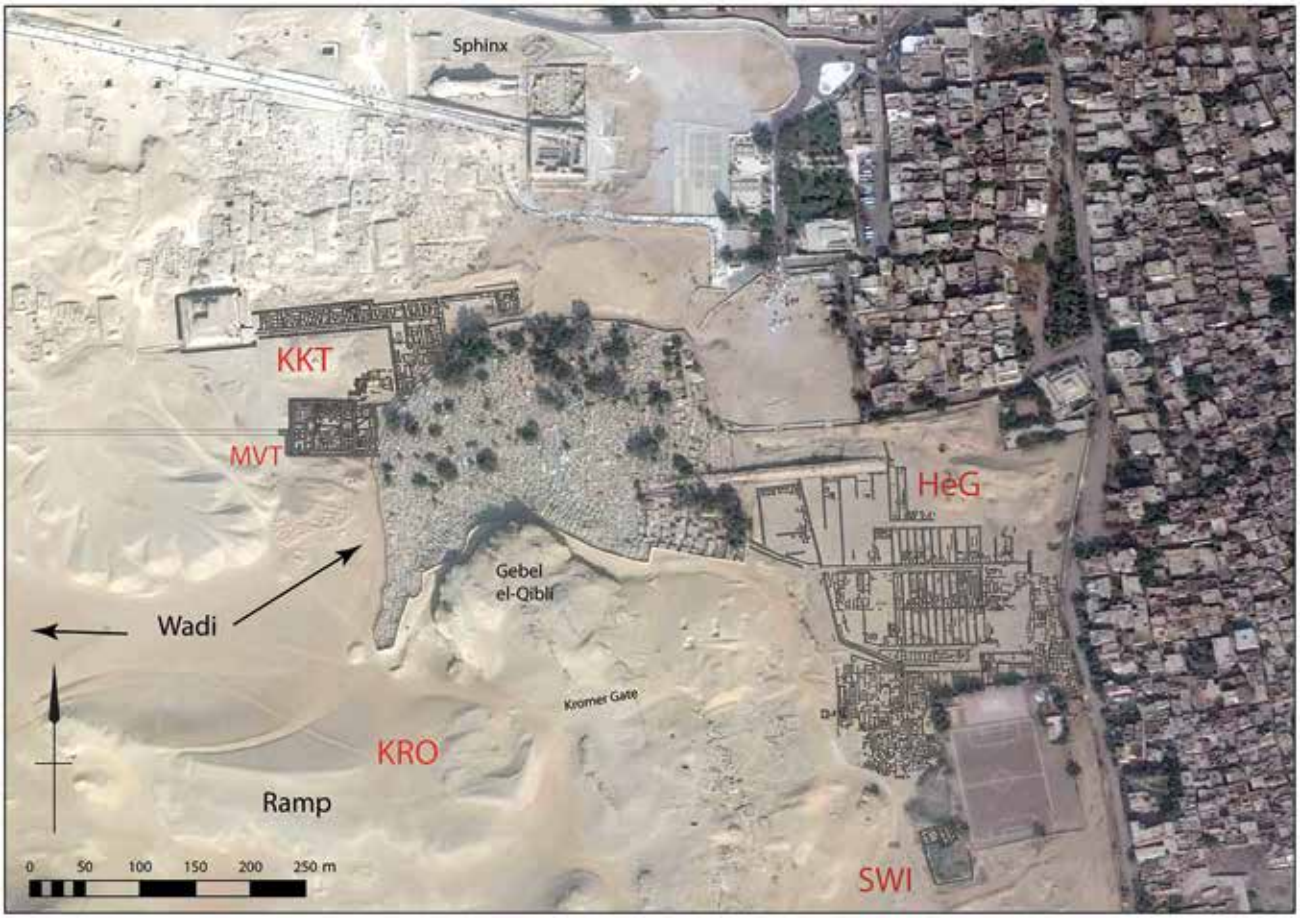
GIZA PLATEAU MAPPING PROJECT

MARK LEHNER | ANCIENT EGYPT RESEARCH ASSOCIATES

During field season 2018 (February 17 through April 14) Ancient Egypt Research Associates (AERA) excavated in three locations at Giza: the Heit el-Ghurab (HeG) settlement site, the Khentkawes Town (KKT), and the dump site excavated by Karl Kromer (KRO) on the western slope of the Gebel el-Qibli.

Eight Ministry of Antiquities inspectors trained in our AERA–ARCE Advanced Field School while embedded in our excavation, survey, and lab teams, funded by a grant to Richard Redding from the Antiquities Endowment Fund (AEF) of the American Research Center in Egypt (ARCE). Mohsen Kamel, AERA-Egypt executive director, and Daniel Jones, senior archaeologist, supervised site excavations. Students graduated from this session at a ceremony attended by Moustafa el-Waziry, general secretary of the Supreme Council of Antiquities (SCA), and Louise Bertini, ARCE Cairo director.



ABOVE: Figure 1. Satellite view of southeastern Giza Plateau showing three areas of AERA's Season 2018: KKT = Khentkawes Town; MVT = Menkaure Valley Temple; KRO = Kromer's Dump; SWI = Standing Wall Island; HeG = the Heit el-Ghurab, Arabic for "Wall of the Crow."

RIGHT: Figure 2. ES1 (Enclosure South 1) showing the older, inner enclosure; view to the south. Rabee Eissa and Ahmed Hamad examine one of the inner walls (upper right). Ashraf Abd el-Aziz, Said Abdul Ahmed (top center), Shaimaa Abd El-Raouf, and Hoda Osman (center left) examine cuts through the thick stone wall that divides ES1 from ES2. ES2 remains covered under the protective sand of our backfill (upper left).

HEIT EL-GHURAB SITE: SWI (STANDING WALL ISLAND)

In the first part of season 2018, all eight students and supervisors of our advanced field school practiced excavation and recording skills on an ancient walled enclosure, ES1 (Enclosure South 1), in the northern end of the bigger compound we call Standing Wall Island (SWI), so-named because in 2004 we found its outer fieldstone wall standing up to a meter high.

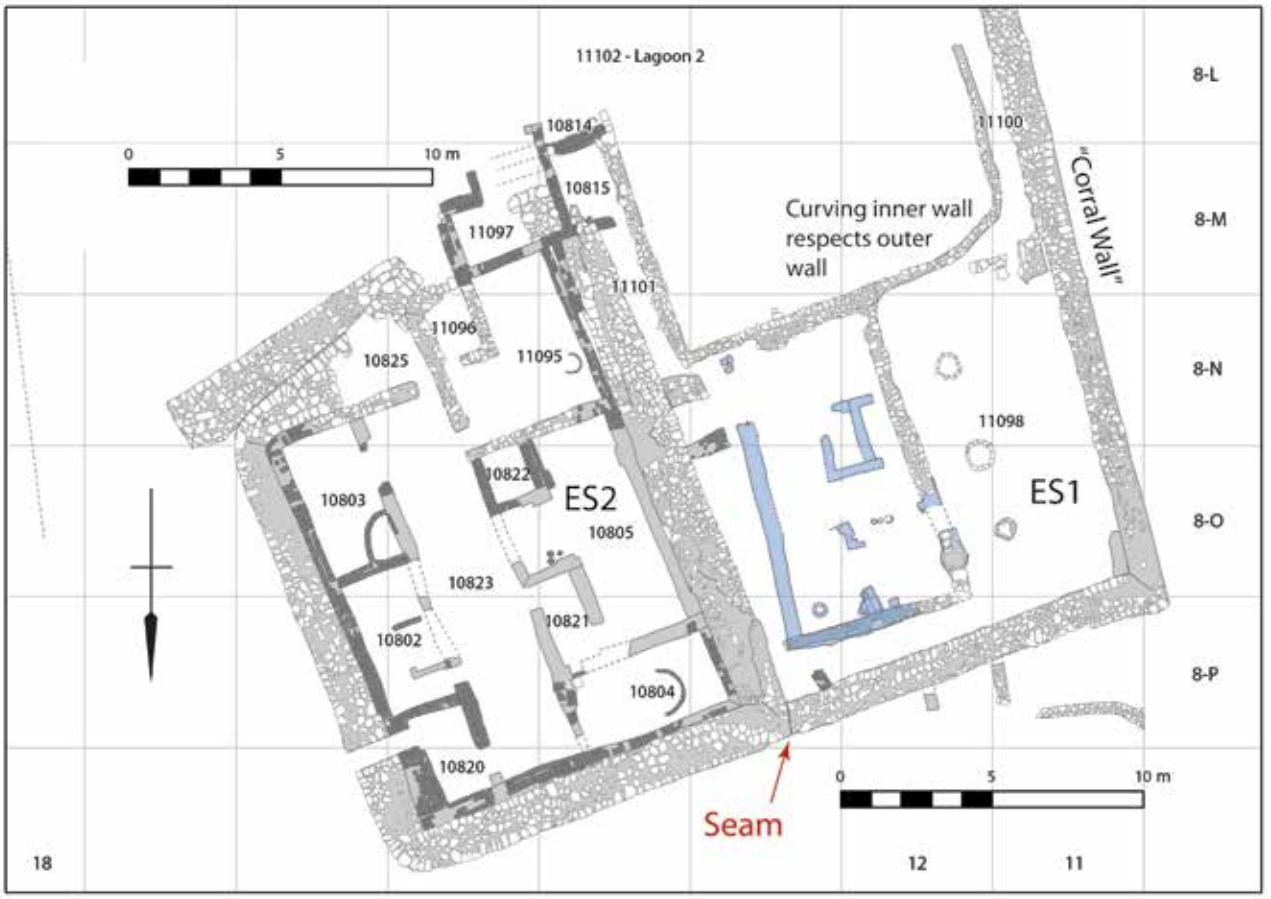
On the north, the thick outer SWI wall frames two smaller enclosures, ES1 and ES2, then continues south, turns a rounded corner to run east, then runs back north, leaving a broad corridor on the east. The whole paper clip pattern encloses a big empty area in which our deep trenches revealed only clean sand. When we found the outer loop in 2011, faunal analyst Richard Redding laid down the compelling hypothesis that it was a corral.[1] The paper clip pattern matches corrals depicted in ancient Egyptian art, ancient corrals found in Egypt and elsewhere, and even some aspects of modern corrals (like the rounded corners).

When we returned to SWI in 2015, we hypothesized that enclosures ES1 and ES2 provided shelter for slaughtering and butchering. But here we found an elite residence perhaps for the person in charge of the whole SWI compound.[2] In 2016, we honed our understanding of the house in ES2.[3]

Already in 2011, we knew the outer wall, which gives us the pattern of a corral, was the last thing built on SWI. The "house" was composed of mudbrick in ES2 before builders threw a thick, stony girdle around it. Afterward, they attached the corral wall to the northwest corner (labeled "seam" in figure 3) and looped it around to the south not long before people abandoned the compound, at a time when sand was already starting to invade. Only then was ES1 enclosed on the north and west. So ES1 may not have existed before the "corral wall" surrounded and defined it as an enclosure.

However, our 2018 excavations revealed an earlier enclosure within the ES1 enclosure (fig. 3). This inner set of walls existed before the outer corral wall. The western wall of this inner enclosure is what we took as a center, dividing wall in our 2015–16 map of ESI, as shown in figure 3. Perhaps because it is older, this inner enclosure does not share the orientation of ES1 and the larger SWI enclosure wall; it is twisted slightly more east of north.

The question is whether ES1 was enclosed on the north and west by an earlier version of the corral wall. One fact suggests that there may have been an older, outer corral wall. The thin, south-



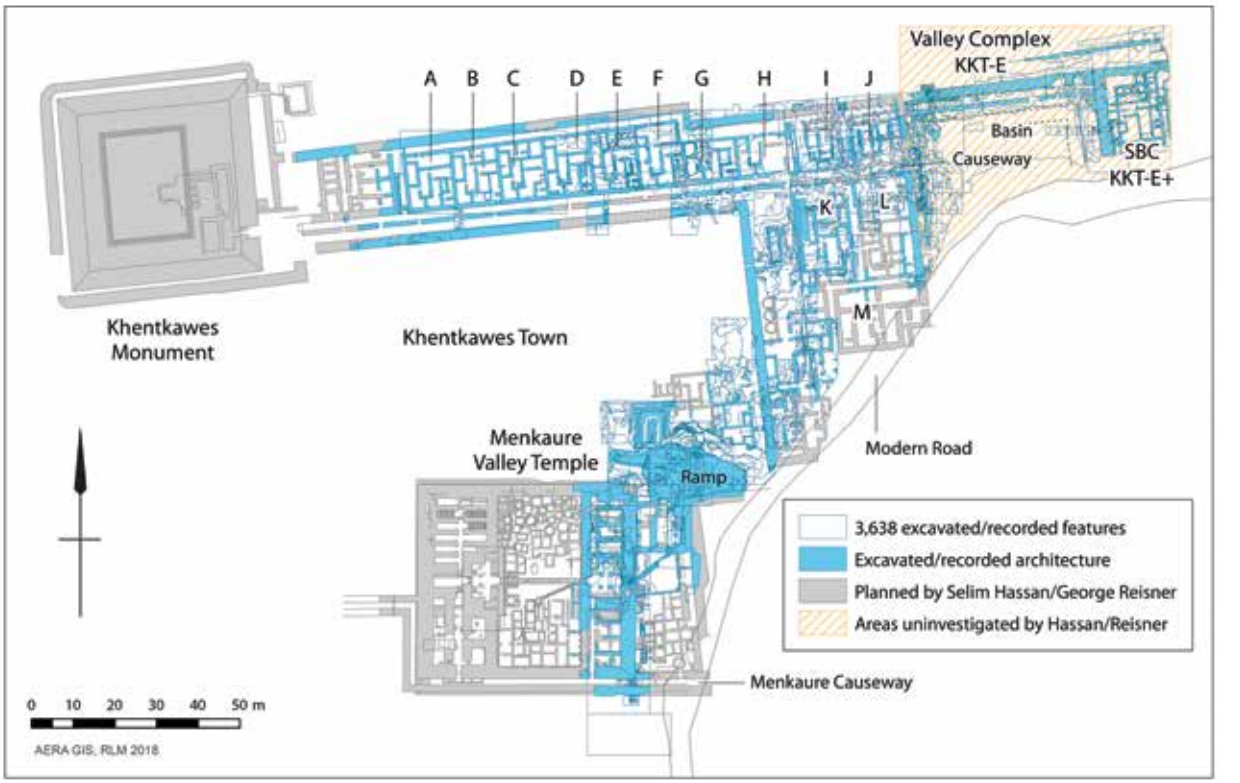
western wall, attached to the southern corner of the inner ES1 enclosure, curves around to "respect" the line of the corral wall (fig. 3). And this thin wall lies deeper, embedded in an older settlement surface than the foundation of the corral wall. So maybe the corral wall replaced an earlier boundary or barrier that kept animals contained.

The older, smaller enclosure, defined by the walls mapped this season (fig. 4), is certainly different from the thick, formal walls giving the room structure of the "house" in ES2. And it is possible this older, smaller enclosure had something to do with processing animals.

Also, we looked again at certain curving walls that we had begun to map in prior seasons embedded in the settlement ruins outside and north of the ES1 and the corral wall (fig. 4). Do these define pens and smaller enclosures for keeping animals?

ABOVE: Figure 3. ES1 and ES2 at the northern end of the SWI compound. The curve of the inner south wall of ES1 respects the outer "corral wall" of ES1, although it lies deeper and belongs to an older phase. The "corral wall" might have replaced an older enclosure wall. Walls of an inner, older enclosure, found by Field School 2018, are highlighted in blue. Plan by Rebekah Miracle from AERA GIS.

BOTTOM: Figure 4. Curving walls north of Enclosure 1 and the late-phase "Corral Wall" at the edge of "Lagoon 1" (filled with our backfilled sand on the left), which may remain from an ancient put-in bay for the delivery of commodities and animals; view to the east.



ABOVE: Figure 5. A plan of the Khentkawes Town and Menkaure Valley Temple, showing parts that AERA excavated and recorded, as well as Selim Hassan's and George Reisner's earlier work in the area. Plan by Rebekah Miracle from AERA GIS.

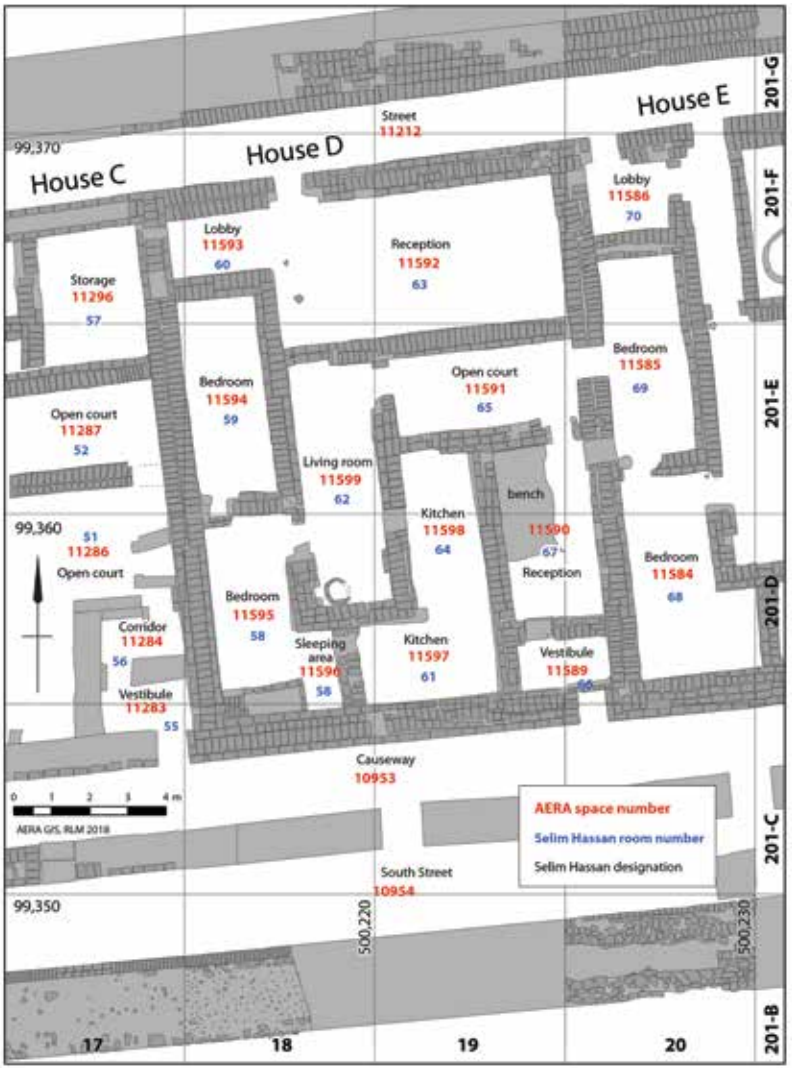
KHENTKAWES TOWN (KKT) HOUSE D

When Selim Hassan excavated the Khentkawes Town (KKT; fig. 5) in 1932 he found modular houses attached to a 150-m long causeway leading to the monument of Queen Khentkawes I, who ruled at the end of the Fourth Dynasty. Her titles, etched in the red granite doorjambs at the end of the causeway, tell us Khentkawes was "Mother of Two Kings." The town was apparently planned for officials who would serve as priests of the deceased queen mother.

Since 2005 AERA teams have re-excavated what remains of the KKT after it had been left exposed to the elements for seventy-three years following Selim Hassan's excavations of 1932. During this time the ruins of the town served as a major track for visitors on horses, camels, and horse-drawn carriages from the Sphinx to the desert. The town is worth saving, conserving, and presenting. Selim Hassan's plan became a standard template for studies of the history of urbanism and town planning.

Except for House D, the focus of season 2018, and Building M (figs. 5–7), we have now re-excavated and thoroughly documented what Hassan exposed of the KKT, except a part that lies under the modern road on the east and south. In 2011, we restored House E as follows: After burying the original walls in protective clean sand, we reconstructed the lower parts directly above the original walls with bricks that match the original bricks, an innovative conservation method that preserves the original, shows its former structure, and is reversible.[4] We worked out this conservation procedure in 2005 at the Eastern Town House (ETH) in the HeG site with a prior AEF grant.[5] This season we excavated any remaining ancient deposits and recorded House D as the first step of a larger, three-part agenda of fieldwork, conservation/reconstruction, and ultimately conservation of the full block of KKT housing, with pathways and signage.

ABOVE: Figure 6. Work in House D during season 2018. House E, with walls reconstructed and extruded in 2011, flanks House D on the east; view to the northeast.



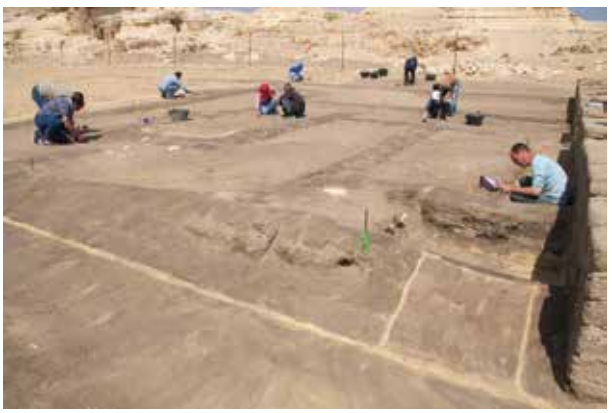
RIGHT: Figure 7. Map of House D (structure 15,260) showing the AERA space numbers (red), Selim Hassan's room numbers (blue) and grid squares. Grid squares are 5 m. Plan by Rebekah Miracle from AERA GIS; room designations (e.g. "kitchen") are Selim Hassan's.

Dan Jones and Rabee Eissa supervised the work. With Shaimaa Abd El-Raouf, Hoda Osman Khalifa, and El-Sayed Ahmed Shoura they focused on House D after moving from Area SWI in the HeG site. In 1932 Hassan's workers mostly emptied the rooms down to the original floor surface and in some places down to the underlying foundation material. Our team excavated a thick layer of contaminated sandy silt from the deterioration of the mudbrick walls, with embedded modern garbage. However, team members also excavated some ancient deposits and cultural features that Hassan's team had left. They also carefully documented blocked doorways, which crucially attest to changes in house use and proprietorship.

One blocking closed access between space 11,598 (the "kitchen") and space 11,599 (the "living room") in the center of the house (fig. 7). A second blocking closed access between space 11,589 (the southeastern entrance vestibule) and space 11,590 (which Selim Hassan referred to as his narrative as a water storage area). This blocking went in after the southeastern entrance to the house was also blocked. This shut the original, main access into the house from the Khentkawes causeway made the vestibule a dead space.

As I have discussed before in annual reports, these blockings, many of which we have recorded for the first time in the Khentkawes, are crucial for understanding the changing use of the settlement over time. The ruling narrative for the purpose of the town, especially the houses along the north of the causeway, is that it housed funerary priests who, by their privileged access through the southeastern doorways to the causeway leading straight to the queen's chapel, enjoyed rights to the offerings that came with their offices. The modular repetition of layout indicates a parsing out of these duties and attendant privilege (fig. 5). But in House D, masons blocked and plastered over the "front" door onto the causeway at the southeastern corner of the house (fig. 8), during a time when they also raised and renewed the floor and plaster of the causeway.[6]

Brick masons also blocked the southeastern doors on other houses. So, while maintaining and renewing the causeway, they radically changed the orientation and use of these buildings. Principal access was now from the northern doorways, opening onto a path that ran between the town and the quarry-cemetery (Central Field East) to the immediate north. Meanwhile, the original main entrances, with their zig-zag way in, became dead spaces, as we see clearly in House D. Hassan noted that in the first house (A) on the west, "the southern entrance had been bricked up in ancient times, and the resulting room (No. 28) seems to have been used as a stable for some animal, as can be proved by the presence of a limestone tethering-block set in the floor against the southern wall."[7] The organization of the KKT must accordingly have changed.



ABOVE: Figure 8. Southeastern access from the Khentkawes causeway into House D, blocked with mudbricks and plastered over at some point after the initial layout of this house; view to the north–northwest.

Also, while we have approached our own examination of KKT on the basis of singular, modular houses (so Houses D, E, F, etc.), it became apparent to us that through blocking original doorways and opening new access, the inhabitants "intermingled" the houses, expanding some units into others, and restricting parts of other individual units.[8] Thus, while central authorities may have planned to accommodate six to ten proprietors in the modular houses north of the Khentkawes causeway, in the end perhaps only a few officiated from their "intermingled," expanded houses.

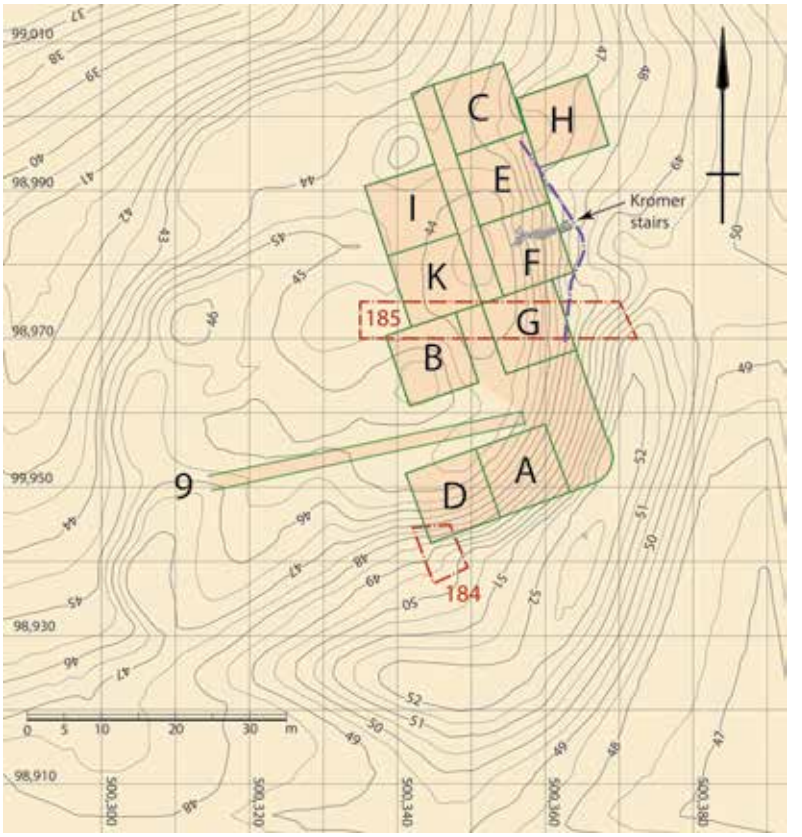
LEFT: Figure 9. House D, central pilaster-niche room (space 11,599 = room 62) after cleaning, excavation, and recording during season 2018, view to the north. RIGHT: Figure 10. The niche defined by pilasters in the southern end of the central room (62 = space 11,599) in House D, view to the north.

But, then, we also see indications that the nature of officiating itself changed. First, we have followed Felix Arnold who saw the central oblong, north–south oriented rooms, with southern pilasters (probably topped by an architrave) framing a niche (see fig. 7; space 11,599 = room 62) as the formal, official reception place, where proprietors held audience and conducted business (fig. 9).[9] We have found very similar rooms in the large houses of the Western Town and Area SWI in the Heit el-Ghurab site. Our discovery in 2015 of limestone furniture supports along with collapsed red-painted molding between the pilasters in the large house of ES2 reinforced Arnold's idea.[10] We could then highlight all the houses with pilaster niche rooms as nodes of household-based administration, including the large houses of the Khentkawes Town.[11]

However, in House D we found evidence that the inhabitants repurposed the very niche in which the proprietor was supposed to have conducted business. They put half-bricks to either corner of the western side of the niche (for a low stand or shelf?), leaving a narrow slot (25 cm wide) and they installed a semicircular mudbrick feature, about one cubit in diameter (55 cm), perhaps some kind of socket for a bowl or basin (fig. 10). A stain of burnt earth and ash spreads into the room from between the pilasters. Intended to frame the lord and master of the house, the niche seems to have devolved into a lowly place to cook or keep warm.

THE KROMER SITE: FOURTH DYNASTY SETTLEMENT DUMP

Between 1971 and 1975 Karl Kromer, an Austrian prehistorian, excavated a massive, crescent-shaped mound of settlement debris immediately southwest of the Gebel el-Qibli, the escarpment running along the western edge of HeG (fig. 1). Here, during the time of Khafre, and possibly beginning in the reign of Khufu, people dumped settlement waste, demolition debris, and quarry waste on a downward slope of around 8 degrees to the west–northwest. The accumulated cultural material spreads over 5.1 ha and up to 6.5 m thick. Inscribed sealings tell us ancient Egyptians did this during the reign of Khafre. Kromer found sealings of Khufu and Khafre, builders of the first and second Giza pyramids. On the HeG site we find sealings of Khafre and Menkaure, builder of the third Giza pyramid. We hypothesized workers brought this material from the HeG when Khafre reorganized and restructured the site. If so, this debris would offer insights into an early phase of the settlement and provide comparative material for studying any remains from the older levels.



RIGHT: Figure 11. Map showing Kromer's 10 × 10 m squares (A-I and K) and 2018 Sondages 184 and 185 (red). Purple line: Kromer's west-facing section after collapse, and as found in 2018, with broken limestone stairway (black and white). From survey by Mohamed Abd El-Basat, Amr Zakaria, Mohamed Helmy, Mohamed Abd el-Maksud, and Ahmed Hamad; adapted by Mark Lehner from plot by Mohamed Abd el-Basat.

Kromer excavated 1,550 cu m of cultural debris in a series of 10 × 10 m squares and some additional oblong trenches, with a total depth of 6.5 m, leaving a kind of L-shaped trough 60 m north–south × 25 m east–west (fig. 11). He found debris from the demolition of buildings — fragments of mudbricks and painted plastered walls; objects of everyday life such as copper needles, spatulas, fishhooks, and faience beads; small figurines; and clay sealings impressed with formal, official designs naming Khufu and Khafre. Some of Kromer's Khafre sealings match those we have found in the HeG.[12]

We first resurveyed the area, staked out grid squares, and located Kromer's original survey points and trenches. The ancient dump was clear on the surface, but decades of drifting sand had covered the area, and, unfortunately, Kromer's map includes errors.

Supervised by Mohsen Kamel, Aude Gräzer Ohara, and Virag Pabeschitz, the AERA team excavated two trenches, a small one, Sondage 184, and a larger trench, Sondage 185 (fig. 12), both in the upper edge of the crescent-shaped ridge left by Kromer's excavations. In these trenches we tried to locate the rough section he cut into the ancient debris. But we abandoned Sondage 184 after finding nothing but concentrated crushed limestone quarry waste.

Sondage 185 overlapped Kromer's Squares B, G, and K and extended beyond his excavations to both the east and west, allowing us to sample portions of the mound that remained untouched, for a total length of almost 40 m (37.09 m long on the south side and 34.43 m long on the north; fig. 12). We were also able to dig 75 cm deeper in Kromer's Square B before having to stop due to time constraints.

ABOVE: Figure 12. Sondage 185; view to the east.
Photograph by Aude Gräzer Ohara.

UPPER LEFT: Figure 13. Upper east end of Sondage 185, south (north-facing) section. Overseer Sayed Saleh points to the boundary between features 35,518 and 35,512, shortened to last three digits; view to the south.

UPPER CENTER: Figure 14. High eastern end of Sondage 185, south (north-facing) section during excavation of 512; view to the southeast. We designated as 512 two sequences that should have been distinguished.

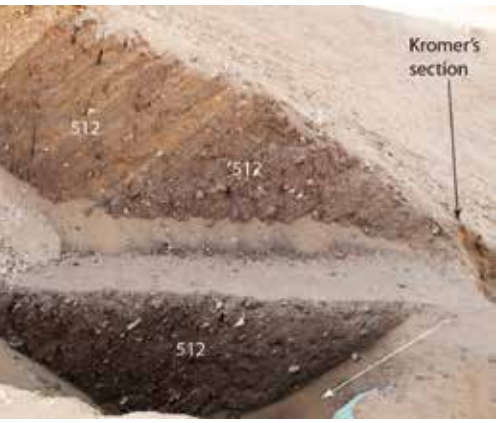
BOTTOM CENTER: Figure 15. Aude Gräzer Ohara checks the concentrated marl limestone bedrock (35,529 shortened to 529) in a small probe at the bottom of Kromer's section; view to the southeast.

FAR RIGHT: Figure 16. Aude Gräzer Ohara stands on the level "floor" of marl limestone (531, *tafla*) after the workers excavated an overlaying thin dark layer with mudbrick debris (522), which prior to excavation, formed a bank with a shoulder of limestone debris (529) left by Kromer between his squares G and B; view to the southwest.

While we tried to pick up the eastern side of Kromer's excavations with the eastern end of our Sondage 185, we ended up nearly 10 m north of it, as Aude Gräzer Ohara ascertained by studying Kromer's published photographs and by finding a crude stairway Kromer made in his square F to ascend the slope. Kromer's cut falls along the dashed purple line in figure 12. This west-facing section of his squares E, F, and G curves somewhat because of the continual collapse of the soft material, which we also experienced at the high end of Sondage 185.

Because we began to excavate a good 10 m north of Kromer's eastern limit of excavation, we cut into massive layers of undisturbed settlement debris built up over time as ancient workers dumped basket after basket (fig. 13). In the section we can see successive dumps, close in time, even individual basket dumps, varying in color and composition (more or less rich in limestone chips, sand, and/or mudbrick fragments). Some thin layers show a surface occasionally hardened by moisture (rain?). It quickly proved impossible to remove these thin, individual deposits in sequence because they are so loose. So, in the upper eastern portion of Sondage 185, we excavated major sequences together.

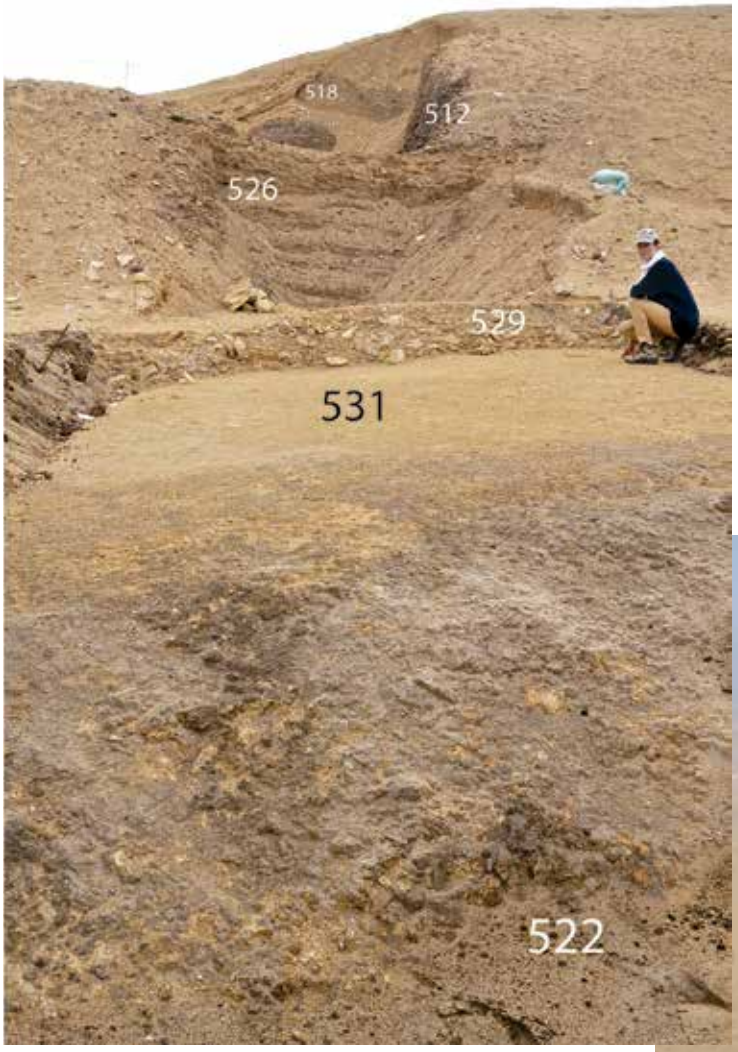
At the top of Sondage 185 (fig. 13), we found more quarry waste (511 and 514) identical to the ancient debris we abandoned in Sondage 184, but mixed with trash dating from the 1940s to the 1970s. (In the photographs, I shortened feature number to the last three digits.) Underneath, we found undisturbed ancient quarry debris of crushed limestone (516). Next, a sequence of light brown layers proved rich in cultural material: fragments of pottery; fragments of mudbricks; clay sealings for bags, boxes, jars, and doors; sealings impressed with hieroglyphic patterns; charcoal, shells; textile fragments, even a big tuft of wool flock; a blue tubular bead; an unworked piece of cornelian; and large



quantities of animal bone. The dry environment of the KRO site, at an elevation between 44 and 52 m above sea level (m asl), allowed the survival of wood and plant remains, like reed, straw, and palm fronds, which could not survive in the damp HeG site, between 15 and 16 m asl.

We next excavated a sequence of intercalated bands of dark sand and sandy silt (512). Gräzer-Ohara noted: "This sequence was even richer in cultural material, notably with a concentration of degraded mudbricks, and possibly ashes, which gave it its particularly dark color"[13] (figs. 13–14). For safety, we stepped back 1.50 m to the north at an arbitrary level, and continued to excavate down another meter into 512 for a width of 2.40 m (fig. 14). We did not reach the bottom or the eastern end of this material, which slopes down to the east over the surface of an underlying sequence (fig. 14, arrow). We were hampered by the collapse of the section above 512 and the danger of working at such a depth in loose material.

Having now determined the eastern limit of Kromer's excavations, the team exposed and cleaned the west face of his eastern cut, which descended much deeper than where we stopped excavating 512. Because the lower material showing in his cut (526) was so soft and ready to collapse, we cut back the face of the section in steps to sample and record it (fig. 15). The deposits consisted again of intercalated silty sand with sand that included much less silt, but overall the whole sequence is sandier, much lighter in color, and looser than 512 just behind it (figs. 14–15). It is the surface of this older sequence that we were following on its downward dip to the east as we excavated 512. The most dense, darkest layers of Nile-rich settlement waste — 512 — are thus bracketed by sandier sequences, 518 (and the upper part of 512) above and 526 below.



At the bottom of the 526 sequence, we found a splayed deposit (527) of mudbrick fragments in a sand matrix (fig. 15). Kromer left this bit as he excavated down to a compact surface of concentrated, broken marl limestone (529) of the local Maadi Formation bedrock. After documenting and removing the broken mudbrick deposit (527), the team excavated a small probe down into the packed limestone to check for lower settlement waste and found none to a depth of about half a meter.

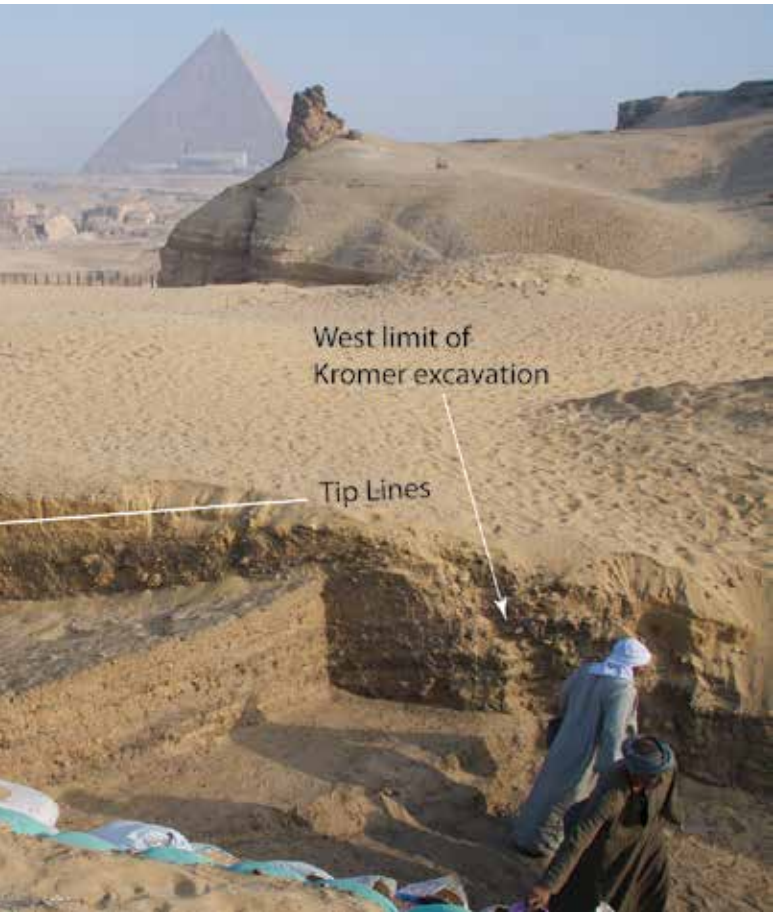
ABOVE: Figure 17. Sondage 185; view to the east. Foreground: the downward slope of "floor" 531, stained dark by overlying deposit 522.

RIGHT: Figure 18. The western end, northern side, of Sondage 185, showing the cut of Kromer's west limit of excavation (his square K; see fig. 11). Layers higher slope down to the west; view to the northwest.

We were now at the bottom of Kromer's excavation in his square G (see fig. 11), on the surface of marl limestone debris (531). We cleared this "floor" from post-Kromer sand west to a low, raised bank that Kromer left between his squares G and B. The east side of the bank consisted of a shoulder of raised limestone debris (529). The rest of the bank consisted of another dark debris layer full of mudbrick fragments, which we peeled away from the limestone debris shoulder and excavated toward the west (522). This dark, bricky deposit overlay a floor of *tafla* limestone (531) so flat and even that it gave the impression of a true artificial floor (fig. 17).

Several meters farther west, we came to the western limit of Kromer's excavations. As on the east, Sondage 185 extended beyond the limits of Kromer's digging. Here we cut across the northeast corner of his square B. The compact marl limestone "floor" (531) begins to slope down quickly to the west (fig. 17). The overlying bricky deposit (522) continues down this slope and becomes thicker. Here, Kromer left a sequence of higher, overlying, thin layers of sand intercalated with very dark, thin layers of ash and Nile silt (fig. 18).

All these layers on the west of Sondage 185 slope down to the west — the opposite of the eastward slope of the "tip lines" in the 512 sequence at the higher, eastern end of the trench (figs. 14–15). Dark Nile silt and black ash layers show more distinctly than the lenses and layers in the higher eastern sequences. Because they are all soft and sandy, and range from continuous layers to short lenses (single basket dumps), it was not easy to excavate each deposit individually, but given how much more distinct these deposits are than those in the high eastern sequence (512), we tried. We decided to take a large sample of the totality of each deposit as we cut each layer back to a section north–south across the trench.



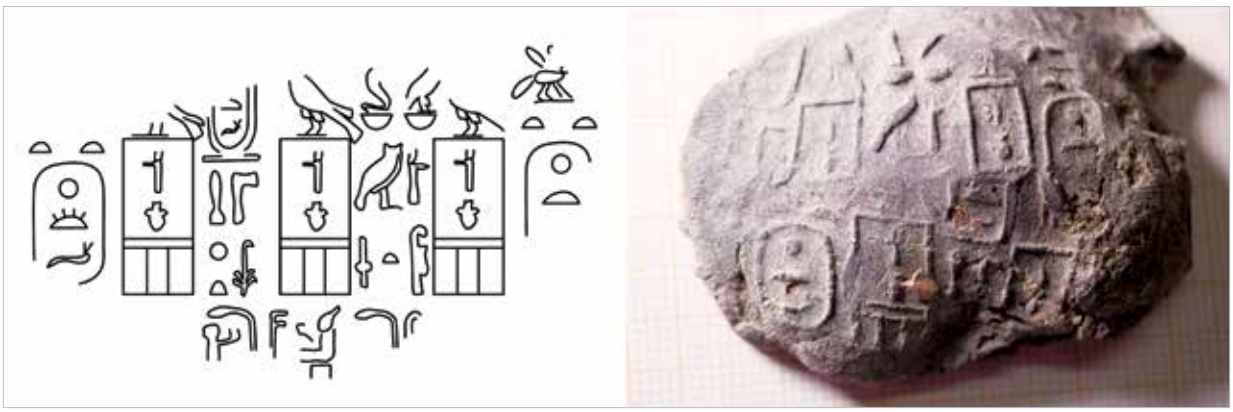
We did not find the bottom of this vast dump of quarry and settlement waste. On the west, as on the east, the dumped material continues deeper, apparently over a shoulder of bedrock. More can be said about the wider context of this dump in relation to quarries and settlements at the southeastern zone of the Giza Necropolis. We also need to think more about this cultural material and the events it reflects. Here I offer a few preliminary finds and thoughts.

FINDS FROM KROMER 2018

Like Kromer, we found in this ancient dump a wide range of material culture: pottery, mudbricks, sealings, charcoal, shells, beads, flints, large quantities of animal bone, and organic material like wood, fiber, and linen. We have so far found no sealings of Khufu. All the sealings impressed with a royal name that we have so far found bear Khafre's name.

We found broken mudbricks throughout the different layers and sequences. Some layers have more of a concentration. We need to check the relative frequencies. If the dump derives from a single demolition of a settlement, we might expect a single concentration of mudbricks. So, do the mudbrick fragments scattered throughout the Kromer dump reflect a one-time demolition, or do we see them mixed with waste from everyday life because of ongoing refurbishing? Here, in the high desert, we do not have many of the yellow bricks of calcareous, marl desert clay — *tafla* in Arabic — as opposed black Nile silt, characteristic of the flood plain. *Tafla* is all around the Kromer site. Gebel el-Qibli is partly composed of *tafla* layers, which Fourth Dynasty masons used to plaster walls in KKT and HeG. Nile silt in most of the dumped, broken bricks is one of several indications that we are dealing with waste from a settlement on, or in proximity to the Nile floodplain, and not a settlement in the desert quarries south of the pyramids.[14] If we do not see enough bricks or brick fragments for one massive demolition, it could be that masons reused bricks for rebuilding. We have seen bricks that masons obviously reused in the middle of the walls of the Galley Complex in the HeG.

We found pieces of different components of mudbrick buildings — roofs, floors, corners, and hearths — which suggest that the dump does include debris from the demolition of whole buildings. Kromer found fragments of a hard gravel screed flooring.[15] This conglomerate of coarse, silty, pebbly sand and fired clay appears very similar to modern cement. When I first saw a piece, I wondered if we had contamination from a modern cement structure. But we saw it come up from sealed, ancient deposits. Kromer understood such hard floors as substitutes for stone paving, and as evidence of



LEFT: Figure 19. Sealing 5844 from Sondage 185, feature 35,522 (see figs. 16–17 where the feature is abbreviated to 522), photo by David Jeřábek; (left): theoretical reconstruction drawing by Ali Witsell. The sealing bears both the Horus name, *Wesir Ib* (Stout Hearted) and cartouche name, Khafre, of the king who built the Second Giza Pyramid, in the title *Hem Netjer Khafre*, "Servant of the God, Khafre," or "Priest of Khafre."

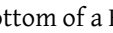
RIGHT: Figure 20. Sealing 5848 with the term *Setep Za* (adze and cattle hobble), under the remains of a *serekh* (paneled rectangle above) and beside the figure of a running king (left) wearing the tall crown of the south.

very high status. He inferred these pieces may derive from the floor of a royal road house, or small palace, at Giza.

We found fragments of white plaster, broken from walls, throughout the sequence. Some show bands of red, black, gray, and lighter shades of pale red or orange. Kromer reported plaster painted black, white, deep red, rusty red, rose, orange, brown, light gray, and beige.[16] We might think that such décor stems from "elite" residences of socially superior individuals, as Kromer thought.[17] He found most of the painted plaster in squares F, B, and G, just where we cut through with Sondage 185. This is where Kromer also found sealings most abundant.

Ali Witsell, who heads our sealings team, reports that we have so far found no sealings of Khufu.[18] Kromer found only five sealings bearing Khufu's name and thirty-eight of Khafre.[19] Kromer's numbers are very low for six full *seasons* of excavation. He must have thrown away a good number of sealings. From only six *weeks* of excavation, Ali and the team retrieved at least forty formal (with king's name and official's titles) and forty-three informal impressed sealings. And they have yet to fully reexamine and register all the possible sealing material from Sondage 185.

One of the largest formal sealing fragments (number 5844) from sequence 522 (figs. 17–18) bears both Khafre's Horus name, *Wesir Ib* (Stout Hearted), and his cartouche name, as part of the title, *Hem Netjer Khafre*, "Servant of the God, Khafre," or "Priest of Khafre."

Perhaps the most important sealing this season will prove to be number 5848, a small fragment from feature 35,522, showing the bottom of a Horus name and, underneath, the hieroglyphs  for *Setep Za*, literally, "choosing a *za*"[20] (fig. 20). *Setep Za* written, as here, with the house determinative,  , makes it securely a place noun, a reference to the palace. In his study of *Setep Za* in the Old Kingdom, Ogden Goelet found no attestation of the term written with the house , therefore signifying the palace, before the Middle Kingdom.[21] Now, sealing fragment 5848 from Sondage 185 (fig. 41) may be the oldest known writing of *Setep Za* with the house sign, thereby designating the palace.

POINTERS BACK TO THE PALACE HYPOTHESIS

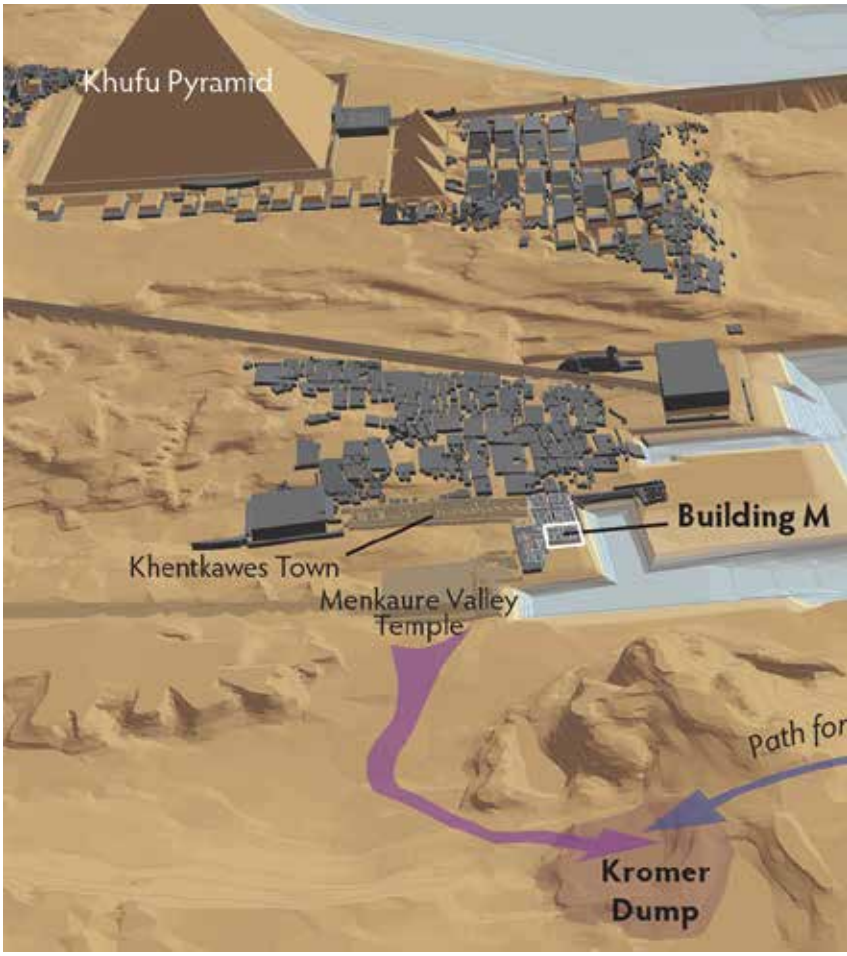
Setep Za was where the king sat to receive counsel and make decisions. Goelet found that Old Kingdom texts containing the phrase "in the *Setep Za*" have to do with the king making decisions, in consultation with his advisers, about craftwork, building, or construction.[22]

Our 2018 finds from the Kromer site bring us back to an idea, fairly old in Egyptology,[23] that we took into our first excavations at Heit el-Ghurab: the palace hypothesis,[24] the idea kings built a residence near their pyramids, and that the food production facilities we were finding in 1991 and 1995 attached to a palace. The idea faded in my mind when we found none of the signature architectural elements of a palace (such as a niched-decorated gate or large audience hall).

Then, in 2005 we found a large corpus of official sealings in another trash dump, Pottery Mound, beside the large, elite House 1 of the so-called Western Town of HeG, with titles that inspired John Nolan to reconsider the proximity of a palace, because they included some of the highest-ranking titles of this time, held by members of the royal house and prominent Fourth-Dynasty families. As the bureaucracy rapidly evolved, these officials could enter service as young men. Certain titles from the Pottery Mound corpus reflect a "palace education system." Nolan suspected that a royal residence nearby served as "a sporadic, periodic royal presence…rather than a perma-

nent, on-going residence... more in common with a temporary royal 'resthouse' rather than a permanent, central palace."[25] From the material he found, Kromer suggested something similar, and he located this putative road palace — where the king stayed when he came to the royal construction site — at the place where Menkaure later built his valley temple.[26]

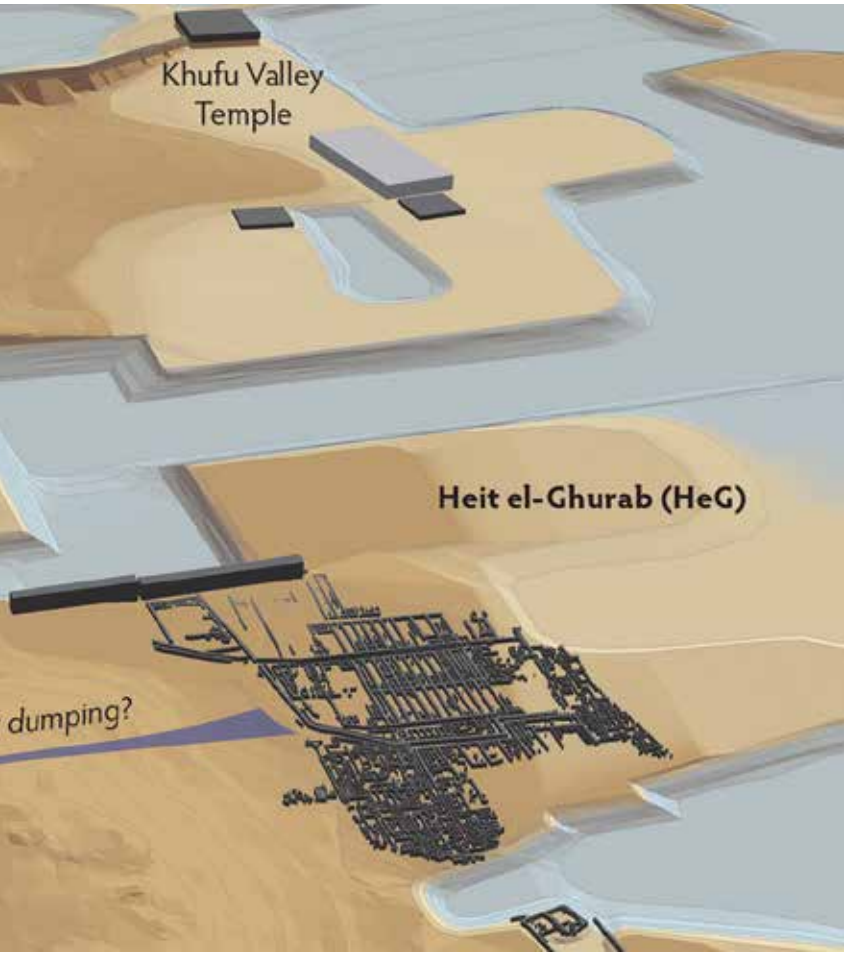
In fact, at that place we now look to a specific building that was later incorporated into the Khentkawes Town (KKT): Building M in the foot end of the Khentkawes Town, a palace-like structure with thicker walls, painted plaster, and an audience hall, typical of central halls in other large houses of administrators in the Khentkawes Town (see above for House D) and in the Western Town district of HeG. These halls are always oriented north to south and feature a niche in the southern end set off by pilasters that were once part of a formal frame around the niche, where the master sat and received visitors.[27]



ABOVE: Figure 21. Model of the southern base of the Giza Plateau, with reconstructed waterways and the Heit el-Ghurab (HeG) site, showing the possible directions of dumping in the Kromer site: from the east, HeG, or from the north and west, the area of the Khentkawes Town and Menkaure Valley Temple. Model designed by Mark Lehner, prepared in AERA GIS by Rebekah Miracle.

The walls of Building M are thicker than the walls of the other KKT houses. This building contains three pilaster-niche rooms and once featured painted horizontal bands of black, white, and red paint (like painted plaster from the Kromer site),[28] while such rooms in HeG houses are whitewashed or painted black. Building M may have been just another such large house, but in addition to its thicker walls, it bears the same elements as a (road, or regional?) palace of the First Dynasty that our German colleagues recently identified at the very ancient Delta site of Buto: storage magazines flanking the audience hall; production facilities for bread and other food in open courtyards; long and narrow corridors framing the core house; plastered and painted walls; and winding access routes into the audience hall. The Buto palace may have been a temporary residence "when the court came to Buto during the king's journey across the country."[29]

We know from work of prior seasons that structures occupied the eastern foot of the KKT, west of a (harbor?) basin, before being rebuilt and incorporated into the settlement for Khentkawes I.[30] Building M, in both an earlier and later phase, may have been a king's "road house" for sovereigns when they came to the pyramid site. Menkaure's builders may have demolished part of Building M be-



fore they erected his pyramid's valley temple, and dumped the debris upon the Gebel el-Qibli. We need to know if Building M shows older and newer phases. As the only KKT building we have not re-examined, Building M becomes a target for season 2019.

While we are still processing the 2018 finds from Kromer, it appears that most of the formal sealings, and perhaps most of the painted plaster and other high-status indicators, come from the lower, western end of Sondage 185 (especially feature 522, see figs. 16–17). Kromer found and removed most of the painted plaster and sealings in just this area, in his squares F, G, and B,[31] which our trench crossed, leaving us to find what he left behind. Here the tip lines dip down to the west, indicating that people came and dumped from the east, the direction of the HeG. In the eastern, higher — and probably chronologically later — layers, the tip lines slope in the opposite direction, dramatically down to the east (figs. 13–14), indicating that people came and dumped from the west. If they came first from the north, the area of the later Menkaure Valley Temple and KKT, they carried their baskets around and up the Gebel el-Qibli (fig. 21).

In those higher, eastern layers (especially 512) we found extraordinary quantities of animal bone, predominantly sheep and goat, in contrast to more cattle in 522. Many of the long bones had the ends cut or broken off, where they made a joint with another bone (the epiphysis), and some bore knife marks. (Ironically, here we found the kind of evidence we sought in SWI to support the hypothesis that this compound served as corral and abattoir, see above). Other long bones had been split, or had holes bored in the ends, to suck out marrow. We infer that butchers sent the higher quality meat from these long bones to people of higher status, while assigning the ends for protein- and fat-rich soups and stews of gelatin and cartilage, a form of consumption that could feed many more people, possibly lower status folk.[32] While we further analyze and think about this rich material from the Kromer site, we could infer that these upper waste deposits derive more from provisioning a workforce.[33] If so, we would have expected that this material to come from HeG, a.k.a. the Workers' Town. So, for now, our two hypotheses for the origins of the Kromer dump material — palace (Building M location) to the west and north, workforce (HeG) to the east — stand in opposition to the nature of the material and the dumping direction at the east and west ends of Sondage 185.

Recent years have seen increased discussion and publication on ancient Egyptian palaces, or "buildings we call palaces."[34] Manfred Bietak points out that Egyptian palaces, in addition to their large features of public display, "also included offices, especially of the chief administrators of the state" — Western Town houses? — "barracks and arsenals for troops" — the Gallery Complex? — "and... considerable storage areas for collecting and distributing commodities..."[35] In HeG we have only part of a Fourth Dynasty proto-urban settlement that once extended far to the east and north along the base of the plateau. More royal structures assuredly lie under the modern urban sprawl. Perhaps all along we have been a bit like the seven blind men and the elephant. All the major structures we have been exposing, including the HeG barracks and bakeries, could have been parts of one gigantic palace, a kind of Old Kingdom Egyptian equivalent of Versailles, or, better, New Kingdom Amarna or Malqata, and like those royal layouts, included in its two major phases various royal apartments, halls, and institutions.

NOTES

1 OI 2011–12 *Annual Report*, pp. 52–53; Redding 2011, pp. 2–5.

2 OI 2014–15 *Annual Report*, pp. 74–96.

3 OI 2015–16 *Annual Report*, pp. 82–99.

4 Tavares 2011, pp. 16–19.

5 Lehner, Kamel, and Tavares 2006, pp. 81–84.

6 These changes are detailed in Lehner et al. 2011.

7 Hassan 1943, p. 38.

8 Tavares and Yeomans 2009.

9 Arnold 1998.

10 Lehner 2015; 2015/2016; Aeragram 2016; Wetterstrom 2016.

11 OI 2014–15 *Annual Report*, p. 83, fig. 8.

12 Nolan 2010, pp. 155, 199, 313.

13 Gräzer O'Hara and Pabeschitz 2018.

14 Such as the settlement that Abd El-Aziz Saleh excavated southeast of the Menkaure Pyramid, on the rim of the quarry that furnished stone for that pyramid's core. There, the builders made walls of broken stone and *tafla*, not of Nile silt bricks; Saleh 1974, pp. 131–54.

15 "Splittestrich," Kromer 1978, p. 106, Abb. 35.

16 Kromer 1978, p. 105.

17 "...sozial höher gestellten Personen," Kromer 1978, p. 101.

18 Witsell 2018b.

19 Kromer 1978, p. 92.

20 Goelet 1982, pp. 97–98.

21 Goelet 1986, pp. 95–98.

22 Goelet 1986, p. 90.

23 For example, Winter 1957 against the idea; Stadelmann 1981, pp. 76–77 for it.

24 Lehner and Wetterstrom 1997.

25 Nolan 2010, pp. 404–05.

26 Kromer 1978, p. 115.

27 OI 2014–2015 *Annual Report*, pp. 79–83; Nolan 2010, pp. 155, 199, 313.

28 Hassan 1943, p. 41.

[29] Hartung 2018, p. 108.

[30] OI 2013–14 *Annual Report*, pp. 71–72, fig. 6.

[31] Kromer 1978, p. 115.

[32] Witsell 2018a for a preliminary report on these faunal features; Yeomans 2011 for parallel faunal findings from HeG.

[33] Witsell 2018a, p. 8.

[34] Tzonis 2018.

[35] Bietak 2018, p. 23.

REFERENCES

Aeragram

2006 "Conservation Pilot Project: A Humble Compound Reborn." *Aeragram* 8/1: 8–9.

2016 "Season 2016: Exploring A High Official's Office-Residence." *Aeragram* 17/1–2: 1–7.

Arnold, Felix

1998 "Die Priesterhäuser der Chentkaues in Giza." *Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo* 54: 1–18.

Bietak, Manfred

2018 "Introduction to Palaces in Egypt: What They Us About the Ruler, Administration and Culture." In *Ancient Egyptian and Near Eastern Palaces*, Volume I, edited by Manfred Bietak and Silvia Prell, pp. 23–38. CAENIL 5. Vienna: Austrian Academy of Sciences.

Goelet, Ogden

1982 Two Aspects of the Palace in the Egyptian Old Kingdom. PhD dissertation, Columbia University. Ann Arbor: UMI.

1986 "The Term *śtp-sȝ* in the Old Kingdom and Its Later Development." *Journal of the American Research Center in Egypt* 23: 85–98.

Gräzer O'Hara, Aude, and Virág Pabeschitz

2018 "Kromer (KRO)." In *AERA 2018 Field Season, Weekly Report 3–8 March*, edited by Manami Yahata. Report on File: Ancient Egypt Research Associates.

Hartung, Ulrich

2018 "Recent Investigation of Early Dynastic Building Structures at Tell el-Farain/Buto." In *Ancient Egyptian and Near Eastern Palaces*, Volume I, edited by Manfred Bietak and Silvia Prell, pp. 101–12. CAENIL 5. Vienna: Austrian Academy of Sciences.

Hassan, Selim

1943 *Excavations at Giza 4: 1932–1933*, Volume IV. Cairo: Government Press.

Kromer, Karl

1978 *Siedlungsfunde aus dem frühen alten Reich in Giseh: Österreichische Ausgrabungen 1971–1975*. Vienna: Österreichische Akademie der Wissenschaften.

Lehner, Mark

2015 "Discovery 2015: House of a High Official." *Aeragram* 16/1: 1–7.

2015–16 "Supporting Egypt's Archaeologists: Field Training in the Heit el-Ghurab Settlement of the Giza Pyramids." *Bulletin of the American Research Center in Egypt* 207: 7–10.

Lehner, Mark; Daniel Jones; Lisa Yeomans; Hanan Mahmoud; and Kasia Olchowska

2011 "Re-examining the Khentkaus Town." In *Old Kingdom, New Perspectives: Egyptian Art and Archaeology, 2750–2150 BC*, edited by Nigel Strudwick and Helen Strudwick, pp. 153–57. Oxford: Oxbow.

Lehner, Mark; Mohsen Kamel; and Ana Tavares

2006 "Eastern Town House Pilot Study, 2005." In *Giza Plateau Mapping Project Season 2005 Preliminary Report*. Giza Occasional Papers 2, pp. 81–84. Boston: Ancient Egypt Research Associates.

Lehner, Mark, and Wilma Wetterstrom

1997 "The 1997 Field Season: Walls, Workshops, Workmen's Huts." *Aeragram* 1/2: 1, 6–8.

Nolan, John

2010 *Mud Sealings and Fourth Dynasty Administration at Giza*. PhD dissertation, University of Chicago.

Saleh, Abd El-Aziz

1974 "Excavations Around Mycerinus Pyramid Complex." *Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo* 30: 131–54.

Stadelmann, Rainer

1981 "La ville de pyramide à l'Ancien Empire." *Revue d'Egyptologie* 33: 67–77.

Tavares, Ana

2011 "Bringing an Ancient House Back to Life." *Aeragram* 12/1: 16–19.

Tavares, Ana, and Lisa Yeomans

2009 "A House Through Time: Building, Abandonment, and Intermingling." *Aeragram* 10/2: 10–13.

Tzonis, Alexander

2018 "Buildings We Call Palaces." In *Ancient Egyptian and Near Eastern Palaces*, Volume I, edited by Manfred Bietak and Silvia Prell, pp. 9–21. CAENIL 5. Vienna: Austrian Academy of Sciences.

Wetterstrom, Wilma

2016 "How Was ES2 Roofed? Modeling in 3D." *Aeragram* 17/1–2: 8–9.

Winter, E.

1957 "Zur Deutung der Sonnenheiligtümer der 5. Dynastie." *Wiener Zeitschrift für die Kunde des Morgenlandes* 54: 222–33.

Witsell, Ali

2018a "Kromer 2018: Basket by Basket." *Aeragram* 19/1: 2–11.

Witsell, Ali, with readings by David Jeřábek

2018b "Preliminary Sealings Report: KRO, SWI.ES1, and KKT House D." Report on file: Ancient Egypt Research Associates.

Yeomans, Lisa

2011 "Stews, Meat and Marrow: Extracting Protein and Fat for the Lost City." *Aeragram* 12/2: 13–14.