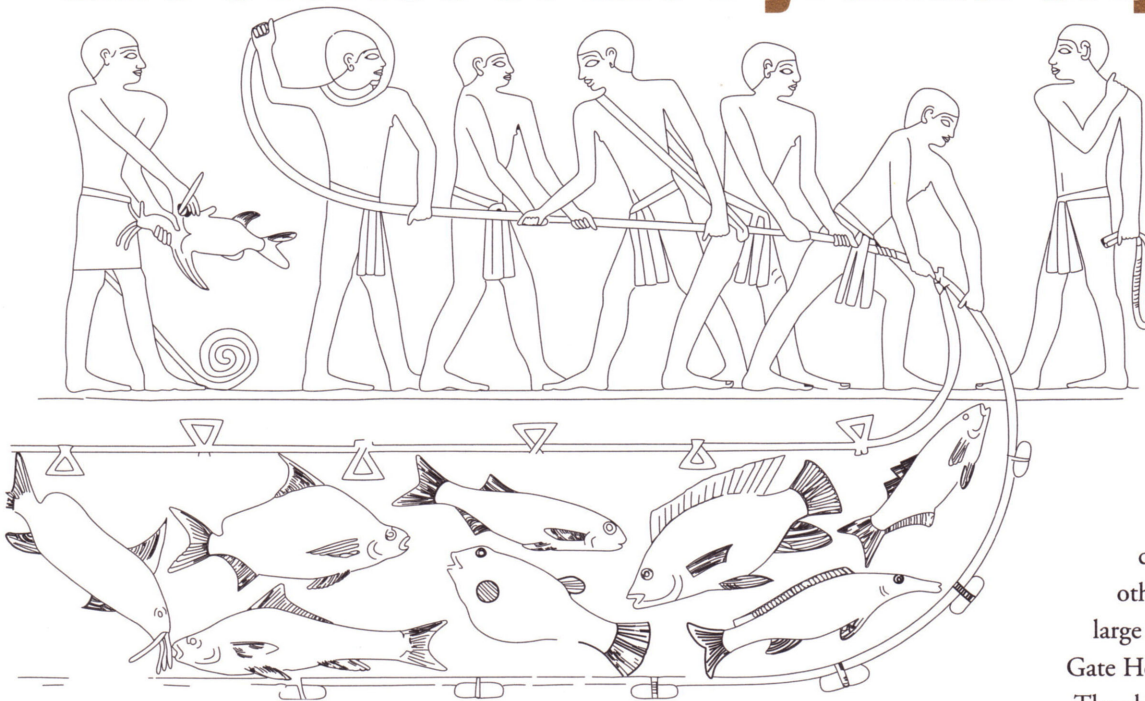




Life Stories of the Pyramid City Unfold



Scene of drag-net fishing from Akhet Hotep's tomb, 5th Dynasty, Sakkara. Net weights, similar to those we found at Giza (see below), are tied in tight loops around the bottom of a net, while floats keep the top of the net above water. The fisherman on the far left is holding a catfish.

the highest ratio of sheep/goat to cattle was found in Gallery III-4, the one gallery we completely excavated. The "costly" cattle/perch combination, on the other hand, is more abundant in the large houses, such as the North Street Gate House, and in the Eastern Town.

The chipped stone artifacts lend credence to the cattle story. According to our lithics analyst Cordula Werschkun, the North Street Gate House produced large numbers of flakes from sharpening blades and knives, what you might expect in a place where cattle were butchered. In Old Kingdom tomb scenes in which cattle are being slaughtered (see page 4)

the butchers have rods attached to their kilts by

a strip of cloth or rope. They sheath the rod in the back of their kilts like a gun in a holster, and when they need to sharpen their knives, they pull it out and use the end to push off small retouch flakes.

(Continued on page 4)

During our Millennium Project at Giza over the last four years we barely had a chance to catch our breath, let alone see what our finds might reveal. But our recent winter-spring 2003 season was time off from clearing, mapping, and excavating in order to study and analyze our material and prepare it for publication in a monograph series.

In this issue of AERAGRAM we offer some preliminary findings that emerged from our enormous trove of artifacts, drawings, and data.

Fine Foods and Workmen's Fare

Richard Redding, our faunal analyst, has commented in the past on the enormous quantities of cattle bone at our site. This season he found more to the story: cattle, the most desirable and costly-to-produce meat, often occurred with Nile perch, the most "expensive" fish to procure. Caught

one fish at a time in the deep channel of the Nile with a line and copper hook (see right), perch was a labor-intensive catch.

In contrast, catfish, Giza's "cheap" catch, could have been harvested in great masses just after the Nile flood. Catfish congregated for spawning in the shallow waters inundating the floodplain basins. Fishermen, including those from Giza, probably used drag-nets, which are often shown in tomb scenes, such as the one above. We found four large limestone fishnet weights like those seen in this relief. Weighing 3.2 to 3.7 kilograms, the weights (see right) had to be heavy to stabilize large nets full of swimming fish.

Paralleling the "expensive" cattle/perch combination, the "inexpensive" catfish occurred at our site with the "cheaper" meats, sheep and goat, especially in the galleries where the workmen lived. Small livestock were apparently laborers' fare since



Copper fishhook and fishnet weight from Giza. 3/4 and about 1/4 actual size, respectively. The rope that attached the net weight to the drag-net went around the groove in the center.

Norton Disk Doctor Checks out Giza



Mark Lehner (left) took Peter Norton, AERA board member and creator of Norton Utilities software, on a site tour during February. A test trench, SFW-1 stands open behind them.

We were pleased to have AERA board member Peter Norton, developer of Norton Utilities software, with its "Disk Doctor" tool, take time out of his busy schedule to visit us for two days in February and see our work. We climbed the Maadi Formation knoll, Gebel El-Qibli (Southern Mount), above our site on the west, and looked out over the pyramid plateau with an overview of the quarries, the wadi through which the pyramid builders brought non-local material, and the possible location of a harbor. We saw the Wall of the Crow, the Workers Cemetery excavated by Dr. Zahi Hawass, and our site. We looked at the excavation areas, so meticulously opened and cleaned under the direction of Mohsen Kamal, to serve as an open reference "book" for us during our analysis and report writing. It was gratifying to be able to give Peter a first hand, "ground truth" look at the work and results that he helped so much to make possible. He was just in time to witness new walls appearing in a test trench, the exception to our "no new excavation" season (see article on page 6). ~ Mark Lehner

Thanks to All who Made the Publication Season Possible

Our Generous Donors

Ann Lurie's extraordinary grant on behalf of the **Ann and Robert H. Lurie Foundation** launched our Millennium Project and helped support our publication season. **David H. Koch** has made our work possible since our first season in 1988-'89, and his major contribution allowed us to go forward with Ann's initiative. **Peter Norton** and **Jon Jerde** provided additional major support for our Millennium Project.

Our accomplishments would not have been possible without the loyal support of **Robert Lowdermilk**, **Glen Dash**, **Matthew McCauley**, **Bruce Ludwig**, **Ann**

Thompson, **Fred and Suzanne Rheinstein**, **Sandford and Betty Sigoloff**, **Victor and Nancy Moss**, **David Goodman**, **Marjorie Fisher**, **Alice Hyman**, **Don Kunz**, **Richard Redding**, **Lora Lehner**, **Bonnie Sampsell**, **Art and Bonnie McClure**, and **Charles Rigano**.

Our Colleagues

We could not have carried out this project without the help of our Egyptian friends and colleagues. We are grateful to **Dr. Zahi Hawass**, Undersecretary of State and Secretary General of the Supreme Council of Antiquities.

We thank **Mr. Adel Hussein**, Director of Giza and Saqqara, for his kind assistance. For his help, we are grateful to **Mr. Mansour Bureik**, Chief Inspector of Giza. We thank **Mr. Ahmed Eiz** who served as our inspector in the storeroom. I am grateful to **Larry Stager**, Director of the Harvard Semitic Museum, and **Gil Stein**, Director of the Oriental Institute, University of Chicago, for the support of their institutions. Thanks to **Joe Greene** and **James Armstrong** for their help. I am grateful to **Peggy Sanders** of Archaeological Graphic Services for the computer graphics that resulted in our overall site map.

In Memoriam: *Shehat Abd al Basat*

It is an enormous loss to our project and to many of us personally that Shehat Abd al Basat, our *Reis* ("Overseer") of workers since the fall of 2000, will no longer be with us. In May he passed away suddenly in his Luxor home.

Shehat took over from his brother, Ahmed, who joined our project for the winter-spring 2000 season as our *Reis* along with his crew of Upper Egyptian (*Saidi*) workmen.

Until then we had been using local workers. But when we started the marathon Millennium Project in the fall of 1999, Mohsen Kamal, archaeologist and team member, highly recommended the Abd al Basat brothers and their dedicated team which included many neighbors and family members from a village on the west bank of Luxor, near the famous Medinet Habu Temple. He extolled their skill and effectiveness which he had seen while working with them in the Valley of Kings on the Amarna Royal Tomb Project. One *Saidi* could do the work of ten of our regular workmen, added Nubie Abd al Basat, brother of Shehat and Ahmed and one of our team members. He has worked with us for many seasons, most prominently as assistant to David Goodman, our surveyor.

I decided to give the *Saidis* a try. So at the beginning of our 2000 season, *Reis* Ahmed showed up with workers who camped out right on our site. They proved to be every bit as good as their reputation.

When *Reis* Shehat took over from Ahmed in fall 2000 the work improved even more. Tall, stately, and confident in his *galabaya*, Shehat was not as stern as Ahmed but just as strict in his own approachable manner. It was his very bearing that commanded the respect of the workers and our team. He was friendly to all, sometimes sharing tea and meals with our team members. Yet, Shehat always insisted on proper decorum during work. Once, when he thought his workers and the archaeologists alike were talking too much during work, he went around announcing, "This is not a cafeteria!"



Tall and stately, Reis Shehat, on the far right, supervises our Saidi (Upper Egyptian) workmen as they clear sand out of the Great Gate in the Wall of the Crow. Spring 2001

Shehat was in charge of the final clearing of the overburden, right down to the pristine surface of the ancient ruins of our Lost City of the Pyramids. Having extensive experience in the Valley of the Kings, he found no task was too great. Heavy lifting jobs included dragging many-ton stones away from the end of the gigantic Wall of the Crow and clearing old car parts from the huge trenches left by backhoes and front end loaders.

Yet, at the drop of a hat, Shehat could switch the team to the finest and most sensitive archaeological excavation. It was a marvel to see how he directed the operation of gently scraping and brushing the ancient surface. He would line up his men, each with trowel and brush, and, in unison, peel back just enough of the sand in the wrinkles and pockets of the surface to reveal walls, ashy chambers, and courtyards. In this way, working quickly in salvage mode behind Mohammed Musilhi's big red loader and two dump trucks, Shehat and his team revealed the outlines of the Eastern Town.

Shehat was no less careful when and if ancient walls or other structures did not appear. In the northeast corner of the site, he found only mud under the clean sand. Sensing its importance, he very carefully cleared back one of the few, or only,

exposures of ancient Nile alluvium—the mark of the annual flood waters reaching our site in the Roman Period. How do we know the date of this flood mud? Because, among other evidence, Shehat very carefully reserved in the uppermost surface of a sequence of sand and mud (flood and dry seasons) a patch of Roman period sherds. Geomorphologist Karl Butzer was amazed at the exposure, part of an archaeological record of environmental change spanning nearly 5,000 years (pre-Old Kingdom to Late Roman Period).

Early in his life Shehat was made famous in Robert Crutchfield's book, *Shehat, An Egyptian*, an idealized biography which borrowed heavily from typifying accounts of the Egyptian peasant. The real Shehat was far more complex, no doubt even then. I knew him as the most skilled *Reis* I have ever worked with in 30 years of Egyptian archaeology, and, increasingly as a friend as we worked together over three seasons. I last saw him in Luxor, when we shared tea in his little shop just around the corner from the Medinet Habu Temple. It was a privilege to work with Shehat and to learn his skills. We will miss him.

— *Mark Lehner*

Life Stories of the Pyramid City Unfold: Big P

(Continued from page 1)

Goats for Gangs in the Galleries?

From the animal bone we can also infer something about life in the galleries. In our last newsletter, we mentioned how each gallery might have functioned as a barracks for a team of young men whose overseer lived in the house located at the rear of the gallery. The team might have been divided into two groups or “sides,” left and right, reflected in the gallery configuration with its two sides divided by the “stylobate,” a bench running down the middle of the gallery. The builders of the New Kingdom royal tombs were divided into sides in their town at Deir el-Medineh.

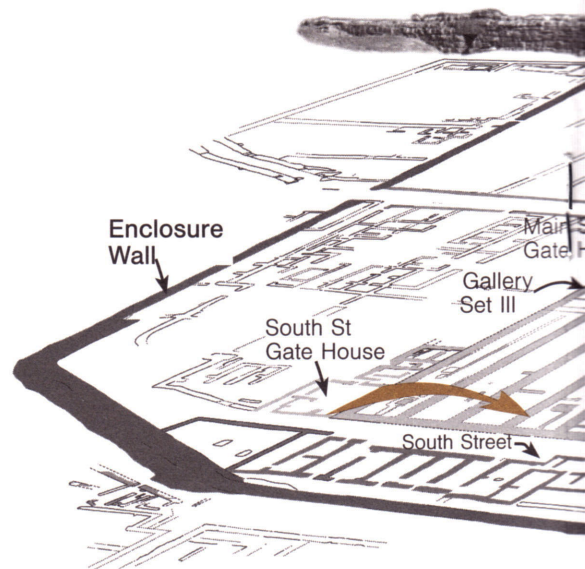
The fact that each gallery has rear chambers with evidence of cooking, roasting, or baking, might indicate a degree of self-sufficient production within a system of provisioning. The double-gangs might have received a sheep, or more often a goat, either as standard rations, or as part of the numerous feasts so well attested in the tomb inscriptions (feasts of the decades, months, half months, the New Year, and of gods like Thoth, Sokar, and Min). The animal would most likely have been delivered on the hoof and slaughtered immediately. We have to remember there was no refrigeration,

so meat would have been freshest—and safest—if slaughtered on site. And it appears that livestock were butchered right at the galleries since there is a high proportion of non-meat bearing bones (knuckles, jaws, etc.) compared to those bearing meat (long limb). The ratio is very close to what we would expect if the butchering took place near where the bone was excavated. Had the animals been slaughtered elsewhere we would expect to find only the bone that would be included in a cut of meat such as the leg bones.

The broad streets fronting the gallery entrances could have been where the small animals were butchered. Perhaps the drain or channel that we found running down the center of Main Street was used for cleaning up after slaughter.

Houses as Filters

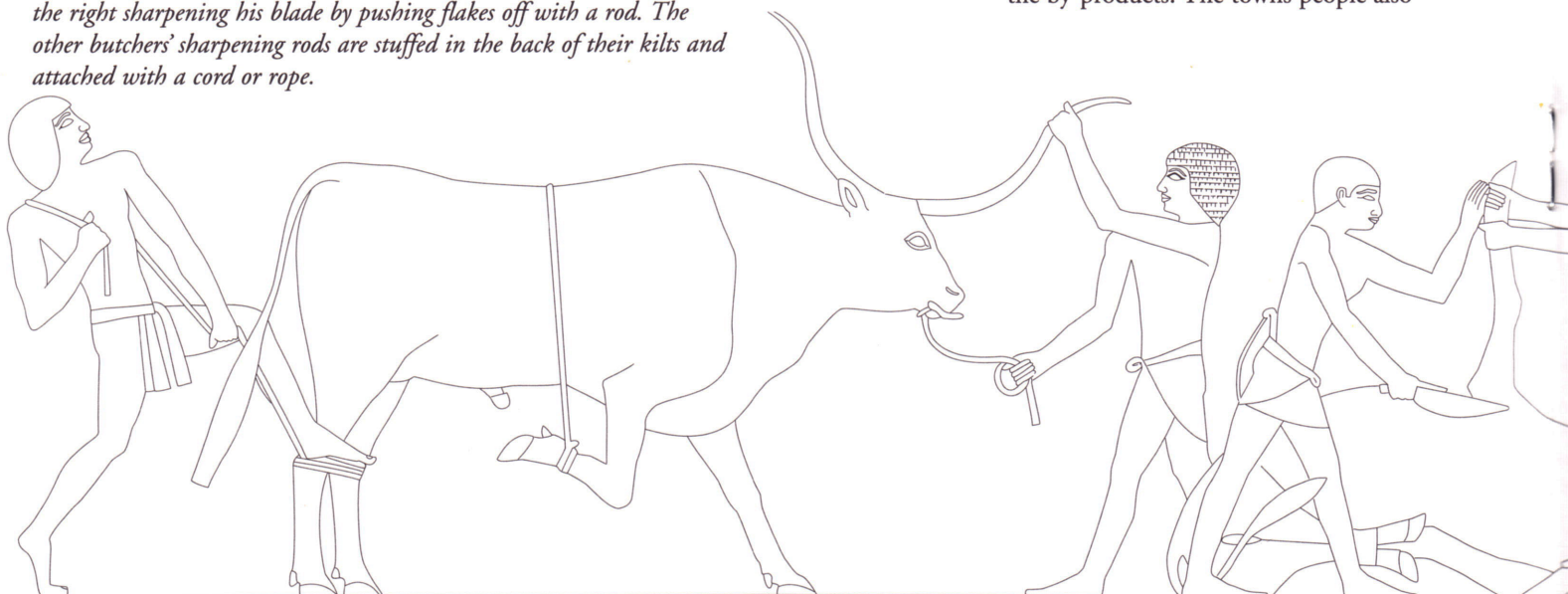
The residents of the houses, who enjoyed cattle and perch, also ate a richer assortment of plant foods. Our archaeobotanist, Mary Anne Murray, found a greater variety and density of plant remains in these areas than elsewhere on the site. Overall it appears that the people living in the houses along the edges of the Gallery Complex lived a better life than those within.



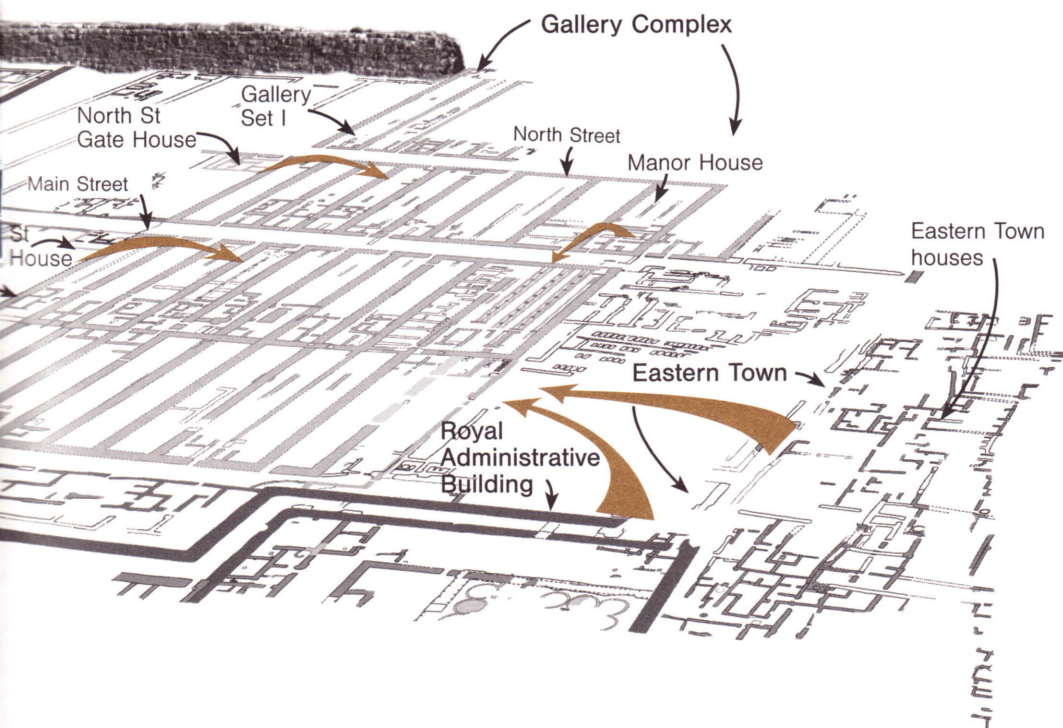
The Lost City of the Pyramids. The tan arrows indicate the movement of goods through house “filters” into the Gallery Complex.

But their own diet may not have been the only reason why the house residents left behind more plant remains. They may also have been processing and filtering foodstuffs going into the galleries. In general the density of plant remains at Giza is extremely low compared to other sites. The higher densities in the houses, highest in the Eastern Town, suggest that the inhabitants carried out the initial processing of plant foods, such as removing the hulls from emmer wheat grains, and left behind the by-products. The towns people also

Butchering cattle, Ty's tomb, Sakkara, 5th Dynasty. Note the man on the right sharpening his blade by pushing flakes off with a rod. The other butchers' sharpening rods are stuffed in the back of their kilts and attached with a cord or rope.



House Filters



may have been grinding grain—stored in the silos of the administrative building—for flour for the dozens of bakeries flanking and within the Gallery Complex. The bakeries produced very little evidence of cereal by-products and most of the querns and grinding stones come from the Eastern Town or the east side of the adjacent Royal Administrative Building.

The food processing carried on in the houses might be seen as “normal” village activities, in contrast to the unique tasks of pyramid building that probably occu-

ried the laborers bunking in the Gallery Complex. The Eastern Town was also typical of a village in that the residents ate pig—more than elsewhere on the site. Pig was not a high-status animal, but, raised in villages as a cottage industry, it is more characteristic of village life than of an administrative complex.

A “Normal” Town?

It could be that we have a large town or city that was “normal” for its time—or for any ancient Egyptian settlement of the Old

Kingdom—except that it acted as a filter and support for this highly unusual, specialized settlement within the Enclosure Wall. The Gallery Complex would have been the equivalent of the towns built for massive construction projects, such as the Hoover Dam or the Aswan High Dam.

Next season, when we excavate the rest of the Royal Administrative Building after the soccer field is moved (see page 6), we will have the opportunity to learn more about how the royal house administered this massive construction project, and the broad infrastructure that supported it.

AERAGRAM

Volume 6 Number 2, Fall 2003

Editor

Wilma Wetterstrom
Harvard University

AERAGRAM is published by AERA, Ancient Egypt Research Associates. It reports on ongoing research and other developments on the Giza Plateau for friends and supporters of AERA and others interested in ancient Egypt.

Ancient Egypt Research Associates

PO Box 382608
Cambridge, MA 02238-2608

E-mail: GPMP98@aol.com

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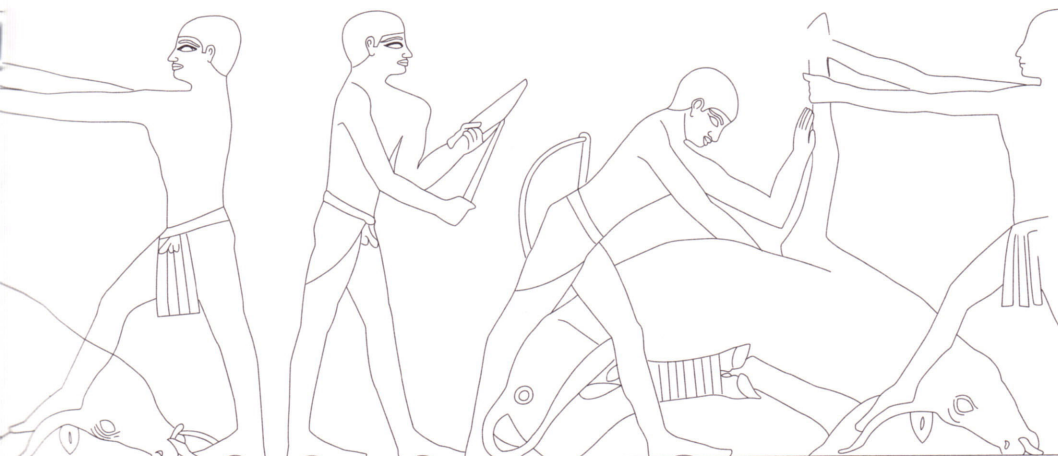
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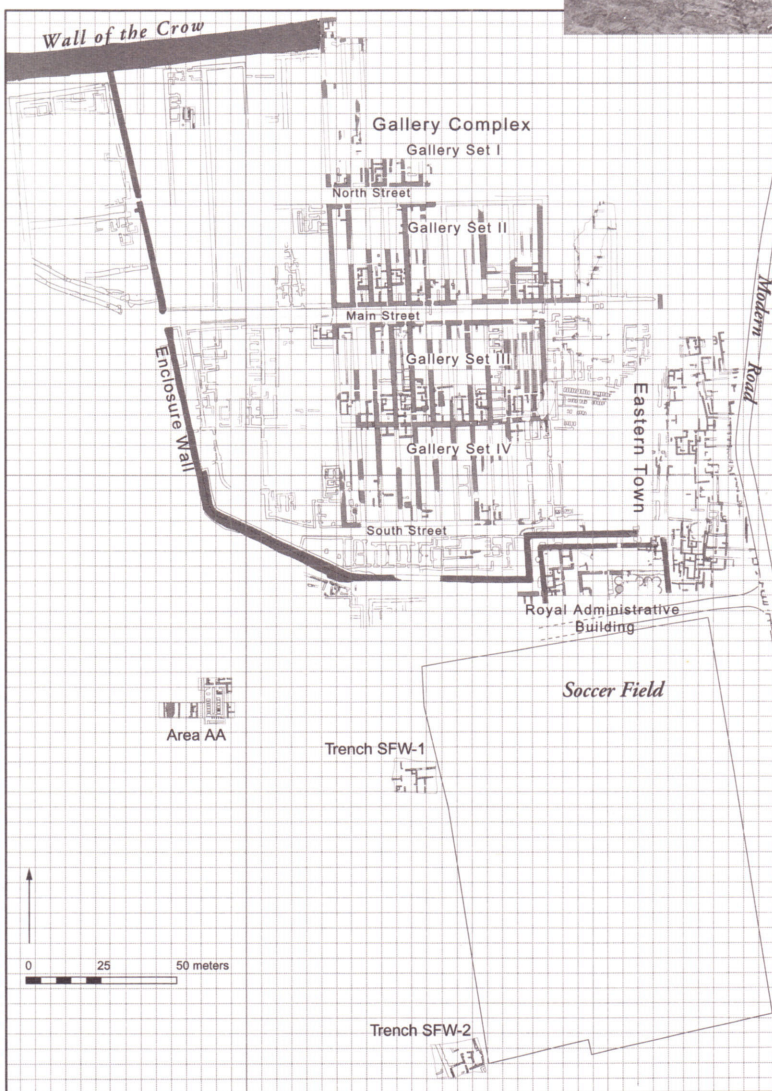
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A Non-Excavation Season 2003 Dig: On the Trail of the Lost City


This was to be a study and publication season—no excavation. But Giza's Chief Inspector, Mansour Bureik, asked us to put in test trenches in two places along the western side of the soccer field, which sits immediately south of our site, to determine if there was settlement in the field. Last season, after we discovered the huge Royal Administrative Building—or rather its northern end—we were certain that the complex continued south under the Abu Hol Sports Club soccer field. The Supreme Council of Antiquities (SCA) recommended mov-



ing the field. To convince the other concerned authorities to carry through Mansour called for the test trenches.

Workers, supervised by Mohsen Kamal, dug the first trench (SFW-1) along the western edge of the soccer field about 80 meters southeast of a large building (Area AA) that we excavated during our first season, 1988-'89. As soon as the overburden was lifted from the 10 X 15-meter square, ancient plastered walls appeared, enclosing rectangular rooms, a courtyard, 2.5 to 3 meters wide, and a small bin. The organization appears to be more regular than in the Eastern Town. Perhaps this was an extramural community (outside the Enclosure Wall around the Gallery Complex) with a more formal layout. Our Area AA building probably belongs to this town.

We dug the second 10 X 15-meter trench (SFW-2) next to the southwestern corner of the soccer field. Here we found a fieldstone wall, 1.50 meters thick, standing high above the surrounding mud mass, and running at a pronounced angle west of north, similar to the Enclosure Wall west of the Gallery Complex. Thinner plastered mud brick walls attach to its east face and form a square court, 5.20 meters (10 ancient royal cubits) wide east to west. Traces of walls show in a wide, shallow depression north of the court. East of the court more mud brick walls could belong to a house, about 5 X 6 meters. In the southwestern corner of the trench a thick ash deposit, with the fieldstone walls, may be part of a bakery.

The second trench (SFW-2) extends the ancient city ruins more than 150 meters south of the southern limit of our excavations up to the end of last season, 2002 (with the exception of isolated Area AA). We now know that ancient settlement extends for a length, north to south, of more than 350 meters, and, with a width of 260 meters, covers more than 9 hectares. 

Above: Site map showing the location of the two test trenches. Above right: Test Trench SFW-1, looking southeast toward the soccer field.

From GPMP to AQMP:

Mapping the Aswan Obelisk Quarries

In January we time took off from our work at Giza to launch the AQMP, the Aswan Quarry Mapping Project. Dr. Zahi Hawass, head of the Supreme Council of Antiquities (SCA) asked for the Giza Plateau Mapping Project's (GPMP) help in mapping the obelisk quarries in Aswan, famous for the unfinished obelisk. Last year the SCA, under Dr. Hawass' direction, excavated nearly 100,000 cubic meters of debris revealing trenches where New Kingdom workmen literally pounded out perhaps as many as five of the largest obelisks ever created, probably for the 18th Dynasty pharaoh, Tutmoses III.

All over the quarry red painted marks and lines remain from the notations of ancient granite workers and surveyors. Every stage of granite working is represented from the Bronze Age (New Kingdom)—when workmen removed obelisk-shaped masses from the bedrock by pounding deep trenches out of the granite with dolerite hammer stones—to the Iron Age—when the quarry men used small wedges to split large pieces of rock.

A good, large-scale map was needed to document all the cultural features, as well as natural joints, fissures, and major outcrops. These were the geological realities that the ancient quarry men so skillfully understood in order to extract obelisks as long as 32 meters, weighing up to 500 tons, without cracking and breaking, after scores of laborers had spent months pounding them out of the solid bedrock. With our GPMP team's extensive mapping experience we were perfectly suited to carry out the work.

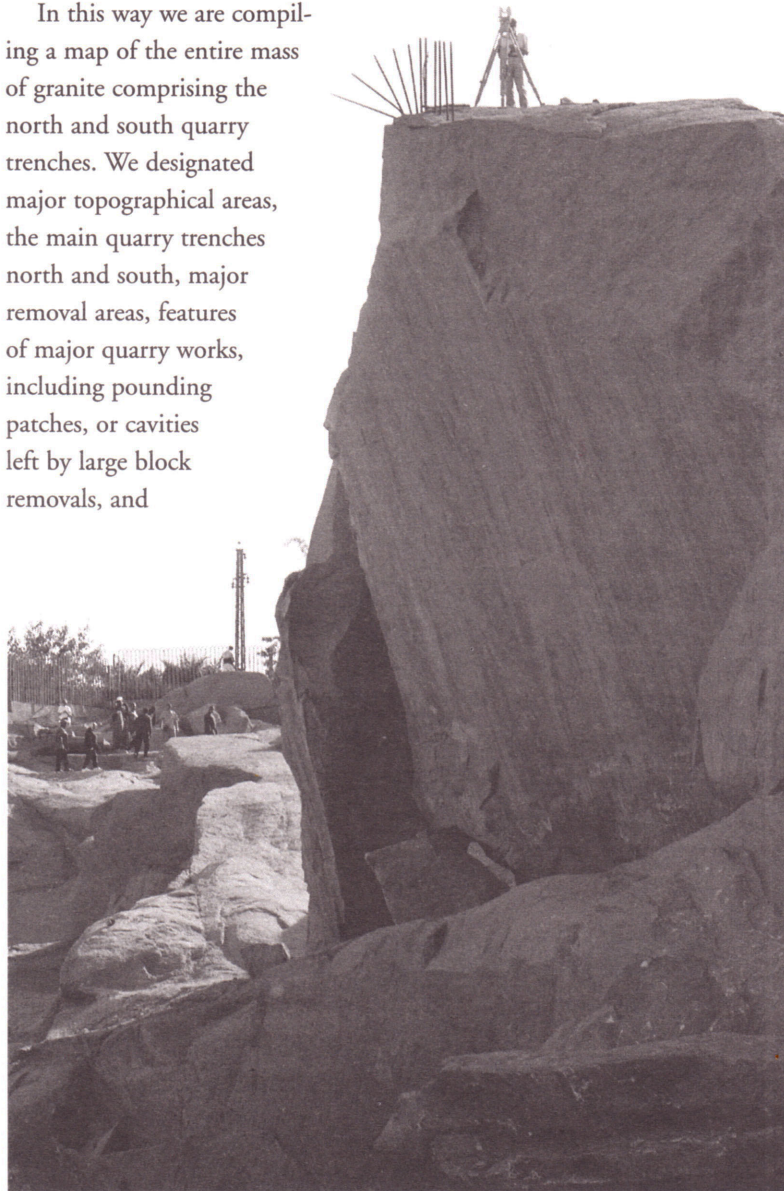
Ana Tavares designed the survey and Tobias Tonner served as computer whiz and data base manager. With Stephanie Durning and myself as foot soldiers (actually as sketchers and point takers) we went to Aswan with two Total Stations (electronic theodolites and distance measurers). We were joined for a while by Mohsen Kamel and Mary Anne Murray. We had the good fortune to work with Inspectors Adel Kelani and Mohammed Abd al-Basat. Our task was to capture all the details of a boulder-strewn series of quarried areas comprising 250 X 150 meters, the size of our whole cleared area at Giza, in only three weeks.

Our approach was to sketch large tracts of the quarry by eye, somewhat to scale (about 1:200), but measured only by pacing. Using a survey control network of points already established by SCA surveyor Mohammed Ali, we "shot" hundreds of points on the sketches with the Total Stations—outlines of boulders, major corners, trenches, ancient pounding patches, and "spines" left where large blocks and obelisks had been snapped off.

Back in our "office" at the Cleopatra Hotel Tobias printed out the points against the local Aswan grid established by the Swiss-German archaeological mission. We then connected the dots on the basis of our sketches, bringing them true to scale.

Meanwhile the inspectors continued to map the detailed masonry features at 1:50, as they had been doing months before we arrived. Their excellent maps greatly advanced the work. We could reduce them by half to 1:100 and lock them into our overall map, which saved us from having to plot such minute detail.

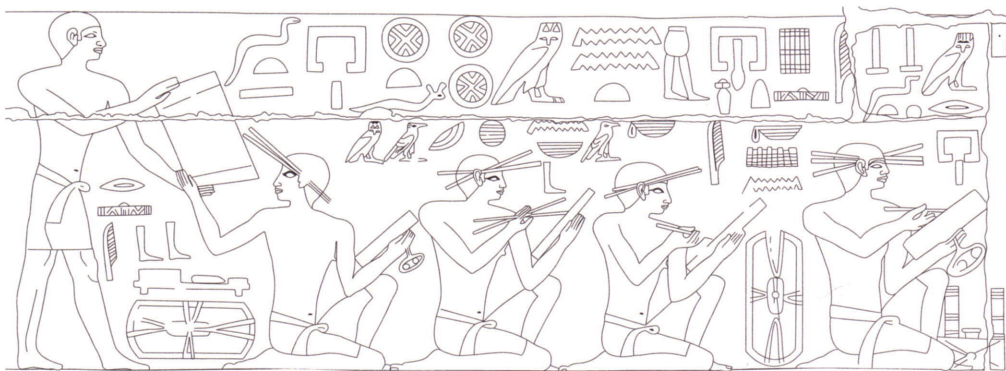
In this way we are compiling a map of the entire mass of granite comprising the north and south quarry trenches. We designated major topographical areas, the main quarry trenches north and south, major removal areas, features of major quarry works, including pounding patches, or cavities left by large block removals, and



Ana Tavares stands with the Total Station high above the obelisk quarries shooting in points for the survey.

specific contexts such as exploratory "proofing holes" or spines where a block was snapped free.

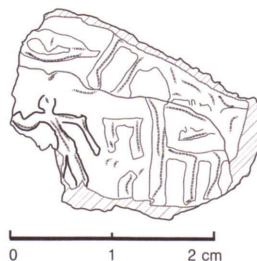
We are still working on drawing up the overall map at scales of 1:100 and 1:200. When it is complete we will deliver the map to the SCA to use in developing the site for tourist visits, as well as for further archaeological documentation. *— Mark Lehner*



Scene of accountants from the mastaba tomb of Khafekhufu in the Eastern Cemetery of Giza. The text reads, "Steward of the council, accounting for the reverted offerings which come from the cities of the funerary estate." John Nolan, the translator, notes that the signs to the far right, which could not be read, might have given the first two words a different meaning. In our Royal Administrative Building there may have been accountants recording transactions.

Sealings Leave "Paper" Trail

The enormous quantity of mud sealings (used to seal and label jars and various goods) in the Royal Administrative Building suggest that storage and redistribution probably took place there. During our publication season John Nolan, our epigrapher, found more evidence in three sealings that do not occur anywhere else on the site. One sealing might be read as "great man of the house" (see right). The other two have a "striding man," a sign for an important person. The three sealings taken together may indicate that goods shipped from overseers were coming into the site through the



Sealing 1742, "great man of the house" (?). The figure on the left side of the sealing is "the man walking with a staff" glyph (shown to the left). Several translations are possible: *ur-* "old man" or "great one," *sr-* "official" or "noble," or *smsw-* "elder." The *n*-shaped glyph to the right might be *per-* "house."

Royal Administrative Building. But this is still highly speculative, John cautions.

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