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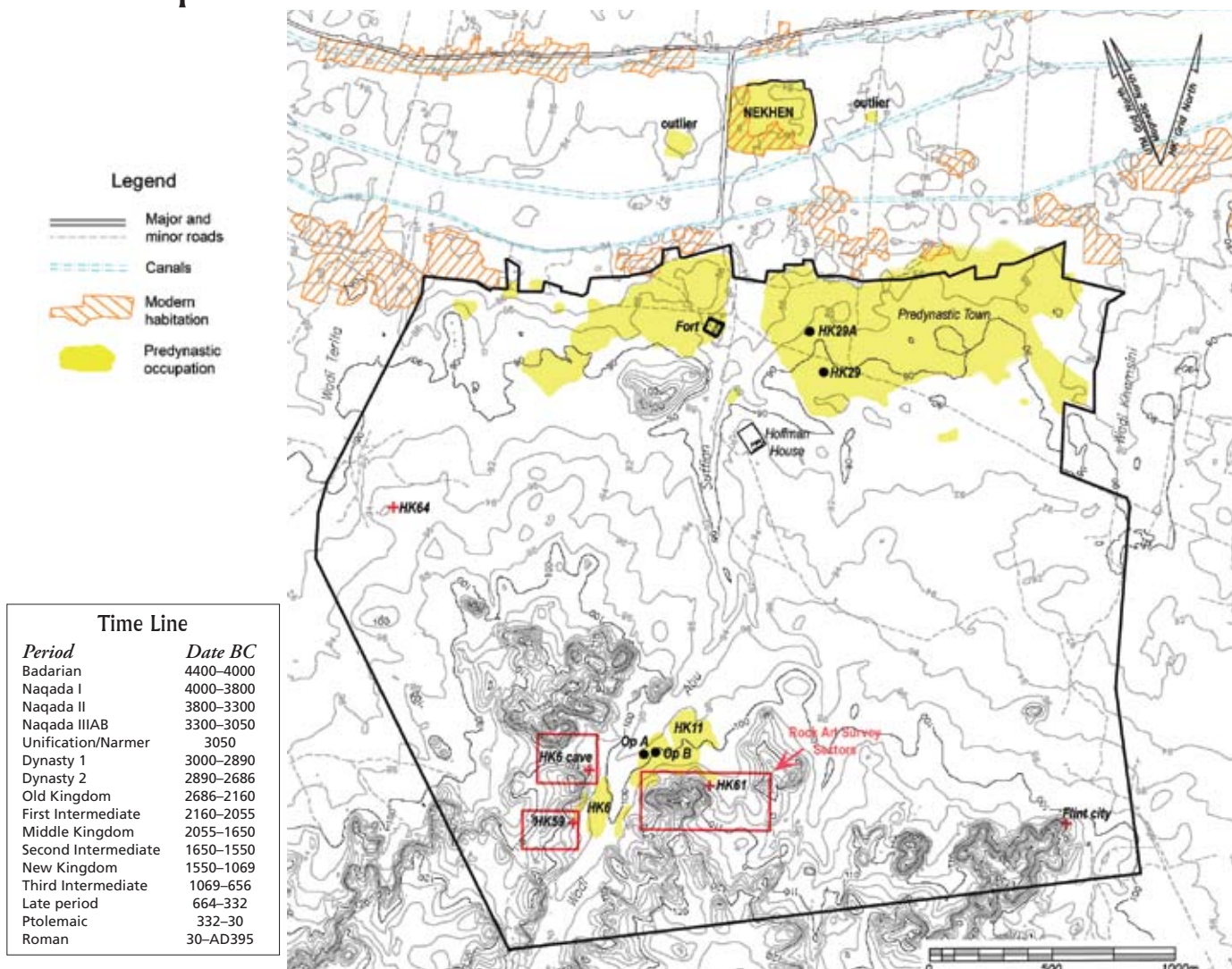
An Elephant Revisited

In This Issue

Hierakonpolis 2009	2	Eggsplosion!	18
Slow and Steady	3	The Perfect Sherd	20
A Tour of the Palace	4	Building a Brewery	21
HK6 Checklist	7	One More Big Pot: HK11C Operation B in 2009.....	23
Elephant Hunting at Hierakonpolis	8	Monkey Business: The Earliest Green Monkey	
An Elephant's Last Meal.	10	in the Egyptian Nile Valley	24
Animal Hospital: Healed Animal Bones from HK6.....	11	Off to a Rocky Start: The Rock Art Survey of HK	26
Two New Tombs at HK6:		Into the Breach: Fixing the Fort in 2009	28
The Hippo Hunters of Hierakonpolis.....	13	Mexican Night at HK.	30
The Tale of Tomb 30.	15	HK on the Web.	30
Photo Highlights 2009	16	The Friends of Nekhen	31



Hierakonpolis 2009



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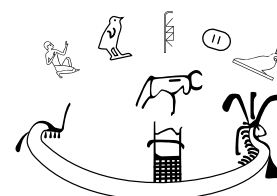
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Slow and Steady

— by Renée Friedman

Bit by bit, we are lifting the lid on the treasure chest we call Hierakonpolis. We don't mean to go slowly, but it just takes time to tease out all of the secrets hidden in our remarkable range of finds—some as small as a starch grain, others as large as an elephant. Nevertheless, some projects do eventually come to a successful conclusion.

This season we managed to expose the full extent of the pottery and food producing installation at HK11C (Operation B) and uncover the last of the big pots (see page 23). We also finally got to the bottom of Tomb 30 in the HK6 cemetery with surprising results (page 15). We are also proud to report that Phase I of the Fort Fixing is nearing its finale (page 28). The emergency supports erected at the end of last season did their job and the central gaps are now well-forgotten memories. A few more final touches and the most critical repairs necessary to keep the Fort standing will all have been implemented. There is still plenty to do, but the crisis stage is over. What a relief!

While some projects are drawing to a close and new projects are being launched (see Rocky Start on page 26), the process of analysis and interpretation is on-going and knows no time limits. A review of even the most unattractive finds can yield important new information (see Perfect Sherd on page 20 and Monkey Business on page 24). But sometimes, to really understand the material, you just have to try it yourself. Experimental brewery building and bead-making (pages 21–22) made up part of our busy schedule during the 2009 season.

Of course, every new find produces new queries and occasionally old areas must be revisited in order to answer them. Unresolved questions, not the least being where was the elephant really buried, prompted us to return to the part of the HK6 cemetery previously investigated by Barbara Adams in 1997–1999. Although the elephant did his very best to hide, we eventually caught him, exactly where predicted (see page 8). However nothing else was as expected.

Looking for more pillared halls we found fences, looking for fences we found tombs. Put all together, they form an unanticipated new architectural complex which may well be a near life-sized model of an early royal palace, populated for eternity not only by family, courtiers and servants, but also by a wide range of animals. Is this the world's first zoo? It certainly seems that way.

Analyses of the faunal and botanical remains (pages 10–12) are providing intriguing glimpses of the make up and management of this royal menagerie as well as a new appreciation of the physical realities behind the iconography of this period and early expressions of power.

Slow and steady, we certainly aren't going to win any races. Instead we are gaining a far better prize: An ever wider and richer understanding of the surprisingly sophisticated society that put Egypt on its path to greatness.

Thank you all again for giving us the opportunity to work at this extraordinary site. It may take time, but it's worth the wait! 🦶



Ostrich offerings: new beads and more eggs (pages 18 and 22).



Fathy making the posts pop up at HK6 (page 13).



Bird's eye view of excavations at HK6 in 2009.

A Tour of the Palace

— by Renée Friedman

Four years of exploration in the elite cemetery at HK6 have gradually revealed the perplexing precinct of the pillared halls. Located within a cemetery, we can presume that they had some funerary function, but before contemplating the finer details, we had to determine whether these structures were restricted to one area, or whether there were others elsewhere in the cemetery. Fortunately, we had a pretty good idea where to look.

About 30m to the north, Barbara Adams discovered Tomb 16, a brick-lined tomb of the early Naqada III period, which had actually been constructed within a large, royal-sized, tomb of the Naqada IC–IIA period (c. 3700 BC). Several substantial posts noted in the vicinity suggested the presence of above-ground structures, but because this tomb was found before the possibility of recovering wooden architecture was realized, the traces were not thoroughly investigated.

Tomb 16 was a very rich tomb. The two best preserved masks come from it, as well as a huge amount of pottery—over 115 vessels, including one incised with the earliest known image of the goddess Bat (see *Nekhen News* 17: 11–15). So, if any area of the cemetery was going to give us some answers, this seemed like the best bet, and we took that gamble during the 2009 campaign.

It wasn't easy though. The area around Tomb 16 has been intensively plundered. The looting left no tomb untouched, with many bodies reduced to splintered bones. It is not clear when this took place, but it must have occurred before the trade in antiquities had any influence, as time and again we found that complete pots had been taken to the surface and smashed, presumably to see if they contained anything of value. Nor were the looters interested in cosmetic palettes.

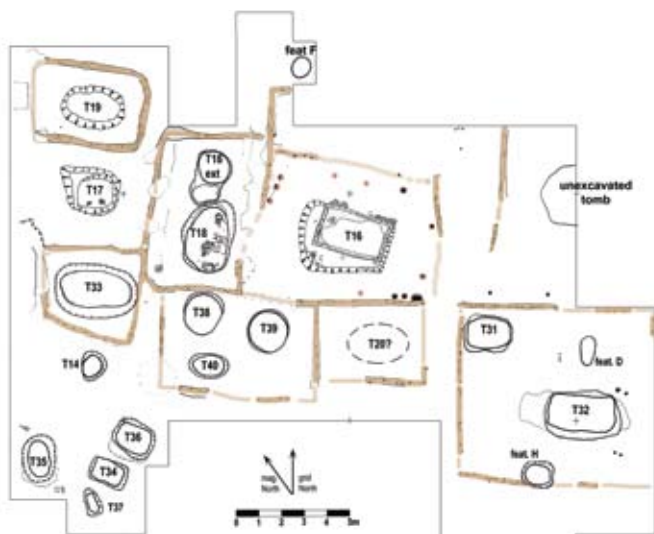


Slate cosmetic palettes and rubbing stones rejected by the robbers.

On two separate occasions, we found these elegant objects discarded by the edge of the tomb, in both cases intriguingly broken in exactly the same place. Whether they entered the tomb in this condition remains to be seen.

Despite the upheaval, architectural preservation was surprisingly good; clearly the looters were not as interested in wooden posts as we are! Although the steep edges around Tomb 16 had subsided, we were still able to detect a number of medium-sized posts set at intervals into individual postholes. We also found traces of the post fence that once surrounded it all. Put together, the lay out seems to resemble the large Early Dynastic Tombs 1, 10, and 11, which were equipped with wooden superstructures and surrounded by a close-fitting fence. While these massive elite tombs apparently stood in isolation, further investigations indicate this was certainly not the case for Tomb 16.

Far from being isolated, Tomb 16 appears to be at the center of an interlocking network of wooden fences that surround a variety of tombs and tomb groupings. This ar-



Plan of the Tomb 16 complex.



Mapping the posts around Tomb 16.



Treasures of Tomb 18: ivory cups, combs, malachite, resin and beads

rangement recalls the early Royal Tombs at Abydos, where subsidiary burials of the members of court were arranged around the tomb of the king, but instead of the serried ranks of retainers as at Abydos, each of the enclosures around Tomb 16 differs in size and content, lending a much more domestic feel. And the best key for interpreting the remains may well be the house metaphor—not just any house, but the royal palace itself!

The household has so far only been partially exposed, but we can still take a brief tour of the palace and meet some of its inhabitants. Further details and more intimate introductions can be found in the following pages.

Access was probably from the east, via the wadi, so let's start near the front. Here we found Tomb 31, a high status tomb placed in the corner of a large enclosure with remarkably well preserved posts (see page 13). That it belonged to people of importance is indicated not only by its contents, which included a palette and some very fine pottery, but also by the space allotted to it. Its big enclosure is shared with only one other tomb—Tomb 32, a large rectangular grave which was flanked by two subsidiary burials. To north, a shallow grave held two dogs (Feature D), while to south a deeper pit contained a juvenile hippopotamus (Feature H). This is the third young hippo recovered from this cemetery, but the first to provide indications that it was held in captivity for some time before its death (see page 11). Together with the dogs, it suggests that the owner of Tomb 32 was quite a hunter.

Moving inward through the complex, we come to a somewhat smaller enclosure containing a tomb (Tomb 20), first excavated in 1999, but still in need of re-examination. Nevertheless, it must have belonged to someone with exquisite taste to judge from the lovely objects found around it, including some elegant pots and more of the fine flint work for which the site is famous (see page 16).

Jumping around to the west side of Tomb 16, we encounter Tomb 18, which was surrounded by another sizable fenced enclosure. The main part of the tomb was originally excavated by Barbara's team, who found the remains of five adults, some still partly articulated. Re-examination this season revealed annexes built on to the north side of the

tomb for the interment of children. While some of the bodies were too poorly preserved to be identified, the predominance of women and children in these tombs is interesting, especially given the location. The high quality of the goods with them—ivory hair combs and cups, and carnelian beads—suggests these were very high status individuals. Each of the adults was buried with one or more fine red bowls, while the children had exquisite little black-topped jars. All in all, it is rather tempting to see them as the royal ladies and their children—the harem. If this is indeed the case, then their obvious connection with the concept of fertility may explain the cluster of ostrich eggshells found in the southwest corner of the enclosure, which has helped to push the calculated total of whole ostrich eggs originally present in the HK6 cemetery to a rather astounding 22 (see page 18)

Concluding our tour of the human burials we come to a small enclosure containing three round tombs, all badly disturbed except for one, Tomb 39, which retained in situ evidence of four individuals, if based mainly on the presence of their feet! In addition, the tomb also retained a little leather pouch holding chunks of malachite and a number of clay beads still on their string. What else it might contain we can't say, as we didn't have the heart to take it apart. Notable, however, is the relative poverty of the materials—clay beads instead of stone. This, combined with the limited space



Tomb 39. Inset: pouch with malachite chunks and beads.

allotted to the enclosure and its corner location, suggests that we may well be in the servants' quarters, where long suffering nannies were laid to rest, but still available for an eternity of service.

Progressing now to the back of the complex, we reach the animals, since the logical place to keep them is of course in the back yard! Indeed, the second rung of tombs along the west side of the complex is almost entirely inhabited by animals, with pride of place being held by the elephant in Tomb 33. Part of this elephant was first discovered in 1997 (*Nekhen News* 10: 3–4), but its true grave remained elusive. It was well worth tracking down as Joe Majer reports on page 8.

The elephant was not the only animal in the yard. To the north, there was an aurochs, or wild cattle, who had been buried like the elephant in its own tomb, surrounded by a post enclosure, which still preserves traces of its white plaster coating (Tomb 19). There was also a hartebeest, whose bones display several pathologies indicative of captivity (see page 11). Its tomb has not yet been located, but is probably immediately west of Tomb 33.

The wild species in the north were joined in the south by domestic animals, including a cow and calf, found nearly intact in Tomb 36, six hunting dogs in Tomb 14, and two giant goats in Tomb 35. A corral for the domestic stock has yet to be identified. Perhaps they were allowed to roam freely in death as in life, while the wild animals were kept in a veritable zoo and buried within their eternal cages. Each group, it seems, was accompanied by their respective human keepers (Tombs 17 and 34), with perhaps the master of the hounds laid to rest amongst his dogs in Tomb 14.

It is the strict division between domestic and wild animals that shows most clearly that there is nothing arbitrary about the layout of any of the burials, animal or human. At this point in our understanding it all seems to fit together very nicely as a microcosm of the royal palace, with



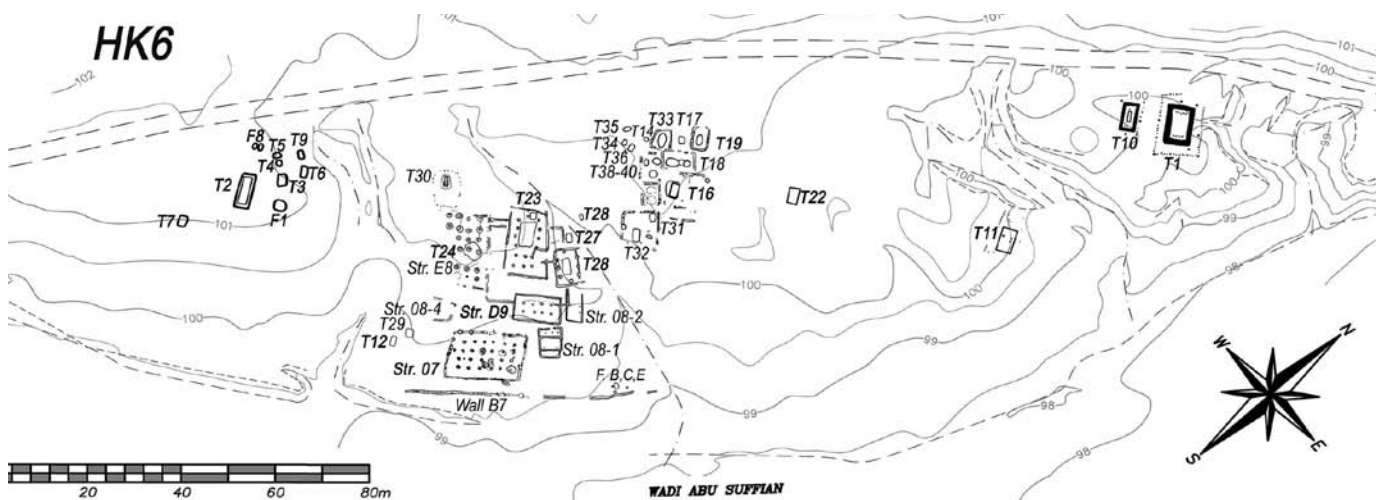
Cow and her calf in Tomb 36.

the positions held in life mirrored in death as they revolve around the ruler in Tomb 16, who expressed his status in many ways.

The burials of prized domestic animals showed off husbandry skills and wealth, while the burial of large and exotic wild animals displayed power. This was not simply the power to kill them, but also the power to control them and potentially become them, taking their natural, physical powers as his own, setting the stage for the iconography of early kingship.

Obviously much remains to be explored and the full size of this interlocking network of fences is still undetermined. Only on the south side have its limits been defined by a 6m-wide empty zone that separates it from the pillared hall precinct.

Unexpected and unprecedented, the discoveries in the Tomb 16 complex pose many new questions, but at least they answer the one we were asking. We can now state with certainty that the remarkable pillared halls occupy a special place in a cemetery that is nothing short of extraordinary. 🏠




Map of the areas excavated to date in the HK6 cemetery. So much more awaits!

HK6 Checklist

— by Renée Friedman

In the 2008 issue (vol. 18) of the fine periodical *Archéo-Nil* (Review of the Society for the Study of Pre-Pharaonic Cultures of the Nile Valley), I published an article on ‘The Cemeteries of Hierakonpolis’. For this contribution, I compiled a list with summary data for all of the tombs in HK6 known at the time. Of course, every season brings new data, but little did I expect to have to revise this list so extensively so soon. Much has changed in just one year (shaded rows in the table). Not only can we add 10 new tombs to the roster, and new details of architecture, but we also must amend earlier attributions and descriptions. Some tombs have changed

shape and contents, while a few must now be reclassified as simply looters’ pits.

This is by no means the final word. Expect changes again next season after the physical anthropologists study our backlog of human remains to determine minimum number of individuals (MNI) for the new tombs. The faunal assemblage is also being re-assessed and if time permits we hope to sort out the question of Tomb 20–21. It is all starting to get pretty complicated, so even if you aren’t a great lover of lists, this score card should help you keep track—at least for now. 

Tomb	Size (L x W x D)	Architecture	Occupants	Date (Naqada Period)
1 brick lined	Ext: 8.2 x 5.4m Int: 6.2 x 3.5 x 2.5m	Fence: 13.75 x 9.5m	1 human	IIIB–C1
2 rock cut	6.25 x 2.1 x 4.11m with side chamber	probable	5 humans assoc	IIIA2–B?
3	2.36 x 2.6 x 1.8m	?	2 human, 2 goats	IIA
4	0.9 x 0.3 x 0.3m oval		1 human	undet
5	1.2 x 0.75 x c 0.40m		7 dogs +2 human	IIA
6	2.9 x 1.6 x 1.5m	?	5 human	IIA
7	2.5 x 2.1 x 0.75m	?	5 cattle	Undet
8	postholes			
9	2.0 x 1.1 x 1.25m		1 human, 3 dog skulls	IIA
10 brick lined	Ext: 6.6 x 3.7m Int: 4.76 x 2.7 x 1.75m	Fence: 8.5 x 4.7m	? 1 clay coffin	IIIA2–B
11 brick lined	Ext: 5.7 x 3.0m Int: 4.9 x 2.4 x 2m	Fence: 9.5 x 4.7m	1 child, clay coffin 6 sheep/goat	IIIA2
12	1.5 x 1.0 x 0.9m		7 baboons, cat, hippo	II
13	Looter’s pit		See Tomb 35	
14	1.7–1.0 dia x 1.15m		6 dogs+1 human	IIA
15	Looter’s pit/post holes		See Tomb 14	
16A	4.3 x 2.6 x 1.2+m	Fence: 7.5 x 6.2?	1+ human	IC–IIA
16B brick lined	Int: 2.97 x 1.89 x 1.21m	Superstr. 6.5 x 4.6m	?+1 cattle foreleg	IIIA
17	1.52 x 1.4 x 1.12m	?	3? human, 1 baboon, 3 sheep/goat	IC–IIA
18	3.45 x 2.44 x 1.15m	Fence: 6.6 x 4.0m	5 human, 1 dog, 4 sheep/goat	IC–IIA
18 ext a	1.2 x 0.7 x 0.78m		Children MNI?	IC–IIA
18 ext b	1.5 dia x 1.34m			IC–IIA
19	2.96 x 1.97 x 1.4m	Fence: c 5.0 x 3.5m	Aurochs, 7 sheep/goat	IC–IIA
20–21	To be determined	Fence: 4.7 x 3.5m	? for Tomb 20–21 occupant	IC–IIA
22 brick lined	Int: 3.28 x 2.18 x 1.53m	?	2 human (v. frag.)	IIIA
23	5.4 x 3.1 x 1.17m	Superstr. 6 x 4.5m Fence: 16 x 9m	12 humans	IIAB
24	c.4.0 x 3.0m oval	Within Str E8	elephant, bull	IIAB
25	1.65 x 1.4 x 0.65m	Superstr. 2 x 2 m	2 human	IIAB
26	3.3 x 1.45 x 1.07m	Superstr. 7.0 x 4.5m Fence: 8.0 x 5.0+m	3 humans	IIB
27	1.9 x 1.2 x c 1m	Fence: c.3.0 x 2.3m	2 humans	IIB
28	1.2 x 0.70 x 1m		1 sheep, 1 dog	IIB?
29	2.0 x 1.8 x 0.9m		3+ human	IIA
30 brick lined	1.6 x 0.4 x 1.9m	Fence (usurped?) 6.75 x 5.5m	1 human	Dyn. II–III
31	1.96 x 1.40m x 1.2m	Fence 8.2 x 7.8m	2 humans +	1C–IIA
32	2.9 x 1.55m x 1.25m		Many humans MNI?	IIA–B
33	3.0 x 1.65 x 1.95m	Fence: 4.3 x 4–3.2m	elephant	IC–IIA
34	1.38 x 0.96 x 0.72m		1 human	IC–IIA
35	c. 1.6 x 0.95 x 1m	?	2 goats + humans?	IC–IIA?
36	1.48 x 1.2 x c. 1m		Cow and calf	IC–IIA?
37	Plunder pit			
38	1.70 dia x 1.2m	Fence: 6.8 x 4.5m	Many; MNI ?	IC–IIA
39	1.68 dia x 1.25m		4 humans	IC–IIA
40	1.42 x 0.98 x 1.0m		Many; MNI?	IC–IIA

Elephant Hunting at Hierakonpolis

— by Joe Majer

"I think the elephant is here," Renée said, pointing to an unremarkable sandy depression called Pit 240. We were standing in a part of the HK6 cemetery excavated by Barbara Adams in 1997–1999. To be exact, we were standing just north of Tomb 14, which Barbara originally considered to be the grave of several dogs and an elephant, the first of the two teenage elephants known from this cemetery. However, it soon became obvious that this shallow, irregular grave could never have held an entire elephant and only about one quarter of the beast was accounted for in the scattered remains. Somewhere three-quarters of an elephant still remained to be found, and the distribution of bones in a wide arc around Pit 240 suggested to Renée that this was the place. My job was to hunt it down.

Sometimes you need to sneak up on your quarry. Before we could dig Pit 240 we needed to figure out Tomb 14. Could we find anything new here? We started by clearing the surface around the tomb and were encouraged to discover an elephant vertebra just 10cm below the surface in deposits that were disturbed, like nearly every inch of HK6. The problem that Barbara encountered, and that we face also, is that due to disturbance and erosion it is very dif-

ficult to identify the ancient ground surface from which the tombs were cut. There is no obvious layer that can be recognized as the original surface among the series of poorly defined sand and pebbly lenses that cover the site. Luckily, the chocolate layer comes to our rescue. This is a hard, chocolate brown, silty layer running under the entire cemetery. It wasn't the ancient surface, but whenever the ancients dug deep they cut through it and left a clearly identifiable edge. The tomb robbers also understood the importance of the chocolate layer as a way of locating tombs. To the south of Tomb 14 we could see how they had trenched down to it in search of tomb cuts. The utility of the chocolate layer was not yet recognized when the first elephant bones were found in 1997 and, as a result, the true extent of Tomb 14 was not attained. Instead, Barbara's team mistook a later robber's pit for the tomb itself.



Elephant maxilla in Tomb 14.

Digging down in Tomb 14, our workmen soon hit the chocolate layer, and eventually discerned the cutting for a circular tomb 1.7m in diameter and unexpectedly deep. The tomb fill contained mainly the bones and teeth of dogs, but at nearly a meter below the surface we were surprised to find part of the elephant's upper jaw (maxilla), with the tusk attached. Although it had disintegrated, I could still make out the tusk's outline from base to tip. Fabric impressions on some of the ivory indicated that this elephant, wherever it was, was originally wrapped! The jaw was in very good shape and could not have been on the surface for long. This suggests that Tomb 14 must have been open when the nearby elephant's burial was plundered and the head thrown out.

Below the maxilla, the sides of the grave began to slope inward and we hit a clean layer of sand resting on a lens of rain-hardened silts. This was further evidence that the tomb stood open for a while after it was plundered. We even found the large sherd used for digging by the robbers who, as we soon discovered, had made quite a mess. On the floor of the tomb, the original interment had been reduced to a jumbled mass of bones from at least six dogs, with a few human bones mixed in. No pottery or grave goods remained. Pushed up against the sides of the tomb were fragments of the original mat lining with bits of hair still adhering and some articulated dog feet, but not enough to reconstruct orientation and layout.



Elephant hunter Joe closing in on Tomb 33.



The real occupants of Tomb 14 revealed: a jumble of dogs.



Target obtained: the elephant in Tomb 33.

Our search for a superstructure associated with Tomb 14 was unsuccessful, but immediately to the north our trowels revealed a series of small wood posts from a fence which eventually was traced around all four sides of Pit 240. This was a good sign that the pit was more than just a sandy depression, but it would be some time before we could be completely sure. Once the tedious task of removing the accumulated sand was accomplished, scattered bones of elephant and hartebeest began to appear—another good sign that we were on the right track. About 40cm below the surface we finally hit the chocolate layer and slowly our workmen began to define the edges of a large, roughly rectangular tomb measuring 2.4 x 3.6m. The marks of the digging stick used to cut the edges could still be seen. It was just where Renée predicted it would be.

Its limits defined, we now felt confident in giving our new tomb a number—33—and with renewed enthusiasm began clearing its contents, which were a mix of sand, gravel, potsherds, bone, bits of ivory tusk, and one small ostrich eggshell bead. We dug for a meter through these deposits, which were clearly left by the tomb robbers who had preceded us.

Finally, at about 1.5m down, we cornered our quarry. It was an unbelievable sight: the well-preserved hind quarters of an elephant, lying on his left side, head toward the east, the articulated tip of the tail in the west. Robbers had pitted out the east side of the tomb and disturbed the head and upper torso, but the rest was still there—vertebrae, ribs, upper legs—still articulated under layers of matting and textile. The chest cavity was still even filled with gut contents, remarkably well preserved after five and a half thousand years. Mixed in with the remains of the elephant's last meal were lithics, fish bone, half digested potsherds and bits of waxy limestone. Not the typical meal for an elephant, but then again there was nothing typical about this elephant as further analysis of its diet shows (see next article).

Wim Van Neer expertly directed the removal of the bones, which filled so many boxes that we needed a spe-

cial truck to haul them back to the house. On the tomb floor, 1.95m below the surface, the elephant's body juices had stained the soil greenish yellow and eaten away most of the matting which originally covered the bottom and sides of the tomb. Only a few bits remained to testify to the large quantities of matting that surrounded the elephant in its final and actual resting place.

How they got the elephant in this deep hole in the first place remains to be determined, but it seems clear that at least part of the fence, which completely surrounded the tomb, could only have been constructed after he had been deposited. Was this fence a mark of respect or an eternal cage? We cannot answer that, but the effort put into the burial of this animal shows that we are not the only ones who considered him a very special catch.

Any time you put your trowel in the ground at Hierakonpolis you are likely to discover something spectacular, but it takes patience and perseverance. Bit by bit, we are uncovering the elaborate menagerie surrounding the graves of the predynastic rulers of ancient Nekhen. All we need now is a giraffe! 🦒



Boxing an elephant.

An Elephant's Last Meal

— by Elena Marinova, Katholieke Universiteit, Leuven; and Wim Van Neer, Royal Belgian Institute of Natural Sciences, Brussels

The excavation of Tomb 33 provides us with one of the most exciting finds from HK6 so far: the burial of an African elephant with over half of the body intact. Analysis of the dentition suggests that the animal was about 10 years of age when it died. It is believed that this elephant and the one from Tomb 24 were imported from further south along the Nile where they were captured, and perhaps tamed, before being brought to Hierakonpolis and kept alive until the ceremonies that necessitated their death. Besides keeping them in confinement, their owners also needed to feed them adequately. Preliminary analysis of the botanical material found within the elephant in Tomb 33 gives us a first glimpse of its final meal.

The large amounts of dark matter found between the posterior ribs and in the pelvic region obviously represent the gut content of the elephant. Already with the naked eye one could see the fibrous plant remains, but for a more detailed understanding, a microscopic analysis was necessary. Four small samples were examined under a low magnification microscope. Such analysis allows the identification of plant remains with sizes of over 0.5mm, such as seeds, small branches, etc. Careful examination of these macro-remains showed us that the samples contained brittle but clearly distinguishable plant material and that the elephant was willing to disclose its inner secrets.

The dominant plant in the samples studied thus far is emmer, represented mainly by chaff fragments showing that the elephant fed on the residue of threshing. The use of emmer chaff as fodder for domestic animals is well known at Hierakonpolis and throughout the Near East; however, there are also intact spikelets which are unlikely to have survived the threshing process. These spikelets suggest that whole, unthreshed emmer grains were also consumed by the elephant, but as the grains themselves are much less resistant to digestion and destruction in the soil, none could be detected on the scale at which this first analysis was carried out.

Another item on the elephant's menu was the young twigs of trees. Wood anatomy observed on some of the thicker twigs revealed the typical morphological characteristics of acacia. The sharp thorns also support the identification of this desert-growing tree.

In addition, the elephant also feasted on a number of herbaceous stems and inflorescences which have been identified as *Ceruana pratensis*. This weedy species grows along the Nile's banks and large irrigation canals. It was used for garlands in offerings, in the manufacture of mats, as wattle for walls, and also as animal fodder. Since the *Ceruana* finds were imbedded inside the lumps of gut content, they can be safely considered remnants of the elephant's diet rather than as parts of the matting on which he was laid. Previous studies by Ahmed Fahmy (Helwan University) showed that this plant was also ingested by the Tomb 24 elephant, who in addition consumed quantities of the rush *Juncus*, which grows along the Nile banks and in wetlands (*Nekhen News* 14: 11). No evidence of these rushes was observed in the gut content of the Tomb 33 elephant, but there were a few remains typical of the sedge family (*Cyperaceae*), which would come from the same humid, river-side environment as the *Ceruana pratensis*.

Elephants can survive on a wide variety of plants. They can feed on grasses and herbs, break off tree branches, strip off leaves and bark, uproot shrubs, and pick up fruits and nuts. When grazing in their natural environment they can

find enough forage, but meeting their dietary needs in captivity may have been more problematic for the zookeeper of ancient Hierakonpolis.

A young elephant of the size found at HK6 would have needed about 50 kilograms of food each day. The variety of plant remains identified in the stomach contents so far indicates that he partook of the bounty of the river side, low desert and cultivated fields, the three eco-zones exploited by the ancient Egyptians. The question is: did the food come to the elephant or the elephant go to the food? While not ruling out the occasional walk-about, in terms of logistics, it may have been more practical to keep the elephant close to places near the settlement where the chaff was deposited. This is further suggested by the numerous flints, partly digested potsherds and two fish bones recovered from within the rib cage.

The vertebra of a *Clarias* catfish and a pectoral spine from a *Synodontis* catfish are most probably the left-overs from hu-



The elephant's last meal, still *in situ*.

On the Menu




Retrieved from the inner elephant: *Acacia* sp. thorns, *Ceruana pratensis* inflorescence; emmer spikelet.

man consumption, which were dumped as refuse along with the less-tasty items and subsequently became mixed with the elephant's food. However, it was not simply ordinary rubbish and animal fodder that was given to the elephant.

The presence of emmer spikelets in the stomach content in relatively high concentrations (on average 30 items per 10 ml of gut content) is surprising. This cereal crop was grown mainly for human consumption and was a major component of the diet at Hierakonpolis.



Less tasty, other bits found within include fishbones, flints and sherds.

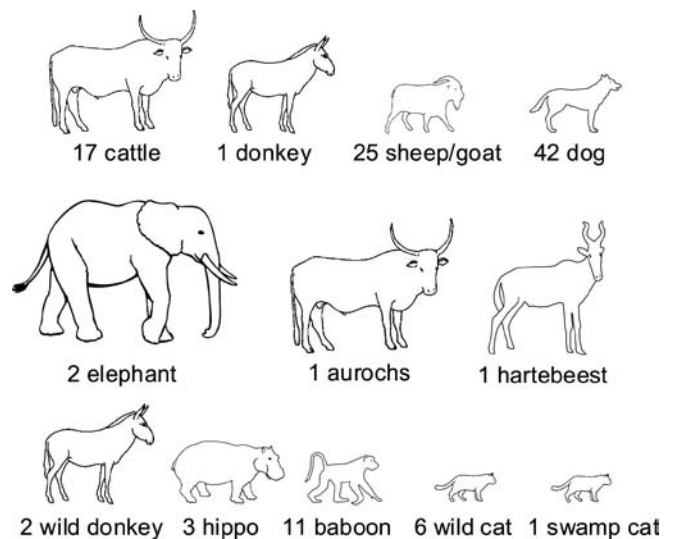
The elephant was no doubt a special animal that received particular attention whilst in captivity; however, considering the large amounts of food needed, it is very unlikely that emmer wheat was its main staple. Perhaps he received a special meal as a parting gift? More detailed analysis, not only of the elephant's final meal but also that of the hartebeest, aurochs, and domestic cattle buried near him, may answer this and other questions about animal care and feeding in Hierakonpolis' royal zoo as research continues. 

Animal Hospital: Healed Animal Bones from HK6

— by Wim Van Neer, Royal Belgian Institute of Natural Sciences, Brussels, and Veerle Linseele, Katholieke Universiteit, Leuven

With the discoveries made this season, the tally of animals buried at the elite cemetery HK6 is now up to an impressive 112. The 2009 excavations uncovered ten dogs—at least six in Tomb 14 and two each in pit graves Feature D and G—as well as a cow and calf in Tomb 36, and a young hippo in Feature H. The excavations also yielded more skeletal material from animals that had been partly recovered earlier, the most notable being the elephant previously attributed to Tomb 14, but in reality interred in the far more substantial Tomb 33. The remains of the goat that were previously attributed to Tomb 13 now appear to originate from Tomb 35 in which another very large individual was also present. The shoulder heights of these specimens were calculated at 76 and 84cm respectively, which is extremely large for goats and shows once again that HK6 was special, not only for its wild species, but also for the type of domestic animals that were selected for burial. The hartebeest skeleton, of which only a few elements had been retrieved in 1998, is now more complete owing to additional finds, although its grave has not yet been located.

After the excavations, the various skeletal parts were carefully examined in the lab. Measurements were taken to reconstruct the size of the animals. Their age at death was determined using dental eruption, tooth wear and the fusion stage of the



The animal register at HK6 so far.

long bones. Morphological characteristics were observed to establish the breed to which the domestic animals belonged, and attention was also paid to pathologies visible on the bones.

We had already observed healed fractures on the jungle cat and baboons found in Tomb 12 (*Nekhen News* 14: 7–8).



Showing only a little restraint: A naughty baboon in a market place (Tomb of Tepemankh, Dynasty V).

The fact that the broken bones had healed indicates that the animals had been in captivity for several weeks prior to their deaths. The young baboon from Feature B, shown on the cover of *Nekhen News* 20, also displayed a pathology: a break on the lower third of its left forearm. The bone was swollen, showing that the animal survived and that the healing process had begun. However, in this case the fracture did not heal completely, probably because the arm was not adequately immobilised to allow fusion of the broken parts. Exactly the same condition was found years ago on the forearm of a young baboon buried in Tomb 17. It is difficult to establish when and how these wild animals broke their bones. Was it during their capture, afterwards during transport to Hierakonpolis, or while they were held in captivity at the site? Whatever the case, the time needed for fractures to heal is 4 to 6 weeks, and this healing time indicates the minimum period during which the animals were under human control.

It is unlikely that the observed fractures on the baboons' forearms are related to the ways they were restrained. Dynastic depictions show baboons and other monkeys with ropes tied around their waist or neck, but not their arms. In humans, this type of forearm trauma is called a 'parry fracture' and is often seen as a result of interpersonal violence, when the forearm is used to block, or parry, blows to the head. That the perhaps unruly baboons found at HK6 were subjected to violence is also suggested by the numerous traumatic lesions on the feet and hand bones of those buried in Tomb 12; of the seven individuals, at least four had a fractured hind foot and at least five had a fractured forefoot. These types of fractures are more likely to have occurred when the baboons were held in captivity.

The young hippo recovered this season from Feature H is the third example of this species recorded thus far at HK6, joining the newborn buried in Tomb 12 and the 6–12 month old specimen found around Tomb 2 in the 1980s. Our new hippo was intermediate in age. Its milk teeth were emerging, showing that the animal was already weaning and thus capable of feeding independently. Unlike the newborn from

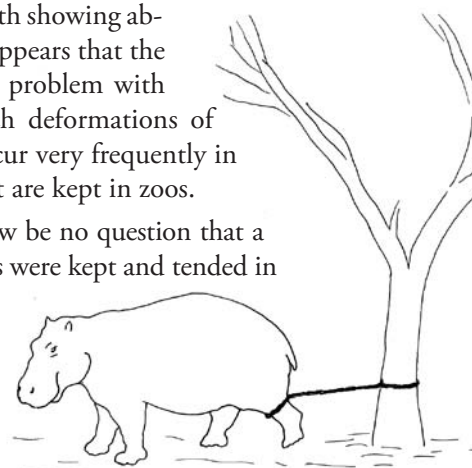


Nursed back to health: healed breaks on hippo and hartebeest bones. **Top:** Hippo fibulae, one healthy, one healing. **Bottom:** Hartebeest rib with arrow indicating where the bone healed.

Tomb 12, which must have died from starvation without its mother, the latest specimen could have survived much longer. To our surprise we found a healed fracture on the lower part of the fibula (the thinner bone that is located behind the tibia) proving that this young hippo indeed spent a rather long time under human control. The location of this fracture is typical of animals that are constrained by a rope tied around their lower hind leg and break their own bone while struggling to be free (see below).

The hartebeest also displays some deformations of the skeleton that may be related to its stay in confinement. One of the ribs has a healed fracture and, although such pathologies also occur in the wild, it is more likely a result of manipulation by humans either during capture or afterwards. Two additional pathologies may be related to a prolonged stay in captivity and possibly inadequate food. On one of the mandibles, more specifically on one of the coronoid processes, there is an abnormal bony extension that seems difficult to explain at first glance, but together with a tooth showing abnormal wear, it appears that the hartebeest had a problem with mastication. Such deformations of the dentition occur very frequently in wild animals that are kept in zoos.

There can now be no question that a variety of animals were kept and tended in this early royal managerie, but how happily remains to be seen...



Two New Tombs at HK6: The Hippo Hunters of Hierakonpolis

— Anna Pieri and Renée Friedman

In 2009 we returned to a part of the elite cemetery in which Barbara Adams had excavated a decade ago; our specific goal was to find architecture. As often happens at Hierakonpolis, we found what we were looking for, but also much more.

Working in the southeast corner of the Tomb 16 complex, we began by systematically scraping back the surface. The remains of posts soon began to emerge in a nice straight line. This proved an agreeable outcome for the first days of our labours, and was made even more satisfying when the tip of a slate palette peeked out of the soil right beside the posts. We were all speechless with excitement as Fathy brushed back the sand to expose it completely. Shaped as an elegant diamond or rhomboid, characteristic of the Naqada I period, it is the first well-preserved cosmetic palette of this type to be found at HK6. Nearly half a meter long, it was complete except for one tip. The search was then on to find the missing bit, which we thought we'd found, until it turned out to be from a completely different one!

The palette no doubt came from the grave beside which it was found. This new burial, called Tomb 31, is rectangular with rounded corners and was, unsurprisingly, badly disturbed. It originally contained at least two individuals whose bones were found at the edges of the grave mixed with potsherds from a variety of fine vessels. These included a black-topped jar, red polished bowls, and a very rare (for us) example of White cross-line (C) ware, the pottery characteristic for the Naqada I period (see page 19).

Clearing the tomb didn't take long, but defining its enclosure proved to be more of a challenge. We already had its northwest corner, but we would chase the posts for 8m in



Tomb 31 and its well-preserved posts.

both directions before the other corners were secured. This left a small tomb in a very large space. We assumed that something else must be in there, but where was far from obvious!

Finally, after scraping the clean fill over this large area for many days, a disturbance in the southeast corner turned into a tomb, and a big one. Tomb 32 is roughly rectangular, 3m long by 1.7m wide, and like all the tombs discovered this year, it contained the scattered remains of several individuals. Along the west wall, the foreleg and scapula of cattle had been provided probably as a food offering. In addition to the usual pottery, the tomb also yielded two stunning rock crystal bladelets, delicate flint rectangles (razors?) and one more of those curious mud cones (see *Nekhen News* 15:21).



Crystal bladelets.

However, the most intriguing discovery was the shattered remnants of objects modeled in plaster and decorated with patterns in red, black and white paint. Similar material has been found in the cemetery at Armant and more recently at Adaima, where the excavators could reconstruct model hunter's gear, including an imitation quiver, shield, knife and sandals. Unfortunately, the fragments from Tomb 32 are too small to identify, but model hunting equipment seems a good guess in light of further discoveries made around this tomb.



The palette emerging.



Picking up the plaster pieces.

We hadn't wanted to dig further to the east, but the two sets of large posts flanking the east end of the tomb suggested that evidence for a superstructure might be found. In the end, no more posts were discovered, but our search led us to something even more interesting: to the north, a shallow pit contained the remains of two dogs (Feature D), and to south, a deeper pit held the disturbed remains of a juvenile hippopotamus (Feature H).

As discussed more fully on page 11, this young hippo had been held in captivity for some time before its burial. However, it is unlikely to have been a house pet, but more a symbol of power, as its capture must have necessitated death of its mother, and killing a hippo was not an easy thing to do. An act of great bravery, hippo hunting was invested with symbolic meaning. This can be seen on painted pottery from the contemporary elite cemetery at Abydos, where hippo hunting is juxtaposed with the taking of human prisoners. The added detail of the unborn baby hippos on the Abydos pot now takes on greater significance in light of our recent find, but what exactly the capture of a baby hippo meant is still unclear.

It may have symbolized a break in the reproductive cycle of this dangerous enemy or, alternatively, its burial was perhaps meant to harness the fertile and protective powers later



Hippo hunting pot from Abydos grave U-415. (Dreyer and Polz eds. 2007, *Begegnung mit der Vergangenheit—100 Jahr in Ägypten*, Mainz, fig. 261).

invested in the pregnant hippopotamus goddess Tawaret, or even a little of both. Whatever the case, while the elite of Abydos were apparently satisfied with painting pictures of the hippo hunt, the big boys at Hierakonpolis actually did the deed and we have the evidence to prove it!

Equipped with his model hunting gear and his dogs at his side, the owner of Tomb 32 was destined to be a mighty hunter for eternity. With his hippo already in hand, he could rest assured that his hunt would be eternally successful. May we all be so lucky! 🐘



Plaster hunting gear from Adaima grave S24. (Crubézy et al., 2002. Adaima 2. *La nécropole prédynastique*. Cairo, p. 82).



Ashraf excavating the hippo.

The Tale of Tomb 30

— by Xavier Droux, Lincoln College, Oxford

At the end of the 2008 season, a few posts, a pit and some intriguing Third Dynasty pottery suggested we had found a tomb of that date just to the west of Structure E8. In anticipation we named it Tomb 30 (see *Nekhen News* 20:14–15), but the sandy depression was so large that we ran out of time before we could get to the bottom.


Returning in March, we removed last year's back fill only to find that we were confronted with... just more sand! Eventually we realised we were not in a tomb, but only a sand-filled pit so misshapen by plunderers it was hard to know if it was an ancient feature at all. Yet, the wooden posts on all four sides of a sizable enclosure suggested that something had to be there. Moving westward, we started again. A few mud-bricks (25 x 11 x 9cm) in the sandy fill encouraged us, but not our workmen, for whom the tomb was “kolo maglub”, or completely disturbed. However, it seemed they had been too quick to judge when, one morning just at break time, more mud-bricks emerged, this time *in situ*, laid on top of a massive stone slab. Although we had already removed 1.5m of sand, we had not reached the bottom of the tomb, but only its roof!

Now we had to figure out how to remove this monolithic capstone. Various pulleys and beams were brought in, but in the end, a length of rope and skillfully applied brute force did the trick. Expectations were running high as the roughly shaped slab was rolled to one side to reveal a surprisingly small, but well constructed brick chamber. Only 1.60m long and 40cm wide, its walls were composed of four courses of mud-brick stretchers topped by a layer of headers on which the stone slab had rested. Smaller rocks had filled in the gaps and the whole had then been capped with bricks covered with reeds and mud plaster. This tomb type has been well documented by George Reisner at Third Dynasty provincial cemeteries such as Naga ed Deir, where he also noted that the pottery dedicated to the deceased was often deposited outside of the tomb, on the sides of the shaft or even below the mud-brick casing. This may well have been the situation in Tomb 30 as not a single sherd was found inside the chamber. In fact, the only things we did find



Trying to raise the roof.

were a fragmentary human collar bone and a single clay bead! We will never know whether the plunderers, having worked hard to tunnel in through a small hole in the west end of the roof, were as disappointed as we were. The workmen had been correct after all! Nevertheless, our efforts have illuminated the longer than expected history of the HK6 cemetery and the attraction that the pillared hall precinct may have continued to hold nearly 1000 years after it was built.

It is not yet clear if the post-enclosure surrounding Tomb 30 is contemporary with it or is the remnant of an earlier construction. The great depth of the shaft and the predynastic items found above and around it suggest that Tomb 30 may well have ‘borrowed’ a previously occupied location. A fine flint lance head recovered by the post wall and some fragmentary ivory figurines from the fill seem to indicate that a rich predynastic tomb may be somewhere close by. Now, our next task is to find it. 



Tomb 30 top and bottom.



A fine flint lance: an indication of things to come?

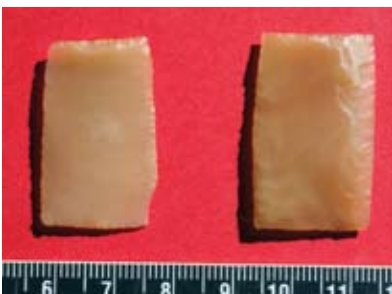
Treasures from HK6



The pouch from Tomb 39 containing malachite chunks and beads.



Elegant offerings from Tomb 20.



Flint razors and curious cone from Tomb 32.



The eggsplosion by Tomb 18.



Lifting the cow in Tomb 36.



Elephant poo to you, treasure to us!



Decorated ivory and bone.



The elephant hunters of HK6.



The elephant in Tomb 33.

The Fort: Minding the Gap



Reed reinforcement layer in gap 'roof'



The dangerous corridor filled at a distance.



Exterior casing wall at back of gap.



Abdullah topping it off.



Closing the gap!

HK11C Operation B



Vats and kilns: the complete installation.



Vat 6 close up.



Pre-firing mark on pot from Tomb 39.
Was it made at HK11C?

The Rock Art of HK



Boats from behind New Kingdom Hill.



It's a Rocky start!

Eggsplosion!

— by Art Muir

Excavations in the elite cemetery have yielded an impressive number of ostrich eggshell fragments. As reported in *Nekhen News* 19: 10–11, using our special formula, the presence of a minimum of 6 whole eggs could be calculated for the pillared hall Structure 07. Already a significant number, further efforts and exploration in various parts of the cemetery have now increased the HK6 tally to a minimum of 22 whole eggs—considerably more than has been found at any other site in Egypt.

As discussed in more detail earlier, for our analyses we had to develop a mathematical formula for calculating the surface area of an ostrich egg. Using the dimensions of whole eggs found in predynastic Upper Egyptian contexts and now kept in several museum collections, we have been able to revise our final result for this “standard egg area” to 581cm² (up from 570cm² reported earlier). At first glance this might seem a surprisingly large number, but then the surface area of a chicken egg is about 73cm². To determine how many whole eggs were originally present at HK6, the eggshell fragments from each find unit were laid out on graph paper and fitted closely together like pieces of a jigsaw puzzle. The area covered by the eggshells, as reckoned from the graph paper, was then divided by the standard egg area to determine the minimum number of eggs present in that location. Because all of the eggshells are from disturbed contexts, it is probable that a significant number of fragments are missing and thus we use the term “minimum number”. Fractional eggs from the calculation are rounded up to the next whole egg value.

Analysis of the eggshell fragments found primarily near the corners of Structures 07, D9 and 08–2 provides a minimum of 11 eggs for the pillared hall precinct. To this total, we can now add another 11 eggs from the enclosures around Tombs 16, 18 and 38–40. Just one egg short of a dozen in both locations, our current grand total stands at 22 (Table 1).

Egg numbers were supplemented during the 2009 campaign by the striking discovery made in the southwest corner of the funerary enclosure around Tomb 18. Here, several clusters of large shell fragments were found lying near a mud plaster ring. The eggshells still present within the ring suggest that it acted like an ‘egg cup’ to hold the eggs. From the size, shape, position and quantity of egg-

shell fragments in the clusters, the eggs must have been whole for display, but subsequently fell over and broke.

The larger fragments were then gathered together and stacked convex side down, before being stowed in the corner of the enclosure for safekeeping. This situation allowed us to join many pieces to make sizeable assemblies of the three eggs once deposited here. But despite sustained effort, we could only manage to reconstruct about 77% of a whole egg. Helena Jaeschke’s patient search for missing pieces among those found in other parts of the Tomb 18 enclosure met with limited success, but resulted in the substantial reassembly of an entirely different egg! This one was rebuilt with pieces mainly from the north end of the enclosure.

A curious feature of some of these eggs was the spalled surface, where thin layers from the glossy surface of the egg had detached as circular flakes. We were puzzled by this anomaly until a communication from a South African ostrich farmer indicated that this is a known phenomenon

resulting from structural weakness at the pores, and the effects of temperature and moisture on the thin, outer glossy shell layer. The effect is progressive with time.

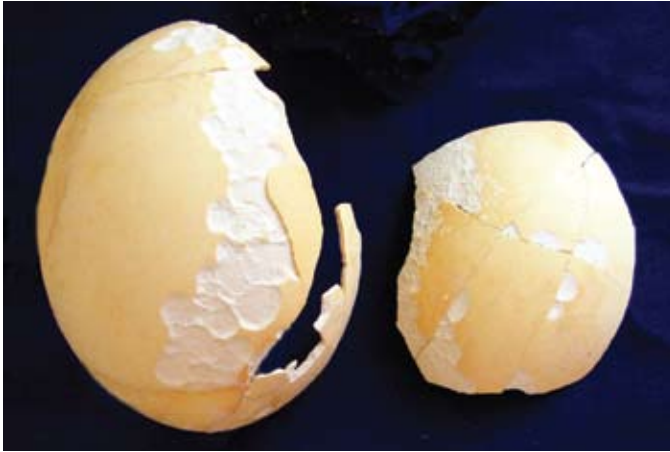
So, why all these ostrich eggs? The HK6 eggs are not the earliest evidence for them in a burial context. Though not frequent, eggs have been found in Badarian/Tasian graves where they appear to have served as functional items, such



Eggscavation Hamdy style.



Egg cup and clusters in the corner of the Tomb 18 enclosure.



Egg spall.

as cups and canteens. In contrast and by virtue of their number and find spot, the HK6 eggs appear to have been invested with a symbolic significance. An obvious conjecture as to the meaning is that as life springs from eggs, the egg was a symbol of rebirth, and if you are going to use egg imagery, why not use the biggest egg in the world? Since at least some of the eggs had been blown, it is doubtful that the eggs were intended as food for the afterlife.

While the rarity of eggs within tombs might seem strange, it must be noted that overt symbols of rebirth are actually pretty rare in predynastic graves. The ritual that helped the deceased on their way to the afterlife must have taken place above ground, as our discovery of the

Cluster Location	Total Area, cm ²	Minimum Egg No.
Tomb 18 Enclosure SW corner	1497.63	2.58 → 3
Tomb 18 Enclosure North sector	449.25	0.77 → 1
Tomb 16	412.10	0.71 → 1
Tombs 38–40 Enclosure West side	3226.49	5.55 → 6
Structure 07 NE&SW corners	3853.46	6.63 → 7
Structure D9 North sector	792.22	1.36 → 2
Structure 08–2 North Wall	240.63	0.41 → 1
Tomb 23 Enclosure NE corner	279.46	0.51 → 1
Total		22

Table 1: Locations of egg clusters and minimum egg numbers.

pillared halls (mortuary temples) suggests. In later times the evidence for the use of the ostrich egg as a rebirth symbol is much clearer, but like so many other features of Ancient Egyptian civilization, it may have happened first at Hierakonpolis! 🐦



Always in demand: Ostrich eggs and feathers.

The Peripatetic Pot

In 1997, while excavating Tomb 14, the grave then attributed to the elephant, a bowl fragment decorated with white paint (C-ware) was unearthed. It bore a distinctive design of zig-zag lines. In 2003, while excavating Tomb 24, the actual grave of the second elephant, another C-ware bowl sherd was found, bearing a strikingly similar design. Although the two pieces did not mend, much time was spent cogitating on the possible implications. Were they part of the same bowl or made by the same artist? Is this a special gift for elephants? Finally, in 2009 the mystery was solved, but in a most unexpected way when sherds with the same unmistakable pattern appeared in and around Tomb 31. Spread over a distance of 35 meters and 12 years, all of the pieces could be reunited into a very distinctive bowl, although the polka-dot panels were an unexpected extra.

What happened here? While repeated plundering may explain how one sherd found its way from Tomb 31 to Tomb 14 (a distance of 15m), our experiments have shown that during the time it takes to examine an object of interest while walking along, one can cover about 35m (the distance from Tomb 31 to Tomb 24) before getting bored with it and throwing it down. Despite the coincidental find spots, the distribution clearly has nothing to do with elephants, and more to do with the activity of tourists. All's well that ends well for our peripatetic pot, but let our experience be a lesson to all visitors to Hierakonpolis and other archaeological sites: Look and learn, but please leave it where you found it! 🏺



Reunited at last: the bowl from Tomb 31.

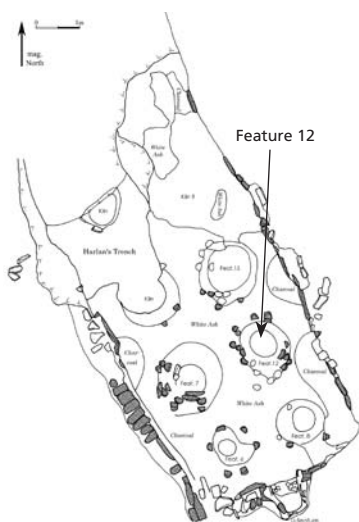
The Perfect Sherd

— by Izumi Takamiya, Kinki University, Japan

It isn't pretty. It's not very clean. It really is a sherd only an archaeologist could love. This is because upon and beneath that rough exterior it contains answers to some of the outstanding questions about the circular features at HK11C, Square A6–7 (now called Operation A).

From 2003–2007 excavations here uncovered a large semi-subterranean rectangular structure (c. 7 x 3.5m). Within it were at least eight circular features, each consisting of a number of firebars arranged in multiple concentric circles, presumably meant to support a vat, which is now gone. Similar features had been excavated a century ago at Abydos, but because the upper level of our installation had been destroyed, we couldn't be completely sure of their configuration or function, until now.

The object of perfection that solves this problem is more accurately (and less romantically) described as a multi-layered lump. Measuring roughly 17 x 13cm and 7cm thick, all of its attributes had been observed before, but never in such a neat package. At its center are two sherds, side by side, from the body of a large pottery vessel. These are sandwiched between two layers of mud. On the inner surface, the mud is covered with a black glistening material about 5–7mm thick, which first drew our attention to the sherd. On the outside, the irregular coating of mud mixed with chaff has been burnt in part to a bright red, indicating exposure to fire and oxygen. Running through the outer mud layer are several small holes, some still containing the charred remains of rope. This type of confection of sherds, held together by rope and then



Plan of the Operation A installation.

together by rope and then cemented with fire red-dened mud, clearly comes from the exterior surface of a circular feature in the heating installation, but we could never be sure exactly where. Scrutiny of the mud coating on the interior answers this question.

The dark mud coating the interior of the sherd has been baked, but in an un-oxygenated environment. Its surface, like others we

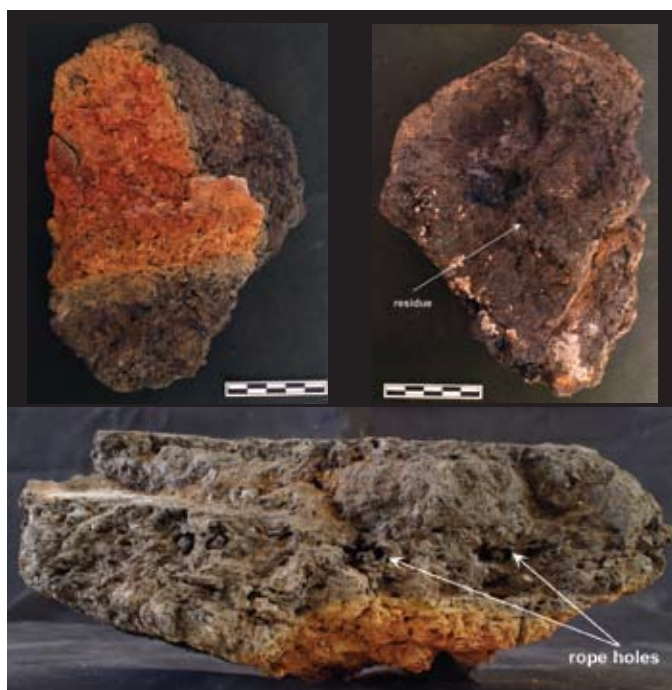
had found, shows that it was pressed up against a slightly curved object, presumably a vat. But what makes this lump so special is the shiny black coating on this mud. Micro-botanical analysis of this coating revealed starches, some showing evidence of fermentation.

We can now confirm not only that this installation was for brewing, but also that the lump once coated a (still missing) vat. This particular black mud must have been pressed directly against the side of a vat that sprung a leak, allowing its precious contents to spill on to the mud lining. The potential for these porous, liquid-filled vats to crack under thermal stress may have been the reason for adding the mud and sherd coating in the first place, and to minimize the loss when they did fail. Returning to the exterior surface, further confirmation of the lump's original location could be found in the dark scar at one end, which can be nothing other than the emplacement for one of the wedge-shaped tops of the firebars supporting the vats.

Putting it all together, we can now reconstruct the circular features as comprising a large vat, which was coated with mud and pottery sherds bound with rope and supported at its circumference by a number of firebars of different heights. But in order to see how it all worked together, we decided to make one ourselves (read on...) 🪑



Izumi and the perfect sherd.



The perfect sherd: front, back and side.

Building a Brewery

— by Richard and Helena Jaeschke

The excavation of Operation A produced a large quantity of firebar fragments, which were neatly laid out in a 'sherd yard' nearby. How much longer they will stay this way remains to be seen, given the increased use of the area as a short cut to the Wadi Sayyida land reclamation project. So, rather than leave them to their fate, we decided to put some of them to good use in a re-creation of a vat feature, which was to be built in the garden of the dig house.

First, we needed to figure out how many firebars we actually needed. Visiting the site, we measured the four concentric rings preserved in Feature 12, and determined their angle of inclination to be about 80°. Although only 17 firebars are still *in situ*, originally there were obviously many more.

Firebars have a wedge or fishtail-shaped top and a slightly pointed end. From examination of the fragments it appears that the fanning fishtail top came in four main widths: 20–23cm, 24–26cm, 28cm, and 30cm+. The shortest complete firebar found during excavation measured 34cm and the longest 65cm. We postulate that the four rows consisted of an inner ring of firebars 34cm long with 20–23cm wide tops; middle rings with firebars 44cm long/24–26cm wide



Firebars.

and 54cm long/28cm wide respectively; and an outer ring using bars 65cm long with 30cm wide tops. As very few intact bars had been found and these were too precious to use in the re-creation, we chose fishtail and base fragments sufficient to make up about 6 complete examples in each of the size classes.

For the reconstruction, firebars were made complete by joining the fragments with a bridge of plaster of Paris. The broken ends were protected with a coat of Paraloid B48 (ethyl methacrylate acrylic resin) in acetone, in order to prevent damage from the moisture and sulphates in the plaster. To mask the plaster, it was tinted using local red and yellow ochre pigments; a formula involving 3 parts red ochre, 1 part yellow ochre and 16 parts plaster of Paris worked the best. When the plaster had set hard, diluted black and yellow acrylic inks were brushed on in places to adjust the colour to the local variations on each firebar.

A large jar made by the local potter provided the central pot of the brewery after we cut off the top. Although no fragments of the original brewing vats have so far been identified, from the remaining evidence it seems that they had a conical base, an incurving rim, and sloping sides reaching a maximum diameter of c. 80cm. The jar we used was only 49cm at its widest point, but had sloping sides of about the right angle. As we intended to leave one side open, so that visitors could see the firebar arrangement in a cutaway view, the small size of the jar wasn't a major problem.

Guided by the surviving features, we built up a pedestal about 30cm across and 15cm high on which we placed the pot, holding it in place with a little mud. Now the information provided by the 'perfect sherd' came into play. It proved that the vats were coated with mud into which potsherds were pressed and held in place with thin rope while more mud was packed on top. The firebars were then leaned up against this mud coating while it was still moist.



Selecting firebar fragments in the sherd yard.



Measuring up the firebar arrangement in Feature 12.

We used the same method, applying a wet mixture of mud and chaff to the pot in strips, starting at the bottom. Potsherds from an old water jar (*zir*) were then shoved atop the wet clay. Helena maintained tension on the rope, allowing Richard to pack on more clay before manipulating each firebar to the correct height and angle against the sides.

As each layer was put in place, we made sure that the firebars were positioned as closely as possible to the ancient arrangement. As the jar we used was smaller than the original vat, we could only fit four firebars in each of the rings.



Building the brewery.

We estimate that a full-sized brewery feature would have needed 5–6 firebars for each of the two inner rings and 6–7 in each of the two outer rings, making for a total of about 24. Considering that over 160 firebars were recovered from the excavations, this number seems about right.

While no awe-inspiring feat of engineering, the ancient brewers clearly took their job seriously and invested time and effort into making their installation into a seemingly efficient and perhaps prolific beer making machine. Our next task is to reconstruct the recipe and try some! 🍷

Beads Aren't Boring

— by Hitoshi Endo, Research Institute for Humanity and Nature, Kyoto, Japan

Beads are not especially prevalent at Hierakonpolis, except in the elite graves at HK6 where the selection is choice, but limited. This paucity probably has more to do with plunder over the millennia than with any disaffection for such finery since bead making appears to have been a significant industry at Hierakonpolis—far more plentiful than the beads themselves are the tools used to make them.

Distinctive little flint borers, called microdrills, averaging only 2cm in length, were recovered in great numbers at the ceremonial center at HK29A and many more were found in a kit of bead-making tools and raw materials from Nekhen, cached by F.W. Green in 1899 and rediscovered by us in 1996.



Boring beads, or trying.

As we are currently involved in the detailed analysis of the lithic material from the ceremonial center, we naturally became interested in how these microdrills actually worked and tried to replicate the bead-making process.

We decided to begin with the softest materials and work upward. Hafting a microdrill to a stick, lubricating with water and rotating it between the hands, an ostrich eggshell bead was a snap. So easy, one has to wonder why there aren't more beads of this type. When it came to carnelian, however, it wasn't so easy—in fact, we didn't get very far at all. Clearly there is a secret to perforating this attractive, popular, but hard stone. We believe the secret is in the sauce (i.e., the abrasive paste), but the recipe still eludes us.

A detailed account of our success to date can be found at www.archaeology.org/interactive/hierakonpolis. And follow along in February 2010 as we test out some saucy ideas and try to master the secrets of the perfect perforation. 🍷



Microdrill and carnelian bead fragment.

One More Big Pot: HK11C Operation B in 2009

— by Masahiro Baba, Waseda University, Tokyo

In 2003 we began excavations at HK11C in Square B4–5 (now renamed Operation B) with the aim to ‘ground truth’ the anomaly detected by a magnetometer survey of the area (*Nekhen News* 16:18). These investigations revealed an array of pottery kilns and large cooking vats, of which there was no

hint on the ground surface before we started. The excavation of this remarkably well-preserved complex is now complete and comparing the results, we can see that the magnetometer predicted its dimensions exactly, but it also detected much more. At the end of last season, I overlaid the plan of the complex

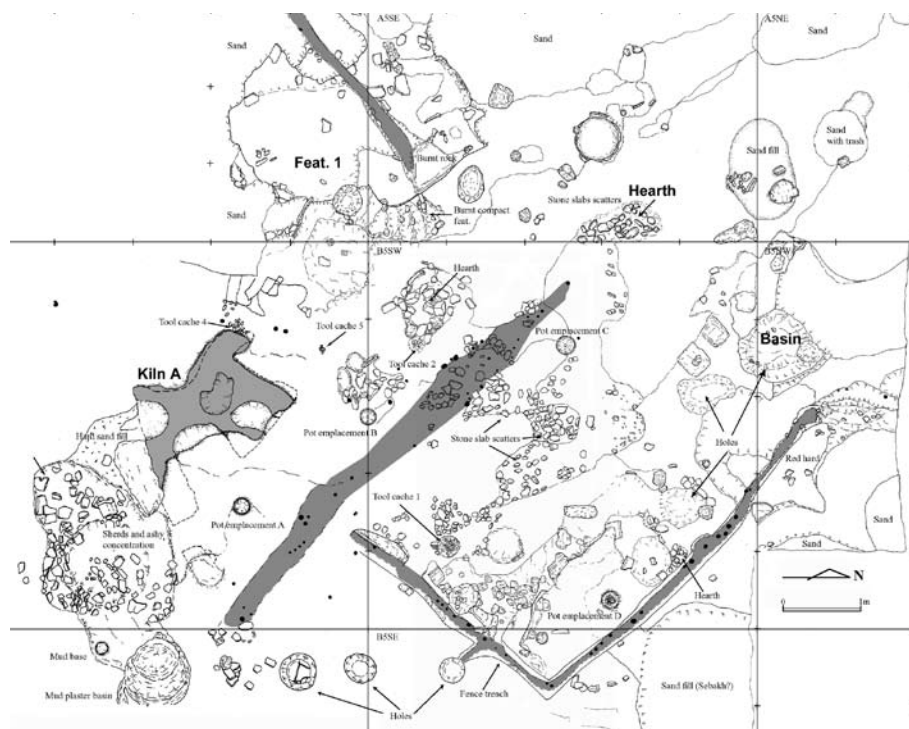
on the magnetometer map. Despite the pixilation, it was still possible to make out the circles which correspond precisely to the big vats. Other magnetically charged features, just beyond the excavated area, suggested that another big pot along with the west wall of the complex were waiting to be uncovered, and indeed they were.

In February 2009 the excavation area was expanded 3m to the west and 2m to the north in order to retrieve the entire plan of the complex. As observed in previous seasons, there were at least two distinct phases of occupation, which are called the Upper and Lower levels.

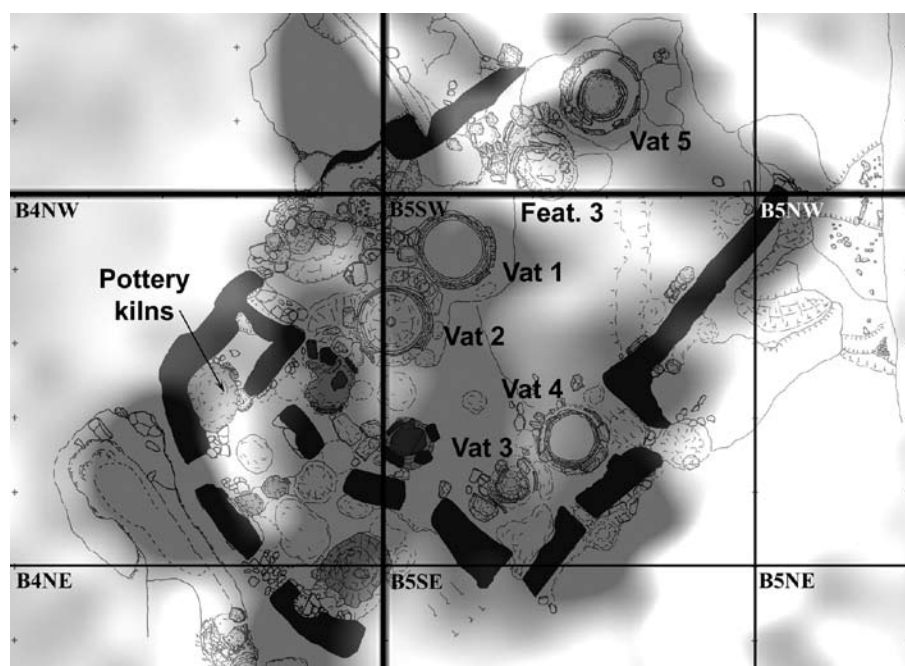
In the Upper level, excavation to the west (3x9m in Squares A4–5) revealed an accumulation of fire reddened soil and debris (Feature 1) probably derived from the cleaning of platform kiln A or the vats in the lower level. To the north, stone slabs were found scattered in dark soil which contained a concentration of charcoal and bones including those from the hind feet of a hippopotamus! These slabs are assumed to be more of the hearth found last season, but whether roasted hippo toes were on offer remains one of many intriguing questions about the site (see next article).

Investigations in the north unit (4x2m in B5NW) uncovered another 1.5m of the fence surrounding the potters’ workshop, but not the corner we had hoped for. Within the enclosed area, a large depression filled with soil may be associated with clay preparation or other pot-making activities, but compared to previous seasons, few sherd tools were recovered. This is probably because this year we concentrated mainly on the exterior of the workshop.

Few of the features from the upper layer were detected by the magnetometer,



Upper Level: Final plan.



Lower level overlaid on the magnetic anomaly.



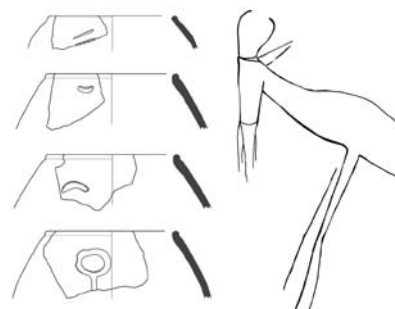
Getting the measure of Vat 5.

but in the Lower level, the anomalies acted like a road map. On the west side, a wall appeared; standing 20–45cm high, it was built of rocks and sherds plastered with burnt mud. Beside the wall was a pit, about 60cm in diameter (Feature 3), surrounded by standing sherds and filled with rocks, burnt mud, and vat fragments with residue adhering to them, all suggesting that Feature 3 is the remains of a vat feature that was removed in antiquity, perhaps when Vat 5 was built beside it.

The last of the big vats in the complex, Vat 5, was preserved to a height of *c.* 30cm with a diameter of 60cm. It was supported in the same way as Vats 3 and 4, with a ring of large sherds around the base creating a covered fire area. From inside Vat 5 we recovered animal bones, hair, and sheep dung as well as sherds and lithics. These materials suggest that the vat was re-used for refuse disposal during the Upper level occupation. However, the shiny black residue adhering to the interior wall of the vat attests to its use in food preparation. The grain-rich

residue is currently being analyzed, and a sample was submitted for radiocarbon dating at the French Institute lab in Cairo.

Among the finds from the Lower level were a few jar sherds with marks made by the potter's finger prior to firing. Similar potmarks have been found at HK29 (the so-called potter's house) and on pots left as grave offerings in the Tomb 16 complex in HK6 cemetery. The meaning of such marks is still the subject of debate, but these new findings suggest that the quality or type of food that was to fill the pots may be significant. In addition, fragments of a large storage jar from Feature 3 carried the incised figure of an animal, evidently a hartebeest, made after firing.



Potmarks made before and after firing.

The work in this final season has clarified the size and arrangement of this remarkable food and pottery production area. The now completed plan of the Lower level shows that this complex was built not for ad-hoc use, but for systematic and permanent occupancy. In association with the installation in Operation A, the entire area appears to have functioned as an integrated industrial area for the production of grain based foods, including beer. As such, it is likely to be the earliest brewery in the world, but let's wait for confirmation from the radiocarbon lab (coming soon) before we drink to it! 🍷

Monkey Business: The Earliest Green Monkey in the Egyptian Nile Valley

— by Veerle Linseele, Katholieke Universiteit, Leuven, and Wim Van Neer, Royal Belgian Institute of Natural Sciences, Brussels

The most striking features of Operation B at HK11C are, of course, the large vats coated with residue, which indicate that they were used in food production. In close proximity, pot-making also took place, but it is not yet clear how these two activities are related. Based on associated pottery, the vat features of the first phase are dated to the first half of the Naqada II period (*c.* 3600 BC).

Around the vats and in adjacent zones numerous animal bones were collected, deriving mainly from food refuse. During the 2009 field season we studied these remains—about 3000 bones altogether. Bones of domestic animals—cattle, sheep, goat, and some pig—dominate in the sample. Fish bones are also common; over 85% of these are Nile perch remains, nearly all from large specimens measuring about



Green Monkeys, also known as Vervet monkeys.

1.5m in length. Hunted animals were rare, but include fox, cat and possibly Barbary sheep, along with a strikingly large number of hippopotamus bones (more than 70) in comparison to other localities at Hierakonpolis. Curiously they are mostly elements of the hind feet. Truly exceptional, however, is the presence of green monkey (*Chlorocebus aethiops*), attested by a well-preserved distal femur.

Inhabiting large parts of sub-Saharan Africa, at present the green monkey is the most widespread species of African monkey. The animal occurs in a wide variety of habitats, including woodland, savannas and fringe forests, but never in semi-desert. Since the main factors limiting their distribution are the availability of water and sleeping trees, green monkeys are especially prevalent in gallery forests. The species does not currently live in Egypt, but it was present during the Last Interglacial period when the climatic conditions were more humid. At Sodmein Cave, in the Eastern Desert, about 40km northwest of Quseir, bones of green monkey were found in a layer dated to around 115,000 years ago. The same levels yielded remains of other sub-Saharan species, such as elephant and kudu, indicating that the savannah extended much further to the north at that time. However, it is unlikely that after this climatic optimum the green monkey ever freely inhabited Egypt again. Conditions were too arid, and the brief increase in humidity during the early Holocene was apparently not sufficient to allow it to return. Not a single predynastic site in the Nile Valley has yielded evidence for green monkey until now.

According to the artistic record, the green monkey was one of the favorite pets of the Ancient Egyptian elite. Representations of the species in this context are known from the Old Kingdom onwards. There are numerous depictions of monkeys seated under the chairs of their owners, who were usually women. Other examples show them on a leash attended by dwarfs or servants. Tomb and temple paintings also



The monkey's femur: the first physical evidence from Predynastic Egypt.



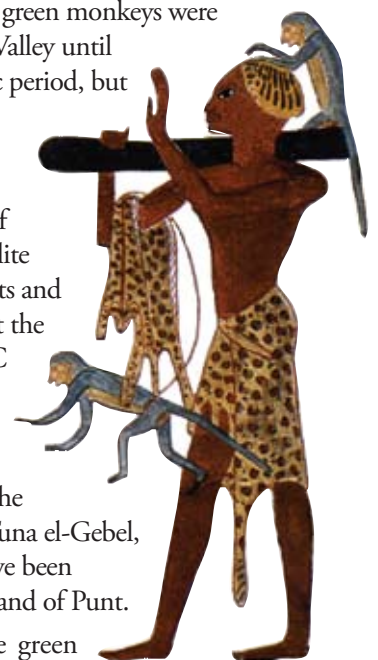
The monkey of Meydum, Tomb of Nefermaat, Dynasty IV. (Ny Carlsberg Glyptotech, Copenhagen)

show that in the New Kingdom they were being imported from Nubia together with giraffes and other exotic animals.

Until now, no physical remains of green monkeys were known until the Late Period (664–323 BC), when they occur exclusively as mummies in the animal cemeteries popular at that time. They are always less prevalent than baboons. At Tuna el-Gebel, for example, the green monkey may be the second most important species among the monkey mummies, but it is far outnumbered by baboons (19 vs. 226 individuals). An analysis of 175 monkey mummies from Saqqara revealed only two green monkeys, with the rest being mainly baboons.

It has been claimed that green monkeys were available locally in the Nile Valley until some time into the Dynastic period, but in view of the lack of physical remains and ecological requirements, this seems unlikely. Instead, the finds of exotic animals at the HK6 elite cemetery, including elephants and anubis baboons, suggest that the green monkey from HK11C should be considered as an import from the Sudanese Nile Valley. A similar origin has also been suggested for the individuals mummified at Tuna el-Gebel, although they could also have been brought in by sea from the land of Punt.

It is not clear how the green monkey ended up at HK11C. Its bone was found amongst what seems to be mainly food refuse, but this does not necessarily mean it was eaten. The bone may have been brought in from elsewhere, like the more than twenty human remains also found at the same location. Perhaps the monkey was once the beloved pet of the potter or cook? Or maybe there is a connection with the exotic animals at HK6, which we know were kept in captivity before their burial. Whatever the case may be, we have another first for Hierakonpolis! 🐒



Nubian bearing monkeys, pelts and ebony. (adapted from Beit el-Wali temple, Ramses II).

Off to a Rocky Start: The Rock Art Survey of HK

— by Fred Hardtke, Macquarie University, Sydney Australia

In 2009, a comprehensive survey of the rock art in the Hierakonpolis area got off to a rock-filled start. This project was prompted by concerns for the rock art record in light of the illicit quarrying of rocks and gravel, which has already damaged several sites (see *Nekhen News* 20:24). Since we are interested in investigating the relationship between rock art and landscape in an attempt to understand these enigmatic markings, it is important that we document as much as possible before further sites are destroyed.

The survey includes all sites that incorporate any (and all) man-made marks on rocks which are not part of a dedicated construction, such as a tomb. In addition, features of interest such as ancient wall constructions and rock shelters were also noted. As well as consolidating previous discoveries, the survey has added many new finds to the repertoire.

During our first season, a total area of 2.375 km² was examined. Of this, 0.75 km² was surveyed in detail, including mapping and epigraphic recording of the rock art observed. The remaining 1.625 km² was investigated at an overview level. The survey resulted in the registration of 57 sites, constituting 165 individual panels of petroglyphs. Of the sites recorded, 42 are new locations.

The majority of the rock art sites (76%) occur around the HK11 hill which also includes the famous boat petroglyph locality of HK61 (see page 2). This high incidence indicates a significant level of human activity in this area, but the reasons for this are still obscure and cannot necessarily be connected with the settlement at HK11 or usage

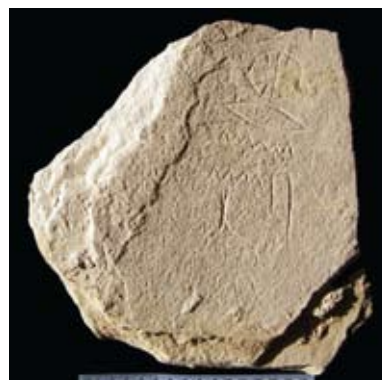
of HK6 in the wadi. Other clusters of rock art activity were located on the north side of the wadi at HK59, near the south end of the HK6 cemetery, and around the cave at HK6, but most of these appear to date to the Dynastic period.

Overall 46% of sites occur in association with rock overhangs or places that provide shelter from wind and sun. This suggests that rock art was created and/or enjoyed during rest and in protected contexts. It seems that its makers were less concerned with display or obvious visibility.

Of the sites registered, panels represented the following:

- **Human figures:** 2%. One panel at HK59 depicts two pharaonic officials in kilts with hieroglyphic inscriptions.
- **Animals:** 10%. Identified animals include ibex, giraffe, cows, bird and elephant.
- **Boats:** 4%. Supplementing the numerous boats at HK61, more animal-headed boats were found in the ravine behind New Kingdom Hill (see page 17).
- **Writing in hieroglyphs:** 4%. In addition to inscriptions of the New Kingdom priests already observed in the HK6 cave and those of the Middle Kingdom at Flint City (see *Nekhen News* 11: 7–8), four new sites were recorded. One preserved the name of a soldier called Renseneb and probably dates to the Second Intermediate period
- **Abstract symbols and lines:** 80%. Most of these are composed of 2–5 parallel lines. Rows of notches in a concentric oval pattern were observed at five sites and warrant further investigation.

Among the most important sites discovered this season is the



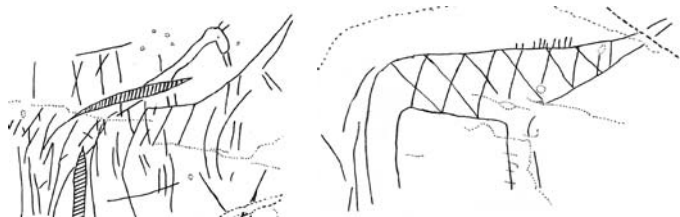
Signature of a soldier named Renseneb.



Recurrent abstract symbol.



An official at HK59.



Giraffes in Panels 3 and 4: with head and without.

large shelter on the north face of the HK11 hill, which was surrounded by four panels of lightly incised giraffes, some shown with ropes around their necks. This shallow cave may be the place where Lansing in 1934 found several complete pottery vessels of early Naqada I date, now in New York. The panels are in shade already by 8am in March, but using a variety of methods to increase visibility, the panels were eventually recorded in full (see discussion at www.archaeology.org).

Panel 1 incorporated what was originally thought to be cattle, but instead appears to be a tethered giraffe, now headless, just like the one on Panel 2. A giraffe with head was preserved only on Panel 3 along with the necks and bodies of two other individuals, while Panel 4 again depicts a headless giraffe, but this time with the mane shown along its neck. In all cases, simple cross-hatching was used to represent the pattern on the hide, a technique that seems to be unique to this site.

Other animals found include a depiction of a mother with its young so tiny, you could easily miss it. At other locations in Egypt, this pair is often cattle, but the delicate body structure suggests that here it may represent gazelle.




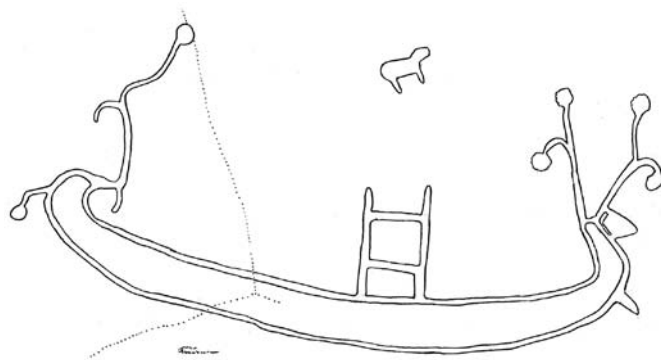
A tiny mother and child.

Unfortunately the mother's head is missing, so we may never know for sure.

The well-known boat drawings on the two facing boulders at HK 61A were also re-analyzed, and the boat on the southern boulder was recorded for the first time. Although eroded, it is not unfinished as previously thought. Instead,

it is finely pecked, but this is only visible under certain ambient light conditions and with the help of mirrors. It is similar in overall style to the two other boats, all of which incorporate a rectangular structure amidships and heads of horned animals at the prow. The north boat also features an animal, possibly a bull, above the cabin and seems to mirror the famous northwest boat, which serves as the Hierakonpolis Expedition logo. In a parallel position across the wadi, two boats with elaborate heads and tails were also recorded behind New Kingdom Hill, but these were made by pecking rather than incision.

As a result of the survey, many new and important sites have been identified. Unfortunately most are located in areas where quarrying is on-going. In an attempt to prevent access, the roads used by the rock miners were blocked where possible. What effect this will have is unclear, so next season we will continue the search and follow up with more detailed surveys in the overview areas. We will also begin to analyze site placement and panel orientations in an attempt to understand the mute testimony of this attractive and intriguing phenomenon. 



The south boat at HK61A revealed at last.



Fred tracing the south boat at HK61A.

Into the Breach: Fixing the Fort in 2009

— by Richard Jaeschke

As reported in *Nekhen News* 20, at the end of the 2008 season heroic efforts were made to shore up the heavily damaged central portion of the west wall—the only wall still more or less intact along its entire length. Steel and timber supports were installed to hold the wall over the summer when it became clear that it was settling into the great ‘central gap’ hollowed out of its interior face. Increasing cracks suggested that if allowed to continue along this course, a major collapse was likely, so we stepped in to try and stop this 9m high, 5m thick and 67m long colossus in its tracks.

Returning in late January 2009, we were anxious to assess our success. The beginning of the season greeted us with a few fallen bricks but no new cracks—and no catastrophic collapse. With much relief we could see that our efforts to shore up the wall had worked, although the strain on some of the beams was obvious. Had we not erected the temporary bracing, we would have had a much different and less welcoming reception. But there was little time for congratulations—we had work to do!

One unexpected benefit from a minor loss of bricks from within the central gap was the exposure of ancient reeds laid between the courses in the wall of the first phase. These reeds added strength through the width of the wall, the way geotextiles are used today. Reeds and matting were used in the funerary enclosures at Abydos and other large mud brick structures throughout Egypt, but similar materials had not previously been observed in the Fort with certainty. The reason for their elusive nature is now clear—nowhere else had the core wall been breached, so its interior make up was unknown. The second phase walls encasing it are only about 1–1.5m thick, so matting was unnecessary at lower levels, but was no doubt used higher up where it is difficult for us to see. The reeds were identified by archaeobotanist Dr.

Ahmed Fahmy (University of Helwan, Cairo) as *Juncus*, a marsh plant used frequently in the predynastic period for matting, especially to cover the bodies for burial.

As interesting as these reeds were, the sooner they were covered over again, the better. Our steel and timber braces allowed us to work in safety in the critical zone as we prepared to enter the breach. We were well aware that all areas of collapse have a corresponding area of compromised foundations below them (i.e., sand-filled pits dug out by animals, archaeologists or looters). In the case of the interior central gap, we knew the culprit to be Late period (post 1000 BC) burials cut into the walls at foundation level and then exposed by Garstang’s 1905 excavations. We rediscovered these cuttings while preparing to reinforce the foundations, but were surprised to see in a small space between them what may be the last surviving bricks of the wall’s original interior surface, the rest having eroded away over the millennia. This discovery helped us to calibrate the width of our reconstruction as we began to fill the yawning gaps.

Once the foundations were firm, we began to construct the buttresses or columns of bricks, which would eventually form a solid infill to repair the damage. We started at the sides of the gap in order to provide further support and take the strain off of the beams. Only then did we feel comfortable about really entering the breach and getting the full measure (actually and metaphorically) of the job ahead of us.

Gingerly stepping inside the southernmost of the holes making up the gap, we pulled out the tape measure. The tape doesn’t lie, but we had to suspend belief when we reeled it out to over 3 meter depth. Now cleared of debris, we could see that the first phase wall at the core had been completely cut through, and the back wall of the gap was actually the second



Work on the central gap resumes.



A buttress at a time, the gap goes away.



Into the breach.

corridor' extending southward for more than 10 meters through the centre of the wall. We needed to fill this gap fast, but before we could do so, we had to deal with the lateral corridor.

Every bit of the challenge we feared it would be, this was accomplished by my positioning myself in the gap so as to be just one leap away from safety if anything started to shift. Thus situated (and pretty uncomfortably), I then flung handfuls of mud into the corridor. Once nicely coated, whole bricks were then slid into place on a plank using the 'pizza oven' method that had proved so successful in previous seasons. In this way, the corridor was eventually

phase wall of the exterior, with the reverse impression of the first phase pilasters still preserved in its brick work. We soon realized what a truly precarious state the Fort had been in. Between the gap on the exterior wall (filled and repaired in 2007) and this corresponding gap on the interior, there had not been 1.5m of wall as we had originally supposed, but actually only two brick length — 52cm — holding up the entire west wall. Luckily we had repaired the exterior gap first, giving the wall the support we thought it already had!

Deeper and more dangerous than we ever thought, the southern gap also included a lateral 'corridor' extending southward for more than 10 meters through the centre of the wall. We needed to fill this gap fast, but before we could do so, we had to deal with the lateral corridor.



The last brick seals the gap. Hurray!

filled and consigned to the archives behind a stout masonry wall built by our mason, Abdullah Nour. Only then could we begin to lay the bricks to repair the main cavity, all the while keeping watch for any movement overhead. What a relief when that gaping hole was reduced to a mere overhang a few bricks deep!

By comparison, the northern gap was a piece of cake. Repeating the procedure, a buttress at a time, soon it too was only a memory. The only thing left to do was dismantle the support structure, which came down a lot faster than it went up. A timber support holding a detaching segment of wall to the south of the gap is all that remains in place, a shortage of bricks having prevented its repair. It will be addressed in the coming season.

By March 26, 2009, the gap in the centre of the west wall had been entirely repaired and the adjacent wall surface to the north sheathed in new masonry to a height of 5m, in order to prevent erosion and avian colonization. Further movement of the walls is now unlikely, and we can finally sleep soundly at night! □



Richard filling the corridor.



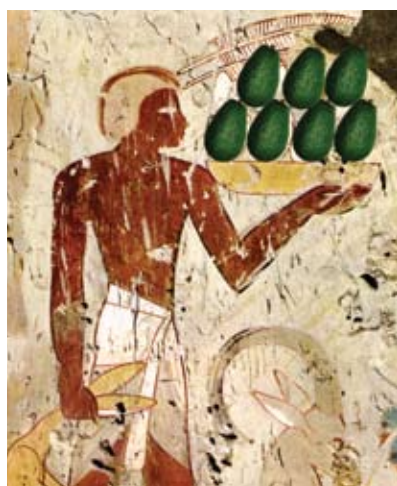
Where there was once a hole: Mission accomplished!

THE HIERAKONPOLIS HOME PAGE

Mexican Night at HK

— by Art Muir

Having been raised in San Antonio, Texas, I love Mexican food and Mexican cooking, and look forward to contributing Southwest dishes to the evening fare when I'm at HK.



Guacamole: evidently a favorite in Ancient Egypt, too!

Taco night and chili night have become a tradition. Taco night requires fresh items from the US—avocados and tortillas. The Egyptian/Tex-Mex fusion salsa recipe appeared in *Nekhen News* 16, but you can't forget the guacamole.

GUACAMOLE (10 generous servings)

- 2 Ripe avocados
- 4 Tbsp finely minced green onion (white & green parts)
- 1 garlic clove, pressed (or more for stronger flavor)
- 2 Tbsp minced cilantro
- 1 Tbsp olive oil
- 2 Tbsp lemon/lime juice (or less if desired)
- 1 Tbsp Pace Picante sauce (or similar mild pepper sauce)
- 3 dashes Tabasco sauce
- Salt and black pepper to taste
- 1 tsp ground cumin (or more)
- 1 tsp adobo seasoning (optional)

Mash together with a fork and stir well. Let stand 30 minutes, stir again and check seasonings. 🍷

PS: Sadly, no kitten companions this year, but new recruits for the mouse patrol have their orders!



HK on the Web

— by Renée Friedman

To learn more about our work on the Fort, rock art and bead making at Hierakonpolis in the 2009 season, be sure to log on to www.archaeology.org/interactive/hierakonpolis where you can also catch up on all of our updates going back to 2002.

There are now many other places where Hierakonpolis is making a splash.

For more views on the royal zoo, have a look at:

Animals for the Gods

www.naturalsciences.be/active/expeditions/egypt

Web site of the Royal Belgian Institute of Natural Sciences (available in Dutch, French and English).

Ancient Animal Graves From Private Zoo?

news.nationalgeographic.com/news/archaeology.html

The newspaper of the National Geographic Society.

And one that you might have missed about HK43:

Ancient Egyptian Skeletons Tell the Story of a Society in Transition

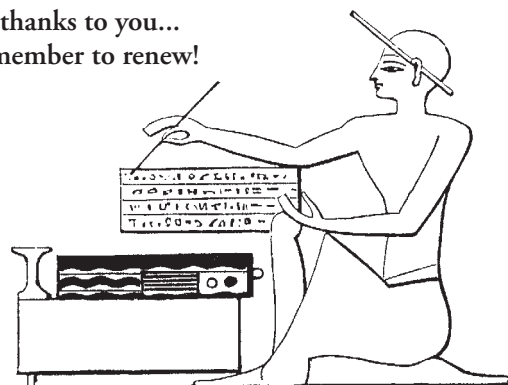
Archaeology from Reel to Real—A Special Report

www.nsf.gov/news/special_reports/archaeology/society_trans.jsp

Friends of Nekhen,

this is all thanks to you...

please remember to renew!



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.

As a Friend of Nekhen 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. Membership in the Friends of Nekhen also entitles you to special rates on Expedition publications.

Help the Hierakonpolis Expedition to continue its important work. Your contribution (tax-deductible in the US) 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.

Membership Application

I would like to help the Hierakonpolis Expedition by joining (renewing my membership in) the Friends of Nekhen. In return for my contribution (tax deductible in the USA), I understand that I will receive the annual newsletter and qualify for reduced rates on expedition publications.

The membership category I prefer is:

- _____ Regular (\$25/£17/€25*)
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†enclose copy of current student ID

- _____ This is a renewal for the 2009–2010 season.
(If you have already renewed, thank you!)

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Fort Futures



Its a long way to the top!

Thanks to grants from the World Monuments Fund and the Annenberg Program for Endangered Cultural Heritage in the Developing World, we have been able to implement the most critical repairs necessary to keep the Fort standing. Every wall of the structure was treated and strengthened in some way. Only the stabilization of the northeast corner remains before Phase 1 of the Fort Fixing is complete. These grants have now come to an end, but there is still much to do to insure the long-term survival and general appearance of this august monument. We are currently seeking funding for Phase 2 in order to further fortify the Fort. Suggestions and donations, as always, are gratefully accepted. Thank you for your loyal support!

Special contribution for the Fort Fund



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Hierakonpolis Highlights 2009



The Fort: finally, fixed....well, almost (page 28)!



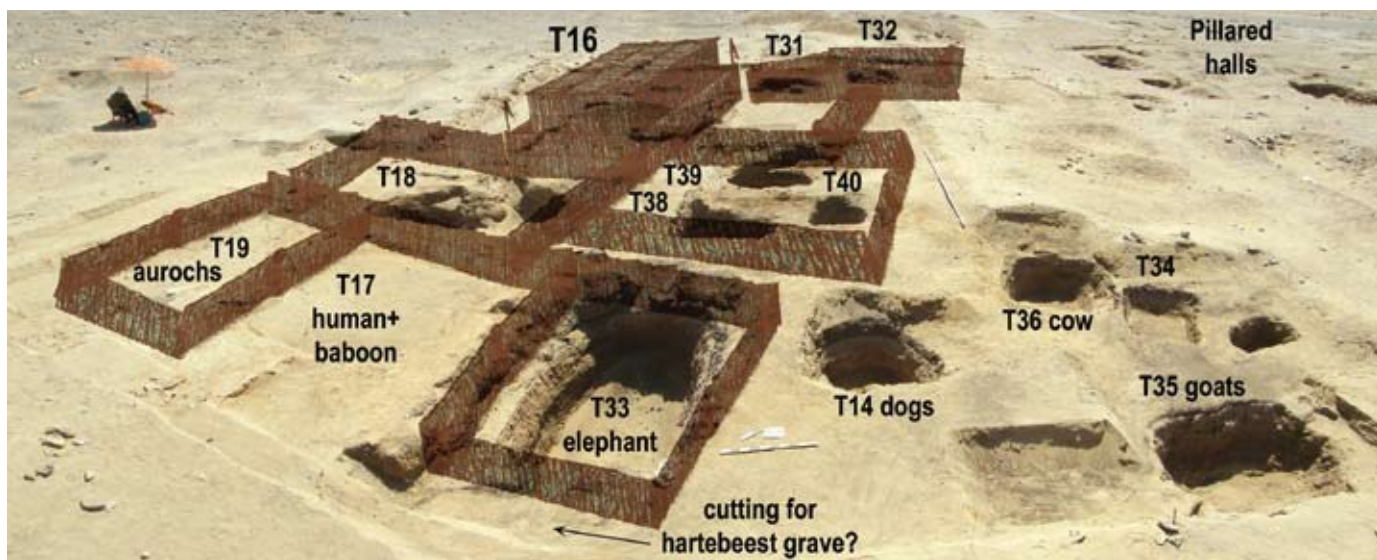
One more big pot (page 23).



More flints from HK6.



Rocking at Hierakonpolis (page 26).



Reconstructing an eternal palace at HK6 (page 4)