



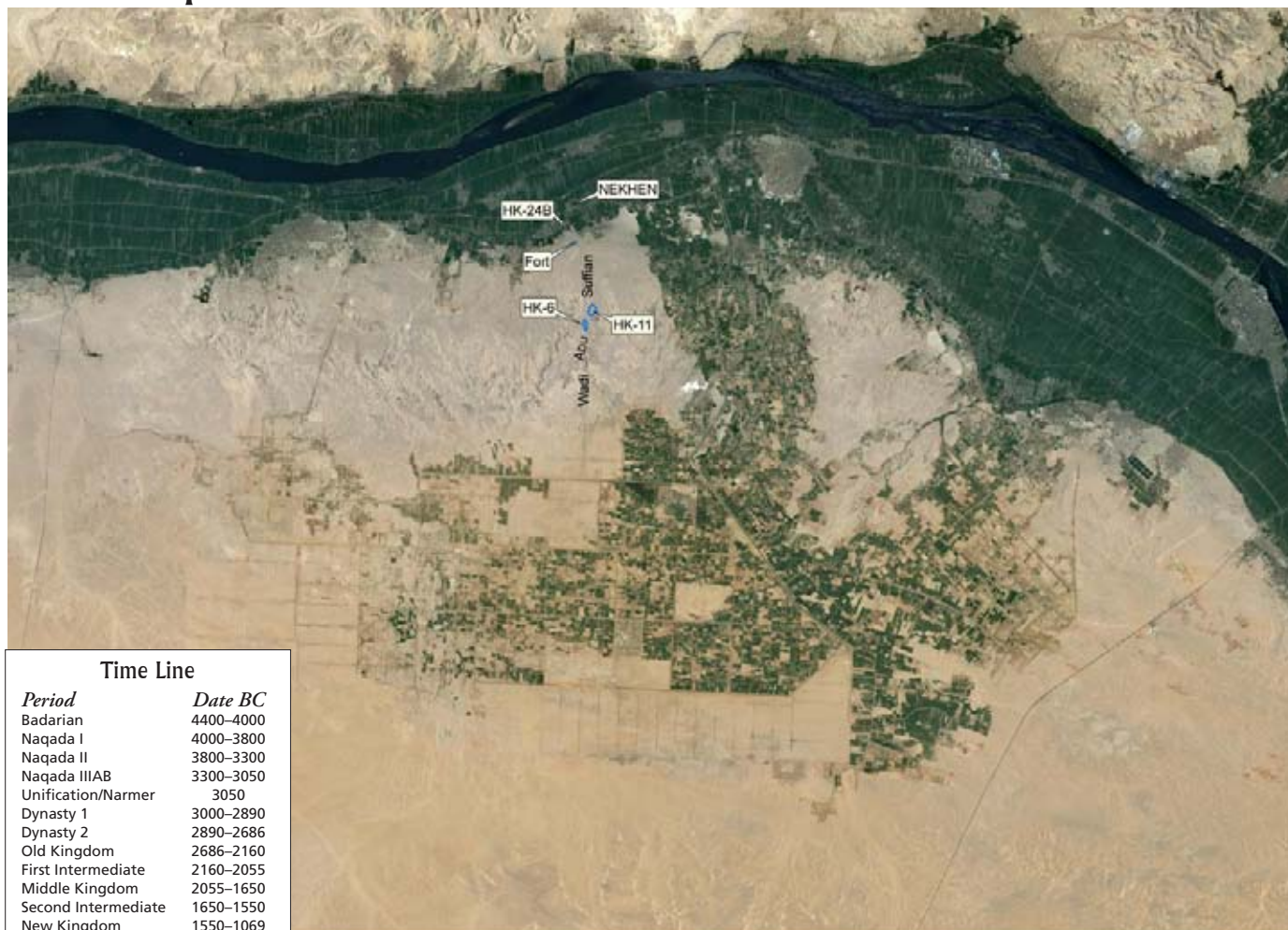
## Meet the Flintstones

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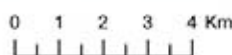


# Hierakonpolis 2011



## Time Line

Period	Date BC
Badarian	4400-4000
Naqada I	4000-3800
Naqada II	3800-3300
Naqada IIIAB	3300-3050
Unification/Narmer	3050
Dynasty 1	3000-2890
Dynasty 2	2890-2686
Old Kingdom	2686-2160
First Intermediate	2160-2055
Middle Kingdom	2055-1650
Second Intermediate	1650-1550
New Kingdom	1550-1069
Third Intermediate	1069-656
Late period	664-332
Ptolemaic	332-30
Roman	30-AD395



Satellite imagery  
© 2011 GeoEye  
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Date of Image is  
October 2, 2009.

Map compiled by  
Joel Paulson, Nolte  
Associates, Inc.

## Thank you, now more than ever!

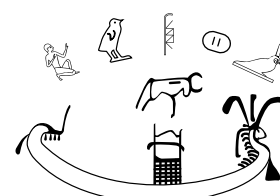
For a season to remember on many levels we are grateful to our loyal Friends of Nekhen who are keeping us in the field through thick and thin. In particular, we are deeply grateful for the generous support of Tom & Linda Heagy, Darrell Baker & Christine Auth, Ben Harer, David & Crennan Ray, Dolores Schifft, Bonnie Sampsell, Lyn Stagg, Ancient Egypt Magazine, John Wall, Rinus Ormelin, Nicoletta Pirazzoli, Mel & Joann Hunt, David Aid, Grier Merwin, Art Muir and Patricia Perry, with special mention of our Danish Friends whose generosity continues to make the difference. We gratefully acknowledge the support of the Japanese Academy for the Promotion of Science for the excavations at HK11C and Grant-in-Aid for Scientific Research (Kakenhi), Japan, for the work at HK24B. Thanks are also due to David Counsell and Grazia Di Pietro, who took the plunge into uncertain waters and bravely came out to lend a hand, and to all the folks at Chicago House for providing much needed moral and kitty support. Last but not least, we wish to express our deep gratitude to our workmen, our guards and our colleagues in the Edful/Aswan SCA, Mohammed el-Baily, Zenan Nubi Abdel Salam and Suzy Samir Labib, for their loyalty, bravery and friendship.

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# Perfect Timing

— by Renée Friedman, Director, Hierakonpolis Expedition

By any measure, the 2011 season at Hierakonpolis was nothing short of fabulous, with the excavations around Tomb 16 at HK6 adding more members to our growing menagerie of animals in both bone and stone (see cover). Some were expected—the hartebeest showed up right on target; the crocodile was a bit trickier to locate (pages 9–11)—and some took us completely by surprise (page 16). In addition to the animals, we also recovered some of the most intriguing human remains to date from the elite cemetery (page 7), allowing us to get to know its inhabitants a bit better. But even more satisfying was finally being able to answer some of the questions that the exploration of Tomb 16 was initially designed to address (page 4).

HK6 was not alone in delivering the goods. Investigations of the brewing and industrial establishments also divulged more of their secrets, substantially increasing our estimate of beer production levels (page 20) and revealing what may be some of the earliest mud-brick architecture in Upper Egypt (page 22).

As usual, the season yielded many new and exciting discoveries, but perhaps the most remarkable thing about it is that it almost didn't happen at all. In retrospect, it was perfect timing: the permission papers were signed the day before the now infamous Police Day and I was able to fly south the next morning to start the work, with no idea of the brave determination of the protestors gathered in Tahrir Square and what was to come.

Once safely ensconced at the site, the shut down of communications made it hard for us to keep abreast of developments. Hierakonpolis was as peaceful as ever, but a

rickety old radio and reports from our workmen did lead to a few nail-biting moments, especially as word of the evacuations of other missions filtered down. We might have joined them had it not been for the support and encouragement of the SCA Edfu office, our local inspector, Suzy Samir Labib, and reassuring phone calls from Ray Johnson of Chicago House. Thanks to them we decided to stay on and in the end were one of only four foreign expeditions to remain. This decision was obviously im-

portant from the point of view of the work, but also on a personal level, I will always consider it a great privilege to have stood with our Egyptian colleagues and cheered when the announcement of Mubarak's departure finally came.

While one might be forgiven for thinking everything would return to normal soon thereafter, we now know this wasn't to be the case. Hidden in our desert oasis we were spared the worst of the troubles that beset so many sites, but that doesn't mean we were totally immune. Late one evening a van was spotted heading up the track to HK6 with intentions that were not difficult to guess. It was only then that I realized how isolated we truly were. Sidain and Feisel were alone in guarding the house (our usual multitude of police no where to be seen), but thanks to

their quick thinking (and speed dialling) they rallied the other guards and with amazing bravery apprehended the looters before any damage was done. Who knows what we might have lost without them? They are truly our heroes and we are so lucky to have them.

It was a year of phenomenal discoveries and momentous events. May every story have such a happy ending! 🐫



Hurray for our Heroes! Our brave guards at the ready: Sidain Abdel Razzik, Abdel Bassett Sidain, Feisel Sidain, Saad Abdel Bassett and Mohammed Sidain.



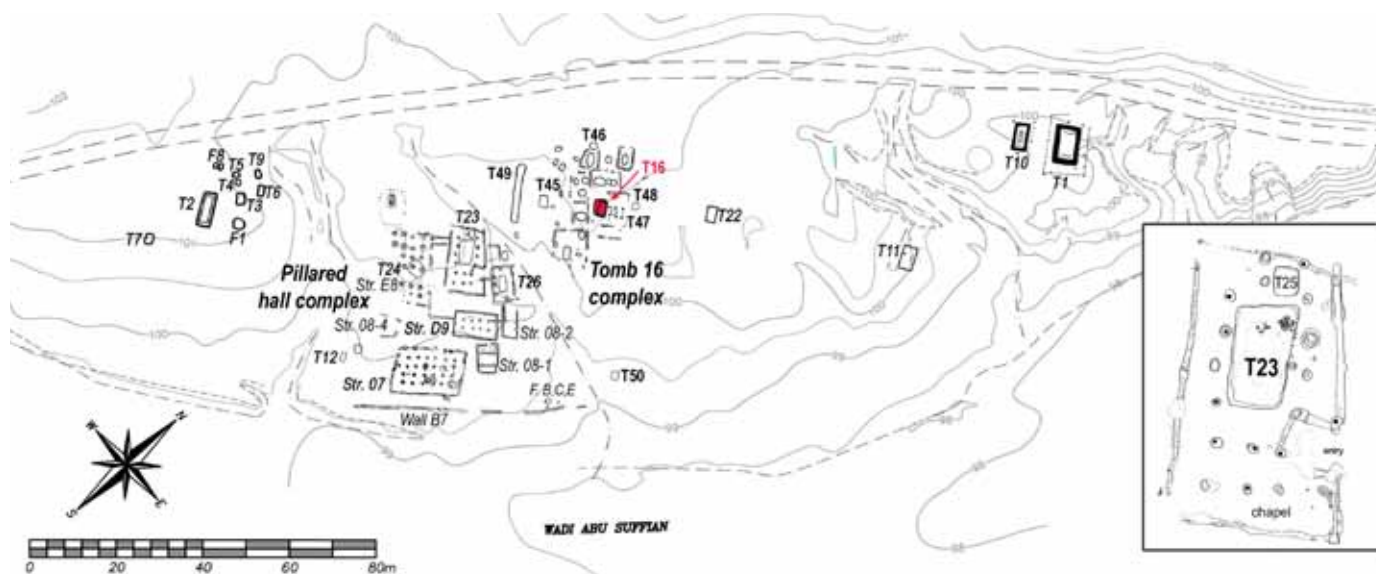
Front page news: "Thefts from two antiquities store-rooms at Giza and a robbery at Kom el-Ahmar in Aswan," *Al Gomhuria*, March 2, 2011.

## Perseverance Pays Off: Answers from Tomb 16 at HK6

— by Renée Friedman

In 2005 we uncovered Tomb 23, the largest known tomb of the Naqada IIB period and, at the time of its discovery, the earliest to exhibit above-ground architecture. Rows of wooden posts attested to an enclosure wall, while large post holes to either side of the tomb cut indicated a columned superstructure rose above it, on the east side of which was a chapel where we recovered the (first) flint ibex and ram's

serted into the earlier tomb cavity. Yet, as we discovered in 2009, there was no lack of architecture for the initial use phase. As the excavations progressed, numerous lines of wooden posts came together to form an interconnected complex of grave enclosures, which flanked Tomb 16 in an arrangement that seems far from random. The tombs of the inner rung were surrounded by fences and reserved for



HK6 in 2011.

head along with fragments of the life-sized stone statue (see *Nekhen News* 17). While subsequent exploration of the adjacent area revealed another large tomb (26), which also had clear evidence of superstructure, more surprising was the precinct of pillared halls spreading out to the south.

These remarkable structures—Egypt's earliest funerary temples—provided us with a glimpse of an elaborate mortuary landscape previously unsuspected for this period, but they also created a big problem. The configuration of columns around Tomb 23 now looked suspiciously like a pillared hall! Did the tomb owner appropriate a previously existing structure? Thus, before anything more could be said about Tomb 23 and funerary architecture, we needed to determine whether other, earlier, elite tombs were also endowed with columned superstructures. With this goal in mind, we extended the excavations northward in 2009 to reinvestigate Tomb 16, a large tomb of the Naqada IC–IIA period, first uncovered ten years earlier.

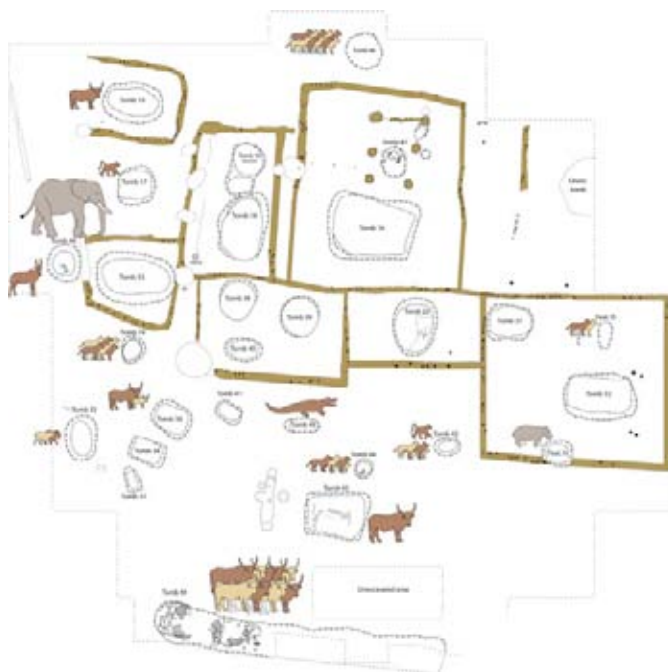
Previous exploration around Tomb 16 had revealed a number of wooden posts of a substantial superstructure, but their shallow footings indicate that they belong to the Naqada III period, when the brick-lined chamber was in-

human interments, while the those in the two outer rungs contained the burials of animals both domestic and wild, attesting to an extensive menagerie.

Given the extensive retinue surrounding Tomb 16, it surely must have been distinguished in some way, but in 2009 we could find no clear traces of how. As we all know, the answer lies below—just how far below came as a revelation.

Perseverance on the north side of Tomb 16 finally paid off. Nearly 2m below the surface we found them: six post-holes, roughly 40cm in diameter, sunk deeply (though not without some readjustment) into what we call the chocolate layer, a stratum of Pleistocene silt that underlies the entire cemetery. This chocolate layer is important to us because with all of the disturbance it is the only way we know we have reached natural sediments, but it was also clearly of importance to the Predynastic Egyptians, who must have seen this rich dark soil below the desert sands as proof of fertility and rebirth in the afterlife. Undulating across the site, every tomb and all major architectural features are cut into it. Thus, the depth and the alignment of the columns (probably including three more to the west) leave no doubt that they are associated with the original Naqada IC–IIA





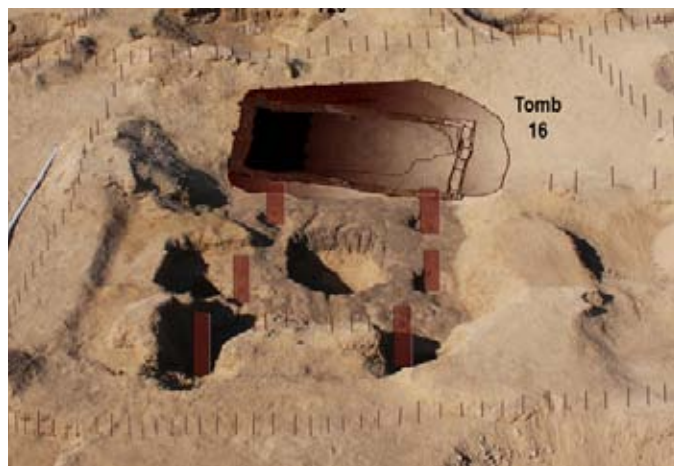
The Tomb 16 complex and its array of animals.

tomb and formed a funerary chapel within the enclosure wall, similar to the arrangement known from Tomb 23.

This satisfying discovery came with an unexpected extra: a tomb (47) dug beneath the floor of the chapel. Although initial indications looked bleak, with tangles of bones pushed up against the tomb walls, at the bottom we found the articulated torso of an adult female whose lower body (at least) had been covered with powdered ochre, turning her feet bright red. This use of ochre is known from other sites, but this is the first time it has been documented at Hierakonpolis. Whether this was due to some special status she enjoyed or simply the fact that disturbances have obliterated the evidence in other graves remains to be determined.



Predynastic pedicure? The red feet of the woman in Tomb 47.



At last: the Tomb 16 chapel revealed (pillars reconstructed).

More intriguing still was her companion, who although tossed about, when reassembled turned out to be a male achondroplastic dwarf who stood just under 4 feet (1.20m) tall (see next article).

A number of ivory figurines attest to a special interest in dwarfs in Predynastic times, but none have provenance. Better documented are the statuettes from the Early Dynastic temple caches, for example at Tel el-Farkha, where 13 little dwarf figurines were found. Although female dwarfs are more commonly depicted in this context, possibly due to an association with fertility, in the court of the Dynasty I kings, it was male dwarfs that were honored by burial amongst the royal retainers and commemorated with high quality stela, showing that they were valued as personal attendants, just as they would continue to be in the Old Kingdom. However, there are several indications that our dwarf was already a highly valued companion.



Digging Tomb 47.

First and foremost is the location of the grave. Burial within the pillared chapel would seem an incredible honor, associating him intimately with the owner of Tomb 16 in death, as he no doubt was in life.

Further recognition is also suggested by the things buried with him. Although the contents of the tomb were highly disturbed, one pot could be fully reconstructed. Unexpectedly, it was badly cracked owing to a firing mistake in the kiln, probably something that happened fairly regularly, and the pot was promptly discarded. So why was this faulty item placed in the tomb? An explanation for this may come from the site of Adaïma, just 20km to the north. Here, badly misshapen pots were found in graves of individuals suffering from serious cases of spinal tuberculosis (Pott's Disease)

resulting in severely hunched backs. This co-occurrence suggested to the excavators that acknowledgement of the physical imperfection was expressed in the imperfection of the pot. This could certainly be the case with our dwarf, since examination of his spine (see next article) shows he stood a bit crooked, just like the pot.

But one flawed jar doesn't mean he was given only second best. Although found in surface levels to the north-



A mirror of reality? The faulty pot from Tomb 47.


west, the stunning flint man (see cover) seems to represent our dwarf with his bowed legs and short arms. This is the only flint figurine in human form known to me and the care with which the stone has been chosen to provide a kilt and sash is especially amazing. It may well be a special piece for a special person.

To date, none of the flint figurines from the cemetery—including our latest addition: a flint donkey, found just minutes after the flint man, but from the opposite side of the complex, making for one very exciting day—have been found in tombs. Those with provenance come from ritual deposits, like that in the Tomb 23 chapel. Thus, it is likely that our flint man comes from the funerary chapel of Tomb 16, but may have been placed there in full recognition of its particular occupant.

While it is still possible that Tomb 23 'borrowed' a pillared hall, the new findings at Tomb 16 show that columned superstructures were already present by the time it was dug. Turning the question around, we may now ask if Tomb 23 was equipped with a large complex of subsidiary graves like Tomb 16. This is an important issue, but first we need to

work out just how large the Tomb 16 complex actually is.

At present, the second rung of graves gives the best clues. This is the rung reserved for the powerful wild animals: the aurochs, elephant, crocodile (finally tracked down in Tomb 45) and hippo, along with the 25 dogs in seven different graves, which may have served as their hunters, herders or controllers. This year's discovery of Tomb 48 and the ten dogs it contained (see page 13) allows us to propose a roughly symmetrical arrangement, with the complex extending for over 40m north to south. For its east-west dimensions, the new tomb (50) discovered near the edge of the wadi suggests a 60m-long expanse. Although still isolated, we may presume this tomb is part of the second rung, the rung of power, since it contained certainly the most beautiful and amongst the most powerful beast of them all: a large male leopard (discussed in more detail on page 12).

The third rung of tombs, composed of domestic livestock, is still poorly understood, but the surprise awaiting us in Tomb 49 shows that these animals should not be excluded from the calculations of size or wealth (see page 16). If the third rung was also organized symmetrically, then the complex is even larger, significantly ratcheting up the Predynastic contribution to monumentality. To determine this, however, bigger, wider and deeper investigations are necessary—along with your continued support and the strength to persevere! 



Tombstone of a dwarf in the entourage of King Djer, Abydos (Dynasty I). Courtesy of University of Pennsylvania Museum of Archaeology and Anthropology.



Female dwarf figurine attributed to the Predynastic. British Museum EA32144.



# A Special Person in a Special Place: the Dwarf of HK6

— by Anna Pieri, University College London, UK

I don't need to tell you that HK6 is a special place and that being a member of the excavation team over the past five years has been an incredible experience. This season, however, the discovery of Tomb 47 made the site even more amazing for me, especially as I embark on a career in physical anthropology. Found below the funerary chapel of Tomb 16, Tomb 47 contained the well-preserved remains of two individuals and the chance to study the peculiarities of one of them caused me to drop my schoolwork and catch the first available flight to Egypt.

The two individuals inside this tomb had probably been buried at the same time, placed next to one another. Unfortunately, the southern side of the tomb had been so severely plundered that one body was completely displaced, but the other was found in perfect anatomical connection, except for the shattered skull and the scattered arms. Nevertheless, more than the 90% of both individuals were recovered, making them some of the best-preserved human remains known so far from the HK6 cemetery.

The in situ individual was identified as a female of between 25 and 30 years of age. The fine preservation of her skeleton made it possible to establish that she was 1.65 to 1.75m (5'4"–5'7") tall. Her height is impressive considering the mean stature of women at the contemporaneous working class cemetery at HK43 was only 1.58m (5'2"). This may be an indication of her higher social status and



Tomb 47 within the pillared chapel.

the better nutrition that came with such status. A cavity in the lower-left first molar certainly suggests she enjoyed a diet richer in refined carbohydrates and sugars than her neighbors at HK43. Carious lesions were extremely rare in Predynastic Egypt overall and at HK43 only a third of the adult population was so afflicted (see *Nekhen News* 17: 9).

In contrast to this imposing and robust female, the other occupant of the grave had extremely shortened limbs and a reduced rib cage, while the spine was of normal size. He was an achondroplastic dwarf!



Anna and the dwarf.



Ouch! A rare cavity on the woman from Tomb 47.



The characteristically pointed chin of a dwarf.

The skeletal growth disorder known as achondroplasia, the most common type of dwarfism, is produced by a genetic mutation that causes depressed formation of cartilage in the bone. The modern incidence is roughly 1 per 15,000–30,000 live births.

Symptoms of achondroplasia are a pronounced shortness of stature and an abnormal head size, which is normally confined to the vault of the cranium. The facial features are also affected. Generally, the maxilla (upper jaw) protrudes, while the bridge of the nose is flattened; the chin is very pointed and the forehead is flat and high. In addition to the shortened limbs and fingers, other characteristics of this disorder include a pronounced curvature of the lower spine, prominent buttocks and a protuberant abdomen.

The individual in Tomb 47 presented almost all of these typical features. The reduced size of the limbs was easy to see, along with the enlarged shape of the epiphyses (bone ends), especially when compared with the arms and legs of his normal-sized companion. His hands and feet were also small and the fingers were bent and somewhat claw-like. Not only short, both of his femurs were also markedly twisted in an antero-posterior view, making him very bow-legged, a trait often stressed in Egyptian depictions of dwarfs. In contrast, his spine was of normal size except for the atlas and the axis, the first two cervical vertebrae (the ones that support the head and allow it to turn), which were of reduced dimensions. The average height of male achondroplastic dwarfs is 1.30m (4'2"), but from the measurements of the limbs, this dwarf stood only about 1.20m (3'9") high. In addition, observation of the lumbar spine and the extremely flat sacrum suggests that he



It's no exaggeration: the twisted legs of our dwarf show that his stance was just like this Early Dynastic dwarf figurine from Tel el-Farkha (courtesy of K. Ciałowicz).



Listing to one side, the spine shows evidence of scoliosis.

suffered from scoliosis, an abnormal curvature of the spine, and that his abdomen must have been prominent.

Unfortunately, the skull was damaged, but it was possible to reconstruct it in part. A large protuberance on the back of the head and the very pronounced mastoid processes allow us to suggest that this individual was male. The frontal bone shows a small eyebrow arch and a very flat forehead, while the complete mandible (lower jaw) displays an extremely prominent chin and a wide angle of the ramus, all characteristic features of achondroplasia.

Ageing the dwarf was more difficult. For this, the preserved teeth were used even though dental eruption in those affected by achondroplasia is known to be delayed. Since the third molar was fully developed and shows some degree of wear, it is possible to suggest an age between 30 and 40 years. This makes him one of the oldest individuals buried in the Tomb 16 complex and further indicates his value in the court of the Predynastic rulers of Hierakonpolis.

From the literature of Dynastic Egypt we know that dwarfism was not regarded as a physical deficiency but as a mark of the divine. When this special status developed is unclear, since the few figurines stylistically attributed to the Predynastic cannot be tightly dated and other Predynastic dwarf burials—one of the Badarian period excavated at Mostagedda and another mentioned by Quibell from somewhere at Hierakonpolis (possibly HK27 or HK33)—do not appear to have been distinguished from the general population by location or grave goods. However, thanks to the remarkable discovery in Tomb 47, there is now no doubt that by the end of the Naqada I period, this dwarf at least was a special person in a special place. 🏺



## A Hartebeest and Its Handler: Tomb 46

— by Joe Majer, San Francisco

Having had the honor (?) of excavating the elephant in Tomb 33 in 2009 (see *Nekhen News* 21), upon my return to HK6 in 2011 it fell to me to find the tomb of its neighbor, the hartebeest. From occasional bones collected from disturbed contexts, we had known for many years that there was a hartebeest buried somewhere in the cemetery, the first evidence for the deliberate burial of this species. When a quantity of bones turned up during the excavation of the upper layers of Tomb 33, evidently thrown out of a nearby tomb, we knew we were getting close to finding its location. The areas to the north, east and south of Tomb 33 were already excavated and revealed no hartebeest burial. The only place left to look was to the west, so it was here we began to dig when work resumed this February.

On our very first day, we found a cutting into the chocolate layer, just 60cm west of Tomb 33, indicating the presence of a new tomb (46). The cutting was oval in shape, oriented north-south and 1.72 by 1.52m in dimensions. Continuing down, the sides began to slope inward so that the floor, found 86cm below the top of the chocolates, measured only 1.15 by 1.03m, making it very cozy for the occupants it was found to contain. Unfortunately, heavy pitting by looters had destroyed any evidence of a superstructure or enclosing fence. However, because the fence surrounding Tomb 33 passed just to the east, Tomb 46 must have been dug and filled in before that fence could have been built.

The upper levels of the tomb fill consisted of mixed debris from its plundering, mostly bone, as well as material that was thrown out and fell in when the adjacent tombs were robbed. No grave goods could be positively assigned to the tomb, and indeed there may never have been any, but we will never know for sure.



Joe and the hartebeest handler in Tomb 46.

Final confirmation of the success of our quest came about 20cm above the floor when a concentration of hartebeest bone was encountered. Although not in full articulation, they were nevertheless in relative order, indicating that the legs had been laid out on the northwest, the body arching around the northeast, and the head originally toward the south. In among these bones we collected clumps of organic matter, presumed to be gut contents, but detailed examination later revealed their remarkable true nature (see next article).



Man and beast from the tomb of Akhethotep, Saqqara.

Given the relatively small size of the tomb, when we reached the floor we were surprised to find there was room for two. On the southern side were the articulating arms and hands of a human and below them, the pelvis, some lumbar vertebrae and a few displaced ribs. By one hand were the remains of what may have been a bag containing organic material—perhaps hartebeest feed? Fine matting preserved on the pelvis and arms indicates that the body had been covered over after being laid upon the mat-lined floor with the torso to the left, legs flexed, and head to the southeast. No matting was directly associated with the hartebeest bone, so presumably it was not covered like the human, but foot bones of the animal found close to the human pelvis suggest they were buried together, their bodies parallel in something like a spooning position, or as close as you can get with a hartebeest!

Although little remained in situ, once examined back at the house, we soon realized there was more to both occupants than originally anticipated. Most of the skull was missing, but the rest of the human burial was in good condition, with almost 80% of the skeleton preserved.

Observations by Anna Pieri of the pelvis, the most sexually dimorphic bone, identified this individual as male. The unfused bones in the sternum suggest he was a young adult, between 20 and 35 years of age, but probably below 30 years at the time of death, like most of the human burials in the Tomb 16 complex. More unusual were the pronounced robusticity of the bones and their impressive overall length. From the measurements of the long bones, his height can be estimated at up to 1.85m (6 feet). The mean height of men in the HK43 cemetery was only 1.67m (5'5"), so he was possibly a member of the well-nourished elite. Whatever the case, this big guy was probably specially chosen to handle the hartebeest. ♀

## Two More Wild Animals from the Elite Cemetery

— by Wim Van Neer, Royal Belgian Institute of Natural Sciences, Brussels

The HK6 cemetery is famous for the amount and variety of animals buried there, either together with humans in the same grave or on their own. The species list is already long, with not only local animals such as hippopotamus, aurochs and wild donkey, but also more exotic species such as the elephants and baboons that must have been brought in from much farther south, probably present-day Sudan. The 2011 season brought to light new additions to the roster of wild animals kept and sacrificed at Hierakonpolis.

The continued excavation of the burial complex around Tomb 16, belonging to a Naqada IC–IIA period ruler, yielded the grave of the hartebeest (Tomb 46) and the crocodile (Tomb 45), whose presence was already suspected from dispersed bone finds. These two species have never been reported from any other Predynastic cemetery and are so far unique for Hierakonpolis, although the re-

mains of another crocodile have been observed on the surface to the northeast. Both crocodile and hartebeest lived in the area and were sometimes eaten, as shown by the food refuse from various Predynastic settlements, including HK11, HK29, and the ceremonial center at HK29A. These crocodiles may have been speared or captured in nets according to contemporary pottery paintings.



Capturing crocodiles in Predynastic times.

The skeleton of the crocodile in Tomb 45 was heavily disturbed, but articulating elements of one front paw and a concentration of teeth suggest that it was buried with its body oriented to the southeast and its head turned back. Its tail was probably also wrapped around, since the floor of the tomb is only 1.45m long and the size of the head indicates a total length of about 2m. Animals of that size



Retrieving the crocodile from Tomb 45.

weigh about 30–40kg and would still have been manageable (by a strong person!). Keeping it alive for a long time would have required adequate food, but these reptiles do not need to eat every day, or even every week, and have a reputation for their resistance to starvation. No evidence of a final meal was observed, so maybe it was a good strategy not to feed it very much since the weaker the animal got, the easier it may have been to keep it in captivity.

While crocodiles must have abounded in Upper Egypt during Predynastic times, hartebeest were probably already rare. For thousands of years, these antelopes, together with aurochs and dorcas gazelle, were the major prey of late Palaeolithic hunters living in the Nile Valley. Their remains within human food refuse show that hartebeest continued to be regularly hunted in Lower Egypt in Neolithic and Predynastic times. However, in Upper Egypt their numbers apparently declined very quickly, judging from their rarity on settlement sites. Only a few bones were discovered in the settlements of Adaïma, Naqada and El-Abadiya 2. At Hierakonpolis, refuse indicating the consumption of hartebeest is restricted to a single bone from HK29A.



Crocodile armor: dermal scutes.



The crocodile reassembled, but missing back bones make it shorter than it should be.



There were probably two reasons for its rapid decline. It is a sedentary species that, even when hunting pressure and human habitation increase, will not migrate to other regions. Moreover, after the introduction of domestic livestock, hartebeest had to compete with cattle for the same food plants. This competition must have been especially acute in Upper Egypt where the Nile Valley is narrow, and this may be why the species disappeared here faster than in the north. All this suffices to underline that hartebeest must have been rare in the Hierakonpolis region, and that its presence at HK6 can be seen as another expression of the elite status of the cemetery.

The hartebeest bones found in Tomb 46 were no longer in articulation due to disturbance; nevertheless, the inventory of the skeletal elements is more or less complete, with only a few bones missing or partially preserved. All of the hartebeest's long bones are fully grown and their articulating ends are fused, indicating that it is an adult.

Establishing its sex, however, is less straightforward. Although sexual dimorphism in size should in theory make it possible to distinguish the larger males from the smaller females, the hartebeest has been extinct in North Africa since the mid-19th century, and almost no skeletons are available in museums to allow metrical comparison. Another criterion, the shape of the pelvis, could not be used since it was only partially preserved. It seemed therefore impossible to find an answer, but a most unusual find gave us the needed clue.

As with the other herbivores from HK6 (the elephants, the aurochs and several cattle), we were interested to find gut contents from the hartebeest in order to investigate its foddering practices (cf. *Nekhen News* 22:

10). Happily, several clumps of this material (known in the field as 'poo') were recovered from the tomb, and in one case it seemed that even twigs about 1cm long were also present. However, upon closer examination these turned out to be the tiny long bones of a foetus. This particular clump was in fact part of the womb!



The legs of the baby hartebeest and part of the womb.




The feet of the mother hartebeest. The longest elements are the canon bones; the back of one shows evidence of inflammation.

The size of the foetal bones suggests that the female hartebeest died about three months after conception, but this is not the whole story. From elements found earlier, outside the grave, we could observe pathologies, such as a healed rib fracture, a tooth with abnormal wear and a deformed lower jaw (*Nekhen News* 21: 12). The fracture may be related to the capture or the handling of the animal in captivity, while the oral pathologies are likely the result of inadequate food, possibly combined with some sort of injury to the head.

Material found within the tomb yielded another bone relevant to the conditions during captivity, namely a canon bone of the foot that showed evidence

of periostitis, or inflammation of the connective tissue that surrounds the bone. The location of this deformation, more or less in the middle of this long foot bone, suggests that the animal was tied up for some time.

Together, these pathologies indicate a captive period greater than three months and this implies that the mating of the hartebeest took place while it was in captivity. Therefore at least one male must also have been present, if not an entire breeding herd of this increasingly rare species. With at least two attested and one on the way, the three hartebeest in the oval enclosure on Narmer's

Mace-head from Hierakonpolis may be more accurate in details than we previously imagined. 



Hartebeests on the Narmer Mace-head — the whole family?

# A Special Trophy

— by Wim Van Neer and Bea De Cupere, Royal Belgian Institute of Natural Sciences, Brussels

The cemetery at HK6 is very disturbed due to illicit digging that probably started not long after the initial interments and continues to this day. As a result, the surface is covered with potsherds and scattered bones. The detection of bone and artefacts clusters is often useful for establishing excavation strategies and, in an attempt to determine the potential size of the Tomb 16 complex, this season we examined the surface bones from the edge of the excavated area eastward to the wadi. In this roughly 40m-long stretch, the ‘usual’ human, cattle, sheep/goat and



Tell-tale signs in Tomb 50.

dog bones were observed, but there was also one fragment that looked tantalizingly different. Back at the excavation house, we immediately checked a few reference books and found confirmation: it was a distal humerus of a large felid. The size of this arm bone suggested it might be from a lion, but one bone does not make a lion.

The very next day we started excavations in the area and soon could trace the outline of a round, 2m-wide grave that we baptised Tomb 50. As hoped, on the mat-lined floor of the tomb were the remains of a large cat that had been covered with textile and then more matting. Unfortunately, every bone had been disturbed and often broken. Yet, most elements of the skeleton were recovered and after a bit of mending, and a great deal of thought, we were able to rearticulate the animal in the lab. Overall, the general preservation was very good: the nails on most of the claws dramatically survive and several pieces of hair were collected along with fragments of thick three-ply rope, perhaps from a net, suggesting how this large cat was controlled or possibly transported to the cemetery.

In Predynastic times, two species of large cat may have lived in the Hierakonpolis region: the lion and the leopard. The skeletons of both are very similar in shape, but they dif-



A cat reconfigured.

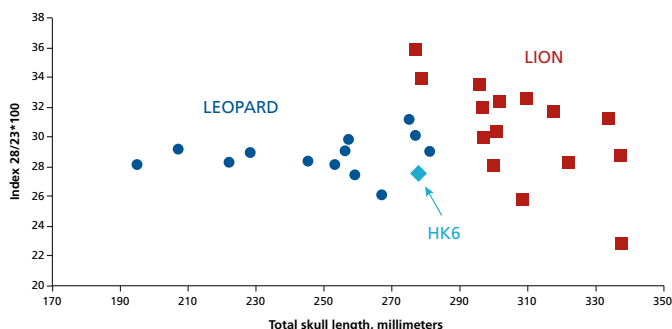
fer in size, with the leopard being smaller on average than the lion. We knew we had a relatively large though not giant animal, and this led us to conclude while still in the field that it was probably a small lion, likely a lioness.

Back home in the Natural History Museum at Brussels this identification was checked by comparing the recorded measurements of the skull with those of modern lions and leopards held in the collections. To our dismay, it appeared that the identification was not going to be as straightforward as we assumed. There were numerous leopard skulls in the reference collections that were indeed much smaller than the specimen from Tomb 50, but there were also a few skulls of the same length or even longer. On the other hand, it appeared that most of the modern lion skulls were much larger than our individual, but again, some of the smallest female skulls compared well in size or were even somewhat shorter.



Skull measurements.

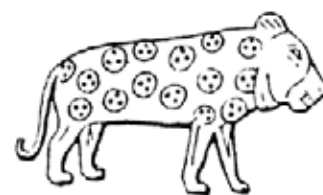




Lion-leopard skull size graph.

Due to the unlucky fact that the size of the Tomb 50 skull falls in the overlap zone of the two species, it was necessary to search for a possible combination of factors that would separate lion and leopard. Finally it was possible to identify the HK6 cat through the simultaneous use of two width measurements and the skull length. It turns out that the large cat from HK6 is in fact a male leopard of exceptional size.

He must have been a prized possession, especially considering the significance of leopard skins throughout Egyptian history. Later worn by *sem* priests, the distinctive pelt already appears on the combatants in the Painted Tomb and adorns the mysterious long-haired figure accompanying Narmer on his palette. Although the lion will continue to be the cat most associated with kingship in Ancient Egypt, the prowess of the leopard was well recognized and is acknowledged on some of the most prestigious items of the late Predynastic period: the Two-Dog Palette, the Gebel el-Tarif Knife-handle and the golden handle of the Sayala Mace. While a picture is nice, the real thing is obviously better. The leopard in Tomb 50 was undoubtedly a very special trophy for its original owner and, as its new caretakers, we are also extremely proud. 🐆



Leopard on the Sayala handle.



## Dog Days: Tomb 48

— by Renée Friedman

No season would be complete without uncovering another pack of dogs in the Tomb 16 complex. Tomb 48, located northwest of the pillared chapel, fulfilled that requirement this year. A round grave, 1.65m in diameter, it originally held at least ten dogs based on a preliminary count of the canine teeth alone. Not as deep as some of the others (just c. 1m), its contents had been severely disturbed and dog bones were strewn throughout the fill and surrounding areas; the dogs of Feature F, explored in 2009, can now be attributed to this tomb. Despite this, parts of three animals were still in situ on the floor and appear to have been carefully arranged. Two were intertwined face to face along the west edge, while the forelegs of another in a crouched position were found on the east side.

In addition to copious bits of dog, a few human bones were also recovered, but given the level of disturbance, their



Dog paws from the east side.



Two dogs entwined on the west edge.

association with the tomb is unclear. The same is true for the bow-tie flint, found half way down in the fill, a lovely red-polished saucer and the tantalizing fragments of White-cross line (C-ware) pottery, which mainly came out of the south-west. Several vessels are represented, one equipped with a handle, and others that seem to have been decorated with figural scenes. Strong similarities with figural fragments found in 1999 around Tomb 22 (see color page) suggest that their original home may actually lie somewhere in between. Figural styles in C-ware have been identified for the major centers of Abydos and Naqada, but that of Hierakonpolis remains elusive, these fragments being some of our best evidence to date. The search will continue as we intend to point our trowels northward next season; meanwhile, the K-9 unit will have its job cut out for it counting all those dogs. 🐶

## Further Treasures of HK6



The bow-tie collection 2011.



Little red bowl from Tomb 48.



Going to the dogs. Finally on the floor in Tomb 48.



Clay beads, owner still at large.



Crocodile cosmetics?  
A bag stained with  
ochre and a mat  
with malachite from  
above Tomb 45.



The C-ware collection from Tomb 22 and Tomb 48.



## The Bigger Picture



Sunrise on the cemetery: panorama of the Tomb 16 complex (Tomb 49 on the right).



Photo: M. Baba

The new mud-brick structure beside the Operation B brewery at HK11C.



Photo: N. Shirai

In the shadow of the *Kom el-Ahmar*: excavations at HK24B.



Photo: M. Baba

The long wall of Square C10–11 at HK11C.



## Where's the Beef? The Surprise of Tomb 49

— by Xavier Droux, Lincoln College, Oxford, UK

It was a long trench on the southern edge of the Tomb 16 complex, one of many disfiguring the elite cemetery. Convenient for storing our equipment on windy days, we had deliberately ignored it, considering it too looted to repay excavation. We were wrong.

It was the search for the crocodile's grave (Tomb 45) that brought us to the brink. Although that burial tricked us by turning up to the north of Tomb 43, exploration to the west and south (where we expected it to be) uncovered some interesting items, including several dozen clay beads and part of a rhomboid slate palette. In hopes of finding their place of origin, we hesitantly widened the explorations southward, but when the flint donkey and the calcite fish-tail knife amulet popped out from the surface gravels, we knew we were committed. Expanding further, quantities of cattle bones began to emerge, and now up against the edge of this trench, there was only one place left to go.

Photo: X. Droux



Fish-tail knife amulet.

With little enthusiasm for the task and only a week left in the season, we staked out a 2m test section in the middle of the 1.5m-wide furrow, joking with the dispirited workmen as they dug through the disturbed sand filling that it really wasn't a plundering pit, but a giant tomb containing 22 cows. This joke wasn't quite so funny when first the tips of the horns and then the entire heads of two cattle appeared, soon followed by their articu-



Tomb 49 so far. It's a whopper!



Photo: X. Droux

Just below the surface, the discovery of the donkey and the fish-tail amulet committed us to the quest.



Coming up with cattle at the western end.





Prime beef still on the hoof. A detailed look at Tomb 49.

lated, intertwined bodies as well as parts of more cattle to the west and east. Opening up to the west, we found the mostly in situ skeletal remains of four more cattle and finally the rounded end of this 1.55m wide-1.25m deep trench, which matched the surface indications exactly.

With only days remaining and already a lot of cattle to sort, if this trench, which now really was a tomb, was as large as the surface depression indicated, we knew we would not be able to finish it in time. Instead, we opted to search for the eastern end by clearing along one edge down only far enough to see the cutting in the chocolate layer. Taking it 2m at a time, it took us four rounds to get there, even farther than the surface led us to believe. The tomb (now called Tomb 49) is a whopping 13.5m long and up to 20 cattle may well be buried in it!

In all, we managed to excavate 5.5 m of this massive tomb, fully revealing six of its occupants and the rear parts of two others. Carefully arranged in two rows, their backs

were placed up against the walls, their legs toward the center overlapping with the animal buried opposite. All faced east, the head of one on the rump of another, although in two instances the heads have been turned back to the west. Both cows and bulls are present and, with the exception of one adult (4 years or more), all were sub-adults (c. 2–2.5 years old) and therefore the makings of a first-rate meal. Although disturbed to greater or lesser degrees by the plunderers, it is clear that the animals were whole (un-butchered) when deposited in the grave and represent a significant sacrifice of valuable assets.

Aside from a large quantity of prime beef, the tomb contained little else. Notable was part of a White cross-lined bowl decorated with thick parallel lines originally in white, but now faded to ghost impressions. More intriguing are the three bow-tie shaped flints. Two fragmentary examples were found mixed in the tomb fill, while a complete one emerged from a depression in the hard gravels beside the grave, much like the flint donkey, suggesting that they are all ritual offerings rather than grave goods. Together with the bow-tie found near Tomb 20 in 2009 and another found by Tomb 48 this year, we now have five of these curious objects, all apparently made by the same craftsmen (see next article), but for reasons yet unknown.

Since it straddles the border between the Tomb 16 complex and that of Tomb 23 (or whatever lies in the un-explored area to the south), exactly whose herd of cattle is buried in Tomb 49 remains to be determined. While the bow-ties suggest that Tomb 49 belongs to the already expansive compound of Tomb 16, only further excavations can answer this question. Whoever the owner, his ability to bury such a large herd of high quality animals is an eloquent statement on the extent of his power and on the wealth of Hierakonpolis overall. This tomb was no joke. It was meant to impress and indeed it does! 🐄



Photo: X. Droux

Tackling Tomb 49.



Photo: X. Droux

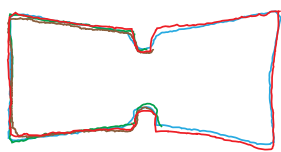
The last laugh? A cattle skull in Tomb 49.

# Focus on Flint: Artisans of the Elite Cemetery

— by Kazuyoshi Nagaya, Waseda University, Japan

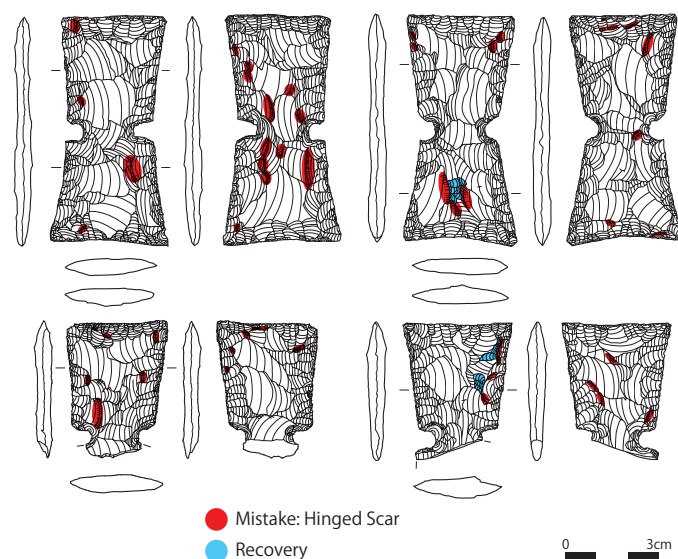
Over the years we have amassed a stunning collection of flint artifacts from the elite cemetery at HK6, and this season's harvest was especially rich. The bifacial flints in the shape of the human, donkey and the so-called bow-ties are amazing, but the other animals, rhomboid lances, fish-tail knives and arrowheads of previous years are no less remarkable. They have not only aesthetic value, but also provide important information about the lithic technology of the time, which can enable us to identify the artisan groups and sometimes even the individual craftsman responsible for their creation.

The four curious bow-ties recovered this year (one complete example from Tomb 48 and one complete and two partials from around Tomb 49) are interesting for two reasons. First, as their superimposed outlines show, they are all exactly the same size. Second,

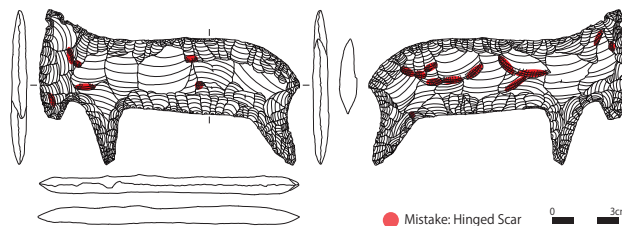


Bow-tie overlay.

on their surfaces, distinctive traces of mistakes made in the process of production and then the measures taken to correct them can be observed. The mistakes, which left 'hinged scars', created uneven surfaces on all four pieces. On two of them, attempts were made to remedy these mistakes by pressure flaking in order to flatten the surface. These production features can be interpreted as a reflection of a knapper's personal abilities. The perfect concordance of the outlines and the similarities in flaking mannerisms suggest that all of the bow-ties were manufactured by the same person at about the same time and from the same supply of beige-colored flint.



Bow-ties and their flaws.



Donkey details.

Detailed examination of the production details of the donkey, a charming new addition to our menagerie of flint animals, reveals that the entire surface was roughly flaked and then the edges were finely shaped by retouch. Interestingly, although not made of exactly the same flint as the bow-ties, the same knapping mistakes can be observed, suggesting it was made by the same or a related craftsman. In fact, this artisan may have been responsible for many of the larger animal forms found previously, such as the gazelle and the hippo (see *Nekhen News* 18: 16), but further analysis is required.

The unparalleled flint man with his stubby arms and bowed legs, picked out ears and knee caps, is certainly a masterpiece of stone-working. However, the most remarkable aspect (for me) is that he was born of the same technique as the arrowheads. The arms were created in the same way as the barbs of tanged projectile points, and the legs are the wings of a hollow-base arrowhead. The flint material is also the same as that used for the arrowheads: a dark brown to deep gray flint often with lighter veins, the colors having been carefully exploited to give the flint man his dress features. This same technology can be recognized in the ibexes with their long legs and graceful horns. The flint elephant, of which only the distinctive head was recovered, also betrays its origins in the technique and raw materials used to make it. Because arrowhead technology, with its emphasis on thin and sinuous forms, constrains the maximum size of the products, the elephant is smaller than the other animal forms, despite the larger size of the animal portrayed.

These are exquisitely-made objects, but the highest praise is reserved for the rhomboid lances and fish-tail knives, which exhibit the greatest skill of all of the bifacial flints from Hierakonpolis. Their surfaces are smooth, mistake-free and are characterized by highly controlled and regular sequences of pressure flakes creating an undulating pattern. Moreover, the cutting edges are fine and evenly serrated with micro-denticulations. Although few are completely preserved, some must have been of impressive size. A fine blackish or murky brown flint was favored for their production. So far, these finest of pieces have been found only in the pillared halls where they may have been displayed and used in various rites.



## Flint Artisans of HK6

### GROUP 1

Material: Beige/ Light Brown Flints  
Product: Symbols & Animals (Larger)

Technological Aspects:

- Mistakes (Hinged Scars)
- Rough & Irregular Flaking



### GROUP 2

Material: Dark Brown/ Black Flints  
Product: Animals & Arrowheads (Smaller)

Technological Aspects:

- Related to Arrowhead Making



### GROUP 3

Material: Murky Black Flints  
Product: Rhomboid Lances & Fish-tails

Technological Aspects:

- Highest Skill
- Small & Regular Flaking
- Fewer Mistakes



From these observations we can now recognize the specific technologies used to create the flint masterpieces from HK6. There were at least three artisan groups that can be identified on the basis of three main criteria: the raw material; the technology along with the skill with which it was exercised; and the final products.

While the first group of artisans, working in beige and brown flint, may seem less skilled, they were certainly no slouches. Despite some surface irregularities, they creatively captured the forms of the animals and worked them to a uniform thickness (maximum 0.7cm). On the other hand, the finesse of the arrowhead makers and the way they carefully selected the flint color to augment their breathtaking figural creations should not be discounted.

We can only guess at the status of those working the dark fine flint to make the lances and fish-tail knives, but given the obvious skill and labor invested, it seems likely that they and the implements they created were highly valued.

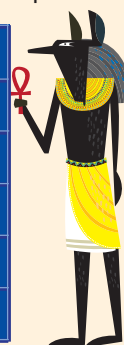
Such detailed study of the flint objects from HK6 provides us with a better idea of the organization of the lithic industry supplying the cemetery. More importantly, it also allows us to catch a glimpse of the craftsmen behind the stones, the skilled artisans of the entourage who each in their own way worked to enhance the prestige of the elite. 🦋



## Did You Get the Clue About the HK Zoo?

On October 26, 2011 the Emmy award winning American TV quiz show **Jeopardy!** featured a category *What's New in Archaeology*, which included a question (or answer) about the menagerie of animals from the Tomb 16 complex at HK6. Did you know the answer? Now can you guess the question for this one? 58\*. Only about 30% of this complex has been explored so far and already the zoo

100	200	300	400	500
100	200	300	400	500
100	200	300	400	500
100	200	300	400	500
100	200	300	400	500
100	200	300	400	500



inventory includes an elephant, hartebeest, hippopotamus, aurochs, crocodile, leopard, wild cats and baboons (58 animals in all). Thanks to your continued support we expect to be adding many more to the roster soon! 🐘

(\*What is the total number of buried animals so far from around Tomb 16).

# The Inside Story: The Installation and Granary at HK24B

— Izumi H. Takamiya, Kinki University, Japan and Noriyuki Shirai, Leiden University, Netherlands

While the future of Egypt was still being decided on the streets of Cairo, we continued to delve into its ancient past. In late January, we resumed our investigations at HK24B, located to the south of the great mound of ancient industrial debris known as the *Kom el-Ahmar*. Last year's excavations at this locality revealed the general outline of a large (c. 6.5 x 5m) cooking installation, dated to the mid Naqada II period, along with a circular mud-brick granary (*Nekhen News* 22: 21–22), but more work was needed to expose their inner details and clarify the chronological and functional relationships between them.

Previous exploration around the walls of the cooking installation in 2007 and 2010 revealed nine depressions, which originally contained large vats for cooking a cereal-based foodstuff, such as beer and porridge. However, the central part of the structure was still obscured by a thick deposit of 'kiln debris' deriving from its destruction.

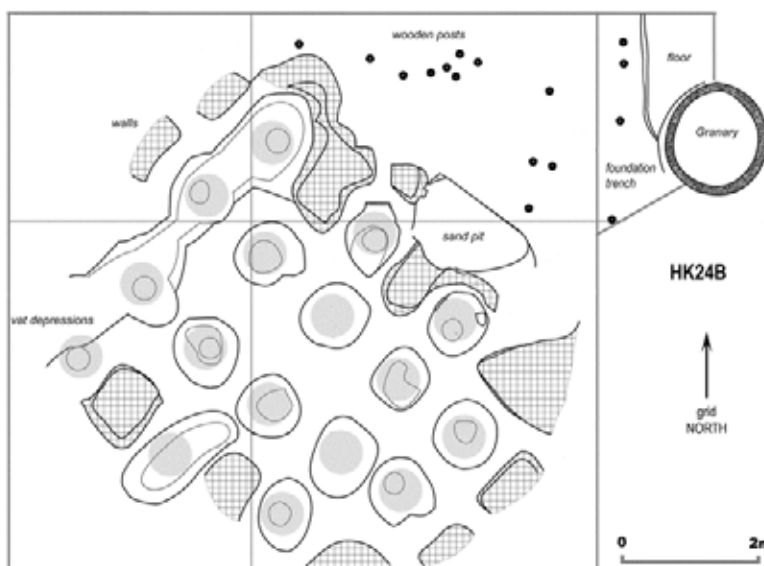
Removal of this debris eventually allowed us to find the original floor about 60cm below the present ground level and in it six more vat emplacements, bringing the total number of vats to an impressive 16. Covering the floor and encircling all of the vat depressions was a thin layer of white

ash, proof that all of the vessels were heated at the same time. Since the kiln debris continuously covered the interior, it is clear that all (except one) of the vats were in use until the installation was abandoned.

Now fully exposed, we can see that this semi-subterranean installation has a NW–SE orientation and is almost symmetrical in plan. In the center, the vat depressions are arranged along the central axis in two rows of five vats each. Another six vats were contained in small 'annexes' on the north and south, each surrounded on three sides by short walls made of burnt mud and sherds. Framing the heating chamber, the wall segments and the openings between them, meant for controlling and feeding the fire, were also symmetrically arranged, with

only minor deviations. Indeed, the symmetrical design of the installation as a whole is quite striking.

No complete vats remain in the emplacements, but from the fragments found in place in 2007 (*Nekhen News* 19: 25) and the sherds choking the depressions, it may be inferred that large vats of more than 70cm in diameter had originally been positioned into each pit and secured in place with irregular lumps of burnt mud and large potsherds. An analo-



Plan of the excavated area at HK24B.



Photo: N. Shirai

The cooking installation at HK24B.



Photo: N. Shirai

The granary.





Chaff and seeds from the granary.

gous support system is known from HK11C Operation B, where the large vats were supported by stones and potsherds (see *Nekhen News* 20: 18–19). This contrasts markedly with the installation at HK11C Operation A (*Nekhen News* 16: 19–20), where a significant number of specially created ceramic fire-bars were used for support, but the reason for this difference (chronological or functional) is still unclear. Although the construction method and materials at Operation A may seem more advanced, the systematic lay-out of HK24B shows that it was far from a makeshift venture, especially when one considers its projected output.

When all 16 vats were in use, more than 1000 litres of beer or porridge could have been processed at one time—a serious amount of product, implying a serious amount of infrastructure to deal with its distribution as well as the acquisition and preparation of the grain from which it was made.

In order to find out more about these associated activities, the contents of the granary were carefully excavated to the floor, which was reached at c. 75cm below the surviving wall top. We referred to this structure as a granary for convenience, but its actual function remains to be proven.

The granary, with an exterior diameter of 1.5m, was constructed of a single row of mud-brick masonry placed in a circular foundation trench. The mud-bricks (25.2 x 9.5 x 8.4cm in average dimensions) are straw-tempered and were held in place with mud mortar. From the exterior, seven courses of masonry are visible; there is probably another course in the foundation trench. No trace of an opening is present in the surviving wall, suggesting that access was gained from above this level or even from the top.

Thick mud plaster coated the interior and floor, making a smooth surface to hold the contents, whatever they might have been. Determining their identity is difficult since inside the granary we found mainly layers of wind-blown sand

separated by several thin lenses of rain-laid mud. Although concentrations of barley chaff were found adjacent to the wall at different levels, this chaff might have blown in from elsewhere. Nevertheless, cereal grains observed near the bottom suggest that this structure was actually once used for storing grain. Unfortunately, the grains were too fragile to collect for analysis.

Other finds from the granary include the skeletons of seven rodents and one small snake. Were the rodents attracted by scent of the cereals? Most of them were found just beneath a mud layer near the preserved top of the wall. Thus, we may propose a tragic story in which these animals, nesting in the structure, were drowned by rainwater. Harder to explain is the neck of a marl clay jar found on the floor, which has been dated to the late Middle Kingdom–Second Intermediate Period by Dr. Janine Bourriau, who kindly identified it from photographs.

In an attempt to clarify its date, excavations were conducted outside the granary and several strata were observed. The most significant is an organic-rich layer that stretched from the edge of the granary to the northern wall of the cooking installation. Filled with the chaff and straw of barley and emmer wheat, this stratum suggests intensive activities involving these cereal crops, which may be related to the cooking installation and/or granary. Although no mud-brick granaries are known before the Naqada III period, the stratigraphic relationship suggests that the granary may have been constructed in the Predynastic period and re-used in the Middle Kingdom or later. Further investigation is obviously required, but it is not hard to imagine a complex system of cereal processing involving both granaries and cooking installations, which was generating an output even greater than previously estimated. Such an extensive industry has left its mark in the commensurately large and complex mound, the *Kom el-Ahmar*. It won't be easy to sort that all out, but we expect to obtain significant information about cereal processing, from storage to cooking, during the Predynastic period as excavations continue. 🏠



A tragic tale of a mouse and a granary: the evidence.

# Up Against the Walls at HK11C

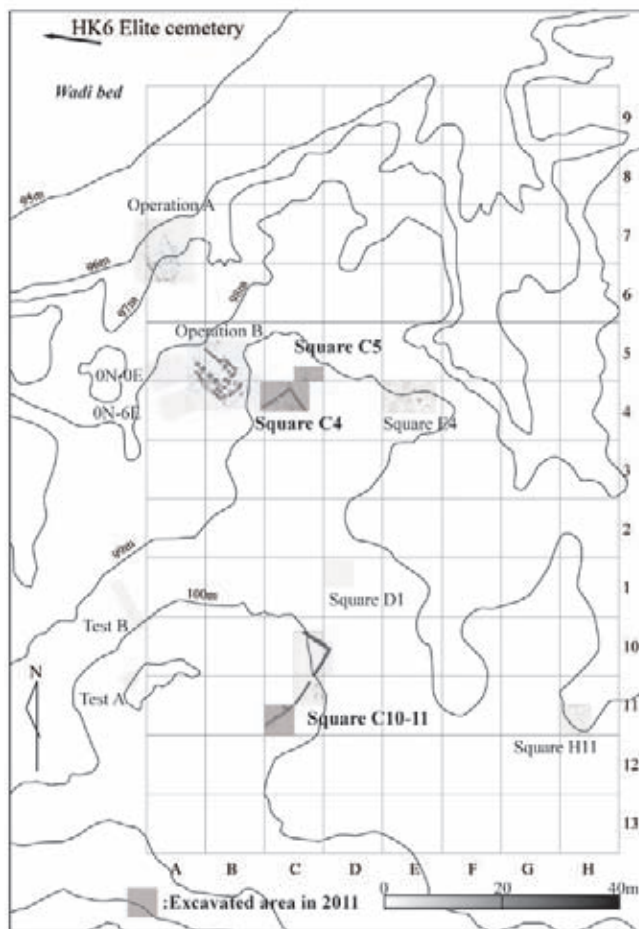
— Masahiro Baba, Waseda University, Japan

The events of this winter in Egypt delayed the start of work at HK11C until early March, but this did not affect the number of new discoveries we were able to make in just three short weeks.

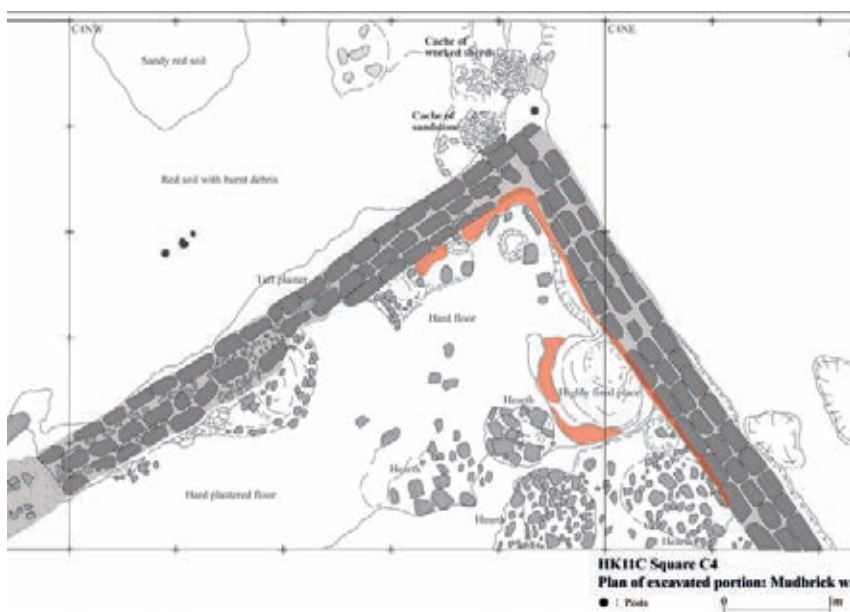
Last season, as you may recall, following the new magnetometer survey of HK11C, four areas were selected for excavation. Most turned out to be ash pits, but investigation of the largest magnetic anomaly (in Square C10–11) revealed walls of a major rectilinear structure, which appears to be more than 20m long and 10m wide. While we were interested in examining more of this edifice, the prospect of digging through the enormous amount of ash found filling it was less than enticing.

Given our time constraints, we instead began the 2011 season in Square C4, directly east of the brewery and pottery production installation of Operation B, where another rectilinear anomaly was observed. This location was chosen in order to investigate the range of activities in close proximity to the production center, which in turn might give us a better idea of how to interpret the big structure in Square C10–11.

Just brushing the ground revealed another wall, which runs straight for 6.5m and then turns



Map of excavated areas at HK11C.



Plan of the excavation in Square C4.

a corner to the southeast. Significantly, the wall is composed of three rows of well-preserved mud-bricks laid in headers. Measuring 14–15 x 25–30cm on average, the irregular shape and dimensions of these bricks show that they were hand-shaped rather than formed in a wooden frame or ‘brick mould’ as known later. Although the wall is now only 15cm high, a coating of mud plaster could be traced on the exterior face.

Bounded by the walls was a hard mud-plastered floor and on it concentrations of charcoal, burnt stones and pottery sherds, which seem to be hearths, as well as one strongly burnt circular area in the east. These features suggest that the structure functioned as a place for fire.

The purpose of these fires remains unclear, but we do have some clues. Against the exterior face of the wall, near the north corner, we unearthed two caches of tools. One cache pit contained five round pebbles and 93 worked sherds of the type so very common from the upper level of Operation B (see *Nekhen News* 16: 21). The other cache, found in a rough modelled-rim jar, was composed of 122 fist-sized pieces of sandstone, almost all with intentionally smoothed and flattened faces. Similar





The tool caches in the corner of the Square C4 structure.

caches were found in Operation B in association with pottery production, and experiments have shown the value of these tools for shaping and smoothing the pots, although why so many of them were needed (more than 1500 sherds-tools have been recovered) remains a mystery. Together these tool caches strongly suggest that the mud-brick structure in C4 is associated with the pottery industry.

The southern part of the structure awaits excavation, but from the magnetic map it appears to be U-shaped, open on the southwest, and about 6.5 x 8m in dimensions. Work will continue here in the coming season.

In light of the intriguing discoveries in Square C4, we decided to return to the structure in C10–11. In the previous *Nekhen News* (21: 20), we described the walls as made of lumps of clay with stones and sherds cemented to the surface, but after removing a part of the thick mud coating, lines of hand-moulded mud-bricks could clearly be seen. This extensive structure, preserved to a height of 80cm, is made of mud-bricks after all—or at least part of it.

Tracing the wall further in a southwesterly direction, we opened a 5 x 5m excavation unit (Square C11 SW). As



Variations on a theme: shaped stones for pot-making.

expected, another 6m of the wall was uncovered; however, here the construction method dramatically changed from mud-bricks to natural stone slabs. In addition, the interior contents also changed. Last season, the excavated area was completely filled with only ash and charcoal, but in this unit we found a hard mud-coated floor covered with brown soil that contained sherds, lithics, stone vessel fragments, textiles and organics, all suggestive of domestic activity. It is unclear why different materials were used; the bricks and stones were placed upon the same level and seem to have been built at the same time. We will try to find the answer to this and the function of this large building in the coming season, but an even bigger question surrounds the use of mud-bricks in these two structures—is this another first for Hierakonpolis?

Ancient Egypt has a rich heritage of mud-brick architecture, our Fort being a fine example. While the use of this building material is well documented from the Naqada IID–IIIA period (c. 3200BC) onwards, its beginnings are still a matter of controversy. Therefore, we collected samples for Carbon 14 dating from the base of each structure. From the large wall in Square C10–11, charred plant stems provided



Bricks after all: the C10–11 wall.




From brick to stone: wall construction in Square C11 SW.

a date of 3627–3363 cal BC ( $C^{14}$  4671±40 BP), which corresponds roughly to the Naqada IIB–IIC period. Testing of charred wood from the C4 wall resulted in a date of 3514–3109 cal BC ( $C^{14}$  4594±40 BP), which can be equated with Naqada IIC onwards. Unfortunately, this is a time when the calibration curves for radiocarbon dates are the most problematic and show significant fluctuations (so-called wiggles). As a result, the probable date ranges are long and tend to be later than expected, making it difficult to use this method alone to date our walls. Nevertheless, none of the material found in association with the walls contradicts the proposed dates, although the complete absence of marl pottery and shapes characteristic of Naqada III points to the earlier part of the calibrated ranges. While further testing will be necessary, these results are still quite interesting.

Although some hand-modelled bricks are known from early sites, such as the potter's house at HK29 and the settlement at Maadi near Cairo, for a long time the earliest constructions made entirely of mud-brick were the Painted Tomb (100) of Hierakonpolis dating to Naqada IIC and




Hand-modelled mud-brick from the burnt house at HK29.

the brick-lined tombs of the T Cemetery at Naqada, both suggesting that mud-brick was restricted for elite use. More recently, mud-brick walls of Naqada IIC date have been reported from the settlement in the Delta site of Tell el-Farkha, leading some to propose that mud-brick technology spread from the Levant to Lower Egypt and from there into the Nile Valley. However, the evidence from HK11C suggests that mud-brick construction was an independent innovation within Upper Egypt, especially since our early bricks are hand-formed and seem to predate the use of standardized wooden brick-moulds. It is also important to note that our mud-brick structures are found in an industrial context and significantly in association with pot-making, an industry that uses a lot of mud. It is not difficult to see how a potter could work out the structural possibilities of this material without external help. Far from elite or exotic, the emergence of mud-brick architecture needs to be considered in the light of the industrial activities at HK11C, which apparently operated over a significant period of time (see below). 



Working around the walls in Square C4.

## Oldest in the World!

Work began at HK11C Operation B in 2003, and over the years we have gradually explored this large complex of pit-kilns and vat installations, revealing five especially well-preserved vats with shiny black residue adhering to their interiors. This residue contains, amongst other things, malted emmer wheat, indicative of beer production. Radiocarbon testing of a sample of this residue resulted in a date of 3762–3537 cal BC ( $C^{14}$  4875±40 BP), which corresponds to the Naqada IC–IIB period, making this the oldest brewery in the world! Intriguingly, this date also corresponds with those obtained from the Tomb 16 complex at HK6, suggesting that activities at Operation B began simultaneously with the foundation of the elite cemetery. Produced for use in funerary rites or to enjoy in a comfortable afterlife, this special brew is no doubt yet another indication of the wealth and power of Hierakonpolis' early kings. 



The brewery vats of Operation B.



# The Fort Forgotten

— Renée Friedman

Don't worry, the Fort won't be forgotten any time soon. In fact, thanks to a grant from the Thames Valley Ancient Egypt Society, UK, we will be tending to its essential maintenance in the coming season. Instead, the title refers back about 200 years, 1798–1799 to be exact, when the artist, collector and diplomat, Dominique Vivant Denon (1747–1825) came to the site as part of the expedition of scholars accompanying Napoleon's military campaign into Egypt. Although he was initially considered too old at 51 years of age, a little intervention by Josephine secured Denon a place with a remit to record the architecture of a county at that time only dimly known. The results of his six-month journey not only convinced Napoleon of the greatness of Egyptian art and induced him to send two more expeditions to Upper Egypt, but the publication of his memoirs in the sumptuous two volumes of *Voyage dans la Basse et la Haute Egypte* (1802) sparked the first wave of Egyptomania to overtake Europe.



*Ruines d'Hierakonpolis* on a dinner plate of the Sèvres Egyptian service. One set of this magnificent service was given to Tsar Alexander of Russia; the other, commissioned by Josephine as part of her divorce settlement but later rejected, was ultimately given to the Duke of Wellington by King Louis XVIII in gratitude. It is now on display at Apsley House, London (from Truman 1982).

No match for the architectural marvels he had seen elsewhere, nevertheless he was enchanted by its sad state and, gathering his entourage around him, he used it as a backdrop for a portrait of himself at work. Although his aim was to provide a picture of the romantic conditions under which he travelled, he seems to have faithfully rendered his surroundings, since in the original sketch, now in the British Museum, a dark mass in the distance is certainly the Fort. However, because he did not mention it in the text, when it came time make the engraving for the publication, the anonymous lump on the horizon was transformed into a sunrise (although the scene looks west). Misunderstood, even the Fort's spot on the landscape was omitted when the scene was redrawn for a dinner plate of the Sèvres Egyptian service.

Sadly, Denon did not visit that lump and turn his considerable talents to recording its condition. Forgotten, the Fort would have to wait until 1885 for publication of its first brief description and until 1902 for its first scaled plan. A general view, showing the full magnificence of this ancient monument—our only standing structure—only appeared in 1905.

As the earliest western visitor to the site, we can forgive Denon for forgetting the Fort, especially since thanks to him we have the sole record our other once standing monument. This temple was removed to furnish stone for the sugar factory in Esna in the 1860s, showing that there are indeed fates worse than being forgotten. 🏛️



Original sketch of Hierakonpolis by Denon. Pen and ink, brown wash on tracing paper. British Museum 1836.0109.79.

Travelling with the army, sometimes at great speed, there wasn't always time to explore and record everything he wished. At Hierakonpolis, aside from considerable amounts of habitation and structural debris, he noted an eroded but intact portal of a much destroyed sandstone building, originally of substantial size. This edifice was a Ptolemaic temple that once stood in the alluvium over the town-mound of ancient Nekhen.



Version with Fort transformed from Denon (1802) plate 54bis.

# THE HIERAKONPOLIS HOME PAGE

## It's a Dusty Job

Well rested after a summer furlough in the lush garden of Chicago House in Luxor, Dusty returned (not entirely willingly) for a second tour of duty, and she did not disappoint. The car ride from Luxor to Hierakonpolis was certainly not the best day of her life, but all was forgiven when a small brown gift was left by my door. The full body count is unknown (thankfully she kept the rest for herself), but for the first time in many years, mice were conspicuous by their absence—wish the same could be said for the termites, but that isn't part of her job description. Quite the young lady, and now much more fastidious about her grooming than her name suggests, our valiant patroller is now at Chicago House preparing (we hope) for the next campaign of Desert Storm, unless of course the lure of the good life proves just too strong. We are keeping our paws crossed, but if she goes AWOL we will miss her. 🐾



Gotcha!



On guard at Hoffman House.

## Farewell to a Special Friend—Carol Starnes Russell 1936–2010

On November 19, 2010 we lost a cherished Friend of Nekhen, Carol Starnes Russell (formerly McCanless), 73, of Hendersonville, NC, to motor neuron disease. One of the first to join the Friends, Carol was a member of the tour led by Mike Hoffman in 1985, which included several days at Hierakonpolis (see *Nekhen News* 2: 8). Falling under the spell of the site, she remained a loyal supporter. Not only was she on board when we resumed research in 1996, but she also came out to lend a hand, bringing with her extraordinary luck. That season we were working at HK64, a stone outcrop covered with petroglyphs on the northwestern edge of the concession. At the foot of the outcrop was a campsite, the excavation of which was producing massive quantities of chipped quartz and fragments of cooking pots typical of the Nubian C-Group, but little more—that is, until Carol showed up. With her assistance, we made the final scrape of the area to sterile soil only to find a pit stuffed full of ostrich feathers, all still perfectly preserved. The pit had been lined all around with the long tail feathers, while several layers of smaller feathers filled the center. Nestled between them and



Carol with the ostrich feather deposit, February 17, 1996.

still in place after 3500 years ago was a small inscribed stone referring to Hathor as the Golden One, celebrating her return to Egypt in the form of the Nile flood. Offered during the Second Intermediate Period, it remains a unique testimony to personal religion and simply an amazing find (for further details see *Nekhen News* 8: 4–5). Needless to say, we were all very excited, but Carol took it in her stride, already a veteran of many archaeological excavations.

An educator of special needs individuals by profession, she spent the summers from 1986 to 2007 on digs all over America as part of the University of South Carolina Student Field School Program, culminating in her recognition as Distinguished Archaeologist of the Year. The stories of her adventures always made for riveting and often hilarious e-mails. Her enduring passion for archaeology also took her to Petra in 1992, where she lived with the Bedouins, and to Egypt 17 times to visit with her adopted family, that of Adly Khat-tab of Nazlet el-Samman, Giza. Best described as a vivacious dynamo, her infectious enthusiasm, her grace and her kindness will always be remembered. 🐾



## The Friends of Nekhen

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

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

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

## Ways to Contribute

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

The contribution category I prefer is:

- ☐ Regular (\$25/£17/€25\*)  
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## Keep Us Digging



Unearthing the past; ensuring the future.


It is difficult times for Egypt now, but we can't let that stop us from digging. Our work at Hierakonpolis is vital not only for promoting the past but also for preserving the future. It helps to protect the site against looting and the encroaching agriculture as well as providing needed employment for the local community, especially during the current situation. Yet it is exactly at this time that granting agencies are reluctant to give. So we are counting on you to keep our trowels in action. Every season worked generates new insights and understanding, every illicit hole dug produces only incalculable loss. Please help us before time runs out. There is so much to do, now more than ever before. 🐦

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## Hierakonpolis 2011: Trophies in Bone and Stone



Big cat stories (page 12).



A special person (page 7).



Crocodile teeth (page 10).



Paws and claws (page 12).



Photo: X. Droux

Where's the beef (page 16)?



Finds of one fabulous day: Flint man (page 6).



Flint donkey (page 18).