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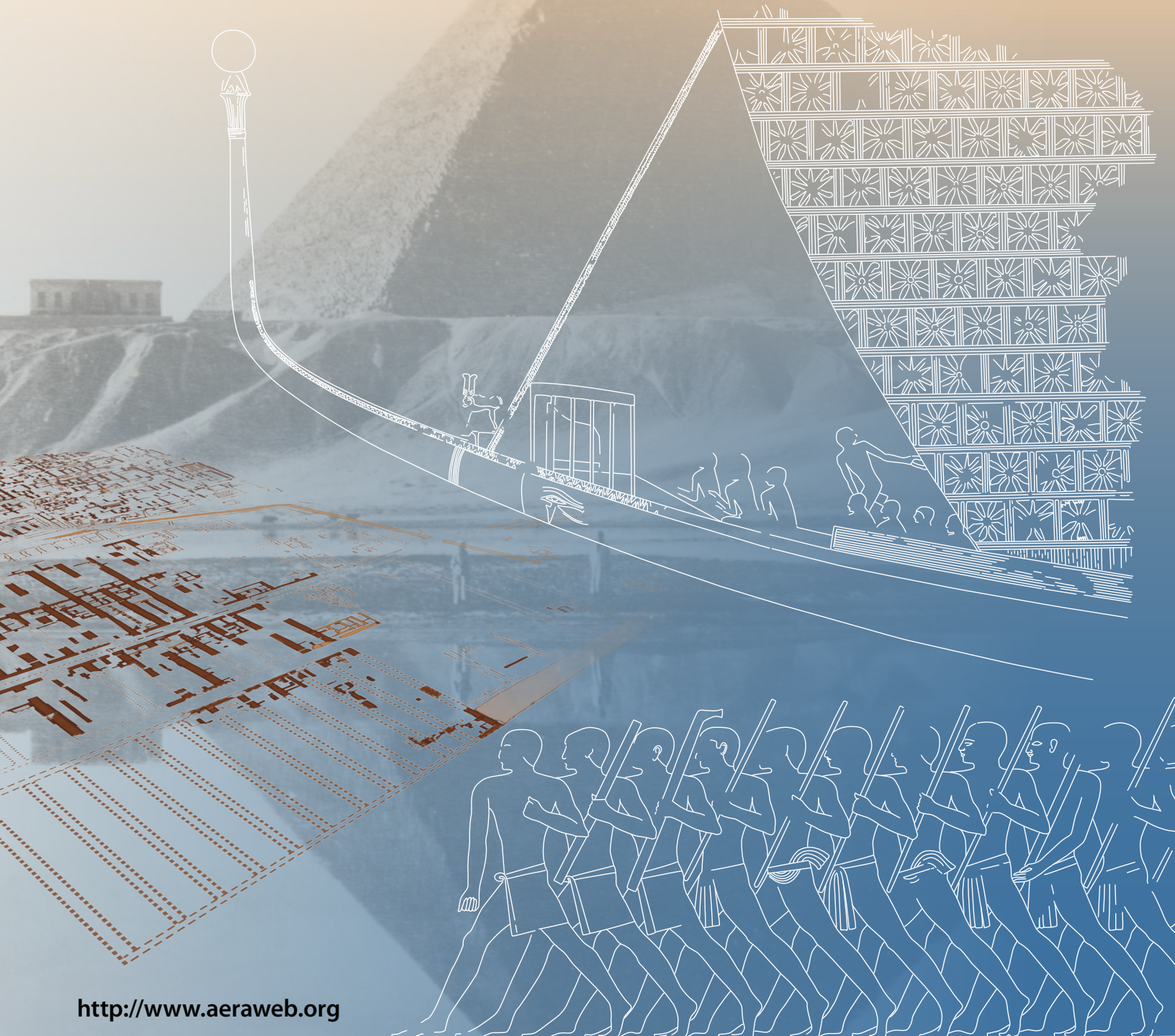
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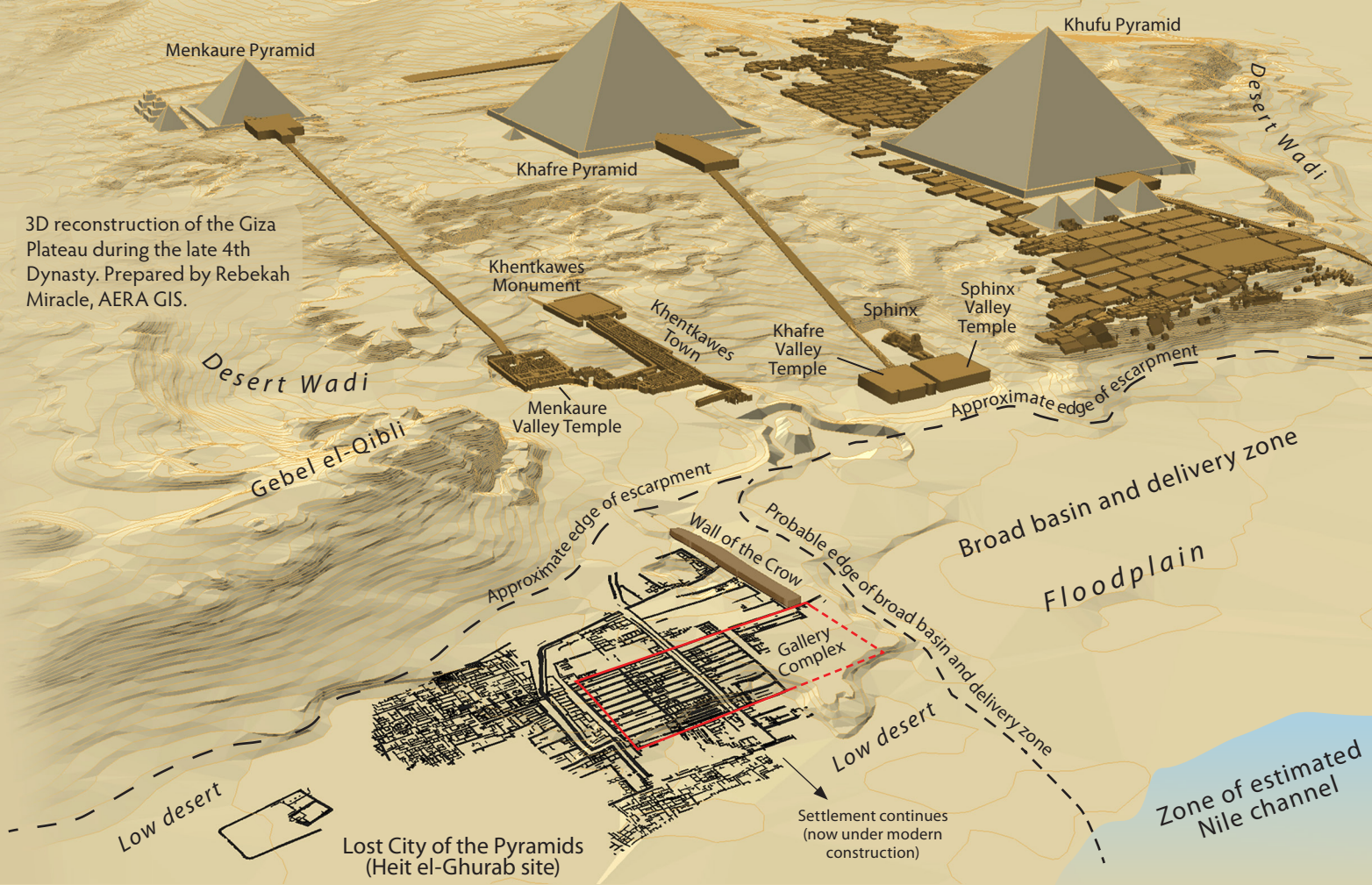
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The Heit el-Ghurab Site Reveals a New Face: *The Lost Port City of the Pyramids* by Mark Lehner

During Season 2013 AERA team members took a break from field excavations for a study season. Without new findings emerging every week from the field, I took the opportunity to pan back and reconsider the mass of data from the Lost City of the Pyramids site (also called Heit el-Ghurab) in the wider context of Old Kingdom Egypt and its 3rd millennium BC world.

A new working hypothesis emerged. Far more than a workers' town, which we had been calling Heit el-Ghurab for years, the site and its Gallery Complex belonged to a major Nile port and harbor, with basins, off-loading quays, timber stockpiles, warehouses, and possibly even shipyards. The Gallery Complex as a barracks housed members of expeditions who brought goods from the Levant in the north and from Aswan in the south, as well as construction material from quarries and foodstuffs from farms and ranches throughout the Nile Valley and Delta.

Ports for Dead and Living

We know that the Giza Necropolis served as a magical port city for the Afterlife. Ships buried next to the pyramid of Khufu and large pits cut in the shape of barks or containing actual wooden funerary vessels next to the pyramid of Khafre and the

tomb of Queen Khentkawes were meant to convey the deceased rulers to the Netherworld.

But a real harbor must have been located nearby for delivering the vast quantities of materials and supplies used in building and supporting labor for the three Giza pyramid complexes over a period of nearly 80 years. If only for this reason, we might expect a major Nile port, the Old Kingdom equivalent of Nile ports such as Tell el-Daba and Memphis during the Second Intermediate Period and New Kingdom.

We have evidence of a man-made harbor at Giza. Field logs of drill cores taken in the floodplain show what might be a huge cut through the natural layers of Nile silt and sandy outwash from the desert wadis. The cut is filled with deep clay and silt. Here, to make a harbor, the pyramid builders may have excavated deep down into the floodplain. I present the data from these cores in the second part of this story, which will appear in the next issue of the newsletter.

It seems obvious that a harbor at Giza was essential for pyramid building. Given the great weight of the granite and limestone blocks, which were transported by ship on the Nile, Egyptians would have unloaded them as close as possible to the construction sites. The massive stone Wall of the Crow, stretch-

ing 200 meters to the east of the escarpment (or slope) between the Giza Plateau and the low desert and floodplain, formed the southern boundary of a delivery zone in front of the Khafre Valley Temple and Sphinx. The Heit el-Ghurab settlement lay directly south, and stretched at least another 150 meters farther east on a spur of low desert, like the peninsular settlements at the Tell el-Daba port.

We know that the Old Kingdom Egyptians also brought by boat large quantities of timber, olive oil, and probably wine and resin from the Levant, the region bordering the eastern end of the Mediterranean. We also know that some of these products ended up at Heit el-Ghurab. Specialists analyzing material in our Giza Field Lab have been identifying bits of Levantine pottery and Levantine wood in charcoal samples we have collected over the years. Although the need for a major delivery facility to receive building supplies was obvious, looking at all these imported items sparked the port hypothesis.

The Old Kingdom Byblos Run

AERA ceramicist Anna Wodzińska identified Levantine combed ware pottery vessels amidst the vast numbers of Heit el-Ghurab ceramics. Altogether she found a total of 18 sherds. The name combed ware derives from its decoration: the potters striated or dimpled the surface as though by a comb. During the Old Kingdom (the equivalent of Early Bronze III in the Levant), potters made combed ware throughout the Levant, but not in Egypt.

Egyptians, however, shipped combed ware jars back to Egypt, no doubt for their contents.

Archaeologists who work in the Levant consider these jars, with loop handles, as the “commercial maritime container,” developed by Early Bronze Age Levantine potters “for the rigors of transport” and “long periods of

time at sea.”²¹ In Egypt excavators have found most combed ware jars in the mastaba tombs of high officials in the royal cemeteries next to pyramids at Giza, Meidum, and Dahshur. The importation of these vessels reached a peak in the 4th Dynasty—the very time that people occupied the Heit el-Ghurab settlement. The 18 sherds we found at our site are the oldest combed ware from a settlement.

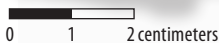
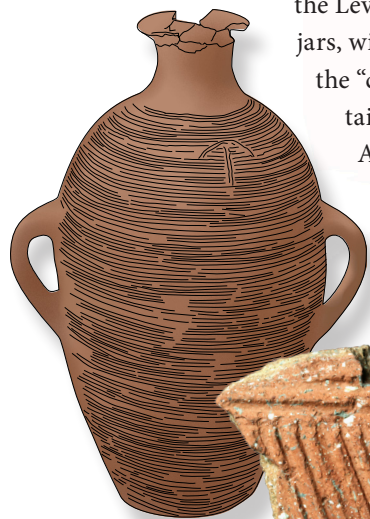


Egypt and the Levant showing the routes of the Byblos run and the Aswan run with Giza as the terminus.

On the cover: Detail of a scene in Sahure's mortuary temple at Saqqara. Returning from Punt, the king's ship of state, sail up, greeted by troops dockside. (After *Das Grabdenkmal des Königs Sahu-re'*, Band II, *Die Wanderbilder*, L. Borchardt, Leipzig, J.C. Hinrichs'sche Buchhandlung, 1913, plate 9). On the left, the Heit el-Ghurab settlement after a map by Rebekah Miracle, AERA GIS. In the background an old photo of the Great Pyramid from an undated postcard.

Combed ware two-handled jar. Drawing based on a photo of a jar from the Western Cemetery at Giza, Pit G 4630; 36 centimeters (14 inches) high. The “T” inscribed on the pot is a maker's mark. MFA accession number: 19.1456.

Combed ware sherd from the Heit el-Ghurab site. Photo by Hilary McDonald.



Whatever the jars contained—most likely resin, wine, or olive oil—it was precious and worth trekking or navigating hundreds of kilometers to obtain. In the Levant, the association of these jars with olive oil production equipment—limestone basins, presses, hearths, and large combed ware vats—favors olive oil.

Additional evidence at Heit el-Ghurab may also point to olive oil. Our wood analyst, Rainer Gerisch, identified bits of burned olive twigs from several areas at the Heit el-Ghurab site.[†] These bits of wood might have come along with shipments of olive oil as some sort of packing material between the jars and eventually ended up as firewood.

Curiously, they came from the Gallery Complex, a set of four blocks of elongated structures, and from the adjacent industrial areas. If the galleries served as barracks for lowly workers, why do we find costly imports in these facilities?

Through petrographic analysis Mary Ownby traced the origin of the Heit el-Ghurab combed ware to the region around Byblos, a major ancient port just north of modern Beirut.[‡]

An entrepôt during the Old Kingdom and later, Byblos gathered goods from smaller sites upland and inland, making it the major port power on the Eastern Mediterranean. Because of a preponderance of evidence for trade between Byblos and Egypt in the Old Kingdom, Levantine scholars coined the term “the Byblos Run.” They suggest that corresponding home ports must have existed somewhere on the Nile.

[†] The olive wood finds are described in “Egypt’s Oldest Olive,” *AERAGRAM* 9-2, Fall 2008, page 3. All back issues of *AERAGRAM* are available for free download at our website: aeraweb.org.

The Ubiquity of Cedar

Perhaps the most compelling motivation for the pyramid builders to run to Byblos: procure timber, primarily the fabled, towering cedars of Lebanon. They could also harvest cypress, pine, and oak, none of which grew in Egypt, a land with a sparse tree cover and limited variety of native woods.

Working his way methodically through thousands of charcoal bits—probably the remains of fuel—picked from Lost City deposits by our excavators, Rainer Gerisch found that it was mostly (93.3%) local Nile acacia. But, in addition to olive wood, other Levantine wood kept turning up in almost every excavation area: cypress, pine, and oak. Cedar, however, was the most abundant import. It occurred in every part of Gallery III.4 (see map on page 7), which we excavated in 2002,[‡] and with a relatively high frequency in other Gallery Complex excavations.

We know that cedar was used for ships and palace doors. The pyramid builders used tall cedar beams as framework in pyramid construction. But would people have burned cedar in hearths?

Parallels with Proven Ports

For clues that might help answer that question we turn to proven Pharaonic ports excavated recently on the western Red Sea coast at Wadi Gawasis, Ayn Soukhna, and Wadi el-Jarf. All three sites include industrial and other settlement structures as well as long, narrow gallery caves hollowed out of bedrock and

[‡] The excavations of Gallery III.4 are described in a “Gallery Unveiled,” *AERAGRAM* 6-1, Fall 2002, pages 4–5.

Galleries in the Heit el-Ghurab Gallery Complex, Galleries III.3 (right) and III.4, view to the south. One massive gallery sidewall can be seen running between the two galleries. The large open area in the foreground may have served as a barracks or storage area. The back portion appears to have been a house, perhaps for an overseer. Excavation team members give a sense of scale. Photo by Yaser Mahmoud.





Dressing the hull of a wooden boat; detail from a scene in the 5th Dynasty tomb of Ti at Saqqara. The men standing in the ship use two-handled hammers similar to one found at the Heit el-Ghurab site (right). (After H. Wild, *Le Tombeau de Ti*, Fascicule II, Institut Français



d'Archéologie Orientale, Cairo, L. Épron, F. Dumas, and G. Goyon, 1953, plate cxxix.)

Right: A two-handled hammer made of indurated limestone from the Heit el-Ghurab site, Gallery II.4. Photo by Emmy Malak.

used for both storage and living quarters. Within the last year an Egyptian-French mission directed by Pierre Tallet discovered that the Wadi el-Jarf port dates to the 4th Dynasty reign of Khufu, whose name is inscribed on stones blocking the entrances to some of the galleries.³

For now, I draw attention to the Middle Kingdom, 12th Dynasty port at Wadi Gawasis and the discoveries of the mission under Kathryn Bard and Rodolfo Fattovich.^{4,5} Unlike the damp Heit el-Ghurab site where all plant materials decomposed except charred remains, Gawasis's hyper-arid climate favored excellent preservation of organic material. Indeed, the team recovered thousands of wood fragments, over 40 wooden cargo boxes, and disassembled ship timbers, including more than 100 hull components, as well as coils of rope. Some of these pieces had been left for storage in the rock-cut galleries.

The Gawasis excavators also found many wood chips and fragments left "when ancient workers disassembled ships whose shipworm-riddled timbers suggest substantial sea journeys."⁶ Shipwrights trimmed and cleaned the parts. Expedition members then used scrap wood to fuel hearths, sometimes for warmth or for cooking inside the galleries. In addition to scrap wood trimmings, the Gawasis expedition members also burned ship timbers in hearths within the galleries, perhaps after they had been used as gallery flooring and deteriorated irreparably.

When he analyzed the Gawasis wood, Gerisch found that as at Giza most of it was native Egyptian species, but the second or third most abundant type was cedar, which must have originated in Lebanon.⁷ Could the cedar charcoal at Heit el-Ghurab similarly have resulted from men trimming and reworking ship parts and reusing the scrap as fuel in hearths? Did Heit el-Ghurab workers incorporate, as at Gawasis, wooden planks into the thresholds, floors, or upper reaches of their galleries and other buildings? Perhaps this is why we find cedar residues in the charcoal almost everywhere we have excavated down to gallery floors.

Expeditionary Template

We know, mostly from Gawasis so far, of other, broad similarities between Heit el-Ghurab and the Red Sea port settlements, including an embayment adjacent to the site, an industrial area with evidence of bread-baking, and imported pottery (Canaanite/Minoan ware at Gawasis).

Andrea Manzo⁸ noted similarities between the rock-cut galleries of Gawasis and the mudbrick galleries at Heit el-Ghurab. He suggested that the Red Sea port galleries represent transpositions of the pattern built in mudbrick at Heit el-Ghurab. Cut from natural conglomerate rock, the Red Sea galleries are consequently less formal than the Giza galleries, but expeditions to Sinai and the southern land of Punt may have adapted a kind of standard template to the Red Sea coast terrain. We might consider the Heit el-Ghurab and Gallery Complex as a more formal expression of a template for expeditionary forces that the Egyptians transplanted and accommodated to other ports.

Ports and People

Traces of the Levantine products at the Lost City site suggest that these products were delivered and stored here, with some ultimately going into elite Giza tombs. Structures where shipments can be immediately and temporarily stored before distribution are a standard feature of ports. The long galleries in the Gallery Complex could well have served in part as warehouses for some of these goods.

We should consider that during two generations, the reigns of Khafre to Menkaure (and possibly since Khufu), the Heit el-Ghurab site became part of the homeland hub and entrepôt of the Byblos run for resin, wine, oil, and hundreds of tons of timber, and the Aswan run for thousands of tons of granite and African products, as well as the Red Sea–Sinai run for minerals.

Then we also have to reconsider the class and status of people who lived and worked here. The men who traveled abroad for wood and other products were members of expeditionary

forces. They and their goods traveled and stayed together until the final destination. Thus we can imagine that the galleries also housed crews along with wood, pottery, and olive oil, and other products they had procured.

Moreover, the men of the expeditionary forces may have enjoyed some of the spoils, perhaps as a reward. Scenes from later pyramid temples and causeways show young men rewarded with gold and other goods at the end of expeditions, as in the scene from Sahure's causeway at Abusir (on the right). Traces of "high-status" goods in the Giza galleries could reflect benefits, such as olive oil, granted to members of expeditionary forces.

In addition, we have recovered large quantities of animal bone in the Heit el-Ghurab site suggesting the inhabitants ate an extraordinary amount of meat—the diet we might expect for expeditionary force members of somewhat higher status than the most common workers.

At the same time, seeing the inhabitants of the Gallery Complex as members of expeditionary troops and nautical crews does not negate the possibility that many of them labored at the most basic skills and exertions. Studies of Nile navigation through time show much punting, pushing, and towing from the banks, the same basic exercise needed to move blocks for building pyramids, tombs, and temples. Recently published scenes from the Sahure causeway show, in fact, that some nautical crews of ships of state, escort boats, and expeditionary ships bear the same gang names as found in workers' graffiti on the monuments.⁹ Crews, apparently nautical, and workers compete in rowing, wrestling, and archery.

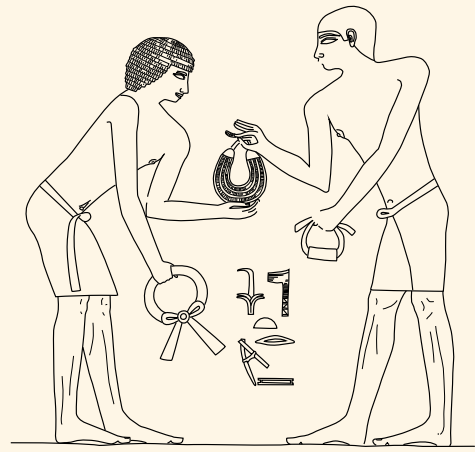
What is the larger theme of these recently published Sahure causeway scenes? It is an expedition to the southern land of Punt, arriving at homeport with Puntites and incense trees (frankincense or myrrh) to be received by the king and his family, along with crews of workers who drag the capstone to crown and complete the pyramid. A celebratory feast ensues, perhaps a special feast out of the many regular feasts that we know so well from tomb and temple texts. We see racks of hanging meat, to be shared and consumed for the occasion. We think in terms of such feasting when considering our evidence for an abundance of cattle, sheep, and goat consumed at the Lost City and realize that "workers' town" and "port city" of the pyramids were not mutually exclusive.

Do we in fact find evidence of a major port at Giza? In the next issue we look at evidence of water transport infrastructure under the floodplain along the base of the Giza Plateau.

REFERENCES

(Please note: references are numbered sequentially in the order in which they are cited in the text.)

1. Marcus, E. S., "Early Seafaring and Maritime Activity in the Southern Levant from Prehistory through the Third Millennium BCE," In *Egypt and the Levant: Interrelations from the 4th through the Early 3rd Millennium BCE*, ed.



Detail from a scene in the pyramid causeway of Sahure at Abusir. A high ranking courtier (right) named Merynetjerni-nut rewards a member of Sahure's expedition to Punt. With his right hand he presents the man with a broad collar of three rows of beads, while holding a cylinder seal in his other hand. The recipient holds a decorative fillet (headband or wreath) in his right hand. (After a drawing by J. Malátková in *Abusir XVI, Sahure - The Pyramid Causeway: History and Decoration in the Old Kingdom*, T. El Awady, Charles University in Prague, Prague, 2009, plate 7.)

- by E. C. M. van den Brick and T. E. Levy, London: Leicester University Press, 2002, pages 410–411.
2. Ownby, M., "The Importance of Imports: Petrographic Analysis of Levantine Pottery Jars in Egypt," *Journal of Ancient Egyptian Interconnections* 4.3, 2012, pages 23–29.
 3. "Egypt's King Khufu's harbour in Suez discovered," ahramonline, April 11, 2013. <http://english.ahram.org.eg/NewsContent/9/40/69024/Heritage/Ancient-Egypt/Egypt-King-Khufus-harbour-in-Suez-discovered.aspx>.
 4. Bard, K. A., and R. Fattovich (eds.), *Harbor of the Pharaohs to the Land of Punt: Archaeological Investigations of at Mersa/Wadi Gawasis, Egypt, 2001–2005*, Naples: Università degli Studi di Napoli "L'Orientale," 2007.
 5. Bard, K. A., and R. Fattovich, "Spatial Use of the Twelfth Dynasty Harbor at Mersa/Wadi Gawasis for the Seafaring Expeditions to Punt," *Journal of Ancient Egyptian Interconnections* 2.3, 2010, pages 1–13.
 6. Ward, C., "Building Pharaoh's Ships: Cedar, Incense, and Sailing the Great Green," *British Museum Studies in Ancient Egypt and Sudan* 18, 2012, page 221.
 7. Gerisch, R., A. Manzo, and C. Zazzaro, "Finds: Other wood and wood identifications," In *Harbor of the Pharaohs to the Land of Punt: Archaeological Investigations of at Mersa/Wadi Gawasis, Egypt, 2001–2005*, ed. by K. A. Bard, and R. Fattovich, Naples: Università degli Studi di Napoli "L'Orientale," 2007, pages 173–174.
 8. Manzo, A., "Typological and Functional Remarks on Some Structures at Mersa Gewasis (Red Sea, Egypt)," In *Recent Discoveries and Latest Researches in Egyptology*, ed. by F. Raffaele, M. Nuzzolo, and I. Incordina, Wiesbaden: Harrassowitz, 2010, pages 157–175.
 9. Verner, M., "The Abusir Pyramid Builders' Crews," in *Es werde niedergelegt als Schriftstück: Festschrift für Hartwig Altenmüller zum 65 Geburtstag*, ed. by N. Kloth, K. Martin, and E. Pardey, *Studien zur Altägyptischen Kultur Beihefte* 9, 2003, pages 445–451.

Facing page bottom left: Cargo boat from a scene in the 5th Dynasty tomb of Ti at Saqqara. (After *Le Tombeau de Ti*, Fascicule II, Institut Français d'Archéologie Orientale, Cairo, L. Épron, F. Daumas, and G. Goyon, 1939, plate xxiv.)

Bottom right: Cattle boat from a scene in the 5th Dynasty tomb of Akhetotepher (Hetepherakhet) at Saqqara. (After *The Ships of the Pharaohs, 4000 Years of Egyptian Shipbuilding*, B. Landström, Garden City, Doubleday, 1970, page 56.)

Research Implications

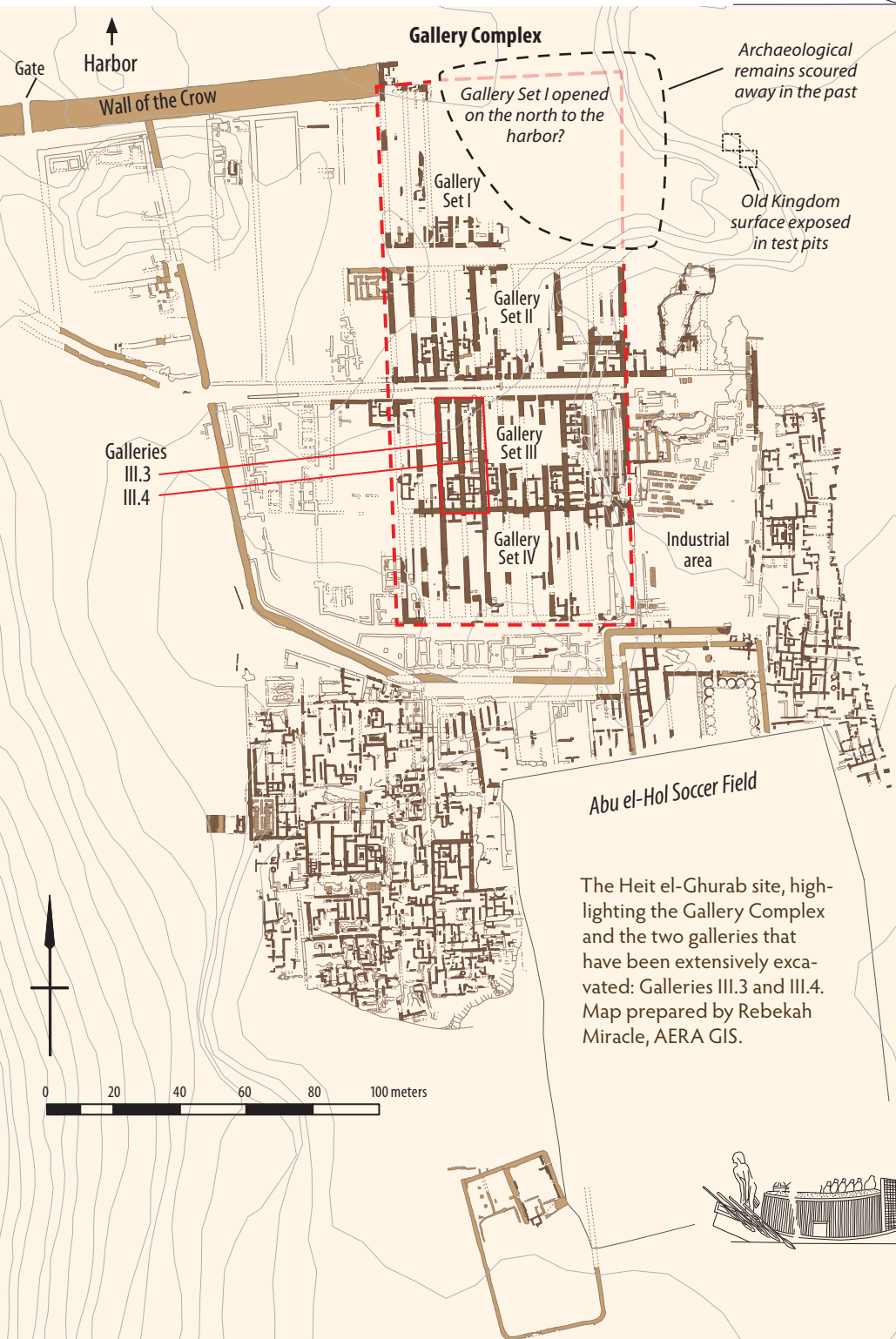
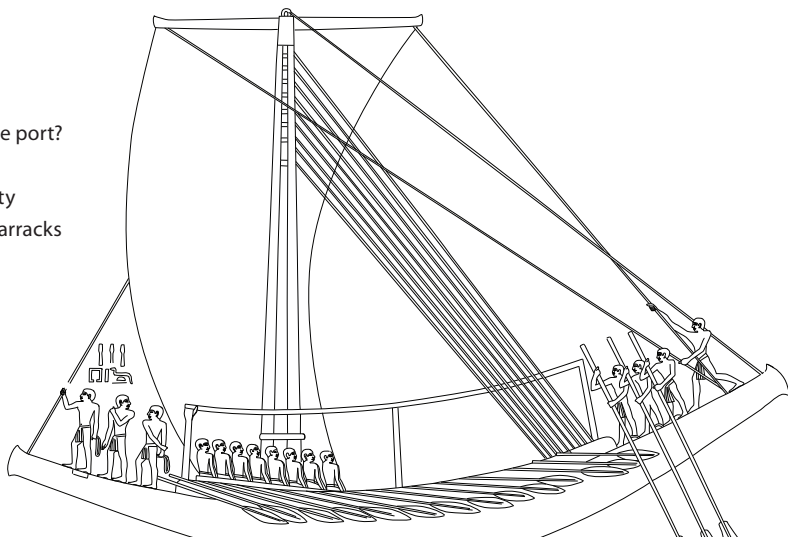
How can we test the hypothesis that the Heit el-Ghurab site was part of a major Nile port?

Evidence so far includes:

- Building stones in large quantities imported to Giza requiring a harbor facility
- Galleries that could have been warehouses—a standard port feature—or barracks
- Levantine combed ware
- Levantine woods, especially cedar, reflecting the “Byblos run”

What other archaeological evidence should we expect? I list some examples:

Right: A scene from the 5th Dynasty tomb of Ti at Saqqara: a sailing ship returning from one of the cities of the funerary estate in Lower Egypt. (After *Le Tombeau de Ti*, Fascicule I, Institut Francais d'Archéologie Orientale, Cairo, L. Épron, F. Daumas, and G. Goyon, 1939, plate xlvi.)



* **Stone anchors.** Thus far we have found none, but some may turn up in areas that we have not yet intensively excavated, particularly the northern area of the site. We should reexamine our corpus of broken groundstone objects on the chance that some could be fragments of anchors, especially portions of the loop to which the anchor cable attached.

In the far northeast corner of the site we did find large, heavy limestone weights probably used for fish nets (illustrated in *AERAGRAM* 6-2, Fall 2003, page 1).

* **Large open areas for repairing ships.** We might further explore the northeast corner of the site where we found evidence of an Old Kingdom trodden surface, which appeared to be just outside the main occupied area of the town. If the area had been a repair yard, we might expect to find scrapers and debris from sharpening them. Traces of ramps for sliding ships to and from the harbor might be preserved in compacted surfaces sloping downward toward the north.

* **Tools used for ship repairs.** Scrapers were used to clean ship hulls. But we probably cannot associate any particular examples with ships, as scrapers are used for many tasks. Nonetheless, comparisons with scrapers from Wadi Gawasis might offer clues. Also, we might find evidence in wear patterns and residues that scrapers dressed down cedar, the lumber used for seagoing ships.

* **Galleries as storage/barrack facilities.** We have intensively excavated only two entire galleries, but we know that the modular gallery template was built out in a variety of configurations, possibly to serve different needs of shipping and trade, such as storage of different products. Or perhaps different crews had their own galleries, as seen at Wadi el-Jarf in the gang labels on gallery entrances.

