



AERA GRAM

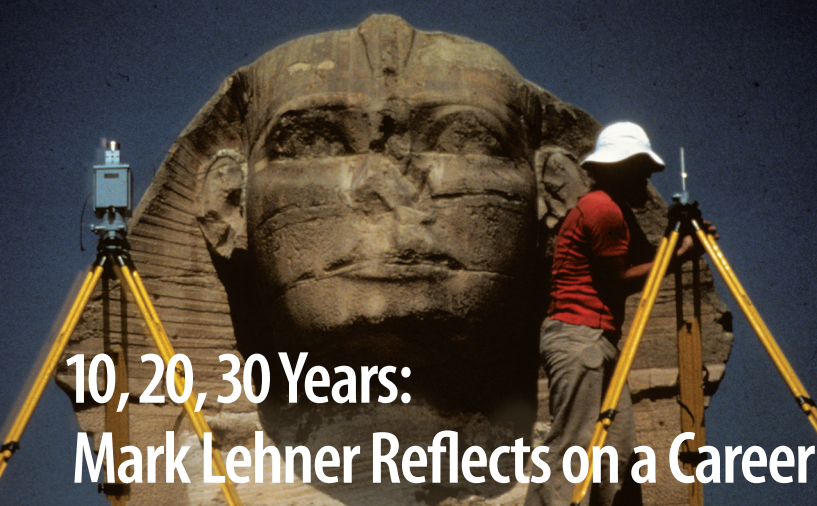
ANCIENT EGYPT RESEARCH ASSOCIATES

Groundbreaking Archaeology

VOL. 10 NO.1

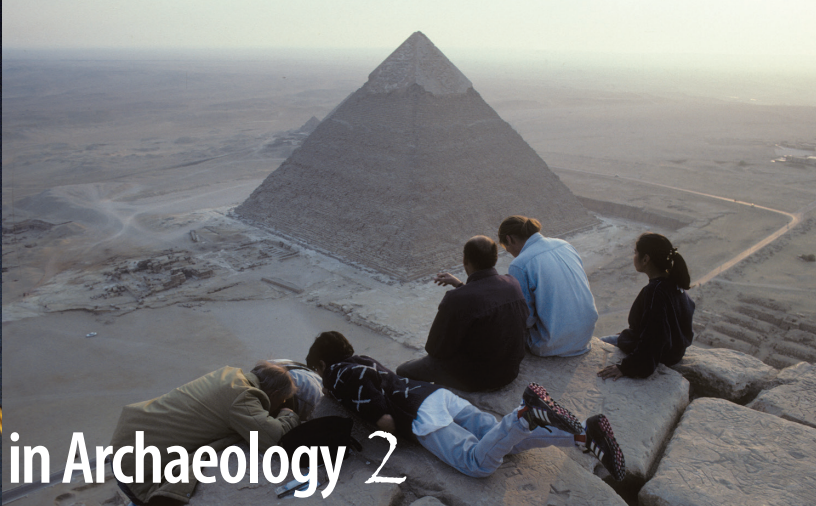
Spring 2009

ISSN 1944-0014



10, 20, 30 Years:

Mark Lehner Reflects on a Career in Archaeology 2



In Memoriam:
Mahmoud Kirsh 7

Daily Life of the
Pyramid Builders 8

AERA's New Home 16

10, 20, 30 Years: Mark Lehner Reflects on a Career in Archaeology

In 1971 when he was 21 years old, Mark Lehner heard from a “psychic reader” that during a past life he helped bury the fabled Hall of Records of the lost city of Atlantis under the Sphinx in Giza. He would find it through his dreams and by tapping the *Akashic* Record, a sort of ethereal transcript of all that transpires.

Did he believe it? “I didn’t disbelieve it,” Mark said in an interview in January 2009. “I honestly thought my destiny was to find the Hall of Records.” He had already been steeped in the works of Edgar Cayce, the famous American psychic who died in 1945 after giving thousands of “readings.” Mark never found the Hall of Records, or tapped the *Akashic* Record, but he devoted a life and career to the archaeological record of Giza.

Early Interest in Egyptology

As a teen, Mark was introduced to Cayce by his father Paul, a minister in the Congregational Church, psychiatric social worker, and a perpetual seeker in his own way. During the year Mark turned 13 or 14, Paul came to an existential crisis when he found himself supporting his family of five children by selling Fuller brushes door-to-door in a strange and downtrodden neighborhood of Sacramento. He and Mark’s mother joined a Cayce study group led by a fel-

low Congregational minister. “Cayce books came flooding into our home,” Mark remembered during the January interview.

Mark eventually graduated high school and ended up at the University of North Dakota, where he found he could take courses in philosophy, psychology, and religion. Despite doing well academically, he grew bored, dropped out of school, and, with a green army bag over his shoulder, began hitchhiking across the country.

Partly by happenstance, Mark found his way back to the front steps of the Edgar Cayce Foundation headquarters in Virginia Beach. It was here that he got his first airline ticket to Egypt on a Cayce youth trip and managed to spend time alone at Giza, inside the Great Pyramid and between the paws of the Sphinx.

Determined to return, Mark applied and was accepted for a junior year abroad at the American University in Cairo (AUC). As soon as he returned to Egypt, now for the long term, he began extended encounters with what he calls “bedrock reality” and started serious library study. He quickly realized something was amiss. “Cayce’s story of Giza was totally different from that of Egyptology, with few points of contact with the actual site except for the Sphinx and Great Pyramid.”

“It was an existential quest that launched me into archaeology,” he said. “My personal myth changed from one of destiny, to simply trying to find the truth about Giza and ancient Egypt and to use what I learned for understanding how we make our lives meaningful in general, and what lies beyond our attempts to do so.”

Beyond Cayce

Mark enrolled for a second year at AUC and took his

degree in anthropology, largely because he wanted to study diverse world views in a culture other than his own. After graduating in 1975, he stayed on in Egypt and began taking freelance jobs on a large number of archaeological missions, learning methodology and technique.

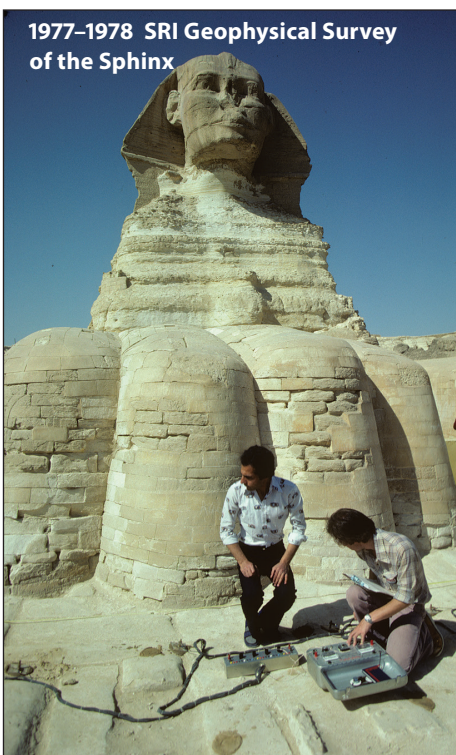
In 1977 and '78, he worked with Dr. Zahi Hawass, then Inspector of the Pyramids, with the SRI International’s Radio Physics Department on a geophysical survey of the Sphinx and Pyramids. The Edgar Cayce Foundation funded the survey of the Sphinx with resistivity (remote sensing with electrical current) and acoustical sounding. The team soon found that existing maps of the Sphinx consisted only of the ground outline at very small scales. When they enlarged these maps to plot the electrical couplings, the inaccuracies had the couplings drifting in and under the Sphinx when in fact they did not. “When we excavate any ancient surface in a 5 x 5-meter square, as a standard we map every stone and sherd to scale. No one had ever mapped the Sphinx to the standards of modern archaeology.”

By 1979, Mark had started the ARCE Sphinx Project, the first systematic study of the monument and its relationship to its surroundings, under the auspices of the American Research Center in Egypt (ARCE) and its Assistant Director, Jim

Allen (now Wilbour Professor of Egyptology, Chair of the Department of Egyptology and Ancient Western Asian Studies at Brown University, and an AERA board member). Although he had ARCE sponsorship, Mark was already learning how to garner funding from supporters and was paying his own salary.

Now his interest in the Sphinx turned to the geology and alignment with other features in the landscape. By 1984, he was mapping and thinking about the entire temple complex around the Sphinx and seeing features other researchers had missed.

“The landscape told stories into how the builders went about their work,”



1977–1978 SRI Geophysical Survey of the Sphinx



1984 Beginnings of the Giza Plateau Mapping Project David Goodman

Mark said. “The Sphinx gave clues to how the pyramid builders understood and used the geology of the plateau. Its position with respect to the pyramids, and to sunset at the Equinoxes and Summer Solstice was a clue to layouts and alignments across the entire Giza Necropolis. The Sphinx was the key that provided access to a wider understanding of the whole plateau, an understanding of Giza’s archaeological record!”

Mark’s new line of inquiry helped launch the Giza Plateau Mapping Project (GPMP), designed largely by David Goodman, a civil engineer and chief surveyor with the California Transportation authority (CALTRANS) who had designed and surveyed for Kent Weeks’s Theban Mapping Project in the Valley of the Kings. With Goodman’s help, the GPMP survey established a control network and grid that allowed any point on the plateau to be located precisely with respect to any other.

As the team established control over the landscape, Mark sensed the geomorphology offered even greater insight into how the Egyptians raised the pyramids 4,500 years ago. “I had first to transport myself back 50 million years—to the Eocene Period—to see how the bed of a sea that covered what is now northeastern Africa led to the formation of the Giza Plateau, and thus to how the Egyptians quarried softer limestone layers, to extract blocks from intervening harder layers, how they used the natural slope of the formation as a ramp up to the pyramids, sitting upon

what was once a shell embankment covered by a shoal and corral reef. The information that lay in the bedrock gave clues as to where to look for the place where the pyramid builders lived. I started to think about all the people. How were they housed

and fed? If they were there in the thousands, the accommodations would have been a major settlement, the equivalent of a city. The Lost City of the Pyramids!”

With an intimate knowledge of the Giza Plateau, now “capture-able” in a survey network, Mark plotted in a large true-to-scale isometric map of all the major factors: the location of the pyramids, their quarries (crudely, corresponding to the piles), the conduits for materials from outside Giza, and the location of a harbor or docking place along the Nile. His landscape analysis pointed to the lower southeast slope of the pyramid plateau. In this area lay the enigmatic, gigantic, half-buried, stone Wall of the Crow, which stretches 200 meters along the south mouth of a broad wadi at the low southeastern edge of the plateau. A huge gate cut through the mighty wall.

“It certainly looked like a city gate,” he said. “It made sense that at least part of the Lost City of the Pyramids must lay beyond that wall, beyond the supply ramps and quarries, on the other side of the wadi, adjacent to the harbor or delivery zone.”

In 1985, after publishing a seminal article outlining his findings, Mark founded Ancient Egypt Research Associates, an incorporated non-profit. Matthew McCauley, a current board member, donated the \$500 for the initial incorporation fee. Mark knew he was on to something beyond the Wall of the Crow, and with the establishment of AERA he was ready to explore. But excavation would have to wait. In 1986, he decided to return to the US after 13 years to complete a PhD at Yale University.

First Excavation

In December 1988, while Mark was still a student at Yale, he launched AERA’s first excavations south of the Wall of the Crow. (AERA celebrated the 20th anniversary of that event this past March.) Funding came from David Koch and Bruce Ludwig (also a member of the AERA Board), who offered to support an excavation after they had seen what

Mark calls a “schlockumentary” he and Zahi Hawass made with Omar Sharif.

“David and Bruce asked what I wanted to do, and I told them I wanted to excavate, not just with archaeologists, but with ceramicists, botanists, zoologists—a fully interdisciplinary team of natural scientists. Because I wanted to dig not just to find the city but to find out about life in the city.”

His first budget was just under \$54,000 with about a dozen team members and a two-month dig season. The excavations proved that Mark’s hunch was correct. The team exposed a stone and mudbrick building with abundant evidence pointing to the time of the pyramid builders. Meanwhile, his work back at the university waited. He returned late for the second semester.

Mark’s systematic, interdisciplinary approach had earned him a reputation among his peers, and before he had even begun his dissertation, the University of Chicago offered him a tenure-track teaching position. Suddenly, it seemed, he was in a Chicago classroom teaching Egyptian archaeology survey courses.

Return to Giza

But events in Giza were already calling him back. A British-American consortium (AMBRIC) installing new public sewer and drainage systems along the foot of the Giza Plateau had unearthed much new evidence of an even larger settlement than Mark had imagined. One of the world’s early large urban sites lies under the modern Cairo suburb that had engulfed what was, not so many years ago, a series of small villages along the base of the Giza Plateau.

Meanwhile Dr. Zahi Hawass and his team had begun excavating the worker’s cemetery just up the slope from the site south of the Wall of the Crow. A soccer field for local youth was expanding near the 1988–’89 excavation site. People mining sand for cleaning the floors of the growing numbers of nearby riding stables were exposing the fragile ancient

ruins and then covering the ancient settlement with refuse. Someone operating a modern backhoe exposed 4,500-year-old floors and mudbrick walls in huge cuts that bled ancient pottery. Exciting discoveries were either imminent or on the cusp of being permanently lost. The moment was now or never.

Mark pulled together a research team, including John Nolan, (AERA’s Associate Director). In the spring of 1991, within days after the Gulf War ended, the team returned to Giza and got to work. When the season concluded, Mark returned to Chicago to teach. With the fall quarter free, he was back in Giza with a larger team to uncover more of the stone and mud building, as well as a pair of nicely preserved bakeries, with features closely resembling those depicted in Old Kingdom tomb scenes. By January he was again in the classroom and did not return to Giza until 1995.

Marathon to Salvage the Lost City

“Finally I realized that the prize to be won or lost needed an all-out effort,” he said. “The work required nothing less than a marathon to salvage the Lost City, to retrieve and analyze all the material culture that we so compulsively save when we excavate. This was the only way we could gain evidence of consumption patterns, climate change, diet and economy. We could not save the Lost City of the Pyramids working with graduate students for two months out of each academic year. We needed to give



1988–’89 Excavations begin



1991 Bakeries
Ann Foster

it a full-time effort with a full complement of professional archaeologists and material culture specialists. That is when I decided to leave my tenure-track post at the University of Chicago and focus entirely on AERA. I was gratified that the university and the Oriental Institute allowed me to stay attached as Research Associate.”

The years 1995 to 1999 were a period of feverish activity. In 1997 the team began to remove a thick overburden of modern—and sometimes unpleasant—dumped material where they wished to locate trenches for excavating into the compact settlement ruins below. The effort brought big rewards. Everywhere they put a square down, the team found massive mudbrick walls. In 1998, they excavated a 20 x 20-meter square, which they dubbed “The Big Leap Forward” (TBLF), and confirmed the existence below of a very large mudbrick and field stone complex.

“One graduate student working at the time looked up at me from the trench and said, ‘There’s something really big lurking down there,’” Mark recalls. “The intact bakeries we had found in 1991 were the tail of a huge archaeological beast.”

Mark and the AERA team were on the brink of discovering an extensive settlement dating from the time when the Egyptians built their largest pyramids at Giza. It was at this critical moment that Ann Lurie, who joined AERA’s Board of Directors in 2008, stepped forward with a challenge: Find out what lies under all the overburden; uncover the city lying below. She would help fund it with a challenge grant. Thus began the Millennium Project, an archaeological mara-

thon launched with the major support of the Ann and Robert H. Lurie Foundation, David Koch, and Peter Norton, joined later by Charles Simonyi, Ted Waitt, and many other loyal supporters. Over the next 21 months, from 1999 to 2002, the AERA team captured much of the footprint of a large, complex settlement, including what appear to have been barracks, bakeries, magazines, guard houses, central storage and accounting facilities, and a village-like suburb of permanent service staff.

Beyond the Millennium Project

In 2004 AERA discovered and mapped the Western Town, a suburb of large houses for high-ranking administrators. In 2005 AERA expanded to a reexamination of the Khentkawes Town (κκτ), a settlement across the wadi from the Wall of the Crow, attached to the monumental tomb of Queen Khentkawes who ruled at the end of the 4th Dynasty. At the same time AERA began to investigate the adjacent settlement and valley temple attached to the Third Pyramid complex of Menkaure.

In 2007 AERA formalized its Archaeological Science Program under the direction of Dr. Mary Anne Murray, who runs the large Giza Field Laboratory in facilities that the Egyptian Supreme Council of Antiquities (SCA) generously makes available within the Western Cemetery of mastaba tombs west of the Great Pyramid.

“Ann Lurie’s challenge was a real catalyst for

AERA to evolve,” Mark said. “Now AERA uses state of the art archaeology to investigate a site the size of ten football fields. We have a fully developed interdisciplinary approach with a professional team. AERA and our research has grown far beyond me and my personal quest.”

The Future of AERA

In 2005, AERA launched its Field School, designed by and under the direction of Mohsen Kamel and Ana Tavares, in collaboration with The American Research Center in Egypt (ARCE), and with a generous grant from the Charles Simonyi Fund for the Arts and Sciences. The AERA Field School teaches Egyptian antiquities inspectors internationally accepted archaeological practices, while embedding the school within AERA’s full-scale, interdisciplinary, professional excavation team.

The rigorous curriculum of the Beginners Field School includes lectures, tutorials, manuals, laboratory work, excavation and mapping, exams, and report preparation. Students who successfully complete the program return to an Advanced Field School session where they concentrate on one of five specialties: advanced excavation, ceramics, survey and mapping, archaeological illustration, or osteoarchaeology (excavation and analysis of human remains). Upon graduation AERA Field School students receive certification, a distinction that gives them greater opportunities to serve on foreign missions and on the cutting edge excavations of the SCA.



1998 The Big Leap Forward (TBLF) excavation



1999 The Millennium Project launches



2000 The Millennium Project reveals the galleries

Responding to requests from ARCE and the SCA in 2008, AERA launched a Salvage Archaeology Field School in Luxor, taking the instruction into real world rescue archaeology.

The AERA Field School program has earned international attention and renown within Egypt. Each year, hundreds of applicants vie for 35 places. "The Field School is something that is so needed and so valuable," Mark said. "Our staff is working with Egyptians to help secure the future of research in Egypt. We measure the Field School success by the fact that the AERA Field School is increasingly staffed by Egyptians—the best of our graduates now teach their colleagues."

With the addition of the Field School, key staff, property in Giza (see story on page 16), and a renewed effort to build financial stability, AERA has evolved into an independent institution, with a future of its own. At the same time, AERA is lean, effective, and innovative.

The global team, based all over the world, meets by Skype and each season comes together at Giza to field one of the largest archaeological missions work-

ing in Egypt. AERA is still a small organization, but has evolved into an archaeological research center for the 21st century.

This year marks a special group of anniversaries for Mark Lehner and the AERA team: 30 years since Mark started directing projects at Giza, the 20th anniversary of the excavations at the Lost City site, and the 10-year anniversary of Ann Lurie's game-changing challenge.

"Now it is time to consolidate our achievements," Mark said, "and pass AERA on to another generation. In this special anniversary year, we have secured our own property, where we begin to build our research center. We begin to plot our legacy and the future. Hopefully, our spirit of quest and exploration with which AERA began will be a lasting part of that legacy." ~ *Cindy Sebrell*

Photo credits: all photos in this article were taken by Mark Lehner except the two on this page, which are by Yukinori Kawae.

Request AERA's E-Bulletin. Keep up with AERA by signing up for our E-Bulletin, sent out once a month. Please e-mail publications@aeraweb.org. In the subject line type: "E-Bulletin."

Join AERA! Your membership will connect you with friends, colleagues, and associates around the globe who support and follow archaeological research in Egypt. Membership in AERA brings you invitations to special events, access to regional lectures, notices and updates on research as it happens in the field, and two issues per year of *AERAGRAM*.

Please use this form or join online at AERA's website: <http://www.aeraweb.org/>.

MEMBERSHIPS:

Basic: \$55 Student/Senior: \$30 Non-US: \$65
Egyptian National: LE100 Supporting: \$250

Name _____

Address _____

Phone _____

E-mail _____

Please make check payable to AERA and send with application to AERA at 26 Lincoln St. Ste. 5, Boston, MA 02135.

Or charge your membership to a credit card:

Name on card _____

Card type & number _____

Expiration date _____

Signature _____



AERAGRAM

Volume 10 Number 1, Spring 2009

Editor: Dr. Wilma Wetterstrom

Assistant: Alexandra Witsell

AERAGRAM is published by **AERA**, Ancient Egypt Research Associates, a 501(c) (3), tax-exempt, non-profit organization.

Ancient Egypt Research Associates
26 Lincoln St. Ste. 5, Boston, MA 02135
E-mail: wwetterstrom@aeraweb.org
Website: <http://www.aeraweb.org>.

AERA Board Members

President and Treasurer: Dr. Mark Lehner

Secretary: Glen Dash

Dr. James Allen

Ed Fries

Jon Jerde

Bruce Ludwig

Ann Lurie

Matthew McCauley

Peter Norton

Dr. Richard Redding

© Ancient Egypt Research Associates 2009

In Memoriam: Mahmoud Kirsh

In January we were saddened to learn of the sudden death of Mahmoud Kirsh, who had worked with us at Giza since 1995.

In one of my deep consciousness dreams, Mahmoud Kirsh and his car would be a major archetype. He conveyed me through Egypt in his black and white Peugeot station wagon through the last 13 years with the meter, meant to tick away time, turned off. In the early years of his work with the Giza Plateau Mapping Project, it was often Mahmoud who would turn up at the gate in the middle of the night or the wee hours of the morning for that rite of passage that is travel back to our other home on the other side of the world.

Mahmoud became my primary driver. He was quiet and reserved. Most of the time he would not talk if I did not as we careened through Cairo traffic. Mahmoud was a skillful driver, and he did not suffer driving fools easily.

Sometimes we would engage in animated conversation about American and Middle Eastern politics. Mahmoud seemed delighted and intrigued at my interest in the complexities of Cairo from bottom up, how people build new homes,



make do with economic challenges, form new neighborhoods and decide on widths of streets and proximity of first floor balconies, how things are supposed to work and how things really work. So we would talk while driving around looking for land for AERA's own center. Mahmoud helped a lot with our search.

I was shocked to learn that Mahmoud had passed away suddenly the week before I arrived in Egypt to prepare for the 2009 field season. Here is what my brother Dan wrote in an e-mail the night I learned of Mahmoud's passing.

I'm sorry to hear that Mahmoud died. I liked him... He was really nice to me when I rode shotgun with him a few times. I remember him surprising me by yelling "Dan!" and waving to me when I was standing on the front steps outside the field school graduation reception—like we were old friends. I also remember his proud assertion: "Dr. Mark—he is Egyptian!"

We miss Mahmoud very much and extend to his family our condolences. His nephew, Ahmed Kirsh, still drives us to and from the site, in Mahmoud's car, where we feel both his absence and his presence.

~ Mark Lehner

AERA Celebrates 20 Years of Excavations at Giza



Jason Quinlan

On the Ides of March 2009, AERA celebrated 20 years of excavations at the Lost City site in Giza. Colleagues, donors, and board members joined the research team for site tours, special receptions, and AERA Study Day that presented all aspects of AERA's archaeology and Field School. Dr. Zahi Hawass, Chairman of the Supreme Council of Antiquities

Dr. Zahi Hawass, Chairman of the Supreme Council of Antiquities, speaks at AERA Study Day.

(SCA), generously hosted AERA Study Day at the Ahmed Pasha Hall of the Supreme Council of Antiquities headquarters.

The SCA sent out invitations to the entire Egyptological community in Egypt and abroad. More than 150 attendees heard AERA team members speak about the Field School, osteology, archaeobotany, lithics, ceramics, and laser scanning techniques. Dr. Hawass opened the afternoon session.

AERA's mid-March celebration concluded with a dinner on the lawn of the AERA villa with 200 people in attendance. In addition to the 20th year of excavation, AERA's 2009 field season also marks the 10th anniversary since AERA Board Member and donor Ann Lurie launched AERA's three-year archaeological marathon (1999–2002) that salvaged the Lost City. Ann's challenge was a catalyst for AERA's growth into one of the largest archaeological missions working in Egypt. Finally, it has been 30 years since Mark Lehner began directing projects in Egypt with his 1979–1983 survey and mapping of the Great Sphinx.

The entire AERA team thanks all who attended these special events and all of you who have supported AERA over the years.

Daily Life of the Pyramid Builders

Twenty years of excavation and analysis have opened windows onto the ancient Egyptians and their daily life 4,500 years ago in the Lost City of the Pyramids. We have mapped the footprint of their city, reconstructed their houses and buildings, compulsively collected samples, and catalogued myriad bits of evidence—fragments of pottery; chipped stone; mud sealings broken off of bags, boxes, jars and doors; artifacts; animal bone fragments; and ancient bits of plants. We have assembled the bits and bytes into vast databases, looking for patterns across space and time with the help of GIS. Like the coming together of a vast jigsaw puzzle, we begin to see patterns—pictures of the Lost City, images of the ancient inhabitants, their movements, work, diet, and leisure.

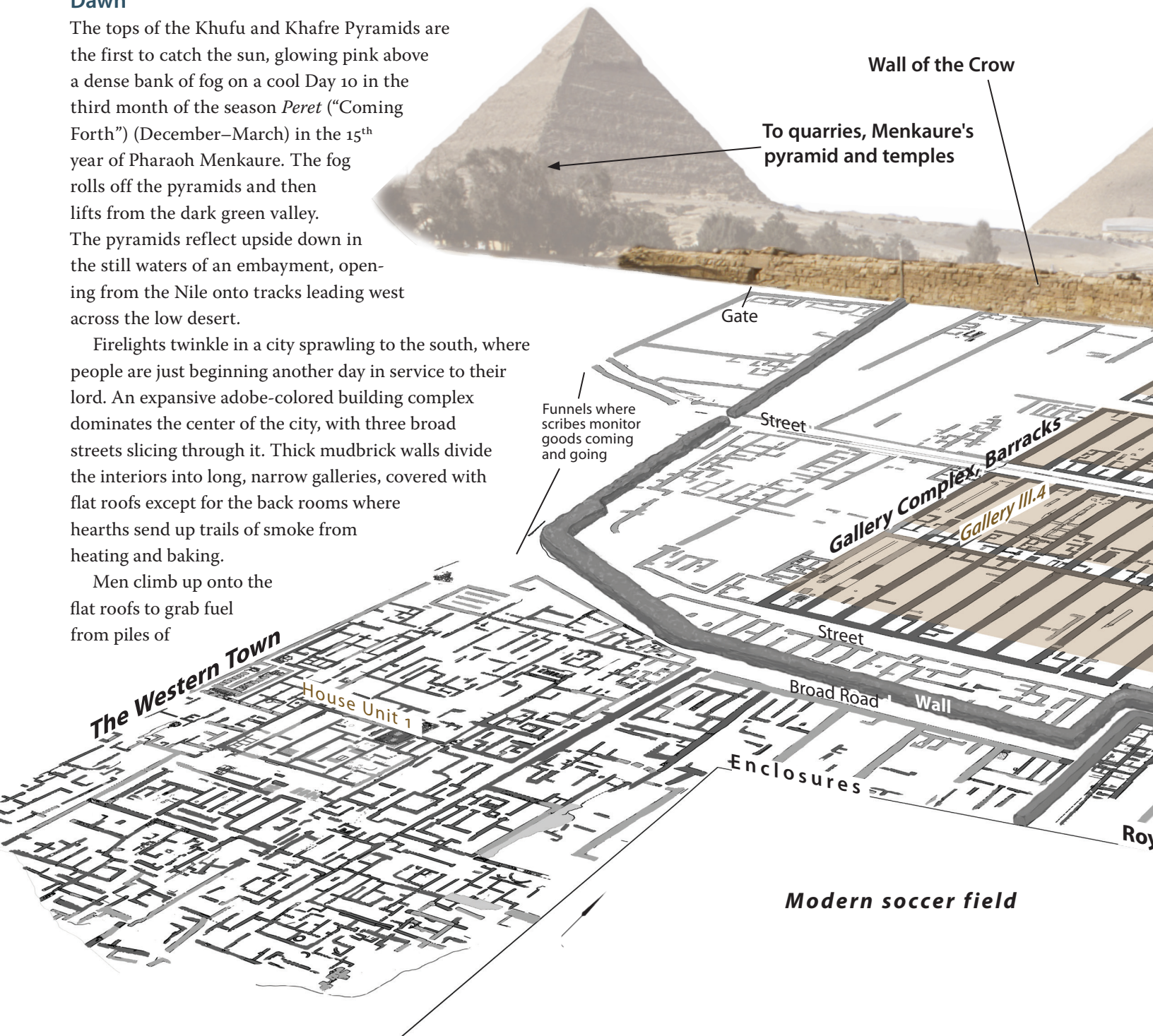
To celebrate 20 years of painstaking recovery and analysis, we resurrect these ancient Egyptians in vignettes of their daily life. While names and characters are fictional, we could support these scenarios in footnoted evidence from our own work in the Lost City, other archaeological sources, and ancient hieroglyphic texts.

Dawn

The tops of the Khufu and Khafre Pyramids are the first to catch the sun, glowing pink above a dense bank of fog on a cool Day 10 in the third month of the season *Peret* (“Coming Forth”) (December–March) in the 15th year of Pharaoh Menkaure. The fog rolls off the pyramids and then lifts from the dark green valley. The pyramids reflect upside down in the still waters of an embayment, opening from the Nile onto tracks leading west across the low desert.

Firelights twinkle in a city sprawling to the south, where people are just beginning another day in service to their lord. An expansive adobe-colored building complex dominates the center of the city, with three broad streets slicing through it. Thick mudbrick walls divide the interiors into long, narrow galleries, covered with flat roofs except for the back rooms where hearths send up trails of smoke from heating and baking.

Men climb up onto the flat roofs to grab fuel from piles of



small tree branches and straw. Here and there goats—extra food stored “on the hoof”—scamper away.

Before dawn, supervisors roust young men from sleep in the long galleries, their barracks. They serve their months of rotation on the royal works.

Morning

Following breakfast, rows of young men emerge from the dark doorways of the galleries carrying their tools for the trek up to their work sites on the Giza Plateau. In the three broad streets they fall in line and march west and then north, through the gate in the stone wall. Some pick up the haulage ropes from barges in the harbor to the east to drag enormous blocks up the tracks. Others make the more distant trek to the quarries on the west. Another group, looking like ants

in the distant haze on the high desert, ascends even higher toward Menkaure’s pyramid, rising against the horizon.

While these rotation workers go up to the plateau, others stay behind to labor in the city. Some will make items for Menkaure’s tomb and temples; many will provide support to keep the whole construction effort running smoothly.

Soon after sunrise people make their way into the open courts and chambers that flank each side of the barracks. From the Eastern Town, a village for long-term residents of squat houses, tiny courtyards, and narrow alleyways, villagers move through a constriction monitored by guards, into a broad

road that passes between the corner of a large, industrial yard on the north, and on the south, the Royal Enclosure, a broad open compound for storage and accounting. Here they grind grain into flour. In the yard to the north they bake bread on an industrial scale to feed the labor force in the barracks.

Some people make their way farther west down the broad road passing along a massive fieldstone wall that encircles the barracks and industrial yards, completely segregating these areas from the Western Town where high officials and their families, servants, and scribes live in large house compounds.

Some scribes move east along the broad road and then into long enclosures stretching between the Western Town and the Royal Enclosure. Or they continue on to the Royal Enclosure to tally withdrawals and receipts, attendance rosters, duties assigned, work completed, and rations.

At the northwestern corner of the Western Town, scribes monitor workers going out and goods and animals coming in through a “funnel” in the road leading into the complex. Other scribes monitor deliveries from the south.

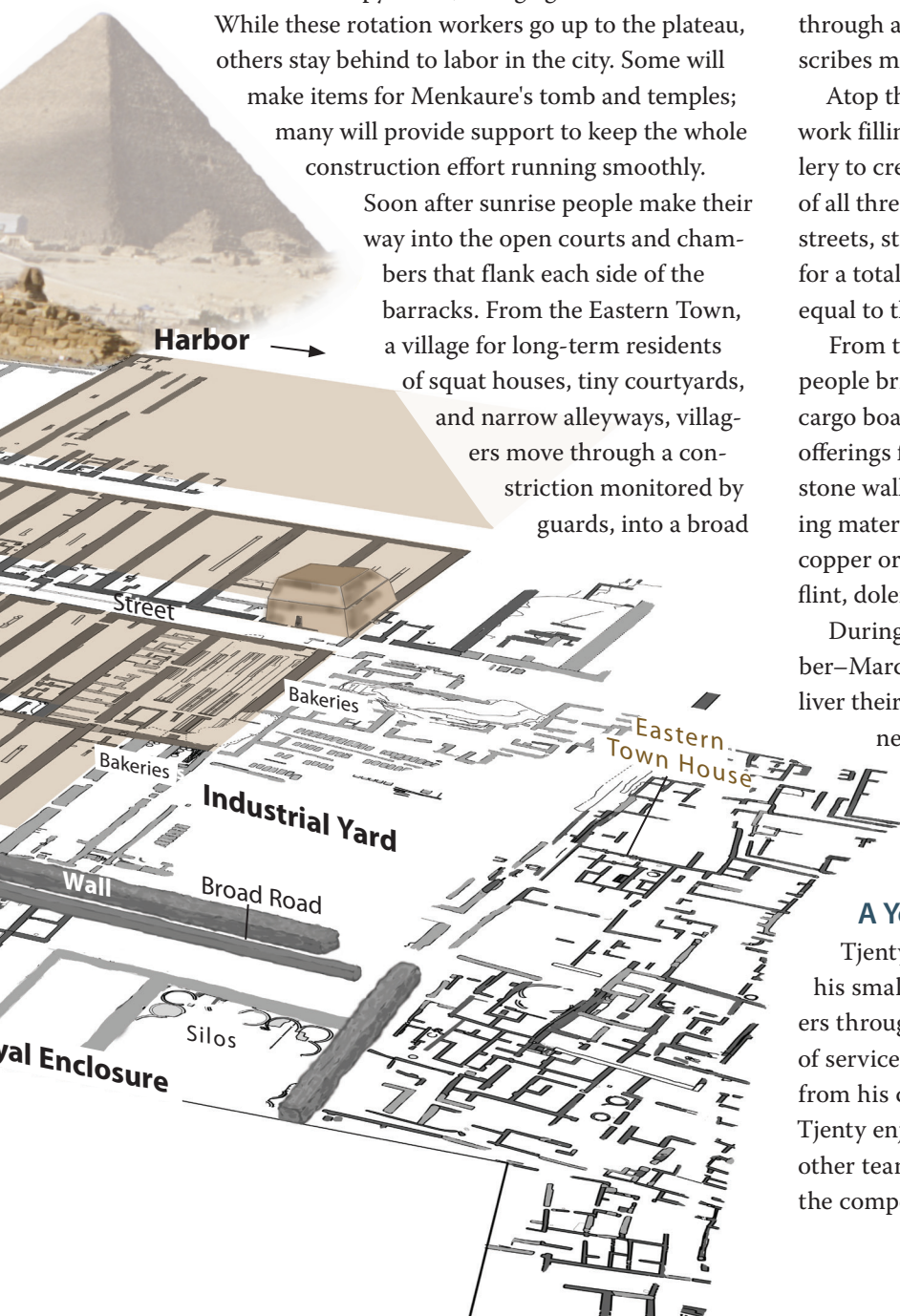
Atop the southern block of the barracks, men are already at work filling bricks in between the arches that cover each gallery to create one continuous flat roof. The combined rooftop of all three buildings gives an elevated terrace, bisected by the streets, stretching 324 cubits (558 feet) by 143 cubits (246 feet) for a total of 5 hectares (60,000 square yards), a surface nearly equal to the base of Khufu’s Great Pyramid.

From the Nile banks along the eastern side of the city, people bring water in pots slung from shoulder poles. Small cargo boats with sails on A-frame masts dock, or bring their offerings from the south, leaving free the harbor between the stone wall and the Sphinx for larger barges laden with building materials: tons of limestone, gypsum, granite, timbers, and copper ore. From distant parts of Egypt, smaller boats bring flint, dolerite for hammers, and minerals for pigments.

During the season of planting and growing (*Peret*, December–March), and harvest (*Shemu*, April–July) fishermen deliver their catch taken by hook and line in the deep Nile channel. The fish range from baskets of small fry, the size of sardines, to Nile perch and catfish so huge that two men carry them on poles.

A Young Resident of the Galleries

Tjenty has come to Giza with other young men from his small village in Middle Egypt. Each year they, like others throughout Egypt, serve their Pharaoh with one month of service. The work is hard but Tjenty is here with cohorts from his community. They are paid rations and eat well. Tjenty enjoys the spirit of his home team, camaraderie with other teams from villages that make up his work gang, and the competition with young men from other gangs.



The Day Begins in the Barracks

Tjenty sleeps shoulder to shoulder with 40 of his compatriots, 20 to a side on the hard, reed-mat-covered floor of the long open hall (in Gallery III.4 on map, pages 8–9). Overseers sleep at the far ends of the two sides on low platforms. The four or five overseers, responsible for groups of ten each, keep a careful watch on the men.

Before dawn a boy lights the linen wicks in several small lamps filled with castor oil so that the men can find their way as they prepare for the day. The men don loin cloths, kilts, and tunics of coarse gray linen and wrap themselves against the cold in lengths of the fabric.

Breakfast

"Every day is a feast day!" Tjenty and his barracks mates tell their family and friends at home. They eat meat many days, tender meat from young animals, more flavorful than the aged beasts they occasionally have at home.

Cooks in the gallery kitchen prepare the meat in stews, sometimes with beef, but usually with goat, or fish, and occasionally sheep. The authorities provide each gallery team with an animal periodically, especially on feast days.

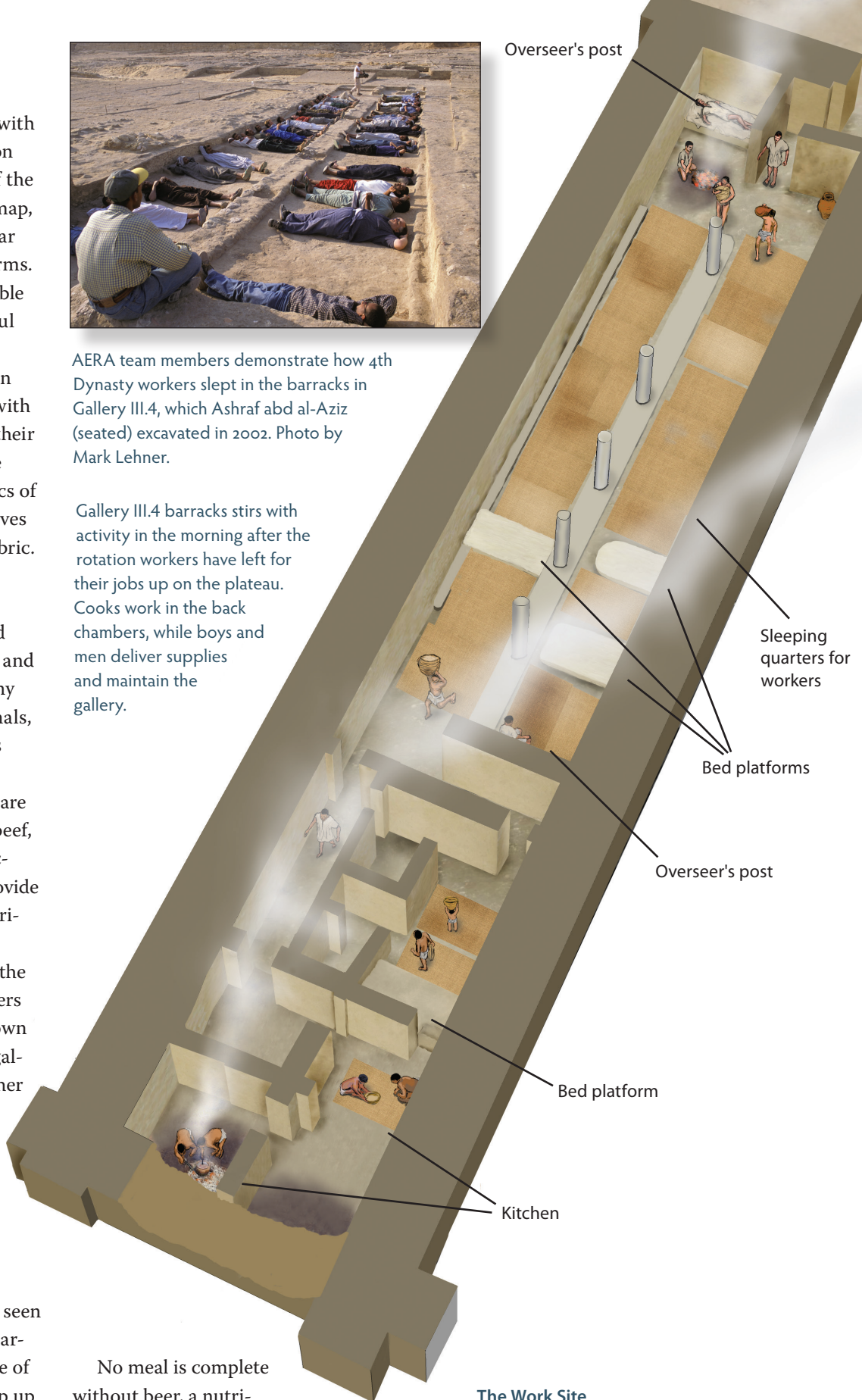
Boys drive the small livestock to the barracks where gallery team members take the animals and shunt them down the street to the doorways of their galleries. The cooks dispatch and butcher the animals with chert knives in the streets, then take the parts to the rear cooking chambers, where they use the meat and bone for stews. They add lentils or onions if they have them on hand.

The men take their stew in white bowls, different from any they have seen in their villages. An inward curve narrows the vessel, reducing the chance of spills. Tjenty and his teammates sop up the liquid with pieces of dense, heavy bread, cut with a chert knife from a large bell-shaped loaf, baked by the hundreds every day for the workers.



AERA team members demonstrate how 4th Dynasty workers slept in the barracks in Gallery III.4, which Ashraf abd al-Aziz (seated) excavated in 2002. Photo by Mark Lehner.

Gallery III.4 barracks stirs with activity in the morning after the rotation workers have left for their jobs up on the plateau. Cooks work in the back chambers, while boys and men deliver supplies and maintain the gallery.



No meal is complete without beer, a nutritious gruel, with a touch of alcohol, swigged from a ceramic jar. The men scoop water out of a large storage jar at the front end of the gallery.

The Work Site

Noise resounds across the Giza Plateau throughout the workday: shouted orders and chants of haulers, the clink-a-chink of copper chisels

dressing blocks, and dull thuds of quarrymen pounding with heavy granodiorite hammers to rough out building blocks of both local Giza limestone and granite from the southern quarries of Yebu. Craftsmen carve and peck at stone panels to create decoration and text. The pounding and pecking cease occasionally as men stop to sharpen their copper tools on fine-grained quartzite whetstones.

The haulers' chants can be heard in the far distance. Brick layers shout at workers carrying baskets of limestone debris and desert *tafla* clay—material to

Clockwise from the left: Whetstone used to sharpen copper tools; marbles; chert butcher knife; bowl used for rations; diorite hammer. Photos by Yukinori Kawae.

raise the supply ramps and their support embankments.

Boys traverse the wadi leading donkeys laden with bulky woven bags and rope nets that carry large jars of water or beer. Workers carry water to the high reaches of the pyramid in jars slung on shoulder poles.

Periodically an overseer's loud call punctuates the cacophony, ordering the men to take meals or breaks. The men enjoy bread, beer, and small dried fish, like potato chips. Their white ration bowls, which they take to the work site in their linen tool bundles, are handy for drinking. Even in the winter, days can be hot. The men need water and as the sun rises in the morning they are forced to shed their outer layers of clothes. Torn kilts and cloth carrying-slings end up in the pyramid builders' waste, tossed in great dump lines.

The End of the Day

At the last light of sunset, the overseers march their teams back to the barracks passing by observant guards and scribes who record their presence. Many guards and workers will stay the night in the quarry, on the ramp, and on the highest course of the truncated pyramid. Their firelights begin to gleam in the dark.

The men using copper tools report to scribes who weigh the tools, note the value, and compare these with the amount of work recorded. If there is a discrepancy suggesting that someone has slivered off and hidden precious bits of copper (a medium of exchange), an

enormous commotion erupts and the overseers are taken away and punished. Copper tools that have become too dull for their tasks are annealed in the small hearth chambers at the backs of the barracks, or delivered over for recasting in the eastern industrial zone.

The young men take their evening meal of stew, bread, and beer, sitting on mats in the street or squatting inside the long sleeping hall, backs to the walls. Some men linger outside chatting as the darkening sky begins to twinkle with thousands of stars. Inside, boys set up a few small braziers for warmth, periodically feeding the fires with acacia wood charcoal from the supply regularly delivered to each gallery. In spite of openings in the vaulted ceilings for ventilation, the sleeping halls are stuffy and smoky.

Free Days

Tjenty and his compatriots have come to work for their lord, but occasionally they are granted a day off. Some men enjoy a game played with limestone marbles on a circular limestone board. Others attend to housekeeping and their own upkeep. In his free time Tjenty repairs tears in his loincloth and linen tool bag, using a borrowed copper needle and linen thread.

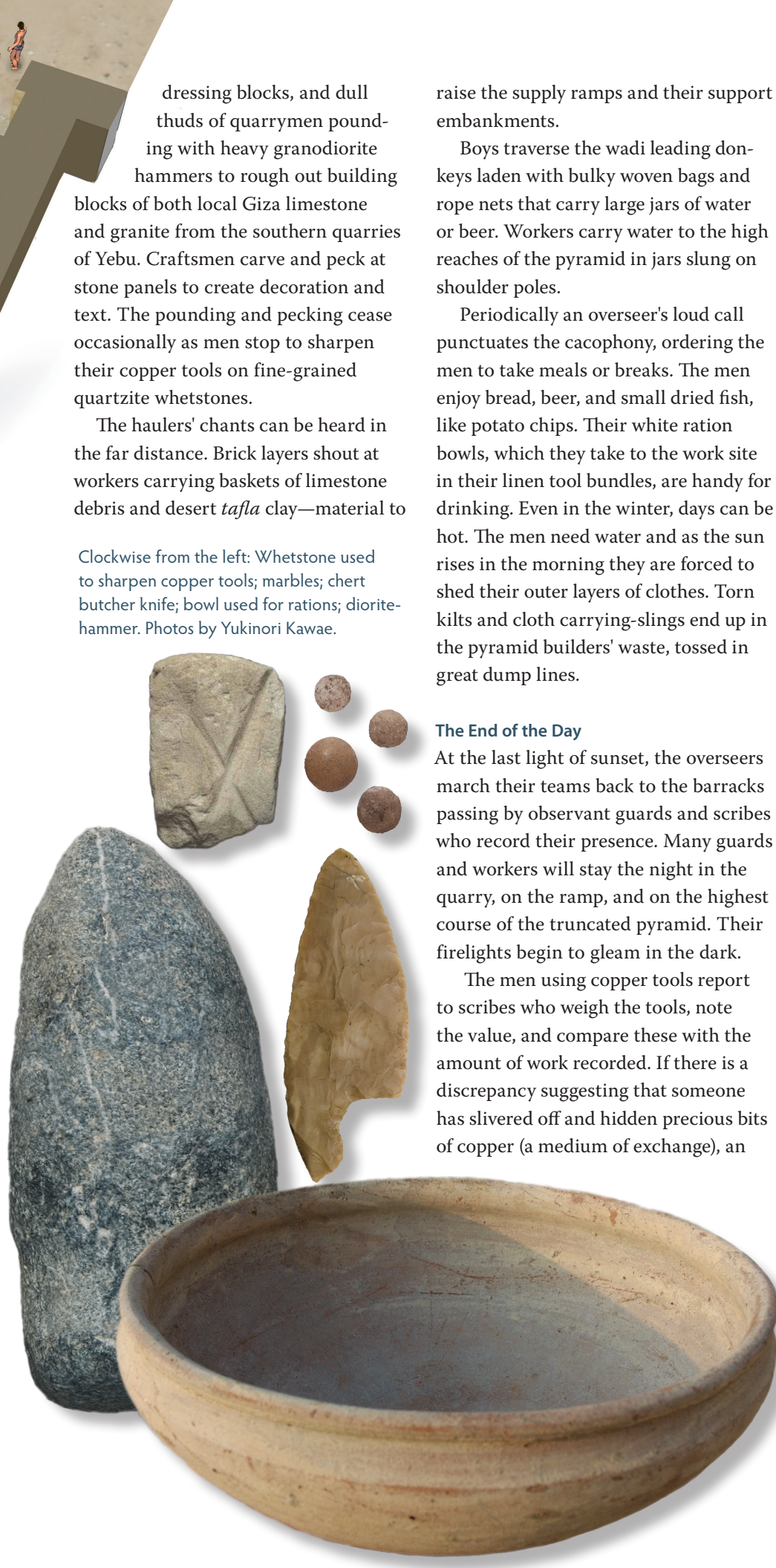
An Eastern Town Woman

Nefret lives with her husband, four children, and mother-in-law in a small mudbrick compound (Eastern Town House on map, pages 8–9) with a tiny two-room house. She moved here from a nearby village as a young bride to join her husband, who followed his parents to Giza in order to work with his father.

Early Morning

Nefret is up before dawn to prepare breakfast with the help of her oldest daughter. The women pull on gray linen dresses and proudly don their polished bracelets and faience bead necklaces.

Every morning Nefret starts a fire in the hearth using straw kindling and



keeps it stoked with acacia wood charcoal. She places a ceramic pot over the hot embers to cook a gruel.

The family gathers around on a mat in the front courtyard to eat, everyone wrapped in lengths of thick linen. On particularly cold mornings they stay inside the little house, illuminated with a lamp and warmed with a brazier. They eat from a couple of communal bowls, scooping up the gruel with pieces of dense bread that Nefret bakes. They pass around a beer jar, each taking a sip.

The Eastern Town House in the afternoon. Women weave and spin for the authorities. Others prepare food and tend to chores.

Nefret draws water from a large storage jar set in the floor for everyone to drink and wash before they start their workday.

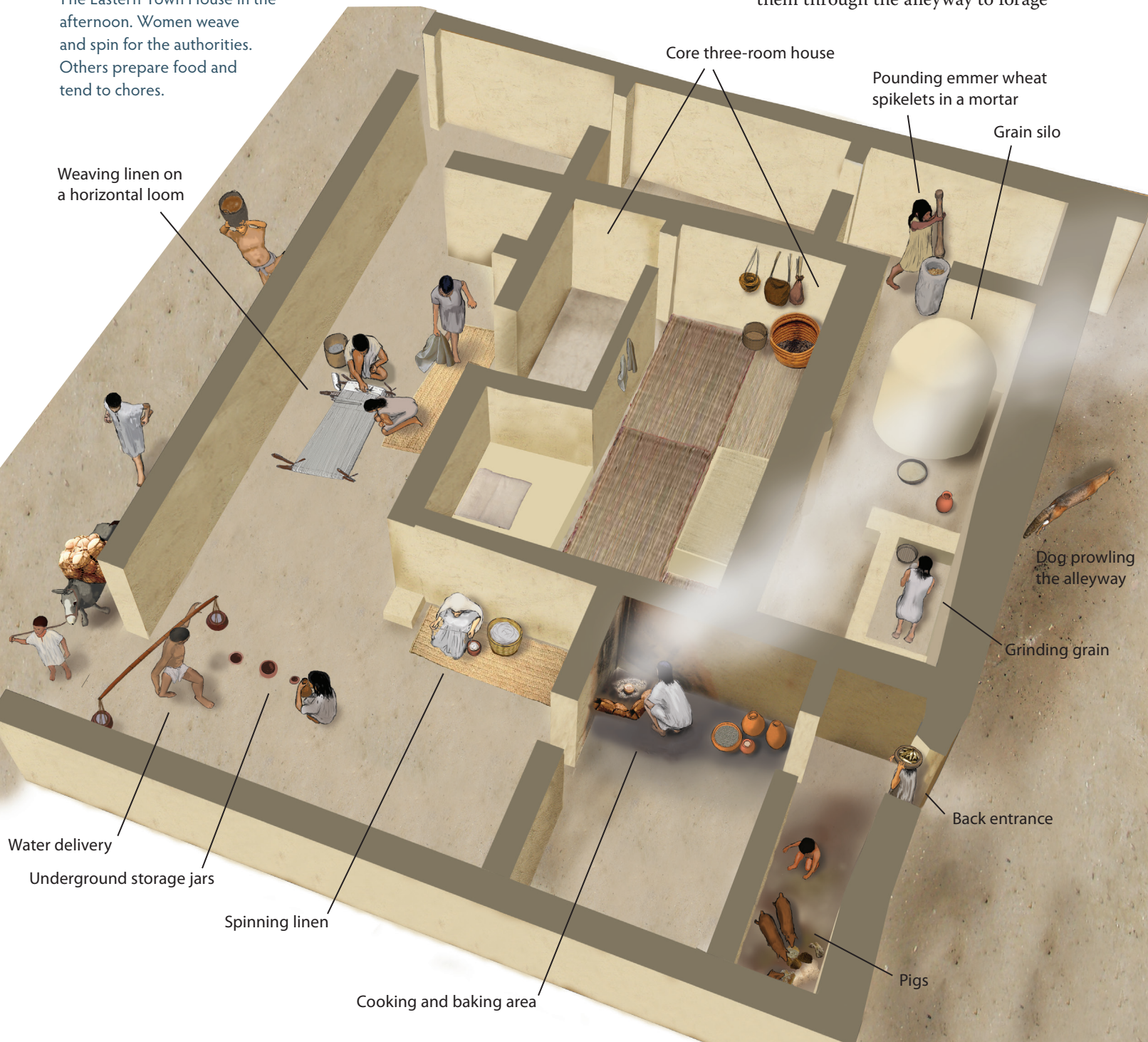
Men's Work

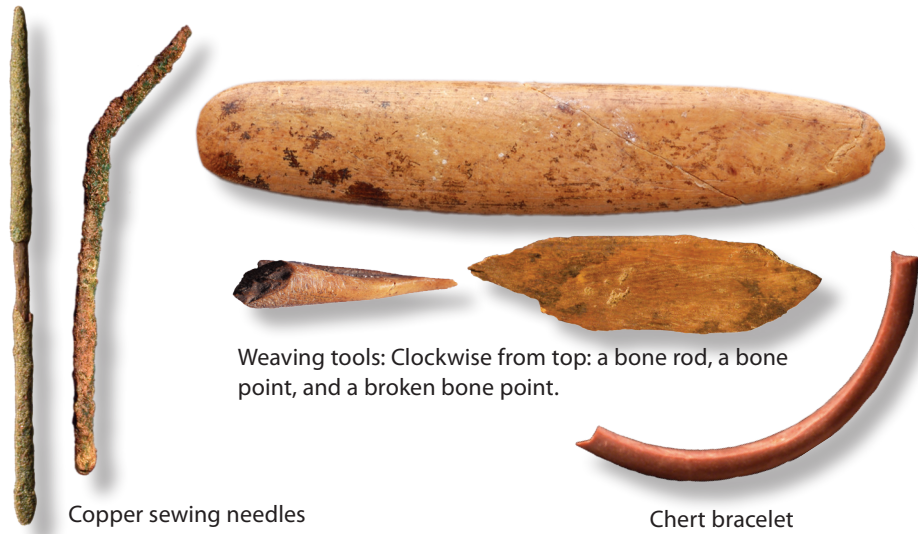
Nefret's husband, in loincloth and tunic, sets off for the nearby industrial yard, where he makes faience objects in a hot, smoky, open workshop. He prepares tiles, beads, gaming pieces, and other objects. Most are for Menkaure's temples, but some pieces go to townspeople. Occasionally he brings beads home.

Nefret's son, dressed in the same simple garments, follows the alleyway south to the Royal Enclosure. Here he grinds red pigments for painting the clay-plastered walls of houses in the city or for painting funerary statues and objects.

Children's Work

The two youngest children help take care of the family livestock, which are both food sources and trade goods. The daughter takes the three goats to browse at the desert edge. The son waters and feeds the pigs and periodically drives them through the alleyway to forage





Copper sewing needles

Weaving tools: Clockwise from top: a bone rod, a bone point, and a broken bone point.

Chert bracelet

for garbage at the edge of the industrial yard. When the female pigs are to be bred, he herds them to a neighbor's house to be "covered" by their boar.

But the youngest son spends most of his day in the faience workshop near his father, fetching water, carrying supplies, stoking fires, and dumping waste.

Women's Work

Nefret and her older daughter begin their work day in the Royal Enclosure with many other women waiting in line for flax fibers or yarn. As a foreman issues materials to each one, a scribe notes the quantities. The women and girls spin the flax fibers into yarn and weave the yarn into cloth using simple horizontal looms. Lengths of linen fabric are paid as rations and used for clothing and sheeting. Nefret and her daughter, like many of the women, take their raw materials home where they work in the confines of their open courtyards. When they have completed their allotments, they report to the scribes with the finished bolt of cloth or skeins of yarn. The scribes carefully record Nefret's "quota" against her "debit" of raw materials.

Other workers hustle the fabric and thread off to the nearby enclosures, where another scribe records its quality and quantity. He notes that these are "incoming," as assistants fold and store the cloth in wooden boxes inside the magazines. The scribe will make a notation when they come out for distribution as

rations to laborers, to high officials and administrators.

Keeping the City Running

Elsewhere in the royal compound, workers line up for leaves, fronds, stems, and fibers that they will weave into mats, baskets, and sandals. Another group picks up fibers for making ropes (the lynch-pin of pyramid building) and nets. The workforce of this large city consumes vast quantities of these materials, so they must be constantly replaced.

As Nefret and her daughter leave the compound with baskets of linen yarn carried upon their heads, they glance to the south and notice smoke rising from the kilns. Outside, downwind from the town, potters shape and fire ceramics in a vast array of forms and sizes for everyday use. A steady stream of donkeys loaded with pots plod into the town each week to replenish the bakers' molds and replace broken cooking pots, water vessels, beer jars, vats, and storage jars.

Working at Home

Nefret and her daughter spend much of their day laboring over their looms strung across the sunny southwestern courtyard. But before dark they must also attend to many household duties. The youngest daughter helps after she returns with the goats in the afternoon.

Nearly every day in the back courtyard, the women grind emmer wheat flour for bread. A low bin holds the quern stone while they hunch over it on

their knees, pushing the grinding stone back and forth.

Emmer wheat spikelets—grains enclosed tightly in glumes—are stored in a small mudbrick silo nearby. But before they can be ground, the grains must be freed from the glumes. This onerous chore falls to Nefret's oldest daughter. She pounds the spikelets with a long, heavy wooden pestle in a stone mortar. Once the spikelets are broken up, she winnows out the light chaff and then sieves the grains to remove weed seeds and bits of stem, sorting out the last weeds by hand. The chaff, stems, and weeds are set aside for tinder and feed.

Nefret and her daughter prepare bread dough and bake it in molds in the kitchen area on the south side of the compound. They cook stews, often with sheep or goat that they buy through barter at a riverside market in a nearby village. On special occasions they butcher their own pigs and share the meat with a network of friends and relatives. Sometimes they receive beef from the authorities. Occasionally Nefret's son brings home a catch of fish for the stew pot.

Nefret sometimes gets payments of lentils, grapes, onions, figs and *nabakh* fruit, but she also buys them in nearby villages by trading pork, linen fabric she weaves on her own, and occasionally faience pieces her husband brings home.

Periodically Nefret sets up her own "stall" in an informal market along the riverbank about 600 cubits (300 meters) due east of the city. She and the other "dealers" try to maintain fair exchanges by also using weights and tokens in their trades. Though the tokens are not standardized in value or condoned by the authorities, they are useful for keeping track of specified quantities.

Evening

After the rest of the family returns at dusk, the women serve a meal of stew, bread, and beer. On warmer evenings the family lingers outside talking after dinner. If it is cold they retreat to

their little house and soon go to sleep. Hearth fuel is precious, and so is the oil for the indoor pottery lamp. Nefret, her husband, and youngest child sleep on the bed platform in a niche, while the others sleep on the bench across the room, on the floor, or on warm nights on the roof.

A Scribe of the Western Town

Seshemnefer is one of four young scribes working in the "House of the Book Roll," under the supervision of three older scribes, in one of the larger houses of the city that contained a scribes' workshop (House Unit 1 on map, pages 8–9.)

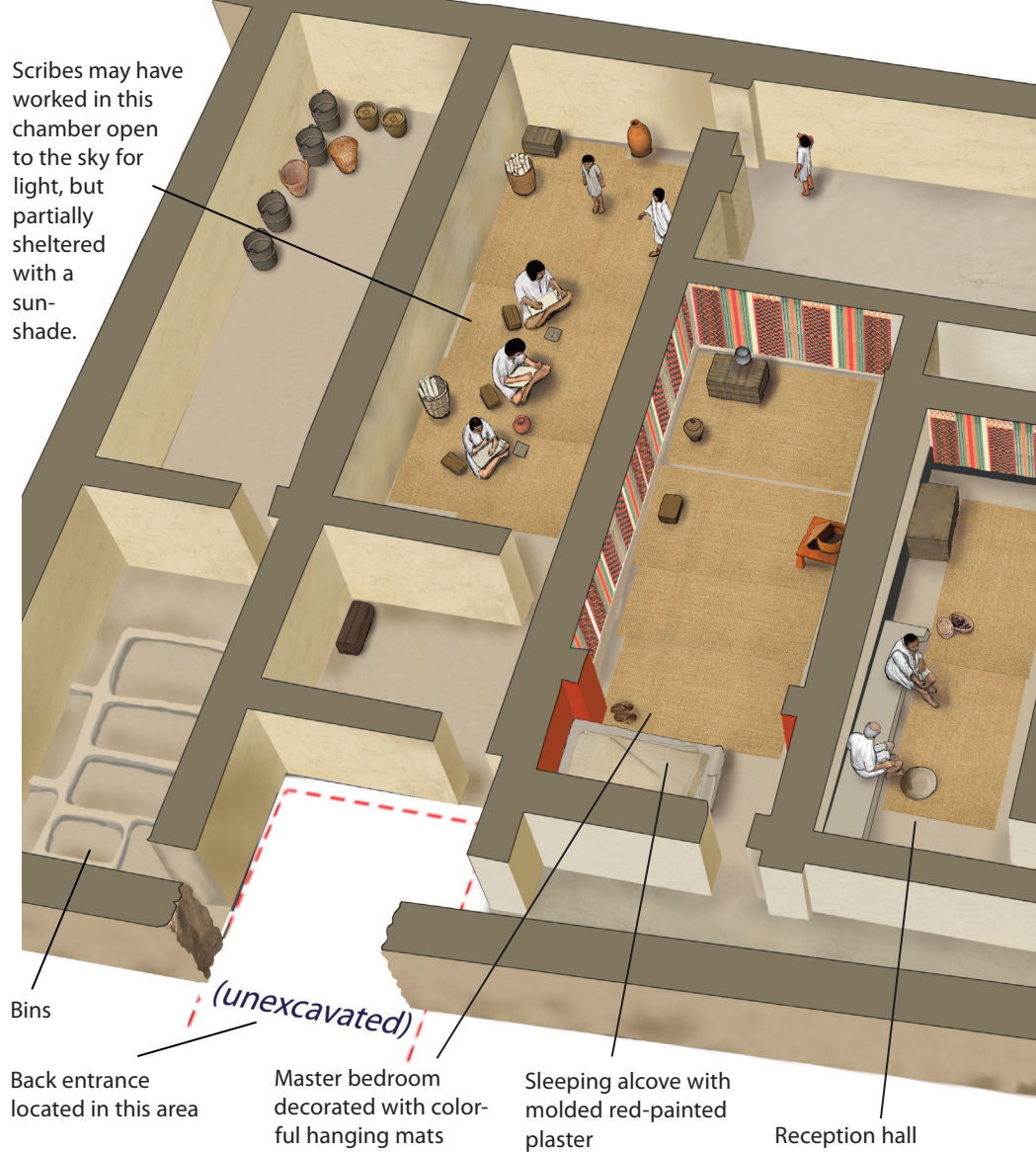
Morning

Seshemnefer and three other young men arrive simultaneously at the largest house in the Western Town having made their way through a maze of alleys from their respective homes in this district. Here at the House of the Book Roll they respectfully greet three older scribes. They are all wrapped against the cold in long, white linen cloaks. Underneath, Seshemnefer wears a fine, white linen tunic and kilt over a loin cloth, sometimes with a sash. The older scribes add a long apron and sash.

Work

The scribes take their places on low seats or floor mats in a bright room open to the sky, but with a sunshade. Four boys, apprentices, retrieve the scribal kits from a wooden box. Occasionally the scribes have to break a mud sealing before they can open the boxes. If the workshop is closed for some days, the scribes seal their boxes by rolling their own cylinder seal, with their title, over a daub of special mud covering the latch. To open the seal they crack the mud letting the brittle pieces scatter on the floor. One of the boys sweeps the mud fragments into a basket and dumps it on a trash pile in a courtyard just outside the house.

Scribes may have worked in this chamber open to the sky for light, but partially sheltered with a sunshade.



House Unit 1. The core of the house, the master bedroom and reception hall, are surrounded by spaces that were most likely used for storage and work areas. In the afternoon, scribes work while servants prepare food and perform other chores.

Occasionally the senior scribe, the resident of the house, goes away on business or pleasure. One of the pleasures reserved to men of such rank is a hunt in the desert, which sometimes bags a prized gazelle or even an addax.

The scribes pull out reeds, ink and palette, and papyrus from their boxes to begin work. They hold a very revered position. While great numbers of scribes throughout the city record and monitor vast amounts of detail about life in the town, this small, closed community is the only one that works closely with the king and wields great power. Among the titles held by members of this group are "Overseer of all Royal Construction Projects," "Scribe

of the Royal Documents," "Scribes of the King's Writing Case," and "Scribe of Royal Documents for Royal Instructions," which oversees the education of the king's children and those of the nobles. Working with others in the scribal workshop this official sets up the curriculum for the children and monitors their study.

These elite scribes meet with the king, or his representative, the Vizier, take dictation from him, and later prepare the correct document for the king's business. Seshemnefer's first document of the day, from dictation he recorded earlier, is a royal warrant, a declaration that the pharaoh is intervening in a matter in a small way.



Entrance probably located in this area

(unexcavated)

Storeroom with beer jars in bin. A guard sleeps on a bed platform

Kitchen and bakery

Break

In mid-morning in a reception hall decorated with multicolored mats, the men gather for a second breakfast. The boys bring food from the kitchen at the east end of the house, where the cooks have been working since very early morning. In front of each scribe, the boys place a fine red serving bowl filled with a stew of tender veal and a ceramic jar with beer. Sometimes meaty Nile perch replaces the beef. In the center of the group, the boys set a tray of flat loaves. Later in the day the boys serve a similar meal, sometimes with conical loaves in place of the flat bread.

Day's End

Late in the afternoon as the light begins to fade, the scribes start putting away their materials. Without the light they cannot write, although they may discuss their work and plans. Before dusk they make their way back to their respective homes, leaving the large structure to the senior scribe and his family.

AERA Publishes First Comprehensive Guide to Egyptian Pottery

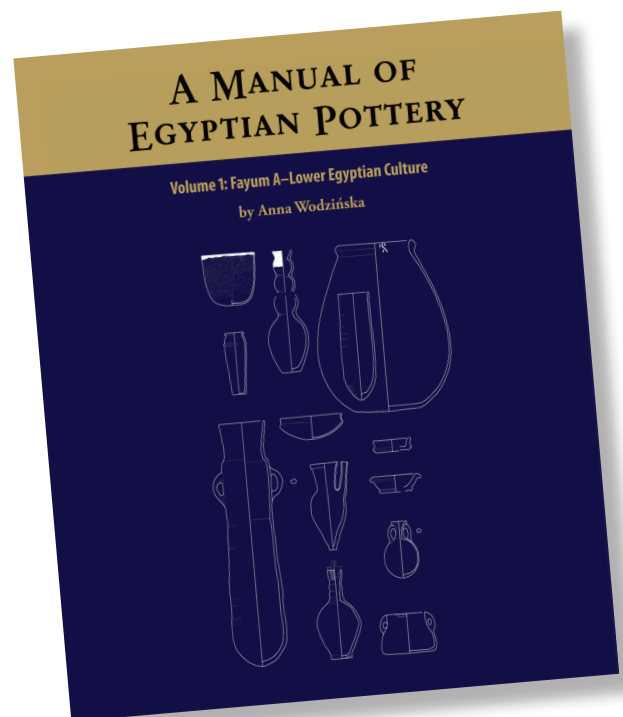
The first two volumes of *A Manual of Egyptian Pottery* by Anna Wodzińska, AERA ceramicist, will soon be available through David Brown Books (<http://www.oxbowbooks.com/>). The manuals, first developed as quick guides for students in the AERA-ARCE Advanced Field School for SCA Inspectors, evolved into four comprehensive volumes that will be useful to many scholars from beginning students to experienced archaeologists.

The four volumes cover all Egyptian pottery, from the earliest (Fayum A) forms to modern ceramics made in Egypt today, organized chronologically. The first two volumes span the periods from Fayum A through the Middle Kingdom.

The manuals are quick identification guides as well as starting points for more extensive research. For each period, ceramic types are illustrated with a line drawing, accompanied by information on the pot's material, manufacturing techniques, surface treatment, and shape. Suggested readings as well as a bibliography are included for each period. Introductory chapters discuss the basics of pottery manufacture and analysis.

The spiral-bound version, intended for field and lab, is \$35. A paperback version sells for \$30. A pdf version will also be available for free download from the AERA website: <http://www.aeraweb.org>.

AERA will publish the last two volumes later this year.





Above left: Satellite view showing the location of the newly-purchased property north of the Giza Plateau. (<http://maps.google.com/>)
 Above right: The 1930s villa before we began renovations. Photo by Richard Redding.

Below: View to the west from the roof of the villa. Khufu's Pyramid rises in the background. Khafre's Pyramid appears beyond it. Our Reis, (foreman) Said Salleh Talbiya, poses on the roof. Photo by Richard Redding.



AERA's New Home

AERA has purchased property with a 1930s villa in Giza, a move that will help ensure that AERA's research and educational programs continue into the future.

The generosity of Ted Waitt, Ann Lurie, Peter Norton, Charles Simonyi, David Koch, Bruce Ludwig, and Marjorie Fisher made it possible to purchase the villa property, strategically located within one block of the entrance to the Giza Plateau. As we write we are renovating the villa, which will allow us for the first time at the end of a field season to move our Giza archives and equipment into permanent facilities. The property surrounding the villa allows for the construction of classrooms,

study spaces, an archive room and library, and GIS and drafting laboratories. The site also allows for the construction of modular sleeping and study rooms around a central court, in effect, AERA's own archaeological center and field school. Jon Jerde, a long-serving AERA board member, and his associate, John Simones, of the Jerde Partnership Inc. in Venice, California, are working closely with the AERA team to design for this new construction, which can proceed in installments.

Not only will the new AERA center put a permanent roof over our heads, it will reduce operating costs and increase the efficiency of our fieldwork and the field school. The new center will promote our writing and publication of a rich archive of material from twenty years of excavation. Team members and field school students will be able to come together in one place, thereby improving communication and interaction.

We have made great progress in renovating the villa since AREA's 20th anniversary mid-March celebration when donors and board members toured the new property. We have already replaced all electrical wiring and plumbing, and we will finish re-plastering, painting, and kitchen and roof renovations by May, when we will be moving in!





JOIN AERA TODAY

Be Part of our Global Past, Present, and Future

Your membership directly supports the main pillars of our mission at [Ancient Egypt Research Associates](#): archaeological excavation, analysis, publication, and educational outreach.

Donors who contribute at the level of basic member (\$55) or senior/student member (\$30) receive our AERAGRAM newsletter twice a year and the AERA Annual Report hot off the presses, months before we post these publications to our website. Donors also receive invitations to special events and regional lectures, as well as firsthand updates on research from the field.

By contributing to AERA, you'll receive the benefit of knowing that you've made a valuable investment in us all, helping to broaden our knowledge of the past, make an impact in the education of our students, and strengthen the future of our global community.

Please join or contribute online at: <http://www.aeraweb.org/support>. Or send your check to the address below. AERA is a 501(c)(3) tax exempt, nonprofit organization. Your membership or donation is tax deductible.

MEMBERSHIPS:

Basic: \$55 Student/Senior: \$30 Non-US: \$65
Egyptian National: LE100 Supporting \$250

Name _____

Address _____

_____ Zip _____ Country _____

Phone _____

Email address _____

Please make check payable to AERA.

Or charge your membership to a credit card:

Name on card _____

Card number _____

Verification Security number (on back) _____

Expiration date _____

Signature _____

Please send application with payment to AERA at:
26 Lincoln Street, Suite 5, Boston MA, 02135 USA

