

News and Events of the Harvard Standing Committee on Archaeology

Chalcolithic–Bronze Age mound at Girdi Abdulaziz,
Kurdistan Region of Iraq; see page 3

In this issue: Projects focusing on Brazil, Egypt,
Germany, Kurdistan Region of Iraq, and Turkey

In Situ

News and Events of the Harvard
Standing Committee on Archaeology
Spring Semester 2020

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Note from the Chair

As this issue of *In Situ* went to press, the COVID-19 pandemic had put a halt on most activities at Harvard and beyond. Nevertheless, the articles presented here came in just before the lockdown, and we are pleased to demonstrate that archaeological research continues.

This issue describes digitization efforts of objects from Brazil in Harvard’s Peabody Museum, drone flights and data captured over Kurdistan, the discovery of lapis lazuli crystals hidden in the dental calculus of a 900-year-old female artist, reports from the long-running excavations at Sardis, the historic renaming of the Harvard Semitic Museum and an interdisciplinary examination of its three spectacular Egyptian coffins, and the 20th anniversary of the Giza Project, documenting archaeological activity at the Pyramids. In addition, we list the events related to the Standing Committee on Archaeology’s mission on campus this semester; many more were unfortunately canceled due to the pandemic.

For fundamental support, both logistical and moral, we thank as always the Dean of Social Sciences, Prof. Lawrence Bobo, and the Dean of Humanities, Prof. Robin Kelsey. Their encouragement allowed us to sponsor archaeological activities over the course of the entire academic year, as well as to bring you these biannual *In Situ* newsletters. We are also indebted to this year’s SCA Student Coordinator, Sara Zaia, who kept us up to date on countless happenings on campus and beyond.

For upcoming events next academic year please check our website, <https://archaeology.harvard.edu>, including our calendar. And questions may be sent to us at sca@fas.harvard.edu. We look forward to putting COVID-19 behind us, returning to the field, and hearing from many of you about your projects for future issues in *In Situ*!

Peter Der Manuelian
SCA Chair; Barbara Bell Professor of Egyptology
Director, Harvard Museum of the Ancient Near East
Director, The Giza Project

In Situ Spring 2020: Edited, typeset, designed, and produced by
Peter Der Manuelian.

Front cover image: The Chalcolithic–Bronze Age mound at Girdi
Abdulaziz in January 2019. Photo by EPAS; see page 3.

Back cover image: Aerial view of the Giza Pyramids. Photo by AirPano,
2011; see page 32.

Drones over Kurdistan

Jason Ur

The popular perception of modern scientific archaeology involves careful proximity—a field archaeologist slowly clearing dirt off of a just-revealed pot or peering through a microscope at the carbonized remains of someone’s dinner a millennium ago. There are, however, many times that an archaeologist can answer questions better by getting away from their subject—sometimes very far away, even into orbit. For geographical scale questions, sometimes a remote perspective is best. Even Harvard does not have the resources for us to excavate an empire, but with aerial photos, for example, we might map the remains of the irrigation systems that supplied it. Or the trackways that ran between the earliest cities. For these questions, aerial photographs and satellite imagery are invaluable.

Unfortunately, archaeology, and history more generally, tends to be at the bottom of the food chain when it comes to these sources. Modern satellite imagery is very expensive, and we tend to get access to scenes captured for other, usually commercial, users whose interests rarely align with ours. Historical imagery has been very productive, especially declassified imagery from spy planes and spy satellites—but then, we are at the whim of the geopolitical interests of the Cold War era.

Here is where Unmanned Aerial Vehicles (UAVs, or drones) have been revolutionary. For the past few years, it is possible to buy off-the-shelf UAVs that are easy to fly, take high resolution photographs, and are within the budgets of funding-starved archaeologists. The software to take photographs and turn them into data—geographically corrected photographic maps (orthophotos), digital topographic data, and 3D models—is inexpensive and easy to use. And unlike commercial imagery or historical photographs, the archaeologist can decide when to take them, so that the ground and lighting conditions are suited for our purposes.

My own project, the Erbil Plain Archaeological Survey (EPAS), is mapping sites and landscapes in the Kurdistan Region of Iraq (figure 1), an area that was once the core of the Assyrian Empire (ca. 900-600 BC). Our questions revolve around how a powerful empire made and remade the landscape of its

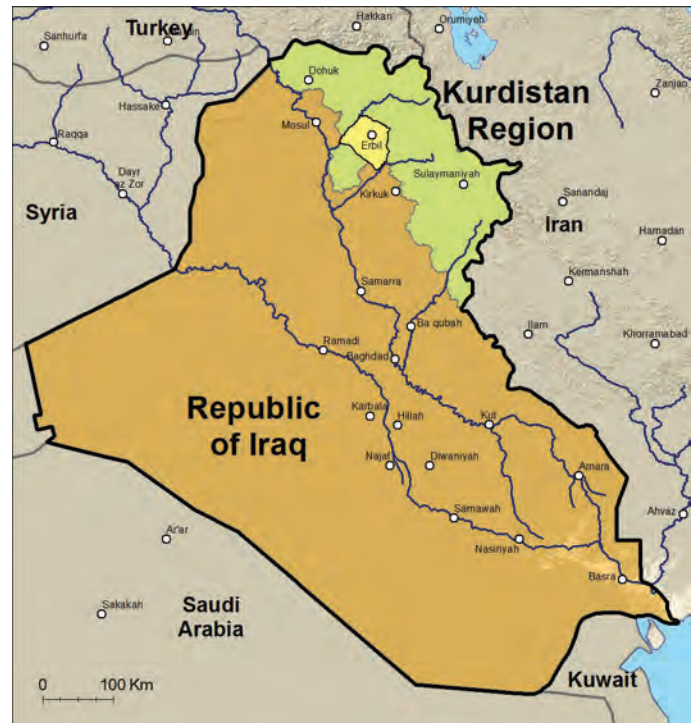


Figure 1. The Republic of Iraq with its Kurdistan Region indicated. The area of the Erbil Plain Archaeological Survey is in yellow.

ancestral homeland. Most archaeological sites in this area (*tell* in Arabic, *gird* in Kurdish) look today like mounds of earth, because they contain layers of mud brick architecture that has eroded in the centuries or millennia since their inhabitants abandoned them; the longest-lived might rise to be 100 feet (30 meters) over the plain. Only some of them date to the Assyrian empire, but all are of historical interest, and all are threatened by the growth of the modern city of Erbil, capital of Iraq’s Kurdistan Region. Drones are the fastest and most accurate way for us to record them, for both research and cultural heritage preservation. My Kurdish colleague Nader Babakr and I have been carrying out this project since 2012 (figure 2).

Since 2016, EPAS has used a small fleet of quadcopter UAVs, flown primarily by Khalil Barzinji. He and I have been training others to use them, most notably Harvard grad students Kate Rose in 2017 (figure 3) and Melina Seabrook (figure 4) in 2019. In 2018, we acquired a fixed wing eBee, a professional survey grade device that can fly further and longer



Figure 2. Nader Babakr (right) is project co-director; Khalil Barzinji supervises our UAV program.

All photos by Erbil Plain Archaeological survey (EPAS).



Figure 3. Harvard graduate student Kate Rose flying the quadcopter in September 2017.



Figure 4. Harvard graduate student Melina Seabrook flying with Khalil in January 2019. EPAS driver Bapir Rowanduzi (far left) looks on with some local residents.

Figure 5. The children at Girdi Jerda were very interested in the project's senseFly eBee fixed-wing drone.





Figure 6. The Mid-Late Bronze Age mound at Aliawa in summer 2016. The gas flare in the background is part of the Kurdistan Region's oil industry.



Figure 9. In the 1980s, the Iraqi Army dug trenches on Girdi Bahrur. Today the cemetery on its flanks is most prominent.



Figure 7. The Chalcolithic-Bronze Age mound at Girdi Abdulaziz in January 2019. For an interactive 3D model of this site, see <http://arcg.is/1y4TjL>.



Figure 10. The prehistoric mound at Girdi Khazna is being slowly consumed by the meandering Siwasor river. For an interactive 3D model of this site, see <http://arcg.is/f9C8z>.

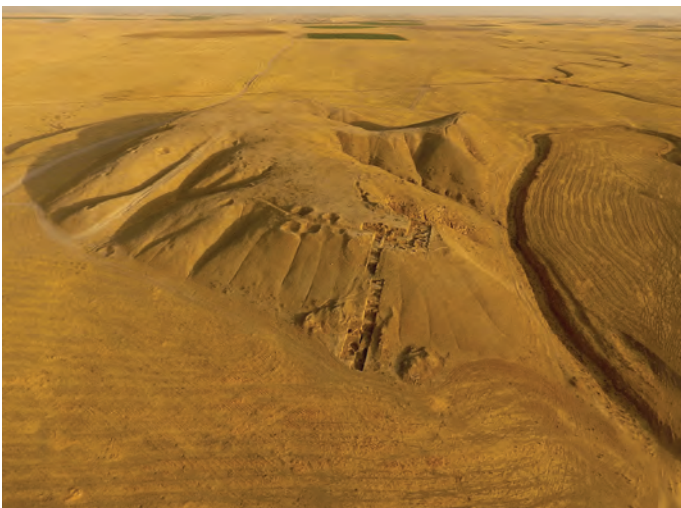


Figure 8. The EPAS quadcopter captured this view of the French excavation trenches at Bashtapa in August 2017.



Figure 11. The Assyrian King Sennacherib commissioned a subterranean channel from the Bastora River to his provincial capital at Arbail (modern Erbil). The canal head's cut stones still remain.



Figure 12. In 2016, unusually heavy rains revealed the remains of the Assyrian dam under the floodplain of the Bastora river.



Figure 13. On parts of the Erbil Plain today, sheep outnumber humans.



Figure 14. The modern city of Erbil is overtaking archaeological sites. The mound of Girdi Qasra is penned in by city streets on all sides. The square trenches of old Iraqi excavations are visible in the topography.

than the quadcopters and has a high-precision GPS positioning system. These devices elicit tremendous interest from the local people around the sites (figure 5).

The view from above is a spectacular way to visualize the landscape, especially the great mounds. In the late summer, when Harvard's academic schedule allows us to travel to the field, the landscape is dry and dusty (figure 6). In the winter and spring, however, Kurdistan's mounds rise over a sea of green crops (figure 7). We know little about most of these sites, although some have come under archaeological excavation (figure 8). Many of the highest mounds were used as military bases under Saddam's Ba'athist regime, and the scars remain visible (figure 9). Others are threatened by natural forces, such as meandering rivers (figure 10)

In addition to these habitation sites, we find the traces of Assyrian imperial transformations. For example, the canal head of the Bastora tunnel, con-

structed around 700 BC by the king Sennacherib, has long been known (figure 11). In 2016, however, high rainfalls uncovered the remains of a massive dam that fed it. The dam had been buried under the silts of the river floodplain (figure 12). We also take time to appreciate the views of the local inhabitants—overwhelmingly flocks of sheep that sometimes number in the hundreds (figure 13).

The photos can be striking, but we need to convert them into data via the process of photogrammetry. If we take enough overlapping photos of a site or landscape from different angles, software can stitch them together into a single map-like orthophoto, or it can generate a very precise topographic model (figure 14). Sometimes these models of the terrain are better for describing a site's history than the photos themselves (figure 15).

Beyond research, our UAV program has become a great tool for public outreach. We have found that our drone photographs and data generate a lot of

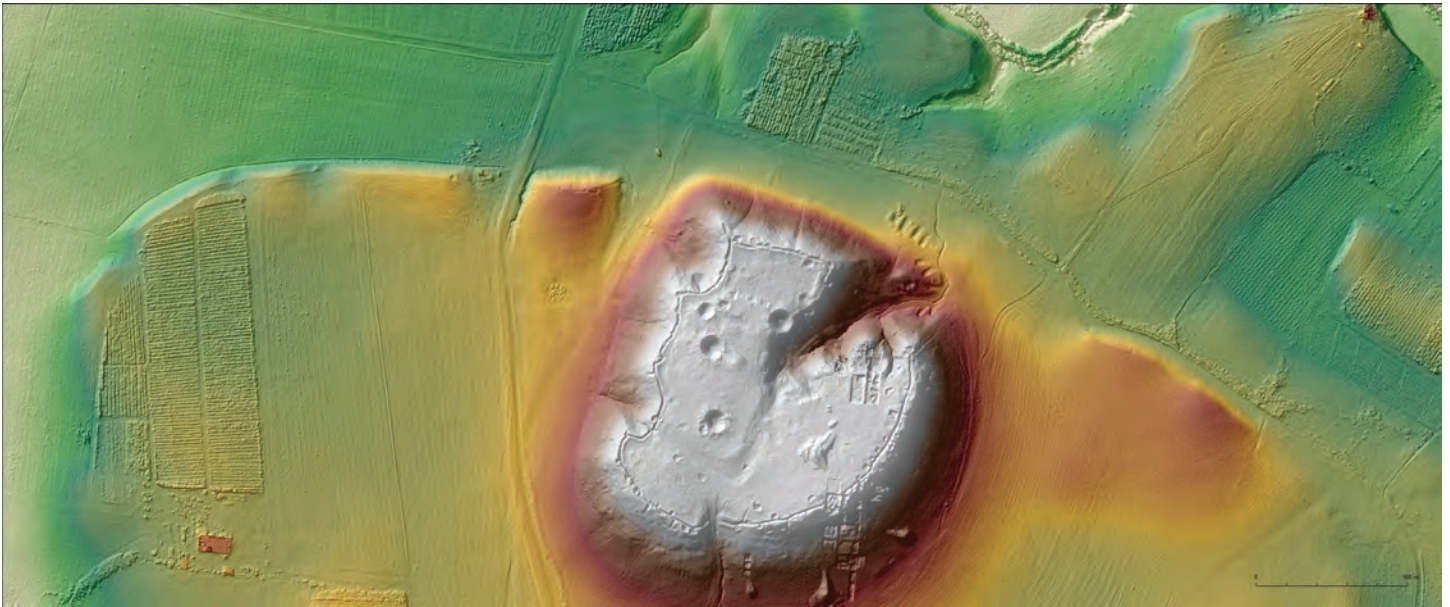


Figure 15. The Assyrian provincial capital city Kilizu (modern Qasr Shemamok) shows the scars of Iraqi Army trenches around its perimeter, and also the craters of the American bombs that destroyed it during the first Gulf War. A team of archaeologists from the University of Paris began excavations in 2011.

public interest, so we invite you to fly over the Erbil Plain via our YouTube channel (<https://www.youtube.com/channel/UCb1xxC7QUJB385yv4r9y8lw>), or interact with 3D models of our sites and landscapes on Sketchfab (<https://sketchfab.com/>

<https://www.facebook.com/ErbilPlainArchaeologicalSurvey>) as well.

Jason Ur is Professor of Anthropology, Harvard University

Peabody Brazil Collections Digitized

Annie Greco, Jennifer Poulsen, and Zach Williams

The Peabody Museum is the repository for a wide range of large and significant archaeological collections from across the world. Our Collections Management Team works daily with these datasets in our 15,000 square-foot archaeological collections storage facility, often referred to as the Peabody Annex.

As a cultural museum, our collections are held in public trust, and we have a professional obligation as stewards to facilitate access to these materials and the data that they provide. One of the fundamental ways we achieve this is through a cataloguing process involving inventorying, documenting, and rehousing (figure 1). This multi-phase process results in the digitization of archaeological information. Data recorded in our database becomes synced and



Figure 1. Earthenware effigy sherd; PMAE# 72-23-30/6716. Photo courtesy the Peabody Museum.

available online through the Peabody website, peabody.harvard.edu/com.

In 2018 a devastating fire at the National Museum of Brazil caused the institution to lose millions of cultural objects related to the country's heritage. Only a year later, the Amazon Rainforest was ravaged by fire too. The loss of such irreplaceable collections, archaeological sites, and historical environments reduces the visibility of the people and the history they represent. In response to these tragedies, the Peabody Museum prioritized the digitization of the collections we hold from Brazil.

This summer, two of our Collections Technicians, Annie Greco and Zach Williams, catalogued and rehoused all of the museum's archaeological material from Brazil, including complete ceramic vessels, effigies, sherds, and lithics. They enhanced over 700 records representing around 3500 individual objects that range from sites located in southern Brazil to the mouth of the Amazon River on Marajó Island. Of particular interest are the anthropomorphic and

zoomorphic effigy and vessel sherds from the State of Pará, a region that encompasses the Amazon River and Rainforest. Human and animal representations commonly adorn ceramic vessels and are diverse in style and decoration, including modeled, sculpted, and carved motifs. The collection presents ample research potential to explore the relationship between people and their surrounding environment in Indigenous Brazilian societies.

Though a seemingly straight forward process, cataloguing extant collections can give rise to unique challenges. With the Brazil collections, the challenge was rehousing. As a vital step to ensure preservation, each object was rehoused from loose, disorganized trays into individual bags, boxes, and mounts (figures 2–3). Rehousing simultaneously reduces improper handling of fragile objects and improves accessibility for future research and teaching.

The outcome of this project was immediate in providing new data and photographs of these important collections to constituents across the globe.



Figures 2–3. Trays of Brazil archaeological material before and after rehousing. Photos courtesy the Peabody Museum.

The digitization of these collections has already encouraged research visits from Brazil and interest from our own Anthropology Department (figure 4). We are excited at the potential these collections provide in creating access, a deeper understanding of Indigenous Brazilian cultures, curriculum development, and so much more. We are honored to add

further detail to the narrative that is Brazil's rich and diverse history and encourage all to view these collections online.

Jennifer Poulsen is Collections Steward, and Annie Greco and Zach Williams are Collections Technicians in the Peabody Museum of Archaeology and Ethnology.



Figure 4. Collections Technicians Annie Greco and Zach Williams working in the Annex. Photo courtesy the Peabody Museum.

Anonymous was a Woman: Illuminating the Writing and Art of Religious Women in the Middle Ages

Christina Warinner and Alison Beach

New advances in the physical and archaeological sciences have enabled the remarkable identification of a skilled female artist who died more than 900 years ago. The chance finding of hundreds of lapis lazuli crystals found embedded within her dental calculus were the key to the discovery.

At a Glance

1. Religious women played an important role in medieval book production and religious art, but poor record preservation and medieval conventions of humility have reduced their visibility in the historical record.
2. Archival detective work, including approaches such as comparative handwriting analysis, is steadily uncovering women scribes and artists whose identi-

ties had been previously subsumed under the veil of “anonymous.”

3. Advances in archaeological science have led to the development of a new method for identifying scribes and artists in medieval cemeteries.

From 1988–1992, the stone foundations of a small, medieval Frauenkloster were excavated on the grounds of the Landesmuseum für Klosterkultur in Lichtenau, Germany (figure 1). The excavation was organized by the Westphalian Museum of Archaeology as part of a renovation plan for nearby buildings, and during the course of the excavations, the architectural remains of a 9th–14th-century women’s religious community were uncovered, consisting of a church, chapel, and a parish cemetery. Like many women’s communities from this time, little is known about it. Archaeological evidence suggests that its

stone church was first constructed in the 9th century and expanded around the 11th or 12th century. The few surviving fragmentary records, dating to AD 1244, 1264, and 1278, describe it as a small house of Augustinian canonesses attached to a church dedicated to St. Peter. It was destroyed in a 14th-century fire, leaving behind few traces of the women who once lived there beyond a broken comb, a spindle whorl, and a cemetery.

During excavations, the remains of approximately 150 individuals were removed and transferred to the University of Mainz, where they became part of the university’s



Figure 1. Stone foundations of the Dalheim Frauenkloster. The Frauenkloster was excavated in 1989, revealing a large medieval cemetery along its northern side (partially beneath the modern building in the photograph). Until its destruction in a 14th century fire, the Frauenkloster served a small religious community of approximately 14 women. Photo by Christina Warinner.

archaeological research and teaching collections. Twenty years later, facing space constraints and university budget cuts, they were slated for cremation and reburial when they found a new home at the University of Zürich in the Institute for Evolutionary Medicine (IEM) under the direction of Dr. Frank Rühli. And that is when I first came to work on the rather remarkable Dalheim skeletal assemblage.

Medieval cemeteries in Europe are important to biological anthropologists, in part because they provide a rare opportunity to study many individuals from a single time and place, and through bioarchaeological and genetic analyses, they have provided unparalleled information about the history of health and disease—from patterns of bone loss during aging to the identification of the cause of the Black Death. In 2010, I began working with the Dalheim

assemblage in a study on oral health and periodontal disease. Specifically, the goal of the project was to determine whether dental calculus preserved sufficient DNA from dental plaque to be able to identify the bacterial pathogens involved in periodontitis during the Middle Ages. We accomplished this goal and more, discovering that dental calculus is in fact the richest known source of ancient DNA in the archaeological record and reconstructing the genome of *Tannerella forsythia*, a species of bacteria associated both today and in the past with periodontal disease. But along the way we made an unexpected discovery—the presence of thousands of tiny, brilliantly blue crystals embedded within the dental calculus of an otherwise unremarkable woman who had died in middle age (figure 2), a woman now known only by her burial code: B78.



Figure 2. The lower jaw of Dalheim individual B78 showing the heavy dental calculus buildup on the teeth. Hundreds of lapis lazuli crystals were found embedded within these deposits. Photo by Christina Warinner.

Blues of the Middle Ages

The color blue is rare among natural minerals. During the Middle Ages, only a handful of blue mineral pigments were known, among them ultramarine, a pigment refined from the ornamental stone lapis lazuli (figure 3). Mined from a single source in Afghanistan, lapis lazuli was traded overland to artistic centers in the Islamic world, where it would have been refined through oil flotation into costly ultramarine and then shipped by sea to Europe via Venetian merchants—a journey of more than 2,000 km. Cheaper blues were also known, such as the common copper carbonate azurite, and at various times and places vivianite, cuprorivaite (Egyptian

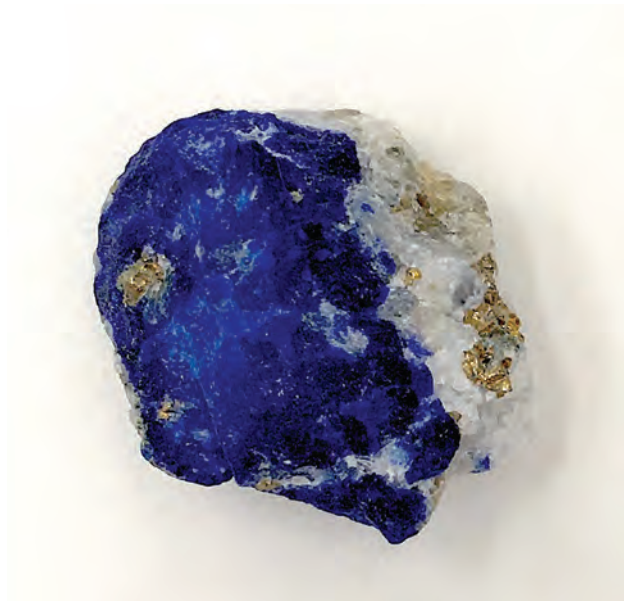


Figure 3. During the European Middle Ages, Afghanistan was the only known source of the rare blue stone, lapis lazuli. Lapis lazuli contains different minerals that contribute to its unique appearance, including lazurite (blue), phlogopite (white), and pyrite (gold). Photo by Christina Warinner.

blue), and cobalt smalt were also available (figure 4). Blue minerals were highly prized as pigments in medieval art, and one of the most striking contrasts between late Roman and medieval art is the vibrant proliferation of blue in the latter.

When we first observed the blue crystals in the dental calculus of B78, we didn't quite know what to make of it. Anita Radini, then a graduate student on the project, was the one who made the initial discovery. Under the microscope, she had first observed a wide variety of microdebris in the dental calculus of B78, including wheat starches and plant tissues from long-forgotten meals, microcharcoal likely originating from smoke or soot, yeast cells, and degraded organic material. Such accumulations of the detritus of everyday life are commonly found in dental calculus and have been observed even in Neanderthals. But scattered across the calculus of B78, and often deeply embedded within it, she observed something never seen before—numerous vibrant blue particles, each smaller than the width of a human hair (figure 5).

Teaming up with microscopist Monica Tromp and physicist Roland Kroger, we applied scanning electron microscopy energy dispersive spectroscopy (SEM-EDS) and micro-Raman spectroscopy and identified the elemental composition and mineral structure of the crystals as lazurite, $(\text{Na,Ca})_8[(\text{S,Cl,SO}_4,\text{OH})_2(\text{Al}_6\text{Si}_6\text{O}_{24})]$, the mineral responsible for giving lapis lazuli its blue color. We also discovered that one of the colorless minerals co-associating with lazurite was phlogopite, $\text{KMg}_3\text{Al-Si}_3\text{O}_{10}(\text{F,OH})_2$, a type of mica that only co-occurs with lazurite in natural lapis lazuli stone. Moreover, the lazurite and phlogopite we observed were finely ground, suggesting they had entered the mouth of B78 as a prepared powder, such as a pigment.

But these findings raised far more questions than they could answer, and most importantly why was there lapis lazuli pigment in the dental calculus of a



Figure 4. Blue mineral pigments known to artists of the Middle Ages: ultramarine (lapis lazuli), azurite, vivianite, cuprorivaite (Egyptian Blue), and cobalt smalt. Photo by Michelle O'Reilly.

woman buried more than 900 years ago in a rather small and out-of-the-way place like Dalheim? For this we needed the help of historians, and we turned to Professor Alison Beach, a leading expert on women's monastic communities in medieval Germany.

Religious Women in the High Middle Ages

Dalheim was one of the many religious communities for women in Germany during High Middle Ages, a period that extended roughly AD 1000 to 1300. During B78's lifetime, many of these communities were quite small and informally organized, often little more than a cluster of dwellings around a parish church. Other monastic communities were more formally organized, and many followed the 6th-century Rule of St. Benedict. Some housed both women and men under the guidance of a single spiritual leader. The clerics who wrote about these dual-sex communities often enumerated the strict rules put in place to limit interaction between women and men. Direct physical contact between the sexes was carefully restricted to spiritual services such as hearing confessions and celebrating the mass. The primary focus of medieval religious communities was prayer, punctuated by periods of devotional reading and manual labor.

Book Production

One important type of manual labor practiced in many medieval religious communities was copying and painting books. These included the richly

produced books used for Mass, the Divine Office (the daily round of communal prayer) and Biblical texts, as well as for more modest volumes of texts geared toward biblical study and devotion. We know that women were among the scribes who produced these books in the High Middle Ages, as they are named in a variety of written sources, including charters, book-lists, necrologies (lists of the dead used for commemorative prayer), and even in the prefaces to texts that they helped to take down in dictation and copy. In some cases, women identified themselves as scribes or artists in a colophon (a writer's identifying mark), and in a few very rare cases they even left behind a self-portrait (see Box 1).

Medieval Women Scribes and Artists

Records from medieval women's monasteries are generally scarce, and as a result it is unclear how widespread book production was within them. Surviving records from a handful of important centers of book production, however, provide a glimpse of the kinds of scribal and artistic work that women performed during the Middle Ages.

At the monastery of Admont in modern-day Austria, for example, nuns and monks worked together to compose sermons and biblical commentaries in the late 12th century. The monk Irimbert of Admont credits two nuns—Irmingart and Regilind—with secretly writing down the sermons that he preached to them through a small window in their locked cloister. The two women subsequently turned

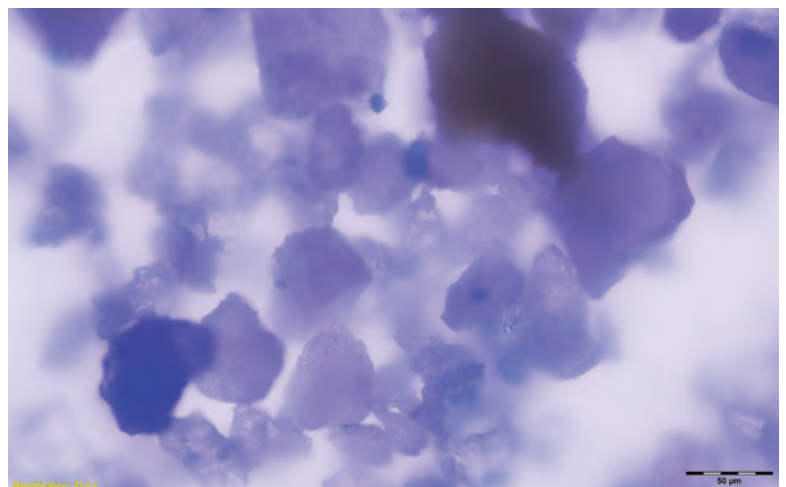


Figure 5. Magnified view of blue lapis lazuli crystals recovered from the dental calculus of Dalheim individual B78. Photos by Christina Warinner and Michelle O'Reilly (left); Monica Tromp (right).

their notes (probably taken down on wax tablets), first into draft manuscripts, and then into polished versions of Irimbert's sermons. These manuscripts are still preserved today. Irmingart and Regilind also collaborated with a number of anonymous nun-scribes, producing several additional surviving manuscripts. While none of these women signed her own name to her work, one 12th-century nun-scribe identified herself while testing out her pen, writing "Ego soror Margareta" ("I Sister Margareta") on the flyleaf of a manuscript used by Admont's women (figure 6).

Lippoldsberg, a women's monastery located just ca. 60 kilometers east of Dalheim, was home to at least one highly skilled female scribe and artist in the 12th century. A letter exchange dating to 1140 to 1168 (nearly contemporaneous with B78) shows Sindold, the monk charged with keeping and correcting the books for the male monastery of Reinhardsbrunn, sending Sister "N" of Lippoldsberg enough parchment, leather, pigment, and silk for the "skillful" production of a deluxe matutinal (liturgical book). Sister N writes back, apologizing for the delay in completing the requested book, noting that she expects to have the work completed by Easter, and complaining that Sindold had not sent enough parchment for the job. Sister N must have had a reputation as a highly skilled producer of deluxe manuscripts to have been commissioned with producing a book for use well beyond her own community.

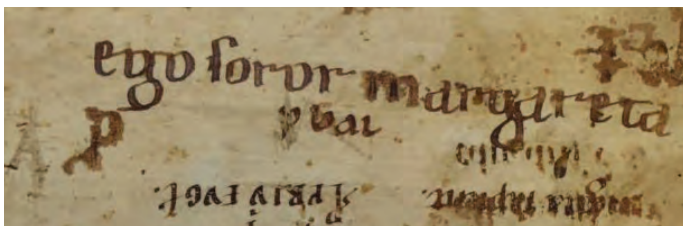


Figure 6. Ego soror Margareta. Photo by Alison Beach.

One of the most well-known women's monasteries was that of Rupertsberg, founded in 1147 by Hildegard of Bingen (see Box 1), who took up residence there in 1150 with eighteen noble religious women. There she composed music and authored books, including the *Liber Divinorum Operum*, which contains more than ten portraits depicting her in the act of recording her religious visions on wax tablets (figure 7). While there is no evidence that Hildegard

herself copied or illustrated any of the many texts that she authored, she did likely supervise the production of a lavishly illustrated copy of her *Liber Scivias* at Rupertsberg. Although the Rupertsberg *Scivias* was lost during World War II, its creation attests to the presence at the monastery of skilled female copyists and artists during Hildegard's own lifetime.

Another 12th-century copy of Hildegard's *Scivias*, now housed at the University of Heidelberg, was illustrated in the late 12th century by two artists who used lapis lazuli pigment to color the many images in the manuscript. Because this latter book was likely produced at the monastery of Zwiefalten, a double monastery known to have had an active scriptorium staffed by the community's nuns in the 12th century, it is possible that these artists were women. The twelfth-century female scribe Mathilda von Neuffen is commemorated in Zwiefalten's 13th-century necrologies as a prolific creator of books for the monastery. A number of liturgical books that are probably in Mathilda's hand are still extant, now preserved at the Württembergische Landesbibliothek in Stuttgart.

The Religious Women of Dalheim

Although no books and very few records survive from the women's community at Dalheim, the finding of lapis lazuli pigment in the dental calculus of B78 suggests that the religious women of Dalheim not only produced books, but produced books of exceptional value and quality. During the twelfth century, lapis lazuli pigment was exceedingly expensive. Refined from raw lapis lazuli stone imported over great distances, it had to be laboriously purified using oil flotation in order to concentrate its blue color, and less than five percent of the raw stone was converted into a functional pigment, a factor that greatly contributed to its price. Access to it at this time would have been rare and almost certainly restricted to religious artists engaged in manuscript illumination.

The discovery at Dalheim adds to a growing appreciation of the role of medieval religious women in the production of books, and it deepens our understanding of female contributions to the spiritual and intellectual revival of the high Middle Ages. On a personal level, though, B78 emerges as something more. Here we meet an individual: a female artist who had been lost to history and was now found. Anonymous in death and with no surviving texts or records to her name, the only clue to her once



Figure 7. Portraits of Guda, Hildegard of Bingen, Gisela von Kerzenbroeck, and Guta of Schwarzenhann. The images of Guda and Gisela are self-portraits. Note that Gisela indicates her identity by adding her name in red ink above her head. Photos are in the public domain.

extraordinary life was the microscopic debris of her pious labor. Her body had become the archive.

Transcending Disciplinary Boundaries

The recovery of a lost artist at the medieval women's community of Dalheim was made possible because archaeologists, physicists, and historians were willing to work together to address a complex problem with open minds and a collaborative spirit. By crossing disciplinary boundaries, we were able to identify evidence where none had been seen before.

Dental calculus offers an unexpectedly rich window into the lives and activities of past people. Forming over a lifetime through the periodic calcification dental plaque, it becomes an archive of our lives, accumulating a diverse range of microdebris that we encounter during our everyday lives. The study of dental calculus offers great potential for identifying not only monastic artists, but all those engaged in 'dusty' arts and crafts, from brick makers

to basket makers to blacksmiths. Recently our team member Anita Radini, now a Research Fellow at the University of York, was awarded a Wellcome Trust research fellowship in the medical humanities to apply this approach to investigate craftworkers in ancient Egypt.

Today's fragmentary historical record, male biases in record keeping, and the propensity of religious women to leave their work unsigned have conspired to erase many of the artistic labors of medieval women from both scholarly and popular memory. But the finding of lapis lazuli in the dental calculus of B78 at Dalheim turns this narrative on its head and opens new paths for recovering the lost histories of medieval women and other marginalized groups. We are thrilled to be able to carry this work forward and to continue to apply scientific methods and historical detective work to reconstruct lost lives and erased histories.

Sources

- Beach, A.I., 2014. "Mathilde of Neuffen and the Female Scribes of Twelfth-Century Zwiefalten," in *Medieval Nuns' Literacies: The Hull Dialogues*, eds. Virginia Blanton, Veronica O'Mara, and Patricia Stoop (Brepols Publishers, 2014), pp. 33–50.
- Beach, A.I., 2004. *Women as Scribes: Book Production and Monastic Reform in Twelfth-Century Bavaria*. Cambridge University Press, 2004.

Box 1. Notable Female Scribes and Artists of the Middle Ages

Monastic book production was seen as a type of pious labor, and most medieval scribes and illuminators—both female and male—remained humbly anonymous. Women even more than men may have felt the call to humility, and this is one reason that we know the names of more male than female book producers in the Middle Ages. Today, the identities of most of these women scribes and artists are lost to us, but biographical details survive for a few. Below are five notable women scribes and artists from the 10th–13th centuries:

Ende

One of the artists whose work is preserved in a richly illustrated tenth-century copy of the Commentary on the Apocalypse by Beatus of Liébana (originally written in the 8th century) was Ende, described in a colophon as “a painter and servant of God.” Ende may have been a nun at the double monastery of Tábara where the book, known as the Gerona Beatus, was likely produced. Ende worked alongside a male colleague, Emeterius, to produce the illustrations. The Gerona Beatus offers the earliest documented example of the use of lapis lazuli by a female book painter.

Guda

The 12th-century religious woman Guda is one of the earliest medieval artists to have left behind a self-portrait (figure 7). She identified herself as the scribe and painter in a colophon in a book of homilies (commentaries that followed a reading of Scripture): “Guda, a sinful woman, copied and painted this book.” The name of her community, which was located in the Middle Rhine Valley, is unknown. The type of blue pigment that Guda used in the manuscript has not yet been analyzed.

Diemut of Wessobrunn

Diemut was an *inclusa* (a woman confined to an enclosure) associated with the male monastery Wessobrunn in the late 11th and early 12th century. She was also a proficient and prolific scribe, as book lists dating to the 12th and 13th century attest. Diemut copied nearly 50 manuscripts, including Biblical texts, liturgical books, biblical commentaries, and saints’ lives. In ca. 1130, the monastery exchanged a two-volume Bible for an entire estate, suggesting their high value.

Guta of Schwarzenhann

Guta of Schwarzenhann was a mid-12th century canoness at the Augustinian dual-sex monastery of Marbach in the Alsace region. Working together with the monk Sintram von Marbach, they produced a manuscript now known as the Codex Guta-Sintram, which served as a prayer book, calendar, medicinal, account of martyrs and a necrology for the monastery. Guta wrote the text, while Sintram provided the illustrations, and portraits of both Guta (figure 7) and Sintram appear in the manuscript.

Gisela von Kerssenbrock

Gisela von Kerssenbrock was a nun at the Cistercian monastery of Marienbrunn in Lower Saxony at the end of the 13th century. Her only surviving work is her sumptuous Golden Gradual (a book for use in the liturgy), which contains fifty-three large decorated initials and more than 200 smaller ones, some painted with gold. Gisela’s self-portrait (figure 7) appears twice within the manuscript.

- Bos, K.I., Schuenemann, V.J., Golding, G.B., Burbano, H.A., Waglechner, N., Coombes, B.K., McPhee, J.B., DeWitte, S.N., Meyer, M., Schmedes, S. and Wood, J., 2011. "A draft genome of *Yersinia pestis* from victims of the Black Death." *Nature*, 478 (7370), p. 506.
- Campbell NM. "Imago expandit splendorem suum: Hildegard of Bingen's Visio-Theological Designs in the Rupertsberg Scivias Manuscript," *Eikón / Imago* 4 (2013, Vol. 2, No. 2), pp. 1–68.
- Dodds J.D. *The Art of Medieval Spain, AD 500–1200*. New York: Metropolitan Museum of Art, 1993, p. 128.
- Henry, A.G., Brooks, A.S. and Piperno, D.R., 2011. "Microfossils in calculus demonstrate consumption of plants and cooked foods in Neanderthal diets (Shanidar III, Iraq; Spy I and II, Belgium)." *Proceedings of the National Academy of Sciences* 108(2), pp. 486–491.
- Mays, S.A., 1996. "Age-dependent cortical bone loss in a medieval population." *International Journal of Osteoarchaeology* 6(2), pp. 144–154.
- Niemeyer W. "Gründung und Erinnerung in der Geschichte des Klosters Dalheim." *Mitteilungen der deutschen Gesellschaft für Archäologie des Mittelalters und der Neuzeit* 27 (2014), pp. 215–226.
- Oliver, J., *Singing with Angels: Liturgy, Music, and Art in the Gradual of Gisela von Kerssenbrock*. Turnhout: Brepols, 2007.
- Pieper R. *Kloster Dalheim: Eine kurze Geschichte*. Landschaftsverband Westfalen-Lippe, 2000.
- Radini, A., Tromp, M., Beach, A., Tong, E., Speller, C., McCormick, M., Dudgeon, J.V., Collins, M.J., Rühli, F., Kröger, R. and Warinner, C., 2019. "Medieval women's early involvement in manuscript production suggested by lapis lazuli identification in dental calculus." *Science Advances* 5(1), eaau7126.
- Warinner, C., Rodrigues, J.F.M., Vyas, R., Trachsel, C., Shved, N., Grossmann, J., Radini, A., Hancock, Y., Tito, R.Y., Fiddymment, S. and Speller, C., 2014. "Pathogens and host immunity in the ancient human oral cavity." *Nature Genetics* 46(4), p. 336.
- Weis, B., Bachoffner, P., Cames, G., Châtillon, J., Étaix, R., Parisse, M., Popin, M., Siegwart, J., Verheijen, L., Vogel, C. and Will, R. eds., 1983. *Le Codex Guta-Sintram: manuscrit 37 de la Bibliothèque du Grand Séminaire de Strasbourg*. Éditions Facsimilés.
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Stories from Sardis

Rebecca Deutsch, Frances Gallart Marqués, Matilda "Midge" Scheftel, and Sarah Eisen

The Archaeological Exploration of Sardis (www.sardisexpedition.org) administered at the Harvard Art Museums completed its sixty-second consecutive season of excavation this past summer with the permission of the Ministry of Culture and Tourism of the Turkish Republic. For two and a half months from June until mid-August some seventy students, scholars, and specialists from Harvard, institutions in Turkey and throughout the world, along with over eighty members of the local communities investigated the ancient site in western Turkey, a palimpsest of civilizations with a storied past from the Bronze Age through to the Ottoman periods, and most famous for its role as capital of the Lydian empire. The dig offers students extraordinary opportunities to gain academic, professional, cultural, and life skills while contributing to the entire process of

discovery, archaeological research, conservation, and publication. The following accounts bring to light the experience of undergraduate and graduate students, as well as a post-doctoral fellow at the Harvard Art Museums participating in fieldwork at two areas in the center of ancient Sardis: Field 49 and Field 55.

Field 49

Rebecca Deutsch is a PhD Candidate, Classical Philology, Department of the Classics, Harvard University:

Last summer I had the opportunity to excavate for five weeks at Sardis, an experience which excellently complemented my literary endeavors. I was put in charge of a steep, rocky, and freshly opened trench in Field 49 (figure 1). On my (terrifying) first day, I arrived on the side of a mountain and met my group



Figure 1. Aerial view looking southeast at outcrop (Field 49) in center of Sardis with acropolis in background at upper right, Lydian terrace walls at north slope of outcrop, and at its northwest corner, trench excavated by Rebecca Deitsch with exposed Byzantine and Roman walls. Photo by Archaeological Exploration of Sardis/President and Fellows of Harvard College.

of five workmen, none of whom spoke any English. At that point my Turkish consisted of little more than “hello” and numbers, but since recording elevations was our first task, the numbers came in handy. My kind workmen were happy to call out the three-digit measurements as many times as I needed.

The primary focus of my research is philology, so for me the language barrier was the easiest obstacle to surmount. I worked on my Turkish every evening and during the day my workmen enthusiastically taught me new words and corrected my mistakes. Soon we understood each other well, albeit with the help of lots of arm waving and sound effects, and I

learned all about their families and lives. Arriving at my trench every day felt like entering a welcoming circle of friends (figure 2).

Being in charge of the trench and the workmen was quite an adjustment for me, since I had no previous experience in any sort of archaeological leadership role. There were so many things to learn and remember, but the directors and other more experienced excavators were always happy to offer advice. The goal for my trench was to discover the continuation of a nearby Lydian terrace wall; while this did not happen, we did uncover a Roman structure (perhaps a house?) and a bewildering array of

Byzantine and Roman walls that seemed to indicate multiple phases of occupation (only future excavation can tell!). As the weeks went by, I felt more and more comfortable and I realized just how fun digging at Sardis was. I loved every part of it—watching the potsherds and tesserae emerge from the soil, trying to determine the relationships between my numerous Roman walls, getting covered in dirt whenever the wind blew, and eating fresh cucumbers with my workmen during break.

Excavating at Sardis taught me how to direct a trench and document my work, and this knowledge of the archaeological process will stay with me and inform my use of material sources as I return to my philological endeavors. But more importantly, my



Figure 2. Deitsch with team at F49. Photo by Archaeological Exploration of Sardis/President and Fellows of Harvard College.

time on excavation introduced me to the complex history and archaeology of Sardis and Lydia more broadly. In my own trench, Byzantine and Roman walls intertwined, reusing Lydian limestone blocks. Lydian skyphos sherds surfaced along with fragments of Achaemenid bowls and Roman amphorae. This diversity was what originally attracted me to Sardis, a crossroads between east and west, and I was not disappointed. My experience with the material record of these various cultures will enrich my literary considerations of intercultural contact—already I read Euripides and Statius with new eyes, for every reference to Lydia has added significance.

Field 55

Frances Gallart Marqués is Frederick Randolph Grace Curatorial Fellow in Ancient Art, Harvard Art Museums:

Although the archaeological site of Sardis in western Turkey is most famous for its role as capital of the Lydian empire, evident changes in its late antique urban landscape have recently expanded our knowledge of the city's long history. We first became interested in the excavation of an artificial terrace near what would have been the ancient city center, both for its significant location and because it seemed to have supported a sanctuary of the Roman imperial cult. We set out to study the original

construction and use of the terrace, but instead discovered the remains of houses, shops, and a gate constructed with materials from the disassembled sanctuary. We call the area Field 55, a name given in the 1970s during an early intensive survey of the urban site, which still conveys the space's most recent use as farmland.

I have been excavating in Field 55 for the past five summers exposing a large Late Roman house built against the eastern terrace wall of the original imperial platform. In that time, we have been able to study at least five rooms, including a kitchen, a small latrine, and a modest, open patio. The house appears to have been destroyed by a catastrophic earthquake in the 7th century CE and contained a wide range of ob-

jects including iron camp stools, swords, lamps, locks with keys, knives, scythes, and fine table wares. This past summer, we expanded our probe to the area just north of the house. As far as we can tell, the newly uncovered spaces were at some point connected to the larger structure to the south, and may have functioned as a grand, marble courtyard with multiple water features.

Spoiled materials from the sanctuary, including pavement and threshold blocks, and fragments of columns and sculptural friezes, were used to create a sunken courtyard surrounded by a narrow walkway, and at least one large basin (figure 3). The latter was



Figure 3. Basin constructed of spolia in courtyard of Late Roman house in Field 55. Photo by Frances Gallart Marqués.

constructed out of large, inscribed blocks, and would have been enclosed with marble screens. The side against the wall was lined with thin marble revetment backed by pink hydraulic mortar. The basin could have held as many as 2,000 liters of water, which would have then overflowed onto a marble gutter running along its western edge (figure 4). The gutter channeled the water south towards an ornamental drain cover with a six-petal rosette, which itself emptied into a drain that cut through the large house to the south. Despite the exciting marble finds, the courtyard lacked a proper floor deposit, suggesting that it was already out of use at the time of its ultimate destruction.

Matilda “Midge” Scheftel is a sophomore at Harvard College:

As an undergraduate student intern at Sardis, I participated in all aspects of the excavation, assisting the recorder, photographer, conserva-



Figure 4. Detail of gutter and drain cover of basin. Photo by Frances Gallart Marqués.



Figure 5. Fragment of cornice decorated with a false lion's-head spout. Photo by Matilda Scheftel.



Figure 6. Marble bull's head from a modillion of a cornice reused in wall. Photo by Matilda Scheftel.

tors, excavators, architects, as well as scholars who were studying the site and its material culture. My experience at the excavation of Field 55 (F55) with archaeologist Frances Gallart Marqués was one of the highlights of my summer.

F55 trench 19.2 exemplifies the heavy presence of spolia in the construction of walls within this area. Among the many objects found this year in the trench was a fragment of a marble, architectural cornice decorated with a false lion's-head spout (figure 5). It was most likely part of the original decoration of the architecture on the terrace of the Roman imperial cult temple. The object was excavated within

an earthquake debris layer, but its original context as well as the place of its later reuse within the courtyard exposed in the trench is hard to determine.

It is possible that the object was reused in the construction of a wall structure, such as the fragment of a marble bull's head (figure 6) and perhaps a garland (much of which is lost) from a modillion of a cornice of the temple's pediment, which was discovered as spolia in a wall below where the floor of the basin in the trench would be expected.

The heavy levels of accretion on the lion spout could perhaps support the argument that it was used for decorative reasons and not as building material within a wall structure, but then again, the accretion could just as easily have resulted from exposure to the elements and surrounding dirt post dislodgement from a wall.

Upon first observing the object, I remarked that the lion's face looked a bit like E.T. or like a pug. The face is very worn, but there are discernible remains of his snout and mouth, as well as an outlined mane and ears.

Sarah Eisen is a PhD Candidate, Classical Archaeology, Department of the Classics, Harvard University:

The summer of 2019 was my first time as an excavator at Harvard's archaeological exploration of Sardis, and my first summer excavating in Turkey. In collaboration with Frances Gallart Marqués, Frederick R. Grace Curatorial Fellow in Ancient Art at the Harvard Art Museums and a longtime member of the Sardis team, I worked with several local workmen to excavate a marble courtyard in a late Roman house in field 55 (F55). Despite having several years of experience excavating in Greece, the project in Turkey presented several new challenges and opportunities for me as a scholar.

One of the aspects of the Sardis project that was most useful to me was the close collaboration between the excavators, conservators, and specialists in fields such as numismatics, ceramics, and architecture (figure 7). At Sardis, everyone works closely together, so our finds are cleaned and conserved within a few days of uncovering them, specialists analyze and identify them, and then we have interactive discussions between all sides to understand the significance of the finds with as much information as possible. This collaborative process really pushed me to interpret the site and the finds from new perspectives, and provided stimulating intellectual conversations. For example, I had many in-depth

conversations with our numismatist, Jane DeRose Evans, looking at the coin evidence in tandem with the architectural layers to determine if F55 was eventually destroyed in the 7th century CE by a series of earthquakes, or one cataclysmic event. While we still cannot decide on a clear answer, these conversations made the F55 team re-evaluate the evidence, and question theories about the phasing of the site that we previously assumed were correct.

Collaborations like this not only helped me to understand F55 from different perspectives, but also ensured that I truly understood all aspects of the materials from the site (dates, details, significance, frequencies, etc.). In addition to collaborations, excavators also read all the pottery that comes out of the site, work with architects to create site plans throughout the season, and write regular reports of our progress and theories about the site. As a result of this setup, I understood my area of excavation at Sardis better and from many more angles than at any other site I have excavated in the past. This underscores the

unique idea at Sardis that the excavators are involved in all processes of the material processing outside of excavation.



Figure 7. Sarah Eisen explaining her excavation of the area near the basin to team members. Photo by Sarah Eisen.

A New Name for the Harvard Semitic Museum

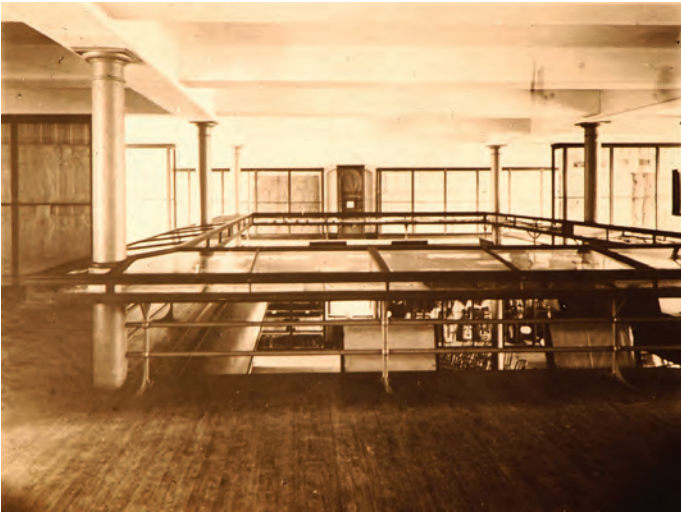
Peter Der Manuelian

One hundred and thirty-one years after its establishment, the Harvard Semitic Museum has a new name. In mid-April 2020, the Museum announced that it will now be known as the Harvard Museum of Ancient Near East (hmane.harvard.edu; figure 1).

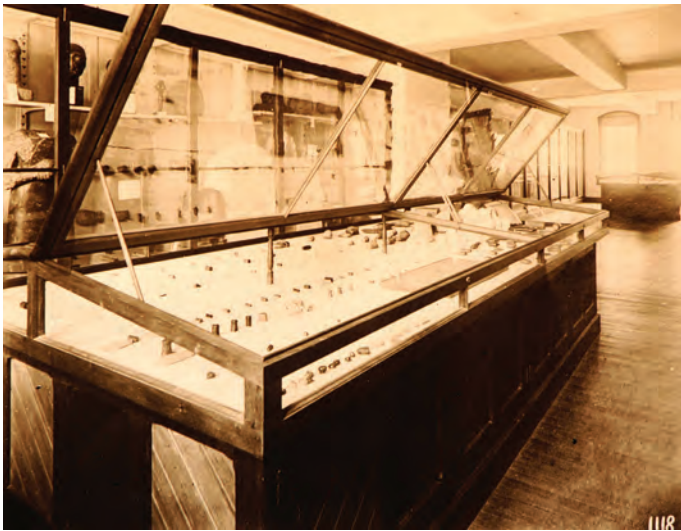
Founded in 1889 by Assyriologist David Gordon Lyon (1852–1935), the museum was originally conceived as a teaching tool to study the ancient histories and cultures of people who spoke Semitic languages, among them Israelites, Moabites, Arabs, Babylonians, and Phoenicians. Lyon had no building for the collections he was gathering, so in 1891 the Peabody Museum kindly lent him a gallery on the fourth floor (figures 2–4). Lyon later found the funds to construct his own building; with the support from Harvard's President Charles Eliot, the Semitic Museum opened, with about 250 people in attendance, at 6 Divinity Avenue, on February 5, 1903. It then enjoyed institutional support for many years.



Figure 1. Harvard Museum of the Ancient Near East (HMANE), formerly Harvard Semitic Museum. Photo by the author.



The new building was simultaneously home to the Ancient Near Eastern collections and what would become the Department of Near Eastern Languages and Civilizations (NELC), with a departmental library, classrooms and even a large auditorium on the first floor. Beginning in 1908 it also became a center for archaeological exploration. With perhaps typical “Victorian clutter,” the galleries on the second and third floors were brimming with ancient and modern objects, plaster casts, and photographs (figures 5–14). Lyon had collected objects, both old and new, from the region as he believed in one long, uninterrupted march of civilization. There were ethnographic garments and even examples of flora and fauna (figures 12, 14).



During the Second World War, the museum housed Naval offices and was closed to the public. Academic activities resumed in the 1970s, by which time the collections had grown to more than 40,000 items, including pottery, cylinder seals, sculpture, coins, and cuneiform tablets. Many of the ancient artifacts came from museum-sponsored excavations in Israel, Jordan, Iraq, Egypt, Cyprus, and Tunisia. The museum continues to make these collections accessible for the teaching, research, and publication of Near Eastern archaeology, history, and culture. Through several different monograph series, it also publishes archaeological, historical, philological, and cultural studies of the Near East, with more than 131 monographs appearing to date (<https://brill.com/view/serial/HVSS>).



Today, our focus remains on the wide variety of diverse peoples living in the eastern Mediterranean region, in parts of modern-day Iraq, and even in north Africa, including the ancient Sumerians, Egyptians, Assyrians, Babylonians, Hittites, Philistines, Israelites, Phoenicians, and others. Our original mission has not changed, but nowadays the term “Semitic Museum” is less widely understood in the public domain. People either had no idea what they might see in a “Semitic” museum, or they (incorrectly) believed the museum was exclusively devoted to Jewish exhibitions. Many had heard the term “anti-Semitic” but “Semitic” was less common.

We wanted a more inclusive and descriptive name for the museum, one that accurately reflects the diversity of our collections. The change is not a reaction to any particular event, but rather our attempt to reflect our core mission in clearer terms. The process took a great deal of time and thought. Over a period of many years, we held discussions with stakeholders

Figures 2–4. The Harvard Semitic Museum gallery on the fourth floor of the Peabody Museum, 1891–1903. Above: photos by D.G. Lyon, LS805 and LS804. Below: the same display cases still in use today; photo by the author.



Figure 5.



Figure 6.



Figure 7.



Figure 8.

Figures 5–6: HMANE second floor, with swinging doors still in use today. Figures 7–9: HMANE third floor. All photos by D.G. Lyon, LS993, 962, 963, 911, except figure 6 by the author.



Figure 9.



Figure 10.



Figure 11.



Figure 12.



Figure 13.



Figure 14.



Figure 15.

Figures 10–15. HMANE: Views of various display cases. All photos by D.G. LS980, 981, 964, 978, 985, 987.

and distributed questionnaires about the museum to visitors and others, both on campus and off. We held focus groups, organized discussion dinners with faculty across the Harvard community, from the Faculty of Arts and Sciences to the Law and Business Schools. We even devoted Museum Studies courses to the issue.

Regarding the name “Harvard Museum of the Ancient Near East,” we know that no name is perfect. For example, the “Near East” is not particularly “eastern” to colleagues living on the other side of the world. But in our defense, our building stands in Cambridge, Massachusetts. We considered the term “Middle East” but it tends to refer to modern times

more than “Near East” does. And the term “Ancient World” casts the net too far across the globe given the specific collections we have.

We ran a range of names by different sectors of the community, gathered opinions, and studied the branding of many like-minded institutions, such as the University of Chicago, the University of Pennsylvania, and the University of California, Berkeley, to name just a few. We believe “Harvard Museum of the Ancient Near East,” or “HMANE” for short, to be the clearest and most inclusive description of what we have and what we do.

The HMANE will continue to support the teaching mission of the University and provide a resource



Figure 16. HMANE: Current appearance of the third floor Mesopotamian gallery, with recently installed polished concrete floor. Photo by Joseph Greene.

on the archaeology and culture of these fascinating ancient civilizations, for the Cambridge community and the visiting public from all over the world. We support international scholars in their research as well. At this writing, we have projects in the works on all three of our gallery floors. On the first floor, next to our engaging and educational full-scale reproduction of a first millennium-BC house from ancient Israel (always a big hit with visiting school groups and archaeology classes) is a new show called “Mediterranean Marketplaces: Connecting the Ancient World.” This exhibition explores the movement of goods, peoples, and ideas around the ancient Mediterranean region, transforming the livelihoods of people at all levels of society. Just like today, ancient “consumers” were also connected to distant markets. Along with some interactive exhibits, one highlight is a large cutaway reproduction view of an ancient

ship’s hull, filled with some of the antiquities our museum expedition recovered from a Phoenician shipwreck off the Sinai coast in 1999. Amphorae (large storage vessels) still show the barnacles attached after all those centuries underwater.

On our second floor, a very popular augmented reality exhibit, “Dreaming the Sphinx” (a free app on the Apple and Google Play stores) is soon to get an update (figure 6). The current version translates the ancient Egyptian hieroglyphic stela text, places the visitor before the giant Sphinx at the Giza Pyramids, and shows the site during three different time eras, ancient to modern. Version 2.0 will add more time periods plus a re-enactment of the propagandistic story told in the hieroglyphs: how the young prince Thutmose IV napped by the Sphinx, who then appeared to him in a dream, and in exchange for being cleared of sand, gave Thutmose the throne.

Also on our second floor, we gathered an all-star cast of specialists earlier this year and opened our three spectacular ancient Egyptian mummy cases (see the next article in this issue).

On our third floor, we aim to breathe new life into our Mesopotamian gallery with “The Art of Intimidation.” Guided by their phone or tablet, visitors will be able to see ancient Assyrian palace reliefs come alive by restoring the ancient colors (based on meticulous academic research), and by animating the activities shown, from royal lion hunts to battles. An ancient “palace overseer” avatar will guide you around the gallery.

As this short article went to press, times had changed drastically for museums. The spread of the COVID-19 virus has temporarily closed most museums, on the Harvard campus and beyond, to the public. In response, we believe the HMANE may be out in front of many museums in terms of virtual access to our galleries. On the home page of our website ([hmane.harvard.edu](https://bit.ly/2zfD2jD)) we have posted a virtual tour (<https://bit.ly/2zfD2jD>) of the entire building. This uses a very versatile format that is perhaps familiar to visitors from real estate websites. It begins with a “dollhouse” view of the Museum, and then the visitor can “jump” inside the building. You can click “play” for an auto-run tour through the museum, or you can navigate and look around freely yourself. And selected objects have “hot spots” that you can click on. These show additional text, photos, and in some cases the hot spots even embed rotatable 3D models of the objects. It’s almost like taking them out

the display cases. Examples include our three Egyptian mummy coffins on the second floor and our Assyrian palace reliefs on the third floor.

Our “Dreaming the Sphinx” augmented reality app on the second floor has a downloadable pdf file with two hieroglyphs. Users can aim their phones at the hieroglyphs and most of the same experiences they could have in front of the Egyptian stela in our gallery are available right at home (figure 6). Users can jump from floor to floor easily, without even having to negotiate the stairs! We expect to add more of these immersive technologies to the museum exhibits in the coming months, and we also look forward to welcoming visitors back into the building when it is safe to do so.

The Ancient Near East provides the world’s first examples of centralized political authority and written language, with sophisticated science and literature. The social, literary, political, artistic changes and innovations are foundational to global human history. And the region continues to be the basis for modern identities—we can’t understand current political events there in a cultural or historical vacuum. For these and many other reasons, we aim to build on the important legacy of our museum, and shepherd it forward—under its new name—towards its 150th anniversary in 2039.

Peter Der Manuelian is Barbara Bell Professor of Egyptology, Director of the Harvard Museum of the Ancient Near East, and Chair of the Standing Committee on Archaeology.

Figures 17–18. Experiments in digital colorization of Assyrian palace reliefs for an upcoming augmented reality exhibit on the museum’s third floor. Above: photo by Peter Lu. Below: digital drawing by Hilo Sugita.



Three Ancient Egyptian Coffins at Harvard University

Peter Der Manuelian

At the Harvard Museum of the Ancient Near East (formerly known as the Harvard Semitic Museum; see the previous article in this issue), we work to enhance our exhibits with virtual reality, augmented reality and other immersive technologies in an effort to make the ancient world more accessible (see, for example, “Dreaming the Sphinx,” a free app on the Apple App and Google Play stores; *In Situ* Fall 2019, pp. 23–26). As these words went to press, with the COVID-19 virus situation drastically affecting the world, universities and museums have begun rethinking how to fulfill their missions as well.

In January 2020, we devoted a week at the museum between fall and spring semesters to comprehensive documentation of our three mummy cases. They belong to three Egyptians employed in the Temple of Amun-Re at Karnak: two men (Pa-di-mut, a priest and metal engraver, and Ankh-khonsu, a doorkeeper)



Figure 1. Opening the vitrine with the coffins of Mut-iy-iy and Ankh-khonsu (from left to right: Dennis Piechota, Adam Aja, Adam Middleton, Joseph Greene). Photo by the author.

and one woman (Mut-iy-iy, a singer), all from Dynasty 22 (about 945–712 BC). They were excavated by Theodore Davis and Percy Newberry in 1901 and subsequently donated to our Museum. No bodies accompanied the coffins to America. Although they have been on view for some time, this was a rare opportunity, thanks to a Harvard Dean’s Competitive



Figure 2. From left to right: Padimut, Ankh-khonsu, and Mut-iy-iy. Harvard Museum of the Ancient Near East. Photos by Frank Graham.

Fund grant, to study them in detail. Most had not been opened in decades, and in one case we had no idea if there was decoration inside the coffin or not.

In addition to professional photography, measurements, pigment and residue analysis, and wood sampling, we included photogrammetry and 3D scanning in our workflow. The goal was to create interactive 3D models of the coffins, inside and out, for Sketchfab, and eventually for an interactive exhibit for the visiting public and world community. We used an Artec Leo scanner for the scanning, and a Sony RX100 VI camera for the hundreds of photos that went into Agisoft Metashape for processing. A three-minute video summary of the project is available at <https://youtu.be/TdGJ-5XR4gM>.

Challenges

The greatest challenge for us was the careful handling of these fragile and heavy coffins, for we needed to lift and turn them in order to document tops, sides, undersides, and bottoms. Day by day, a team



Figure 3. Georgina Rayner examines the pigments on the coffin of Ankh-khonsu. Photo by the author.

of twelve specialists compiled their documentation and took their samples, in a complex arrangement of choreography: coffins rolling in from the gallery (which had become a temporary photo studio), lids turning over, bottoms being scanned and photographed, etc. All went smoothly, and the professional team members never got in each other's way, despite the time pressure, the differing needs of everyone's equipment, and the fragility of the ancient materials.

There were four batches of images for each coffin: lid exterior, lid interior, bottom interior, and bottom exterior. Once these images were processed, our colleague from Indiana University, Bloomington, Mohamed Abd el-aziz, used Agisoft Metashape, Zbrush, Xnormal, and 3D Studio Max to merge the various pieces together, remove the unwanted backgrounds, decimate the meshes, and animate the coffins, so that the lids move up and down, exposing the decoration of the interior. The results, with all three coffins side by side, may be viewed here: <https://skfb.ly/6QTHw>. Individually, viewers can also see the coffins one by one here:

Pa-di-mut: <https://skfb.ly/6R8WF>

Ankh-khonsu: <https://skfb.ly/6R7WL>

Mut-iy-iy: <https://skfb.ly/6RqIK>

Sketchfab provided a convenient way to upload the models for instant and interactive viewing. Being able to rotate the coffins, stop and start the animation, and even "climb inside" are all welcome and useful features. Since museum objects are often difficult to access up close, Sketchfab provided an excellent virtual display. In our case, this is particularly welcome since two of our three coffins, for lack



Figure 4. Jessica Gebhard and Madeline Liberman measure one of the coffin lids. Photo by the author.

of gallery space, are displayed against a wall, which means one cannot view all sides except on Sketchfab.

Taking these technologies one step further, we added the coffins project, and other objects, to our virtual tour of the Harvard Museum of the Ancient Near East. We wanted to give users virtual, in addition to physical, access to our building, a feature that the recent COVID-19 virus has made all the more relevant and necessary. The interactive 3D model of our museum is available on our website home page, or here <https://bit.ly/34BmSwQ>.

The coffin lids are now back in place on their respective coffin bases in the gallery, obscuring the interiors, which remain visible on Sketchfab. And finally, by zooming or manipulating the angle of the light source in Sketchfab (option key on Mac; alt key on PC), users can highlight areas for detailed views that are impossible in the gallery.

Lessons Learned

We found it relatively easy to produce the photography for photogrammetry work, with anywhere between 300 and 500 images per coffin section (lid, bottom, interior, exterior, etc.). Using the Artec Leo portable 3D scanner is liberating, since it requires neither cables nor tethering to a computer, and the screen on the device provides instant feedback. Nevertheless, it proved extremely useful to check the scans on a nearby laptop during the course of the scanning, like "dailies" on a movie set. We were able to rescan areas missed and ensure that we had complete coverage. For sharp details and excellent color reproduction, the photogrammetry images worked

best. For the underlying geometry, the Artec Leo is the way to go. Good file-naming systems, and accurately named folders and subfolders helped us keep the thousands of images organized.

Next Steps

Our next step is to take these 3D models and create an interactive exhibit, with a wall monitor in the gallery showing the animation, and an app or website (beyond our virtual museum tour) that provides more information. For example, “annotating” the coffins, with popup texts translating the hieroglyphic inscriptions, or identifying the deities and describing the ritual scenes taking place, is certainly on our to-do list. Beyond this, exciting augmented reality applications await. Users could virtually take the coffin out of its display case, lift up the lid and enjoy a walk-through or flyover of the interior. Using an Insta360 One X camera, we have already simulated such experiences, and a practice run can be seen here: <https://youtu.be/ElbZgTHQoy0>.

On the scholarly front, we hope to gather the scientific papers from all our collaborators into a single monograph on the three coffins, to be published in the series *Harvard Egyptological Studies* (<https://brill.com/view/serial/HES>).

We also hope to reveal more of what lies under the resinous “goo” in the bottom interior of Ankh-khonsu’s coffin (figure 5). The underlying painting of the god “Re-Horakhty, lord of the Two Lands” standing on a *nebu* hieroglyph and surrounded by serpents, needs clarification and, eventually, some digital epigraphy.

The potential for access to these ancient monuments is growing thanks to immersive 3D, VR, AR, and mixed reality technologies. In archaeology, however, where reconstructions are concerned, it is important to note the source documentation. We look forward to expanding the teaching and research potential of these new tools.

Our Thanks

The team working on the Coffins Project consisted of

Harvard Museum of the Ancient Near East

Peter Der Manuelian, Director

Joseph A. Greene, Deputy Director and Curator

Adam Aja, Assistant Curator of Collections

Adam Middleton, Museum Coordinator

Conservators

Dennis Piechota, Archaeological Conservation

Jane Drake Piechota, Archaeological Conservation



Figure 5. First experiments with DStretch on the bottom interior of the coffin of Ankh-khonsu, showing the figure of the god Re-Horakhty. Normal view photo at left by Frank Graham.

Photographer

Frank Graham, Exhibit Services and PhotoGraphics
Straus Center for Conservation, Harvard Art Museums

Katherine Eremin, Patricia Cornwell Senior Conservation Scientist

Kate Smith, Conservator of Paintings and Head of Paintings Lab (pigment)

Georgina Raynor, Associate Conservation Scientist (pigment, XRF)

Institute of Archaeology, University College, London

Margaret Serpico, Honorary Research Associate (residue analysis)

Wood analysis

Michaela Schmult, Director of Collections Harvard University Herbaria and Libraries

Madelynn von Baeyer

Research Fellow at the Harvard University Herbaria

Iconography studies

Cynthia May Sheikholeslami, Cairo

Students and Volunteer Interns

Madeline Liberman (Columbia University)

Eden Piacicelli

Lauren Wyman

Marija Tomoshevska

Jessica Gebhard

Peter Der Manuelian is Barbara Bell Professor of Egyptology, Director of the Harvard Museum of the Ancient Near East, and Chair of the Standing Committee on Archaeology.

The Giza Project: Celebrating Twenty Years of Aggregating Archaeology at the Pyramids

Peter Der Manuelian

The Giza Project (giza.fas.harvard.edu), a non-profit international initiative based at Harvard University, assembles information about all the archaeological activity at the most famous site in the world: the Giza Pyramids and surrounding cemeteries and settlements (third millennium BC to present). Using digital archaeology, the Project unites diverse documentation to produce powerful online and traditional academic research tools and new teaching technologies. It presents academic information about Giza at all levels of expertise for the world community and strives to provide a model of archaeological information management.

The mission statement above describes a project that began way back in 2000 at the Museum of Fine Arts, Boston. Thanks to the Andrew W. Mellon Foundation, and in particular to Angelica Rudenstine, I was able to begin a project with \$750,000 over four years to try to make the Giza Necropolis more accessible. Rather than simply scan all 45,000 glass plate expedition negatives from George Reisner's Harvard University–Boston Museum of Fine Arts Expedition (1905–1947), we decided instead to focus on “just” the 21,000 Giza photos, but link them intelligently with as much additional metadata as possible.

Assembling a crack team of Egyptologists, PhD candidates, undergraduates, volunteers, and talented and dedicated MFA Museum Associates women (figure 1), we transcribed expedition diaries, created artifact databases from object register books, scanned maps, plans, sections, and epigraphic drawings of scenes and inscriptions, and converted scholarly publications into a massive Giza digital library of text-searchable pdf files. Everything fit into its appropriate module in our TMS collections management system, and the Project's first website launched in 2005. Each of the hundreds of Giza tombs surrounding the Pyramids became a central “node” in our system, linked to the appropriate photos, diary pages, object records, drawings, publications, etc.

It soon became apparent that focusing only on the parts of the Giza Necropolis excavated by the HU–MFA Expedition precluded any holistic attempt to study the entire site. For this reason, a trip through

Europe in 2006 successfully brought on board all the museums and institutions with a direct archaeological connection to Giza. To digital data from Berkeley, Philadelphia and Cairo we were able to add materials from Berlin, Hildesheim, Leipzig, Turin, and Vienna. We were building “Giza International,” a sort of centralized repository. We were also able to discover in Egypt and ship to Boston some 74 Arabic expedition diaries kept safely all these intervening years by the descendants of George Reisner's foremen (figure 2).

Funding from the Mellon Foundation continued with a series of grants, first from the Museums and



Figure 1. Some of the many Giza Project offices, staff members, and students, at both the Museum of Fine Arts, Boston (2000–2010) and Harvard University (2011–present). Photos by the author.

Conservation Division (Angelica Rudenstine), and later from the Scholarly Publications Division (Donald Waters). Several grants totaled about \$3.4 million and took us from 2000 to 2010.

Eager to take our digital data to the next level, we teamed up with French 3D modeling company Dassault Systèmes (Paris and Waltham, 3ds.com), whose visionary marketing specialist, Mehdi Tayoubi, generously put his resources and team from Emissive (emissive.fr) at our disposal in building 3D models of Giza for teaching and research. Breathing new life into old data came in particularly handy when the Philip J. King professorship was created at Harvard University, and the Giza team made the jump across the Charles River to Cambridge. Like George Reisner himself (1867–1942), who was also an MFA curator and Harvard professor, the Giza Project was now able to represent both institutions in a collaborative

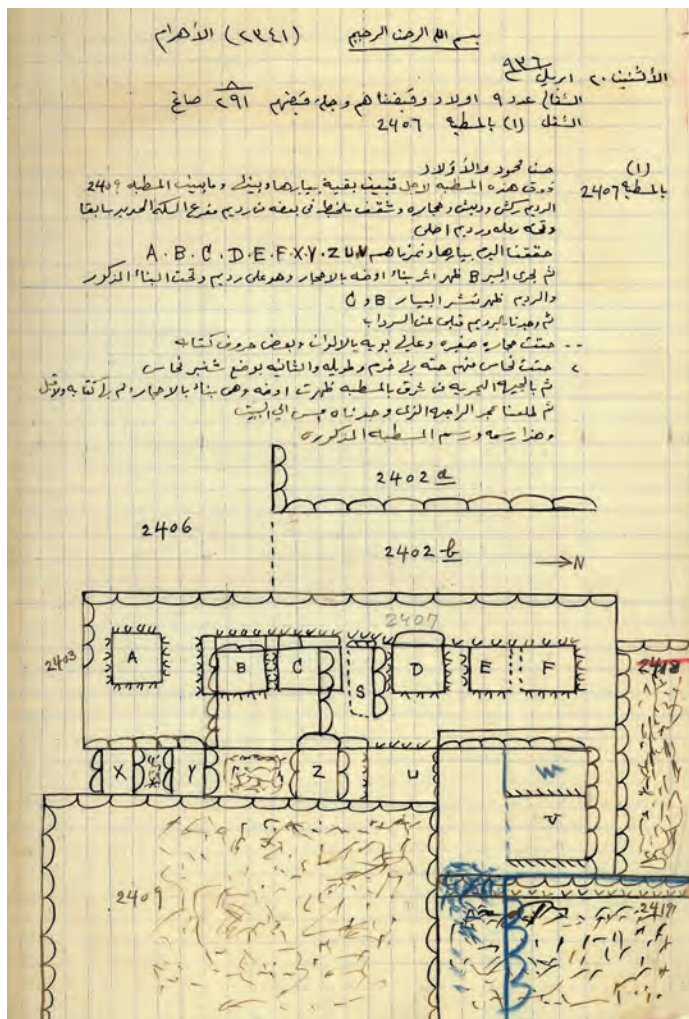


Figure 2. Scan of HU-MFA Expedition Arabic Diary page, from seventy-four books retrieved from Egypt in 2006. Forty of the books covered the Giza excavations.



Figure 3. Students in Anthropology 1250 (“The Giza Pyramids: Archaeology, History, Technology”) in Harvard’s Visualization lab classroom, fall 2019. Photos by the author.

partnership. We thank the MFA curators for their continuing support: Rita Freed, Larry Berman, and Denise Doxey. The Project’s work fed directly into undergraduate (Gened) and graduate courses taught in Harvard’s Visualization Lab classroom, managed by Rus Gant on behalf of the Department of Earth and Planetary Sciences (fig. 3). We thank John Shaw for generously making this classroom available.

Supported by a series of NEH grants, the Giza Project at Harvard, run primarily by Nicholas Picardo, and formerly by Rachel Aronin and Jeremy Kisala, with student and volunteer support, roughly doubled the number of records online over what had been achieved at the MFA. We expanded into “educational telepresence,” building out 3D models, not only for our new Harvard-based website, but for



Figure 4. Worldwide press for the Giza Project.

immersive stereo headset use as well. The Project's outreach expanded as well (figure 4), and a HarvardX online "Giza Pyramids" course (8 modules, 60 videos; <https://bit.ly/3bhGDfg>) has reached a total enrollment at this writing of 84,000 learners. Some of our work even overlapped with the mission of the Harvard Museum of the Ancient Near East, such as the "Dreaming the Sphinx" augmented reality app we launched on the Apple App and Google Play stores (see *In Situ* Fall 2019, pp. 23–26).

From 2018 onwards, the Giza Project teamed up with Zhejiang University in Hangzhou. Dr. Changyu Diao joined us for a full academic year, adding his expertise on a wide variety of projects, from back-end web coding, to live-streaming our Anthro 1250 classes to China, to 3D scanning and 3D printing, thanks to several PLA printers generously donated by Sindoh. More recently, a grant from the Harvard Global Initiative will allow us to prepare a "Digital



Figure 5. 3D model of the Great Pyramid; courtesy the Giza Project, Harvard University.

Giza" exhibition for the newly opened Zhejiang University Museum of Art and Archaeology, most likely in early 2022.

Now twenty years on, with 152,464 items in our database and website, we look forward to enhancing

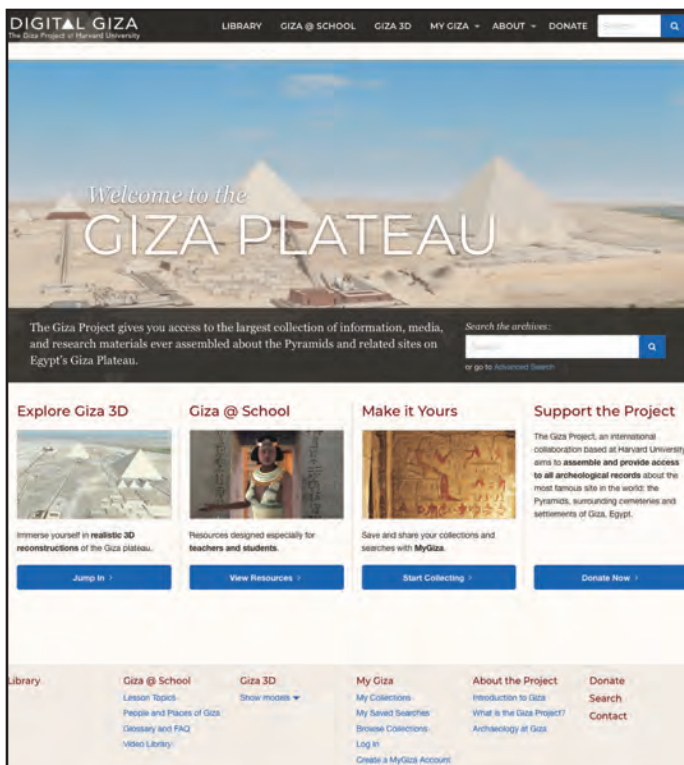


Figure 6. Prototype of the new Giza website, <http://giza.fas.harvard.edu>.

our website further (figure 6), with the IIIF-compliant “Mirador” image viewer, the ability to save and share collections (“MyGiza”), and educational features such as “Giza@School,” including an interactive timeline. Through the kindness of ICONEM (iconem.com) we have received drone footage of the Giza Plateau, which we hope to combine with our own interactive tours and a GIS overlay that will allow for enhanced research as well as edu-tourism. New sourcing documents will explain how we built our 3D structures, while photogrammetry and Sketchfab object models (figure 7; <https://skfb.ly/6R-RXx>) and Matterport camera scans of Giza tomb chapels will enable a host of new scholarship opportunities. A number of Harvard PhD candidates are already taking advantage of these new tools in their dissertation research.

A description of our first decade, with a detailed history of the Giza Project, was published in 2017 by Harvard University Press (figure 8). Funding remains an ever-present challenge, especially in the current world economy, but with proper support we hope to continue to document the past, present, and future at Giza, one of the most valuable world heritage sites.



Figure 7. 3D models from photogrammetry of the famous Menkaure statuary from Giza; models by David Anderson, the Giza Project, and Zhejiang University.

Our Thanks

After twenty years, the Giza Project has benefited from the work of 900 different people. Among those with fundamental contributions are Diane Flores, Cathy Pate, Nicholas Picardo, Rachel Aronin, Jeremy Kisala, Luke Hollis of Archimedes Digital, Rus Gant, David Hopkins, Josh Widdicombe, Changyu Diao, and Harvard Egyptology and archaeology PhD candidates Laura Taronas, Kate Rose, Sara Zaia, Inês Torres, Hilo Sugita, Julia Puglisi, Sergio Alarcón Robledo, Nisha Kumar, and Gaia Bencini.

We also thank Rashmi Singhal and Cole Crawford of DARTH, Jeff Steward (HAM), and the able staff of Harvard’s FAS Research Computing.

Peter Der Manuelian is Barbara Bell Professor of Egyptology, Director of the Giza Project, Director of the Harvard Museum of the Ancient Near East, and Chair of the Standing Committee on Archaeology.

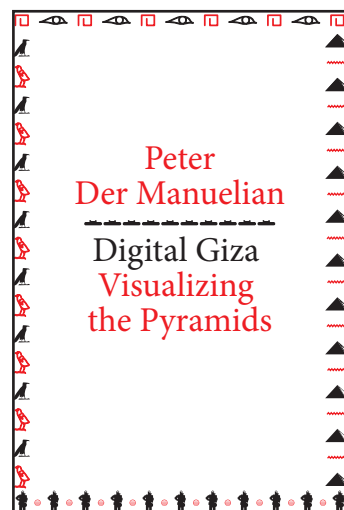


Figure 8. Summary of the first decade of the Giza Project, published by Harvard University Press (2017).

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Nour Khachemoune
Vismaya Kharkar
Drake Marshall
Alexander McQuilling
Peter Otness
Katherine Paglione
Laura Taronas
Ani Tchorbajian
Jonathan Thumas

Spring 2020 Events (Prior to COVID-19 Cancellations)

Friday, January 24, 2020

12.00 pm, Warren House 102, Folklore and Mythology Library
Harvard Summer Study Abroad Information Session—
The Viking Studies Program in Scandinavia

Tuesday January 28, 2020

5:00 pm to 6:00 pm, Warren House 102, Folklore and Mythology Library
Harvard Summer Study Abroad Information Session -
The Viking Studies Program in Scandinavia

Wednesday, January 29, 2020

12:00 pm, Room 203, Tozzer Anthropology Building, 21 Divinity Avenue
Community Archaeology in Boston: Digging Boston's Chinatown
Joe Bagley joined the Boston City Archaeology Program

Thursday, January 30, 2020

All day, Common Room Harvard-Yenching Institute 2
Divinity Avenue Cambridge, MA 02138
Emergence of Modern Humans in China: Behavioral Perspectives
Dr. Tongli QU, Associate Professor, School of Archaeology and Museology, Peking University
Visiting Scholar, Harvard-Yenching Institute

Wednesday, February 5, 2020

12:00 pm, Room 203, Tozzer Anthropology Building, 21 Divinity Avenue
Monitoring the Ancient Maya Marketplace: A View from Tenam Puente, Chiapas, Mexico
Dr. Elizabeth H. Paris is an Assistant Professor in the Department of Anthropology and Archaeology, University of Calgary.

Wednesday, February 12, 2020

12:00 pm, Room 203, Tozzer Anthropology Building, 21 Divinity Avenue
Moving Up, Moving Down, Moving On: Lowland Agropastoralism in the Wake of Tiwanaku State Collapse (11th-12th c. A.D.)
Dr. Sarah Baitzel is Assistant Professor of Anthropology at Washington University in St. Louis

Thursday, February 13, 2020

6:00 pm, Geological Lecture Hall, 24 Oxford Street, Cambridge

Transmission and continuity of Ancient Egyptian Culture
Dr. Fayza Haikal, professor of Egyptology, The American University in Cairo

Wednesday, February 26, 2020

12:00 pm, Room 203, Tozzer Anthropology Building, 21 Divinity Avenue

HEB and Archaeology Faculty Introductions:
Archaeology of the Invisible, a talk by Assistant Professor, Christina Warinner

Research on Wild Bonobos at Kokolopori, a talk by Assistant Professor, Martin Surbeck

“Introduction to the Evolutionary Neuroscience Lab” a talk by Assistant Professor, Erin Hecht

Thursday, February 27, 2020

6:00 pm, Geological Lecture Hall, 24 Oxford St
The Ancient Maya Response to Climate Change: A Cautionary Tale

Billie L. Turner II Regents Professor and Gilbert F. White Professor of Environment and Society, School of Geographical Sciences and Urban Planning and the School of Sustainability, Arizona State University

Sunday, March 1, 2020

3:00 pm to 5:00 pm, Room 203, Tozzer Anthropology Building, 21 Divinity Avenue

Common Technology, Opposite Approach: Comparison of Bronze Casting Technology at Zhongyuan and Sanxingdui

Dr. Jay XU, The Asian Art Museum of San Francisco

Tuesday, March 3, 2020

4:00 pm to 6:00 pm, Room 422, 485 Broadway street, Cambridge, MA 02138

Asia Now: A New Focus on Contemporary Art

Dr. Jay XU, The Asian Art Museum of San Francisco

Wednesday, March 4, 2020

5:00 pm, Boylston Hall, Fong Auditorium

Real Heritage - Cultural Heritage: Digital Devices and Cultural Heritage of Palmyra

Patrick Michel, Université de Lausanne

Thursday, March 5, 2020

10:30 am, Boylston Hall 203

Cultural Heritage and Digital Mediation: The case of Palmyra

Patrick Michel, Université de Lausanne

Thursday, March 5, 2020

4:40 pm, Haller Hall, Geo 102, 24 Oxford Street, Cambridge

A Multidisciplinary Approach to Explore Early Hominin Paleobiology Through Field and Lab Research

Dr. Zeray Alemseged

Thursday, March 5, 2020

6:00 pm, Geological Lecture Hall, 24 Oxford St

The second boat of Khufu from Giza

Dr. Bob Brier

Tuesday, March 10, 2020

6:00 pm, Geological Lecture Hall, 24 Oxford St

Early Archaeology of the Pacific

Matthew Spriggs, Laureate Fellow and Professor of Archaeology, Australian National University, Australia

The Standing Committee on Archaeology

The Standing Committee on Archaeology is a multidisciplinary group of scholars appointed to promote the teaching of archaeology at Harvard. We seek to advance knowledge of archaeological activity, research, fieldwork, and techniques in the many and varied fields where archaeology is employed as an approach to past cultures and histories around the world. Archaeology can be seen as the study of past human societies through the recovery, analysis, and interpretation of material remains. Those who practice archaeology employ a wide range of methods, techniques, and theoretical orientations drawn from across the spectrum of academic disciplines to further their specific intellectual goals. Likewise, scholars of many disciplines who do not consider themselves to be practicing archaeologists nevertheless use the results of archaeological work in their teaching and research. Our members and students work with and in a wide range of the museums and departments on Harvard's campus.

<https://archaeology.harvard.edu>

