NEKHEN NEWS

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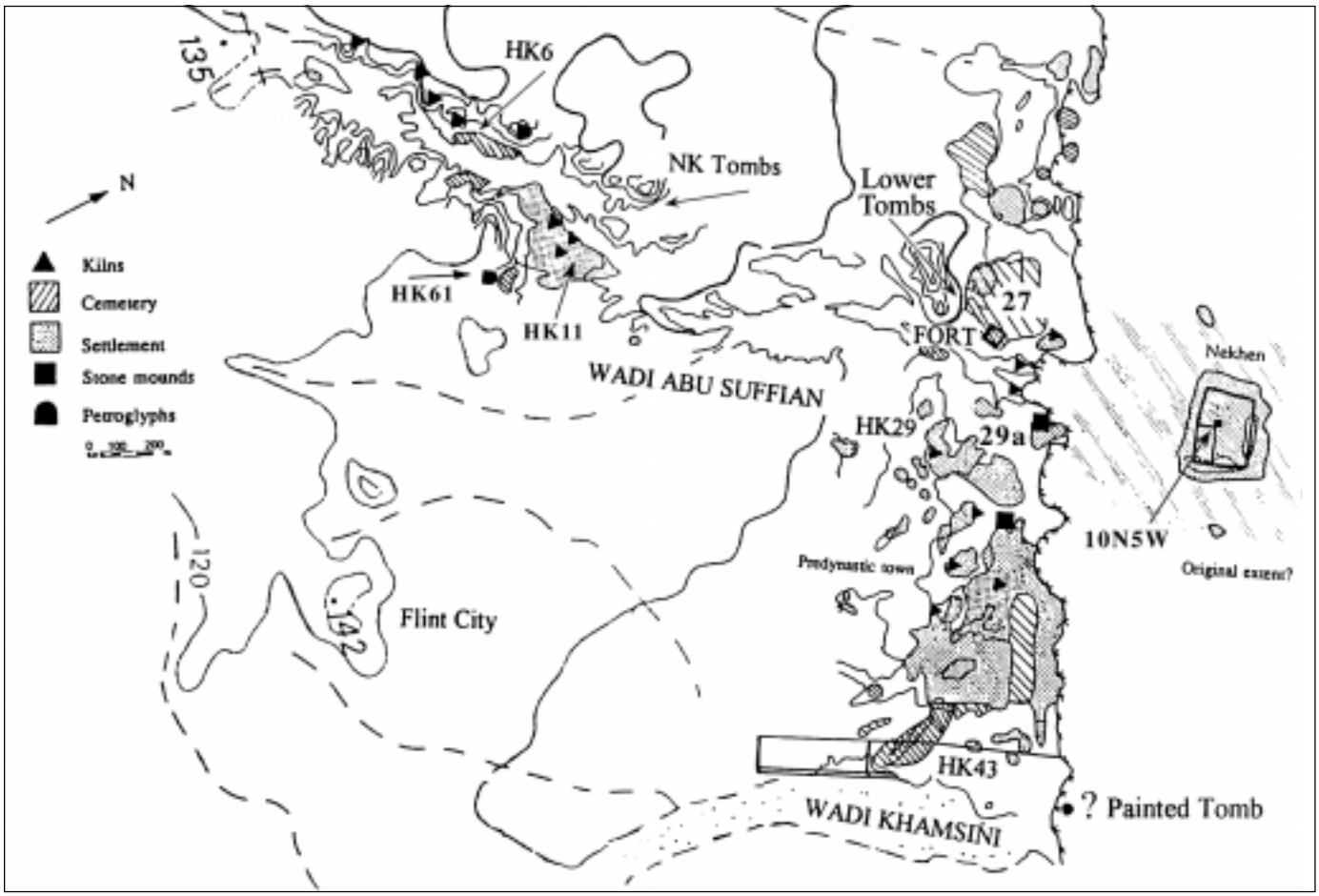
Photo: J. Rossiter

HK11 Square G from cherry picker.

Things are Looking Up!

In This Issue

Map of Hierakonpolis



Michael Hoffman, 1945-1990

—by Barbara Adams

Ten years ago we lost our leader, our mentor, our inspiration and our friend. As he died, Mike charged us with accomplishing the tasks he had not completed in his all too short life. His desires focused mainly on having his work at Hierakonpolis, spanning some twenty years, published in the form of site reports.

So how have we done? Not as well as he might have hoped in the matter of site reports, for it is not easy to analyse all the material and collate someone else's field notes. But we have not done too poorly, either. We put together a memorial volume for Mike, *The Followers of Horus*, which came out in 1992 as *Egyptian Studies Association Publication no. 2*, only two years after his death. A much admired volume of 40 essays by his colleagues in Egyptology, it has become a classic work. Next came Barbara's *Ancient Nekhen* (ESA no. 3) in 1995, which contained a resume of our work to date. Now, at last, Barbara's site report of Mike's work in the Locality 6 Cemetery is nearly here—to be published by BAR this autumn. In the meantime, we have resumed publication of the *Nekhen News* and continued to put out popular pieces as well as a number of scholarly articles and preliminary reports—see the newly updated Web Bibliography at our web page—**www.hierakonpolis.org** (a phenomenon Mike could hardly have dreamt of).

In the pipeline and moving up the queue of publications for completion are reports on Mike's excavation in the Locality 29a ceremonial centre, Renée's excavations at the Locality 64 petroglyph covered hillock, and the newly conserved decorated Dynastic tombs. These will be followed by Barbara's report on Mike's 1984 excavations of square 10N5W in the city of Nekhen, for which Thomas Hikade has already analyzed the lithics (see this issue). She will then be finalising the report of her own excavations in the Locality 6 cemetery.

We think that Mike would be amazed and pleased at our achievements in this and other areas, as the excavation goes on at the various localities of Hierakonpolis that he so loved.

Getting It Together

—by Renée Friedman

In this, our fifth season of renewed fieldwork at Hierakonpolis, things have really come together. Not only is the site living up to its potential to illuminate the past, often in ways we never imagined five years ago, but things are also literally coming together. The serendipitous discovery of the matching pieces of the remarkable masks from the elite cemetery at HK6 is just one case in point. Analyses of the various finds made at the workmen's cemetery at HK43 are also bringing together scientific evidence by which to differentiate the strata of Predynastic society. We are also pleased to report that the Predynastic house we have sought for so long has finally been found, not, however, as a result of the extensive hi-tech magnetometer surveys, but by using more traditional means—luck!

We were also very lucky to secure the services of two professional surveyors for the mapping of the Fort of Khasekhemwy. The task required state of the art equipment and some ingenuity, but 115 years after it was first described the first accurate plans, cross sections and elevations of the Fort have finally been produced. Among other things, these new plans make it possible to calculate the number of bricks in this magnificent monument. Remarkably, we seem to have found where at least half of them may have come from, for that large and mysterious magnetic anomaly located to the east of the Fort was not a house but a brick mine!

One of the many high points of the season was literally high. Thanks to the industry of our Inspector of Antiquities, Osama Ismael, and the technicians from Edfu Light and Electric, we had the chance to see the site from a new perspective—one about 10 meters up! A cherry picker was made available to us for a day, and in spite of an electrical outage in Edfu, which ironically left the Electric company's vehicle with insufficient gas, we did manage to get a good look at various portions of the site. Considering that our job as archaeologists essentially involves going down, it was a refreshing change of direction…and quite a ride!

Our fifth season also marks the last season of major conservation in the Dynastic tombs. At long last, the shattered stela of Djehuty was finally restored, and substantial progress was made in piecing together fallen plaster from the tomb of Horemkhawef. As the results from the conservation and the documentation of the tombs come together, the beauty, charm, and importance of these long-ignored monuments are even more evident. Their study, even in the preliminary stages, is well on the way to rewriting the history books.

We have much to be proud of and much to be grateful for. We are especially grateful to Dr. Raymond and Mrs. Beverly Sackler, without whose support much of our progress

Going up! The cherry picker at the Fort.

over the past five years would not have been possible. This season, their continued support lit the dim recesses of the decorated tombs and shed new light on the human remains from the cemeteries by making it possible for Dr. Joel Irish to study them. Further donations from Tom and Linda Heagy and the LaSalle National Bank helped to pay for a number of scientific analyses, which are revealing more of those firsts for which Hierakonpolis is famous.

A grant from the National Geographic Society to Barbara Adams funded excavation and study of the cemetery at HK6. A conservation grant from the American Research Center in Egypt/Egyptian Antiquities Project to Renée Friedman allowed us to continue the conservation and documentation of the decorated dynastic tombs. The Discovery Channel (USA) provided the funds to bring over professional surveyors, Nick Hampson and Neill Bennett, who donated their time to produce the accurate plan and survey of the intriguing enclosure of King Khasekhemwy. We are grateful to Leica Geosystems AG for lending the TPS1100 total station for their use during this project. A generous donation from the Bloomsbury Summer School has helped to cover the cost of this issue of the *Nekhen News*.

To all these Foundations and especially to our many Friends of Nekhen, we offer our most sincere thanks for helping the Hierakonpolis Expedition to achieve its potential. We hope that you are all as excited by our results as we are.

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

Some Problems Solved in the Locality 6 Cemetery

—by Barbara Adams

In the last *Nekhen News* (vol. 11), I wrote about a season of excavation at Locality 6 that resulted in spectacular discoveries as well as several puzzles. Now after a long season of work between early October and the end of December 1999, funded by a grant from the National Geographic Society, many of the things that puzzled us then have been clarified, several more graves have been uncovered, and the finds have continued to be impressive. It is clear that this cemetery still has much to tell us.

In the 1999 season, as in every year since we recommenced excavations in the elite cemetery in 1997, there have been special and unique finds and the small group of hard-working people have had to wear two hats to accomplish all the tasks. Thus Ian Casey not only supervised the excavation, but also drew the maps and many pots in his "spare" time. Chris Ellis, who disappeared daily further into the depths of Tomb 22, analysed all the lithics at the end of his field day. Helena Jaeschke, who was there to conserve objects, also excavated and conserved skeletons, planned graves, and drew. She and her husband Richard tell us what it has been like to conserve and reconstruct the objects and bodies from HK6 in this issue. New expedition member Sylvia Warman has also contributed an article describing the intricacies of the analysis of animal skeletons.

The priorities of the 1999 season were to complete the exploration of a mudbrick-lined Naqada III tomb (Tomb 16) and expand the excavation area. The first exciting discovery came soon after excavations were resumed. In a pit near Tomb 16, at the north end of what we had called a robbers' trench in 1998, the left side of the remarkable pottery bearded mask was discovered. We had found the centre and right side of this life-size pottery mask in approximately the same location last year. The new fragment completes the left side of the mask and preserves one human ear in relief. Another fragment of the mask was discovered among the sherds from the fill of the Tomb 16 construction pit. Both sides of the mask are perforated behind the ears at the lower back edge where the mask is broken. It can thus be envisaged that the mask was placed over a human face and tied at the back, most likely when the person was participating in a ceremony at the graveside. The thickness, weight and shape of the mask mean that it could not have been easily affixed to the head of a dead person lying on his side.

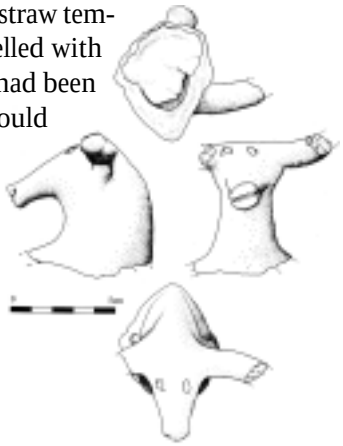
The Bearded Mask (HK6 Tomb 18)

Side view of mask.

Although the disturbed provenance of the two main fragments does not provide an entirely satisfactory context for this unique mask, it seems most likely that it is contemporary with its main find spot, Tomb 18. Stylistic similarities with ivory tusk and stone figurines surmounted with bearded male heads also suggest it should be dated to the late Naqada I or early Naqada II period.

Further excavation of the robbers' trench finally revealed Tomb 18. Considering the extraordinary masks it may have contained, it is not surprising that this tomb turned out to be no ordinary grave. Excavation to the base of this grave revealed, for the first time in this looted cemetery, four human skeletons still relatively in position. The upper parts of the bodies had been disturbed and some bones were missing, but they could be discerned as crouched burials facing west (by river orientation). Three were placed alongside one another, their legs aligned and their knees nestled into the body in front. An almost complete female body in a corner of the grave appears to have been the last to be interred as her feet lay over the body behind, which made a wonderful composition in the bottom of the grave. In front of her face were four bowls. These pots and the other sherds from the grave date Tomb 18 to Naqada IIAB. The need to preserve the partially disturbed bodied in this grave separately called for careful conservation.

Tomb 18 also contained a straw tempered pottery cow head modelled with a flat base at the neck, as if it had been applied to a vessel. Its head would have tilted down horizontally when in position. It has white pigment-filled depressions for eyes that make it look slightly cross-eyed, and a simple slash across the muzzle indicates the mouth in a rather endearing fashion. Unfortunately, the tips of its horns are broken off.

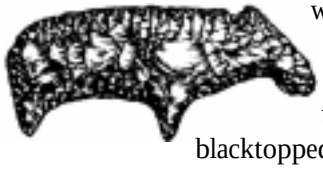


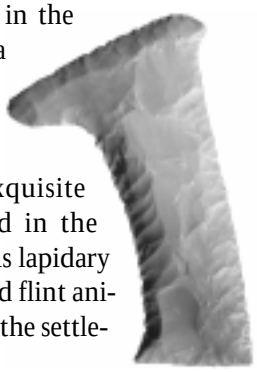
Pottery cow from Tomb 18.

As the excavation of Tomb 18 was being concluded, we began work in Tomb 19, dated to Naqada IC-IIA. Initially, a large cow jaw with resin impregnating some of the tooth sockets had been found to one side of a pit. As work progressed, not only further frag-

ments of cow bone but pieces with resin attached, such as ribs, were found in the fill of the grave, as well as fragments of reed matting and scraps of a linen bag. Fragments indicate that the cow's body, in human fashion, was laid upon a multi-layered bier consisting of a wood substrate with plaster and reeds impressed into it. In complete contrast to Tomb 18, which was a grave with human bodies and a cow figurine, this grave had a cow's body with the upper part of a human figurine made of red painted pottery.

The continuation of excavation to the south of Tomb 16 showed that part of the robbers' trench discovered in 1998 was actually a double grave. These two interlinked circular graves (Tombs 20 and 21) contained a charming collection of blacktopped red pottery (datable to Naqada IC-IIA) as well as three especially fine bifacial arrowheads. However, the finest bifacial chert artifact to be found during the recent excavation in the Locality 6 cemetery was the head of a finely chipped giraffe. This was a surface find but may have come from one of the Naqada I–II graves in the area. This piece now joins the exquisite chipped flint hippopotamus found in the 1980s at HK6 as rare examples of this lapidary art form. Further examples of chipped flint animal figures were found this season in the settlement and are discussed in this issue.





Tomb 16, dating to Naqada III, proved to be a rectangular mudbrick-lined tomb with external dimensions of L: 2.97 W: 1.89m and an internal height of 1.21m constructed within a purpose dug pit. The interior of the tomb is plastered with mud between 0.5 –1.0cm thick, and the floor was also originally mud plastered, only traces of which survive in the northeast and northwest corners.

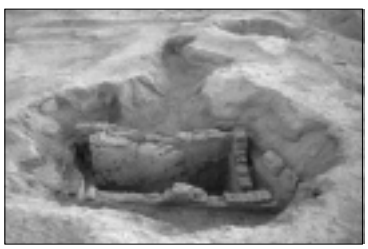
In the centre top of the east wall of Tomb 16 there is a pair of small depressions that possibly represent a point where a longitudinal roof beam was added when the mud plaster was still damp. The charcoal retrieved from the overburden and construction pit of Tomb 16 suggest that a large quantity of timber was slowly burned in this area. The burning of the roof timbers while buried would produce just such conditions, but there are no rubified bricks at the top of the tomb. Charcoal samples found in the upper levels of the tomb fill were analyzed by our archaeobotanist, Dr. Ahmed Gamal Fahmy, and identified as fragments of cedar of Lebanon. This is the first time this imported wood has been discovered at Hierakon-polis. If there were any questions as to the high status of the individuals interred in the HK6 cemetery, this discovery certainly lays them to rest. The import from Lebanon of apparently large pieces would have required great expense and effort to transport as far south as Hierakonpolis.

Arrowheads from Tomb 20/21.

In addition to this remarkable find, two more fragments of the pottery mask with more feline features were found amongst pottery in the fill of Tomb 16. The mask has been restored by Richard Jaeschke and now has two cut-out eyes and a larger area of face. Part of what appears to be the brow and eye of a third mask was also found in Tomb 19, suggesting that such masks were not as rare as they might seem.

Another excavation was opened some 20m to the north in an area designated Area 1 to try to solve some of our chronological puzzles. Fragments of mudbrick were soon evident, including one with the paw imprint of a dog made when it was still wet. Excavation of the entire square was not possible; however, the mudbrick-lined Tomb 22 dating to Naqada III was completely examined. This tomb was placed within a subrectangular hole (3.28 x 2.18m) cut into the wadi floor and built of a double thickness of mudbricks. The interior was coated with white plaster, which is particularly well preserved on the west wall. A perfectly level line had been scored into the mud plaster around all four walls 0.25–0.30m above the base of the tomb, perhaps as a guide line for a decorative border for a scene that was, alas, never painted.

The clarification provided by the 1999 season's work means that a chronological reconstruction can now be suggested for this section of the cemetery which reaffirms Michael Hoffman's interpretation that there was a hiatus in use and no later, classic Gerzean (Naqada IICD) phase in this cemetery. The first use of this area was for the shallow rectangular Naqada IC graves, Tombs 13 and 14, the latter being the grave of the juvenile elephant. These graves appeared to contain the remains of two human individuals, one adult and one juvenile male buried with the elephant and seven dogs. Somewhat later (Naqada IC-IIA) the two shallow subcircular graves, Tombs 20 and 21, were added. During Naqada IIAB, deeper and more rectangular grave pits were cut to the north,



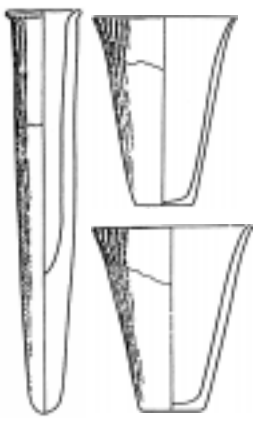
Tomb 22, with its undecorated plaster.

one of which (Tomb 17) contained the remains of two individuals. Another contained the burial of a larger than average cow (Tomb 19), whilst another (Tomb 18) was a larger multiple burial containing at least four human interments, with which we suspect the bearded mask was associated. The large pit cut for Tomb 16 during Naqada III seems to have disturbed the Naqada I and Naqada II graves dug some three hundred years earlier.

The history of use and reuse of this cemetery has important implications for the understanding of Hierakonpolis' place during this formative period in Egyptian civilization. The wealth and variety of the graves in both the Naqada I and Naqada III period attest to the importance of Hierakonpolis during these times. The period of abandonment in Naqada IICD, when elite graves, including the famous Painted Tomb, were placed on the far southeastern border of the site may be linked to climatic change or to reasons yet to be revealed. The return to this area 300 years later for the construction of large mudbrick-lined Protodynastic tombs reinforces the traditional elite nature of the Locality 6 necropolis.

Judging by the results of the previous three seasons, this wealthy cemetery at Locality 6, although looted, could still hold further significant surprises for us. These might be more of the unprecedented funerary masks and animal models, elegant figurative lithics, fine pottery vessels, rare painted pottery, stone vases in local and Lower Egyptian stone, or imports from the Near East as we have already found—or entirely new discoveries. By excavating more of their graves and analysing their remains, we may also have a chance to explain why this cemetery was chosen for the burial of exotic animals. These animals, like humans, were accorded careful burial, including resin treatment of the body, a precursor to mummification. We need to know how these interments relate to the funerary practices of Naqada I–II.

Hoffman thought the animal burials were only to be found grouped in a Naqada III precinct around the large stone cut Tomb 2 at the south end of the cemetery, but that is not the case. The animal graves are earlier and quite likely to be anywhere in the cemetery—we are already aware of a second elephant grave which is probably the one identified by John McArdle in 1982.



Pots from Tomb 20/21.

Most of all, we have shown that we can now hope to excavate more human skeletons from early Naqada II graves at HK6. This means that we can contrast and compare the gracile elite with the working class populations of the same period from the HK43 cemetery to provide the sort of regional population study that has never been accomplished at any Predynastic site in Egypt. This—and much more—clearly awaits a patient trowel in the coming season.

Picking up the Pieces

—Richard and Helena Jaeschke, Archaeological Conservators

One of the joys of being a conservator on site is that you never know what will emerge during excavation. This makes it difficult to plan, so conservators have to bring everything they might need to treat a wide range of materials and objects and be able to adapt local resources to suit. The autumn '99 season in the "elite" cemetery at HK6 demonstrated this clearly.

Helena Jaeschke carefully revealing the bodies in Tomb 18.

During the '97 and '98 seasons, conservator Richard Jaeschke had divided his time between the needs of the pottery reconstruction from previous excavations in the cemetery and the fragile fragments of bone and plant remains emerging. This changed in 1999 with the discovery of intact body parts with matting and associated grave goods. Helena Jaeschke, archaeological conservator (and Richard's wife), joined the team for the first part of the excavation and was on hand when the first *in situ* human remains were uncovered.

The first impression a visitor receives from the site is of extreme aridity. The ground is baked hard, the slopes covered with loose scree; not a plant in sight. It seems ironic that the main hazard faced by the newly excavated objects is dampness. Even a few centimetres below the surface the objects retain a surprising amount of moisture that within moments of being exposed begins to evaporate. Pottery can form

a haze of semisoluble salts, the surface of flints can craze and turn white, and organic materials begin to shrivel and lose their strength. Putting the items in a bag or plastic box does not help. The moisture merely condenses on the inside of the container, forming droplets which can further damage the object. Mould can grow with remarkable speed, causing staining and further harm within hours. It is not merely the appearance of the artifact which is damaged, the information it contains is also being compromised or destroyed. So the moment a body begins to appear, swift action is vital. Consolidation must begin to strengthen the object, enabling it to survive the change in the equilibrium it had reached in its buried state.

Once summoned to the graveside, the conservator takes over the delicate task of uncovering the fragile body, using soft watercolour brushes and a photographic blower to gently remove loose debris. Compacted soil is loosened using tiny dental tools and specially shaped blades, then carefully lifted away on a palette knife or small spoon. As the surface of the body is revealed, it may be necessary to consolidate one area before going on to work on the next, and this was certainly the case in the extraordinary Tomb 18. An acrylic copolymer resin (Paraloid B72), which has been tested for long-term stability and suitability on this kind of material, is dissolved in acetone and kept ready for this need. A small amount is allowed to flow gently onto the fragile area from a small pipette. Brushing the solution on would encourage it to form a thin layer on the surface instead of penetrating the core. Pouring or dripping it on would cause too much damage to the object. Instead, the thirsty organic remains soak up the solution as it is allowed to flow drop by drop. When the area is sufficiently saturated it is left for the solvent to harden while another area is cleared, so no time is wasted. Sometimes an area must be treated several times, gaining strength so further cleaning can be undertaken. As much dirt as possible is cleaned off before the surface is consolidated, but further cleaning may be necessary later in the laboratory.

Once the body is sufficiently revealed it is photographed and drawn to scale on the site plan. Then the soil around it is loosened and the edges delineated allowing the body to be cut free from the underlying soil. Care must be taken in case a further body or grave goods are lying hidden beneath. The detached body is then ready to be lifted onto a support. The forethought of the directors in stocking the dig-house with large numbers of baking trays for laying out specimens proved invaluable. Each tray is padded with acid-free tissue and marked with the body's identifying numbers and a sketch of its location. The body is then lifted onto the tray and carried by hand back to the dig house at the end of the day.

The creation of the wonderful new workroom has created a superb area for treating the finds. The trays, each with its precious cargo of body, are laid out so that the relevant bone specialist (Jim Mower for humans and Sylvia Warman for animals) can see the day's haul. The delicacy and care applied to the cleaning and lifting of the bodies mean that small subtleties in the arrangement of bones or associated materials are retained, providing the specialists with information about the body and the archaeologists with further data on the placement of the bodies and possible later movement.

One of the bodies had a stack of three red polished pottery bowls alongside in the grave. Although crushed during their millennia of burial, the sherds were still in the correct position. As it was not clear how broken or fragile the bowls were and whether any other material lay between them, the bowls were protected by consolidation before lifting. The outer bowl was bound with strips of cloth consolidated with the Paraloid B72 solution, so even tiny chips of ceramic were retained. In the workroom the bowls were laid out and cleaned with cotton wool swabs dipped in acetone, followed by swabs dipped in distilled water. Before any new substance is used on an object it is tested first on a small area to check for possible unexpected reactions. The sherds were then assembled, using a different formulation of Paraloid, B48, as an adhesive. This is a stickier resin in solution and stays hard at higher temperatures. One of the problems in the past has been that commercially available glues are designed to work in cooler environments. Pots stuck together beautifully during one season would be found to have assumed strange shapes as the glue softened in the extreme heat of the summer in the site store. Gradually these temporary joins are cleaned and the more heat-resistant Paraloid B48 adhesive used.

Richard Jaeschke reconstructing pots from HK6.

As well as the excitement of major discoveries, such as the bodies and almost complete pots to assemble from the sherds, the season produced a range of individual items that needed the conservator's attention. Fragments of matting were lifted in the same way as

the body parts. Flints were carefully cleaned to enable them to be drawn. Some sherds and the fragments of the amazing, eerie pottery masks were covered with a deposit of soluble and semi-soluble salts from the soil that had to be tested and removed without damaging the surface in any way.

The conservator makes careful decisions at each stage about the requirements of the object. No data must be lost. Soil can be removed, but not stains which may provide further clues. Breaks can be repaired, but evidence of use (or misuse) of the object must be clear for the archaeologist to interpret. It is exacting—but very rewarding—work.

Helena left at midseason, going back to take care of the family, while Richard came out for the second half. This arrangement meant that a dual range of skills was available, as Helena is a draughtsman and baker, whilst Richard surveys and undertakes mechanical and automotive tasks. Conservation doesn't stop when the team finishes work for the day, as practical skills are needed when small problems occur around the house; from knobs falling off the gas cooker to recalcitrant cassette players or blocked drains. It all adds to the richness of life in the desert.

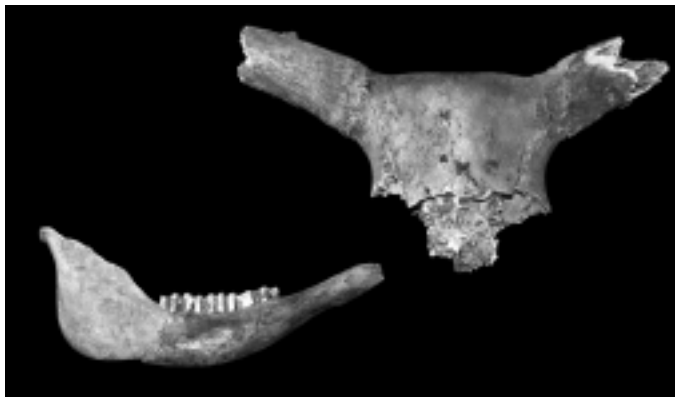
How Now, Large Cow?

—by Sylvia Warman, University College London

Following discoveries of various mammals (most notably the elephant) within the elite cemetery at HK6, I was asked to join the expedition as zooarchaeologist. By the time I arrived in 1999 a considerable quantity of animal bone material had been recovered. This material, added to that recovered from the two previous seasons, kept me very busy during my visit.

One of the most interesting finds within the animal bone assemblage was the remains of a cow recovered from Tomb 19. This specimen was striking for two reasons; it appears that the great majority of the skeleton of a single animal was present and that the bones represented an individual of considerable size.

The remains of the cow were initially labelled as *Bos*, the genus name for cattle, but the size of the bones cast doubt upon the assumption that these remains were from a domestic cow, *Bos taurus*. The wild (now extinct) ancestor of the domestic cow, the aurochs (*Bos primigenius*), is known to have been considerably larger than domestic cattle in antiquity and slightly larger than even the biggest modern breeds. The indicative elements from Tomb 19 included the front of the skull with the horn cores attached, known as a bucranium. The size of the horn cores and the angle at which they rise



Jaw, skull, and horn cores from the very large cow from Tomb 19.

from the skull suggest that this may indeed be an aurochs. It is hoped that this identification can be confirmed during the Fall 2000 season. It may also be possible to determine the sex of the individual, as the form of the horn core is known to be dimorphic in the aurochs. This determination was not possible in the field, however, due to the absence of a well preserved pelvis.

Further interesting details about the cow remains relate to their preservation, condition, and taphonomy. None of the bones showed any signs of either butchery (indicated by cut marks) or burning, which suggests that the entire carcass had been placed in the grave and was not in the disarticulated state that might follow the consumption of its meat. The cow bones are derived from two contexts within Tomb 19: the corona or back-dirt from the robbing event, and the base of the actual tomb. Separate parts of the same bone recovered from the two contexts were found to fit together. This was the case for the lower jaw as well as several long bones. This observation provides an interesting insight into the possible actions of the robbers—tossing the odd piece of cow bone up as they searched for (presumably) more conventional treasure.

There was one particular bone that provided further information on the nature of the burial of this beast. A rib, laid on reed matting and impregnated with resin, was found near the base of the tomb. Human bones had been found in a similar condition at HK6 (Tomb 3, excavated in 1980). These observations appear to point to the fact that both human and animal bodies were being treated in the same manner, with both exhibiting early methods of mummification and body containment. The importance of animals previously noted in this cemetery, both figurative and real, is further augmented by this discovery in Tomb 19.

The cattle remains were not the only finds from Tomb 19. The upper part of a human figurine made in red painted pottery, and a flower identified as *Ceruana pratenisis*, an annual Nile herb, were also recovered. The other ceramic finds

of black-topped and straw tempered pottery provide a relative date of Naqada IC-IIA, or around 3700-3600BC for this interesting burial.

The message from this particular find is that not only the humans at HK6 were elite, but so were the animals.

Flint animals from Berlin.

Your membership in
The Friends of Nekhen
is an invaluable aid to the project's goals of excavation, preservation, and publication. Without you, our job would be not only more difficult but perhaps imperiled. We need you! Join or renew today!

Preliminary Report on Analyses of the Hierakonpolis Human Remains

—by Dr. Joel D. Irish, Dept. of Anthropology, University of Alaska Fairbanks

The excavations of the elite Predynastic cemetery at HK6 and that of the lower class inhabitants at HK43 have resulted in a significant number of human physical remains. The study and analysis of these remains were undertaken in February 2000, generously made possible by Dr. Raymond and Mrs. Beverly Sackler. The primary purpose of the study was to estimate the biological affinity of the Predynastic people of Hierakonpolis relative to dental and cranial morphometric data previously collected by the author and others in North, Sub-Saharan, and non-African samples (n=1,950 individuals) dating from the post-Pleistocene through recent times.

Approximately 160 sets of human skeletal remains were examined. Of these, 77 from sites HK6 (n=16), HK27 (n=1), and HK43 (n=60) were complete enough for detailed dental morphometric analyses. Amongst them, 14 possessed complete—or nearly complete—skulls, which allowed for further craniometric studies.

Dental Observations

The dental analysis is concerned with morphological variation in the permanent dentition (ages 6 to adult). Each specimen was inspected for usable teeth, and up to 36 discrete dental and osseous oral traits. Additional anatomical and cultural dental features (313 possible observations per individual) were documented for potential future study.

The traits are included in the Arizona State University (ASU) dental anthropology system. Procedures used in the ASU system are based on well-established criteria for scoring intra-trait variation. The dental traits in each individual were recorded, using 23 reference casts. The reason for selecting these particular traits concerns their individual and collective expression in Africa, as well as in Asia, Europe, and the Americas, to facilitate a comparison of suites of features within and among samples and regions.

Excavating in cemetery HK43.

Once the data are recorded, the normal procedure is to determine frequencies of trait occurrence and apply one of several multivariate distance statistics (e.g., Mean Measure of Divergence) to the discrete frequency data for intersample comparative purposes. Because this report is preliminary, statistical analyses have not yet been undertaken. However, based on a qualitative inspection of the dentitions, it appears that: 1) dental phenetic homogeneity was prevalent among the Hierakonpolis inhabitants; and 2) they exhibit dental traits that ally them with other post-Pleistocene populations in greater North Africa. Prior work shows North Africans have morphologically simple, mass-reduced teeth. This dental pat-

tern was shown to be ubiquitous among samples, regardless of distance—from the Canary Islands to Egypt and Nubia—or time—from 8,000 year-old Capsians to recent Berbers in western North Africa. This pattern, termed the "North African Dental Trait Complex," includes high frequencies of several traits such as an interruption groove on UI2, M3 agenesis, and rocker jaw, plus a low occurrence of LM2 Y-5 groove pattern. All of these features are also present in Europeans and West Asians to some degree, but are uncommon in sub-Saharan peoples. Craniometric indicators appear to support these results, and European-like discrete traits, such as alveolar orthognathism, dolichocephaly, rhomboid orbits, narrow nasal aperture, and nasal sill, are prevalent.

Cranial Observations

Up to 21 standard craniometric measurements were taken on 14 of the most complete crania (all from HK43). As with the dental analyses, the normal procedure would be to apply a multivariate distance statistic (e.g., Mahalanobis general distance, discriminant analysis, etc.) to these data for the purpose of comparison between Hierakonpolis and other African and non-African samples. Statistical analyses have not yet been undertaken. At present, my qualitative inspection of the 14 crania appears to support the preliminary dental findings: 1) Hierakonpolis inhabitants appear to be uniform in cranial size and form, and 2) they show some resemblance to other post-Pleistocene populations of North Africa, as well as Europe and West Asia. They appear distinct from post-Pleistocene sub-Saharan Africans.

Additional Observations

During the course of the dental and cranial analyses, other osteological and paleopathological observations of the crania and postcrania were made on a more perfunctory basis. Several such observations suggest that the peoples of Hierakonpolis were in overall good health. Individuals from HK43 working class cemetery (n=60) exhibit slight enamel hypoplasia, mild calculus deposition, slight occlusal wear, and a low incidence of caries. Such features are often found in populations that experienced low systemic stress, with a fairly low grit/carbohydrate diet. As has been noted previously, several long bones and other postcranial bones have some observable osteoarthritic lesions, as well as enthesopathies (occupational stress markers) that define muscle attachments. The latter features are suggestive of muscle hypertrophy; in other words, these individuals evidently worked hard during their lifetimes. The few individuals from HK6 (elite cemetery, n=16) exhibit even lower incidences of caries, hypoplasia, calculus, osteoarthritis, and stress markers, which may be expected in this higher social class. There were not enough human remains from HK27 (middle class cemetery, n=1) to allow similar comparisons.

Hierakonpolis provides a unique opportunity to study the remains of individuals from different social classes dating to the same time period and all from the same place. The analyses undertaken thus far indicate that the elite class was of the same genetic stock as the working class. Thus most differences between them can with confidence be associated with difference in lifestyle that can be affiliated with the multilevel social structure.

Economic theory informs us that for every change in culture (economic system), there is a cost that must be paid by the people making the change. If the people's health and diet are good, then they will be prepared to go through the hard times that such a change requires. If not, the changes will probably fail. What we have at Hierakonpolis is a great opportunity to study the remains of those people who were paying the cost, and those who benefited from the cost they were paying at the beginning of a time of great change—perhaps the greatest Egypt ever underwent.

Future, more detailed, analyses of the various osteological and paleopathological features should prove enlightening concerning the life histories of the Hierakonpolis inhabitants of every class at this momentous time. This work has the potential to tell us what the process of state formation really meant to the people who lived through it.

Excavations at Locality HK11

—by Ethan C. Watrall, Indiana University, Bloomington

In 1978 Mike Hoffman discovered the well-preserved house of the potter at HK29, proving the value of the desert portion of Hierakonpolis for the study of domestic life in the Predynastic period. The Hierakonpolis Expedition has been searching for another example with which to fill out the picture. Our search has led to the discovery of many exciting aspects of the site: kilns, temples, and now even a brick mine—but not a house. Undaunted, the search has continued and we hoped that technology might help us out. In 1999 we invited Tomasz Herbich, Director of the Polish Center for Archaeology, to carry out an extensive magnetometer survey at HK11.

Located on a terrace of the Wadi Abul Suffian, Locality HK11 makes up one of the largest concentrations of Predynastic cultural activity on the Hierakonpolis concession. The locality itself covers an excess of 68,000m^2 and is made up of several distinct zones. Excavations originally carried out by Fred Harlan in 1978–79 revealed districts for trash disposal, pottery production, and habitation. The existence of a nearby cemetery and a petroglyph site (HK61) serve to reinforce the sheer extent and intensity of occupation at this locality during the Predynastic. Further, the essentially undisturbed surface of the site suggested it would be the best place to find the domestic establishment we sought.

In recent years, there has been a plea for increased archaeological study of the household in recognition of its importance as a nexus for activity and social change. The household allows a relatively bounded and nonarbitrary research focus that is potentially cross-culturally comparative. Unfortunately, traditional models of Near Eastern archaeology have focused almost exclusively on the urban elite and their institutions. Little effort has been expended in either the excavation of individual households or the actual quantification of the Near Eastern domestic unit. Among the most shining exceptions has been the work carried out at Hierakonpolis under Michael Hoffman. The excavations at HK29 not only set a precedent that reinforced the importance of domestic archaeology, but demonstrated that Predynastic domestic architecture and cultural remains were indeed recoverable. But now we needed to uncover more.

The magnetometer survey of 0.66 hectares of intact surface area in the northern part of the site (S2) revealed a number of small but strong anomalies indicative of subsurface settlement remains, possibly hearths and kilns (see *Nekhen News* 11, 1999:17). Armed with these results, we decided to initiate excavation in an area in the center of the survey zone (square C4) that exhibited a significant quantity of these magnetic anomalies. These excavations were undertaken by Ethan Watrall assisted by Judith Bender and Art Muir.

Osama and his posts.

The surface of Square C4 was characterized by a light, but even, concentration of cultural debris. Initial clearance of the western quarter of the square uncovered two large amorphous black ashy stains that matched the size and shape of the magnetic anomaly exactly. Excavation revealed a stratified pit more than 60cm in depth filled with burnt soil and ash, most likely originating from a hearth. Unfortunately, the lack of any recognizable hearth structure suggests that the burning episodes took place elsewhere and the magnetic anomalies in C4 represent only the refuse pits into which the burnt debris and rubbish were periodically dumped. No evidence of structure associated with these pits was uncovered in the area investigated.

Although it seemed that our luck again had run out, that of our Inspector of Antiquities had not. During the less than riveting excavations in C4, our Inspector, Osama Ismael, observed similar ashy deposits in the middle of the dirt road

Square G (also see cover)

that runs along the perimeter of the locality. As this area was in danger of destruction due to increased traffic, he decided to conduct a small test excavation at this spot. Within just a 1x1m test unit, he discovered two *in situ* wooden posts surrounded by floor deposits dating to the early Naqada II period. The area, designated Square G, was chosen for further investigation (for obvious reasons).

When we opened up the area as a 10x10m square, the two posts turned into over 60 wooden posts arranged into three roughly parallel lines. All were relatively well preserved, with many exhibiting the original trimmed and pointed ends. Some were in excess of 20cm in length and ranged in diameter from 2–10cm. The best preserved was a line of double posts running for 10m along the southern side of the square. Lengths of intact reed fencing were also discovered at several places along this fence line. Exhibiting both horizontal and vertical fibers, the fencing represents something rare in a Predynastic context. Michael Hoffman, as a result of his excavations on HK29 (the potter's house), theorized that domestic structures included exterior space enclosed by fencing like this. However, his only evidence was the remains of trenches in which the fences once stood. The discovery of intact reed fencing at HK11 not only corroborates his theories, but also provides an unprecedented primary indication of Predynastic architecture. Unfortunately, due to the high winds experienced this season, this delicate fence line could not be completely excavated and was backfilled to preserve it until next season.

Five mud-lined pits, ranging in diameter from 30 to 50cm, were also uncovered. While the deeper of the pits may have been used for storage, the shallow nature of the others suggests that they served a different purpose. In the original 1978–79 excavations of HK11, Fred Harlan uncovered features that he thought might have been the remains of pot emplacements: small shallow pits lined with mud to hold ceramic vessels. The mud lining would have stopped liquid from seeping into the floors of the Predynastic house. It is quite conceivable that the mud-lined pits discovered in Square G served the same purpose.

The limited area of excavation makes it difficult to get a clear picture of the architectural layout, but it does appear that we have found ourselves in the outbuildings of a large farm. As the posts were driven into the gravely yellow desert surface without postholes, it was impossible to distinguish building phases, although it is likely that changes were made to the structure over time. Analysis of the stratigraphy and the ceramic assemblage distinguished three periods of activity ranging from the Naqada IC to Naqada IIB.

The amount of faunal material (both burned and unburned) strongly suggests that activities at this location included animal processing of some sort. The astonishing level of organic preservation allowed the recovery of animal soft tissue, including hide, hair, horn cores, and hoofs, as well as the beetles that ate them. The quantity of animal dung revealed also suggests that animals were kept here. All in all, one gets the impression it was rather a smelly place.

Domestic activities at the site are represented by cooking pots, a limited number of grinding stones, shaped sherds acting as lids or spindle whorls, and dung cakes carefully stacked and stored for use in hearths.

While the majority of the finds were what we would expect from a domestic context, we were nevertheless surprised by some of them. For example, there was a fragment of a superbly crafted ripple flaked knife, approximately 6.5cm in length, made from a beautiful translucent yellow/cream non-local flint. Examples of similar flaked knives have been associated with either ritual or mortuary contexts. Comparable instances have indeed been discovered at Hierakonpolis associated with the Gerzean temple (HK29a). The discovery of the fragment at HK11, however, necessitates a re-evaluation of the role these objects played in Predynastic culture, especially with regard to the general butchery of animals.

Example of a ripple-flake knife.

The discovery of the midsection of a chipped flint animal figure, probably a hippopotamus, was completely unexpected. Equally surprising was the recovery of a complete flint dog from the trash pit in C4. Also of interest was the discovery of one complete and one fragmentary ceramic "nail." A discussion of these intriguing and important items is found elsewhere in this issue.

The domestic complex at HK11 we have so long awaited is already contributing to a new understanding of Predynastic life on several levels—local, regional and even international. Continued excavation will allow a spatial analysis of the locality and ultimately allow the expedition to draw conclusions about population levels at HK11, the distribution of domestic activity, architecture, and community organization. Continued study of the ceramic and lithic finds will provide the first clear picture of an entirely domestic assemblage at Hierakonpolis. In addition, the high level of well-preserved plant and animals remains will ultimately offer an unprecedented view into the subsistence economy of the average Predynastic household that can be compared to the results from the cemeteries, for a truly holistic look at the past.

Ceramic Nails

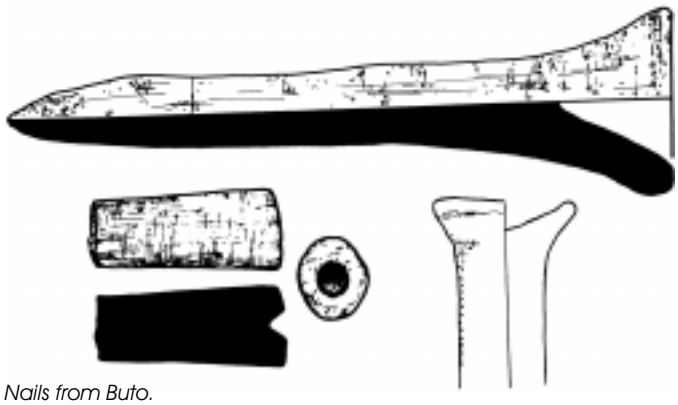
—by Renée Friedman

Ceramic nail from HK11.

It may look like an overgrown golf tee, but the "clay nail" has been at the forefront of discussions about Mesopotamian influence in early Egypt for over a decade. With this season's discovery at HK11 of one complete and one fragmentary "ceramic nail," Hierakonpolis can now contribute to this debate.

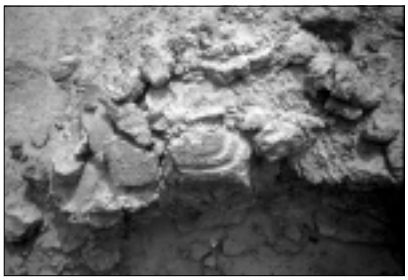
Twelve of these curious clay objects were discovered in the 1980s in the lowest levels at Buto, Hierakonpolis' counterpart in the Delta. Their striking similarity to the colored clay cones used in the thousands to create mosaic-style decoration on the mudbrick walls of Sumerian temples in southern Mesopotamia during the Uruk period (*c*. 3400-3100BC) was quickly noticed. On the basis of this discovery, the excavator of Buto, Thomas von der Way, suggested, in a contribution to the Michael Hoffman memorial volume (*Followers of Horus*, edited by R. Friedman and B. Adams 1992), a more direct interaction between Egypt and Mesopotamia than hitherto envisioned to explain the Mesopotamian influence seen on a number of Late Predynastic and Early Dynastic artifacts (see Smith in *Followers of Horus*, pp. 235-46). He posited a direct sea connection via Syria between Mesopotamia and Buto as part of the expansionist policies of the Sumerians at the time. It has even been suggested by some that Buto became a Mesopotamian trading colony. It has also been suggested that this close, direct type of interaction had far-reaching ramifications for the origin of mudbrick architecture in Egypt. As these mosaic cones were made to decorate mudbrick walls, which often were built with niches in Mesopotamia, it was proposed that niched brick architecture was imported first into Buto and from there spread throughout Egypt.

This theory was widely accepted by Mesopotamian scholars, although conflicting evidence soon began to appear in Egypt itself. First, similar clay objects (differing from those in early Buto only in that the depression in the head was made with fingers, not an implement) were noted at sites throughout Egypt in Early Dynastic contexts (mainly Dynasties 1-2) which did not suggest their use in mudbrick architecture. Even the single nail we discovered loose within the mixed debris inside the Fort of Khasekhemwy in 1999 provides no such support. Had this huge mudbrick enclosure been decorated with such cones, certainly more would have survived or their original locations would have been obvious. The context of the nails at HK11 does not support the architectural interpretation either, nor for that matter does their find context at Buto. No mudbrick was found at HK11, nor has it been found at Buto; the architecture in both sites is entirely of wood and reeds.



Nails from Buto.
Nail from The Fort (lower right).

Mudbrick architecture has, however, been found elsewhere at Hierakonpolis. Notably, the burned house at HK29 features one (once mud, now burnt) brick near the entrance that had been decorated with wavy lines made by the maker's fingers. At the later Predynastic (Naqada IICD) temple at HK29a, Mike Hoffman found odd bricks impressed on their long narrow top sides with either parallel rows of holes or 2-3 large depressions, apparently made by the insertion of several fingers. These bricks once capped the mudbrick curtain wall in the temple courtyard and the depressions in them seem to have been made to facilitate the decorative display of some type of object. Yet amongst the quarter of a million potsherds found during the temple excavations, not one nail was recovered.



Decorated mudbrick from HK29.

While the discovery of the nails at HK11 seems to shed little light on the purpose of these objects, they nevertheless appear to be the earliest dated ceramic nails in Upper Egypt (Naqada IIAB), contemporary with Buto level 2. This dating proves that nails, regardless of variation in form, were known in both Upper and Lower Egypt at approximately the same time.

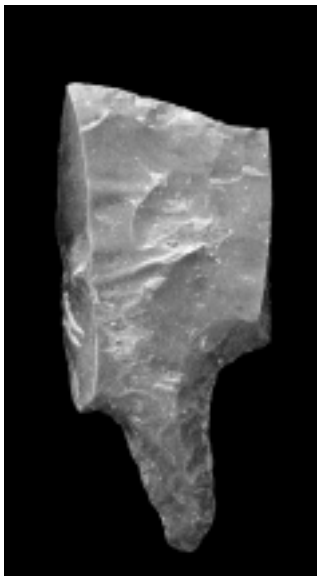
The domestic nature of the find spots at HK11 and Buto indicates that these "nails" served a more prosaic need, but what that might be still remains to be discovered.

The Friends of Nekhen is dedicated to assisting the Hierakonpolis Expedition in their work of learning more about the Egyptian civilization's earliest beginnings. Tax-deductible in the U.S., JOIN or RENEW TODAY!

Figures in Flint

—by Renée Friedman

The consummate skill of the flint workers of the Predynastic period is obvious from the elegant perfection of ripple flake knives and fishtail lances found most often in Predynastic graves. Their creativity, however, can best be appreciated in the animal forms which they chipped out of flint. Animals figures in flint are amongst the rarest lithic artifacts of the Predynastic period and of those known (less than 20 examples), specimens with known context are even rarer (8 examples). Thus it is surprising and gratifying that the 1999-2000 excavations in HK6 and HK11 have added three more examples to the limited corpus of the latter category.



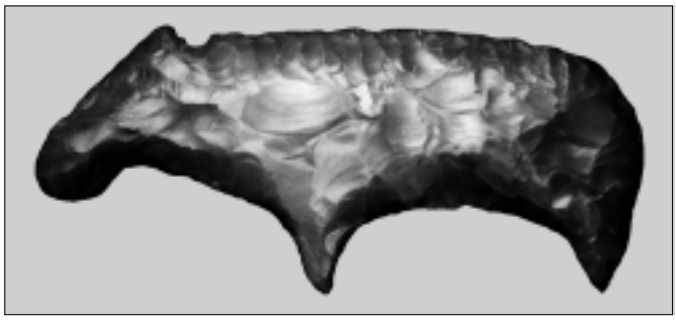
Midsection of a flint hippo from HK11, Square G.

Beautifully crafted and expertly retouched, on fine beige flint, the giraffe head found on the surface of HK6 is a worthy companion to the exquisite hippopotamus discovered there by Mike Hoffman in 1980 near tomb 1. The fragmentary piece found in square G at HK11 may be part of a similar hippopotamus. Certainly the crafting of the remaining leg suggests it must have come from a similarly stunning example.

The dog from the trash pit in HK11 square C4, though charming, is not up to this high standard. Made of local flint, it still bears witness to a skilled, if not masterful, hand. A similar creation in flint, recovered from settlement debris at Hierakonpolis by Henri de Morgan in 1907, is now in the Brooklyn Museum. In addition, a chipped flint bird formerly in the private collection of John Garstang may possibly have come from his explorations at Hierakonpolis in 1905. With over half the known examples attributed to Hierakonpolis, it would seem that we have evidence of yet another local industry!

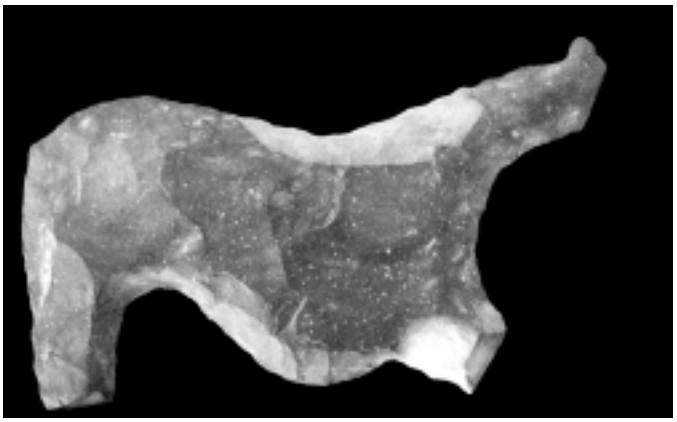
The only other provenanced examples come from Petrie's excavations at Abydos—a crude crocodile, hippopotamus and possibly a scorpion from the town debris beneath the Osiris temple, and a snake from the early temple deposits themselves—and remarkably also from Kahun, where one small flint hippopotamus was found within the Middle Kingdom town. In addition, a beautifully worked flint bucranium was found within a cache of early flints near the tomb attributed to Queen Neithhotep of Dynasty 1 at Naqada.

The lack of provenance for the vast majority of the figures makes it difficult to assess their purpose. The finest examples, painstakingly knapped from relatively large pieces of the best flint, were no doubt highly prized, as those from the elite cemetery at HK6 suggest. On the other hand, the smaller, cruder examples found within the settlement debris may well have been toys, created on a lazy afternoon by a flint knapper for his children. Only further discoveries will tell.



The exquisite flint hippo from HK6.

Many of the flint animals discussed above are on display in the Petrie Museum of Egyptian Archaeology and the British Museum, and they are well worth a visit.



The flint dog from HK11, Square C4.

Flint animals from Abydos, Kahun, and unprovenanced.

10N5W at Nekhen

In 1984 Michael Hoffman tested square 10N5W in the floodplain settlement at Nekhen for Predynastic occupation. With the aid of heavy duty sump pumps—an innovation at the time—his stratigraphic sondage below the water table revealed an uninterrupted sequence of habitation extending back to the Badarian period. The importance of this discovery for understanding developments within the Predynastic period and early settlement patterns cannot be overestimated.

The 1984 excavation in 10N5W initially revealed the foundations of a three room mud-brick house dating to the Naqada III period [see photo page 18]. To the east of this dwelling was an enclosure wall some 3m thick (sondage levels 1-3a). Just below this wall, the water table was encountered.

From this point on, excavations, with the aid of a sump pump, were limited to one room of the house. By the end of the season the sondage had extended to 1.3m below the water table and had reached late Naqada I levels. Hand augured cores at each corner of the original 10m square showed that stratified occupational debris extended for another 2.5m and contained some Badarian ceramics at their base.

Mike Hoffman reaching the water table in 10N5W.

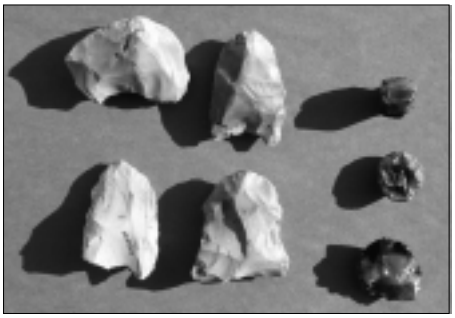
The stratified artifacts from 10N5W provide an invaluable tool for detailed relative dating of Predynastic sites. In keeping with the Hierakonpolis Expedition's commitment to study and publish Hoffman's findings, Dr. Thomas Hikade and Jane Roy were invited to examine the lithics from the stratigraphic sondage. Their discussion of findings from the study of the materials, mainly from the household establishment excavated in Level 2, follows. This remains the only house from Nekhen for which the complete assemblage has been retained, providing unique insight into domestic life at Nekhen in the Early Dynastic period.

From Chiefdom to Kingdom and Back– A Contribution Based on the Lithic Analysis from Square 10N5W at Nekhen

—by Thomas Hikade, German Institute of Archaeology, Cairo

In 1984 the late M.A. Hoffman excavated 10N5W in the ancient town mound at Nekhen, a square that yielded a stratigraphic sequence from the Predynastic to the Early Dynastic period. The lithic assemblage from that excavation consists of almost 4000 pieces. The tool kit includes scrapers, microdrills and perforators, serrated sickle blades, crescent drills and bifacial knives. The major part of the material is debitage such as chips and small flakes.

Within this assemblage there are some very interesting finds that clearly indicate that workshop activities took place at or close to the structure in 10N5W. Eight crescent drills and 3 quartzite borers give evidence for the production of stone vessels. The crescent drills can be divided into three groups: the typical crescent-shaped tool which we have in a large version of up to 5.6cm wide and a smaller version with a width up to almost 3.5cm. The third group has a shield-like shape and is more elongated. All crescent drills bear distinct use wear.



Crescent drills and carnelian bead blanks.

From the same level as the crescent drills we have more than 30 carnelian nodules and the preform of a carnelian bead. Carnelian is not a local material and therefore it had to be imported. However, carnelian is abundantly available in the Eastern Desert and it was perhaps obtained from desert dwellers as part of an exchange or trade relationship. The typical tools for the final finishing of beads were microdrills and very fine perforators that were once fitted into a handle. From the same find unit as the carnelian more than two dozen of this kind of tool were found. The manufacture and drilling of carnelian beads is depicted in tombs, one example being the tomb of Aba at Deir el Gebrawi dating to the late Old Kingdom.

Continued on page 18

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Color Pages

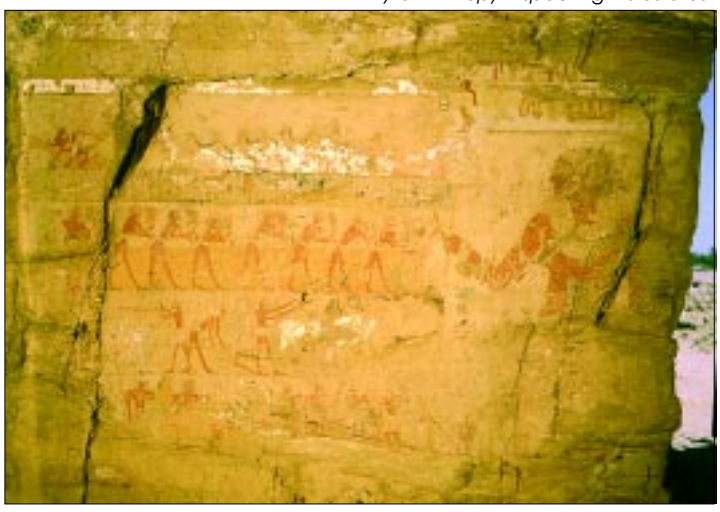
Alluring images defined on the tomb of Hormose.

The complete bearded mask (HK6 Tomb 18), front and side views, and a line drawing of the feline mask fragments.

Knife from 10N5W.

We are extremely grateful for the grant from the Egyptian Antiquities Project (EAP) of the American Research Center in Egypt, Inc. (ARCE) under its USAID Grant for the "Restoration and Preservation of Egyptian Antiquities" that has made the work in these tombs possible.

Ny-ankh-Pepy inspecting his estates.



A view of the Fort from the cherry picker.

Hormose in his leopard skin robe.

Portrait of the artist in the tomb of Horemkhawef.

The exquisite flint hippo from HK6.

Hierakonpolis—
City of the Hawk.

Pot emplacements at HK11, Square G.

New revelations in the tomb of Hormeni—decoration we never imagined.

The documentation in Djehuty's tomb gets underway after cleaning.

It is therefore clear and a confirmation of older excavations that the area close to the Temple of Horus at Nekhen was the site of stone working activity. However, there is also evidence for more domestic activity.

Ancient flint knappers.

There are some twenty segmented and serrated sickle blades, of which several show sickle sheen indicating use. The sickle blades were hafted into a wooden handle to form a crescent-shaped sickle. This type of the segmented blade is known in Egypt from the middle of the 4th millennium B.C. and its forerunners most likely came from Palestine, although their use continued in Egypt long after they had been replaced in Palestine by the so-called "Canaanean Blades." Another common tool type is the scraper, which is represented by more than fifty artifacts. An initial study showed at least six different types of scraper. We hope that future analysis will lead to a greater understanding of their various functions. Clearly the area in question was the scene for both household and "professional" activity, showing that one need not exclude the other.

An analysis of lithic assemblages may not only increase our understanding of how jewelry or stone vessels were made or what a typical tool kit in a given period looked liked, it can also increase our knowledge of the society and its economy.

The Naqada II-III period saw the emergence of writing and development of the administrative and economic system in Egypt. At that time the skill of flint knapping was at its peak with the production of the so-called ripple-flaked knives. Knives of this kind were sometimes made in a light brown, very dense flint with pinkish bands or stripes. This raw material is also very common during the first half of Dynasty 1. A knife from 10N5W is made from exactly the same type of raw material (see photo Color Pages). At least 100 pieces of this kind of flint, amongst them several thinning flakes and some 15 tools, come from 10N5W. However, this material is not available at Hierakonpolis and, like the carnelian, had to be imported from elsewhere.

I have wandered across the desert plateau at Abydos and come across several outcrops of this specific type of flint. There is no clear indication of flint mining as yet, although from the abundant use of this raw material in Cemetery B at Abydos I assume that the material was locally mined and worked from late Naqada II to the middle of Dynasty 1. If this assumption is correct, we must consider whether specialised miners and flint knappers were based at Abydos and that it was from here the material or tools were distributed.

At the end of Dynasty 1 we can observe a decline in the use of this brown-pinkish flint in the royal cemetery at Abydos and a shift towards a medium brown (caramel), slightly coarser flint, sometimes with white bands. A large number of the flint implements at Saqqara in Dynasty 1 were manufactured from this material and on the other side of the Nile at Helwan, a workshop of the Early Dynastic period yielded thousands of pieces of this kind of flint.

This caramel flint is totally absent in the assemblage of 10N5W. In economic and administrative terms, the unification of Egypt led to increased centralisation and a shift northwards to the new capital at Memphis. Specialised craftsmen from Upper Egypt may also have moved and it is likely that not only workshops but also sources for raw materials would now be sought closer to the royal residence. The flint knappers of Nekhen seem to have made do with the more locally available flint.

From Dynasty 2 onward a different kind of flint became widespread. It is a very homogenous dark brown (chocolate) flint easily distinguished from the two above-mentioned varieties. In Egypt many of the rectangular so-called "razor blades" were produced from this material. Examples of this tool type can be found in their thousands all over Egypt. Once again a new mining area was being exploited. However, with the new capital now more firmly established, the flint knappers need not move from the royal residence. Mining expeditions could be sent to any location with relative ease while the workshops remained central.

To recap, there are at least 3 major groups of flint which apparently came from different localities and were used at different times from the late Predynastic to the Early Dynastic period, with some overlapping. Of course, we must not

The Naqada III house in 10N5W.

forget the many varieties of flint that were available all along the limestone formation from Cairo down to Esna that were also used during the same period. However, by concentrating on major groups within an assemblage we can obtain a better understanding of the organisation of nationwide flint knapping activities in Ancient Egypt. What we may be seeing, even in a relatively small sample from 10N5W, is a reflection of the historically known political and economic shifts that led ultimately to unification. The absence of raw materials typical of Dynasties 1-2 fits with the idea that the most skilled workers moved to the capital, a process that continued until the end of the Old Kingdom when expanding provincial administration and increasingly confident local nomarchs were able to patronise their own regional talent independent of the royal residence.

At the end of the Old Kingdom, flint was replaced more and more by copper and later bronze, although it was used down to the first millennium B.C. in the Nile Valley. During the whole time from Naqada III to the end of the Old Kingdom there was a specialised group of flint knappers. The more experienced among them were probably centred at the workshops in the royal residence. What happened to them as the demand for their skill declined? Were they unemployed or retrained for another task? This is another story…

Bead makers.

What they ate: Plant remains from HK43

—by Dr. Ahmed Gamal Fahmy, Helwan University

Most of our information on diet in Predynastic Egypt comes from desiccated or carbonized plant macro–remains (grains, seeds and fruits) that have been retrieved from graves, hearths, storage pits and trash mounds. The interpretation of evidence from these different archaeological setting is not straightforward. Data for determining human diet collected from settlements may be biased by food processing and cooking, which influence the preservation of plant macro-remains. Samples may be contaminated by animal fodders or dung which were burned as fuel for the cooking fire. Funerary remains, on the other hand, appear to provide only a very selective and perhaps idealized sample of the actual daily fare.

In fact, most of what we know about Predynastic diet is circumstantial at best. Archaeobotanical analysis of the material discovered at the Predynastic cemetery at HK43 is helping to alleviate this situation and is providing important information on the nature and quality of the diet in this period.

The exceptionally fine preservation in the burials at HK43 has allowed us to collect a variety of "soft" materials (hair, matting, and so forth) including the desiccated contents of the gut (stomach and intestines). Samples were gathered from nine burials (seven adults and two children). This material has been carefully re-hydrated and then examined in order to gain clearer insights on Predynastic diet and food preparation technique on the basis of actually ingested foods. It was a laborious task, but it has yielded high dividends.

Most plant materials were present only as micro-remains as a result of food processing or digestion. The microbotanical analysis confirmed the presence of phytoliths (plant silica skeletons), fruit epicarp (skin) fragments and starch grains. The distinctive appearance of these plant micro-remains under powerful magnification made it possible to identify the plants from which they came.

Most common were the remains of emmer wheat (*Triticum dicoccon* Schrank), identified from starch grains and husk fragments. Emmer wheat played a crucial role in the agricultural economy of Predynastic Egypt and continued to do so until the Ptolemaic period (332–30BC), when it was replaced by free threshing wheats (durum and bread wheat), which did not require laborious processing to remove the chaff from the grains. In fact the significant amount of husk fragments found in the gut contents from the adult burials suggests that little attempt was made to remove the husks before the grains were ground to flour for bread.

The texture of surviving ancient bread varies greatly and it is difficult to draw conclusions about the quality of daily bread from the funerary loaves. However, the evidence from gut contents indicates that bread for the living could be quite coarse and chaff-filled. While it is possible that this chaff-filled bread was ingested for medicinal purposes, the quality of the bread may also be an indication of the social class of those interred at HK43.

Yet, not all of those at HK43 ate such bread. One of the most significant results of the analyses has been the possible identification of a different meal for children. The samples from children's graves contained only pure starch grains with no husk fragments whatsoever. This finding suggests that the wheat was very well cleaned before being ground to make what we might call baby food. While the existence of baby food in ancient Egypt seems obvious, this is the very first evidence that it might really have existed.

The new information derived from the study of the gut contents has far reaching implications, but further study is required. In the upcoming field seasons we hope to conduct tests to estimate the nutritional value of the consumed food.

We are grateful to Dr. Catherine D'Andrea, Simon Frasier University, Vancouver, for her assistance in this project.

Emmer wheat

Mapping the Fort and more

—by Nick Hampson, Neill Bennett, and Renée Friedman

It has recently been confirmed beyond a doubt that the "Fort" or ceremonial enclosure of the Dynasty 2 King Khasekhemwy at Hierakonpolis is the oldest free-standing mudbrick structure in the world. In recognition of its historic importance and deteriorating condition, the enclosure has been placed on the World Monuments Fund list of *The World's 100 Most Endangered Monuments for 2000/2001*.

Preliminary work undertaken last season shows that this monument has much to contribute toward an understanding of the architectural and organizational origins of the pyramid complexes of Egypt as well as the shadowy events at the end of Dynasty 2, a period of fundamental changes in Egyptian culture. The Fort encloses a huge area and many seasons will be necessary to unlock all of its secrets, but these investigations can only take place if the monument is conserved and preserved for the future.

Before a strategy for the conservation of the Fort could even be formulated, it was necessary to have accurate and current topographic, elevation, and cross-sectional plans of the monument. This has now been accomplished. In early February 2000, two professional surveyors, Nick Hampson and Neill Bennett of Malcolm Hughes Land Surveyors of Manchester, England, surveyed the Fort and its environs using a state-of-the-art Leica TPS1100 Total Station. This remarkable instrument was able to measure without a reflector target, and thus cumbersome scaffolding or ladders were unnecessary. The Total Station's laser is able to measure to any surface that is appropriately reflectant and mudbrick turned out to be perfect. Essentially, all one needed to do was point and measure; the data was collected in the unit's internal memory and downloaded each day into the site computer. As a result the task was completed in record time and a preliminary ground plan of the Fort was generated in the field.

The collection of "textural" information, however, was a little trickier. In order to map the current condition of the Fort, it was clear that photography was the only method. The necessary control for this photographic element required the placing and the observing of small targets along the walls in order to fix the photos to a known plane, thus providing rectified, or adjusted, photography that was directly related to the topographic survey. This meant having to place targets along the base and top of each wall. Placing targets along the bottom of the walls was easy; high-resolution plastic photo targets were tacked to the walls at chest height.

Placing targets along the top of the walls, 9 meters high, was not such an easy proposition. There was no way to affix the plastic targets without a great deal of time-consuming hassle and equipment. Instead, we decided that daubs of whitewash might be the best option—but how to get it up there?

Surveying the Fort—

Creating the ground plan was easy. The placement of the photo targets required a bit more creativity. Surveyors Neill Bennett and Nick Hampson load the "paint brush" on the end of a very long pole, which (eventually) was wielded with great skill to accomplish the task.

It took a great deal of ingenuity and perhaps even more duct tape, but we did it. In the end the method of choice involved a 2m ranging rod taped to a 3m length of polyethylene pipe, taped to a paintbrush, all wielded from the top of a 2m ladder by a tall man (i.e., surveyor Neill Bennett). It was actually as difficult as it sounds, made even more challenging by the fact that it was a very windy day.

The consistency of the whitewash (thick) and the trajectory of the paintbrush had to be just right to get the paint to adhere to the crumbling upper walls. For those of us down below holding the ladder, an unsuccessful attempt was much like being insulted from a great height by a giant bird. In the end we managed to complete the task with humor intact, although our clothes were a write-off!

Having placed and observed the targets, a series of overlapping photographs were taken, so that the photos could be connected to create a seamless rectified image of each wall. The preparation of the computer generated elevations which detail the current condition of the walls is now in progress. It will provide us with an invaluable document from which to assess the structure's conservation needs.

The survey work proceeded better than hoped. The first accurate plan of the Fort is now a reality and this allows us to address some of the long-standing questions about the monument. We can now confirm that the fort is 64.7m x 56.7m in dimensions, with the gate area projecting a further 5m to the southeast. The tallest wall survives to a height of c. 9m

above current ground level, although we assume a loss of approximately 1m in height due to weathering. The main walls are 4.7m wide; the much ruined curtain wall appears about 2.5m wide.

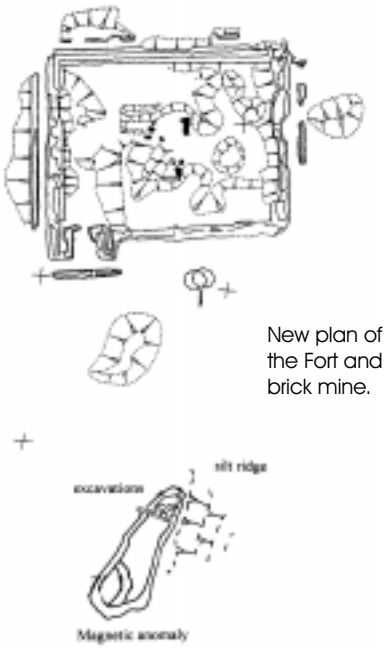
The new plan also includes the remnants of the internal structure uncovered last season (see *Nekhen News* 11, 1999: 9-13). While it has always been thought that the rose granite column base was no longer in its original position, this may in fact not be true. The new plan has revealed that this large piece of granite is in the very center of the enclosure. This placement hardly seems fortuitous.

The average size of the bricks measured at various parts of the structure measured 25x13x8.5cm. These measurements seem to conform to the fractions of the standard ancient Egyptian cubit (52.3cm). Thus the bricks are roughly 1/2 cubit by 1/4 cubit by 1/7 cubit (one palm). With these accurate dimensions we can now calculate that the main structure originally contained somewhere between 2.5 million and 3 million bricks and the curtain wall about 1 million bricks, for a total of 4 million, which is a lot of bricks.

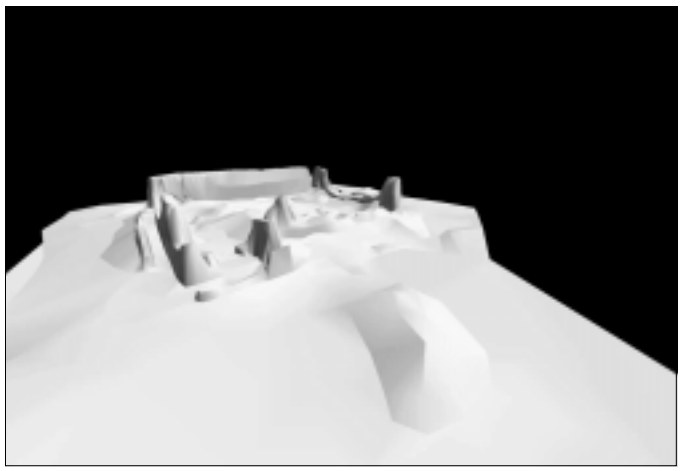
It is actually as a monument to the managerial skills of Khasekhemwy's men that the Fort really stands out. The ability to marshal the staggering amount of materials and the equally large workforce necessary to construct such a massive monument is impressive. It is here that the real story of the pyramids begins. Thus it was an unexpected bonus of the field season when we realized that the large keyhole-shaped anomaly revealed by the magnetometer survey to the east of the Fort in 1998 was not a boat and not a house but the clay mine from which the bricks for the Fort were obtained (see *Nekhen News* 10, 1998:17). This unique discovery should make it possible to assess more fully the skills of the builders and managers, and the analysis of this clay source will be invaluable for assisting in the Fort's conservation.

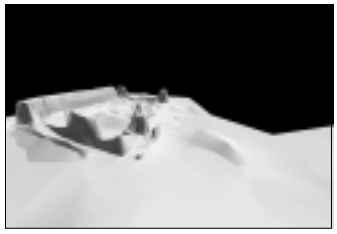
The interpretation of this area as a clay mine for the bricks explains the large size and apparently empty interior of the anomaly as detected by the magnetometer. The location would certainly be ideal for this purpose. The pit cuts through one of the largest outcroppings of Sahaba silts in the immediate vicinity of the Fort. This ridge still stands to quite a height. It is located at the very edge of the wadi, allowing for easy transport of water to the manufacturing site and a large expanse of flat land for the laying out and drying of the bricks. It would seem, however, that this mine did not provide all of the bricks for the Fort, although it may have been responsible for a good half of them.

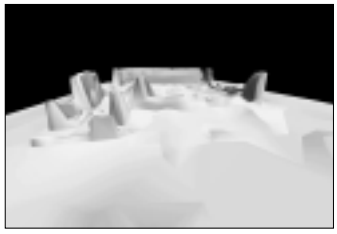
Our new survey data show that the Fort's main walls required about 7,560 cubic meters of brick. If one assumes that the clay mining began at the top of the ridge, then roughly 5 meters of silt may have been removed to reach the lowest level attained during our excavations (sterile levels were not reached because the soil had become too wet). The anomaly as measured by the magnetometer is roughly 40m x 20m. If the estimated depth is 5m, then a total of c. 4000 cubic meters, or about half the necessary dirt, could have been removed from this location. Exposed outcroppings of silt on the southern side of the wadi mouth may have been used in addition to this mine. Considering the spatial requirements for the brick manufacture alone, it should perhaps not be surprising that several areas were being mined at the same time. Each bit of information is new data for reconstructing the logistics of the Fort's construction and in turn new data for assessing the true legacy of King Khasekhemwy.



New plan of the Fort and brick mine.

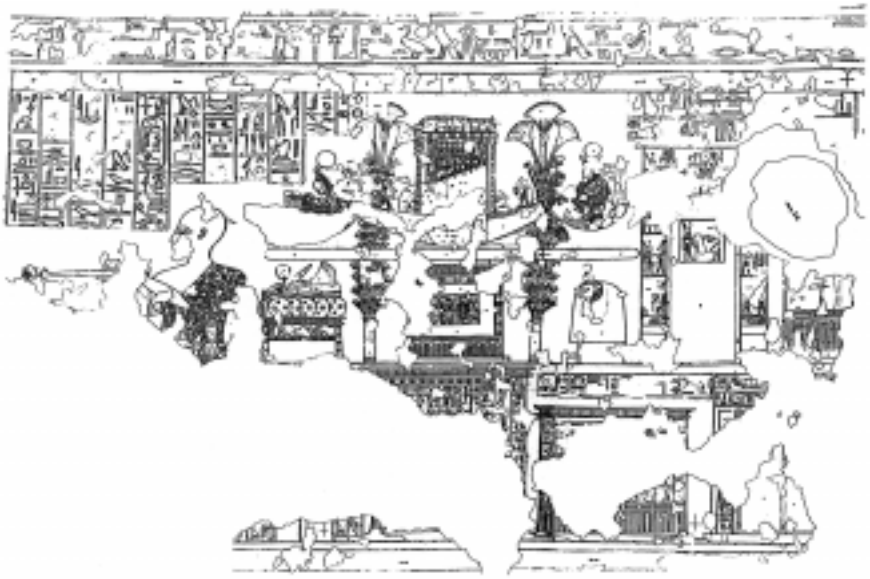






These images of the Fort were created by Ian Briffett, based on data collected by Nick Hampson and Neill Bennett using the Terramodel Visualizer—a Spectra Precision Software product.

The Dynastic Tombs



Hormose dedicating the new temple furnishings. This is perhaps the most important scene in the tomb, and certainly the most detailed.

—by Renée Friedman

The year 2000 marks the official end of the conservation work in the four Dynastic tombs which have been the focus of attention for the past three years. The dedication of conservators Lamia El-Hadidy, Eric Miller, and Ed Johnson is to be commended. They have earned a well-deserved rest. Photographers Yarko Kobylecky and Jim Rossiter have done sterling service in recording the often fragmentary and faded decoration under difficult conditions.

To be sure, bits and pieces still need attention and the documentation of all of the tombs is not yet complete. The monitoring of their condition will also be a long-term responsibility. But the major work is essentially done—and now the hard work for the Egyptologists really begins. We are victims of our own success. The cleaning of each of the tombs has revealed unsuspected decoration of extraordinary importance. The information preserved in the tombs at Hierakonpolis will certainly add substantially to our understanding of Egyptian art and history. Yet each tomb is different and, as you will see, has its own story to tell.

Tomb of Hormose

While the final touches were applied to the conservation of the tomb, Will Schenck continued to record the decoration. The images he was able to pick out from even the most poorly preserved wall, like the wonderfully alluring Hathor head (see color pages), certainly has made the three years of laborious conservation worthwhile.

Will concentrated on the upper registers in the tomb's main chamber and representative samples of the hard-to-reach vault and ceiling scenes this season. His copy of the scene depicting the newly donated temple furnishings was particularly successful. Here Hormose is calling attention to the specific patronage of king Ramses XI (end of Dynasty 20, c. 1070BC) to the Temple of Horus during his tenure as High Priest, yet he effectively takes the credit by depicting himself (rather than the king) in a beautiful leopard skin robe dedicating these objects. This detailed scene is perhaps the most important in the tomb and certainly one of the most individual. No two of the chests is the same. Each has individual and specific touches that indicate the artists were drawing from the actual objects and not from copybooks.

Along with the chests, gold vessels, and refurbished barques for both Horus and Isis, Ramses XI also provided a new gateway with golden double doors to the temple. By depicting this gate in its place within the temple of Horus, the artists have left us a guide to the appearance of this august temple. Unfortunately the plaster breaks off just as it is getting interesting, but as far as we can tell, the new gate was set up in front of (i.e., below) the original single-door gate of Thutmose III. The size of the gate and its relationship to other walls suggests that we are looking at the entrance to the main shrine—the holy of holies that few Egyptians were ever allowed to see. Again, the specifics of each gate indicate that the artists are recording their actual appearance and were not simply drawing a generic gate or generic temple layout. It is an exciting possibility that this representation may assist us in understanding the archaeology of the actual temple mound at Nekhen.

While the main chamber is essentially dedicated to the glory and accomplishments of Hormose, the antechamber appears to belong to Hormose's wife Henut-ao, and, as Betsy Bryan discovered, the differences lie not just in the main subject.

Artist Will Schenck and his drawings from Hormose.

The Artists in the Tomb of Hormose, Part II

—by Betsy Bryan, Johns Hopkins University

The tomb of Hormose, although once blackened by soot and the victim of frequent disturbances, preserves a rare record of private tomb decoration at a time when the production of royal tombs in the Valley of the Kings was about to cease. There are few parallels for Hormose's tomb either in Thebes or in the Edfu region. The distinction of Hormose's tomb is that, based on the style and variety of pigments used as well as the pureness of the drafting capabilities, it was almost certainly painted by artisans brought in from Thebes for the purpose.

There is no grid in any part of the tomb of Hormose. Even on the north wall of the main chamber where the series of furniture representations could have benefited from a workshop technique, the work is that of only a couple of people working freehand. The competence of the artisans employed here resulted in a well-proportioned and carefully designed wall. The strength of the painting technique is in line drawing, not in the painting. There is a minimum of paint applied in any single location and the artisans utilized a number of methods to conserve the pigment and the time required to apply it. These methods, entirely different from ones observable in early-mid Dynasty 18 private tombs in Thebes, produced, nonetheless, excellent visual results.

Dancing girls in the Tomb of Hormose.

Artisans of various competence were employed throughout the tomb. Some worked alone while others apparently had assistants or apprentices. For the most part, identification of a specific artist's hand has been dependent on attention to details such as the shape of navels, small facial features, repetitious elements such as details within floral bouquets or garment pleats. Using these observations it has been possible to identify at least 5 main artists, one of whom specialized in the painting of women in groups. His work is best seen in the antechamber, among the dancing girls who adorn the eastern and part of the northern wall (see Back Cover). There are ten of these girls and there is every indication that all ten were painted by the same artist. The drafting was done quickly and without any preliminary sketch. The style of line drawing is angular, such that the girls are made up of all elbows, knees, ankles and toes. The artist has relied on using a diverse presentation of these limbs to carry the energy of the scene. The effect is to suggest movement through a sequence of angular gestures and body positions which, when separately observed, are quite repetitive. The impression given, however, is quite the opposite! The quick, angular and incomplete line method used on the dancing girls identifies a distinctive artist's hand, one confident in his own painting. The work of this artist can be found again in the group of mourning women on the lowest register of the antechamber's north wall (see *Nekhen News* 11, 1999:22).

Clearly, a different artist was employed to paint the elegant tambourine ladies that accompany the girls. These ladies in their red shawls have been carefully drawn following underpainted lines and the finished outlines are smooth and elegantly curved. This same artist working with apprentices may be responsible for the majority of the funerary procession and other scenes in this room. Yet another specialty artist was probably responsible for the exquisite miniature details of the kiosk in which Hormose's wife Henut-ao sits suckling a child in her celebrated role of the Nurse of Isis. The same man probably painted the miniature drawings of the underworld on the east wall upper register. The unusual nature of this afterworld scene and its placement high on a wall otherwise occupied with offering and ritual scenes may indicate that the artist's talent for miniaturization was valued and fitted into whatever space was available in the tomb. This artist, like the specialist for women, worked in his own freehand style using little, if any preliminary sketching. He drew on a tiny scale without using thin lines, and consequently these figures give the impression of being larger-scaled elements in the overall decoration than they actually are.

Interestingly, only one artist can clearly be identified as working in both the antechamber (that part of it still extant) and in the main chamber. Thus the difference in the subject matter and the strong focus on Hormose's wife Henut-ao in the antechamber are also reflected in the artists used to decorate it. It would seem that Henut-ao was a woman of independent mind and independent means, and she spared no expense in decorating her portion of the tomb.

The Amazing Invisible Walls

—by Kate Spence, Cambridge University

My heart sank the first time I walked into Djehuty's tomb on the Burg el Hammam at Hierakonpolis. Renée had promised me early Dynasty 18 wall paintings, but the four very blank-looking mud coloured walls did not look inspiring. She had said that the paintings were faint and that only a few scenes were preserved, but this was ridiculous!

Careful examination in strong light eventually revealed the whereabouts of the figures of the Goddess of the West and Osiris reported in *Nekhen News* Vol. 10. Although extremely faint under normal conditions, the figures appear miraculously when moistened with distilled water, only to fade rapidly back to obscurity as it evaporates. Having found the decoration, it was now my job to record it. This task proved to be extremely difficult. I was tracing the drawings onto clear acetate sheets, but these could not be firmly attached to the wall, since, in order to see the decoration, it was necessary to lift the acetate repeatedly to dampen the wall. Too much moisture and the masking tape would fail and deposit the acetate in the dust on the floor. Reference marks for repositioning the acetate sheets made on special low-tack tape also had an annoying habit of dropping off at the first hint of moisture.

After about a day, I started to use balls of cotton wool to dab water onto the walls instead of the spray bottle as it proved easier to avoid masking tape failure. The cotton wool balls rapidly turned the colour of the walls, which seemed a little suspicious. I chose a patch of wall where I had previously identified faint colour and began to dab the surface repeatedly. Little by little, the face of a girl emerged. The wall was just dirty! Somehow the whole tomb had become coated with a thin layer of mud which had almost completely obscured the decoration and looked just like a natural stone surface. After consultation with the conservators, the whole tomb was cleaned and more areas of decoration were identified. Although still faint, the decoration in Djehuty is no longer a complete secret.

In a fit of enthusiasm we then reopened the adjacent tomb of Hormeni, where traces of decoration had been observed earlier (see *Nekhen News* 9, 1997:7). Before long, Edfu was out of distilled water and the resident bats were furious, but from behind the mud patina emerged a wonderful array of orange bodies and decoration that, remarkably, is even clearer than that preserved in Djehuty's tomb.

Discovering previously unrecognized decoration is exciting, but it all has to be recorded. Although the scenes in Djehuty's tomb were more visible than they had been, most were still far from clear, as the paint is fragmentary and the only reasonably well preserved color is red, which unfortunately is the same color as the native rock. In the less well preserved scenes, I was reduced to plotting traces of paint in an attempt to establish the nature of the scene; elsewhere tiny cracks in the surface revealed the position of a lost area of pigment. Before long, I was unable to stop myself examining the house walls in the evenings, absentmindedly looking for significant patterns in the tiny cracks in the plaster work.

Occasionally Will Schenck would visit while taking a break from his work in the tomb of Hormose. He would murmur, "Interesting...", as I explained that the three spots of paint I was plotting were legs, before he trotted smugly back along the path to produce more masterful copies of the exquisite wall paintings in Hormose, leaving me with the frustrating task of looking for the traces of that other leg.

By the end of the season, the results were worth all the effort. Almost the entire scheme of decoration in Djehuty has been recovered, including wonderful scenes by the door of a sailing boat, cattle crossing the water, and a fowling scene showing Djehuty standing on a papyrus raft with his little daughter. The south wall is the best preserved. It is decorated with three registers of scenes depicting purification rituals, funeral rites, and processions. On the north wall virtually no paint survives, but small cracks and changes in the texture of the rock surface reveal the presence of a seated figure of the deceased and his wife in front of an offering table and a row of kneeling children holding lotus buds. The decoration has much in common with the early Dynasty 18 tomb of Reneni at Elkab. Although the Hierakonpolis examples are not carved in relief, they were once expertly painted.

As the tombs of Djehuty and Hormeni date to the reign of Thutmose I and are therefore earlier than almost all of the New Kingdom tombs in Luxor, these newly discovered scenes are as important as they are charming. Caught unprepared for all these new discoveries, time was simply too short to begin the recording of Hormeni's tomb this season. There is no way of telling what patient plotting in the coming season will reveal.

The Lady of the West.

Another Look at the Lower Tombs.

—by Vivian Davies and Renée Friedman

Horemkhawef was the chief Inspector of the priests of Horus of Nekhen during the Second Intermediate Period (1650-1550BC). His small but charming tomb has suffered considerably in recent times at the hands of man. Its current state is even more disturbing when one realizes that a little over 100 years ago, it was substantially intact. At the beginning of the 2000 season less than 20 percent of the decoration in the tomb remained *in situ*. We know from archival photographs that plaster was already falling off the wall in the 1930s. Major damage was done to the tomb in 1989, prior to the fitting of the protective metal door to the tomb. Impact marks on the remaining plaster and chisel marks on the wall behind indicate that the tomb was intentionally defaced.

The fragments of fallen wall plaster were collected when the tomb was cleared during the 1998 season. Last season we began replacing this plaster in the tomb, with Gillian Pyke and Renée Friedman devoting a great deal of their attention to this undertaking. Ultimately over 100 fragments were reattached to the wall. Mutilated scenes on the west, north and east walls were pieced back together and the remaining and restored decoration in the tomb was recorded by Vivian Davies.

Horemkhawef is famous for his biographical stela (now in the Metropolitan Museum, New York), which gives an account of a journey that he made to the capital at Lisht and mentions a number of members of his family. Very many more are represented in his tomb, including importantly a daughter, probably named Sobeknakht, who is credited as being the one "who makes his name to live" and can therefore be considered as the one responsible for the final decoration of the tomb. Other named individuals include a certain Sedjemnetjeru, who was a *sesh kedwt*, "scribe of forms," and was probably responsible for the drafting and painting of the decoration. Although not a member of the family, he is, quite remarkably, shown in a prominent and honoured position censing the tomb-owner's offering-table, his inclusion in the scene virtually amounting to a "signature" of his work. One of the great successes of the season was the reinstallation of the fragments bearing his name and figure on the now-ruined east wall (see Color Pages).

Sedjemnetjeru was no doubt proud of his abilities, and well he should have been. The tomb is painted with great verve and charm. But not only was he a talented artist, he appears to have had a great sense of humor too. This is abundantly clear in a hunting scene, squeezed into a small area, just to the right of the door. Since it is very faded and obscured by vandalism, one could miss it all together, and in fact we had pretty much overlooked it until we began to copy the wall. In this remarkable scene a large cat (a cheetah?) appears to be attacking a prey, now sadly lost. But above, a dog follows in hot pursuit—and probably without much hope of success—for his name, written above him in hieroglyphs, is "Khem", meaning "Stupid."

A dog named Khem.

Research over the last two seasons has shown that Sedjemnetjeru's activities were not confined to Hierakonpolis but that his talents were also sought after and recognized at Elkab. More of this exciting discovery in the next issue.

The tomb of Ny-ankh-Pepy also revealed more of its secrets. This tomb originally belonged to a Late Old Kingdom official named Itjefy and was later usurped, probably in the Middle Kingdom, by the nomarch Ny-ankh-Pepy. As remnants of the original incised and painted decoration survive in many portions of the tomb, both the recording and the conservation of this tomb was made more challenging.

This season, conservation work concentrated on the readhesion of loose plaster throughout the tomb, and Kate Spence began recording the tomb with all its complexity. For this she used a series of color-coded conventions. Black was used to outline figures, while green was used to record underlying palimpsest decoration. Dashed lines of various weights indicated broken edges of color, underlying carved decoration and ghost indications of figures and inscriptions in which the pigment had fallen away. Her careful scrutiny of the walls allowed her to recover various pieces of the original decoration, much of which was carved. These include a figure of the original tomb owner, Itjefy, slaughtered animals as part of a butchery scene, and, of course, many still undetermined figures. It is clear from his titles, "Governor and Overseer of Priests," that Ny-ankh-Pepy was an extremely important official, who occupied the most senior administrative post at Hierakonpolis. It is also becoming clear that Itjefy is not a man to be overlooked either.

Untangling the various scenes within this tomb and deter-

mining what is part of the original scheme and what is secondary has been a difficult but rewarding job. Many of the misconceptions about this tomb, its date and style, are being gradually put to rest as a result of this work. In addition, the various visitors' inscriptions written in hieratic and dating to early Dynasty 18 are being recorded and studied by Vivian Davies. They were written by scribes, among them a certain Hormeni and Djehutymes, who had come to admire the beauty of Ny-ankh-Pepy's tomb.

Replacing the fragments in the tomb of Horemkhawef.

Recarving the Narmer Palette

—by Mark Warden, Stone Mason.

I first had the idea of re-carving the Narmer Palette in the winter of 1998, at about the same time that, one hundred years earlier, it was discovered on the temple mound at Hierakonpolis. However, it was not until much later the following year that I actually started the task. There are many problems when dealing with such a piece. It is very well known, it is certainly well carved, and although often illustrated in line drawings, these drawings are not completely accurate (see *Nekhen News* 10, 1998:22). This, coupled with the fact that the Palette is totally inaccessible to instruments such as calipers, makes the task even more difficult.

Mark, the stone mason, at work.

The Palette of Narmer is made out of a dense greenish sedimentary rock called siltstone. As such stone is only available from the original source, deep in the Wadi Hammamat in the Eastern Desert of Egypt, the replica palette is made of slate, a stone so closely resembling the siltstone of the original that for years it has inaccurately been called a slate palette.

The first thing I had to do was purchase the slate from my supplier. This turned out to be perhaps the hardest piece I have ever worked with. After shaping the stone, drafts and simulated drawings were made from photographs of the original. The biggest problem I had was lining up the two faces. This has to be done very carefully. The Narmer Palette actually has a convex curve on both faces, that is, the edges bend slightly to all sides. Therefore the tracings cannot be laid down completely flat. Once this difficulty was overcome, a white wash was placed on both surfaces so that the lines of the traced template will be easier to see.

So now you have a white Narmer Palette with traced decoration. What's next? The Palette is carved in bas or raised-relief, that is to say that the background has been removed revealing figures that stand proud of the surface. Surprisingly enough, over the entire surface of the Palette, decoration only takes up about one third of the total area. Thus the time spent removing the background material is extensive, and apart from the detailing this takes the longest to do. Taking a small chisel, I made 'V' cuts around all of the images. All cuts must be the same depth all over the palette's surface to act as a guide when removing the unwanted material. The result is a very complicated looking network of lines. Being very careful, I then began chiseling away the background. Chiseling makes marks on the surface and these must be removed. To do this powders or emery papers can be used. Ground marble dust and a splash of water would suffice, but on this occasion I used papers. Once all of this has been completed the interesting part can now begin!

The detail of the Palette is very fine. For the original sculptor, this must have been the real challenge. When carving detail all moves must be anticipated. That is to say, be prepared, and plan your moves; do not remove too much at any one given time. Otherwise the results could be catastrophic and all your efforts, as wonderful as they are, will be a waste of time.

The artist seems to have been the same one throughout.

While it may be argued that each of the four Hathor faces is different, when you examine the features such as eyes and fingers as closely as I have, it seems, at least to me, to be the work of one hand—and a skilled one too! I would like to draw your attention to the eyes on the Palette. These are among the most exquisite that I have seen from the land of Egypt. Considering that palettes were used for the grinding of cosmetics to decorate the eyes, I wonder if these wonderful eyes could have been painted at some point. They lend themselves so beautifully to this concept. For me though, the most telling and difficult features from the sculptor's point of view are the images of the Sandal-bearer and the beheaded victims. These require much time to carve. They are so small. The detail is so very fine.

In modern times the sculptor can turn to tungsten tipped chisels as well as fire sharps (hand drawn chisels). Ancient Egyptians used only copper chisels, which I can tell you from my knowledge of my trade, is all they would have needed to carve the Narmer Palette. There are a number of people who believe that the Egyptians possessed some great power over stone and natural materials. Indeed they did! They possessed great patience and a will to turn out masterpieces. In all, even with modern tools, the replica palette took me around 650 working hours to complete or around 4 weeks of solid working time.

As I am writing I have my Narmer Palette here in front of me. I feel I have gotten to know the person who carved the original just a little. He must have spent many hours much the same as I did, making sure he had the content just right. I can see him sitting with the Palette on his lap, perhaps in the shade of his favourite sycamore tree, quietly scraping, chiseling and carving for his King. I am very proud of my palette, as I am sure he, too, was of his, so many centuries ago.

Mark, with his palette completed.

Hierakonpolis in the Canary Islands

—by Barbara Adams

For eight years now, the last entry in my bibliography has been the manuscript *Report on Egyptian Pottery in the Municipal Museum, Santa Cruz, Tenerife, Canary Islands, 13th March, 1992*. I had been contacted by a young couple resident in the town of Santa Cruz de Tenerife to advise them on some pottery and a stone vase from Egypt they had discovered in the Municipal Museum of Fine Arts. I was invited to the island for a few days, after which I produced the report suggesting an exhibition should be considered. Then nothing happened for sometime.

The keen Egyptophiles, Eduardo Almenara Rosales and Candelaria Martin del Rio Alvarez, have been tenacious in their interest and dedication since 1992. This resulted in an exhibition that opened this April in Tenerife, to which I was invited to give the inaugural lecture in a series that was being held in conjunction. My talk was followed by a resume of the Protodynastic period by the only Egyptologist resident in the Canaries, Miguel Angel Molinero Polo, who teaches at La Laguna University. Helen Whitehouse of the Ashmolean Museum visited the following week to give a lecture on the important collection from Hierakonpolis in that museum, followed by lectures by Spanish Egyptologists.

The title of the exhibition, *Egipto en Tenerife: Historiade un Intercambio*, tells the story of the exchange which took place in 1908 between the University Museum in Liverpool and the Municipal Museum in Tenerife. Liverpool received a selection of glazed tiles from the Canaries and sent over a number of pots from Hierakonpolis and Esna where John Garstang had excavated. Candelaria and Eduardo found me through consulting my book *The Fort Cemetery at Hierakonpolis* (1987) in which I published the cemetery that Garstang dug in 1905-6 within the Fort. Two of the vessels could be identified in Garstang's manuscripts, which meant the graves could be reconstructed for the exhibition in Santa Cruz, thus setting the objects in their archaeological context. Skilled craftsmen had even constructed a scale model of the Fort with the graves pinpointed in the sand within the enclosure!

Exhibit brochure featuring a pot from Hierakonpolis.

All that was lacking on the opening night was the book that Candelaria and Eduardo have written on the objects. They discovered at the last minute that the one stone vase in the collection came from the tomb of Ka at Abydos. As it was essential that this information be inserted, publication is delayed until June.

Order now....

"Excavations in the Locality 6 Cemetery at Hierakonpolis 1979-1985"

by
Barbara Adams

This volume is a comprehensive report on Michael Hoffman's excavations in the elite cemetery at Locality 6 in 1979-80, 1982, and 1985. It contains a description of ten Naqada II and Naqada III tombs and some of the faunal graves, which are a special feature of this cemetery. It includes a large catalogue raisonée of all the excavated objects and specialist reports.

Egyptian Studies Association Publication Number 4
British Archaeological Reports. Fall 2000

An Enigmatic Pot from Hormose's Tomb

—by Gillian Pyke


The enigmatic sherd.

Clearance of the rock cut tombs in the hill known as Burg el Hammam began in 1998 as the first stage of their conservation, funded by a grant from ARCE/EAP. The chapels of these tombs had been open for many years, if not centuries, and consequently their floors were covered with all manner of debris. The vast majority of the archaeological material within the debris was pottery; this was collected and all the diagnostic sherds were drawn.

Among the pottery collected during the clearance of the Dynasty 20 tomb of Hormose were a few sherds from early periods, some of which still had their modern excavation numbers on them. These pieces were undoubtedly incorporated into the floor deposit as a result of the later usage of the tomb by the British Egyptologists J .E Quibell and F. W. Green, during their excavations in 1897–99 (see *Nekhen News* 9, 1997:12). They seem to have brought material there for study and then left the less spectacular pieces behind, together with the fragments of letters and other personal items, which we also recovered.

The origin of other artifacts found within the tomb was less clear. Some of the New Kingdom pottery may be from the funerary equipment of Hormose himself, while the Late Roman and Coptic pottery may have belonged to the hermits who later inhabited the tombs.

During the clearance one curious sherd stood out: a small, handmade bowl with a slightly flared wavy rim and rounded body and base, with some blackening at the rim. The exterior is slipped a reddish brown and burnished. Textile impressions can be seen on the lower part and base, while the interior is covered with an unidentified resinous material. It raised interest as soon as it was found. Passed around to all of the dig staff, no one had ever seen anything exactly like it before.

The "dolmen" discovered by F. W. Green.

We later discovered that we were not the first to wonder about this sherd. Some 99 years earlier, F. W Green had been equally intrigued by this enigmatic vessel fragment. In the winter of 1998, John Green, son of F. W. Green, donated his father's personal diaries to the British Museum (see *Nekhen News* 10, 1998:15). These included the diaries that he kept during his 1898–99 season at Hierakonpolis, examination of which showed that they contained a wealth of information, not only in the text but especially in the many illustrations. One of these sketches was immediately identifiable as our mysterious pot. It accompanied an entry concerning a tomb or "dolmen" discovered by Green on 19 January 1899 at the edge of the cultivation. He recorded this discovery in his diary as follows: "*The Dolmen-like structure is interesting; it consists of a chamber of crude brick...This chamber is 3.3[m] wide by 1.6 long by 0.9 deep. In it is a rough chamber made by roughly squared laminated sandstone from this side of the river...These slabs form a room inside the brick chamber 1.5 wide and originally 1.6 long roofed probably to build a shaduf [water lifting device]. In this chamber were found a fragment of polished red ware...and several flints and a piece of a small bowl with an indented edge. The ware is red and hand made; it may be modern or perhaps IV Dyn. I think the tomb belongs to the N[ubian]?] but I have no evidence as yet.*"

Unfortunately, this dolmen structure is no longer standing, and its exact location is not certain. It, too, is enigmatic. Green published a sketch and plan of the dolmen in *Hierakonpolis II* (pl. lxviii bottom), but says only that it was found near a group of tombs of post Old Kingdom date, and "appears to belong to the late prehistoric or early historic period, but it may be later" (p. 22; see also Adams, *Ancient Hierakonpolis Supplement* 1974:83). The sherd, however, he evidently left behind.

Green's observations about the enigmatic vessel are informative. His accurate description and illustration of the pot are characteristic of the high standard of his work at a time when pottery was often discarded as uninteresting. The vessel is immediately recognisable from his sketch, and the drawing is comparable to that done a century later using modern conventions.

Bowls with wavy rims are known from the Old Kingdom and continue into the Middle Kingdom and beyond. However, none of the known examples appears to be an exact parallel for our vessel. Wheel made and generally much larger, they seem to lack the fine red polished slip and the blackened rim. Although the technology is similar to that used for pottery of the Predynastic period, the shape of the vessel and rim treatment are not comparable to these types either.

Handmade vessels were also produced by people of Nubian cultures who were present in Egypt. Red polished pottery with a blackened mouth is common among the C-group Nubians in Egypt, and to a lesser extent in the so-called Pan-grave culture. The Pan-grave people were semi-nomadic cattle herders, who moved into Egypt in the late Middle Kingdom, around 2000–1600 BC. Their shallow circular pit-graves give the culture its name and a cemetery of such graves is located at Hierakonpolis near the Fort. However, no parallel for the enigmatic pot has been found here either. Further consultation with ceramicist Pamela Rose suggests that handmade pottery of Nubian origin, dating to the third century AD and later, could also be eliminated.

The pot as drawn by F. W. Green (above) and the modern drawing (below).

Thus it seems that the over 100-year-old mystery surrounding this intriguing pot is far from over, although the search continues. We welcome your suggestions. We'll keep you posted.

THE HIERAKONPOLIS HOME PAGE

The Hapy-Horus Project

So what's a Hapy-Horus? Well, in case you haven't already figured it out, Hapy is a god of the Nile inundation, a water god, and Horus is a principal solar deity. So Hapy-Horus is a syncretic god of water and sun and thus, by the logic all too clear to the ancient Egyptians, a god of solar hot water! And a completed Hapy-Horus project will make the archaeologists who periodically occupy the Hoffman house Happy indeed.

Pity the poor archaeologist who, after a long hot day in the field, comes home to relish a warm (if not hot) shower, but must first visit the patio to gather a Sun Shower plastic bag that has been heated by the morning's sun, hang it on a nail in one of the bathroom shower stalls, squat on the floor, and sparingly dispense hot water on his/her body. If an inconsiderate colleague has failed to refill his/her bag from the prior day, the poor archaeologist at the end of the afternoon can only have an invigorating cold shower.

Art Muir and a Sun Shower.

We first mentioned the Hapy-Horus project in the 1998 issue of *Nekhen News*, when we proposed adding a solar hot water system to the then unfinished "new wing" of the Hoffman house. Thanks to the generosity of our Friends, we have been able to get closer to making this suggestion a reality.

In 1998 and 1999 very significant progress was made in completing the new wing on the rudimentary foundations left by Mike Hoffman. Moreover, it was decided that the new wing should have two additional bathrooms, and provisions were made in the design to accommodate a solar hot water system.

In 2000, we really got busy. Two more bedrooms in the new wing were completed and the exterior was given a plaster coating, whitewash, and a delightfully decorative trim. We also installed sewer lines from the new, but still unfinished, bathrooms to the location of a new septic tank.

$o what do we need now to finish the task? You gue$$ed it—we only need money to pay for the purchase and construction of a 300 liter solar hot water system that will be provided by a supplier in Cairo. In 1998, we installed a very effective solar electric energy system that completely changed the culture and efficiency of the work crew. With your financial support, in 2001 we will be able to complete the installation of the solar hot water system, which will result in another significant cultural change. When you renew your membership, please earmark an extra contribution to help support the Hapy-Horus project one more time (see the membership form on the next page).

The new wing at Hoffman house and part of the dedicated crew. Crew members from left to right: Ed Johnson, Art Muir, Jane Roy, Will Schenck, Thomas Hikade, Debbie Darnell, Dawn Youngblood, Ethan Watrall, Lamia El-Hadidy, and Renee Friedman.

Help the Hierakonpolis Project: Join the Friends of Nekhen

Perpetrator: K. Park

Hierakonpolis is a site intimately associated with the birth of the Egyptian state at about 3100 BC. The largest Predynastic site still extant and accessible anywhere in Egypt, Hierakonpolis is continually providing exciting new glimpses into this formative—and surprisingly sophisticated—age.

The Hierakonpolis Expedition is a long established research project investigating the origins of Egyptian civilization. Since 1967, archaeologists and scientists have systematically explored the settlements, cemeteries, and temples of this rich site in an attempt to better understand the cultural and environmental processes that transformed a land of farming, herding, and fishing villages into the world's first nation state.

The Hierakonpolis Expedition staff is drawn from colleges, universities, museums, and private walks of life throughout the United States, Britain, Egypt, and the world—professionals who have been working together in a cooperative scientific endeavor to produce well over 30 years of exciting discoveries.

Friends of Nekhen

Nekhen is the ancient Egyptian name for the site of Hierakonpolis. The Friends of Nekhen is a group of concerned organizations and individuals, scholars and lay persons alike, which is helping the Hierakonpolis Expedition to continue its work and achieve its goals. In return for their support, Friends of Nekhen will receive the yearly members' newsletter, NEKHEN NEWS, which describes and illustrates the Expedition's latest discoveries and accomplishments. Membership in the Friends of Nekhen also entitles you to special travel arrangements with Expedition tours and reduced rates on Egyptian Studies Association publications. *Your help is needed* to achieve the project's goals of excavation, preservation and publication. Site report publication and resumed excavations are the current priorities. Your contribution (tax-deductible in the U.S.) will support important research that might not otherwise be possible.

Hierakonpolis Online

The Hierakonpolis website is designed to be a major source of information about the expedition, the history and prehistory of the site, and about the Friends of Nekhen. Here you can track progress as it happens, view the important and exciting new discoveries made each season, get to know the staff, and more. Keep your eye on www.hierakonpolis.org!

Special contribution for

The Hapy–Horus Project

(see article page 30)

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Tambourine ladies in the tomb of Hormose.

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Finely chipped flint giraffe from the cemetery at HK6.

Photo: Y. Kobylecky

Dancing girls in the tomb of Hormose.