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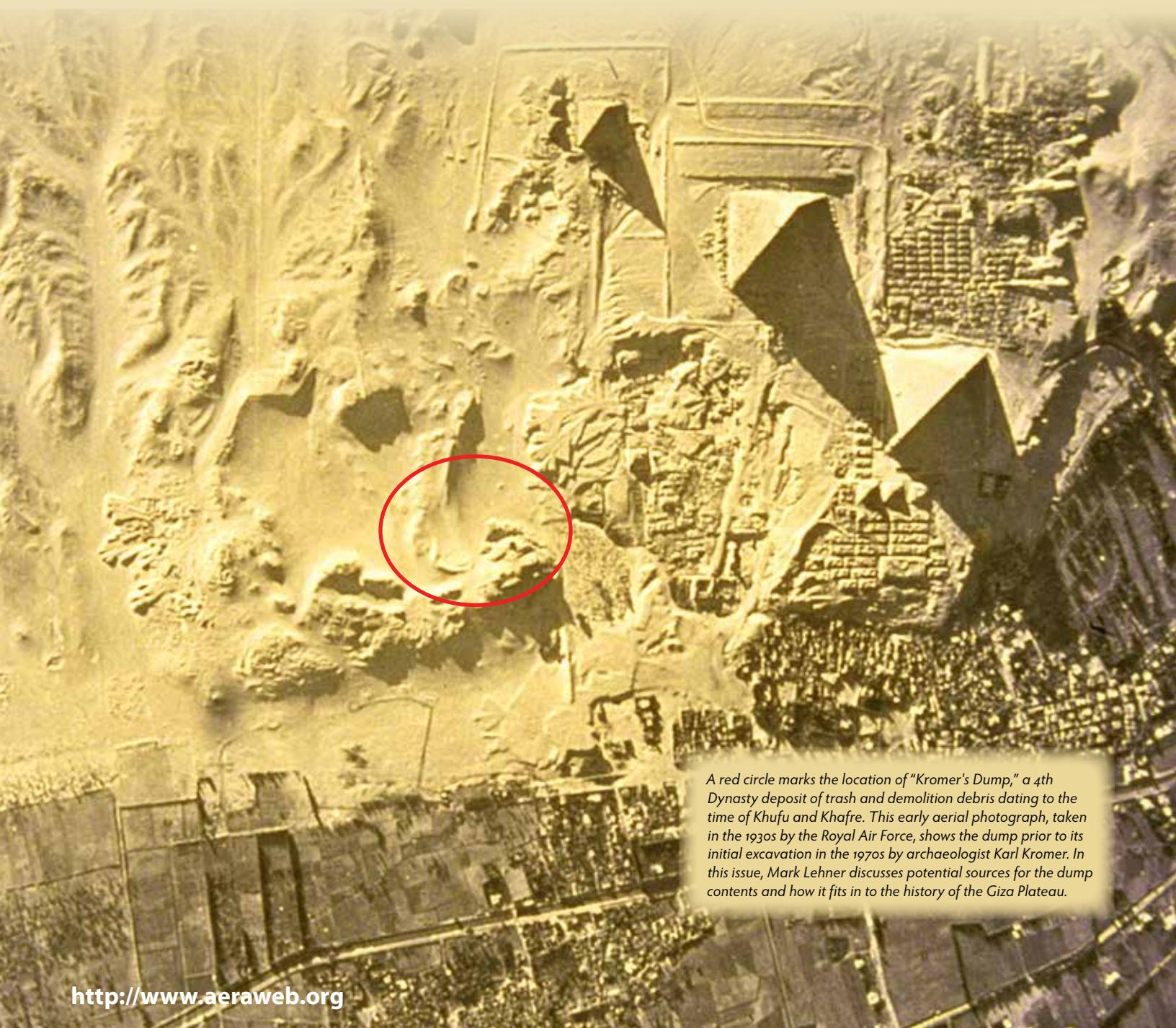
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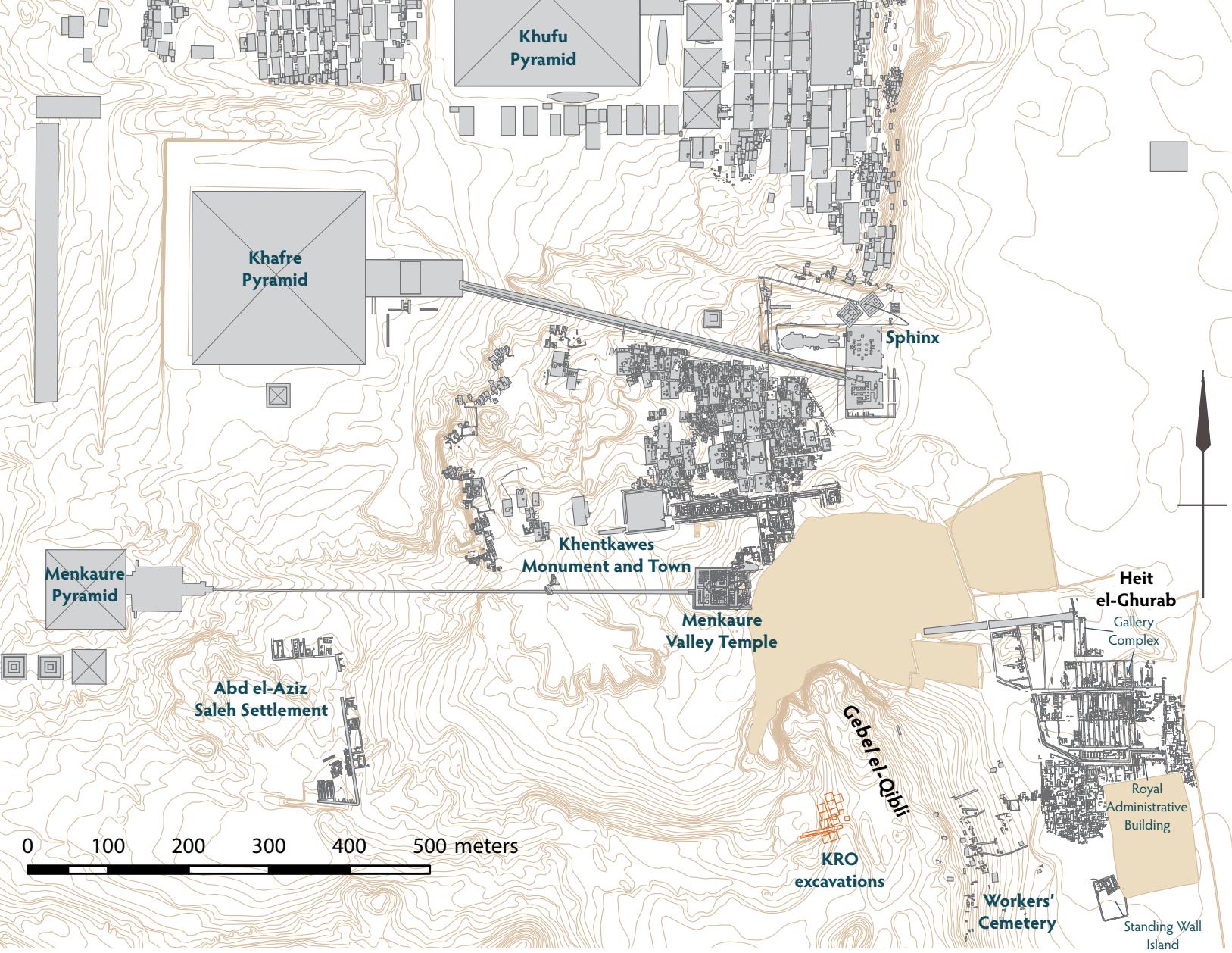
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Kromer in Context: Biography of an Ancient Dump

Here, in an edited version of one of his field dispatches, Mark Lehner¹ lays out his initial thoughts on the context of the Kromer Dump, a 4th Dynasty demolition and trash deposit high on the southern Giza Plateau, where AERA excavated in Spring 2018. His examination of the geologic and settlement history of the area, combined with personal observations from decades of fieldwork, provides background for this fascinating ancient deposit. Mark walks us through potential sources for the debris in the Kromer Dump and where on the plateau those buildings may have originally been located.

We are on the track of a massive puzzle that places a palace into our picture of the 4th Dynasty at Giza, perhaps dating to the time of Khufu and Khafre. Last season we found pieces of the puzzle in the Kromer Dump (KRO).² As we painstakingly put these pieces together, we began to see a picture of the palace, its possible location and size. But before we can look in detail, it is necessary to give more of the context where Karl Kromer, an Austrian prehistorian, excavated a pyramid builders' massive demolition dump between 1971 and 1975, and where we excavated during Season 2018 (see map above).

Some 4,500 years ago, workers carried baskets full of trash up the Gebel el-Qibli (Southern Mount)—the escarpment run-

ning along the western edge of the Heit el-Ghurab (the Lost City of the Pyramids; HeG), separating it from the higher levels of the Giza Plateau (see map above). The trash included everything from hair balls to fish hooks and demolition and quarry debris, including pieces of walls, hard-trodden floors, roofs, painted plaster, hearths, and clay sealings impressed with hieroglyphic titles of high-ranking officials. One sealing mentioned the *setep za*, one of several ancient Egyptian words for “palace.” Were we in fact finding pieces of a palace that the pyramid builders demolished? If so, could it have been near the upper slope of the Gebel where they dumped this material?

Right: Season 2018 workers carry equipment up the slope of the Maadi Formation escarpment to "Kromer's Gate" through the "Crags" and to the dump site on the other side of the ridge. Photo by Sayed Salah. Below: One of the Crags/Ayn Moussa blocks, frozen in position when it was slipping into a Pliocene shoreline two million years ago. Photo by Mark Lehner.



Kromer's Gate: Up Through the Crags

At the beginning of Season 2018, we hypothesized that workers brought trash from the HeG site to KRO when Khafre ordered its refurbishment while he was building the second pyramid at Giza. We hope to test the idea the HeG hosted Khufu's infrastructure for building the first pyramid, the Great Pyramid of Giza. Khafre rebuilt the site to create the footprint that we have mapped, where people lived and worked from Khafre's time through the reign of Menkaure, who built the third pyramid of Giza.

Why would anyone order workers to carry tons of trash 115 feet (35 meters) up the Gebel to dispose of it? To us it seems a tad absurd. Whatever the wisdom of the person in charge, it is a task eminently doable for the machine-like worker-synchonies that ancient Egyptian authorities could mount to shave smooth acres of pyramid casings or, a millennium later, cut gigantic obelisks from granite bedrock.

It was easy for us in 2018 to visualize this trek, because our workers and team members had to make it every morning, and like Khafre's workers must have done 4,500 years ago, they shouldered material in baskets (above right) up the Gebel north of the main tombfield of the so-called Workers Cemetery (see map at left), excavated by Zahi Hawass and the Giza Inspectorate in the 1990s. Then our workers moved through "Kromer's Gate," my term for an opening in the dark, craggy rock of the uppermost Maadi Formation ridge, a layer called Ayn Moussa ("Eye of Moses").

The Maadi Formation is named after the suburb Maadi, south of Cairo. The Moqqatam Formation, the plateau on which the pyramids sit, is named after Gebel Moqqatam, which we pass on our way to Heliopolis and the airport northeast of central Cairo. After the Eocene, these limestone layers ran continuously from Giza to these eastern areas until about 5 to 7 million years ago (in the Messinian age of the Miocene), when proto-Nile streams (the Eonile) began cutting the Nile Valley as they rushed north into the Mediterranean basin. Next, about 2 million years ago (in the Pliocene), seawater flooded the Nile canyon. Washing against its western shoreline, right here at southern Giza, this seawater undercut fine sediments and caused the crusty dolomitic Ayn Moussa blocks to separate, tip up, and slip down into the edge of the sea. Arrested in place, these are the Crags (above left). Over the forty years that I have walked the Giza Plateau, I have always enjoyed passing through a little valley that runs north-south between two rows of the Crags. If, 45 centuries ago, workers carried baskets of debris from the HeG to the Kromer Dump, they would have come through an opening in the Ayn Moussa ridge; here, "Kromer's Gate" (above right, and next page, top), aligns with the northern side of Kromer's excavation.

Unexpected Angle: Dumping from the West

The idea of workers carrying baskets of demolition debris from the HeG to the dump worked fine in our imaginations, until we cut into its ancient layers in 2018 (next page, top). For

"Kromer's Gate," an opening in the hard, crusty Ayn Moussa ridge along the top of the Maadi Formation. The gate aligns with the northern edge of the crater that Kromer created with his excavations. Advanced AERA-ARCE Field School survey students Mohamed Helmi and Mohamed Abd el-Maksud survey the gate with their teacher, Mohamed Abd el-Basat.

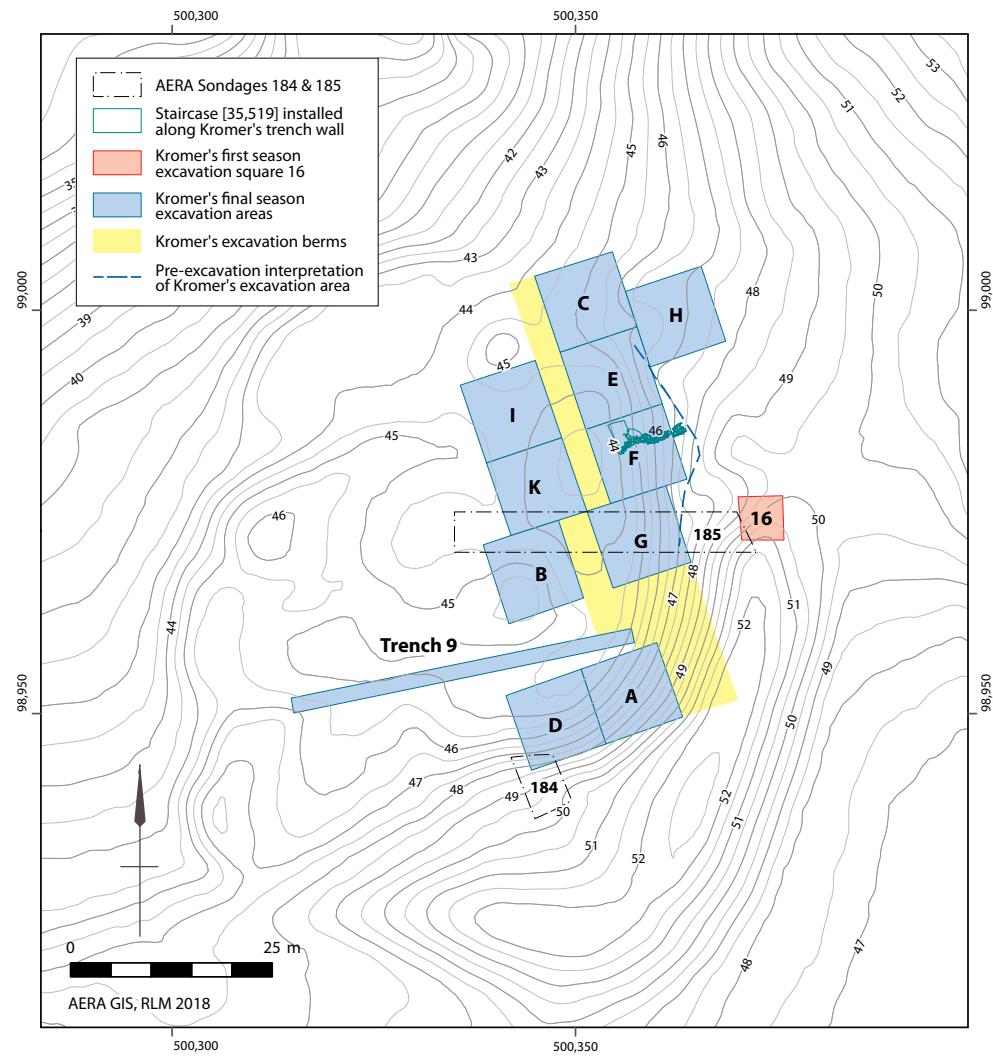


our hypothesis, the "tiplines"—lines of streaked sediment seen in the section wall of our trench, created by individual basket dumps of material—were just wrong. We began at the high eastern end of our Sondage (trench) 185 (map at right), beyond the eastern rim of Kromer's crater, just beyond where he had excavated. We saw that the angle of repose for the spilt trash sloped down to the east.

If 4th Dynasty workers had come from the east, through Kromer's Gate, the tiplines should angle down to the west. But there they were, clear as could be, all sloping uniformly at a steep angle down to the east. The workers must have trudged up from the west, the opposite direction of Kromer's Gate and the HeG.

Go West, Young Man: Kromer and the Quarry Crush

So, if Khafre's workers came to dump on the Gebel el-Qibli from the west, what do we find west of the Kromer site? We find quarrying and "quarry crush"—broken, crushed, and powdered



The eastern end of 2018's Sondage 185 showed "tiplines" left when workers emptied their baskets from the west. Here I "ghosted" workers onto the southern section of our Sondage 185 to show how the ancient workers dumped from this direction. Photo by Mark Lehner.

Below, right: The rounded, quarried, western face of the Gebel el-Qibli. Thin layers of limestone at the top interleave with tafla and gypsum-rich layers. The sequence was naturally fragmented (brecciated) in geological times. Photo by Mark Lehner.

Facing page: map of the Kromer area, showing the location of his original work and AERA's 2018 work in Sondages 184 and 185. Map by Rebekah Miracle, AERA GIS.



limestone. Workers dumped at the Kromer site during a time of quarrying on an epic scale, and it shows in parts of their dump.

To try to make sense of the unexpected dumping direction, I walked a wide arc southwest, west, and northwest of the Kromer site. As I approached the site from these directions again and again during our eight-week season, I looked for telltale signs of any settlement that could have produced all the dark, silty 4th Dynasty garbage and mudbrick debris we were finding in our trench.

In 2018, pure quarry crush was the first thing we found in the Kromer site, in our Sondage 184 at the top, southern limit of the Kromer crescent (see map at left). And although it sounds like a flavor at an ice cream shop, the name is precise for the powder that quarry workers produced as they separated and shaped limestone blocks from the natural bedrock by chiseling with a wood hammer and a pointed copper chisel, and by pounding with large dolerite hammerstones.

We also found quarry crush at the top of Sondage 185, but here we know it was turned over in modern times, because we found pieces of modern newspaper within it. In fact, ancient, undisturbed quarry crush is abundant immediately to the west of Kromer. But where are the nearest quarries? Immediately northeast and southwest. Northeast of Kromer, the Gebel el-Qibli itself is a quarry (at right). The pyramid builders rounded its northern face as they took its tafla, gypsum, and broken stone for building ramps, embankments, and settlement walls, like the stone enclosure walls of the HeG's Gallery Complex, Royal Administrative Building, and Standing Wall Island (map, page 2).

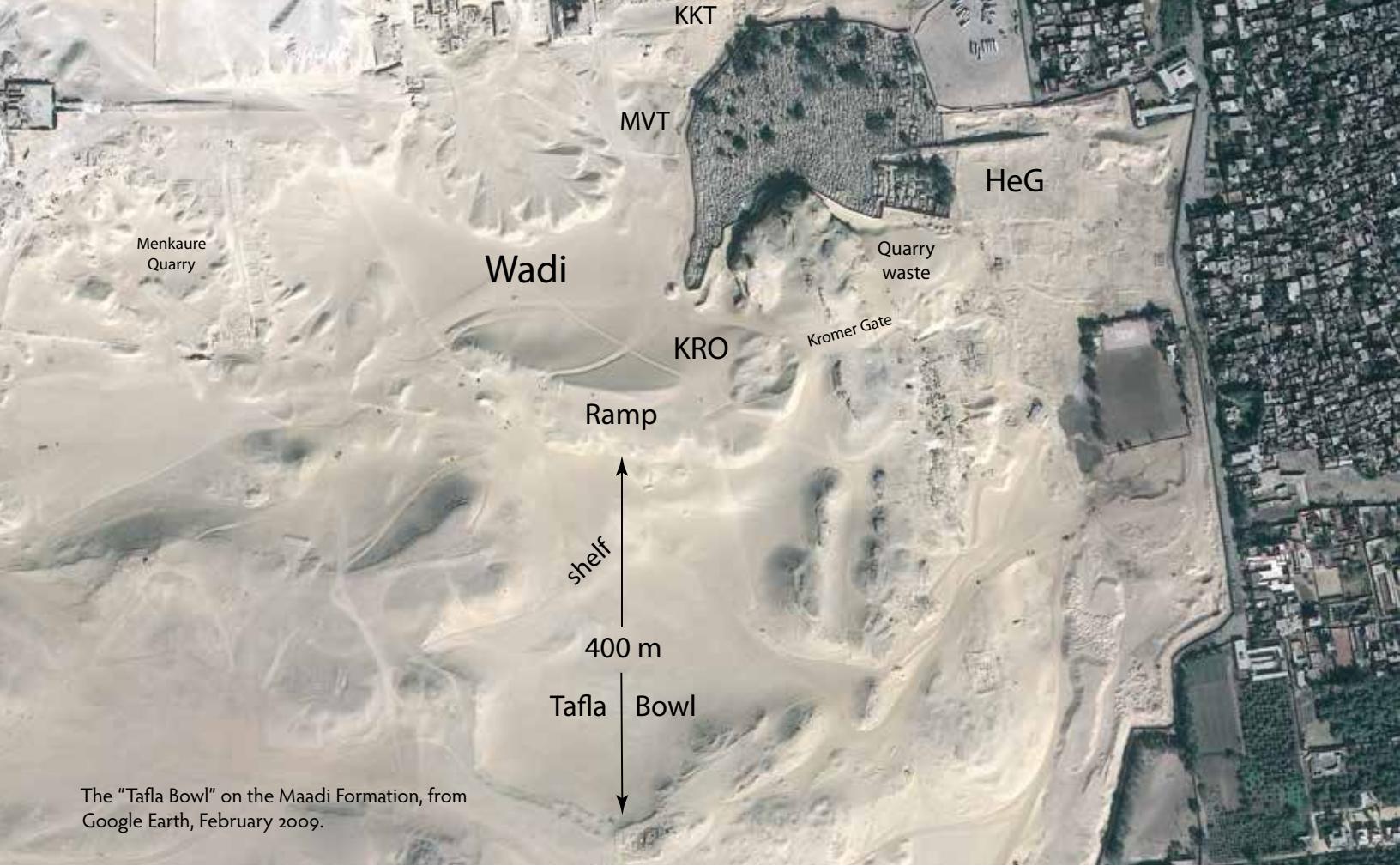
That people quarried the face of the Gebel el-Qibli in ancient times is shown by the huge deposits of quarry waste on the Gebel's eastern slope.³ Members of the Giza Inspectorate exposed this quarry waste in exploratory trenches that they



dug into a kind of shelf on the slope between the upper Maadi Formation ridge and the HeG site. Anyone who takes the most direct line to the Kromer site from the HeG—like our workers shown on page 3—passes between this massive quarry dump and the so-called Workers' Cemetery to the south.

We could think that the Kromer Dump derives from a nearby settlement of quarry workers perched upon the Maadi Formation, maybe right next to the dump site. Perhaps every so often, the occupants dumped quarry waste, and then waste from their everyday living activities, leaving the intercalated layers that both Kromer and we found (above, top).

But items like fish hooks and sewing needles belie this scenario. People who fished in the deep Nile channel produced this trash, people who sewed and cooked, and ate roast beef



and mutton. Based on the quantities of bone that we found, and the many fragments of dark gray, Nile alluvial mudbricks, I think we must see these deposits as coming from a settlement on or near the floodplain, to the east-northeast.

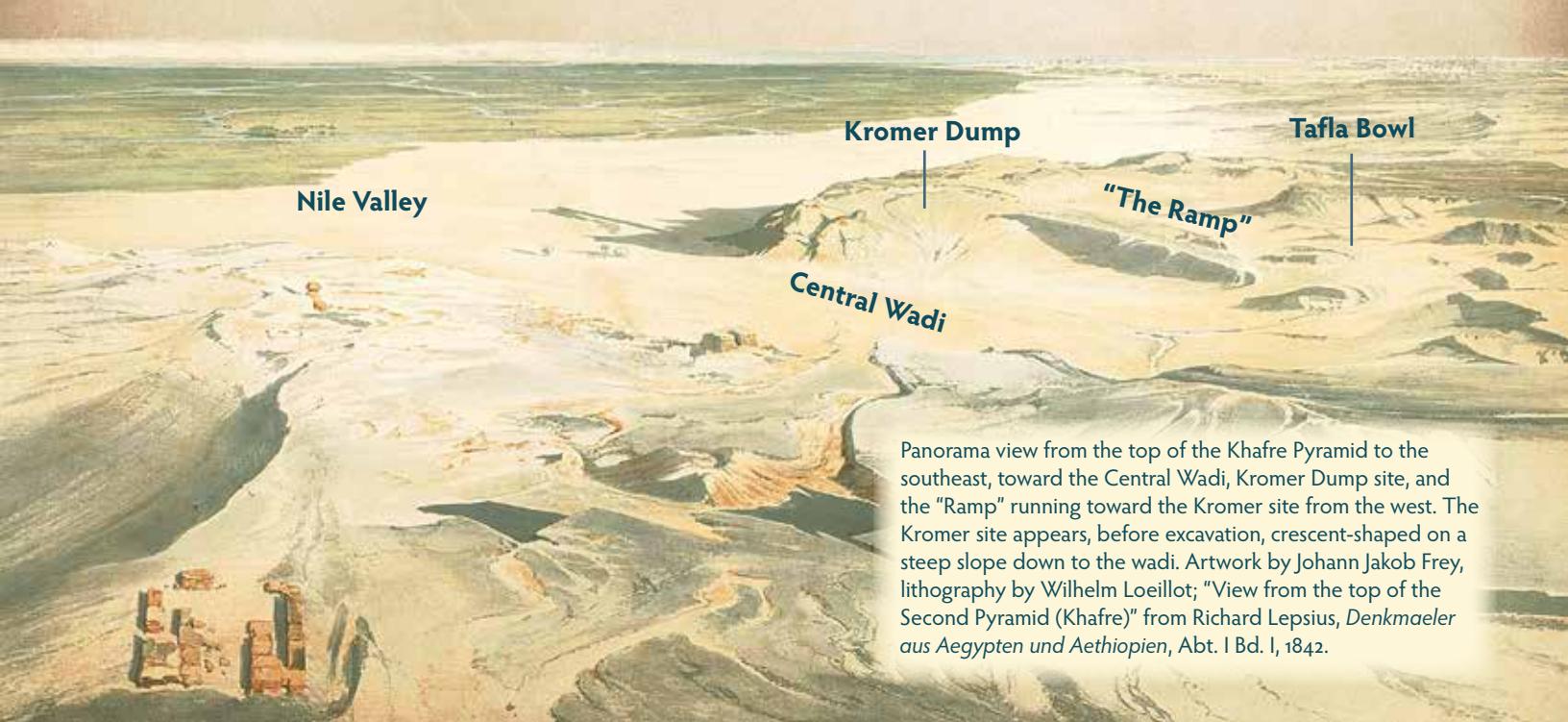
Settlement Scrapped Off the Tafla Bowl?

As we begin to examine this part of the southern plateau for potential sites, we start immediately southwest of the Kromer Dump. This puts us in the "Tafla Bowl"—a 300 meters (984 feet, east-west) × 400 meters (1312 feet, north-south) quarry depression so-called due to the massive amounts of *tafla* (Arabic for yellowish desert marl clay) on the bottom of the bowl and in strata running through the ridge that surrounds it. At 43 meters above sea level, the floor of the bowl sinks some 118 feet (36 meters) below the highest peak on its west side, and some 65 feet (20 meters) below the ridge along its east side. The Kromer site is located at the northeastern corner of the Bowl (see image above).

In 1985 I drew a Workers' Village in the Tafla Bowl as part of a model of how the pyramid builders organized the plateau for building Khufu's Great Pyramid (at right), because the Bowl struck me as very similar to the setting of the Workers' Village outside the city of the 18th Dynasty pharaoh Akhenaten at Amarna, and similar to the tomb builders' village on the



My 1985 isometric drawing of the Giza Plateau during the final years of building the Great Pyramid of Khufu. Inserted into the Tafla Bowl: a workers' village (lower left), based on the 18th Dynasty Workers' Village in Amarna, but increased eightfold. A larger settlement, conjectural in its layout, stretches south of the Wall of the Crow and harbor. Here AERA teams found the Heit el-Ghurab site between 1988 and 2004.



Panorama view from the top of the Khafre Pyramid to the southeast, toward the Central Wadi, Kromer Dump site, and the "Ramp" running toward the Kromer site from the west. The Kromer site appears, before excavation, crescent-shaped on a steep slope down to the wadi. Artwork by Johann Jakob Frey, lithography by Wilhelm Loeillot; "View from the top of the Second Pyramid (Khafre)" from Richard Lepsius, *Denkmäler aus Aegypten und Aethiopien*, Abt. I Bd. I, 1842.

West Bank of Luxor at Deir el-Medineh.⁴ Both nestle in a kind of bowl surrounded or flanked by ridges. I based my rectangular workers' village on the form of the one at Amarna, but I increased the housing units sixfold and the overall size eight-fold. I estimated that the Bowl could have accommodated 2,000 to 3,000 people, and that the walls of this village would have been of stone rubble and desert tafla clay, not the mudbricks we find in the Kromer Dump. To the east, south of the Wall of the Crow, I drew a larger settlement, where I envisioned administrators living and working during construction. Three years later we began to find the HeG site in this very location.

After walking the bowl during December 1988, our first season of excavation in the HeG—I saw little possibility of finding ancient settlement on the floor of the Bowl. I still think that quarry workers might have scraped away a settlement on the bottom of the Bowl and dumped the demolition debris into its northeastern corner at the Kromer site. But what about the copper fish hooks Kromer found? While people would not have fished for deep Nile perch in the Bowl, perhaps they did in a Nile channel close to the western side of the valley, along the HeG.

After walking the Tafla Bowl during Season 2018, I still see tafla-rich bedrock exposed under a light sand cover. The sand is very thin on the west side of the Bowl due to the horse and camel traffic that has worn a wide diagonal path—streaked white from exposed quarry crush—from an opening through the eastern Maadi Formation ridge to the northwest rim where riders ascend up onto “the Ramp” (see below). The white streak sweeps down to the southeast, to a kind of shelf, which drops down to exposed Maadi Formation tafla bedrock.

It is worth remembering that quarry workers always need to get at a fresh face of rock so they can carve out stone most effectively. As they work, they produce limestone chips and

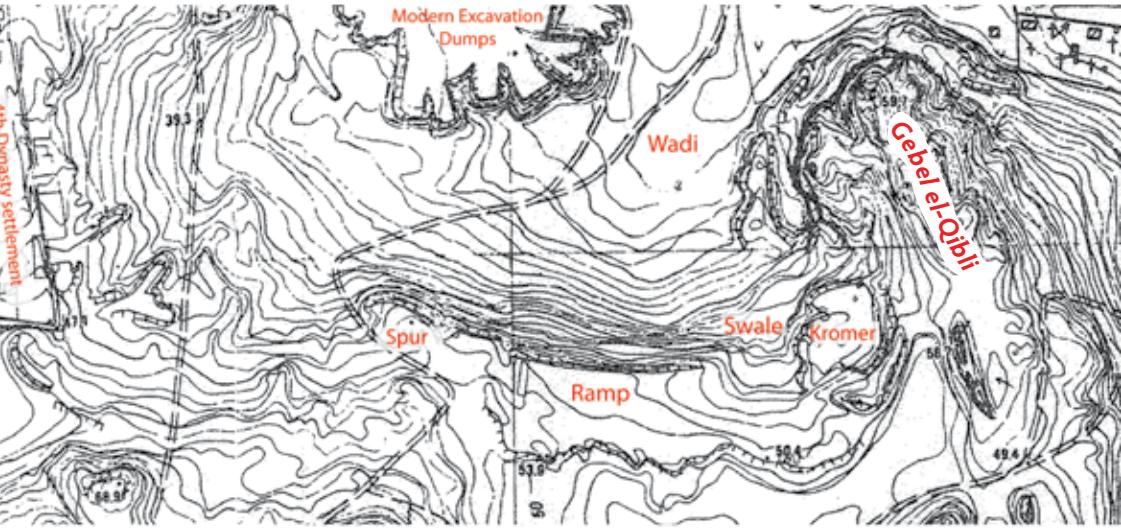
powder. By cutting channels to separate blocks, 4th Dynasty quarry workers wasted more than 30% of the bedrock, and that this 30% remained as quarry waste—chips and dust—after they removed blocks. They had to move this waste aside to expose a new bedrock face. They also had to clear any camp or settlement that might have covered the bedrock. Could they have removed a settlement from the Tafla Bowl, such as the one I imagined in 1985?

We still need to check, by further excavation, the extent to which builders used the Tafla Bowl as a quarry for tafla clay for mortar and plaster. Where the strata of the Maadi Formation are exposed, as in the face of the Gebel el-Qibli (see page 5), the layers are thin, laminated, and brecciated (fragmented), composed of tafla- and gypsum-rich limestone beds. Here pyramid builders could not extract the large blocks offered by Moqattam Formation beds of the plateau’s Central Field, but they could obtain broken stone and tafla for ramps, embankments, mortar, and plaster.

As they deepened the Tafla Bowl by quarrying, they appear to have shoved their quarry waste to the north, augmenting one of the largest structures on the Giza Plateau—a gigantic ramp embankment of quarry waste leading right to the Kromer Dump.

Kromer and the Gigantic “Ramp”

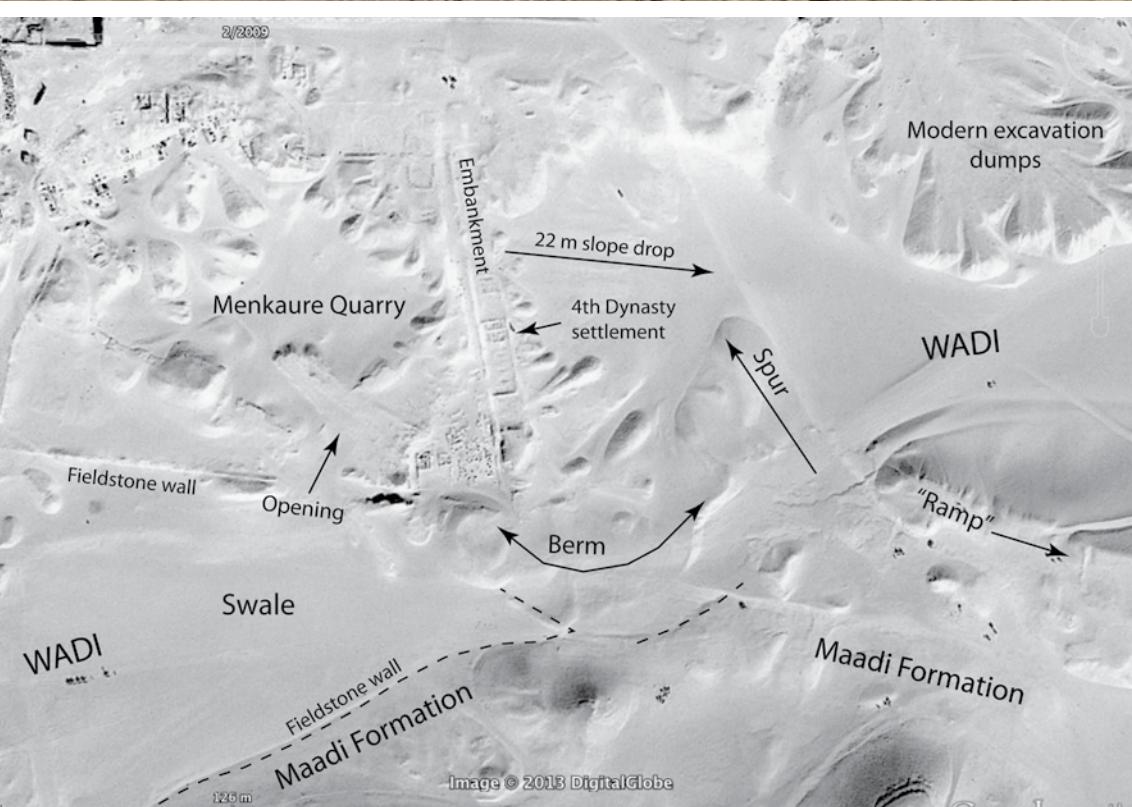
While we call it the “Ramp” today, it really doesn’t slope up very much on its long axis from west to east. Rather, the top slopes slightly in cross-section, from its southern edge down to its northern edge. This embankment looks most ramp-like in a painted panorama published by K. Lepsius in 1842⁵ (above). In this panorama, the southern, higher ridge of the Ramp swings around, nearly continuous with the southern shoulder of the “Kromer Crescent”—the ridge of the crater that Kromer cre-



The 1:5,000 Ministry of Housing and Reconstruction 1977 topographic map, with contour lines every one meter, shows the Kromer site, the "Ramp" the Gebel el-Qibli (upper right), and the wadi. A swale, possibly formed from rain run-off over the last 176 years, cuts the Ramp and the west side of Kromer's excavation dumps.



Quarry crush in Sondage 184 and the Swale being cleaned during the 2018 season, with the "Ramp" embankment in the background. View to the west from the Kromer ridge. Photo by Mark Lehner.



The Central Wadi (labeled "WADI" in image) at Giza, from Google Earth, showing the juncture of a number of major features at the western end of the Ramp: A 4th Dynasty settlement in the Menkaure Pyramid quarry excavated by Abd el-Aziz Saleh (1974) along a thick fieldstone wall; a berm of cultural debris across the course of the wadi, and a northward thrusting spur of quarry debris over the edge of the Maadi Formation. The northern run of the fieldstone wall and settlement are founded upon an embankment of quarry debris. From here a sheer slope falls 72 feet (22 meters) into the wadi.

ated with his excavations—making a compelling connection between the deposits in the Kromer Dump and the Ramp.

Today, a semicircular depression, or swale, interrupts the northern ridge of the Ramp, just where it connects to the Kromer Crescent. Here, the contour lines fall back and sink 15 to 16.4 feet (4 to 5 meters). The 1977 Ministry of Housing and Reconstruction 1:5,000 contour map shows this swale (at left, top), but the Lepsius rendering does not. When we started excavation work at Kromer in 2018, I thought I could see on the shoulder of this swale, under a light sand cover, a pattern of large rectangles separated by channels—a pattern of quarrying for blocks, such as we can see in the Moqattam Formation quarries to the north. Since horse and camel feet had already laid bare this ancient surface, we cleaned a large patch of it (at left, middle). But it was not limestone bedrock. It was solid quarry crush—the same thick bank of it that we exposed farther east in Sondage 184, higher on the ridge of the Kromer crescent.

How does this massive deposit of concentrated quarry crush relate stratigraphically to the silt-rich demolition and waste debris from the Kromer Dump farther north? This is something we must try to ascertain by excavation next season.

The Western End of the Ramp: Settlement and Quarry

The Ramp ends on the west-northwest about 688 feet (210 meters) shy of a 4th Dynasty settlement excavated by a team from Cairo University under the direction of Abd el-Aziz Saleh in 1974⁶ (map, page 2, and at left, bottom). And so, we might assume that the settlement waste and demolition debris came to the Kromer Dump from that site. There, in a kind of courtyard defined by a thick stone rubble wall, and between stone rubble buildings, Saleh found many large pieces of Egyptian alabaster, some with red-painted quarry marks. The remains suggest a variety of activities: alabaster-working, baking, accounting, and perhaps pottery manufacture.

People might have settled here during the reign of Khafre and his project to build the Second Pyramid.⁷ But when builders threw up an enclosure wall of fieldstone around the entire Menkaure Pyramid precinct, they angled the wall far south of due east, and then turned an acute angle to the north-northwest to take in this settlement, the courtyard, and the quarry that furnished most of the core stone for Menkaure's Pyramid.⁸

As many of the buildings abut the enclosure wall, the whole settlement probably dates to the time Menkaure's workers were building his pyramid.

But holes that Saleh's team dug in the courtyard show the settlement was founded upon quarry debris, its walls were composed of quarry debris, and it was at least partially buried by quarry debris. And this absence of mudbrick walls is a prob-

lem for seeing this settlement as the source for the dark, Nile mud-rich settlement waste in the Kromer site.

From a northward-running embankment that supports the 4th Dynasty fieldstone wall and buildings, the wadi drops 72 feet (22 meters, from 47 to 25 meters above sea level). The drop must have been much deeper before the wadi filled with sand. At the base of this steep slope, below the western face of the Gebel el-Qibli, geophysical survey of the wadi shows a large sand-filled cavity, possibly more than 32 feet (10 meters) deep, extending almost as far as the Gebel el-Qibli.⁹ The depression is certainly a deep quarry that likely furnished core stones for Khafre's Pyramid.

To obtain good blocks, the pyramid builders cut deep into the lower flank of the Moqqatam Formation, expanding the northern side of the wadi. They needed to keep the bedrock face exposed, unencumbered with quarry waste. So here again they hauled their quarry waste—limestone chips and crush—up, over, and against the southern side of the wadi, which is the northern edge of the Maadi Formation,⁹ thus forming this end of the Ramp.

As they built up the Ramp, workers could have ascended and descended the northern side on lateral sloping paths. Today, horse and camel riders use just such a path, which rises from the wadi floor up to the west against the Ramp's northern slope. The Lepsius panorama shows three such lateral paths sloping up to the west against the northern face of the Ramp.

Settlement-Quarry Cycles?

Thirty-three years ago, I wrote about how these large features in the southern Giza Plateau—the Kromer Dump, the Ramp embankment, and the Tafla Bowl—might relate to the pyramid builders' settlement and infrastructure.¹⁰ At the time, I had been walking the Giza Plateau and thinking about these things for twelve years.

What I thought possible then, I still think possible now. Workers could have settled temporarily on the southern slopes of the central Wadi, on the north-facing slope of the Maadi Formation, and maybe back, farther south, in the Tafla Bowl. But I would expect that in these areas settlements were composed of tafla and limestone debris like the Abd el-Aziz Saleh settlement, not Nile mudbrick. I could imagine, in the southern zone, layers of such settlement intercalated with quarry waste.¹¹ But ultimately, the more I walk this southern zone, the more impressed I am at how almost everything cultural, the settlement and infrastructure that we have so far seen, is composed of desert materials—white or off-white and beige walls of quarry debris, tafla, and broken stone. I see no dark stains of Nile mud, no Nile mudbrick. The only major exception to this is the mudbrick that the last king of the 4th Dynasty, Shepseskaf, used to complete Menkaure's Pyramid Temple, causeway, and the chapels of the three queen's pyramids.

In over 30 years of work, the infrastructure and settlement that we have found composed of dark Nile mudbrick includes the Menkaure Valley Temple (MVT) and the Khentkawes Town (KKT), which lie west-northwest of the Kromer Dump, as well as the HeG site, to the east of the dump. So, the demolition debris of Nile mudbrick and the dark silty waste that Kromer and we found in this pyramid-builders' dump must derive from the KKT and MVT settlements to the northwest of the Kromer site, or from the HeG to the east. Kromer himself thought that the debris came from the demolition of a long-time settlement, which included a royal road house, where Menkaure began to build the valley temple of his pyramid.¹²

A Tale of Two Dumps and Two Directions

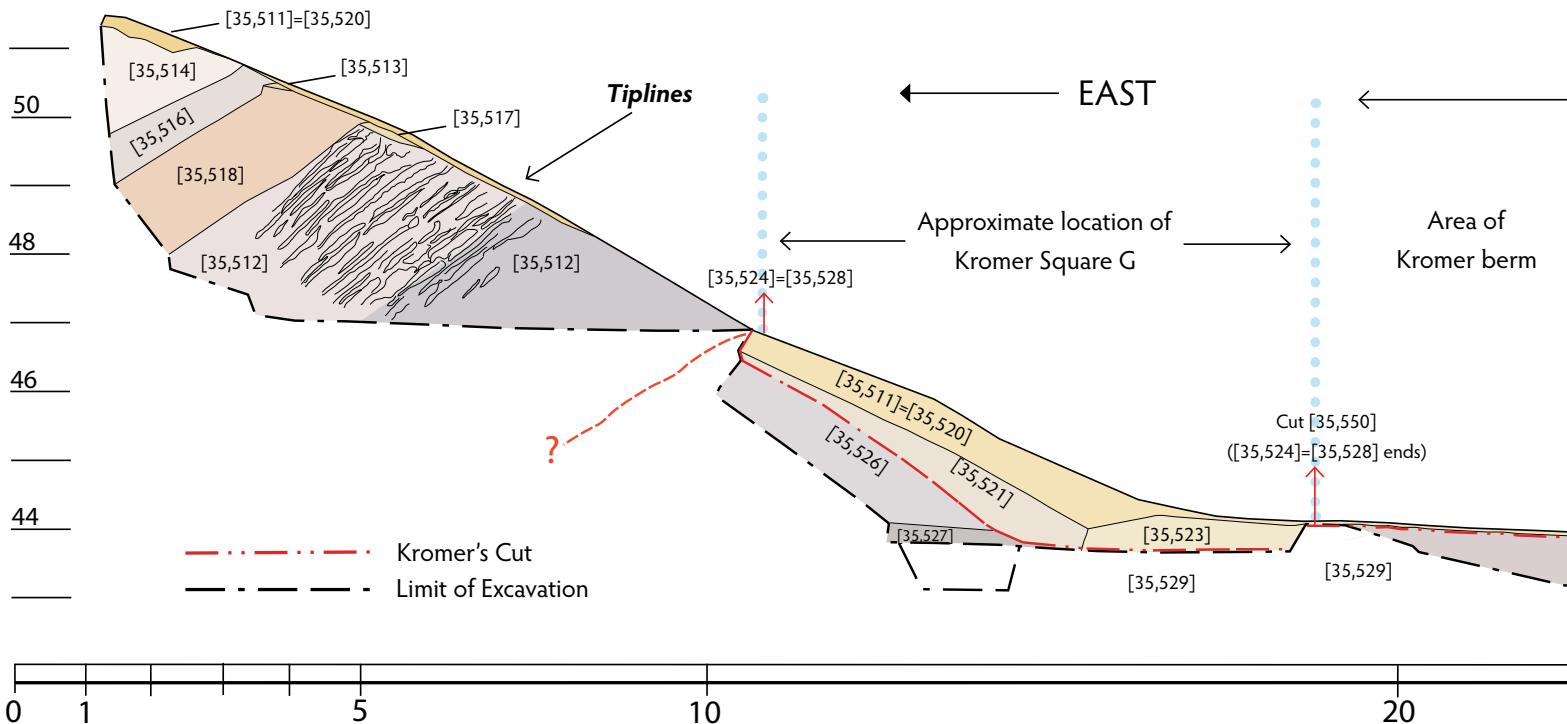
In 2018, where our Sondage 185 crossed the *western* side of Kromer's excavated crater, we found untouched layers that he left at the bottom, and layers farther west, beyond the western limit of his excavations. Here, at the western side of the dump, tiplines of older deposits slope in the opposite direction than the tiplines on the eastern, higher end of our trench (image shown below). At the western side of the dump, the tiplines slope down to the west, indicating workers dumped them from the east, the direction we expected at the beginning of Season 2018, if they had brought the material from the east, from the HeG site.

The opposite slopes to the tiplines on the higher eastern and lower western ends of Sondage 185 tell of two distinct dumping events, a later dump superposed over an older dump (see image below).

The 5+-meter thickness of the older, lower lying layers, which we cut into for a depth of little more than a meter or two in 2018, shows the substantial nature of the demolition debris dumped in the early phase. Also, it seems that many indicators of higher status—like painted plaster and sealings impressed with officials' titles of the highest rank—come more from the lower, older layers at the western end of Sondage 185 (especially feature [35,522]), with tiplines sloping down to the west, indicating the material came from the east, from the direction of the HeG.

Kromer found most of his painted plaster and sealings in his Squares K, G, and B (map, page 4),¹³ the area we crossed with our Sondage 185. While he did not provide his own stratigraphic section drawing of this area, he noted that the lower layer contained debris from the destruction of residential buildings.¹⁴ This lower thick layer shows in his drawing of the north-facing section of Squares A and D (section at right). People brought this material from the east, and spilt the contents of their baskets down to the west. Then, Kromer wrote, the dump lay neglected for some time, while layers of sand covered it. For some time, people dumped only occasionally. After even more time, people began to dump more regularly, coming now from the west, spilling their baskets down a slope in the opposite direction—down to the east (section at right).

Kromer thought that the older dumping disposed of demolition debris from a settlement razed and dumped as one uninterrupted operation, while the younger upper layers had accumulated from more sporadic removal of waste from life in a settlement over several or more years.¹⁵ The sporadic nature of



the later dumping, Kromer wrote, is indicated by short tiplines in various directions. He did not see the very consistent angle of tiplines in the higher, more easterly parts of the upper phase of the dump, which we cut into (top, page 5).

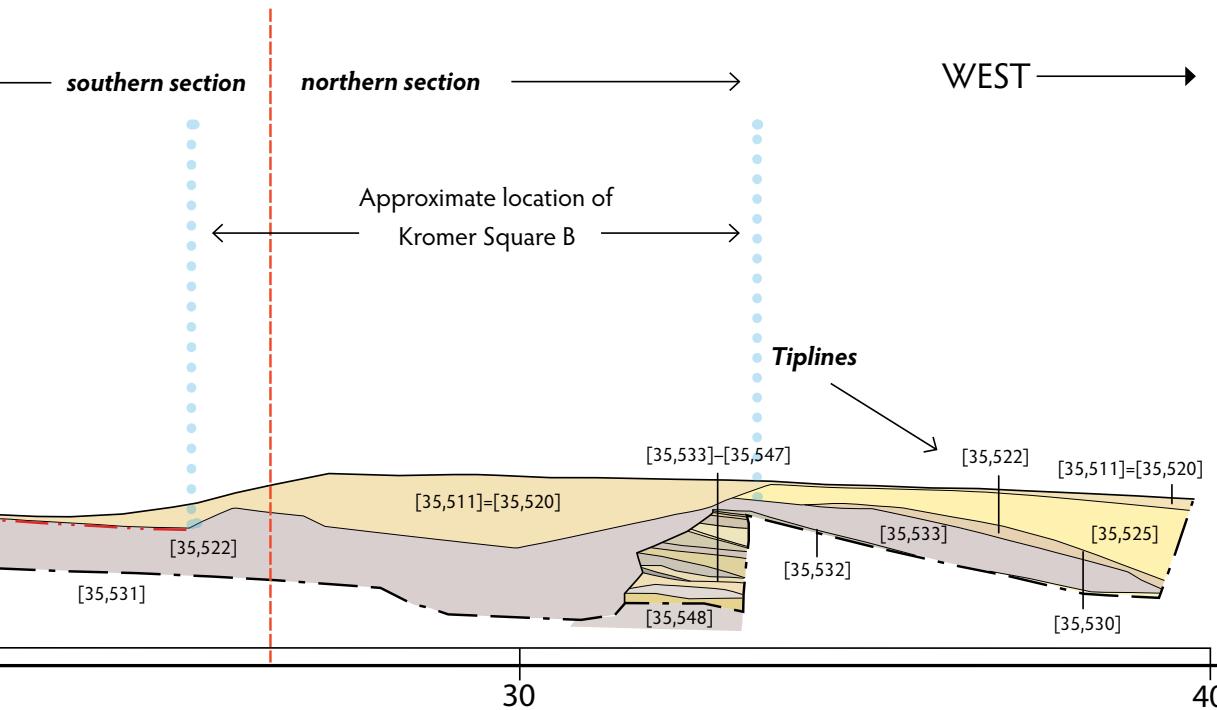
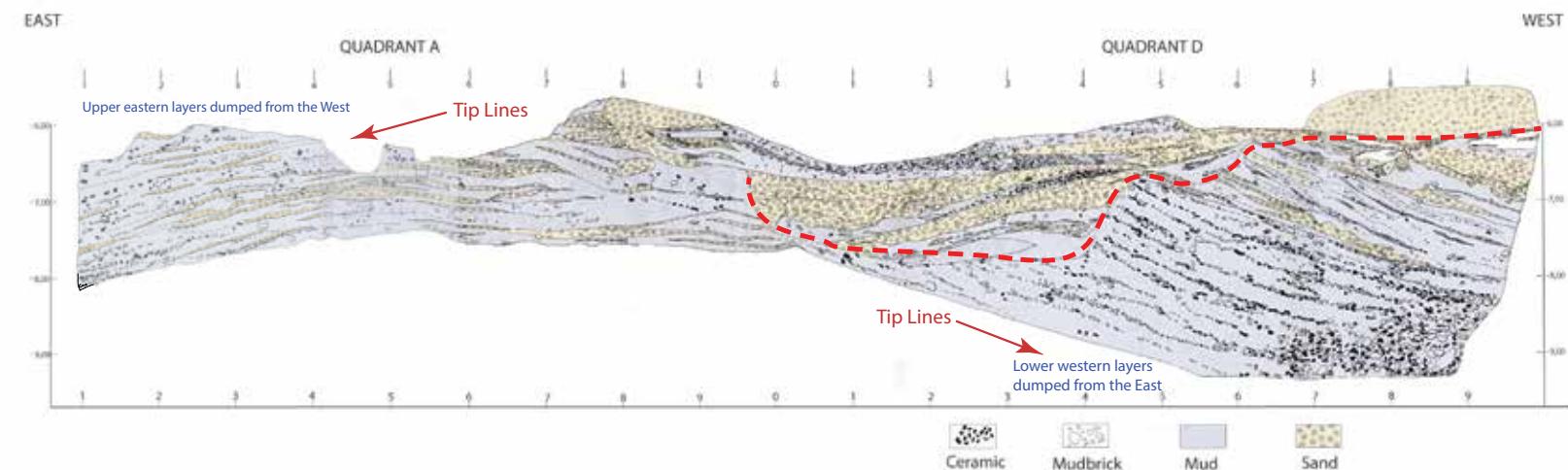
During the later period of dumping, sand blew in incrementally, covering thin layers of silty settlement trash. In our Sondage 185, we saw this intercalation of sand and silty settlement debris in the higher, easterly layers. We also see sand increasing in the overall matrix from bottom up (page 5).

Kromer wrote that, ultimately, the entire western part of the section was covered by a dune of sand, almost 70 centimeters thick.¹⁶ A problem here is that Kromer did not mention any distinction between sand and quarry crush. That “dune” at the upper right side of his section in Quadrant D (section below), which he designates as sand (and I have colored yellow), is probably what I call quarry crush—a material very different

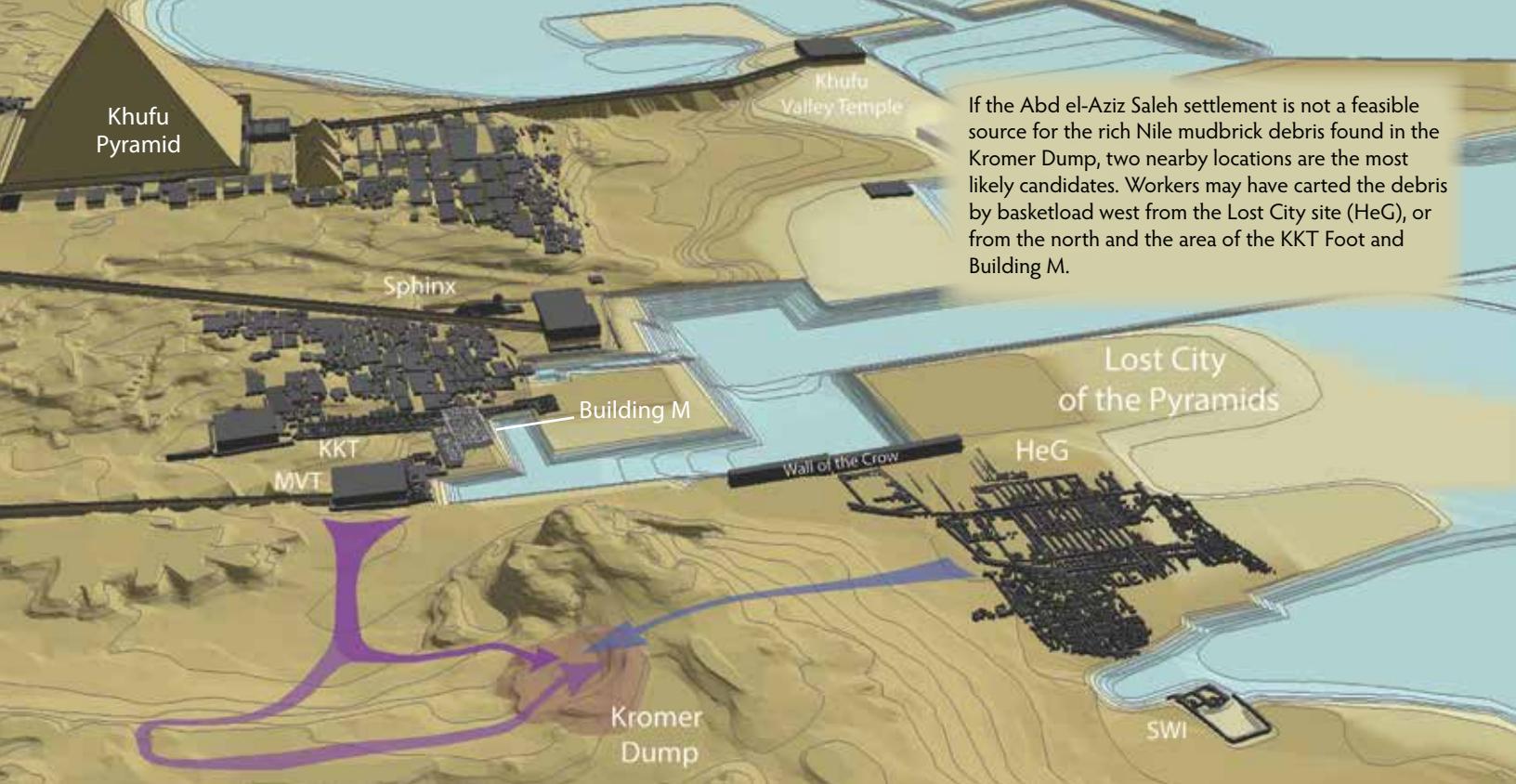
from sand in composition and origin. We saw this crush at the eastern top of our Sondage 185, where it had been turned over in modern times, and as the only deposit, undisturbed, in Sondage 184. It is possible that some of the lower layers that Kromer designated as “sand” in his section were in fact quarry crush, interleaved with dumped settlement waste. But overall, it seems that people dumped the almost pure quarry crush layers after both phases of dumped settlement debris; quarry crush largely caps the settlement deposits.

We found most of the evidence that led us to imagine an administrative feeding large numbers of workers¹⁷ in the upper

Kromer's north-facing section of his Squares A and D showing lower, older layers dumped from the east, superposed by higher, younger layers dumped from the west. I added the color overlays—yellow for sand/quarry crush and blue for alluvial-based deposits. The dashed red line emphasizes the stratigraphic boundary between older and younger phases. Illustration by Mark Lehner, based on Kromer 1978, Abb. 6.



A composite section of Sondage 185 from the 2018 Kromer Dump excavations. At the eastern end of the trench, we see higher, younger deposits with tip lines that slope down to the east, indicating dumping from the west. At the western end of the trench, we see lower, older deposits with tip lines that slope down to the west, suggesting dumping from the east. Numbers in square brackets are AERA feature numbers. Original profile by Rebekah Miracle, AERA GIS, amended by Mark Lehner.



eastern layers that slope down to the east. These later dumper came from the west, or northwest, and as we suggest, probably from the area of the Menkaure Valley Temple (MVT) and Khentkawes Town (KKT) (above). However even these later dumper, like those before them who came from the east, dumped at the Kromer site before the MVT was completed and before the KKT settlement was built in the reign of Menkaure and Shepseskaf.¹⁸

But Whence the Palace?

That the older, lower layers with high-status content, dumped from the east down to the west, could indeed come from the older phase of our “Lost City of the Pyramids” (HeG) is ironic, since we and others have often referred to the HeG as “the Workers’ Town.” In fact, it was in this older dump that Kromer saw the broken remains of what he called a “*königlichen Verwaltungsgebäude*,” that is, a royal administrative building, or, as he wrote, a palace, or buildings attached to a palace,¹⁹ especially in his Squares B, F and G, just where our 2018 Sondage 185 crossed.

So, should we not look for a palace in the older phase of the HeG? And should we not return to the “palace hypothesis,” an idea that we took into our early excavation seasons?²⁰ Also, did we not, in fact, find a huge structure that we called the “Royal Administrative Building,” which indeed has an older phase that was taken down and rebuilt?²¹ The 2018 KRO remains look eerily familiar to our lab specialists, and sealings made from one of our most well-known HeG seals have also been found in KRO.²² Thus far, there is a strong case for connecting the two sites.

If the Abd el-Aziz Saleh settlement is not a feasible source for the rich Nile mudbrick debris found in the Kromer Dump, two nearby locations are the most likely candidates. Workers may have carted the debris by basketload west from the Lost City site (HeG), or from the north and the area of the KKT Foot and Building M.

But another possibility exists nearby, outside of the HeG. We see evidence for a royal apartment, perhaps a small worksite palace, in Building M in the foot end of the Khentkawes Town (above and next page). Menkaure’s builders may have demolished part of Building M before they erected his pyramid’s valley temple and dumped the debris upon the Gebel el-Qibli. Excavated by Selim Hassan in 1932–1933, M is part of a larger complex that included an audience hall, in what he called an “exceedingly comfortable and practical residence”²³ amongst the “mansions”²⁴ of the KKT foot. He notes that there were two levels of occupation here, with later buildings being constructed on top of the walls of the originals. The walls here are notably thicker than elsewhere in the KKT, and Hassan noted remnants of red-, black-, and white-painted plaster, such as we have found in KRO. As the only KKT building we have not re-examined, the remnants of Building M become a main target for future excavation as well.

And lastly, in future seasons we plan to dig deeper into the dump, down to its earliest levels, as well as in other directions and parts of the dump, in order to gain further insight into just how and when it was formed.

Up Next? Time in the Lab

Our regular readers will remember the abundance of material culture we recovered from only six weeks of excavation in the Kromer Dump during the 2018 season.²⁵ Before returning to the field to tie up loose ends, we first need time in the lab to process the KRO material in order to properly plan our next steps in excavation.

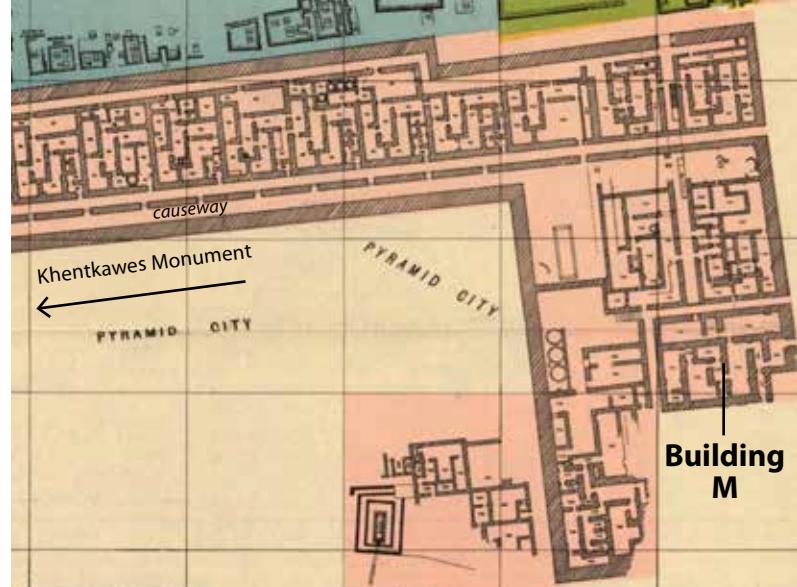
Detail of original plan of the Khentkawes Town from Selim Hassan's *Excavations at Giza, Vol. IV, 1932–1933*. His plan indicates that everything shown in pink was excavated during one season, from 1932 through 1933. Note the thicker walls of Building M and the difference in architectural plan from the priests' houses to the north, running along the causeway toward the queen's monument.

Beyond finishing the basic analysis of the Kromer backlog, the 2019 season will find our lab specialists testing the hypothesis that there is, in fact, a differentiation between the upper and lower dumps this season in the lab. And we look to our different classes of material culture in hopes of finding some evidence regarding how much time may have passed between the different dumping events.

A large part of the remaining lab work is processing the wet sieve and heavy fraction from KRO 2018. We rely on our wet-sieving expert, Abd el-Latif Ibrahim (who also does our flotation, see sidebar on page 24), to wash away the sediment to reveal micro-remains hidden inside. After this material dries in the sun, a team of dedicated workers led by longtime lab assistant Mohammed Hassan sort it by hand. They are adept at quickly sorting the piles down into their constituent material culture classes. There was much more of this material than we could process in 2018, so it falls to the 2019 season to complete.

Much of our 2018 lab team is slated to join us again, finishing their analyses of last year's KRO material, in addition to any new material that may come from the wet sieve/heavy fraction processing work. We also welcome new specialists who will study KRO material. Dr. Richard Redding has invited Luther Sousa, from the University of Manitoba, to come examine the butchery cut-marks on the KRO animal bone for evidence of the use of metal tools. Philip C. LaPorta, stone tool specialist, will come for a study of tools from both the main HeG site and KRO. And lastly, we are pleased to welcome a familiar face to the Giza lab once again—Dr. Ania Wodzińska, former AERA ceramics team leader, who will join us to study ceramics from KRO.

With our returning staff on hand—ceramicists Mahmoud el-Shafey and Aisha Montaser, archaeobotanist Dr. Claire Malleson, animal bone specialists Dr. Richard Redding and Mohammed Hussein, small finds specialist Emmy Malek, plaster and roofing expert Manami Yahata, lithicist Samar Mahmoud, and clay sealings team Ali Witsell and David Jeřábek—we expect a full house. Stay tuned to our next issue for a report on this season's findings.



Period; 2) The face of the Gebel wants to fall apart naturally because gypsum salts crystallize to push the soft tafla clay layers apart in a network of cracks, and from geological times, larger fissures break up (brecciate) all the thin layers.

4. Lehner, M., "The Development of the Giza Necropolis: The Khufu Project." *Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo* 41, 1985. See pages 127, 134–35, fig. 3c.

5. Lepsius, K., *Denkmäler aus Ägypten und Äthiopien, erste Abteilung: Topographie und Architektur*. Berlin: Nicolaische Buchhandlung, 1849, pl. 18.

6. el-Aziz Saleh, A., "Excavations Around Mycerinus Pyramid Complex." *Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo* 30, 1974.

7. Lehner, M., "Giza, A Contextual Approach to the Giza Pyramids." *Archiv für Orientforschung* 32, 1985, see pages 156–57.

8. Reisner, G., *Mycerinus. The Temples of the Third Pyramid at Giza*. Cambridge, MA: Harvard University Press, 1931, see pages 9, 69.

9. Dash, G., "Seeing Beneath the Surface." *AERAGRAM* 7-1 (Spring 2004): pages 8–9.

10. Here and there, they also cut into the northern ridge of the Maadi Formation for desert marl clay and broken stone for ramps and embankments. On site, and in the image on the bottom of page 8, you can see a cut into the bedrock, an edge just below the west end of the Ramp.

11. Lehner, M., 1985, "Development of the Giza Necropolis."

12. Lehner, M., 1985, "A Contextual Approach."

13. Kromer, K., *Siedlungsfunde aus dem frühen alten Reich in Giseh: Österreichische Ausgrabungen 1971–1975*. Vienna: Österreichische Akademie der Wissenschaften, 1978, page 115.

14. Kromer 1978, page 115.

15. Kromer 1978, page 17: "beim Einreißen der Wohnbauten angefallen sind ..."

16. Kromer 1978, page 18–21.

17. Kromer 1978, page 18.

18. Lehner, M., "Shareholders: The Menkaure Valley Temple Occupation in Context." In *Toward a New History for the Egyptian Old Kingdom*, edited by P. de Manuelian and T. Schneider, Leiden and Boston: Brill, 2015.

19. Kromer 1978: page 104: "...der königlichen Verwaltungsbauten, die königlichen Magazine, und sicher auch die Verwaltungsobjekte der vom Königs besonders betreuten Heiligtümer." (...the royal administration building, the royal magazines, and certainly also the administrative buildings of the sanctuaries specially looked after by the king).

20. Lehner, M. and Wetterstrom, W., "The 1997 Field Season: Walls, Workshops, Workmen's Huts." *AERAGRAM* 1/2 (Spring 1997): pages 1, 6–8.

21. Lehner, M., and Sadarangani, F., "Beds for Bowabs in a Pyramid City." In *The Archaeology and Art of Ancient Egypt*, edited by Z. Hawass and J. Richards, 2007. Cairo: Supreme Council of Antiquities. We excavated and found two phases at the northern (back?) end of the "Royal Administrative Building," as we dubbed it. Most of the building, possibly as long as 150 meters, lies under the modern soccer field, to be removed, soon.

22. Witsell 2018, pages 4–6.

23. Hassan, S., *Excavations at Giza, Vol. IV, 1932–1933*. Cairo: Service des antiquités de l'Égypte, page 41.

24. Hassan 1932–1933, page 36.

25. "From the Lab: Mechanics of an Influx," *AERAGRAM* 19-1 (Spring 2018), pages 10–11.

1. Text by Mark Lehner, edited by Ali Witsell.

2. For more on last season see Witsell, A., "Kromer 2018: Basket by Basket," *AERAGRAM* 19-1, pages 2–9, Spring 2018. Available for free download at aeraweb.org.

3. Two points of caution on the idea that the face of the Gebel el-Qibli results from quarrying alone: 1) Before builders of the modern high security wall moved the debris along the base of the Gebel el-Qibli (in 2004 AD), I saw very little ancient pottery in this debris. However, I did see burials with Late Period amphorae partially exposed in a cave on the northeast-facing side. These burials show us that the Gebel face had been quarried before the Late

Spring 2019: A Return to the Menkaure Valley Temple

AERA is thrilled to be returning to the Menkaure Valley Temple (MVT) to further untangle this fascinating mud-brick enigma—one of the Giza Plateau’s least-known, yet most important, buildings. Original findspot of some of the Old Kingdom’s most magnificent pieces of statuary, the MVT is a building with a complex history and multiple occupations spanning approximately 300 years and at least three dynasties (4th–6th). Building on our previous work here in 2008, 2011, and 2012, we will return to the MVT this coming season, Spring 2019.

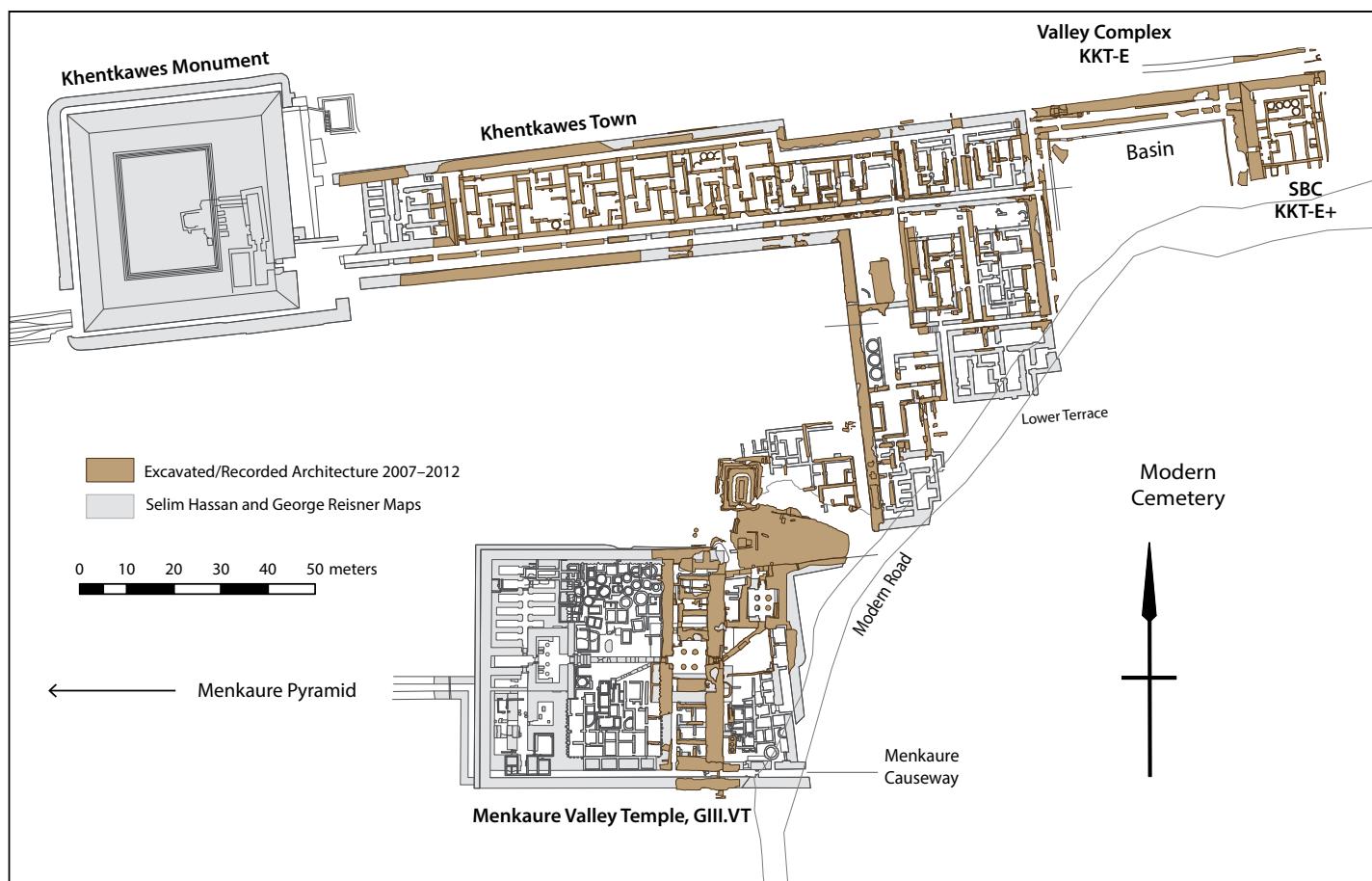
Prior Excavation History

A valley temple—along with the pyramid, satellite pyramid, queens’ pyramids, mortuary temple, and causeway—was an essential part of the basic Old Kingdom pyramid complex. It served as a transitional stop for the funerary procession, between the canal and harbor, where the procession would begin, and the causeway leading to the pyramid and mortuary temple, which served as an “eternal palace” for the deceased king. The valley temple may have also served as the site for ceremonies related to the mortuary workshop or purification process of the king’s body.

George Reisner excavated here from 1908 to 1910, after extrapolating its location by following the causeway down from Menkaure’s Pyramid (see map, page 2). He established three building phases: 1) original limestone foundation blocks put in place by Menkaure, who died before he completed the temple in stone; 2) a mudbrick temple finished by Shepseskaf, Menkaure’s successor; and 3) a rebuilding in mudbrick of parts of the temple some 300 years later, likely during the reign of Pepi II, the last king of the 6th Dynasty. This Second Temple was necessary because the original temple had been badly damaged by a flash flood in the desert wadi at some point late in the Old Kingdom.

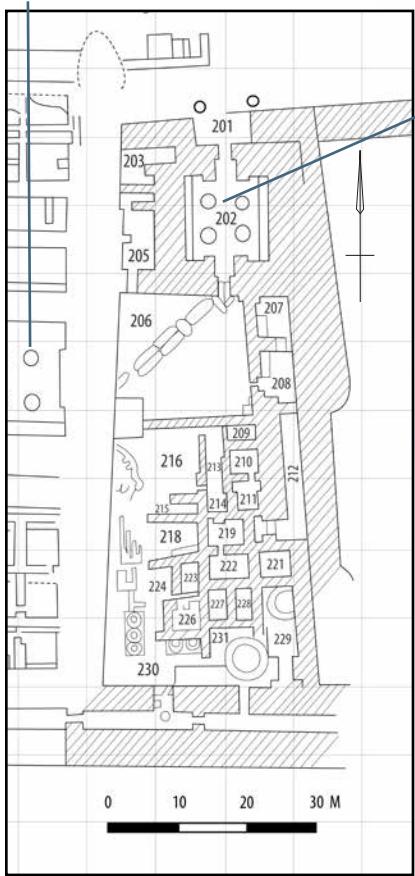
Reisner excavated a 5th Dynasty occupation in the central court—a sort of squatters’ settlement that he mapped and displayed on his plan of the temple (Reisner 1931, plan VIII). He saw three major horizons of residential architecture, including apartments and granaries, interspersed with two debris layers.

In 1932 Selim Hassan expanded upon Reisner’s work, extending his excavation to the east of the temple. Here he uncovered along the eastern front of the main temple the Ante-temple, an annex consisting of a four-columned vesti-

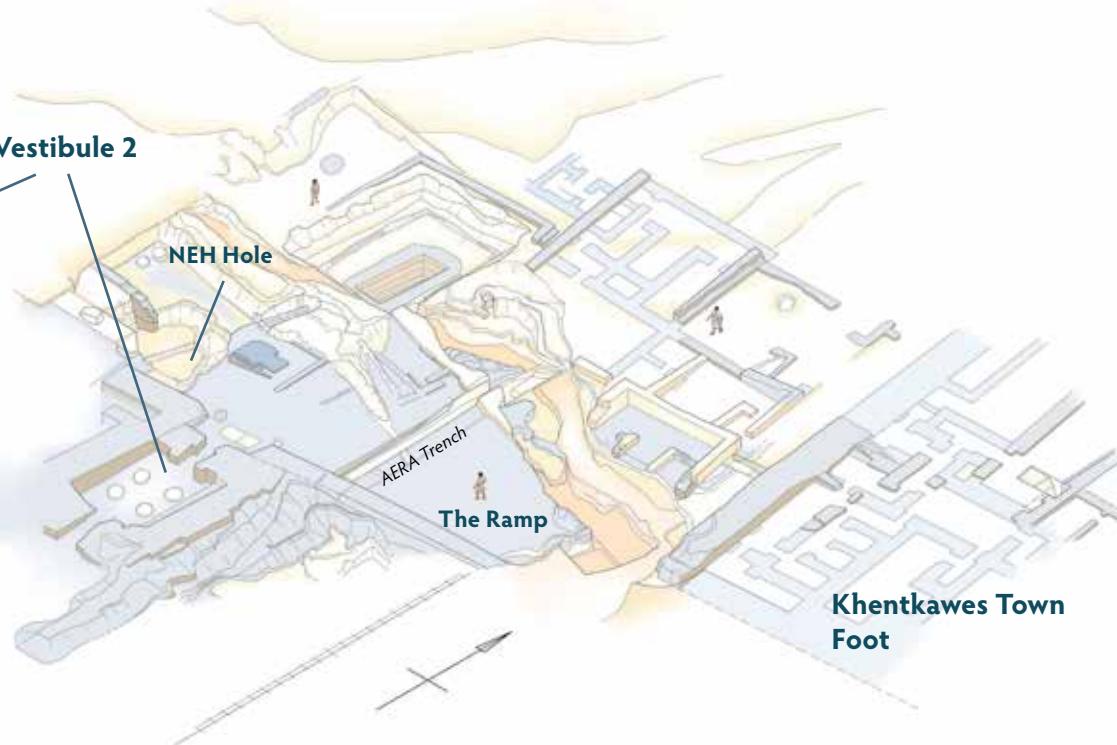


Plan of Menkaure Valley Temple and the Khentkawes Monument and Town, combining all of George Reisner, Selim Hassan, and AERA’s work (2007–2012) in this area. Prepared by Rebekah Miracle, AERA GIS.

Vestibule 1



Vestibule 2



Left: Plan of the MVT Ante-temple after Selim Hassan, *Excavations at Giza, Vol. IV, 1932–1933* (Cairo: Service des antiquités de l'Égypte, 1943, fig. 1). Above: An isometric drawing of the interface between the Khentkawes Town (KKT) and the Menkaure Valley Temple (MVT), following AERA's work here in 2008. Flash floods cut a small canyon through the Ramp (shown in orange). We excavated a trench across the Ramp to investigate the layers of the road surface. Illustration by Mark Lehner and Wilma Wetterstrom. Below: AERA team members excavate the floor of Vestibule 2 in the MVT Ante-temple in Season 2008. On the right, two of the original alabaster column bases can be seen, while the other two peek out from under the excavation balk on the left. View to the north. Photo by Mark Lehner.

bule, a court with a limestone-paved path, and small domestic structures. At the time, Hassan believed it to be a valley temple related to the nearby Khentkawes Town, a complex centered on the funerary monument of this 4th Dynasty queen mother, replete with living quarters for the priests that maintained her cult after her death.

AERA and the MVT

AERA excavated in the MVT during the 2008, 2011, and 2012 seasons. In 2008, we recorded stratigraphic links between the MVT and KKT, just north of the Ante-temple entrance where the MVT meets the foot of the KKT, separated by a mud-paved ramp that provided access up to the Giza Necropolis. Hassan excavated this ramp and mentioned it in his publication, but it had never been properly mapped. In the time of the temple, people ascended the ramp to enter the MVT through the Ante-temple, by turning left (south) through a columned portico and then passing through Vestibule 2 (Room 202 on map above). Here we excavated a sequence of floors, domestic installations, and wall remodeling that testify to the MVT's complex occupation history.

Also in 2008, we emptied sand from a large hole dug in ancient times through both the Ramp and the mudbrick casing of the MVT northeastern corner. This pit, dubbed the NEH hole, allowed us to examine some of the huge limestone core blocks that make up the temple foundation. With the blocks stacked three high at this corner, it seems certain that Men-





AERA's Season 2012 clearance to expose the eastern extent of the Menkaure Valley Temple, view to the north. Photo by Mark Lehner.



Season 2012's Sondage E with the southern deep probe (foreground), with Sondages A, C, and B in background. View to the south-southwest. Photo by Mark Lehner.

kaure intended to build his valley temple in stone, just as his father and predecessor, Khafre, had done. But, as Reisner noted, he died before the project could be completed, and his successor, Shepseskaf, finished the building in mudbrick. Here at the NEH hole, that mudbrick casing measured 4.25 feet (1.30 meters) thick.

In 2011, we moved into the eastern area of the main temple (an operation

we called MVT-E), re-clearing Vestibule 1 and its four alabaster column bases—a perfect mirror of those in Vestibule 2, which we uncovered in 2008. We also worked in the open court east of Vestibule 1, with its limestone-paved path running at a diagonal to meet the southern threshold of Vestibule 2.

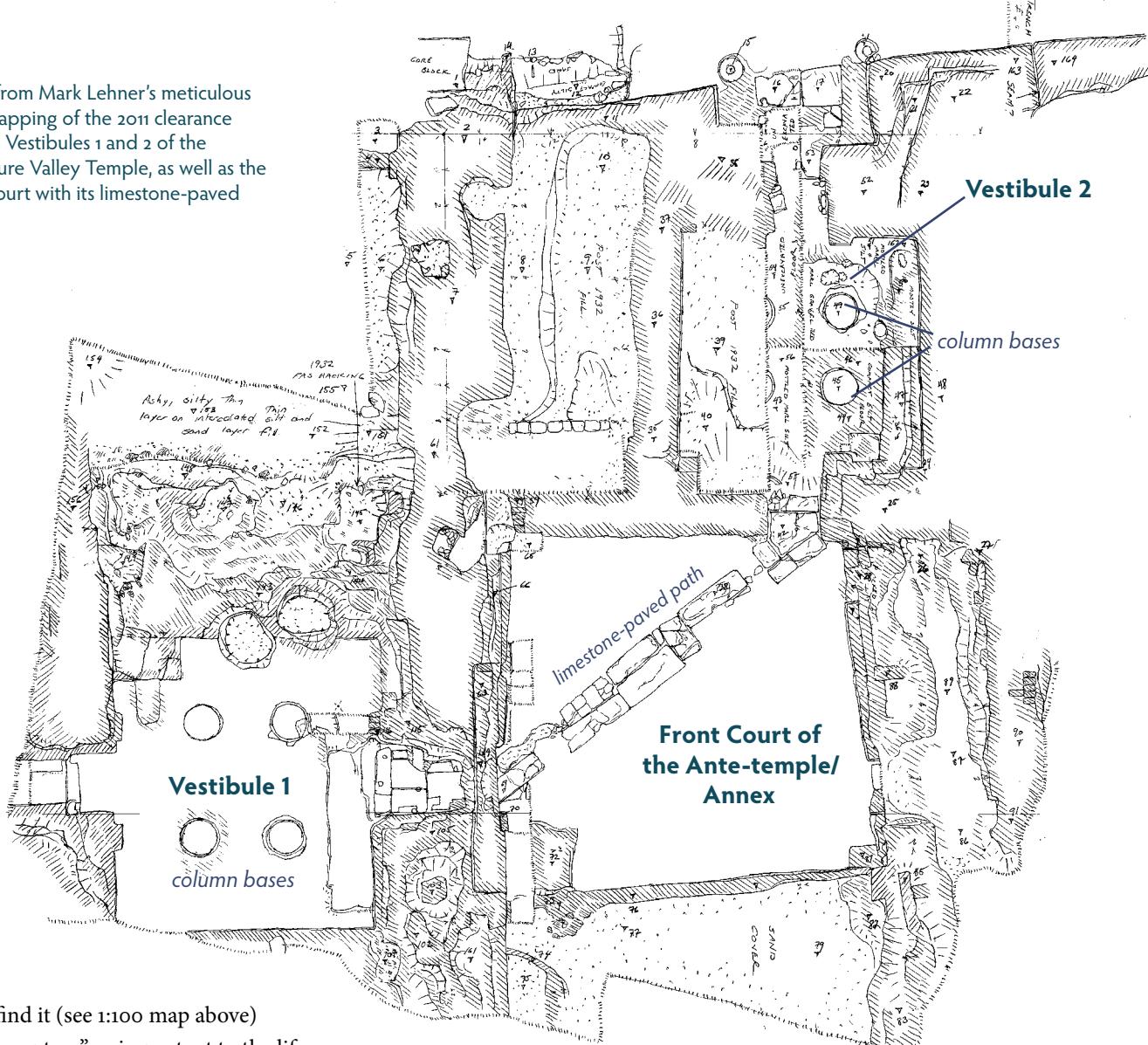
We resumed and extended this work in 2012 when we investigated the eastern wall and “front door” of Vestibule 1, checking the relationship between Shepseskaf’s work and Reisner’s Second Temple. In 2011–2012, we cleared the majority of the eastern temple wall of sandy overburden and dug seven sondages along the eastern base of the wall and southeastern corner of the temple, with the goal of answering specific questions regarding the phasing of construction and occupation. One sondage also explored the northernmost of the eastern magazines, inside the northeast corner of the temple.

Hassan uncovered the Ante-temple in 1932, but he was unable to ascertain that it belonged to the MVT. We showed that, together with the large ramp to the northeast, the Ante-temple was an original feature of the temple, at least as a terrace extending to the entrance from the ramp.

Why Go Back?

Simply put, to learn more. As we have found again and again, when we return to old excavations with our systematic Museum of London Archaeology (MoLA)-derived field techniques (such as those we’ve completed in KKT, MVT, and the Kromer Dump), our precise mapping and cataloging inevitably allows us to recover more information not only from the original building, but also regarding what has happened to those remains since their original excavation. A thorough recording of the architecture

Detail from Mark Lehner's meticulous 1:100 mapping of the 2011 clearance in both Vestibules 1 and 2 of the Menkaure Valley Temple, as well as the front court with its limestone-paved path.



as we find it (see 1:100 map above) is “data capture” as important to the life history of a building as any new excavation.

While the aim for 2011–2012 was re-clearing and mapping the eastern third of the MVT and its eastern Annex, the goal for 2019 will be to explore the western third—the inner sanctuary and southwestern magazines. Here Reisner found the famous dyad and triad statues of Menkaure. Our goal for this first season back is to do small, limited trenches that we hope will disentangle specific stratigraphic questions aimed at resolving the chronological sequence of occupation and construction/destruction in the western portion of the MVT, including the southwestern corner.

Our work has shown that Reisner and Hassan were not careful in backfilling the eastern part of the temple, so the remains we encountered there were in rather poor condition. But we know that Reisner did backfill the western and central portion of the temple, giving us hope that the remains there are in better shape. Returning to the building with our careful excavation and recording methods will ensure we save as much of the MVT’s history as possible. As we remove debris and backfill, we will continue the detailed survey we began in previous seasons.

A Hearty Welcome

We wish to extend our special thanks to Dr. Wally Gilbert for making possible a return to this unique site, and we are delighted to welcome Dr. Florence Friedman to the AERA team. Dr. Friedman is an art historian who has written extensively on the Menkaure dyad and triad statues, and we look forward to her insights on our renewed work. We hope both new team members are with us for years to come.

For Further Reading:

Hassan, S., *Excavations at Giza, 1932–1933*. Vol. IV. Cairo: Government Press, 1943.

Lehner, M., “Ascending Giza on a Monumental Ramp,” *AERAGRAM* 11-1, Spring 2010, pages 8–13. Available for free download at <http://www.aeraweb.org>.

Lehner, M., “Shareholders: The Menkaure Valley Temple Occupation in Context,” in *Towards a New History for the Egyptian Old Kingdom: Perspectives on the Pyramid Age*, edited by P. Der Manuelian and T. Schneider. Leiden: Brill, pages 227–312, 2015.

Lehner, M., Kamel, M., and A. Tavares, “The Khentawes Town (KKT)” in *Giza Occasional Papers* 4, pages 9–46. Boston: Ancient Egypt Research Associates, Inc., 2009. Available for free download at <http://www.aeraweb.org>.

Reisner, G. *Mycerinus, the Temples of the Third Pyramid at Giza*. Cambridge, MA: Harvard University Press, 1931.

"Know to Show:" AERA Field School 2018 Begins Preparing an Ancient House for "Show Time"

During the 2018 field season, we continued our commitment to training Inspectors in the Egyptian Ministry of Antiquities (MoA). An Antiquities Endowment Fund (AEF) grant from the American Research Center in Egypt (ARCE), awarded to Richard Redding, AERA Chief Research Officer, allowed us to train eight students, who specialized in advanced excavation and cultural heritage presentation, survey, or archaeozoology.

The students studying advanced excavation and cultural heritage presentation deployed to Khentkawes Town (KKT) in March after four weeks digging at the Heit el-Ghurab site (HeG). KKT, where AERA has worked since 2005, runs east from the foot of the funerary monument of Khentkawes I, a late 4th Dynasty queen. The priests who once maintained the queen's mortuary cult lived in modular mudbrick houses lining the north side of the causeway extending from the monument chapel.

Selim Hassan excavated and mapped the town in 1932 and 1933.¹ Over the following years the mudbrick walls deteriorated, and by 2005 many had been reduced to only a few courses or mere centimeters. Nevertheless, AERA teams have been able to gather valuable information and material culture from KKT and shed new light on the settlement.

In 2011, aiming to conserve as well as display one of the priest's residences, we built a replica of House E in KKT (photo below), as a way to present it without exposing the fragile ancient walls to the elements.² We covered the house with a thick layer of protective sand and then built on top of it. Eventually we hope to conserve and reconstruct the whole block of KKT houses and install accompanying pathways and informative signage. Building on our experience at Memphis

where we designed and installed a visitor walking circuit,³ we hope to develop a Giza Plateau walking circuit,

which will dovetail with MoA's initiative to revitalize tourism on the plateau.

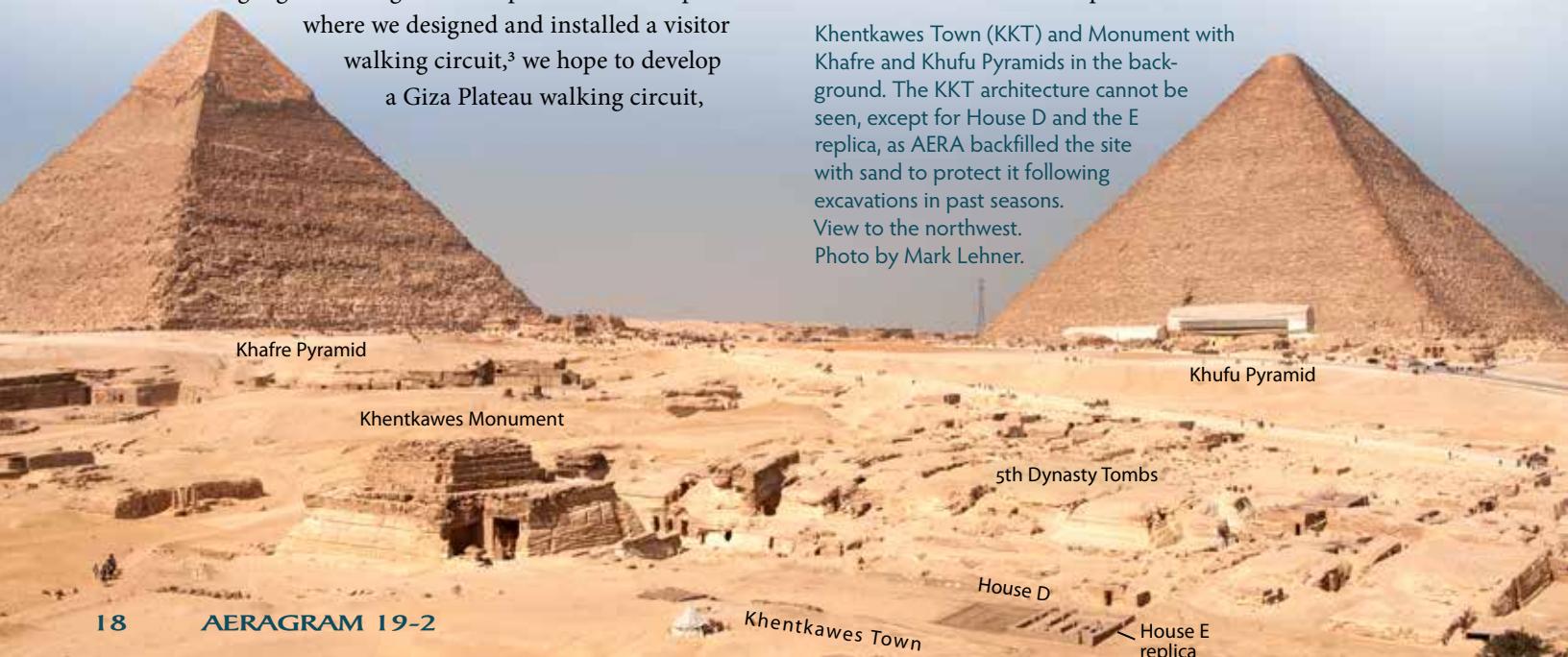
At KKT the 2018 field school students carried out the first steps in conserving and presenting another Khentkawes priestly residence, House D (photo below, on facing page, and on back cover), next door to the first replica. House D was the last remaining structure along the causeway that we had not yet excavated. We had only cleared the surface in 2011 to the tops of the surviving walls in order to map them in preparation for the House E conservation project.

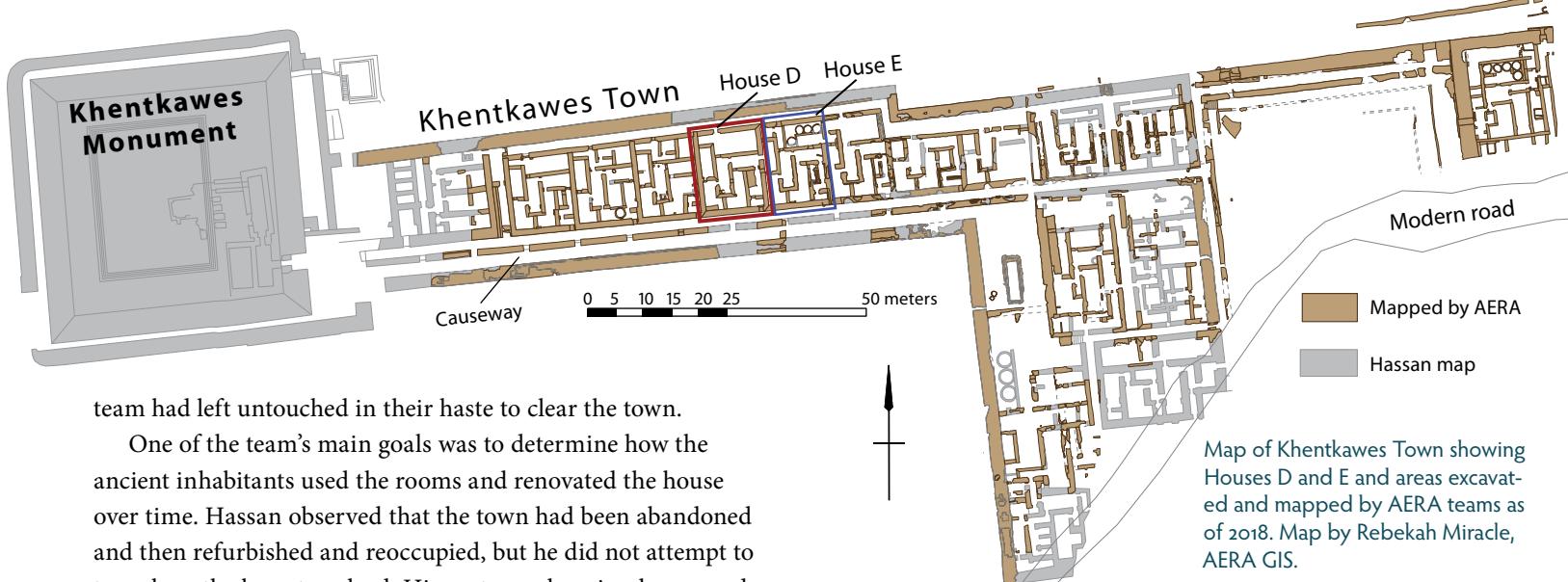
Under the supervision of AERA Senior Archaeologist Dan Jones and instructors Hanan Mahmoud and Rabee Eissa (MoA Inspectors, AERA Field School grads, and now AERA team members), the four students began work on House D in early March. Their task, as they honed their excavation and interpretation skills, was to pay particular attention to the architectural elements of the house, including floor surfaces and activity areas, and to record these in detail so that we would have a comprehensive plan to work from in reconstructing the house for visitors. The students also had the additional remit of "know in order to show." We asked them to bear in mind that they would eventually show the house; they were to think about signage, labels, and other means to tell its story to the public.

In the Field

Over the decades as KKT stood exposed to the elements, the mudbrick walls deteriorated and windblown sand and modern garbage accumulated in the ruins (see photos, facing page). The students cleared this away to reveal the remains of the walls, as well as ancient deposits and features that Hassan's

Khentkawes Town (KKT) and Monument with Khafre and Khufu Pyramids in the background. The KKT architecture cannot be seen, except for House D and the E replica, as AERA backfilled the site with sand to protect it following excavations in past seasons. View to the northwest. Photo by Mark Lehner.





team had left untouched in their haste to clear the town.

One of the team's main goals was to determine how the ancient inhabitants used the rooms and renovated the house over time. Hassan observed that the town had been abandoned and then refurbished and reoccupied, but he did not attempt to trace how the layout evolved. His cartographer simply mapped the site as if everything belonged to a single phase. The students tried to sort out the phases from what remained 86 years after Hassan excavated.

They identified the original layout of House D, which was probably built during the 4th Dynasty-reign of Shepseskaf, Menkaure's son and successor. When Menkaure died before completing his mortuary complex, Shepseskaf finished it and also built the Khentkawes Town.

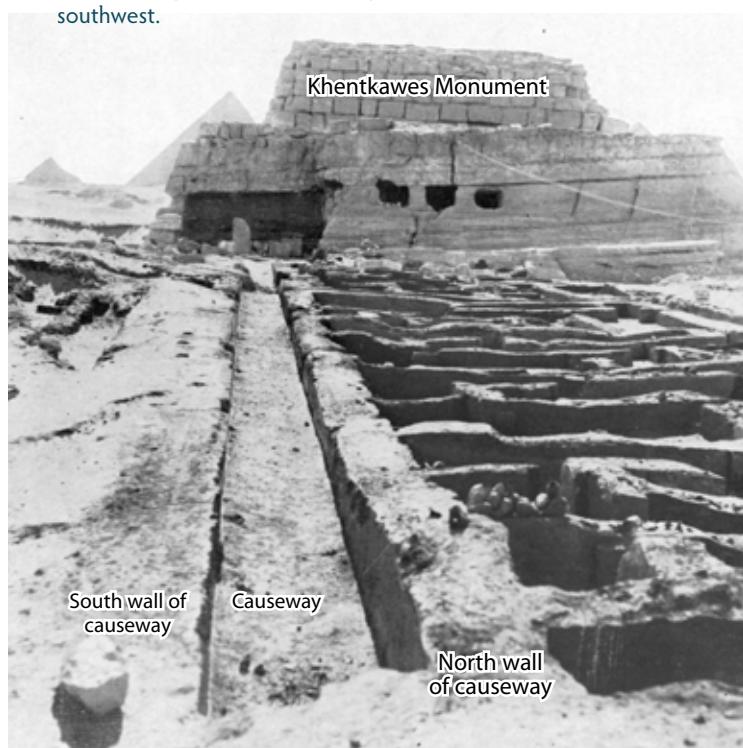
The layout of House D is similar to five of the other houses. As Hassan noted, they were all built along the same general plan with some internal variations. An entrance in the southeast corner opened onto the queen's causeway, 5.4 feet (1.60

Below: The field school team at work excavating and documenting House D. The replica of House E on the right (also shown on page 20) was constructed in 2011 as part of a conservation project. House D is on track for the next conservation project, and the field school is carrying out the groundwork for it. View to the northeast. Photo by Mark Lehner.



Below left: The Khentkawes Town after Selim Hassan completed his excavations in 1933. The walled causeway can be seen running west to the chapel in the Khentkawes Monument. Photo from Hassan 1943, plate IV, note 1. Compare the condition of the site in this photo with the way it looked 85 years later in the photos on the right and on the back cover.

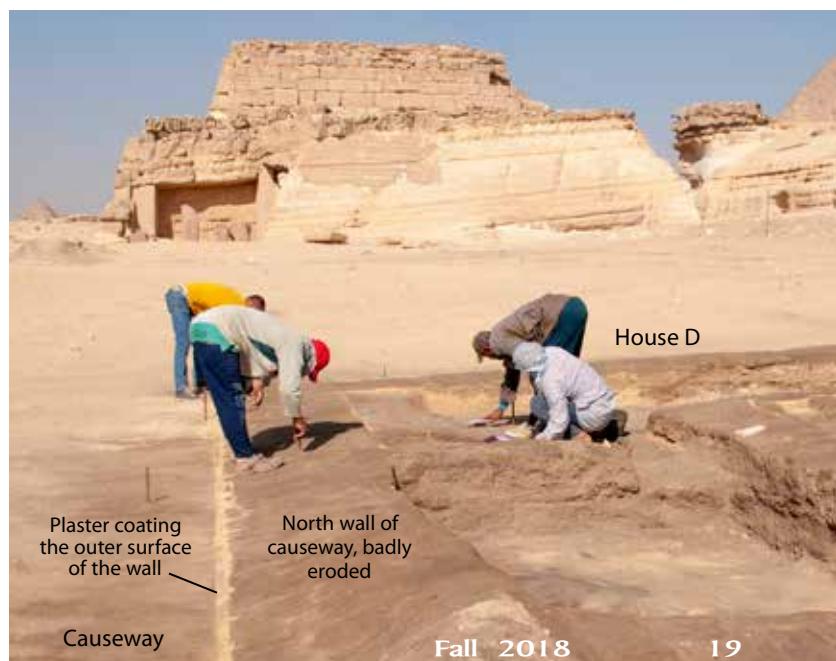
Below right: The field school team found the causeway and House D walls badly denuded. Photo by Mark Lehner. View to the west-southwest.



South wall of causeway

Causeway

North wall of causeway



Plaster coating the outer surface of the wall

Causeway

North wall of causeway, badly eroded



Above: East end of both House D and the House E replica. Note the blocked doorway to the causeway. View to the northeast. Photo by Mark Lehner.
Right: Map of House D showing the original floor plan. Map by Rebekah Miracle, AERA GIS.

meters) wide, which ran along the southern side of the housing block.

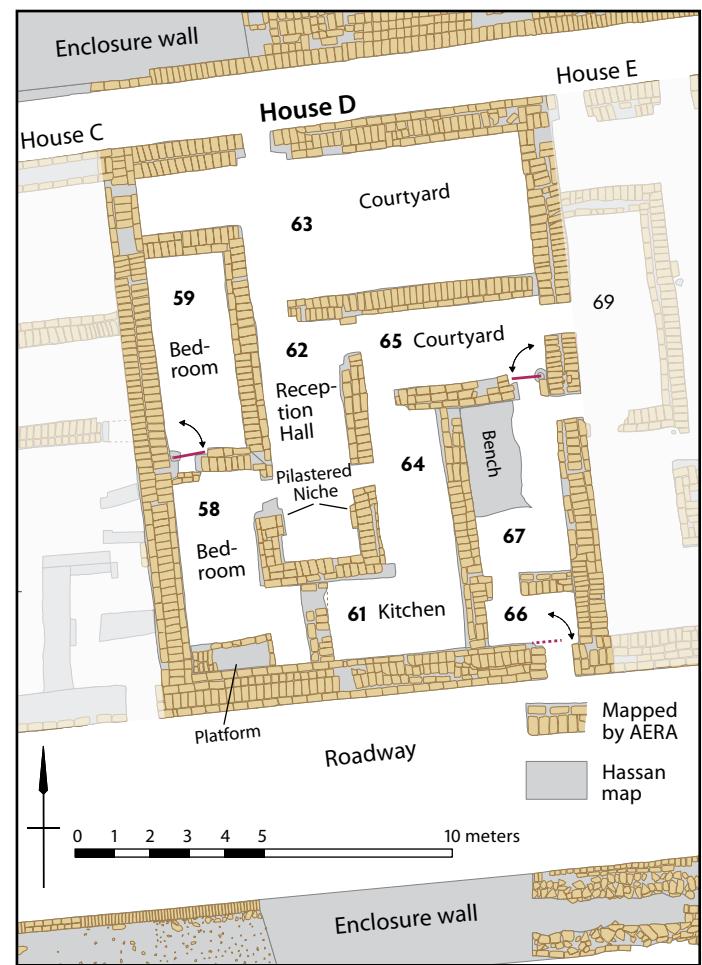
The access to House D, as in many Old Kingdom residences, was a zigzag affair. Anyone entering the house had to make a couple of 90° turns, left then right in the tiny vestibule, Room 66.⁴ A door at the entrance probably pivoted inward from the west side of the opening, like the one in House E, making the space even tighter. But we have not yet removed the blocking in the doorway (discussed below), which would cover any pivot socket that might be there, so we cannot be certain about its position.

The vestibule connected to Room 67 via an opening that might have been screened with a curtain. Much of that room was once taken up with a bench, which the students found badly degraded.

At the north end of 67, a door secured from the other side opened into a courtyard. The door's orientation was confirmed by a stone pivot socket, resting *in situ*, which Hassan's workers had missed but the students found.

While access to the house from the south was controlled by the zigzag vestibule and two doors, it was relatively unfettered from the north. The northern entryway opened directly into Room 63—no zigzagging required. The rebate in the wall indicates that it had a door, one that probably pivoted on a socket that the team found lying displaced nearby.

Room 63 must have been an open courtyard, given that it was too wide a span for a timbered roof.⁵ Along its south wall, an opening in line with the northern door, gave access to the long, narrow central Room 62. Configured like chambers we have seen in large, high-status houses at the Heit el-Ghurab site, this was the reception hall where the master would have



carried on business and received visitors, while seated in the pilastered niche at the south end of the chamber.⁶

The east wall of the reception hall had two access points: one into the kitchen, Room 61/64, and the other to Room 65. In the reception hall's west wall an opening gave access to Room 58, a space that probably served as a bedroom, as suggested by a narrow platform, about 6.5 feet (2 meters) long and 2.3 feet (0.7 meters) wide, in the southwest corner.

At the north end of this bedchamber a doorway opened into 59, which was probably another bedroom. In the opening, the students located another stone pivot socket that indicated a door swung into the second bedroom and would have been locked from within it. They also uncovered what might have been a step at the entrance, which would have allowed for a transition between floors built at different levels. KKT was constructed on a natural geological plane inclining down at 6° from northwest to southeast, and the house floor slopes gently with it. But the builders also used fill to moderate the angle of the slope. Here they may have attempted to minimize it in the back bedroom.

Conjoined Houses

Based on their architecture, Houses D, E, and F appear to have been built as separate, independent residential units. Yet from the time of completion, they were interconnected. House D accessed House E via two openings into E's back bedroom (photo above), one of which was blocked up early on. House

E's courtyard, Room 79, was open to House F as it had no east wall.

Sometime after the houses were completed, builders constructed a wall down the length of the broad southern roadway, enclosing a causeway just under 5.24 feet (1.60 meters) wide, leading to the Khentkawes chapel. The southern doors of all the priests' houses opened onto it, giving them direct access to the funerary chapel. But that changed.

The team discovered that well before the end of the 5th Dynasty, House D's southern entrance was blocked, as, it appears, were all the southern doors in the KKT housing block (see below), closing off access to the causeway and shifting the main entrances to the northern entryways.

Evolving Layout, Dynamic Organization

With this shift in access, the functioning of House D must have changed radically. The residents no longer had access to the chapel where priests would give offerings to sustain the deceased queen. This change prompts us to reconsider the standard interpretation of the modular mudbrick houses, that they were homes for priests serving Khentkawes's mortuary cult. That interpretation hinges on the priests' privileged access to the chapel via the causeway and thus the offerings to which they had rights through their office. After the southern doors were sealed, the residents could only exit onto the northern street, a corridor from which several doorways opened into pathways leading to the quarry tombs just to the north.

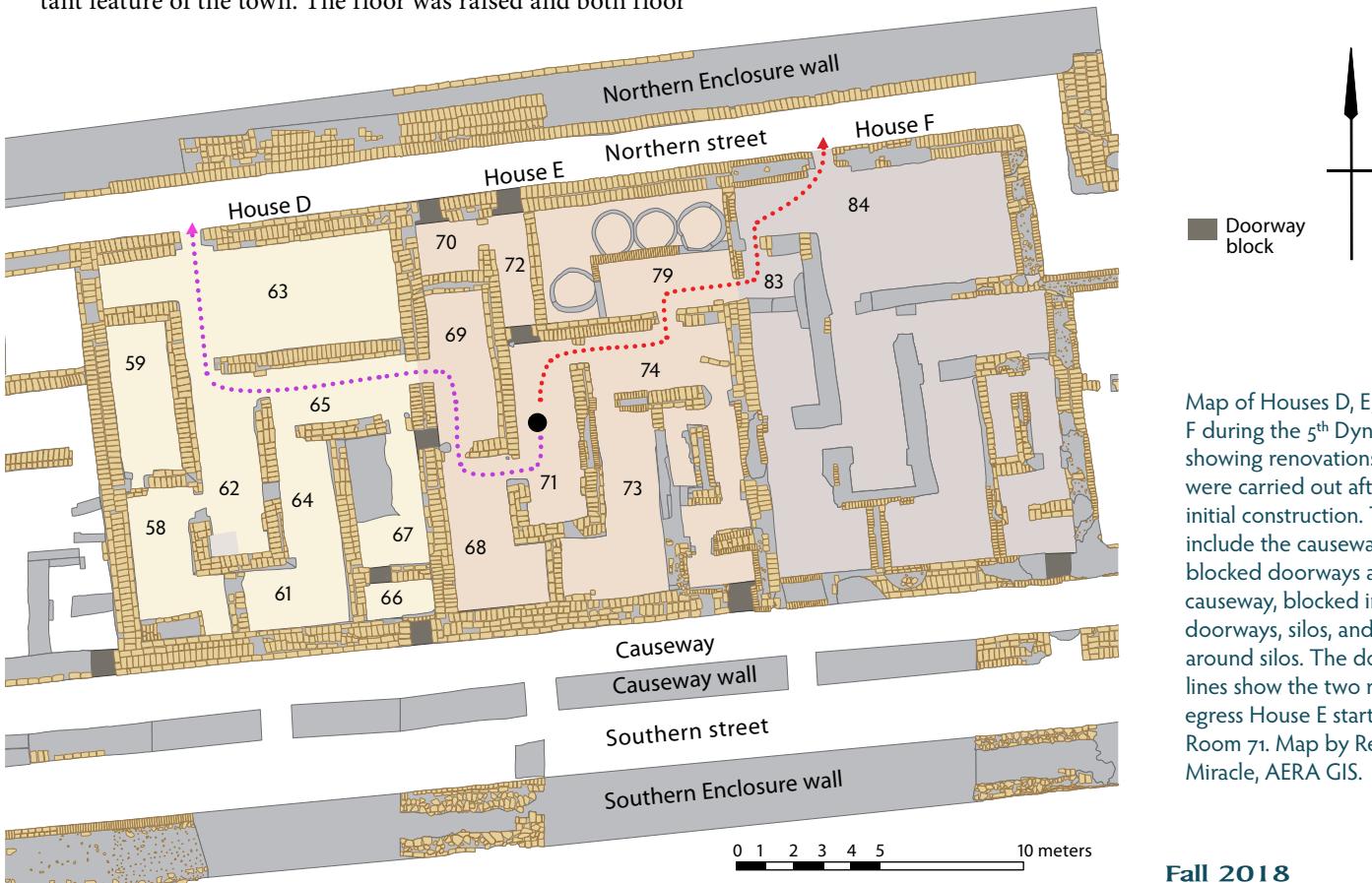
But the causeway was not abandoned. It was still an important feature of the town. The floor was raised and both floor

and walls replastered. The plastering on the north wall was done as a single operation, indicating that the southern doors must have all been blocked at the same time.

What is particularly important, and surprising, about this discovery is the timing of the blocking. The team's careful stratigraphic work revealed that the southern doors were sealed in the midst of the 5th Dynasty, not on the eve of abandonment, as we had previously assumed. It appears that the town, and perhaps the mortuary cult, were dynamic organizations throughout the 5th Dynasty.

Once the southern entrance was sealed in House D, the tiny vestibule, Room 66, may have become a storeroom for water jars, as Hassan suggested. But after a time residents began discarding trash in the cramped space, not an uncommon practice in ancient mudbrick houses when rooms were no longer in use. Eventually the residents barricaded the opening in the vestibule's north wall, building a block directly on top of garbage. Perhaps they were trying to contain a growing trash heap that was spilling into the adjacent room. But if the block were only a low wall, they may have continued tossing trash into the space. Or they may have completely sealed the chamber, reducing it to dead space. We cannot say since very little of the blocking was preserved.

During this period, the opening between the reception hall, 62, and the kitchen, 61/64, was blocked off as well. There is no evidence of any other alterations in the hall. But there were changes in House E that would have affected House D and possibly Room 62's function.



The pilastered niche at the south end of Room 62 in House D during the 6th Dynasty reoccupation. The semicircular feature was added during this period along with the two bricks set in the side of the niche. Photo by Dan Jones.

The north end of House E underwent a series of renovations that eventually sealed it off from the rest of the residence (map on page 21). The northern doorways were blocked and Room 70/72, to which they opened, was sealed on its south side, leaving the residents with egress and entrance only through the adjacent houses. In effect, D, E, and F became one large house. The renovators also constructed large mudbrick silos in E's courtyard, Room 79, partially enclosing them with walls, and for a time both E and F had access to the silos. But at some point House E residents were closed out of the silo courtyard, left with the only access to the outside through House D.

To use House D as their portal, they would have gone through the doorway in their Room 69, into 65 and then through the reception hall, 62, to reach the north end of the house and the doorway. In House D at that point, with the next door neighbors traipsing through, was the reception hall still a place fit for the master to preside? Perhaps the occupants of House E were no longer just next-door neighbors, if they ever were, but members of the master's own family that had overflowed into E after filling D.

New Life in Khentkawes Town

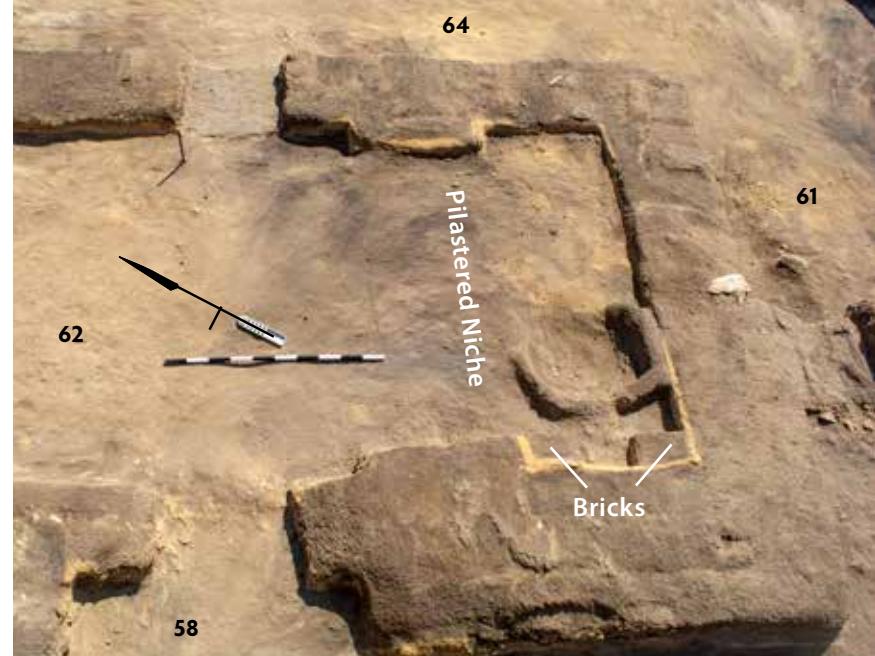
At the end of the 5th Dynasty, KKT was abandoned and over the next century or so fell into ruin, before new residents arrived. They repaired and moved into the northern portion of the town, probably late in the 6th Dynasty when king Pepi II (2216–2153 BC) re-endowed Menkaure's cult and rebuilt the Menkaure Valley Temple, which had been badly damaged in a flash flood.

House D apparently needed no repairs, but in the pilastered niche, where the master once sat, the new residents built a structure that appears as a circle on Hassan's map. Some 85 years after the cartographer drew that circle, our team found only a single course of mudbricks forming what appears to be half of a circle or an oval. We do not know how high the feature originally stood, but the dimensions—2 × 1.8 feet (64 × 56 centimeters)—suggest a small household silo or an animal feeding trough (photo above).

Next to the circular feature, against the west wall, tucked between a pilaster and the south wall, two bricks were inserted opposite each other with a slot between them, perhaps used to support something or to function with the circular feature.

Home Fires

In each of the two bedrooms (58 and 59), the kitchen (61–64), and Room 65, the team found ash and charcoal deposits mixed with windblown sand. The ash was concentrated in the



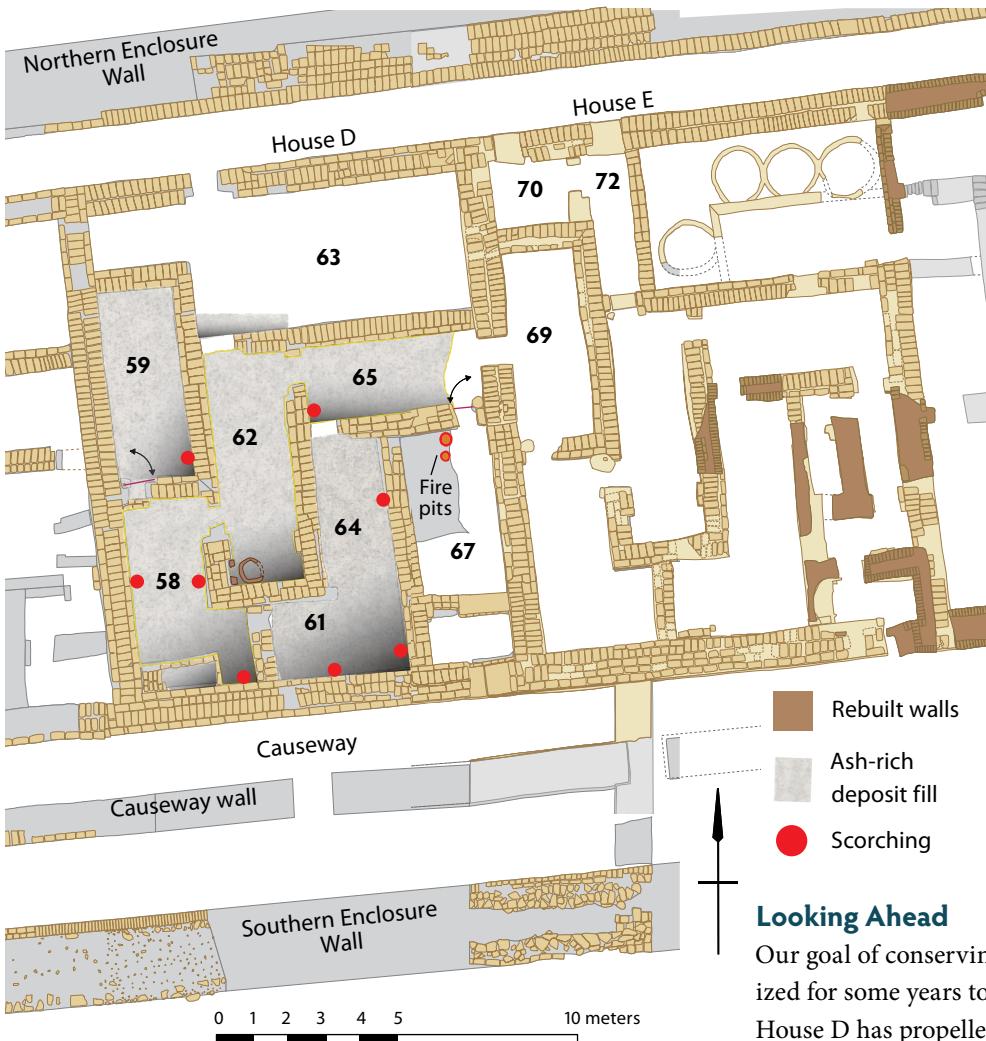
southern ends of these chambers and was most likely left from the heating and cooking fires that once burned in the house. Indeed, Hassan observed, "Many of the ovens which we found in these kitchens contained the ashes of the last fires lit in them."⁷

In addition to the ash deposits, our team found evidence for heating and cooking that dates from the 6th Dynasty and possibly earlier. In the room that Selim Hassan called the kitchen, they discovered features suggesting that the room was indeed a kitchen. They uncovered scorch marks on the east wall near its north end, and still more scorching in the southeast corner, where it appears an oven once stood.

The students uncovered more scorched walls in the bedrooms (photo, facing page) and in Room 65, all probably the result of heating fires burning next to the walls (marked on the map, facing page), possibly in simple open fires or hearths. The team did not find any hearths where they excavated, but in Room 67 they uncovered two small firing pits, with brownish red sides, the result of repeated fires, probably for heat.

We may yet find hearths in a future field season. On the west side of the house, Hassan's excavators left deposits untouched when they quit before reaching the floor. Because of time constraints our team did not get to excavate them, but these deposits have already given up some information. The field school team collected flotation samples from each of the deposits in order to recover plant remains (see article starting on page 24 for more on plant remains).

The flotation samples revealed a household busy cleaning cereals for daily food preparation. According to AERA Archaeobotanist Claire Malleson, the samples, like the ones from House E that she studied in 2013, were rich in field weed seeds and cereal chaff, items that were separated from the grains through sieving, winnowing, and hand cleaning, and ultimately used as tinder and fuel.



Above: The east wall of Room 58 was scorched by fires, probably used to heat this bedchamber in the winter. The area is marked on the map at the left, just to the right of "58." Photo by Dan Jones.

Left: Map of Houses D and E showing the final occupation features and the ash-rich deposit fill that covered part of House D. (Note: Ash deposits also covered part of House E, but are not shown here.) Map by Rebekah Miracle, AERA GIS.

Looking Ahead

Our goal of conserving and displaying KKT will not be realized for some years to come, but the field school team's work on House D has propelled us a few steps closer. Their detailed floor plan will provide the blueprint for the modern replica. Their suggestions for conveying the house's story to the public will inform the final design.

The team must also be congratulated for their major contribution to our evolving understanding of KKT. They determined that access to the causeway from the houses was *not*, as we had believed, blocked at the end of the first occupation, but in the midst of it, muddy the accepted interpretation of the housing block as home to priests. ~ Wilma Wetterstrom

This article is based on material from the House D Data Structure Report by Hoda Osman Khalifa Eid, Shaimaa Abd el-Raouf Mahmoud, and el-Sayed Ahmed Shoura, and edited by Rabee Eissa and Dan Jones; Claire Malleson's end of season archaeobotany reports for 2018 and 2019, and her Giza Archaeobotany Database at Opencontext.org.

1. Hassan, S., *Excavations at Giza, vol. IV, 1932–1933*, Cairo: Service des Antiquités de l'Égypte, 1943.
2. Tavares, A., "Bringing an Ancient House Back to Life," *AERAGRAM* 12-1, pages 16–19, Spring 2011. Issues of *AERAGRAM* are available for free download on our website, aeraweb.org.
- 3 "Conclusion at the Capital: MSCD Project Finished," *AERAGRAM* 18-2, pages 1–11, Fall 2017.
4. The room numbers used here are ones that appear on Hassan's map of KKT, 1943.
5. Ancient Egyptian timbered roofs were restricted to 11.5 feet (3.5 meters), unless there were supporting columns. See J. Nolan and G. Heindl, "Double-Decker Dorm? Reconstructing the Galleries," *AERAGRAM* 11-2, pages 7–9, Winter 2011.
6. "Another Official's House Emerges in Season 2015," *AERAGRAM* 16-2, pages 18–21, Fall 2015.
7. Hassan, page 38, 1943.

The House D samples, like those from House E, stand in sharp contrast to the Heit el-Ghurab (HeG) flotation samples. They contain a much higher proportion of cereal chaff: over 26% compare with less than 2% in the HeG samples. HeG was provisioned by the state and received cereals that had been cleaned. Khentkawes Town, on the other hand, procured grain through other means; the cereals arrived at the settlement minimally processed, possibly from local fields farmed by the residents or their kin. Household staff were left to complete the tedious cleaning before they could grind the grain into flour, cook it as porridge, or sprout it for brewing.

Still Conjoined

Houses D and E were conjoined during this second occupation, with the same configuration as during the earlier one. It appears that all of the chambers in D, save for the northern end of the house, were put into service, as indicated by the many walls that were rebuilt (shown in the map above). But the chambers may not have all been used in the same way as during the 5th Dynasty. With the pilastered niche no longer the framed seat of a high-ranking person, the master of the conjoined household probably conducted business and held audience in other rooms.

From Dirt to Database:

The Life Cycle of a Flotation Sample



AERA flotation specialist Abd el-Latif Ibrahim prepares the flotation tank. Having lined the drum with mesh, he fills it with water. The sediment sample he will be floating waits in the white bag in the background.



After having measured the sample's volume and poured the sediment into the tank, he records the sample number, volume, and the date in his flotation field notebook.



3

The "light fraction," buoyant plant remains, floats, while heavy materials sink. A mesh catches the heavy remains as the dirt, in suspension, passes through to the bottom of the tank. After all the light fraction has been collected, Abd el-Latif recovers the "heavy fraction" and sets it out to dry. Later, lab assistants pull out cultural material, such as clay sealings and small objects, and plant remains that sank, such as dense nut shells.



As Abd el-Latif agitates the sample, the plant remains floating on the surface are carried away by the water pouring down a sluice on the side of the tank and fall onto a fine-mesh sieve below.



Abd el-Latif collects the last of the floating plant remains with a tea strainer and (below) knocks the material from the strainer into the fine sieve where the rest of the plants were caught.



6

When all of the sample has been processed, he gently transfers the contents of the sieve to a piece of cloth and hangs the cloth, with contents folded up inside, on a line to dry.



7



Photos 1 through 6 by Richard Redding.

Once the plant remains are dry, Abd el-Latif packages them and sends the packets to the AERA Field Lab. In the lab, archaeobotanists examine the samples under a microscope, sort them into types, identify them using reference material, and count them. They record the taxa and the numbers of each type, and enter the information in the ever-growing Access botanical database and now also the Giza Botanical Database (see next page). Photos by Ali Witsell.

Giza Grains, Chaff, and Seeds Ready to Explore at OpenContext.org

by Wilma Wetterstrom¹

Since the first field season at the Heit el Ghurab (HeG) settlement (aka Lost City of the Pyramids) in 1988–1989, the AERA team has systematically taken samples of sediments from our excavations in order to recover remains of plants. Primarily cereal grains, chaff, straw, weed seeds, pulses, and bits of charcoal, these remains were charred in fires as fuels, discards from food processing, spills, and cooking accidents. Charring left them intact and relatively impervious to microbial decay, buried in the layers of the ancient settlement. But these materials are for the most part minute and cannot be picked out by hand during excavation, as a lump of charcoal or pottery sherd might be. Hence, we collect sediment samples from which plant remains can be retrieved via flotation, a water separation technique (see facing page). The material that is recovered goes to the AERA Field Lab for study.

Now, thirty years after our first field season, we have amassed records for 3,000+ samples, encompassing a staggering 275,000+ plant remains, including material from HeG and, since 2005, from the Menkaure Valley Temple and Khentkawes Complex. Claire Malleson, AERA Archaeobotanist and Director of Archaeological Science, recently brought all of this data together and prepared it for open access via the Open Context website (opencontext.org), where it is available to users worldwide. Supported by an Antiquities Endowment Fund (AEF) grant from the American Research Center in Egypt (ARCE), Claire worked on the Giza Botanical Database Project with collaborators Rebekah Miracle (AERA GIS) and Eric and Sarah Kansa (Open Context).

Before the project began in July 2017, only a fraction of the data on the 3,000+ samples was available through publications. Claire believed the whole set should be made widely available because of its great research potential and its significance as a unique dataset. The HeG site is one of the few ancient settlements in Egypt from which plant remains have been extensively, systematically, and uniformly sampled and processed for the entire history of excavations at the site. This great continuity along with a comprehensive sampling strategy and large number of samples renders the Giza assemblage a gold mine for statistical analyses, comparative studies, and research on HeG.

But the data in its original form, an Access database, was not a viable option for a wide audience. Over the 26 years the database developed, it had accumulated mistakes, outdated botanical nomenclature, and obsolete grid and feature numbers. To prepare the data for Open Context, Claire reviewed all 3,000+ records, expanded the details of the

botanical information, and where needed, corrected and/or updated information.

On the Web

The Giza Botanical Database went live some months ago, and though the team is still uploading material, there's plenty to peruse. The project webpage² opens with an abstract, map, and options for exploring the database via links. The user will soon discover the

enormous potential after browsing for a while.

The Giza Botanical Database also offers on its homepage two tables as Excel files to download. One is a handy synopsis of the plant data in a format archaeobotanists often use. Each feature is listed with the counts of every taxa recovered from it. The other table provides more detailed information for each botanical specimen and links to eol.com (*Encyclopedia of Life*) for botanical information about the plants.

Using the Giza Botanical Database

The database offers a wealth of information for archaeologists investigating plant use—diet, economy, farming, trade—in North Africa and the Eastern Mediterranean during the Early Bronze Age/Old Kingdom as well as comparative data for other periods. The sidebar on the next two pages shows how a scholar might use the website to help answer two types of research questions.

¹. Wilma Wetterstrom served as AERA's first archaeobotanist, participating in the first three field seasons. Although she spends most of her time now preparing AERA publications, she still enjoys studying charred seeds under a microscope and continues to do archaeobotanical research.

². <https://tinyurl.com/y5wyq9v>, or locate Giza Botanical Database by typing "Giza" in the search box on the opencontext.org homepage.



Claire Malleson, AERA
Archaeobotanist and Director
of Archaeological Science

Using the Giza Botanical Database to Research Diet, Class, and Ancient Agriculture

Diet and Status

We know that HeG was a settlement of people of high rank, humble folk, and people in between. We also know that persons of high status had greater access than anyone else to the choicest meat and fish.¹ Did they also have preferential access to “expensive” plant foods as well? One of the very few concentrated sources of sugar in the Old Kingdom, cultivated figs (*Ficus carica*), fresh or dried, were probably “expensive.”² Introduced from the Eastern Mediterranean, figs were often depicted in tombs of the well-to-do as food offerings and in fruit harvest scenes. The wealthy might have grown fig trees in their gardens.

Did the wealthy of HeG have greater access to fig fruits? We turn to the Giza Botanical Database to find out. On the database homepage,³ “Data Records” (on the right side) opens a menu with several options that are links, including “Plant remains.” Using the filter on the plant specimens page, we can generate a list of all fig (seeds), with the areas where they were found.

We can compare the numbers of fig seeds in these areas, which are located in different “neighborhoods” of the settlement representing a range of social ranks. The downloadable Excel file “Giza-Botany-Feature-Summaries.xlsx” provides the counts in each area by archaeological feature.⁴

The table on the lower right shows the counts. SFW.H1 (Soccer Field West, House 1) produced the largest number of fig seeds (74), followed by BB (the Buttressed Building) (15), AA-S (AA-South) (8), and AA (7). But numbers alone are not adequate to compare areas since the volume of sediment collected for flotation varied widely. So for the comparison, I calculated the number of figs per volume of dirt collected from each area and also the percentage of features that contained figs. SFW.H1 has the highest values: 0.1235 fruits per liter of flotation sediment and 19.7% of features contain fig seeds. AA-S, AA, and BB produced much smaller values, but greater than those of the three areas that yielded only a single fig seed each.

The fig seed distribution suggests that people who inhabited SFW.H1 enjoyed far more figs than lower-ranking residents in other parts of the site. We believe that SFW.H1 was home to a high official and a scribal workshop. Another high official resided in Area AA-S. In contrast, the three areas yielding only one fig seed were home to people of lower status. The seeds found in GIII.4 (Gallery III.4 in the gallery complex) came from an ash deposit near a guard/doorman’s post—probably the remains of a fire used for warmth. The TBLF (Area “The Big Leap Forward”) sample came from a section of one of the galleries where a foreman probably lived. ETH (Eastern Town House) was a small house in the village on the eastern edge of HeG.

The samples from Areas AA and BB came mostly from ash layers associated with bakeries. Figs were perhaps used here to

The screenshot shows the Giza Botanical Database homepage. At the top, there's a header with 'OPEN CONTEXT' and a search bar. Below the header, there's a large image of the Pyramids of Giza and the Sphinx. A sidebar on the left lists 'Project', 'Giza Botanical Database', 'Chronological Periods', 'Areas', 'Analysis', 'Reports', 'Publications', and 'Contact'. On the right, there's a 'Suggested Citation' section with a link to 'Cite This Page'. A red circle highlights the 'Record type: Plant remains' option in a dropdown menu. The main content area is titled 'List of all plant specimens' and shows a table with columns: 'Item Label', 'Project', 'Context', 'Category', 'Early (BC/CE)', and 'Late (BC/CE)'. The table lists various items, many of which are categorized as 'Plant remains'. A second red circle highlights the 'Filter by Text Search (Data Records)' button. Below this, another table titled 'List of fig specimens' is shown, with similar columns and a list of items categorized as 'Plant remains'.

Heit el-Ghurab Area	Number of fig seeds	Total liters of sediment for flotation	Fig seeds/liter of sediment for flotation	Percent of features with fig seeds
SWF.H1	74	599	0.1235	19.7%
BB	15	3538	0.0042	2.0%
AA-S	8	423	0.0189	4.0%
AA	7	2022	0.0035	2.3%
ETH	1	569	0.0017	-
GIII.4	1	2728	0.0003	-
TBLF	1	543	0.0018	-

flavor bread, as they were in the New Kingdom. These bakeries may have baked for higher status people, given their location. The AA bakery was in the compound with the *wabet* (“pure place,” a term for a royal mortuary workshop), as attested to by the clay sealings from AA, where priests prepared supplies for the king’s tomb.⁵ The BB bakery stood in a royal administrative building where grains were stored in large silos and then dispersed. Administrators would have overseen these operations while scribes recorded them. None of the numerous bakeries elsewhere in the site yielded evidence of figs.

This simple analysis of fig seed distribution at HeG, a starting point for studying access to sweet foods at Giza, illustrates how the Giza Botanical Database makes it possible to launch such a study quickly and efficiently.

Comparative Studies

The Giza Botanical Database also offers valuable, readily accessible data for comparative studies across time and geographical areas. For example, we might ask if cereal preferences changed through the period from 2400 to 1400 BC. We can easily calculate the HeG data points using counts for emmer wheat and barley grains and for cereal chaff taken from the Botanical Database. The data might be expressed as the ratio of emmer wheat to barley grains or emmer to barley chaff. These ratios could also be data points in a comparison of Upper and Lower Egyptian cereal choices.

The vast quantity of field weed seeds found at HeG, as well as other settlement sites in Egypt, offer much potential for studying ancient Egyptian agriculture. Often harvested with the crop, weeds can be a proxy for field conditions and harvesting techniques. For example, weeds that grow in moist soils might indicate that cereal fields were located near backwater swampy areas along in the Nile trunk channel. The presence of predominantly tall weeds suggests that the cereals were cut high up on the stem, possibly to leave the straw to be harvested separately.

The database provides the total counts of all the weed types recovered, many to species level, making it possible to draw inferences about how HeG foods may have been produced.

In a Delta wheat field, canary grass, a weed, grows among the cereal stalks. In ancient Egypt, canary grass and other weeds grew rampantly in the cereal fields, were harvested with the crop, and through a series of steps were separated from the grains. Some of them ended up charred and recovered via flotation samples during excavations.

The HeG weed assemblage might also be compared with those from other Egyptian sites in order to see how the relative abundance of weed types varied across Egypt and over time. Some types, for example, may have declined while others flourished, perhaps indicating changes in agricultural techniques.

Weed assemblages can reflect the processing stages that farmers undertake to separate weeds and chaff from the cereals. Each stage—winnowing, sieving, fine-sieving, and hand-sorting—produces a somewhat different collection of by-products. Winnowing removes small light materials, but does not separate out larger, heavier items. Sieving can remove many of the larger materials, but weed seeds that are about the same size and shape as cereals do not slip through the sieves, and have to be hand-picked.

The weed assemblages from different areas and features of HeG may reflect a particular stage of cereal processing and thus suggest whether workers were hand-picking contaminants from the cereals just before milling them. Or perhaps the assemblage might suggest that workers were fine-sieving grains possibly before storing them.

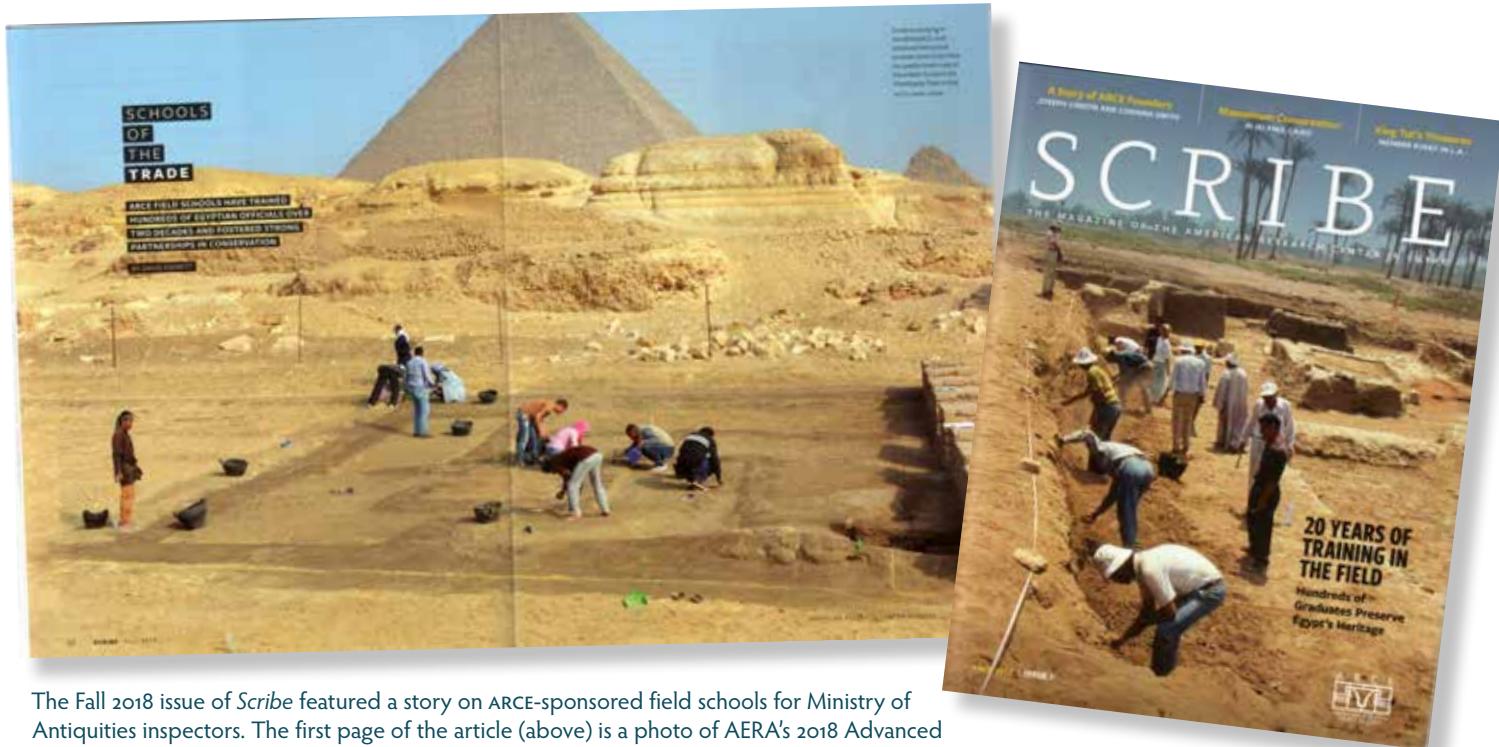
The weed data from HeG can be compared with assemblages from other sites for insights into ancient Egyptian cereal processing. For example, villages, where most grain producers lived, might yield weed assemblages with a higher proportion of by-products from early stages of grain cleaning.

Any researcher can carry out such studies using the Giza Botanical Database because all the data is there, easily accessible, and free. Thank you, Claire.

1. Redding, R., “‘Treasures’ from a High-Class Dump,” *AERAGRAM* 8-2, pages 6–7, Fall 2007. Redding, R., “Status and Diet in the Workers’ Town,” In *Anthropological Approaches to Archaeology, Colonialism, and Animal Transformations*, edited by D. Campana, P. Crabtree, S. D. deFrance, J. Lev-Tov, and A. Choyke, London: Oxbow, pages 65–75, 2010.
2. Honey was the main sweetener in ancient Egypt, but it was a “precious commodity, available only to the wealthy. The poor used dates or did without.” S. Ikram, “Diet,” in *The Oxford Encyclopedia of Ancient Egypt*, vol. 1, edited by D. B. Redford, Oxford: Oxford University Press, page 294, 2001. The earliest evidence of dates does not appear until the Middle Kingdom, so Old Kingdom folk had little access to sweeteners.
3. Visit tiny.cc/918q8y, or locate Giza Botanical Database by typing “Giza” in the search box on the opencontext.org homepage.
4. We can also locate all areas with fig seeds in the downloadable Excel file “oc-table-10476456-24f2-4e36-b5a8-e7d613fa1cc5.”
5. Nolan, J. S., “Change of Address: Funerary Workshop Priests Move to New Quarters,” *AERAGRAM* 15-1&2, pages 29–31, Spring–Fall 2014.

Photo by Claire Malleson





The Fall 2018 issue of *Scribe* featured a story on ARCE-sponsored field schools for Ministry of Antiquities inspectors. The first page of the article (above) is a photo of AERA's 2018 Advanced Field School excavation in House D of the Khentkawes Town at Giza. See article starting on page 18.

Field Schools Are Changing the Face of Egyptology And AERA and Its Graduates Are Helping to Lead the Way

Egyptologists in the Ministry of Antiquities (MoA) have served as Inspectors on foreign excavations for many years, as David Everett discusses in his article on the American Research Center in Egypt (ARCE) field schools in the Fall 2018 issue of *Scribe*, the ARCE member magazine.¹ But their university programs, like many academic programs in archaeology, do not train specifically in the field techniques of excavation and recording in scientific archaeology. To fill this education gap, in 1995 Diana Craig Patch (now curator at the Metropolitan Museum of Art) developed a formal training program in archaeological field techniques for inspectors sponsored by ARCE.

From that first field school, the program has grown into a very successful training ground, with a great many field schools, and AERA has played a significant part. “By far, the key leader in (the) next generation of field schools was Mark Lehner, one of the world’s best-known Egyptologists ...”²

Everett describes how AERA “developed a broader model of field school” starting in 2005, with longer sessions and “more formal, comprehensive instruction at active digs.”³ He traces the expansion into introductory and advanced courses, with specializations in archaeology, illustration, survey, ceramics, and excavation, followed by salvage archaeology, and finally, analysis and publication field schools.

Many inspectors have completed the full cycle of AERA-ARCE Field Schools and gone on to teach in AERA programs or other field schools, now including the MoA’s own programs. Some inspectors have also continued their education in graduate school and completed advanced degrees.

One of the inspectors featured in the article, Rabee Eissa, is the “personification of the benefits of field schools in Egypt.”³ After completing the AERA field schools, he went on to get both Masters and Doctorate degrees and now directs the ministry’s excavation at the Ptolemy II temple in Beni-Suef. He also works as a regular team member on AERA excavations and teaches in our field school (see article starting on page 18).

As more and more inspectors—the total now estimated to be 1,000—receive training through AERA’s programs and other field schools, the impact ripples across Egypt. Rabee notes in the article, “The field school is very important for the ministry because it creates a new generation of professional archaeologists.”³ Ministry Inspectors, once limited to watching from the sidelines, now participate in the digs and conservation projects they oversee, as well as run their own. Indeed, Everett observes, the field schools have helped transform the exploration of Egyptian heritage and culture. Once the domain of non-Egyptians, as described in a section on the history of Egyptology, this research is now a collaboration of foreigners and Egyptians, as well as independent Egyptian exploration.

The article offers an informative, interesting history of the ARCE field school program and its significance for Egypt as well as a compelling confirmation of our own program’s immense benefits to individual inspectors and Egypt.

1. Everett, D., “Schools of the Trade,” *Scribe, the Magazine of the American Research Center in Egypt*, Fall 2018, Issue 2, pages 12–23.

2. Quotations from page 19 of the article.

3. Quotations from page 14 of the article.



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