crescent drills excavated by Michael Hoffman in square 10N5W, which probably date to the early First Dynasty, and the figure-eight drills discovered by Walter Fairservis in the niched-façade palace, which was in use during the First and Second Dynasties. Earlier examples of these tools are known from other areas of Hierakonpolis, but were unavailable for study.

During the microscopic examination, it became clear that each type of drill had a distinctive pattern of use-wear traces, i.e., damage caused to the cutting edges during use, which are represented by negatives of removal/abrasion. These patterns indicated that each type of drill had its own way of being operated. Crescent drill type 1 (tall) showed bilaterally symmetrical abrasion on the edges, indicating that it was rotated horizontally. Crescent drill type 2 (wide) displayed an asymmetrical damage pattern, and was likely to have been set at an angle to the vessel walls in order to widen the inner space. The figure-eight drills exhibited a symmetrically abraded pattern,



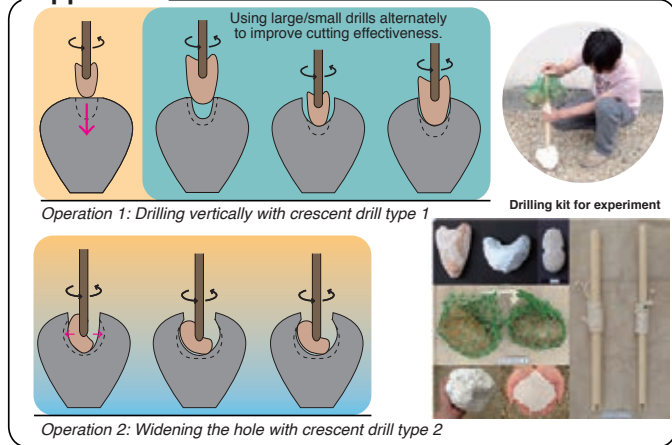
Stone drills from Nekhen: crescent drills (above); figure-eight-shaped drills (below).



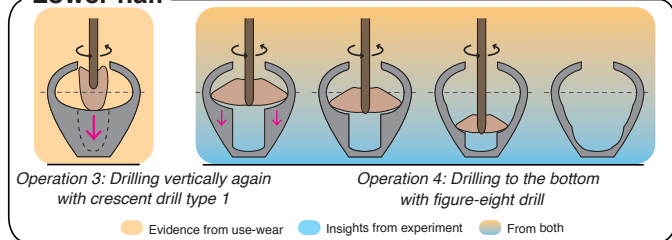
Patterns of use-wear are clues to the way the drills were used.



Upper half



Lower half

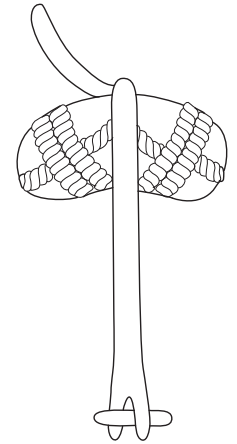


Flowchart for drilling Predynastic stone vessels.

occasionally with a circular scar, which is evidence that the drill was rotated horizontally. Moreover, since no trace of use was observed on the central part of the figure-eight drills, it seems likely that the central portion of the vessel had been already drilled down to the bottom before this type of drill was employed.

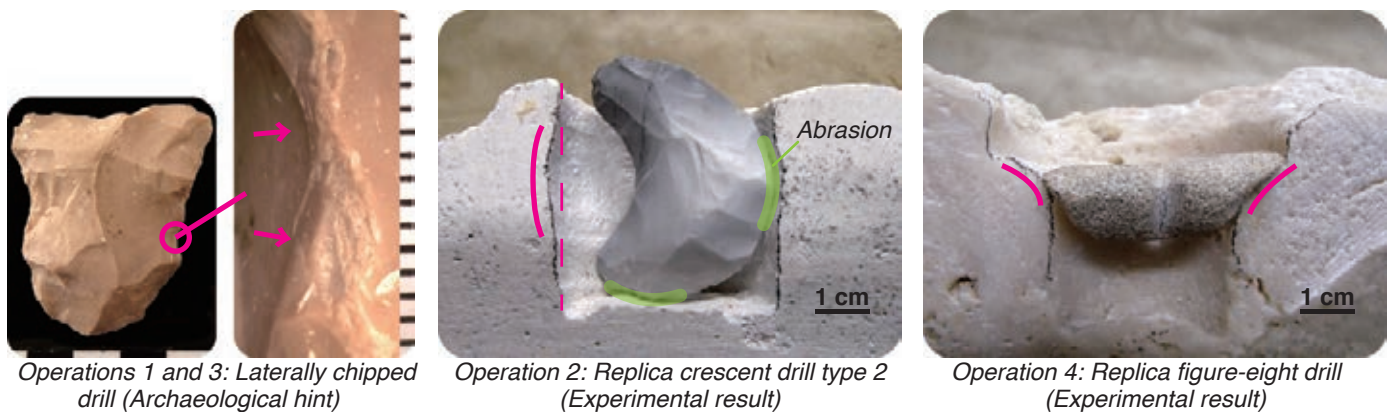
An experimental drilling of limestone with replica tools was carried out to verify the assumptions made on the basis of the microscopic observations of the artefacts. A device, composed of a drill, drill shaft and stone weights set in a net, was replicated by the author with reference to stone vessel manufacturing scenes depicted on the walls of Dynastic tombs. As a tentative conclusion, Pre- and Early Dynastic stone vessel drilling can be reconstructed in the four operations illustrated in the flowchart.

In *Operation 1*, the upper half of the vessel is drilled with crescent drill type 1. The drill is set on the material horizontally to create a small but deep hole. The experiment suggests that cutting ability is significantly improved when drills of different sizes are used alternately. This is possibly because fresh abrasive sand remains in a gap between the drill and the stone when the drill size changes rather than being swept away by the centrifugal force of the rotation of a single drill. Some of the ancient drills showed identical use-wear traces to the replicas used in this way, i.e., lateral chipping on the cutting edges caused by contact with the opening in the stone vessel (below, left). In *Operation 2*, a pouch-shaped hole is made. Crescent drill type 2 is set aslant to the material in order to widen the open space within the vessel. The replica drill cut limestone to a depth of about 2.5 mm after 500 rotations, and this resulted in the same asymmetric abrasion pattern as observed on the ancient tools (below, middle). In *Operation 3*, the lower half of the vessel is drilled out. Crescent drill type 1 is used again to drill the material vertically. *Operation 4* is the final step. This is when figure-eight-shaped drills of several diameters are used to thin the vessel wall down to the bottom (below, right).



Ancient Egyptian stone drill: the hieroglyph for 'craftsman'.

As suggested by the use-wear traces on both the ancient drills and the experimental pieces, the early craftsmen at Nekhen seem to have developed a rational method for their working of stone. This not only made the drilling possible, but also made their labor more efficient, allowing them to reach higher productivity. The tools from Hierakonpolis are a testament to the continuous ingenuity of the Predynastic craftsmen, and from their study we learn to appreciate their beautiful products even more. 🏺



Rock Art from Behind Closed Doors and Much More: Survey of 2015

—Fred Hardtke, Macquarie University, Sydney, Australia

We stood silently and beheld the massive steel doors as they were unbolted, revealing yet another sturdy door. Peering in as the second was opened, my eyes scanned past a myriad of artefacts for the elusive sandstone blocks. A wooden crate filled with dusty rocks caught my eye. Nearly three decades earlier, these blocks lay strewn under the clear skies of Hierakonpolis, their original find spots, somewhere on the HK11 hill, not precisely known to us.

I had come to the Ministry of Antiquities magazine at ElKab along with other members of the team who were attending to the conservation needs of the finds from last season (see page 7). While they were engaged in this task, I was granted the privilege of examining and photographing the

A hand-drawn map was our only indication as to where these blocks had been found. It showed the northeast face of the HK11 hill, including the well-known locality HK61A. While most of the rock art spots marked on the map were familiar from recent reconnaissance, one area was not, and the next day I went out to investigate. Following the map up the hill brought me to a rockslide with a tumble of undecorated blocks. Luckily, dotting the rocks to either side of this cascade were just enough markings to leave little doubt I had finally found the location where most of the store-room pieces must have originated.

While the discovery of new localities is important (not to say thrilling), confirmation of known sites is also critical.



A lion hunting antelope and donkeys from HK11.



Block with giraffe from HK11 now in the ElKab magazine.



Part of an ibex on a fallen block.

detached rock art found by Walter Fairservis in 1988 and now kept in the magazine for safe-keeping. I had long been aware of these stones from old slides and sketches, but had never seen the real thing.

The blocks were carefully laid out and brushed down. Some were immediately recognisable from the sketches. Others were fragmented and required a little assembly before their images were finally revealed, and a few mends not previously realised were made. In the end, before us were the remnants of what once must have been elaborate tableaux. One assembly includes a giraffe (sadly headless) accompanied by geometric incisions, and just possibly the lower part of an elephant (above) and a hippo (left). On another set, executed in an almost miniaturist style, a lion apparently stalks antelope and donkeys. An ibex and various geometric incisions graced other fragments, which were now ready to be photographed before being laid to rest again in their cavernous repository under lock and key.

Thus, a part of the season was spent checking on other previous reports of rock art on and around the HK11 hill and making sure that nothing had escaped notice. This effort paid dividends.

A traverse across the top of the hill netted a previously unrecorded pair of large boats, with single cabins and decorated prows, pecked on the side of a rounded boulder. Heavily



Facsimile of boats pecked onto a boulder at the top of the HK11 hill.



Another puny pachyderm at HK61C.

eroded – only the finest pecks were still visible – they were difficult to spot through most of the day, but they couldn't hide forever!

Located at the bottom of the HK11 hill, the boat petroglyphs at HK61A are well known, one of which even graces the Hierakonpolis Expedition logo. A careful re-examination of even this well-visited location revealed overlooked elements. Near ground level, on the exterior face of the cleft in which the three famous boats were carved, was yet another boat (and possibly two). This boat, like the others, is of an incurved sickle type, but lacks the elaborate prow and stern decoration. Since it is badly weathered, one can be forgiven for missing it (the light really has to be right), and it will take further study to work out all the remaining details.


While in the vicinity, I also returned to HK61C, the site of the tiny elephant petroglyph, since an archival report mentioned a second elephant at this location. Not only did I find it, but also another one of these little fellas. Located on the



Fred taking a second look at HK61A.

side of the same rock as the better known example, these two are not as well executed or as well preserved, but there is no question about their identity as puny pachyderms.

Dogs were also a theme this season. A dynamic scene of dogs in chase with legs in full flight was pointed out to us by Masahiro Baba on the north side of the HK11 hill, not far from his excavations in Square C10–11 (see page 13). Nearby another dog was found on a loose block. Crouching forward, its hindquarters raised, it effectively portrays a dog baying at its quarry, a motif commonly found in the rock art of other regions.

To date, the richest concentration of rock art at Hierakonpolis occurs on the HK11 hill. These new additions to the rock art registry at this location have not only expanded the range of motifs known there, but further confirmed the importance of this imposing feature of the landscape for those engaged in the creation of rock art and the rituals that surrounded it. They also show that it never hurts to take a second look! 



Barking dog being drawn.



In full flight: new dogs from HK11.



Fifth Dynasty Findings of the Rock Art Survey

—Fred Hardtke

After re-checking the nearer sites, the rock art survey progressed further into the desert, moving into uncharted territory. To the southwest, near the ever expanding boundaries of the Wadi Sayyada land reclamation project, was an area that looked promising from the satellite imagery (see page 2). During the initial survey of this area, I encountered a small number of panels with geometric motifs much like the spirals found previously (see *Nekhen News* 25: 18), but they did not prepare me for what was about to appear. Following the crest of a high ridge, I scanned the rock outcrops on either side for any marks or incisions. Then, on the side of a rise, a large block came into view. On it were a number of marks, which I sensed would be significant. Clambering over to it, I could see it was covered with hieroglyphs and, most astonishingly, a faint cartouche!

The inscription was on a large, loose slab of laminated sandstone. Lying nearby was a smaller fragment preserving part of a human figure with round head and indications of another. Such simplified, anthropomorphic depictions are similar to Dynastic rock art I had encountered during work in the Western Desert. The two blocks are likely associated, given they were the only things found in the area, and may once have been part of a larger composition executed on an exposed bedrock surface further up the hill; however, no trace of the original location could be detected.

The inscribed block now includes four horizontal registers, but there could once have been more below (see front cover). Initial reading in the field was accomplished with



Human figures on the fragment found near the inscription.

the assistance of Vivian Davies. It contains a list of gods, along with a standard good-wishes formula, below which is the cartouche of King Nyuserre of the Fifth Dynasty, sadly broken on the right and eroded on the left. The inscription itself is quite unusual in structure as well as in the entities it names.

The first register commences from the right with the names of the gods Re, Horus, Seth, and Anubis with Min below. The second line starts with the name of the god Nemty, shown as a falcon on a crescent resting on a decorated stand. Following him is the god of the oases, Igai, shown here as three stylized *was* sceptres on a standard. Next comes Nekhbet with her name spelled out in hieroglyphs above a vulture on a basket. She is followed by Wadjet, in a curious writing, labelled as the goddess of Pe and the goddess of Dep. Finishing this line is the goddess Satet, who is also defined with a vulture on a basket, a writing that is also known from the granite *naos* of Pepi I from Elephantine now in the Louvre.

The third line includes the formula reading: “All of the gods, given all life, all good things and all health.”

The fourth and more intriguing line contains the cartouche of King Nyuserre, but this register is only partly preserved so that the signs preceding the king’s name are unclear. Behind the cartouche is what appears to be a king seated on a throne holding a flail.

In addition to the cartouche, the form (palaeography) of the signs places the inscription in the Old Kingdom. However, according to Dr. Jaromir Malek, who so kindly agreed to look at this inscription, there are several inconsistencies, suggesting that the author was not an accomplished scribe.

The reasons for the presence of this inscription in this remote quarter are far from obvious. Apparently incomplete at the bottom, the missing part might have told us whether it was made to commemorate an event that was connected with the area where it was found and/or with King Nyuserre himself. However, the location of Hierakonpolis, near the end of the ancient desert road, the Darb al-Dush, leading from the southern districts of Kharga Oasis, might be a clue. Of note is the mention of the rarely referenced god, Igai, best known from Dakhla Oasis. Together with Seth, also popular in the oases, we see two gods of the Western Desert on the same block. Does the inscription mark the presence of a desert route? If so, it adds an entirely new aspect not only to the rock art survey, but also to the history of Hierakonpolis. 🏺

Skin Deep: the Beautiful Leather of the Nubians at Hierakonpolis

—Lucy Skinner, London, UK, and Andre Veldmeijer, PalArch Foundation, The Netherlands

One of the many things making the Nubian cemetery at HK27C stand out from a typical Egyptian cemetery during the Middle Kingdom is that the people buried there had a lot of leather. This is remarkable for two reasons. First, it is rare for leatherwork to be preserved in archaeological contexts, especially leather of such great age. Luckily, the dry conditions at Hierakonpolis are ideal for organic preservation, and if the body was buried with leather, it is likely that at least some traces survive. Second, the finds show that the Nubians had a preference for dressing their dead in leather rather than linen, which was the typical funerary attire of the ancient Egyptians.

Work is now underway to publish the results of the excavations at HK27C with the support of the White-Levy Program for Archaeological Publications. To that end, in February 2015 Lucy Skinner, conservator and leather specialist, spent a fascinating few weeks on site analyzing leatherwork from the Nubian burials, expanding up on the earlier studies of Andre Veldmeijer (see *Nekhen News* 19: 24).

Opening the boxes and laying out all the fragments on the workroom tables gave a good overview of the large volume of leather collected and allowed comparison between the different tombs. It was the first time that the leather from all the seasons of excavation at HK27C had been examined at one time and, as a result, some very interesting patterns emerged.

The majority of the leather from HK27C is soft and pliable with a fine fibrous texture and lacks the smooth upper coating (grain layer) of the skin. At first sight it seemed the grain surface had deteriorated during burial, but with so many fragments now examined, it is more likely that the grain layer was intentionally removed to create leather resembling chamois or nubuck.



Lucy laying out the Nubian leather in the workroom.



The remains of the soft leather loincloth from Tomb 54 at HK27C.



Visible under magnification: the hairs on a decorated rawhide sandal from Tomb 27.

Rawhide—animal hide that has been defleshed, stretched and dried, but not tanned or cured—is also present in the graves and now appears as thick and yellowish in colour. Under magnification it was possible to see the minute holes in the grain surface where the hair grew out and, on some, traces of the actually hairs were still present. Human skin was also preserved quite abundantly in the Nubian graves, but can be easily distinguished from leather. It is stiff, much thinner than rawhide, and slightly transparent.

Despite the miraculous preservation, all of the leather is nonetheless fragile and exceptionally vulnerable to damage by handling. Damage inflicted by robbers and insects has left it fragmentary and full of holes. Differences in leather preparation methods or the microclimates within the graves have resulted in variable levels of preservation. Some tombs contained soft and flexible leather, while in others the leather is powdery and very brittle. In addition, where the leather was compressed and folded beneath a human body, heightened moisture levels from the fluids have caused the leather to darken and become stiff and resinous (almost glassy) in appearance.

The Nubian occupants of Hierakonpolis evidently put a lot of effort into creating garments and other items from leather. Although there are examples of large plain sheets, many items were made from small rectangular or triangular patches meticulously stitched together in straight cut seams using leather or rawhide thong. It is interesting to observe the different styles and qualities among the stitch-work within one grave and even on the seams of the same garment. These variations suggest that more than one person was involved in sewing and piecing these items together. The differences



The contrasting colours of the patch-work garment of the tattooed lady from Tomb 9.



Remains of the patch-work skirt still on the body of the woman from Tomb 63.

in quality might even suggest a teacher and apprentice (or parent and child) arrangement.

These patch-work creations mainly appear to be skirts with daintily pierced and gathered top seams. Most were all brown, but faint traces of colour prove that some of these leather garments were bright, decorative pieces, and not merely functional. A deliberate intention to show contrasting colour is demonstrated by the panels of what may be a skirt found in Tomb 9 (one of our tattooed ladies). Investigation of the fragments revealed an outer layer with cream, pinkish red and brown patch-work on a plain brown lining.

Now that the skeletal remains have been examined and the sex of the individuals confirmed, the differences between the leather found with Nubian men and women can be appreciated. The females tend to wear stitched-panel skirts or leather draped around the lower half of their bodies. The remains of a patch-work skirt found still adhering to the articulated lower body of the woman buried in Tomb 63 (see *Nekhen News* 26: 25) provide important confirmation of how such garments were worn.

Male attire was harder to pin down since the graves of men did not contain as much leather, and what there was

had less stitching. From Tomb 48 came the remains of a soft, crumbly leather sash or belt, colored bright red, and knotted in a number of places. Long belts or waist sashes with blue glass beads attached to them were found between the legs or around the waist of two men. In other male graves, sheets of very soft and pliable unstitched leather were recovered in the area of the waist. In Tomb 54, the gathered leather still had dried muscle attached to it, suggesting it was wrapped around the groin as a sort of loincloth. Thus it seems that the men in the cemetery wore only sashes or belts and loincloths, probably together, along with simple rawhide sandals.

Cured skins with patches of black fur on the grain surface are another notable type of leather artifact. These have been found in a few graves—primarily those of men—and seem to be something different from the other leather items. One, found amongst the gathered leather loincloth in Tomb 54, suggests they may have been pouches attached at the waist.

Leather processing methods used during the Middle Kingdom are not well understood. Nevertheless, some parts of the process, like skinning and defleshing, would not have varied greatly no matter what the time period. These procedures were carried out quickly to avoid



Knotted red leather sash of the man from Tomb 48.



Remains of a leather belt decorated with beads found with the man in Tomb 18.

putrefaction, and efficiently, using sharp knives for cutting and blunt blades for scraping the skin and removing the hair. Following this, the skin could have been treated in several different ways using either oils, fats, alum or vegetable tannins to preserve it, lubricate it and make it pliable. Further research is necessary to determine the specific techniques used at HK27C.

It has been suggested that the Nubians, at Hierakonpolis and elsewhere, were leatherworkers and came to Egypt to perform this task for the local population. But if they were preparing leather at the site, where was this done? What would such a place look like?

Leather working, as undertaken in ancient Egypt, is difficult to detect in the archaeological record as it does not leave easily recognizable traces. For example, curing seems to have been done in large pottery vessels rather than pits in the floor, so traces of this process are hard to distinguish. Furthermore, the refuse from hide processing (i.e. pieces of skin, fat or hair) are rarely preserved or might be easily confused with food preparation.

Having had the chance to briefly examine some of the material excavated from the predynastic meat processing installation at HK11C (see page 12), it is worth considering whether this locality could have included an area for



Leather workers in the Tomb of Rekhmire, 18th Dynasty. After a painting by Nina deGaris Davies (New York MMA 35.101.2).

processing skins. This would be a place where hides were scraped and prepared for tanning or curing to convert them into leather. It is an interesting idea, and with raised awareness of what signs to look for, it might be possible to identify these elusive leather processing areas in future.

The significance of leather products in the ancient world (and in fact until the advent of plastics) should not be under-rated, but is hard to judge from the limited archaeological traces. Happily, from HK27C we have a well-contexted range of types and qualities, which can give us insights into the importance of leather to the ancient Nubians who wore it. ↗



Pot Luck in the Nubian Cemetery

—Renée Friedman

In Nubian burial practice, pottery vessels were placed outside of the grave, on the surface surrounding the tomb. As a result, the pots have become broken and scattered. Mending is therefore important for determining from

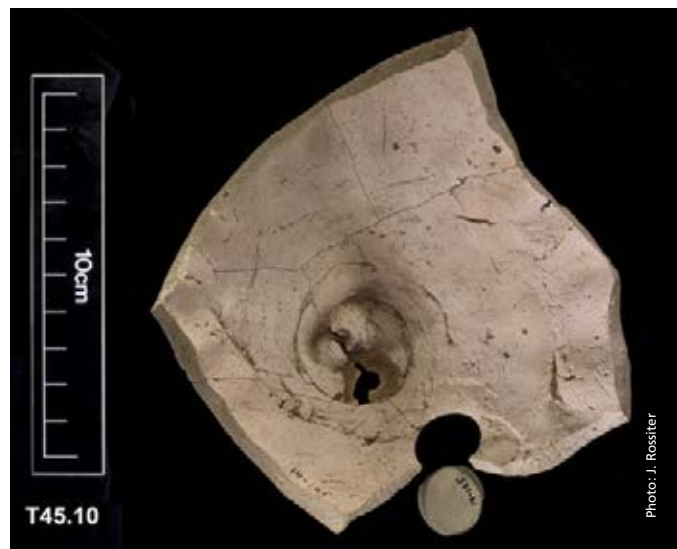
which tomb the pottery came, the full nature of that grave assemblage, and ultimately its date. Encouraged by the success in mending the Nubian vessels (see *Nekhen News* 26: 26–7), we decided to try our luck with the Egyptian pottery, especially as last year's clearance of the lowest levels of the HK27C cemetery (*Nekhen News* 26: 23–4) had produced a large volume of sherds with precise find spots. It was hoped that by mending them to pots found in higher levels we could



Egyptian storage jar from HK27C Tomb 45: a much modified pot.



The potmark and ground down rim on the Tomb 45 storage jar.



Hole and stopper in the base of the Tomb 45 storage jar.

discern or confirm their grave attributions. In addition, although refitting had been carried out during the various excavation campaigns at the cemetery, it had never been attempted across the seasons. This was mainly due to limitations of space, but by arriving early on site this year, before anyone else, we were finally able to give it a try.

From 25 November to 6 December 2014, we were able to colonize every surface in the workroom and beyond. With the invaluable assistance of Lamia El-Hadidy and inspector Doaa Abdel Hamid, we laid out thousands of sherds from all seasons and began mending.

Initially the work concentrated on the large storage jars, not only because they took up the most space, but also because the individual features of their manufacture and subsequent modifications were most compelling. These Egyptian marl jars were especially favoured by the C-Group in Nubia as well as at Hierakonpolis. The largest vessels produced during the Middle Kingdom, they are

composed of two parts: a neck and shoulder thrown on the wheel, and a hand-moulded body and base. These parts were then joined together and the distinctive scrape marks at the junction and along the lower body were particularly useful for identifying mends.

How these great vessels were used by the Nubians is unknown, but their value is evident. On many, we observed chipped rims that had been ground smooth; a few showed cracks that had been repaired with lashings run through a series of drilled holes. Several also bore incised potmarks, some quite elaborate, running the gamut from geometric motifs to figural designs. It was especially satisfying when an isolated incised piece could be reunited with the pot and reveal its part in the greater design.

Reassembly also helped us to appreciate more fully another modification the Nubians made to these jars. On a few we were able to see that a hole had been cut into either the shoulder or the base. The holes at the bottom may have allowed decanting of the contents, and in one case the original pottery plug was found still in place. However, the question of ritual killing cannot be ruled out especially for the larger and often carefully rounded holes made at the shoulder. Clearly, these Egyptian pots had a special meaning for the Nubians, even if we don't yet understand what it was.

There are at least 24 specimens of these storage jars in the cemetery. By the end of our early stay we had made significant mends to more than half of them. Although we eventually had to share our work surfaces with others, pot-mending continued with great success throughout the rest of the season on the nearly 300 Egyptian vessels documented at HK27C. The results of this exercise have greatly improved our knowledge of the shape, usage and grave attribution of the Egyptian pottery — aspects that are crucial for understanding the unique community of Nubians buried at Hierakonpolis. 🍷



Coming together: Egyptian pottery from the C-Group cemetery.

Join the
Friends of Nekhen and
help us continue to make
these exciting
discoveries!
See page 31
for details.

Making a List, Checking It Twice: Body Count at HK27C

—Sean Dougherty, MATC, Milwaukee, WI and Anna Pieri, Livorno, Italy

In January 2015, the physical anthropologists assembled at Hierakonpolis to give the C-Group Nubians a final going over before commencing with the formal report. Thorny issues of the sex and age attributions for some individuals were thrashed out and consensus was finally reached.

Results are now in for the 69 individuals found in the 64 graves at HK27C. Of the 52 adults, 15 are male, 26 are female and 11 are indeterminate. There were 13 non-adults and four infants (under 1 year). The relative rarity of youngsters suggests either low fertility within this community or young deaths were interred elsewhere.

The presence of a C-Group cemetery within an otherwise Egyptian context provides a unique opportunity to understand the biological experience of a non-native population dwelling within a foreign land. While these individuals may have acculturated to Egyptian society to some extent, their experience of health, disease, injury, and occupation might still be unique. So, another aspect that needed to be double-checked was pathology: age-, trauma-, or occupational-related changes to the bones, especially of the spine, one of the hardest working parts of our bodies. The findings were interesting, but whether they were specific to the Nubians or simply 'normal' for the native populations living in Hierakonpolis at this time needed to be determined.

Luckily, the skeletal material retrieved from the rock cut chamber below one of the mud-brick chapels on Old Kingdom Hill (see *Nekhen News* 18:21–22) was available for comparison. This chamber, or family crypt, contained the commingled remains of at least 30 individuals who had been interred during the Second Intermediate Period and early New Kingdom. The geology of the hill made it too dangerous to collect the entire assemblage from the chamber, so the skeletons were incomplete, but the remains offered the benefits of being from Egyptians who lived at the same place and nearly the same time as the Nubians of HK27C, and of being accessible.

In order to make the comparison, the bones (now filling four large boxes) first had to be decanted for detailed examination. Once the pesky pottery menders had been ejected from the workroom, bones rapidly replaced pots on every available surface. Since the sample was both incomplete and thoroughly mixed, it was not possible to analyse the remains with respect to age and sex groups. Instead, the bones were sorted by skeletal element (i.e. long bones, vertebrae, cranial, etc.) for data collection. Analysis of the pelvises and other elements used for aging suggested a general demographic profile similar to that of HK27C. This made the comparison easier and even more informative.

Keeping in mind that the relative social status of the individuals in the two samples is unknown—the heavily plundered crypt on Old Kingdom Hill contained the remains of two micro-face mummy masks, one covered with gold leaf, but no other indications of wealth such as jewelry or fine vessels—the comparison suggests the Nubian population experienced a greater amount of physical stress than the Egyptians. The HK27C group had higher rates of vertebral osteoarthritis among young and middle adults compared to Old Kingdom Hill. This greater prevalence of degenerative changes on the spine among the C-Group may have been caused by strenuous activities or occupations, particularly by female members of that group, to a degree not undertaken by the local Egyptian population.

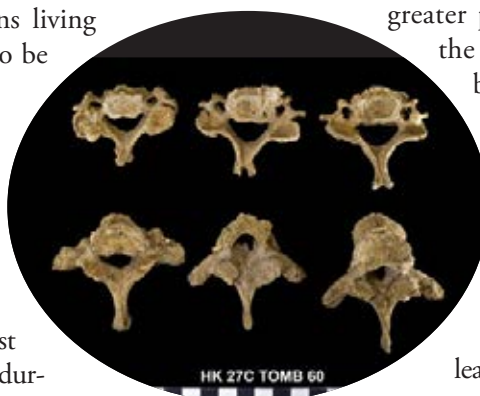
The HK27C cemetery represents a unique population of Nubians dwelling far from their homeland. Study of their leather goods, pottery, bricks and burial customs has revealed how they differed in death from their Egyptian counterparts. Now, the pathological changes visible on their skeletal remains are revealing how their experience in

life differed as well. 🦴

This work was made possible by the White-Levy Program for Archaeological Publications.



Physical anthropologists studying the spines from Old Kingdom Hill.



Ouch! Vertebrae from HK27C Tomb 60 showing degenerative changes of the spine.

Hierakonpolis in Oxford

—Liam McNamara, Curator of Ancient Egypt and Sudan, Ashmolean Museum, and Director of the Griffith Institute, University of Oxford

On 23 November 1898 the Keeper of Oxford's Ashmolean Museum, Arthur J. Evans, launched a public appeal to raise funds for the second season of excavations at Hierakonpolis, a site he described as "pregnant...with such important accessions to the University collections." A first installment of objects from J.E. Quibell's work there in 1897–98 had arrived at the museum earlier that year and Oxford was already becoming well-established as "the standard place for...early Egyptian art", as W.M.F. Petrie later noted in his memoirs. Petrie had donated a selection of predynastic objects from his excavations at Naqada to the Ashmolean as well as two colossal statues of the fertility god Min from Koptos (these had been rejected by the British Museum on the grounds that they were "unhistoric"). In support of further exploration at Hierakonpolis, a series of lectures given by Petrie in the Ashmolean Lecture Room in 1898 generated a substantial sum, and together with grant in aid from several Oxford Colleges and the diversion of certain funds, the Ashmolean was able to support the 1898–99 excavations conducted by F.W. Green.

The initial allocation to Oxford of objects from Hierakonpolis included many of the most important discoveries. To name but a few, the museum received the mace-heads of Kings Scorpion and Narmer, the fabulous Two-Dog palette (see back cover), the limestone statue of King Khasekhem, and a headless figurine of a woman carved in lapis lazuli (the head was subsequently found in 1905 and reunited with the body), along with a variety of small animals in faience, rock crystal, ivory and other materials.



The Ashmolean's Egyptian display c. 1922. How many objects from Hierakonpolis can you spot?

All of these objects were displayed in the Ashmolean's main antiquities gallery shortly after their arrival.

Many of the most important artefacts from the second season were also presented to the Ashmolean Museum. As the museum's Annual Report for 1899 records: "almost the whole of the carved ivories found at Hierakonpolis" were presented, but "unfortunately, owing to the perishable nature of the material, a large number of these arrived in a disintegrated condition. Many of the more important specimens, however, which had been treated with wax, still remain intact." The laborious task of extracting these objects from the consolidated mass of gelatine, melted stearine and beeswax was only recently completed by the museum's conservators (see *Nekhen News* 9:13) and the objects are the focus of continuing research.

In total, over 1000 objects from Hierakonpolis were received, including more than 700 ivories, where they joined material from sites such as Koptos, Naqada and Abydos (amongst others), with the result that Oxford has the most significant collection of Predynastic and Early Dynastic artefacts anywhere in the world outside Cairo. Many of these objects, and particularly those from Hierakonpolis, now feature prominently in



Limestone statue of King Khasekhem (Ashmolean E.517).



Lapis lazuli statuette, the head carved separately and pegged together (Ashmolean E.1057 and E.1057a).

the Lisa and Bernard Selz Gallery, *Egypt at its Origins*, which opened in November 2011.

On-going excavations at Hierakonpolis, as well as the re-display and scientific research on objects from earlier work, continue to breathe new life into the museum's collection. A series of future articles in the *Nekhen News* will examine

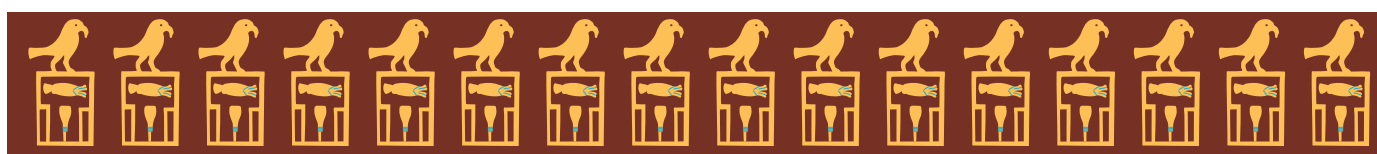


Limestone mace-heads of Kings Scorpion and Narmer (Ashmolean E.3631 and E.3632).

selected artefacts from Hierakonpolis in Oxford in greater detail, especially in light of recent discoveries.

The Ashmolean Museum has been a home for Hierakonpolis for over a century and, it is hoped, will continue to be so for many more years to come. 🏛️

All images in this article are © Ashmolean Museum, University of Oxford.



Introducing the Narmer Catalog

—Thomas C. Heagy

Since the discovery of his palette at Hierakonpolis in 1898, Narmer has become the best known of Egypt's early kings. Yet, he is also one of its most enigmatic. The Narmer Catalog is a new online resource (www.narmer.org), which seeks to promote greater study and better understanding of this monarch and his influential reign — arguably the most significant in Egyptian history. It brings together, for the very first time, the complete set of inscriptions that have been dated or attributed to Narmer, and includes problematic ones as well as some previously unpublished.

The Narmer Catalog builds upon the *Database of Early Dynastic Inscriptions* created by Ilona Regulski (www1.ivv1.uni-muenster.de/litw3/Aegyptologie/index1.htm), and includes images for each inscription and further references, making it a primary and easy to use resource destination for all researchers specifically interested in Narmer.

For each inscription, it provides the following information: the Source Number (same as those in Regulski's database to allow cross-referencing and avoid confusion), Date, Dated by, Type, Material, Region, Site, Locality, Depository, Registration No., References, and drawings and/or photographs, with new photography supplied where possible. The sources for the database entries come, to the greatest extent possible, from every substantive source in English, French and German.



Detail from the Narmer palette.

Supplementing the Narmer Catalog are bibliographies for the Narmer Palette (courtesy of Stan Hendrickx) and the Narmer Mace-head, which include extensive references for these widely known objects from Hierakonpolis. Complete bibliographies featuring all of the database references are also available.

The purpose of the Narmer Catalog is to encourage and facilitate research on King Narmer by all interested parties. Help us keep it a useful and up-to-date resource. Your comments, corrections, and additional information are most welcome at: comments@narmer.org. 🐦

The Narmer Catalog project is directed by Thomas Heagy with the assistance of Elise MacArthur. For further information visit us at www.narmer.org

HK in Berlin? Flint Animals and Carved Ivory in the Ägyptisches Museum und Papyrussammlung

—Robert Kuhn, Ägyptisches Museum und Papyrussammlung, Staatliche Museen zu Berlin, Germany

For many years, visitors to the Egyptian Museum in Berlin have not been able to see objects dating back to the very beginning of Egyptian history. To remedy this, a special exhibition was created in 2015 to illustrate the most important steps in early Egyptian craftsmanship and cultural development. On display were about 200 artifacts belonging to Berlin's marvelous collection of Pre- and Early Dynastic objects, and a new book, discussing them in their cultural and technological context, was produced. A permanent installation of these objects in the Neues Museum on Museums Island is now being planned.

In the late 19th and early 20th centuries connections between excavators, such as W.M.F. Petrie and G. Schweinfurth, and private collectors, such as M. Kennard and J. Simon, helped the Berlin Museum to obtain a remarkable number of artifacts dating from the Palaeolithic to the end of the Second Dynasty. In addition to finds from Naqada and Abydos, there is also a rich collection from the necropolis of Abusir el-Meleq, which was excavated in 1905–1906 by G. Möller, who was a curator at the museum. Sadly, part of the material was lost during World War II, yet many objects of stone survived, as well as some of pottery and organic materials.

None of the Berlin objects have a documented origin as Hierakonpolis, but for some this provenance is highly probable. This is especially the case for the three zoomorphic flint figurines purchased in 1901 and 1902 by L. Borchardt in Upper Egypt. The notes in the inventory book report Qena as place of acquisition (although some publications state this as Hierakonpolis). The first piece, purchased in 1901, is the figurine of a Barbary sheep made from a dark, nearly black, flint (ÄM 15712). Its head is shown in front view to display the characteristic features of the horns (cf. the Barbary sheep from HK6 Tomb 23, see *Nekhen News* 17: 5).



Flint figurine of a Barbary sheep in Berlin, ÄM 15712 (Photoarchiv).

The two other pieces were bought one year later possibly from the same antiquities dealer. One represents a bovid (ÄM 15774), which was identified by G. Schweinfurth and the zoologist M. Hilzheimer as a hartebeest, while the other is clearly an ibex (ÄM 15775). Both figurines are struck from



Flint figurine of a bovid in Berlin, ÄM 15774 (photo: Sandra SteiB).

brown flint, corresponding to the type used by Hierakonpolis artisan groups 1 and 2 as identified by K. Nagaya (see *Nekhen News* 23: 19). In addition to similarities in the materials, the style of all three Berlin figurines also shows a strong connection to the figurines from Hierakonpolis.

This affiliation was made even clearer during the special exhibition by the chance to display the Berlin ibex with a cast of the famous HK6 ibex that was found in the chapel of Tomb 23 (courtesy of the Hierakonpolis Expedition and the skills of Richard Jaeschke). Comparing these examples and analyzing the production technique, it seems quite clear that the Berlin figurines were made with the same flint knapping technique and were probably produced in the same workshop as the HK6 flints. No provenance for the Berlin figurines can be stated definitively, but it is highly probable that these pieces originated from Hierakonpolis and date via stylistic comparison to the Naqada IIA–IIB period.



Friends reunited: flint ibex from HK6 Tomb 23 and ibex in Berlin, ÄM 15775 (Berlin photo: Sandra SteiB).




Ivory cylinder in Berlin, ÄM 19653 (photo: Andreas Paasch).

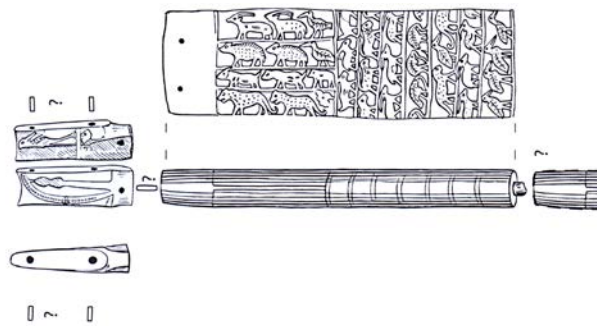
A fourth object possibly coming from Hierakonpolis is an ivory tube or cylinder (ÄM 19653), originally consisting of a minimum of three segments, of which two are preserved in Berlin. These pieces were purchased near Elkab in 1910 by L. Borchardt, but no precise provenance was recorded. Both fragments are almost round in cross-section and decorated in raised relief. The longer tube is 16.5cm long and 1.9cm in diameter. A slightly broken peg, still preserved in its bottom, once connected it to another cylinder probably also of ivory. The decoration consists of seven rows of different animals moving horizontally around the tube and, above them, of four rows of animals moving upwards along the shaft.

The second segment was once joined to the longer cylinder by a peg made of ivory or wood, but this has not been preserved. This piece is 5.2cm long, and has a round cross-section that becomes flatter toward the upper end, and terminates in a slightly concave tip. The two flatter sides are decorated in raised relief, one showing a plant or feather connected to a pole, the other a bird and a feline each on baselines, placed one above the other. The short sides have two parallel drilled holes. It seems probable that these holes were meant for little pegs by which to attach other elements, probably of ivory, to both sides.

Again, the excavations at Hierakonpolis provide the best parallels for these fragments. Several small tubes and cylinders made of ivory and bone were found in the 'Main Deposit' in the temple area at Nekhen. These tubes have very similar measurements and designs, some even have small drilled holes. Many show comparable scenes of animal rows in raised relief, yet so far none can be identified as the missing third segment of the Berlin cylinder. One piece from Hierakonpolis has the same types of animals, but its diameter is

almost twice that of the Berlin pieces (UC 27653). Another complete tube with comparable animal rows (UC 14865) has roughly the same diameter, but the animals stand on cross-hatched base lines, while the base lines on the Berlin pieces are plain.

What are these things? The neatly carved tubes seem to be parts of a composite object put together with pegs, while the drilled holes might have helped to secure the linkage. It has been suggested that the fully assembled tubes served as handles for mace-heads. However, I wonder whether the pegged construction of these handles would have been able to support the weight of a stone mace-head, even if used only for ceremonial display. The Berlin specimen, on the other hand, is different, as the upper end has holes for the attachment of presumably rather narrow pieces to either side. Whether this item served as a handle for a standard or as part of a fan cannot be said for sure. On-going analysis will hopefully shed more light on this enigma, but whatever it may be, we can at least say that it probably came from Hierakonpolis! 

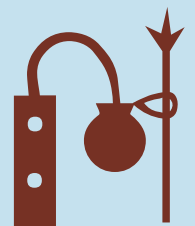


Drawing of the Berlin ivory cylinder (after Kuhn 2015, fig. 70b).

Photographs of Berlin objects © Ägyptisches Museum und Papyrussammlung, SMB.

For More on Berlin's Early Egypt Collection

Robert Kuhn, *Ägyptens Aufbruch in die Geschichte. Ägypten im Blick: Schriftenreihe der Ägyptischen Sammlung Berlin, Bd.1.* Reichert Verlag, Wiesbaden, 2015.



Dr Ahmed Gamal-ed-Din Fahmy 5 March 1962 – 18 December 2013

In December 2013 we lost a gifted archaeobotanist, a valued team member, and our dear friend Ahmed Fahmy after a two-year battle with brain cancer. His contribution to the archaeobotany of Ancient Egypt, and Hierakonpolis in particular, was immense. He published over 20 scientific papers on the topic alone and, as a professor at Helwan University, trained a number of students to follow in his footsteps.

Ahmed's involvement with Hierakonpolis began with his PhD dissertation, *A Historical Flora of Egypt, Preliminary Survey* (Cairo University 1995), a large part of which dealt with the plant remains recovered from HK11C Test A (the trash mound) and the ceremonial center at HK29A excavated by Mike Hoffman. Joining us in 1997, he began building upon his doctoral research with the study of the vast body of botanicals from around the site. As readers of *Nekhen News* will know, he was responsible for significant discoveries ranging from (among many other things) the contents of the final meals of people buried at HK43 (*Nekhen News* 9:5; 12:19) to that of the elephant found in HK6 Tomb 24 (*Nekhen News* 15:11); and from the ingredients of a predynastic incense mixture with the first evidence for the use of dill (*Nekhen News* 15:20) to the identification of some of the earliest false offerings for the dead (*Nekhen News* 18:23).

Trained as a specialist on fruits and seeds (macro-remains), Ahmed became interested in phytoliths (micro-remains) and with the aid of an Alexander von Humboldt grant in 2003 began the study of phytoliths in West African plants. In 2006, he shifted that interest back to Egypt, and together we received a grant from the National Science Foundation to undertake the integrated analysis of plant remains at Hierakonpolis. This grant enabled him to create an archaeobotanical laboratory at Helwan University and begin the intensive



Ahmed taking a break from the microscope.

study of the residue from the breweries (see *Nekhen News* 20:21). From this study he was able to work out the production steps and recipe for Nekhen beer, research that sadly remains unpublished as we wait for robust radiocarbon dates – something we hope to rectify soon.

In addition to the gifts he gave to us of his expertise and dedication, Ahmed is also to be thanked for bringing to us his wife, Jane Smythe, who served as our illustrator and part-time potter for many years (see *Nekhen News* 17:21-23). Their arrival at Hierakonpolis was always much anticipated by the team and the Sidain family. We could be sure that Ahmed's wry humour would soon keep us all much amused, and Jane's boundless energy would always give us a boost. No one would ever tell me what was so hilarious about floatation (i.e. dumping soil samples into water and waiting for the botanicals to float), but whenever that day rolled around and the buckets came out, continual peals of laughter would ring out across the house compound followed by Ahmed's hearty guffaw — sounds I will sorely miss.

Much in demand by other missions and burdened with administrative duties at the University, in recent years we didn't see as much of Ahmed as we would have liked. Nevertheless, I think he always considered Hierakonpolis his home. He was certainly part of our family and we continue to mourn his tragic passing. 🙏

—Renée Friedman



Ahmed with students having fun at floatation, 2007.

The list of Ahmed's scientific papers can be found at www.hierakonpolis-online.org; Meet the Team.

Fred Wendorf

31 July 1924 – 15 July 2015

More than anyone else, Fred Wendorf, and the team he put together under the aegis of the Combined Prehistoric Expedition (CPE), can be thanked for re-igniting interest in the prehistory of the Nile Valley with his work in Nubia in the 1960s, while his subsequent investigations in the Western Desert added an entirely new chapter to our understanding of the origins of Egyptian civilisation.

Fred started off as an archaeologist working in North America, where amongst his many contributions, he was instrumental in developing the techniques and legislation for the then unknown field of salvage archaeology. In 1961 he answered the call for one of the largest salvage projects of all—the rescue of Nubia before it was flooded by the waters of Lake Nasser. Dramatic discoveries, including the earliest evidence for warfare, made during his four seasons of work there radically changed our view of a place where, in fact, it was believed no Palaeolithic sites existed at all.

After the waters rose, in 1967 Fred and the CPE moved north and undertook a survey of Palaeolithic sites along the Egyptian Nile Valley from Aswan to the Fayum. One of the places they stopped at along the way was El-Kilh. Often described as being near Edfu, as the map on page 2 shows, the sites (E71P1-6) they investigated are (or were) actually on Hierakonpolis' door step. Here they found the camps of various groups of Late Palaeolithic hunters and gatherers ranging in date from 21,000 to 14,500bp, demonstrating the time depth present in the Hierakonpolis area. More importantly, from the analyses of the finds

and their geomorphological settings at all of the sites they surveyed, and especially Wadi Kubaniya where intensive investigations were undertaken from 1978 to 1984, Fred and his long-term collaborator Romuald Schild were able

to open a window on a long vanished world far different from what we might imagine, giving us a view onto a desolate Nile Valley where dune fields flanked an erratic, highly seasonal river. Resources were scarce and life was brutal, yet these groups managed to survive, some in quite innovative ways.

Expanding upon this research, in 1972 Fred moved into the Western Desert, then terra incognita, where

he discovered the remains of hunters and herders who colonized this now arid land when greater rainfall, from c. 8500 to 4500 B.C., made it possible. His three decades of work in the desert yielded an immense amount of new data about both climate and human adaptation. The Neolithic ceremonial center he discovered at Nabta Playa, with its tumuli, megalithic alignments and calendar circle provides evidence for the early development of complex society, with important implications for understanding the predynastic cultures that later flourished along the Nile.

From 1964 until 2002, Fred was a professor at Southern Methodist University in Dallas, Texas. In 2001 he donated the artefacts collected during 40 years of his remarkable career to the British Museum. A selection of these is now on display in the new gallery of Early Egypt.

Fred was an archaeologist with global impact, an old style southern gentleman, and just plain fun. It was a privilege to learn from him and be able to call him friend. 🐦

—Renée Friedman



In the shadow of the Fort, Fred and team at El-Kilh in 1967 (Wendorf Archive, British Museum).



Fred Wendorf (left) and Romuald Schild (right) at the Nabta Playa calendar circle. (Courtesy of CPE).

THE HIERAKONPOLIS HOME PAGE

Wells are Deep Subjects

—Joe Majer, San Francisco

Water, we take it for granted. When we turn the tap we expect a never ending flow of the life-giving liquid. However, at Hoffman House, our home away from home at Hierakonpolis, obtaining an adequate water supply for washing and flushing has always been a challenge. Early on we installed a pipe line connecting into the village water system. Since the house is 1km away from and 10m higher than the village, good pressure is needed to get the water up to us, but if the waterworks turns up the pressure, the village pipes leak, so the pressure is generally set at a medium value. This means that it is only at night, when the village is asleep and the pressure rises, that we get water, which we collect in numerous storage tanks for later use. Not the most reliable system, but it worked. Thrifty use of the supply meant everyone could have a shower when needed. Life was good.

Unfortunately, this was not to last. Since the revolution, infrastructure maintenance has taken a back seat to other issues and the water has become ever more erratic. In recent years many are the times when water trucked up from the village in jerry cans was all we had. Limited water also meant the garden was rapidly withering while the termites flourished, munching their way even more quickly through our storage boxes.

Something had to be done. An application was made to drill a well. In late 2014 permission was granted and Renée quickly hired a well digger. Actually, she hired three, the last of which finally found water, 33m down. However, the quality

of the local pumps could not be guaranteed, so she asked me to buy a pump in the US and bring it out and install it. I must say I knew little about wells. Fortunately, I found *A Manual for Well Drillers in Africa*; it became my bible.

Book and pump in hand I set off for Egypt. Who would believe it, but for the first time in 30 years of visiting Egypt, I was asked to open my bags at customs. Naturally they wanted to know what the pump was. They pushed it, prodded it, and asked many questions, but finally waved me through.

At Hierakonpolis, however, we had a bigger problem. There was water in the well, but it was full of silt. Was this an issue of the supply or could it be flushed out? Hoping for the latter, I assembled the components for the pump installation, and then waited as heavy duty sumps sucked out the sludge. It took a long time, but finally the water seemed to clear. It was now or never.

Extending my stay so we could do the final installation, I was up early, nervously waiting for the plumber. Once present, we quickly set to work, lowering the pump into the well as we attached length after length of plastic pipe to carry the water to the surface. After weeks of preparation, within an hour everything was in place and we were ready to see if it worked. When I hit the switch all eyes were on the hose-pipe leading from the well. Would it be water or would it be sludge? For a moment all was quiet. Then the pipe quivered and water gushed out. We were more than relieved, we were ecstatic!

From now on we will have water independent of the village system. Although we still need to plumb it into our system, it is nice to know we can flush freely and that the garden will again be green. Well done! 🍷



Drilling the well: third time lucky!



All hands on deck: Joe lowering the pump into the well.

The Friends of Nekhen

Nekhen is the ancient Egyptian name for the site of Hierakonpolis, the city of the hawk, and one of Egypt's first capitals. The Friends of Nekhen is a group of concerned individuals, scholars and organizations that is helping the Hierakonpolis Expedition to explore, conserve, protect and publish all aspects of this remarkable site. The largest Predynastic site still extant and accessible anywhere in Egypt, Hierakonpolis continually provides exciting new glimpses into this formative — and surprisingly sophisticated — age, and more.

In return for your contribution you will receive the annual newsletter, the *Nekhen News*, produced exclusively for the Friends. Lavishly illustrated, the *Nekhen News* keeps you up-to-date on all of the Expedition's latest discoveries.

Help the Hierakonpolis Expedition to continue its important work. Your contribution (tax-deductible in the USA) will support vital research that might not otherwise be possible. Share in the excitement and the sense of commitment by making a genuine contribution to the search for understanding. Join the Friends of Nekhen. 🦅

Ways to Contribute

I would like to help the Hierakonpolis Expedition to explore and conserve the site of Hierakonpolis, ancient Nekhen. In return for my contribution (tax-deductible in the USA), I will receive the annual newsletter, the *Nekhen News*.

The contribution category I prefer is:

- Regular (\$25/£17/€25)
- Sponsor (\$250/£150/€250)
- Patron (\$500/£250/€500)
- Sustaining (\$1000/£500/€1000)
- This is a renewal for the 2016 season.
(If you have already renewed, thank you!)

Make your US \$ check / GBP £ cheques payable to (we are unable to accept cheques in Euros):

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To pay by credit card, Paypal or bank transfer, visit our web page at www.hierakonpolis-online.org.



Detail from the Scorpion mace-head, found at Hierakonpolis, now in the Ashmolean Museum, Oxford.

We Are on the Move!

To secure the on-going exploration of Hierakonpolis and provide a safe repository for an archive of excavation notes and images spanning almost five decades, the expedition has forged a new affiliation with the Ashmolean Museum at the University of Oxford. The Ashmolean has long-established connections to the site and has been home to some of its best known objects from more than 100 years (see pages 24–25). The perfect place to be, our association with Oxford offers many exciting opportunities for a bright future as we strive to illuminate the past.

Change isn't hard — note only the new names and/or mailing addresses for you contributions.

Please support us on our journey, as we continue to explore, conserve and study the city of the hawk! 🦅

Special contribution for
A Brighter Future

\$/£/€ _____



Name: _____

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Highlights of 2015



What's new in Tomb 2? (page 10).



More hearths, more fish scales at HK11C (page 12).



Well done! (page 30).



Wall construction at HK6 (page 4).



Pot luck (page 21).



A giraffe at last? (page 4).



Lovely leather (page 19).



HK in Oxford (page 24).

