

The Djehuty Project
A FUNERARY GARDEN IN THEBES

Sacred Beasts
CONSERVING ANIMAL MUMMIES

Weni the Elder
A NEW LOOK AT AN OLD LIFE

SCRIBE

THE MAGAZINE OF THE AMERICAN RESEARCH CENTER IN EGYPT

THE
Ancient
Places
& Lives
ISSUE

THE TEMPLE OF REPIT

A VIBRANT HISTORY PRESERVED

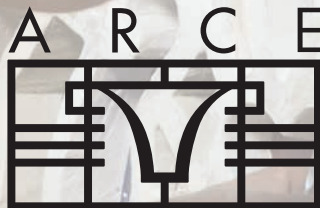
FALL 2020 | ISSUE 6

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The Mosque of Aslam al-Silahdar during conservation

PHOTO: MATJAZKACIČNIK

CONTENTS

SCRIBE | FALL 2020, ISSUE 6



Juanqui Andrés, staff member of Factum Arte, joining the pieces of the funerary garden facsimile together and proceeding with the final retouching. Note the trunk of the tree that was also recreated.

FEATURES

Scared Beasts

Conserving the Animal Mummies in the San Antonio Museum of Art

PAGE 16

Conservation and Training at the Temple of Repit in Athribis

A Ptolemaic Temple with a Vibrant History is the Focus of an ARCE AEF Grant

PAGE 26

The Djehuty Project

Discovering a 12th Dynasty Funerary Garden in Thebes

PAGE 40



ON THE COVER

Conservators work on the West wall of the Temple of Repit

THE AD IN OUR INNER FRONT COVER FEATURES A PHOTO BY MATJAZ KACIČNIK. KACIČNIK WAS NOT PREVIOUSLY CREDITED FOR THE USE OF THIS IMAGE IN OUR FALL 2019 ISSUE.

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UNITES STATES

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Michael Wiles,
Chief Financial Officer

Rebekah Atol, *Development and Membership Associate*

Courtney Marx,
Administrative and Board Associate

Jeanned'Arc Sanbar,
Communications Associate

EDITOR IN-CHIEF

Sally El Sabbahy

DESIGN

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Cairo Center

2 Midan Simón Bolívar
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U.S. Office

909 North Washington Street
Suite 320
Alexandria, Virginia, 22314
703.721.3470
info@arce.org

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SCRIBE, FALL 2020, ISSUE 6
ARCE.ORG

LETTER FROM THE EDITOR

3 Ancient Spaces and Lives

MAP

4 Key Places in this Issue

NOTES FROM THE FIELD

Updates on excavation, conservation, and research projects across Egypt

5 ARCE's Digital Leap

HISTORY

8 Weni Rediscovered

An International Team Comes Together to Offer a Fresh Look at an Ancient Life

NEWS

The latest from ARCE's offices and chapters in the U.S. and Egypt

48 Egypt Updates

50 U.S. Updates

52 Chapters

54 Antiquities Endowment Fund

57 Institutional Members

FELLOWS FORUM

Conversations with fellows, past and present

58 Brooke Elizabeth Norton and Margaret Taylor Dean

FINANCIAL YEAR IN REVIEW, 2019-2020

62 Donor Support

BACKFILL

Recalling moments captured over the decades

64 Did You Know? Before There Was Scribe



A handwritten signature in black ink that reads "Sally El Sabbahy".

Sally El Sabbahy
Editor In-Chief

Ancient Spaces and Lives

Surely, if you're an enthusiast or scholar of ancient civilizations and cultures you must occasionally find yourself wondering what life was like for our predecessors. The farther back we go in to the past the harder that can be to answer, but this doesn't deter our fascination with it. For those actively working in the field, such as archaeologists and Egyptologists, the argument could even be made that they are actually driven by an obsession to understand how people used to live and die. After all, what else could convince someone to spend months or years digging in the Egyptian desert?

When an archaeological team is excavating and conserving a historic site or zone, they often have to contend with remains that are in advanced states of decay and more often than not, have undergone varying degrees of modern interference or past reuse. Factors such as these can impact their ability to interpret artifacts, and ultimately may influence their

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understanding of the behaviors of ancient users and the functions of certain spaces and objects.

Once a team has put the pieces of this puzzle together as much as they are able to, the next challenge begins: helping others that are not intimately familiar with the given site or object understand it. For closed or active dig sites, this is usually accomplished through an academic publication that details the findings and the team's interpretation of them. For sites that are open to the public for visitation, this interpretation may also extend to on-site visitor information and displays that help visitors understand and appreciate what they are looking at. In all cases, the goal is the same: we want to understand the past and in our own way, perhaps even relate to it.

In honor of this yearning to decipher the past, the theme for this issue of *Scribe* is 'Ancient Spaces and Lives.' The featured projects showcase the many ways that ARCE enables and supports research and fieldwork that promote a greater understanding of Egypt's history and culture, and the various avenues in which this is pursued. Fittingly, the excellent work covered in this issue includes a project to conserve animal mummies in San Antonio; ongoing efforts to conserve the Temple of Repit and uncover its many historic layers; investigations into the mastaba of Weni the Elder; and last but certainly not least, the discovery of a Middle Kingdom funerary garden and the international partnerships that worked to produce a facsimile of it.

With so many ways to understand ancient Egypt, it's no wonder why we keep digging. 🌱

Locate the fieldwork, historic sites, and other key places featured in this issue of Scribe



- 1 San Antonio, TX, Conserving Animal Mummies, **PAGE 16**
- 2 Arthribis, Conservation and Training at the Temple Repit, **PAGE 26**
- 3 Abydos, Mastaba of Weni the Elder, **PAGE 8**
- 4 Luxor, 12th Dynasty Funerary Garden in Thebes, **PAGE 40**

Updates on excavation, conservation, and research projects developing across Egypt



Dr. Louise Bertini
Executive Director

ARCE's Digital Leap

What a learning curve 2020 has been! Much like all of you, ARCE has made adjustments in order to accommodate our new universal normal and to look after the health and wellbeing of our members, staff, and supporters. Aside from closing our offices in Egypt and the U.S., we also halted all of our in-person programmatic events in both countries. As many of you have no doubt witnessed, this represented a major and exciting pivot for ARCE into the virtual realm.

The planned Annual Meeting, set to take place in Toronto from April 3 to 5, instead became the Virtual Annual Meeting (VAM) and occurred over four days, on April 17, 18, 24, and 25. The event was an unprecedented success, attracting nearly 2,000 registrants from around the globe! In our post-VAM attendee survey, 96% of respondents said they would like to see a continued virtual component to our future Annual Meetings, which provided us with some food for thought regarding all of our programmatic offerings. We quickly realized that developing ARCE's online reach presented a lot of exciting and innovative possibilities for increasing engagement with our diverse and international audience.



The entrance of the Karaites graveyard following conservation work by ARCE

Because of this, our Egypt and U.S. staff put their heads together and decided to dive headfirst into the production of a variety of online content and events. Beginning in May, we launched virtual tours of past ARCE projects and 3D scans of historic artifacts and objects, partnered with the ARCE Chapter Council to offer member-only online lectures (see page 52), organized open access online lectures, and introduced the official ARCE podcast (see page 50). All of these programs will continue through to the end of this year, and will then be integrated with our standard in-person events and programs thereafter.

Our biggest takeaway from all of the online content that we have been producing is that there is an incredible demand and appreciation for it. Beyond the record-high number of registrants for the VAM, our Tomb of Menna virtual tour attracted 2.4 million views over the summer and its subsequent online lecture featuring project director Dr. Melinda Hartwig garnered 1,200 registrants. Similarly, our open access lecture with Dr. Elizabeth Bolman, past project director of ARCE's Red Monastery project, attracted over 800 registrants, and member-only lectures have consistently pulled in an average of 400 registrants each. Thousands of other online users have been exploring our virtual tours and listening to our podcasts, and as a result, we've seen considerable growth in our membership, e-newsletter sign up's, and overall traffic to ARCE.org.

We also have a number of other digital roll-out's that have been in the works for much longer, namely the launch of the Cairo Center's Marilyn M. and William Kelly Simpson Library online catalogue (you can access it from the ARCE.org library webpage) and some very exciting releases coming out of the ARCE project archives (see page 48). These include the Fall 2020 launch of an online archival repository, in partnership with the University of California, Los Angeles (made possible with funding from the National Endowment for the Humanities), and the release of 30 virtual exhibits with Google Arts and Culture as part of our partnership with them to promote ARCE projects and develop online educational content about Egyptian heritage and history. Last, and certainly not least, we have been preparing the relaunch of

AEF GRANTS

Antiquities Endowment Fund 2020 Recipients

ONE-YEAR GRANT

Anne Austin

‘Conservation and Documentation of the Human Remains at Deir El-Medina’

El Sayed Mamdouh El Sayed Soliman

‘A Rediscovered Tomb in Qurnet Marei: TT382 (Usermontu)’

Essam Nagy

‘The Osiris-Ptah Neb-Ankh Research Project (OPNARP)’

Janet Richards

‘Displaying Weni the Elder in the Sohag Museum’

JJ Shirley

‘Theban Tomb 110 Publication Field School’

Lissette Jiménez

‘Abydos Archive Center Conservation Field School: Preserving Archives from the Nubian and Coptic Museums’

Melinda Hartwig

‘Conservation of the Tombs of Rebiu and Samut’

Nairy Hampikian

‘Bab Zuwayla Urban Storytelling and Conservation’

Stacey Anne Bagdi

‘Engaging OUR Past: Celebrating the Discoveries in the Daqahlia Governate’

THREE-YEAR GRANT

Stephen J. Davis

‘Architectural Conservation at the White Monastery Church in Sohag’



the celebrated Theban Mapping Project website in collaboration with the website’s founder, Egyptologist Dr. Kent Weeks. Expect this in the late Fall!

In the offline world, we’ve also continued to see exciting developments and the continuation of some of our regular activities and programs. ARCE recently welcomed a new Chapter, based in Kansas City, MO (see page 52). We also have a new cohort of Antiquities Endowment Fund recipients, including our first-ever award for the new three-year grant cycle ARCE is offering (see left). For updates on some of last year’s AEF awardees, check pages 54-56. The ARCE Cairo Center also said goodbye to its outgoing fellows, including two exciting young scholars that are highlighted in this issue (see page 58) and welcomed our newest batch for the coming year (see page 49).

A conservator working at the Karaites graveyard as part of ARCE’s ongoing project to conserve the remains of the historic Basatin Jewish cemetery

Our ongoing project at the historic Basatin Jewish cemetery has also seen some exciting milestones, as those of you who attended our online event for it in mid-September learned. The ARCE team has carried out considerable conservation work at the cemetery's remaining portion of a Karaite family graveyard, in addition to surveying, photo documentation, and producing architectural drawings. Surviving marble and granite burial markers have all been carefully cleaned, the graveyard's prayer room has been beautifully restored, and work is now underway to develop a management plan for the cemetery.

We are positioned to pursue additional funding to not only implement the management plan, but to install visitor centers at some of the remaining graveyards. We are incredibly grateful to our project partner, Drop of Milk, and to the U.S. Embassy in Cairo for their support through the Ambassador's Fund for Cultural Preservation. Without them, this project would not have been possible.

We are continually working to fund our signature, ongoing programs ranging from fellowships to the digitization of our library and archives. To this end, we will be reaching out to ask for your support to strengthen and sustain our legacy programs that strengthen scholarship, access, and Egyptian-American cultural ties. I hope you will join me in supporting ARCE during our forthcoming year-end campaign.

Lastly, I am excited to welcome our new U.S. Director, Liska Radachi to the organization. Liska brings more than a decade of experience in fundraising and external engagement, coming to ARCE from the Smithsonian Institution. We are very much looking forward to Liska building U.S. membership, programs, and outreach. Learn more about Liska on page 50.

As always, I hope you enjoy this issue of *Scribe* and continue to safely support and follow ARCE from the comfort of your homes. We are all in this together! 🌸



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Weni Rediscovered

An International Team Comes Together to Offer a Fresh Look at an Ancient Life

BY SUZANNE L. DAVIS AND JANET RICHARDS

In the winter of 1999, the University of Michigan team working at Abydos had a once-in-a-lifetime experience: excavating the tomb of Weni the Elder. To students of Egyptology, Weni the Elder is something of a celebrity, immortalized in an autobiographical inscription detailing his life during Dynasty VI (ca. 2323-2150 BCE) of the Old Kingdom. In his autobiography, Weni describes service under three kings and his appointment as the governor of Upper Egypt. This document, inscribed on a massive limestone slab and now on view in the Egyptian Museum in Cairo, provides an amazing level of detail about the career of a single individual in ancient Egypt.

The inscription was found by the French archaeologist Auguste Mariette at Abydos in 1860, in a 6th Dynasty cemetery landscape known today as the Middle Cemetery. But Mariette failed to note its precise provenance within the Middle Cemetery's 70 hectare (173 acre) expanse.

When the Michigan team, with the kind permission of the Permanent Committee of the Ministry of Tourism and Antiquities, began to excavate in 1999, the excavators were working from survey data. A 1996 survey of visible mudbrick architecture in this area indicated the presence of a large structure at the top of the Middle Cemetery hill, and surface ceramic material suggested a 6th Dynasty date. Excavation revealed the structure to be a massive mudbrick enclosure with walls 95 feet (29 meters) long, ten feet (3 meters) thick, and originally more than 16 feet (4.9 meters) high. Broken fragments of limestone inscriptions were found in the surrounding sand, some inscribed with Weni's name or one of his titles. And then, hidden in the southeast corner of the structure, archaeologists discovered a *serdab*: a small,



rectangular chamber containing the deteriorated remains of a series of statues of the tomb's owner, as well as models of servants and items that would be useful in the afterlife. Most of what remained were small fragments of painted wood figurines that had been severely damaged by water, time, and termites. But one was a well-preserved limestone figure of a child – the tomb owner as a young boy (now on

Greg Tucker (L) and Ayman Damarany (R) walk the Abydos landscape

PHOTO BY S. DAVIS



display in the Sohag National Museum). The boy's name was inscribed on the base; he was Weni.

Since the rediscovery of Weni the Elder's mastaba tomb, the University of Michigan team has continued to explore the Abydos Middle Cemetery, finding and excavating the tomb of Weni's father, the Vizier Iuu, as well as the remains of other mudbrick tombs and structures, some of which support the hypothesis that

a local saint cult developed nearby, focused on the tomb of the official Idi, probably a son-in-law of Weni.

As research progressed, we began to reconsider the material excavated in 1999. Artifact conservation and documentation techniques had advanced in the intervening years, as had architectural conservation and the technology available for landscape studies. A number of Egyptian colleagues have also become important members of the team – some of whom are from the local area around Abydos. A project to reexamine and care for Weni's burial equipment and, perhaps, to conserve his mastaba for public display, seemed like a good way to explore our shared research interests and deepen our professional connections.

Weni the Elder's Mastaba

In 2016, with generous funding from ARCE's Antiquities Endowment Fund (AEF), we began a new multi-year project focused on the Weni mastaba and its excavated artifacts. The first part of our work focused on the mastaba itself. The key question was: could it safely be exposed, conserved, and presented to tourists? If so, this would offer multiple advantages. To Abydos visitors who are not professional archaeologists, the Middle Cemetery appears as a featureless expanse of high sand dunes located along a route to other (visible) sites in the north Abydos landscape. Many visitors no doubt have trouble imagining this area of seemingly open desert as a rich and varied necropolis full of monumental funerary structures. A visit to the massive tomb of the famous Weni could, theoretically, go a long way towards helping people envision, understand, and appreciate this exciting ancient landscape. And, from multiple conversations with key stakeholders, we knew that many of our local colleagues were interested in having the mastaba be visible and accessible in the landscape.

Mudbrick, however, is a fragile architectural material: it is soft and can be quite crumbly, and it cracks easily and dissolves with repeated or prolonged contact with water. If exposed to the elements, the mastaba would suffer erosion from both wind and rain. And, unsupervised visitors could damage the structure by climbing it. Structural stability for the huge and deteriorated walls would also be an issue. Uncovering Weni's mastaba would be irresponsible unless we knew we could safeguard it adequately. Otherwise, we would

be making the monument accessible now, but – in essence – destroying it for future generations.

Our investigative team for this part of the project involved archaeologist and Abydos Middle Cemetery Project director Janet Richards, archaeologist and photographer Ayman Damarany, architect Nicholas Warner, conservators Suzanne Davis and Hamada Sadek, and archaeologist Gregory Tucker,

a University of Michigan graduate student whose work uses site-wide spatial data to visualize and study ancient landscapes.

“I can say how I feel about this site in one word. Amazing. Even if some parts of the site are not completely intact, it’s so interesting. There is something different here. Special.” – A. DAMARANY

One of the wood statue bases after conservation and rehousing

PHOTO: S. DAVIS



First, this group assessed the logistics of exposing the mastaba. How much sand would have to be removed in order to make the mastaba visible in the landscape? And how would we keep windblown sand from reburying the structure? How achievable would this be over both short and long-term time horizons? Next, we looked carefully at the structure’s architectural conservation needs. What would be required to stabilize the walls, and how much annual, ongoing maintenance would be necessary after this was completed? Last but not least, we considered the mastaba in the context of overall site management. The north Abydos landscape is huge, and monitoring it and maintaining it at even a basic level is

Conservator Eman Zidan at work on wood statue base from the Weni *serdab*

PHOTO: S. DAVIS



a massive undertaking. Given current resources, were we confident we could ensure adequate monitoring and care of Weni's tomb once it was exposed?

The answer was, sadly, no. Re-excavating the mastaba would pose little difficulty. But given its location and the current site conditions, it would quickly be reburied by blowing sand unless large areas of the landscape around it were significantly altered and regraded. In a cemetery filled with ancient ruins and human remains, this would mean careful, extremely time-consuming excavation. Once explored in detail, the required conservation work was theoretically feasible, although it would require a large investment of time and money. Much more difficult was ensuring resources for the mastaba's ongoing, required conservation maintenance. Further, resources and staffing for overall site management already have a full plate at Abydos. Adding a fragile monument that would require regular monitoring and many kinds of basic but time-consuming care to the site's ongoing preservation needs seemed unwise.

In the end, we concluded that uncovering the mastaba – while attractive from a public presentation perspective – would hasten its destruction. But the viewshed and other visualization studies that took place alongside research into the mastaba's physical preservation suggest new possibilities for virtual presentation of the Middle Cemetery landscape to scholars and visitors.

Excavated Artifacts

As impressive as Weni the Elder's monumental mastaba is, the material excavated from it is perhaps even more interesting. One of our first goals for this project was to reexamine wooden objects from the ruined *serdab*, which had been re-used in the Saite period. We wanted to assess their condition and storage housings and also to understand the range of objects better.

Identification of these artifacts has been complicated over the years because they are in very fragmentary condition, having suffered extensive damage from termites in the more than four thousand years since they were deposited as part of Weni's burial, compounded by their compression beneath a Saite re-use layer. On first glance, most appear to be nothing more than shapeless lumps of termite frass. Only a few retain intriguing bits of paint or identifiable details.



But careful work by archaeologist Peter Lacovara and conservators Davis and Eman Zidan revealed a new level of information about this set of objects.

To Lacovara's trained eye, these fragments of figures and models represent exceptionally well-crafted examples typical of the late Old Kingdom and early First Intermediate Period. Based on evidence from identifiable body parts, like heads and statue bases, the *serdab* included more than ten small-scale male statues, and at least one very large standing male figure (at least 3 feet or a meter high). Large standing figures also seem to have included female servants, and small female figurines were present as well. Other small fragments indicate models of a bakery and brewery complex, a pottery production workshop, and a wide range of additional figurines. For example: ducks, geese, a slaughtered cow, vats

TOP: Epigraphy interns Rasha Ahmed (L) and Alaa Talaat (R) at work with a paper mockup of the chapel
PHOTO: A. DAMARANY

BOTTOM: Conservators Carrie Roberts (L) and Hamada Sadek (R) treat a limestone fragment from the Weni Chapel
PHOTO: A. DAMARANY



Ceramicist Lucia Hulkova at work with Abydos Middle Cemetery pottery
PHOTO: A. DAMARANY

for beer brewing, bread molds ready for heating, and a large oven. As part of the project, we surveyed the objects' condition, made conservation treatment and rehousing recommendations, and conservators then began work on the artifacts most at risk.

“Looking at objects and figuring out how they all go together and what they belonged to, this is when I’m happiest at work. For the Weni serdab, many fragments remain unidentifiable, but we can begin to form a conception of what the contents of the deposit would have been.” – P. LACOVARA

At the same time that work on the wood *serdab* artifacts was progressing, a different team was studying the fragmentary limestone reliefs excavated by the Michigan team from inside and around Weni’s mastaba. Senior epigrapher Heather Tunmore and epigraphy interns Rasha Ahmed and Alaa Talaat began to assemble the fragments into a conceptual reconstruction of Weni the Elder’s funerary chapel. This ongoing project has longer-term educational and outreach goals, and it is complicated due to the large number of fragments and their deteriorated condition. So while the epigraphy team worked, conservators Sadek and Caroline Roberts surveyed the relief fragments, identifying those at greatest risk and assembling a list of the most frequently encountered problems. These

included powdering and cracking stone surfaces, flaking paint, and broken fragments. The conservators then tested and refined a conservation protocol that includes consolidation of the stone with nanolime and treatment of painted surfaces with a dilute cellulosic consolidant. Treatment of broken fragments depends on the size of the fragments.

“Conservators protect collections for the next generation, and when we have some conditions, we can’t find a solution in articles or a book. But when we meet the situation, we can find a solution. It requires hands-on time and work. I believe that.” – H. SADEK

“My favorite thing is looking at stone fragments with the epigraphers and thinking about how they fit together—not just physically, but in terms of how they would be read. I can see how the work I’m doing to preserve stone fits into the bigger picture. It’s challenging, and I can’t wait to go back and be challenged some more.” – C. ROBERT

Project ceramicists, meanwhile, were reexamining multiple phases of pottery associated with Weni’s mastaba. Just as with the other excavated artifacts, analysis of the pottery is difficult because the sherds are badly weathered and poorly preserved. Because votive activity occurred around the mastaba for millennia, the pottery is also heavily mixed with examples from the Old Kingdom all the way to the Late Roman period. Ceramicists Christian Knoblauch, Mohammed Naguib Reda, and graduate student Lucia Hulkova went back through previous seasons of excavated material to assess the evidence of Weni’s burial equipment, documenting vessel types and decorative finishes. They found Early Bronze Age III pottery with combed decoration, red polished bottles with incised necks and round bases, and large clay storage jars, many preserving quantities of the original contents. Examination of contexts associated with the mastaba revealed large amounts of offering pottery, primarily beer jars dating from the 6th Dynasty to the Middle Kingdom. Pottery from later use of the area indicates Ptolemaic occupation, with potsherds from domestic and daily life activities such as cooking, dining, and food storage.

Consistent collections management was integral to the success of the artifact-focused projects, and this was provided by registrar Doha Fathy Abouelenien and photographer Damarany. While Fathy managed and monitored artifact data, movement, and storage, Damarany provided both object and action photography, recording not only excavated artifacts but also documenting the team's work. In these roles, Fathy and Damarany facilitated almost all aspects of object-focused research and documentation, including future publications.

“Registration is important because you have to have all the information, all the pieces of the story.”

– D. FATHY ABOUELENIEN

Stronger Networks

The opportunity provided by the AEF grant to learn more about ancient Abydos, Weni the Elder, and his

relationship with the local region in Dynasty VI has been crucial to the interpretation of data collected for this ancient individual, and to the multi-authored book on Weni that is in preparation. But having the time and resources to build relationships with colleagues has been equally important.

A major goal for this grant was to foster and invest in relationships between professionals in the United States, Egypt, Europe, and Australia. To this end, the participation of four early-career team members was funded by the AEF. Ahmed and Talaat, both Egyptian graduate students completing their MA degrees, joined the team as epigraphy interns. Two non-Egyptian PhD students also came on board. Tucker, from the University of Michigan, assisted in landscape studies to support the mastaba-focused part of the project, and Hulkova, from the University of Vienna, worked with the ceramics analysis team on artifacts excavated from the mastaba. All four are





Registrar Doha Faty Abouelenien at work in the Abydos magazine



The Michigan team visits the Abydos Visitor Center with Mr. Ashraf Abdel Aal Okasha, General Director of El Balyana and Abydos

eager to return and welcome further opportunities to collaborate.

We also focused on strengthening existing relationships between Egyptian and non-Egyptian colleagues working at the site. Formal activities in support of this goal included a series of presentations and discussion sessions led by Richards, the Middle

Cemetery’s project director. These detailed the history of excavation at the site, recent research, and the current unanswered questions that the team’s work aims to address. Davis and Tucker prepared a handout on grant writing tips and led multiple group discussions on this important topic. Members of the team were also invited to attend (and many participated in) webinars from the National Center for Faculty Development and Diversity (NCFDD). Available through the University of Michigan, which is an institutional member of the NCFDD, these focused on strategic planning, academic time management, and the art of saying ‘no.’ Because most team members are active scholars, teachers, and/or are in various stages of completing graduate degrees, the group also held frequent, focused conversations to discuss degree progress, research goals, and work/life balance. Finally, we worked to develop joint research and publication projects that could continue into the future.

We also intentionally worked to create spaces and moments for social interaction. A daily morning coffee hour, regular evening walks, and a once-a-week evening party gave team members time to build friendships and trust. Field trips to local cultural sites, facilitated and led by Egyptian colleagues, also gave the group time to relax and interact away from work.

We believe that team dynamics and relationships are important for not only the success of the project, but also for the wellbeing of individuals. To this end, we actively tried to create a culture where team members could thrive both personally and professionally.

Outcomes and Conclusions

Our knowledge about Weni’s mastaba tomb has grown dramatically. Although we decided to leave the mastaba safely buried, we came to realize that there are other productive avenues for presenting it to visitors and scholars. For example, including information about it in displays at local and regional museums and investing in a virtual presentation of the tomb and its landscape.

We learned much more about Weni’s burial equipment, looking with fresh eyes at the pottery and at the contents of the *serdab* while also increasing our understanding of the inscribed reliefs in his funerary chapel. A preventive conservation plan

for artifacts in storage was an important outcome, and we also worked to streamline our data collection and management. Intensive work with the fragmentary, often severely deteriorated objects helped the conservation team develop and refine better protocols for treating damaged archaeological materials, like termite-compromised wood and powdering, flaking limestone. In some cases, this work has advanced enough that we are now beginning to consider museum exhibitions or presentations of the material; an idea that would have seemed completely unrealistic before this project.

Beyond the archaeology-focused outcomes, the team has a new sense of social and professional cohesion. We communicate throughout the year, checking in, sharing stories, planning joint projects, and trading advice. We present conference papers and write together, and sometimes our projects unfold in unexpected directions, such as a recent exhibition

of Damarany's photographs at the University of Michigan's Kelsey Museum of Archaeology in Ann Arbor (the Kelsey is the institutional home of Richards and Davis). In informal interviews conducted by Davis over the course of the past two years, almost all team members mentioned, unprompted, that work at Abydos is special in part because of the team's positive energy. Comments that the team is, "like a family," were made frequently. People talked about how staff are kind to each other, express gratitude, and work actively to help each other.

As imperative as it is to save the ancient past, this project has emphasized that we all, also, want to live productive, happy lives in the present. We are grateful to ARCE and the AEF for helping us realize a vision of archaeological (re)discovery for Weni the Elder's mastaba tomb and, at the same time, professional renewal in stronger, more collaborative relationships with our colleagues. 🌱



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look at where we've been.



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SACRED BEASTS

**CONSERVING THE ANIMAL MUMMIES
IN THE SAN ANTONIO MUSEUM OF ART**

BY SARAH M. SCHELLINGER AND JESSICA POWERS

Ultraviolet-induced luminescence (UIL) image of the cat mummy. San Antonio Museum of Art,
gift of Gilbert M. Denman, Jr., oo.2016.1.

PHOTO: PEGGY TENISON, COURTESY OF SAN ANTONIO MUSEUM OF ART

A large, bold, yellow drop cap letter 'F' is positioned at the start of the first paragraph. The letter is stylized with a thick, uniform stroke and a classic serif design.

rom the Third Intermediate Period (ca. 1070–712 BC) through the Roman Period (30 BC–AD 395), the ancient Egyptians adopted the practice of mummifying animals to serve as votive offerings that accompanied petitions to the gods. The animals were dedicated to the god or goddess to whom they were sacred, for example, ibises to Thoth and raptors to Horus. This custom resulted in the mummification of millions of animals, which were deposited in cemeteries associated with temples throughout Egypt. Nine of these votive animal mummies are now in the collection of the San Antonio Museum of Art: three

crocodiles, three raptors, two ibises, and a cat. Although the ibis mummies were displayed in the past, concerns about the other mummies' condition and uncertainty over the nature of the remains they contain deterred Museum staff from exhibiting them. Recently, the Museum undertook a thorough study of the animal mummies with the generous support of an Antiquities Endowment Fund (AEF) grant from the American Research Center in Egypt (ARCE) for their conservation.

The animal mummies entered the Museum between 1991 and 2005 as donations from Gilbert M. Denman, Jr., and Beryl and Henry McCleary. A San Antonio attorney and a longtime trustee of the Museum, Mr. Denman began acquiring Egyptian, Greek, and Roman art in the 1960s and was instrumental in establishing the Museum's collection in this field. He donated his Egyptian collection, including the crocodile and cat mummies, in 1991, and two ibis mummies entered the Museum as part of his bequest in 2005. The McClearys lived in Egypt, where Mr. McCleary worked in petroleum exploration as a geophysicist with Amoco Oil Company from 1963-1967, before relocating to Texas. In 2003, Mrs. McCleary gave the Museum three raptor mummies and a lidded pottery jar that the couple acquired while in Egypt. >>



Cat mummy, before conservation. San Antonio Museum of Art, gift of Gilbert M. Denman, Jr., 91.80.206

PHOTO: MIMI LEVEQUE

The Museum’s study of the animal mummies began in the spring of 2017 and included non-invasive imaging, a conservation survey and treatment, and photography. To protect their fragile linen wrappings in storage and during the movements required for the project, Museum staff first constructed archival storage boxes, designed by conservator Mimi Leveque of ArchaeaTechnica and custom-fitted to the shape of each mummy. In April 2017, X-ray imaging and CT-scanning were performed at the Radiology Department at University of Texas Health San Antonio, under the supervision of radiologist and department chair Dr. Pamela Otto. Dr. Rob Coke, Director of Veterinary Care at the San Antonio Zoo, assisted with interpretation of the images. The X-rays and CT-scans allowed the identification and study of the animal remains within each mummy without unwrapping and damaging them. Ms. Leveque drew on these images to plan treatment of the mummies, which she carried out on two trips to San Antonio in June 2017 and February 2018. Following their treatment, the animal mummies were all photographed. The project culminated in a spring 2018 exhibition that presented the results of this investigation.



Cat Mummy

Although Ms. Leveque treated all of the Museum’s animal mummies, one – the cat (91.80.206) – became the highlight of the project. Gilbert M. Denman, Jr., purchased the mummified cat at auction from Christie’s London in 1970, as part of the same lot as the crocodile mummies described below. He gave it to the Museum with his Egyptian collection in 1991.

X-ray image of cat mummy. San Antonio Museum of Art, gift of Gilbert M. Denman, Jr., 91.80.206

PHOTO: RADIOLOGY DEPARTMENT AT UNIVERSITY OF TEXAS HEALTH, SAN ANTONIO

The mummy was badly damaged: it was folded in half, the linen bandages had become partly unwrapped, and some of the bones were protruding through gaps in the wrappings. In this unstable condition, the cat could not be transported to an off-site conservator for treatment, and this situation prompted the Museum to apply for support from the AEF grant to bring Ms. Leveque to San Antonio. Her treatment, presented here, resulted not only in stabilization of the cat mummy but also in the unexpected discovery of its painted shroud.

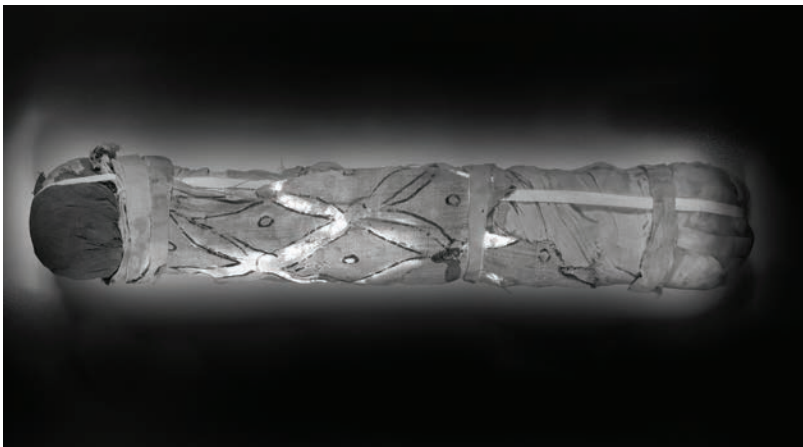
Radiography confirmed the presence of an adult feline skeleton, which suffered extensive damage to the mid-section where the bundle had been bent into a compact U-shape. Although a portion of the front of the cranium is missing, it is mostly intact. Some of the upper body vertebrae seem to remain in the correct position, but one humerus was fractured mid-shaft. Both femurs are missing, presumably

lost through the damaged area of the wrappings. A mixture of disarticulated bones, including vertebrae, radii, ulnae, phalanges, and ribs, were identified in the lower portion of the bundle.

Examination revealed that the cat probably became infested with dermestid beetles while it was being embalmed. The wrappings contained considerable quantities of frass and bodies of adult beetles, and the linen is covered in flight holes from the escaping adult beetles. The beetles consumed all of the cat's flesh and some of its fur, and as a result, the two overlapping layers of linen wrappings hung loosely around the skeleton. A long strip of red linen, attached by thin linen bands around the neck, covered the cat's head. Although there are no known examples of the use of red linen to wrap animal mummies, examples of pink linen have been found on some animal mummies in the Egyptian Museum. During its conservation treatment, the cat mummy was gently straightened from the curled

Mimi Leveque consolidating
cat mummy remains into
Tyvek bags
PHOTO: SARAH SCHELLINGER





TOP: Cat mummy, after conservation. H. 20 in. (50.8 cm), w. 7 in. (17.8 cm). San Antonio Museum of Art, gift of Gilbert M. Denman, Jr., 91.80.206

PHOTO: PEGGY TENISON, COURTESY OF SAN ANTONIO MUSEUM OF ART

BOTTOM: Visible-induced luminescence (VIL) image of the cat mummy. San Antonio Museum of Art, gift of Gilbert M. Denman, Jr., 91.80.206

PHOTO: PEGGY TENISON, COURTESY OF SAN ANTONIO MUSEUM OF ART

position, and the wrappings were removed from the lower portion of the bundle. Neither of the two layers of linen wrappings was very sturdy, and the inner layer was weak and fragmentary. An ancient sewn repair on the fabric's bottom edge indicated that it had served another purpose before its incorporation in the cat mummy's wrappings, further compromising its integrity. Ms. Leveque experimented with realigning the original linen wrappings, but they proved insufficient to contain the cat's extremely deteriorated remains. She developed an innovative solution: the fur, soft tissue, and bones were removed and wrapped in modern linen bundles that were secured in packets made of nylon stockings, and the powdery material was placed in Tyvek bags. These packets were placed within the original inner wrappings with additional modern linen for support. The ancient linen wrappings were secured with bands of new linen and covered with tea-dyed silk crepe. To provide additional support, a brace was created from strips of heavy Japanese kozo paper covered with modern linen. The cat mummy was secured to this brace with two modern linen straps.

The process of examining and stabilizing the cat's wrappings revealed a fragmentary painted linen shroud, which probably once covered the lower body below the red cloth over the head. The shroud was attached with linen bands at the neck, and additional straps seem to have secured it around the body. The original number of straps and their positions are not certain, but indentations and abrasions on the painted cloth indicate that at least some bands had been tied horizontally across it in the past. The shroud, which is woven from coarser threads than the cat's inner wrappings, was cleaned and gently straightened. Its painted design mimics a bead net dress. The pattern, outlined in black, consists of red lozenges separated by blue borders that evoke tubular faience beads; a circle at the center of each lozenge may have been filled with another color. Traces of the red, black, and blue pigments remain visible to the naked eye. Ultraviolet-induced luminescence (UIL) images of the shroud highlighted the red and black pigments, probably an iron oxide and a carbon black; further analysis is necessary to identify these pigments precisely. Visible-induced luminescence (VIL) images confirmed the use of Egyptian blue, which fluoresces under infrared light, and revealed more extensive traces of the pigment. Although painted shrouds with similar patterns are known from human mummies of the Roman Period, we are unaware of any other example on an animal mummy. Its presence here may reflect a modern reuse of the painted shroud in an attempt to make the cat mummy more appealing to early twentieth-century collectors.

Crocodile Mummies

The Egyptian collection that Mr. Denman donated to the Museum in 1991 included four mummies

(91.80.110.a-d) that he acquired together with the cat at a London auction in 1970. The mummies were catalogued for the sale as “alligators” and arrived at the Museum in an old wooden cigar box that housed the four mummies and several additional strips of ancient linen. Museum staff doubted whether the small linen bundles actually contained crocodiles, or indeed any animal remains, but X-ray images confirmed that all four were mummified neonatal crocodiles.

The X-ray of one of the crocodile mummies (91.80.110.a) revealed a neonatal crocodile with its tail bent around the body. (Layers of resin and oil coating the linen wrappings rendered areas of this mummy radiopaque.) The crocodile’s snout is visible through a small opening in the wrappings at one end of the mummy. The linen used to wrap this crocodile consists of narrow bands made from several fabric scraps and secured with string. The linen strips remain tight and needed little treatment; a few loose threads were set with a solution of 4% methyl cellulose in distilled water.

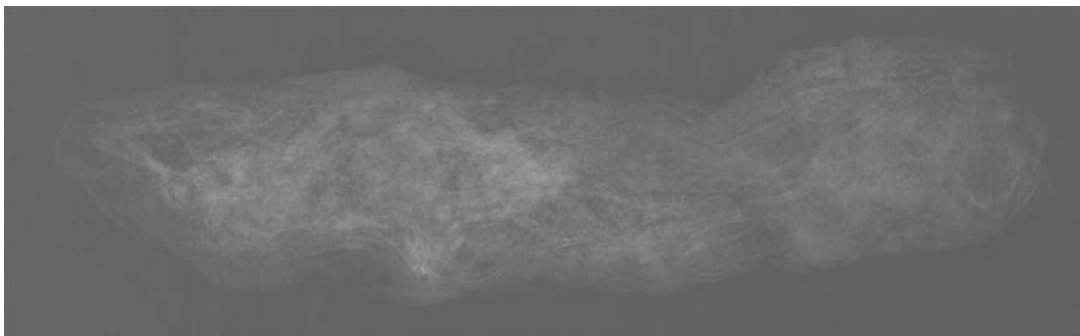
Mummies 91.80.110.b and 91.80.110.d each contained part of a neonatal crocodile, with the tail, hind limbs and part of the spinal column in B and more of the spine in D. Examination of the skeletons and of the wrappings indicated that the two bundles originally

belonged to a single mummy that was broken into two pieces. The wrappings consisted of two layers of linen bound with linen strings, the outer layer folded twice to make thick bands. The linen is stiff and brittle due to the coating of oil and resin, and the bands had become loose. After slightly humidifying the linen, Ms. Leveque repositioned the two sections and attached them with Japanese kozo tissue and strands of toned cotton embroidery floss; the join and the loose linen bands were secured with methyl cellulose solution.

The X-ray of crocodile 91.80.110.c revealed the head and front legs of the animal. Its wrappings are similar to those of crocodile mummy 91.80.110.b-d. The exposed end of the crocodile, with clearly visible underbelly scales, was left uncovered for future study. A secondary break along the jaw line and neck was stabilized with Japanese kozo tissue secured with methyl cellulose solution, and loose sections of the linen wrappings were reattached.

Ibis Mummies

Both of the Museum’s ibis mummies (2005.1.36 and 2005.1.37) were discovered during the Egypt Exploration Fund’s excavation of the ibis cemetery at Abydos in 1914. They were among objects sent to London in accordance with the excavators’ partage



LEFT: X-ray image of crocodile mummy. San Antonio Museum of Art, gift of Gilbert M. Denman, Jr., 91.80.110.a

PHOTO: RADIOLOGY DEPARTMENT AT UNIVERSITY OF TEXAS HEALTH, SAN ANTONIO

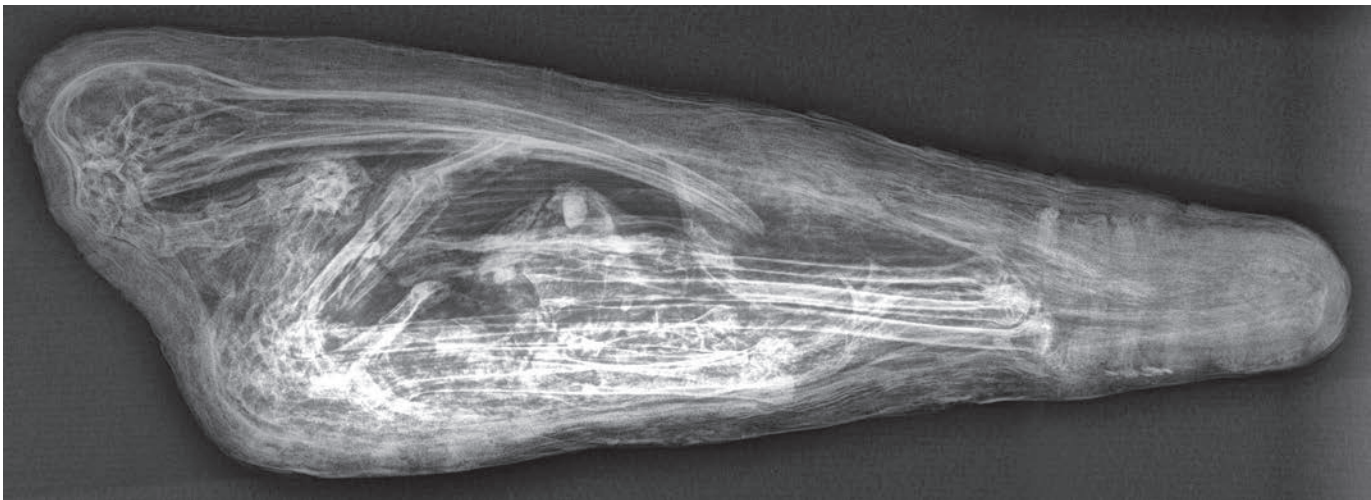


Crocodile mummy. L. 4 1/2 in. (11.4 cm). San Antonio Museum of Art, gift of Gilbert M. Denman, Jr., 91.80.110.c

PHOTO: PEGGY TENISON, COURTESY OF SAN ANTONIO MUSEUM OF ART



Ibis mummy. Max. h. 4 1/2 in. (11.4 cm), w. 15 1/2 in. (39.4 cm). San Antonio Museum of Art, bequest of Gilbert M. Denman, Jr., 2005.1.36
PHOTO: PEGGY TENISON, COURTESY OF SAN ANTONIO MUSEUM OF ART



agreement and were put on display there in the summer of 1914. In 1915, the Egypt Exploration Fund distributed twenty ibis mummies to American museums. The Toledo Museum of Art purchased four, which were subsequently deaccessioned in 1991. Mr. Denman purchased two of these at a Sotheby's auction in 1993 and placed them on loan with the San Antonio Museum of Art. After Mr. Denman's death in 2004, the ibis mummies entered the Museum's permanent collection as part of his bequest.

X-ray and CT-scan images revealed that the ibis mummies were preserved in the two distinct positions that Egyptian embalmers used to arrange

the birds before wrapping them. In one arrangement, used for ibis 2005.1.36, the head was raised with the long neck compressed in an S-curve and the beak tucked down against the breastbone. In the second position, employed for ibis 2005.1.37, the head and neck were bent down along the abdomen between the wings, with the long beak projecting beyond the wings. In both positions, the bird's feet were bent underneath the wings.

Ibis 2005.1.36 was wrapped with a pattern of alternating dark brown dyed and undyed linen strips. The bottom layer of linen was attached to the mummy with dots of resin. Over time, the dark

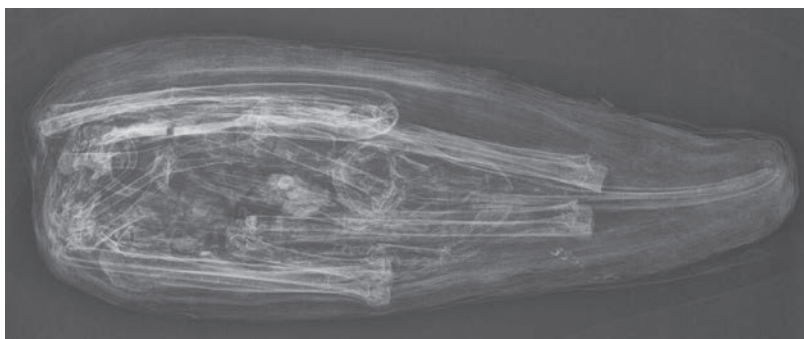
X-ray image of ibis mummy. San Antonio Museum of Art, bequest of Gilbert M. Denman, Jr., 2005.1.36

PHOTO: RADIOLOGY DEPARTMENT AT UNIVERSITY OF TEXAS HEALTH, SAN ANTONIO



linen had become particularly brittle, and much of the dyed bands that originally formed the pattern is now deteriorated or lost. The use of oils and resins also caused the undyed linen strips to become brittle, resulting in smaller breaks and losses. Ms. Leveque stabilized the weakened linen strips by inserting thin pieces of modern linen, tinted dark brown, into the recesses where the original dyed strips were along the mummy's right and left sides. The conservator attached modern linen to the ancient fabric with tinted Japanese *kozo* tissue set with methyl cellulose solution. Tea-dyed silk crepe line secured with methyl cellulose gel stabilized an additional split in the linen strips on the proper left side of the mummy.

The outer wrappings of ibis 2005.1.37 include an intricate geometric pattern consisting of three rectangular coffers created with strips of dyed and undyed linen. The light and dark bands divide the coffers diagonally, and the colors alternate so that each successive coffer is the mirror image of the previous one. Additional strips of dyed and undyed linen extend from the coffers to the ends of the mummy. The bottom and sides of the ibis mummy were covered with an outer wrapping of a fine, warp-faced linen. Extensive losses to this outer layer, especially around the bottom, revealed that the inner wrappings included four additional pieces of fabric, each with a distinct weave pattern. The possibility of encasing the entire mummy in silk crepe line to contain the brittle and flaking linen was considered but rejected because of the risk of damage by abrasion to the original fabrics. Instead, loose pieces of fabric were reattached with methyl cellulose gel and protected



with Hollytex non-woven polyester tissue. The loss on the underside of the mummy was secured with black silk crepe line adhered with methyl cellulose gel.

Raptor Mummies

Beryl and Henry McCleary acquired three raptor mummies (2003.50.1-3), together with a fourth that was not given to the Museum, in Egypt between 1963 and 1967. The mummies were accompanied by a coarse, undecorated clay jar with a conical lid (2003.50.1.1-2). The jar is similar to containers associated with raptors deposited in the animal catacombs of the North Saqqara necropolis.

The X-rays of the three raptors all showed complete skeletons of small birds of prey. Two of the raptors, 2003.50.1 and 2003.50.3, were positioned with the legs close to the torso and the tail feathers forming the length of the bundle. The second bird of prey, 2003.50.2, was wrapped with the wings tucked into the body and the legs extended. Damage to the wrappings has exposed the top of the head, the beak, the claws of the right foot, and some feathers of raptor 2003.50.1 and the beak of raptors 2003.50.2 and 2003.50.3. All

TOP: Ibis mummy. Max. h. 3 ½ in. (8.9 cm), w. 13 in. (33 cm). San Antonio Museum of Art, bequest of Gilbert M. Denman, Jr., 2005.1.37

PHOTO: PEGGY TENISON, COURTESY OF SAN ANTONIO MUSEUM OF ART

BOTTOM: X-ray image of ibis mummy. San Antonio Museum of Art, bequest of Gilbert M. Denman, Jr., 2005.1.37

PHOTO: RADIOLOGY DEPARTMENT AT UNIVERSITY OF TEXAS HEALTH, SAN ANTONIO

three mummies were tightly wrapped in linen coated in oils and resins. Losses from the outer wrappings of mummies 2003.50.1 and 2003.50.3 revealed that they were prepared in a similar manner, with at least three pieces of linen making up the wrappings. Mummies 2003.50.2 and 2003.50.3 both had deep holes at the back of the neck that were probably used in the past to hang or mount them. The holes were filled with toned

Japanese *kozo* tissue, which was attached with methyl cellulose solution. The latter raptor's wrappings were lifting from the surface of the mummy and preserved traces of a thick, non-soluble adhesive from an old repair attempt. This adhesive was softened with poultices of acetone and isopropanol, and flaking areas of the linen wrappings were repositioned and secured with methyl cellulose solution.



LEFT & ABOVE: Raptor mummy with clay jar. Raptor: h. 9 3/4 in. (23.8 cm), w. 3 in. (7.6 cm); jar: h. without lid 14 1/2 in. (36 cm), max. diam. 5 1/4 in. (13.3 cm). San Antonio Museum of Art, gift of Beryl N. and Henry G. McCleary, 2003.50.1, 2003.50.1.1-2

PHOTO: PEGGY TENISON, COURTESY OF SAN ANTONIO MUSEUM OF ART

Installation view of *Egyptian Animal Mummies: Science Explores an Ancient Religion* at the San Antonio Museum of Art (23 March–1 July, 2018)

PHOTO: PEGGY TENISON, COURTESY OF SAN ANTONIO MUSEUM OF ART



Exhibition

The animal mummies conservation project has made it possible to place the Museum's nine mummies on display together for the first time. The exhibition, *Egyptian Animal Mummies: Science Explores an Ancient Religion*, shared with the public the information we learned from studying the animal mummies through X-rays, CT-scans, and multispectral photography images. The animal mummies were displayed together with a selection of bronze statuettes and animal mummy reliquaries from the Museum's permanent collection to illustrate the important role these votive offerings played in Egyptian religion in the 1st millennium BC and early 1st millennium AD. Curated by Dr. Schellinger, the exhibition was on view from March 23-July 1, 2018. Following the exhibition, individual mummies will be incorporated into the Museum's permanent ancient Egyptian collection galleries. 🌸

Dr. Schellinger is a Visiting Scholar and Lecturer in the Departments of Near Eastern Languages and Cultures and History of Art at the Ohio State University. From 2016-2018, she held the inaugural Andrew W. Mellon Foundation Postdoctoral Curatorial Fellowship at the San Antonio Museum of Art.

Dr. Powers is the Gilbert M. Denman, Jr., Curator of Art of the Ancient Mediterranean World at the San Antonio Museum of Art.

ACKNOWLEDGMENTS

We gratefully acknowledge the assistance of the following people without whom this project would not have been successful: Dr. Pamela Otto, Jeanette Hernandez, Mary Lou Jew, Emily M. Tarin, Yvette Garza, and James Charlie Berry (University of Texas Health San Antonio); Dr. Rob Coke (San Antonio Zoo); Mimi Leveque (ArcheaTechnica); Dr. Salima Ikram (American University in Cairo and Animal Mummy Project); Dr. Lidija McKnight (University of Manchester and Animal Mummy Bio Bank); Dr. Adam Levine and Caitlin Jewell (Toledo Museum of Art); and Peggy Tenison (photographer). Our research and the accompanying exhibition were supported by the Andrew W. Mellon Foundation, the American Research Center in Egypt Antiquities Endowment Fund, and generous donations from members of the San Antonio Museum of Art.



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Area M3 of the Temple of Repit, prior to excavation

Conservation

at the Temple of Repit in Athribis



and Training

**A PTOLEMAIC TEMPLE WITH A VIBRANT HISTORY IS THE
FOCUS OF AN ARCE AEF GRANT** BY LUCIE PIERI AND MARCUS MÜLLER

The temple of Repit in Athribis, Upper Egypt, is one of the last unexplored large stone temples of the Ptolemaic era. It is located a little over six miles (10 kilometers) west of the modern city of Sohag, close to the Red and White Monasteries. Excavation concluded last year, following a 16-year multidisciplinary project led by Christian Leitz and directed in the field by Marcus Müller (Eberhard Karls-Universität Tübingen, Germany). During this time the team carried out archaeological excavation of the temple and research on the archaeological remains; as well as epigraphic, architectural, and art-historical

studies. Since 2012, a team of international conservators has provided emergency conservation measures for archaeological finds and excavated areas of the temple, as well as for the limestone blocks of columns, walls, architraves, and ceilings that have been moved to newly created storage space.

As the excavation phase came to an end, the Egyptian Ministry of Tourism and Antiquities expressed their desire to open the site to visitors, as part of its plan to develop tourism in the Sohag area. Fresh from excavation, many areas were still unfit for public opening, presenting safety issues for would-be visitors because of gaping holes and broken floors, as well as the risk of irreversible losses for the temple due to weak stone reliefs and detached painted layers.

The eastern ambulatory, L1



Thanks to the generous support of the American Research Center in Egypt, through the awarding of an Antiquities Endowment Fund (AEF), a targeted conservation project allowed us to carry out emergency treatment of a very large area of the temple, as part of the Athribis Season XVII (Fall 2018 to Spring 2019). The aim of our project was to mitigate the risk of irreversible loss by consolidating the stone reliefs and painted layers in three large areas of major significance and to provide temporary protection for the temple, before the opening of it to the public.

Additionally, the project provided training to Egyptian conservators from the Sohag Conservation Office, which was responsible for overseeing all the practical work under the supervision of the project's team of foreign conservators. The training program including theoretical aspects, as well as a guided approach to practical conservation work specifically designed for this project.

Presentation of the Site

The temple, dedicated to the lion-goddess Repit, her husband Min, and their son Kolanthes, was built under the reign of Ptolemy XII (81-58 and 55-51 B.C.). Its decoration was completed over a period of 200 years, the inner part under Ptolemy XII, then during the reigns of the first century Roman emperors Tiberius, Caligula, Claudius, Nero, Vespasian, Titus, and Domitian. Additionally, repurposed stone blocks inscribed with the name of Emperor Hadrian were discovered in a secondary door blocking dating to the Late Roman Period. It was perhaps in the 2nd and 3rd centuries A.D. that stables were built in the western courtyard M3, perpendicular to the temple wall, thereby partly damaging the reliefs and hieroglyphic texts that were part of the conservation program financed by the AEF grant.

Presumably in the mid-4th century, the temple became part of a Coptic nunnery and was greatly transformed by the addition of monastic installations: the main entrance was blocked and a church was built in front of it. Workshops were installed in the main sanctuary and other rooms of worship, leaving behind ceramic vessels and large masonry vats, perhaps used for dyeing textiles, as well as water canals dug into the stone floors.

During this period decorative elements were destroyed or damaged, in particular divine figures and symbols were meticulously hacked or covered with a lime-plaster, which actually ended up protecting the painted layers beneath. The northern ambulatory L2 was largely transformed by cutting the column bases and by building an imposing gate with pilasters, thus creating a new space within the ambulatory that

was defined with sockets on the floor. It was during this Coptic reuse of the temple that its three crypts containing valuable goods were plundered.

In early medieval times following the Arab conquest in 642, the temple was again repurposed. It was as early as the 8th century that the roofs and columns of the large pronaos (room A) and the roof of the following room B collapsed, most likely caused by human interference because the walls of the temple show no evidence of earthquake damage. The fallen blocks were removed and the rooms were cleared. Both rooms were divided into several smaller rooms by walls built of mudbricks and reclaimed limestone spoils, with stone tiled floors. In the pronaos these rooms are aligned along a surprisingly prestigious corridor with small columns of fired bricks. Two of these rooms served as kitchens, with others delegated as workshops and for storage. In room B a complete wall was even built by installing small Late Roman stone columns side-by-side. Large jars and small pots that were excavated in the floor indicate the storage of food and hearths point to cooking activities. Other rooms were mainly used as stables and waste deposits, for example in the eastern ambulatory L1, where a great deal of work financed by the AEF grant was executed. From the mid-10th to mid-11th centuries the temple then served as quarry for building stones and lime production until its ruins disappeared under debris and sand, where it remained for centuries.

As with many other sites across Egypt, the temple was first partly excavated by Flinders Petrie from 1907-1908. During a blitz one-month campaign, trenches were dug along the walls to establish a ground map and document some of the reliefs. The temple then remained untouched until the end of the 20th century, when the Egyptian Antiquities Organization (EAO) led the next campaign from 1981-1997. One third of the temple was left unexcavated due to the fact that these areas were covered by massive stone blocks, parts of the collapsed ceiling, columns and walls. Work only resumed in 2003 with the Eberhard Karls-Universität Tübingen project led by Christian Leitz and field directors, Rafed el-Sayed (until 2011) and Marcus Müller (since 2012). The stratigraphic excavation of the remaining buried section of the temple began in 2012, together with the removal of more than 400 collapsed blocks of up to 32 tons (columns, capitals, architraves, ceilings, and walls).

Materials and General Condition

The temple consists of limestone blocks from the local quarries in the mountain overlooking the site, sculpted in sunken and raised reliefs and painted. The quality of





the stone is poor in some areas, as evidenced by sculpted plaster fills. Painting surfaces consist of a thin white preparation layer, painted in six limited colors: red, yellow, blue, green, black, and white. Two or three main decoration phases can be observed: the main sanctuary and central area were sculpted and painted under the reign of Ptolemy XII, whereas the outer areas were sculpted then partially painted in the Roman period.

The main damages encountered are the fragmentation and disintegration of the limestone, as well as detaching and powdering paint layers. EAO-led conservation in the 1980s also used inappropriate materials such as cement when making repairs, which is damaging in the long-term.

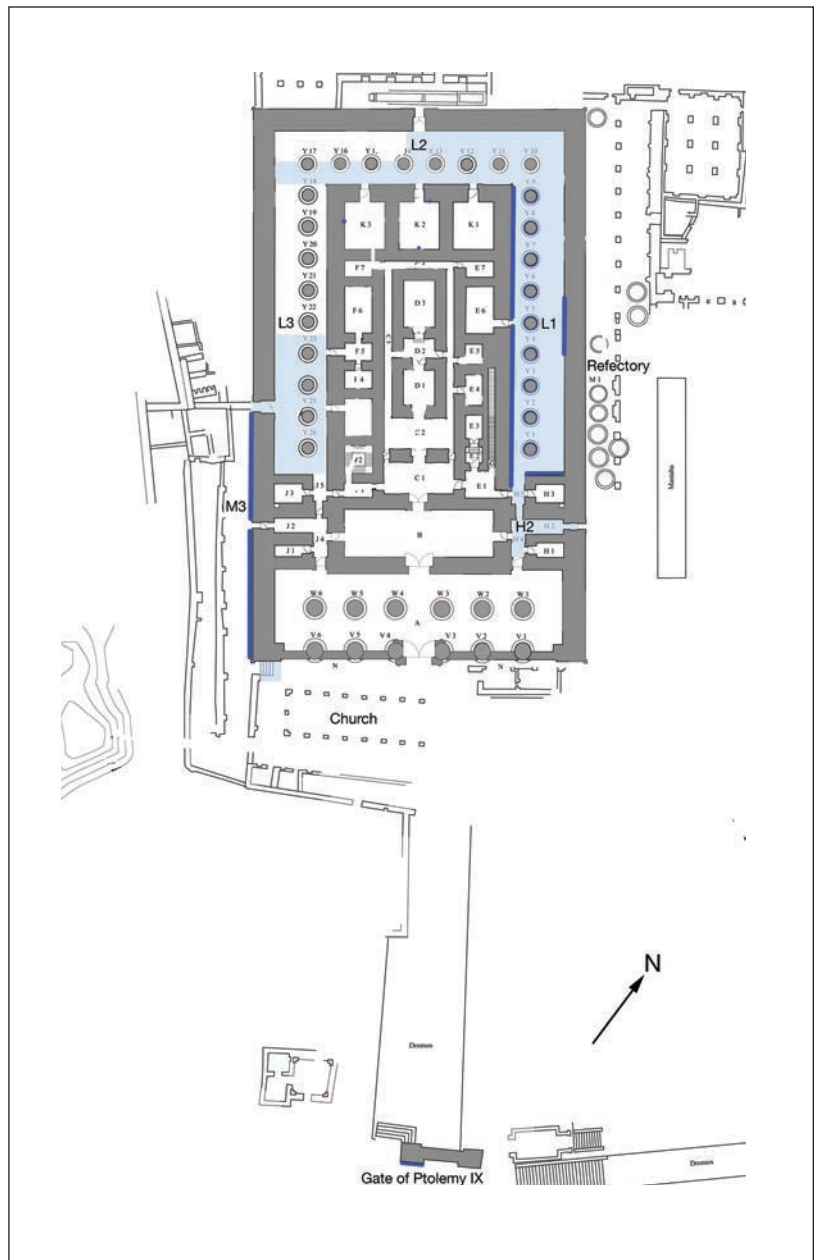
The whole temple is contaminated by soluble salts, which appear as isolated crystals or extensive

crusts that are brown and opaque in color (resulting from the salts mixing with soil). This has been linked to monastic-period installations of fabric dyeing vats that used sodium chloride as a mordant and medieval-period reuse of the temple as stables for animals, which led to nitrate contamination in many areas (animal waste is a source of nitrate salts). Over time, repeated cycles of dissolution/crystallization of salts, driven by variations in relative humidity and temperature, produce mechanical stress and cause the stone to crumble. Salt crystallization can also cause the detachment of painted layers.

Project Objectives

Over the last five seasons (2012-2018), a conservation team consisting of various European

A general view of the eastern ambulatory, L1



professionals has been responsible for emergency treatments of the areas recently excavated, as well as re-treating some areas excavated in the past under EAO direction.

In 2016, the scientific team made a proposal for a visitor walkway – a guided tour that would take the visitor through 18 representative “stations” or viewpoints, showing some of the most characteristic rooms. It was updated in January 2019 to include two more stations (rooms F3 and E1). This tour proposal was used as basis to set the priorities for the next conservation plans, together with a general overview of the condition of the stone and painted layers, summarized in “risk maps,” which give a visual overview of the areas at risk of higher loss for stone and for painted layers. These “maps” are

created by crossing the visitor walkway proposal with our condition assessments, thereby identifying the priority areas for treatment inside the temple.

An important part of the conservation work was already completed throughout the previous seasons. Nevertheless, significant areas were still in need of urgent treatments.

As previously stated, the aim of this project was to provide conservation treatment to three primary areas of the temple:

- The eastern ambulatory L1, specifically the western wall and the 9 columns
- The south section of the western outer wall M3 up to human height
- The limestone floors in the ambulatories L1, part of L2 and L3

Blue indicates areas of the temple that were targeted for treatment as part of this project

Treatment was only made possible with the AEF funding, as the surfaces were too large to be conserved with the restricted resources available in previous seasons. These areas feature some of the most important scenes (geographical processions) and texts (bandeau text, hymns to Repit and Min), as well as some of the best-preserved and most colorful paintings. The western exterior wall, in specific, still has the remains of rare painted layers, making it a priority for preservation.

Additionally, we were also able to carry out limited conservation treatments on the south and east wall of L1, as well as some emergency treatments on structures outside the temple: part of the Gate of Ptolemy IX and the Coptic church's northern staircase that gives access to the court M3.

Condition of the Target Areas

Ambulatory L1

The ambulatories or colonnades (L1, L2, L3) surround the inner rooms on three sides. The eastern ambulatory L1 was only partly excavated by Petrie and the EAO, and most of the area was excavated between 2012 and 2014 after the removal of a number of huge collapsed blocks.

The lower part of the walls and columns was covered with a thick lime and sand plaster during the

early Coptic occupation, which has partly protected the paintings beneath. In 2016, the decision was made to partially remove this remaining Coptic-period plaster, which was already detaching in places, in order to reveal the inscriptions and iconography underneath. On the western wall, the Coptic layer was kept in the sunken relief hieroglyphs whenever possible, as this ensures sufficient understanding of the text while providing a continued protection of the pigment layer.

Emergency treatments, like consolidation of the stone and re-attachment of fragments had been implemented over the previous seasons. Emergency consolidation of polychromy had only been addressed in an ad hoc manner due to lack of resources.

At the time of the project only minor structural alterations remained to be treated, such as powdery original plaster fills. The primary conservation concern was the extensive detaching of the painted layers, mostly on the columns and the west wall, which retain the largest painted surface of the temple (approximately half the surface of the columns and 70% of the western wall).

Therefore, the focus of this area was to complete the emergency treatments by consolidating the extensively detached paint layers to avoid further losses, as well as completing minor structural consolidation of powdery stone and plasters.

The south section of the western outer wall, M3



Exterior wall M3

The western temple wall in the court M3 is one of the best-preserved wall sections with a length of more than 246 feet (75 meters). The upper part of the western wall (up to the top of the bandeau text) was excavated during the EAO-led campaign in the 1980s. The bandeau text and sub-basement remained hidden underneath the level of the secondary Late Roman floor (Coptic occupation). Authorization to remove part of this floor to excavate along the wall was obtained during Season XII (winter 2013-2014) of this project, but only in a 5 foot (1.5 meters) large trench.

The southern section of the M3 wall was chosen for this project as an emergency area to treat before the opening, as potential visitors would need to go through a very narrow passageway along the southern half, and may cause damage to the remaining fragile limestone reliefs and painted layers.

The limestone was very powdery in many areas, probably due to medieval reuse of the area as stables. In places it was as soft as chalk and could be scratched with a fingernail. Many areas presented ongoing delamination of the stone relief (fractures parallel to the surface), which could be identified by the hollow sound one hears when carefully knocking on the surface, as well as moving fragments. Additionally, many transversal cracks, fractures, and open joints could be seen by the naked eye.

As the southernmost and northernmost part of the M3 wall were already treated in 2016 and 2017/18, the focus of this project was on the last untreated part, in the center between the door to L3 and door to J2. The upper part of the wall had already been partially treated by the previous conservation team and the project time frame did not allow us to treat the whole height of the wall at the same time as the treatment of L1; therefore, the treatment was limited to the lower part up to standard human height *id est* up to the top of the fifth stone course. Further treatments of the upper part of the wall will be planned for in the future, in particular the re-attachment of painted layers above the bandeau text, as well as the removal of old cement fillings followed by lime plaster reintegration.

Floors

Floor blocks pathologies are similar to those of elevations blocks. The original floors are in a very irregular state of preservation, due to the heterogeneous quality of the local stone. Some slabs are very well preserved with a smooth surface, while other blocks were disintegrating or showing detachment of fragments. Additionally, the floors have been exposed to erosion and mechanical alterations during the periods



of occupation and reuse, and then again following archaeological excavation due to the activity on the site (passage of workers with wheelbarrows, etc.).

The floor blocks between the columns and the outer wall are partially collapsed towards the center. This is an original construction defect: the foundations were filled in with a heterogeneous material which settled down and left substantial voids. In some areas (mostly the north-eastern corner of the temple) the original blocks are completely missing due to their reuse at later periods, either for new constructions or for the production of lime.

Preserving the original limestone floors to make them visible (instead of hidden under a layer of protective sand) was a priority as it greatly enhances the whole architectural understanding and appreciation of the site by restoring an optical unity to the temple,

The walls in L1 prior to treatment for painting detachment



Conservators at work

retaining its authenticity, and improving the overall visitor experience.

Treatment Strategy

Priority was given to preventive measures over remedial conservation and restoration was kept to a minimum

1. *Preventive measures* to avoid or reduce damages included: identifying fragile areas and signal them visually to other workers, installing temporary protections (removable “band-aids” made of Japanese paper or gauze with a light glue; light roofs or screens to protect painted layers from sun and rain), and when possible, introducing durable protections (sturdy roofs).

2. *Remedial conservation* to stabilize condition and slow further degradation, including: consolidation of powdery stone and original plaster fills, re-attachment of fragments and detached painting layers, structural plaster fills and repointing of failed joints.

3. *Minimal restoration* to allow research (for example: removal of salt crusts and Coptic plasters to enhance the readability of the inscriptions) and to enhance visitor understanding and experience (for example: final plaster fills with reintegration of register lines and floor-blocks lines).

The overall conservation strategy also followed international deontology standards, in particular:

- *Respect for original materials* (including secondary reuse structures from the Coptic and early

medieval periods). Filling and injection mortars were formulated or chosen to be weaker than the original materials to reduce stress and act as sacrificial material that will deteriorate before the historic materials, as well as allow for removal without damage. Strength and durability were also considered, in order to account for the possible absence of maintenance of the site in the long term.

- *Use of compatible materials* that consider the nature and strength of the original materials and the outdoor desert environment. The goal of this is to achieve stability, readability and reversibility (or re-treatability). Mineral materials compatible with limestone and plasters were favored over organic ones: lime-mortar, lime-based injection mortars, and mineral stone consolidants. Synthetics adhesives such as acrylics or epoxy resins, which age rapidly, were used sparingly in areas not directly exposed to light and supported by a mineral treatment such as lime mortar edging or pointing. Natural adhesives were favored for the consolidation of painted layers to avoid creating a waterproof film that would close the porosity and trap the salts, thereby causing increased damages.

Each of the above interventions were documented through systematic reporting, digital photography, and graphical mapping.

Planning and Implementation

The 3,5 month-long conservation project was scheduled from early January to mid-April 2019 and involved more than 30 people: 7 foreign conservators and supervisors from France, Germany, Japan and Mexico, 12 Egyptian conservators, 6 local masons, and 2 carpenters; working in collaboration with a scientific team of archaeologists, Egyptologists, and an architect.

The project was managed by conservator Lucie Pieri, who has been participating in the Athribis Project for six seasons after leading the Ptah Temple Conservation Project in Karnak for the Centre Franco-Égyptien d'Étude des Temples de Karnak (CFEETK). The supervising team included six other conservators, most with extensive experience working in Athribis and other Egyptian sites. Benjamin Blaisot, who specializes in conservation of architectural heritage mostly in Mexico and Egypt, was in charge of the reintegration of the floors and construction of the protective roof. Claire d'Izarny-Gargas, who worked for many years at Karnak and with ARCE, supervised the team of Egyptian conservators together with Lucie Antoine, who had spent the last two years at the temple of Karnak working for the CFEETK. The team was completed by Satoko Toyoda, who implemented the mapping

documentation system. This team of five oversaw the launch of the project and training of the group of Egyptian conservators for the first two months. During the second half of the project, a reduced team of three took over: Lucie Pieri with Mariana Diaz de Leon, a conservator currently working for the Templo Mayor in Mexico City, assisted by conservation student Susanne Kulzer.

The supply of materials was organized well ahead of the project, as some conservation supplies had to be imported through a lengthy and costly duty procedure (namely the cellulose fiber used for poultices). Remaining conservation supplies such as injection mortars and adhesives were either brought in the team's personal luggage, or purchased through specialized import or medical companies in Cairo (solvents such as ethanol and acetone, epoxy resin, distilled water).

We endeavored to source many materials locally to enable local conservators to adopt the methodology with limited means: Arabic gum from Upper Egypt, hiba clay from Thot village near Luxor, and ammonium oxalate stone consolidant. This last item is produced in Egypt by El Nasr chemicals but unfortunately at the time of our project no stocks were available, so we sourced an Indian/Chinese product through a supplier in Cairo.

Lime putty for the floor reintegration was prepared before the start of the mission in November 2018, by slaking quick lime from Sinai in a concrete pit, then protecting it from evaporation by covering it with several layers of building plastic and a thick layer of sand. As there is no water supply on the site, all water had to be brought in barrels and canisters, either from the dig-house (tap-water) or from the village (filtered water), transported with wheelbarrows or with a motor-tricycle. A cistern was also rented to provide water pumped from the canals, which had a high organic content but was nevertheless adequate for slaking the highly basic lime.

The sand surrounding the site could not be used for mortars, as the grains proved too round and consisted of a poor grain size distribution. Therefore, building sand with angular grains was purchased locally. The other aggregates used in the mortars were crushed pottery sherds discarded from the excavation and a cream-colored limestone powder collected in the mountain overlooking the site, derived from the erosion of limestone, plus wind-born impurities.

Training of Egyptian Conservators

Many local conservators from the Sohag Conservation Office have already worked for several seasons in



the temple as trainees or contractors, and therefore have experience of the protocol established by our conservation team. Their participation in this project was essential to carry out the treatment of the very large target areas, and to create a specialized team of experienced local conservators for future care. Indeed, three conservators from this project team will be part of the future Sheikh Hamad Conservation Office, under the direction of conservator Sameh Awad: Mostafa Hassan, Sameh Kamal, and Ahmad Hosam.

Ten local conservators were selected amongst the employees of the Sohag Conservation Office through a fair interview process in October 2018: Noura Soliman, Hossam Faisal, Ibrahim Rezk, Ahmed Mohamed Hosam, Shimaa Nour El-Din, Sameh Kamal, Mostafa Abd El-Ghany, Mahmoud Ahmed El-Sherif, Hend Abden and Mohamed Abu El-Makarem. Two additional conservators, Mostafa Hassan Mahmoud and Omar Diab Al Youssef were recruited later on in February, as the need for more resources became

Conservators at work

apparent. The selection process relied on a practical condition assessment exercise followed by a technical question about conservation materials and treatments. A good level of English was an important criterion of selection, in order to enable them to benefit from the training as well as ensure good level of communication with the team during the project.

The training program was prepared and taught by five conservators during the first two weeks. The first week aimed at presenting the site (Lucie Pieri) and refreshing or teaching basic conservation knowledge in the fields of stone (Lucie Antoine), wall painting (Claire d'Izarny-Gargas), and architecture conservation/site management (Benjamin Blaisot). Between lessons, site visits and practical exercises in condition assessments enabled the team to familiarize themselves with the temple and discuss conservation concerns. Interesting debates were generated around the site's conservation and management issues.

During the second week the training focused on documentation, under the supervision of conservator Satoko Toyoda. The aim was to provide a full workflow for documentation and mapping of damages and treatment. The conservators photographed and formatted the photos, prepared the mapping layout, and mapped the damages on transparent acetates for columns Y1 to Y9. Three conservators were then selected to get further training and assist in the

digitalization of these damage mappings during the third week for half of a day.

Finally, conservators were introduced to practical work with demonstrations of the treatment procedure and preparation of conservation materials on site. They were then closely supervised during the first weeks of work. All interventions on site were carefully mapped using traditional paper and acetates method, which were then scanned.

The whole group showed interest and motivation throughout the theoretical training, as well as skill and application during the practical work. Their help was also extremely valuable to procure local supplies. Supervisors also participated in the treatment given the large areas targeted, thus forming a closely bonded team.

Preventive Conservation

Rare but violent rain episodes (for instance, the hail storm in 2014) are a continuous risk of damage to the remaining fragile paint layers. Preventive measures included the installation of a light temporary roof structure in area L1 over the columns and west wall. This structure has two aims: providing shade for the conservators as well as for the treatments, which should not dry too quickly (especially as this season was taking place late in the winter and early spring, with temperatures reaching 95°F or 35°C) and providing protection to the fragile painting layers from the rain

The floors in L1



and sun until a stronger more permanent structure could be planned and authorized.

The light roof made of wooden frames and stretched cotton fabric was built ahead of the project in November 2018 over part of the column as well as the west wall in ambulatory L1. Later in the season it was extended with a short canopy to fully protect the columns. The same system was used to cover rooms E2 and J2.

The structure is light and removable. The fixing system, consisting of an iron bracket anchored in the stone via a single screw, is fully reversible, but strong enough to avoid the roof flying away in strong winds. In terms of maintenance, it is expected that the fabric, which is a strong cotton cloth used for boat sails, will last for about three years. The frame can be reused as part of a longer-term solution, while the fabric replacement with another material can be discussed as part of an overall site management plan.

During the season, we also successfully integrated recommendations to alter the visitor walkway route in order to mitigate likely damages by visitor access. The main alteration was to the exit route from the temple after station 18, now redirected via room H2 and avoiding the fragile Coptic-period refectory.

Indeed, the structures most at risk after public opening are the secondary Coptic structures, such as the church and the refectory outside of the temple, which have not received any conservation treatment since cement plastering implemented in the 1980s. Additionally, some rooms inside the temple are too confined to allow visitors in without substantial damage: the Wabet E3, room J2, corridors C3, and C5. Different systems for blocking visitor access to fragile rooms were discussed: more dissuasive ways, such as low doors or mudbrick walls may provide better protection than ropes. However, the latter is the preferred option of the local authorities.

Conservation of Painted Reliefs

Conservation treatment of the painted reliefs was carried out over a period of 12 weeks by a team of 10, then 12, Egyptian conservators, supervised by two to three of the foreign team of conservators.

Prior to treatment all areas were carefully photographed. A high definition orthophotography (photo-mosaic) of the two large walls (west wall in L1 and exterior wall M3) was compiled by architect Matthieu Vanpeene. Additionally, specific alterations such as flaking of pigment layers and detachment of ground layers were photographically recorded in representative areas before treatment. These photographs formed the basis of detailed condition and treatment mapping. Precise architectural drawings produced by



Vanpeene, as part of his ongoing PhD, were used to map the condition and treatment of the floors.

The reconstructed west wall of L1

The treatment methodology was composed of the following:

- Detached stone fragments were re-adhered with minimal dots of epoxy resin followed by lime-mortar pointing.
- Delaminating stone (M3) was secured by injection of lime-based mineral grouts.
- Detached ground layers and pigment layers were re-adhered with Arabic gum.
- Voids behind detached ground layers too rigid to be re-adhered were filled with lime-based injection grout PLM-A.
- Ground layers were then carefully edged with custom-made lime micro-mortar. This provides further strengthening and additionally enhances the aesthetic.
- Consolidation of powdery pigment layers was carried out with Arabic gum. Remaining losses, cracks and joints were filled with custom-made lime-putty plaster.
- Partial removal of salt crusts with water poultice.

The removal of salts was selective, focusing on areas where crusts disrupted understanding and only after careful consideration. Water poultices readily dissolve and absorb salt crusts, but in the process a small part of the surface salts is redistributed inside the stone, which may be potentially deleterious to surface strata. Areas with well-preserved polychromy were therefore avoided or treated only after due diligence.

Furthermore, a small area of remaining Coptic plaster on column Y5 above a secondary Demotic inscription was carefully removed to allow its recording as part of the philology research. The careful mechanical removal was performed after applying cellulose fiber



The team in 2019 during a practical demonstration

and water poultices in order to dissolve the salts holding the plaster.

In addition to timetabled conservation work, completion of lime plaster repointing was achieved, as were some restoration treatments, such as further filling of losses with remodeling of register lines to enhance the understanding of the scenes.

Floor Reintegration

Tailored lime mortar and aggregate mixes were tested for filling larger gaps in the floors. The treatment was carried out by carefully trained local masons and workers under the supervision of a specialist conservator. The intervention consisted of consolidation of the historic stone (following the same methodology as for

the wall) and reintegration of missing volumes with two layers of lime mortar including coarse aggregates such as gravel and crushed ceramic to withstand visitor passage.

In the case of deep losses (more than 2 inches or 5-6 centimeters), a first layer either of wet compacted sand or thick mortar with a large size gravel aggregate was applied, followed the day after by a thin mortar with small sized gravel and crushed ceramic aggregates. Shallower losses required only a thin mortar application. The surface of the plaster was leveled, the height being defined by the edges or depths of existing slabs. The contours of the blocks were then lightly traced on the surface of the plaster following the architectural drawings and preliminary photos.



“The stratigraphic excavation of the remaining buried section of the temple began in 2012, together with the removal of more than 400 collapsed blocks of up to 32 tons”

strength. Mudbrick is a very versatile material, locally sourced and made, and easily adapted to fit to uneven floor levels. They are also strong yet easily removed if further archaeological research is needed.

Secondary water canals and door features, which would need to remain accessible for further research, were treated in the same way with the addition of a plastic interface between the feature and the sand to ensure easy future access to these important scientific elements.

Conclusion

Thanks to the AEF grant, this conservation project was a great success, resulting in the conservation treatment of a colossal 2,691 ft² (250 m²) of painted surfaces and in addition, most of the ambulatories floors. The training program was a very fruitful experience for the very committed Egyptian conservators, as well as for the conservators who taught them, resulting in enriching discussions and exchange of knowledge. It culminated in an English and Arabic presentation at the newly opened Sohag National Museum, attended by several conservation students and professors who also visited the site.

However, it must be stressed that some areas of this site remain in critical condition and should be kept closed to public access. The Coptic areas surrounding the temple (church, refectory, and monastery) are in a particularly fragile and unstable state. Conservation can provide stabilization, but in order to preserve fragile painted surfaces, appropriate protection systems should be installed to mitigate the unavoidable damages accompanying the flow of visitors.

Moving forward, the project will need an overall site management plan that integrates the different stakeholders (Egyptian Ministry of Tourism and Antiquities, the Supreme Council of Antiquities, archeologists and Egyptologists from Tübingen University) and relevant specialists (architects, conservators, and possibly engineers). After all the stakeholders have made their objectives clear, a plan of action will be devised for the benefit of the site, researchers, and the public. 🌱

The partially collapsed floor blocks between the columns and the outer wall of ambulatories L1 and L3 were also reconstructed. The reconstruction of missing block parts respects this condition, resulting in visible block angles. Over time it is expected that these repairs will be abraded, eventually blending with the existing fabric.

In areas where the blocks are completely missing the strategy was to use different materials, immediately recognizable as a later intervention, providing a stable, safe surface for walking as well as good aesthetic integration. A deep hole in the corner of L1/L2 caused by missing surface blocks was filled with clean sand and covered with mudbricks. These were laid with dry joints in a geometric pattern providing suitable mechanical



The cracks and missing areas of the funerary garden being filled with silt (without lime)



The Djehuty Project

**DISCOVERING A 12TH
DYNASTY FUNERARY GARDEN
IN THEBES**

BY JOSÉ M. GALÁN

A

Spanish archaeological mission coordinated by the Spanish National Research Council in Madrid has been working in Dra Abu el-Naga, at the northern end of the Theban necropolis on the West Bank of Luxor, since January 2002. The mission started focusing in and around the rock-cut tomb-chapels of Djehuty and Hery (TT 11 and 12), two high officials who served under Hatshepsut and Queen Mother Ahhotep respectively, ca. 1520–1460 BCE. The area was previously occupied by funerary shafts (20 have been located) and by mudbrick offering chapels

(four unearthed). They seem to have belonged to members of the royal family and of the Theban elite during the 17th Dynasty, between 1600 and 1520 BCE. Dra Abu el-Naga has been associated with the 17th Dynasty since in the mid-19th century when the obelisks of King Nubkheperre Intef and the coffins of the Intef kings, King Kamose and Queen Ahhotep were discovered there, together with luxurious funerary equipment.

However, this does not mean that the area was not occupied before the 17th Dynasty. In fact, in 2008 the Spanish mission discovered an 11th/early 12th Dynasty burial 3 feet (1 meter) below the floor of the open courtyard of the tomb-chapel of Djehuty (TT 11), including a wooden coffin painted in red with a polychrome inscription along its four sides and the lid. The mummy of its owner, called Iqer, was resting on his left side, with three staves and two bows placed along his body.

A large group of modern houses stood southwest of the open courtyard of Djehuty until the village was demolished in the winter of 2006/07 and the families that lived there were relocated to New Qurna. The following year, in exchange for removing the debris closer to the site, the Supreme Council of Antiquities granted the Spanish mission an extension to the

RIGHT: View of the site in February 2018. The funerary garden may be identified to the left (southwest) of the open courtyard of Djehuty's tomb-chapel (TT 11) and in front of an early 12th Dynasty rock-cut tomb

BELOW: David García documenting the garden's structure. The staircase is visible at the side facing the tomb





southwest. The excavation in this area began in 2011 and brought to light the above-mentioned 17th Dynasty mudbrick offering chapels and funerary shafts, in addition to four 11th/early 12th Dynasty large rock-cut tombs. The identity of their owners remains unknown, but the size and layout of the structures suggests that they must have been high-ranking individuals at the Theban court. Two of them share an open courtyard and in front of one of the entrances a small funerary garden was unearthed in 2017.

The garden measures 9 feet by 7 feet (or 3 meters by 2.2 meters), and has a maximum height of 1.3 feet (0.4 meters). The structure was made of silt, which was covered in a layer of white lime mortar to make it stronger. The interior is mostly divided into a grid of 23 squares measuring roughly 1 foot by 1 foot (30 by 30 centimeters) squares, separated from one another by 3 inch (8 centimeters) walls with rounded tops. It also contains three plots of different layouts and sizes, and two slightly elevated platforms in the middle that have circles of darker soil in the center. Between the perimeter wall and the inner grid is a channel 2 inches (5 centimeters) wide. The garden was built over a 1.3 feet (0.4 meters) mound of dark soil, which had been brought from the fertile plain and placed on the limestone floor of the courtyard's northeast half. Each square then acted as an independent planting area, and their silt walls helped retain the water within the individual small beds.

The aim of a so-called 'square foot garden,' also known as a 'waffle garden,' is to enable cultivation in a non-favorable environment by optimizing the available water, making them characteristic of arid areas. Its use as an agricultural installation for daily nourishment is already documented in the mastaba of Mereruka in Saqqara, ca. 2300 BCE. Archaeological evidence of such gardens has been found, for example, in the fortress of Uronarti (next to the Second Cataract), in Avaris (east Delta) and in el-Amarna (Middle Egypt). While from a completely different period and location, the similarities with the cultivation system used by Native Americans of the Zuni Pueblo in New Mexico (documented in photographs from the early 20th century) are quite remarkable.

Several square cells of the Dra Abu el-Naga garden contained desiccated seeds that had been planted around 4,000 years ago, which constitute a remarkable finding. Research is in progress, but archaeobotanists have already identified seeds of coriander (*Coriandrum sativum*) and of a non-sweet variety of melon (*Cucumis melo*), as well as several parts of flowers of the daisy family (*Asteraceae*). It seems that the garden combined plants associated



with food offerings, together with other plants that probably had an aesthetic and/or symbolic use, to be presented to the deceased as a wish for life/rebirth.

The lower part of a tree trunk was found at the northeast corner of the garden, still upright (1.3 feet or 0.4 meters high) with one of its roots growing towards the middle of the garden, in the direction of more humid soil. The tree has been identified as a tamarisk, and its visible rings reveal that it lived for around 25 years. Although the tamarisk is a semi-desert species and it could have grown spontaneously, its location at the exact corner of the garden seems to reflect a certain intentionality.

Attached to the northwest side, which faces the tomb entrance, is a two-step mudbrick staircase coated with lime mortar, which would have been used by water carriers to access the inner squares. The detail of the

TOP: Retrieving botanical remains in the process of excavation

BOTTOM: Archaeobotanist Leonor Peña sampling the soil looking for seeds and other botanical remains



Zulema Barahona documents the pottery found around the garden, including *kernoi*-bowls and *hes*-vases. They were probably used in rituals in the early 12th Dynasty



The entrance to the open courtyard preserves the layers that eventually sealed the garden and protected it when the area was reused in the Second Intermediate Period

staircase (and the tree growing at one of its corners) makes the garden a very close physical rendering of the gardens depicted in the tombs of Amenemhat and Khnumhotep III at Beni Hasan, also dating to the 12th Dynasty, ca. 1840 BCE. The outer face of the staircase adjoins a mudbrick enclosing wall 6 inches (15 centimeters) thick (same as the width of a brick), which sets aside an area for the garden of 12.5 by 12.8 feet (3.8 by 3.9 meters).

The size of the garden does not correspond to that of fields under cultivation for a mortuary foundation, such as the one mentioned at the end of the story of *Simuhe*, or in the agreements that the nomarch Hapidjefa reached with the priests in charge of his funerary cult, which he registered on the wall of his tomb at Asyut. The garden was thus probably conceived and built as a model or miniature garden, to make a visual statement of the deceased's capability and to support his wish to be periodically supplied with offerings during his eternal life. It probably also played a role in one of the funerary rituals performed at the entrance of the tomb. The pottery found around the garden included two *hes*-vases and four *kernoi*-bowls of different sizes, two made of Nile silt and one of marl clay with incised wavy decoration. The pottery matches that found inside the rock-cut tomb and confirms that both the tomb and garden date back to the early 12th Dynasty, ca. 1920 BCE.

The garden found by the Spanish mission, together with the one found by Herbert E. Winlock in 1930 in front of the tomb-chapel of Djari (TT 366), are the only Middle Kingdom examples yet known that were built as part of a funerary monument in the Theban necropolis. These two funerary gardens constitute the archaeological evidence of the



TOP: Once finished, the replica was cut in four pieces to facilitate its transportation to Luxor

BOTTOM: A replica of the garden was produced in Madrid by Factum Arte

iconographic composition which includes a square grid-garden in front of the chapels of Anubis and Osiris, in the *heilige Bezirke* scenes in the early 18th Dynasty tomb-chapels of Reneni in Elkab, and of Hery (TT 12), Teteki (TT 15) and Ineni (TT 81) in Thebes. Miniature grid-gardens are also depicted before small shrines, as part of a ritual called “plowing the earth,” as shown in the tomb-chapels of Rekhmira (TT 100) and Amenemhat (TT 53).

Successive events of blowing wind and running rainwater dragged sand into the open courtyard and eventually covered the garden and sealed it, so that when the area was reused in the 13th Dynasty and later it was protected under a natural cushion of thin sand. This circumstance made possible that the garden’s fragile silt structure, the 4,000 year-old seeds and the tamarisk trunk were preserved in good condition. The stratigraphy of the court’s fill conveys



evidence of both environmental and human factors ranging from the early 12th Dynasty until the very beginning of the 18th Dynasty.

The analysis of the seeds and plant remains from the garden may contribute to our knowledge about the cultivation of plants for funerary/ritual purposes. Information on other trees and plants that grew wild or were cultivated on the fertile plain on the West Bank at Thebes may be derived from the analysis of the pollen preserved in the strata that filled the courtyard. The stratigraphy, analyzed by geologists/geomorphologists, may also shed information on pluviometry and the environment in the Theban region from 1900 to 1500 BCE. This is part of the objectives of the project sponsored by an ARCE Antiquities Endowment Fund (AEF) grant from the 2018/19 cycle.

Another objective is the conservation of the garden. Once the sediment was removed, the cracks



ABOVE: Dr. Louise Bertini and ARCE staff from the Cairo Center visited the site and had a close look at the garden's replica

and missing areas were filled with a silt/“*muna*” similar in composition to the original one (which has no lime). The areas where the layer of white lime mortar was detached from the silt structure were sealed with a similar plaster. The whole structure was then consolidated with ethyl silicate.

Despite the consolidation undertaken, the garden's structure is too fragile to leave it exposed to environmental and human factors and a decision was made to conceal it with a protective covering. However, it is a pity to think that the only well-preserved and documented Middle Kingdom funerary garden would be kept out of sight and hidden from visitors to Dra Abu el-Naga. For this reason, the AEF-funded project also included the production of a replica of the garden, transportation of the replica to Luxor, and its installation on top of the new protection covering the original garden. The replica, or facsimile, was

produced in Madrid by Factum Arte, who are experts in the use of digital technology for conservation and have considerable experience in Egypt in the tombs of Tutankhamun and Seti I. The key of this undertaking was to produce a replica that would require minimal upkeep. We began this process by scanning the garden during the 2018 fieldwork season, in collaboration with Leica Geosystems. A STL, or stereolithography, archive was produced for printing in a 3D large-scale printer. The replica was milled into medium density polyurethane and was then molded and cast in an epoxy resin mixed with soil and pigment to resemble the color and look of the original. The final cast contains UV filters to protect the replica and will ensure it has an extended life despite being located outdoors in Dra Abu el-Naga. The replica was cut in to four sections to facilitate its transportation (the total weight being 1,784 pounds or 800 kilograms). It arrived from Spain and was unpacked at the site in March 2019.

The four pieces of the replica were joined together again at the beginning of February 2020, and the final retouching was conducted by a staff member of Factum Arte. Even the trunk of the tamarisk tree was reproduced and attached to the garden's structure. The replica was set up on top of the solid structure that covers and protects the original garden. It is in the exact same place as the ancient garden, only resting 3 feet (1 meter) above it. For this reason, the courtyard was filled with clean sand to visually position the ‘new’ garden at ground level. A time capsule box containing information about the ancient and the new gardens was buried with the Middle Kingdom garden, and a small pipe was installed at one corner to allow for monitoring of the temperature and humidity of the reburied garden.

Ultimately, the purpose of the replica is to preserve the fragile original structure and, at the same time, allow visitors to see what a Middle Kingdom funerary garden looks like. Visitors to the tomb-chapels of Djehuty and Hery will gain a better understanding and appreciation of how this area of the necropolis may have looked in ancient times, and Dra Abu el-Naga can now boast a rare funerary garden as one of its unique features. 🌿

José M. Galán is a Research Professor at the Spanish National Research Council in Madrid. The documentation, interpretation, and conservation of the Dra Abu el-Naga Middle Kingdom funerary garden was sponsored by an AEF grant from ARCE from 2018-2019.

The latest from ARCE's offices in the U.S. and Egypt

Grants and Partnerships Set the Stage for Expansion of the ARCE Archive

One of the busiest teams at ARCE is the archives staff led by Project Archives Specialist, Andreas Kostopoulos. Based at the Cairo Center, the ARCE archive contains documentation for 79 conservation and site management projects that ARCE carried out in Egypt between 1994 and 2018. The collection includes thousands of physical and born-digital materials, such as photographs, photographic slides, technical reports, architectural drawings, maps, epigraphic sketches, and other graphic materials; covering a multitude of different historic monuments and periods, including Pharaonic, Graeco-Roman, Coptic, Islamic, and Jewish.

Kostopoulos and his team, which includes project assistants Tessa Litecky and Talya Stanke, have been steering a number of exciting projects, made possible by funding from the National Endowment for the Humanities (NEH), and a partnership with Google Arts and Culture. The common goal of these initiatives is that they all aim to digitize the ARCE archives and make them available as an online resource. The team had a brief chat with Scribe about their ongoing work and what we can expect to see coming out of the archives in the near future.

Scribe: You all have a lot going on! What is the primary project that you are working on right now?

AK: We received a foundation grant from NEH last year to begin the process of digitizing the archives and have been working mostly on that. We recently also decided to pursue an implementation grant from the NEH to build on the progress from the foundation grant so we can continue digitizing the archive.

TS: Yes, the major thing that we are really focused on right now is building the archive website, which we're expecting to launch in the early fall. ARCE is moving from being more of a traditional and insular institution that is very much open to researchers but isn't necessarily physically accessible to many, so this website is a major move towards increased accessibility and is also a way of promoting the

valuable materials that ARCE houses. In terms of the user experience, you could consider the website to be a digital collection that allows people to access the project information that we have digitized so far. Users to the archive website will be able to search, browse, and research different specific items from the ARCE collection.

TL: As Talya said, we're moving in the direction of trying to make all our archival material more accessible but also make it easier to use. This is a great thing about the archive website, which will be free and open access. We'll have a very robust search engine so people can find exactly what they're looking for, like specific reports, and then they'll also be able to download them and use them. Open access is a big focus of this project. Most of the projects that ARCE has undertaken have not been comprehensively published, such as the final and technical project reports that the project directors wrote, and the data in these is invaluable.

Kostopoulos (L) and Luke Hollis (R) of Archimedes Digital conducting a 3D scan of the Mosque of Aslam al-Silahdar



AK: We've been building the website with the support and partnership of the University of California, Los Angeles (UCLA) – who are assisting us with the metadata – and web developer, Notch8. We're expecting to launch with five full projects, although we had initially just planned on doing three. UCLA has been incredibly supportive and this project really would not have been possible without them and their participation. Incidentally, they are also an institutional member of ARCE!

Scribe: Tell us more about the partnership with Google Arts and Culture (GAC)?

AK: The partnership with GAC really is focused on the production of short, immersive 'stories' that showcase fast and attractive information on Egyptian heritage sites and history. We use text and images and

video and audio clips to really engage with users in dynamic ways and tell stories about ARCE's projects. It's a totally different target audience from the one we are developing the archive website for.

TS: Our work with GAC has also expanded over recent months; we started with just a few stories and then those slowly started to increase as our partnership deepened. Now, we are looking at doubling the number of stories that we currently have, so we're expecting our partner page to be really nicely populated. We're expecting this to launch this month (in September) but it may be pushed back a bit based on GAC's timetable. Something very exciting about this is that the stories will be published in both English and Arabic, and will also integrate Google Street View utilizing the 3D scans we have been producing as part of the virtual tour series.

2020-2021 ARCE FELLOWS



NATIONAL
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NEH Funded Research Fellowship

Samah Selim

Niqula Haddad: a Literary Biography
Rutgers University

(Alternate)

Samuel Wilder

The Arabic Classical Poetic Heritage in
Mamluk Literary Culture
Freie University, Berlin

Coptic Icons Postdoctoral Fellowship

Andrew Henry

Coptic Iconography and the Embodiment
of Divine Protection
Boston University

Theodore Romanoff Prize (donor funded)

Maria Victoria Almansa Villatoro

Between Social Identity and Royal
Ideology: A Behavioral Interaction Analysis
of Old Kingdom Letters and Royal
Decrees through Language Usage
Brown University

Pre-dissertation Travel Grant

Alaa El-Shafie

Debt and Economy in 19th Century Egypt
Columbia University

Morgan Moroney

The Multivalences of Wine in
Ancient Egypt
Johns Hopkins University



CAORC/ECA Funded Research Fellowships

Mitchell Bacci

Traders and State-Builders: Foreign Trade
and the Making of the Modern Eastern
Mediterranean, 1838-1938
Harvard University

Kea Johnston

Unseen Hands: Coffin Workshops at
Akhmim in the First Millennium BCE
University of California /Berkeley

Mikael Muelhbauer

Prestige Architecture in the Greater
Fatimid World
Columbia University

The latest from ARCE's offices in the U.S. and Egypt

DR. FATMA ISMAIL, DIRECTOR FOR U.S. OUTREACH AND PROGRAMS GAVE a lecture on ARCE's past and present work on religious monuments, titled "Diversity on the Nile: 25 Years of Conserving Synagogues, Monasteries, and Mosques." The event took place at the St. Petersburg Museum of History, Florida on February 17, 2020, and attracted over 50 attendees. It was organized by Michele Kidwell Gilbert, a member of ARCE's President's Advisory Council, and her husband, Dr. Gordon J. Gilbert. Several key members of the community also took the lecture as an opportunity to discuss ARCE's work further following the event, as well as their interest in the upcoming ARCE Holy Family tour in November 2021.



TOP: Ismail speaks at the St. Petersburg Museum of History
BOTTOM: Ismail (L) with Michele Kidwell Gilbert and Dr. Gordon J. Gilbert (R)



Dr. Fatma Ismail, who oversees the ARCE Podcast, prepares for a new episode on King Tutankhamun from her home office

IN JULY, ARCE LAUNCHED ITS OFFICIAL podcast under the direction of Dr. Fatma Ismail, Director for U.S. Outreach and Programs. The podcast program enables ARCE to present the latest research and findings from Egypt in an engaging and accessible format, through engaging discussions. The program boasts an impressive lineup of world-renowned scholars in the fields of Egyptology, Islamic history, Coptic studies, Modern Egyptian history, and archaeology, and to date has featured Salima Ikram, Aidan Dodson, and Nozomu Kawai.

The first phase of the program will focus on popular topics like mummification, King Tutankhamun, Kingship, and the exodus; later episodes will highlight ARCE projects and field-work. If *Scribe* readers have any suggestions for topics that they would like to see addressed in ARCE's podcast program, email us at podcast@arce.org.

ARCE Welcomes New U.S. Director

This summer ARCE brought on a U.S. Director, Liska Radachi. Radachi has worked in the fundraising and external engagement field for over a decade. Most recently, she served as a Director of Advancement for the Smithsonian, focused on fundraising for institutional priorities including renovation of the Fossil Hall at the National Museum of Natural History, The Smithsonian American Women's History Initiative, and the transformation of the National Air and Space Museum. In that role, she built the most successful National Regional Councils at the Smithsonian with 100% giving participation and a strong pipeline of major gifts. She received her BA in Art History from the University of Arizona and her MA in Arts Administration from Indiana University. Originally from Scottsdale, AZ, Radachi lives in the Hill East neighborhood of Washington D.C. with her husband Adam and cat Linus.

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For more information, please contact Liska Radachi at 703-721-3473 or lradachi@arce.org.
 Also, get your *Free Estate Planning Guide and Organizer* at giftplanning.arce.org

*The latest from ARCE's Chapters***Welcoming Our New Chapter: ARCE-MO**

BY STACY DAVIDSON AND JULIA TROCHE

The Missouri Chapter of the American Research Center in Egypt (ARCE-MO), based in Kansas City, is the newest of ARCE's local chapters. With leadership located throughout Missouri, ARCE-MO serves all of Missouri as well as surrounding states. The Board is Stacy Davidson (President), Dr. Julia Troche (Vice President), Rozanne Klinzing (Treasurer), Dr. Lisa Saladino Haney (Secretary), Dr. Kathleen Sheppard (Director), Clara McCafferty Wright (Director), and Dr. Anne Austin (Director). The all-female Board of ARCE-MO met through previous ARCE Annual Meetings and have aligned themselves to the following principles: education, outreach, collaboration, and innovation. They are also fervent supporters of Diversity, Equity, and Inclusion initiatives within the field of Egyptology. By forming in a previously underserved region of the country, they aim to break down geographic and socio-economic barriers to access that exist in Egyptology. One such development was the first ever Missouri Egyptological Symposium.

The Annual Missouri Egyptological Symposium was co-founded by Dr. Sara Orel and Dr. Troche in 2018 as a way to build community among geographically disparate Missouri Egyptologists, many of whom are the only ancient world specialists at their institutions. Past Missouri Egyptological Symposium presenters include all members of the ARCE-MO Board in addition to Dr. Nicola Aravecchia, Dr. Bryan Brinkman, Dr. Victor Matthews, and Dr. Patrick Salland.

ARCE-MO is driven by its educational outreach mission, evinced by its chosen logo. Based on a Deir el-Medina tattoo studied by Dr. Austin, the logo consists of three hieroglyphic signs that read *ir nfr ir*—a mirrored text meaning “do good.” This guiding principle of “doing good” drives us to offer accessible and broad community-based initiatives. At the Second Annual Missouri Egyptological Symposium (October 2019 in Springfield), Dr. Troche organized an Educators’ Workshop, which was supported by an Archaeological Institute of America Society Outreach Grant. This workshop brought together area K-12 educators and the symposium presenters to discuss the challenges inherent in teaching ancient history, strategize accessible teaching plans, and share resources. ARCE-MO is working on developing and publishing Egyptology and ancient history lesson plans for use in museums, K-12 classrooms, and other educational settings. We will make these, and other resources, freely available via our website.

Stacy Davidson is the ARCE-MO President, and an adjunct Assistant Professor of History and founder of the Egyptology track in Continuing Education at Johnson County Community College. Julia Troche is the ARCE-MO Vice President, and an Assistant Professor of History at Missouri State University

To learn more about ARCE Missouri and its initiatives and events, please visit our website: www.arcemo.org, email us at ARCEMissouri@gmail.com, and join us on Facebook and Twitter @[ARCEMissouri](https://twitter.com/ARCEMissouri).

ARCE New England was forced to cancel its final three lectures for the spring of 2020 due to the COVID-19 pandemic. The lectures included Inês Torres speaking about “Creativity and Innovation in the Non-Royal Tombs of the Old Kingdom” in March, Aidan Dodson’s “Rameses III, King of Egypt” in April, and Jacqueline Thurston addressing “The Sacred Deities of Egypt” in May. Fortunately, Torres was able to give her presentation as part of ARCE’s virtual Chapter lecture series. The New England Chapter hopes to reschedule Dodson and Thurston for the spring of 2021, and plans to hold all their fall events virtually (keep an eye out for the schedule).

Virtual Chapter Lectures a Hit!

JJ Shirley and Nick Picardo weigh in on the unprecedented success of the virtual chapter lectures

From May to June, Nick Picardo, co-founder of the Pennsylvania Chapter of ARCE and current treasurer of the New England Chapter, and JJ Shirley, vice president of the Pennsylvania Chapter, collaborated with ARCE’s staff and chapter network to develop a virtual chapter lecture series exclusively for ARCE members. The series, which featured speakers like Kara Cooney and Salima Ikram, was initially created to address the cancellation of in-person meetings and lectures caused by the COVID-19 pandemic, but became wildly popular – with hundreds in attendance at each lecture – ultimately resulting in a spike in membership subscriptions, renewals, and chapter affiliations. In total, 80 new members joined ARCE and 212 renewed, directly as a result of the virtual chapter lectures.

Scribe spoke with JJ and Nick about the immense popularity of the virtual chapter lectures and what is in the works for future virtual events in collaboration with ARCE’s North American Chapters.

Scribe: What was the process of choosing the guest speakers and topics for the chapter lectures?

CONTINUED ON NEXT PAGE

JJ: The development of the virtual chapter lecture series was done rather quickly by me, Nick, Louise Bertini (ARCE’s Executive Director), Rebekah, (ARCE’s Membership Associate) and Courtney (ARCE’s Administrative and Board Associate). In order to not put the entire lift onto ARCE National, Nick and I put together the speaker list by calling on people who we knew had already been slated for in-person lectures, and others who we thought the Chapters would particularly like to hear from. We were trying to achieve geographical diversity among the speakers in order to match the geographical diversity of our Chapters. And likewise for the topics – trying to bring a variety of engaging topics that, based on our own experiences as long-term Chapter members, would engage a wide swath of the Chapter membership.

Nick: In some cases, co-sponsoring Chapters were associated with particular speakers because they had been on a Chapter’s upcoming lecture schedule. For some others, a speaker had ties or a long-standing relationship with the Chapters. The lecture series definitely came together quickly, since it had to. ARCE’s Alexandria, VA staff were absolutely fabulous in taking this on and setting it up to run so well. And the ARCE Chapter Council generously stepped in with funding for the series. The variety of speakers, presentation styles, and lecture topics featured prominently in the overwhelmingly positive feedback from attendees, which I think speaks volumes about the breadth of ARCE members’ interests and their thirst for new information. We can’t thank the speakers enough for participating.

Scribe: Do you expect that in-person Chapter events could eventually be entirely replaced with virtual events?

JJ: In the long-term I don’t think so. If anything, I would hope that once we are able to safely return to in-person lectures we will have larger audiences because of the success of the on-line lectures. And that of course is good for Chapters!

However, I do think that particularly in the short-term there may be a desire to see even in-person lectures be made available on-line. Many regular lecture attendees are retired people who might be nervous about returning to an indoor space. So there may be something of a challenge for Chapters to provide both types of lectures, and to ensure the safety of in-person lectures to its members.

For Chapters that have fundraising or other social events, these will also be a challenge in the short-term. But again, I think eventually, as things normalize, we will have more robust Chapters than ever.

Nick: Through the course of the two-month Virtual Chapters Lecture Series, more and more discussions started to hit on the possibility of a “best of both worlds” scenario that might include a combination of in-person and virtual Chapter events. This would,

of course, be at the discretion of individual Chapters to determine if right for their operations and constituencies. Even before the final lecture of the series, some Chapters had already begun looking into – and planning – their own online programs for the near future. So, although the virtual format has been adopted as a response to truly abnormal circumstances, the benefits it can bring to members under relatively normal conditions have been recognized.

The biggest lingering question for ARCE and more broadly may be, what will the appetite for virtual programming be when things are back to normal? When folks are no longer spending the vast majority of their time at home and once again have any number of fun and edifying options out and about? Precedent pretty much guarantees there will still be plenty of interest in regular programming. The tricky part may be to find the right frequency and balance.

Scribe: Were you prepared for the demand and popularity of this initiative? Also, did the shift to an online platform affect the social aspect of these lectures in any way?

JJ: While I had hoped for a successful program, I was genuinely surprised at the huge numbers that our events drew. And the fact that it didn’t drop off since these were weekly events for 2 months was really wonderful to see. The attendees were clearly engaged and curious, as evidenced by the large number of questions submitted for every chapter. I think the online “anonymous” nature enabled folks who might be less comfortable asking questions in person to engage more fully.

Typically, Chapters bring the speaker out, or provide other refreshments, before or after the lecture so that more intimate conversations can be had with Chapter members. This is the one area where the virtual events are of course lacking. But because we were able to devote additional time to the Q&A portion I think this made up, at least a little bit, for the lack of post-lecture in-person discussions.

Nick: As we’ve all probably noticed time and again over the past months, it’s impossible to fully replicate the experience of having everyone physically together in the same space. But, the virtual Q&A still allowed for exchanges among academics and non-professionals, which was important to preserve at least in some little way. Especially when meeting in-person, knowledgeable interaction and socializing among specialists, enthusiasts, and casual learners is at the heart of the ARCE Chapter experience.

Did you enjoy attending the virtual Chapter lecture series this summer? ARCE National is organizing public and member-only lectures regularly until the end of the year. For more information on our schedule and speakers, visit [ARCE.org](https://www.arce.org)!

The latest from ARCE's Antiquities Endowment Fund (AEF)

AERA Objects Project

The goal of the AERA Objects Project is to create an archive of high-quality inked drawings and photographs of the “objects” from 30 years of AERA’s excavations in the Old Kingdom settlements of the Giza Plateau, and produce a typology for public use. The majority of objects are stone tools such as pounders, fishing-net weights, stone drills, hammers, anvils, and grinding tools. There are also items such as bone tools (for weaving), and ceramic sherds re-used as scrapers, all left behind by the teams affiliated with the Khafre, Menkaure and Khentakwes mortuary complexes.

During Fall 2019 AERA Objects Manager Emmy Malak and AERA Cairo Archives Manager Dan Jones collaborated on the collation and assessment of all the existing illustrations and photographs, working in the AERA Cairo center, and the AERA / Ministry of Tourism and Antiquities (MoTA) magazine/workroom on the Giza plateau. They identified the items that needed to be drawn or photographed because either a) no previous images had been created or b) existing images were poor quality.

During spring 2020, prior to an early shut-down due to the COVID-19 pandemic, a team of AERA-trained MoTA specialists joined the project for six weeks. Yaser Mahmoud (AERA graduate and field school tutor at Giza) led the illustration team: Rasha Ahmed Hany and Alaa Talat Shams. Amel Eweida (AERA graduate and field school tutor at Mit Rahina) led the photography team: Nourhan Hassan, and Mohamed Hamed. Rasha, Alaa, Nourhan and Mohamed were all trained by Yaser and Amel – and so they represent the 2nd generation of the highly successful AERA/ARCE training programs.

The AERA team - Emmy Malak (Cairo), project PI Claire Malleison (Beirut), AERA editor Ali Witsell (Kentucky) and GIS manager Rebekah Miracle (Texas) - are now working with Yaser and Amel, around the impact of the COVID-19 restrictions (managing at-home 24/7 childcare, lack of internet/electricity, travel restrictions) and slowly moving forward toward the final goal.



1 Illustration team at work in the AERA / MoTA magazine/workroom (L-R Yaser Mahmoud, Alaa Talaat Shams, Rasha Ahmed Hany)

2 Emmy Malak and Yaser Mahmoud Hussein discussing the details of an object

3 Amel Eweida and Nourhan Hassan preparing an object for photography

ALL PHOTOS: COPYRIGHT 2020 BY ANCIENT EGYPT RESEARCH ASSOCIATES



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Conservation and Reconstruction of the Tomb of Padibastet

BY ELENA PISCHIKOVA, DIRECTOR, SOUTH ASASIF CONSERVATION PROJECT

This project introduces Padibastet, a recently discovered High Steward of the God's Wife and a grandson of Pabasa A, the owner of an imposing tomb (TT 279) in the North Asasif necropolis.

Padibastet reused part of the Kushite tomb of the Mayor of Thebes Karabasken (TT 391) in South Asasif. Most of the features inscribed for Padibastet were found damaged or collapsed and the ARCE grant is helping in bringing Padibastet's tomb art and his personality back to life.

The team of the South Asasif Conservation Project has already made significant progress in conserving and reconstructing the tomb of Padibastet. Conservation work is performed by the conservation team of the Ministry of Tourism and Antiquities led by Abdelrzak Mohamed Ali. Epigraphy and photography is done by Erhart Graefe, Elena Pischikova and Katherine Blakeney.

Conservation and reconstruction work is in progress in the areas of the tomb entrance, with the doorframe re-inscribed for Padibastet, the stair-case vestibule, open court stela and entrance to Padibastet's chapel.

The entrance to the chapel was found completely destroyed. Fifteen limestone fragments were identified as part of the painted lintel. The structure of the doorframe was rebuilt out of new limestone and ancient fragments were reinstated in their original positions.

Dozens of limestone fragments carved in sunk relief were identified as part of the entrance doorframe and joined with fragments



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in situ. Large sections of the original torus molding were installed above the lintel and the door was topped with a cavetto cornice. The remaining fragments of the original cavetto and traces on the bedrock helped to calculate its proportions.

There is still a lot of work to do and the team is looking forward to the completion of this project, which is currently scheduled for the summer of 2021.

- 1 Conservator Ali Hassan Ibrahim performing conservation work on the open court stela
- 2 Entrance to the chapel of Padibastet before and during reconstruction
- 3 Scene of Padibastet in adoration of the sun god in the staircase vestibule in the process of conservation

ALL PHOTOS : KATHERINE BLAKENEY, SACP

The latest from ARCE's Antiquities Endowment Fund (AEF)

Penn Museum Papyri Project

BY JESSICA BYLER

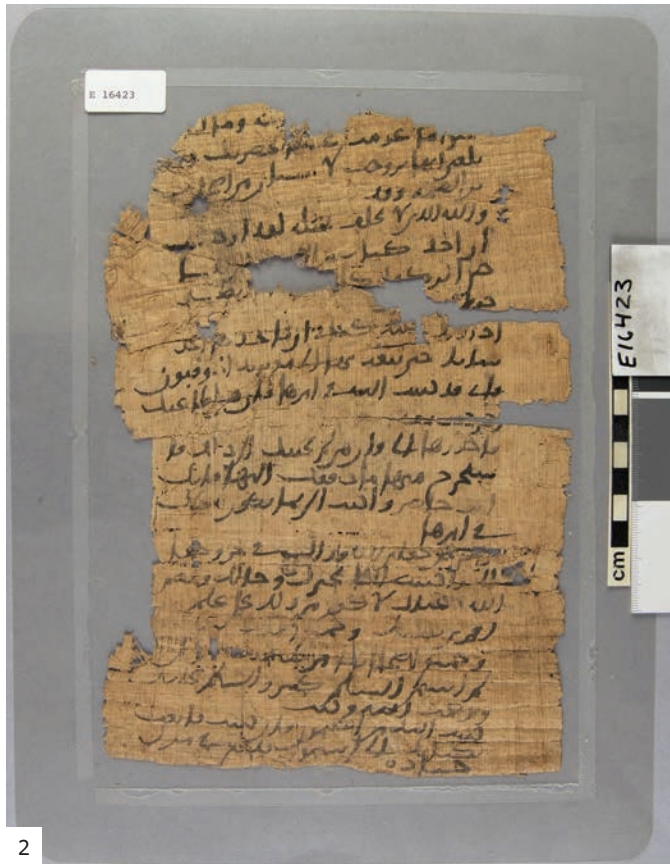
This fall, a survey of the Penn Museum's Egyptian papyrus collection was started thanks to an ARCE AEF grant. The goals of the survey include preparing and rehousing the collection to be moved to a new storeroom, identifying unstable papyri that need to be treated, and getting some of the papyri ready for exhibit. The Penn Museum is in the process of redesigning the Ancient Egyptian and Nubian Galleries, and the curators have identified around 70 papyri they would like to display.

The collection includes around 1,200-1,800 papyri featuring a wide range of personal, legal, administrative, literary, and religious texts in six languages: Arabic, Greek, Coptic, Hebrew, Demotic, and Hieratic. These include Books of the Dead, Homer's Iliad, and the Gospel of St. Matthew. There are also numerous groups of small fragments which have not been reconstructed or studied. The Penn Museum's collection of papyri has never been the subject of a concerted conservation campaign – until now.

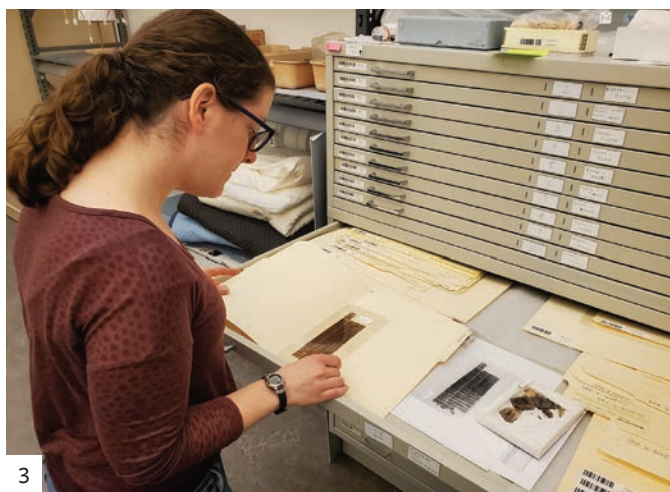
Most of the collection is currently encapsulated in Mylar and stored flat in manila folders or sandwiched between two glass plates, though many of the small fragments are stored in tissue paper envelopes. Each piece of papyrus is examined, measured, and photographed, noting the structure, old mends or treatments, condition issues, type of housing, and rehousing or conservation needs. Images are available on our Digital Collections. So far, about half the collection has been documented and photographed. Eventually, the information on the Penn Museum papyri collection documented in this survey will be included in the Advanced Papyrological Information System (APIS) database, where only a small fraction of our collection is represented today. Hopefully with the new photos and documentation, this collection will be more accessible to papyrologists and scholars around the world.



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- 1 Part of a large group of varied, small fragments; including some with Hieroglyphic, Greek, and Coptic writing
- 2 A private letter in Arabic
- 3 The papyrus is stored flat in drawers

ALL PHOTOS: COURTESY OF PENN MUSEUM

The latest from ARCE's Research Supporting Members

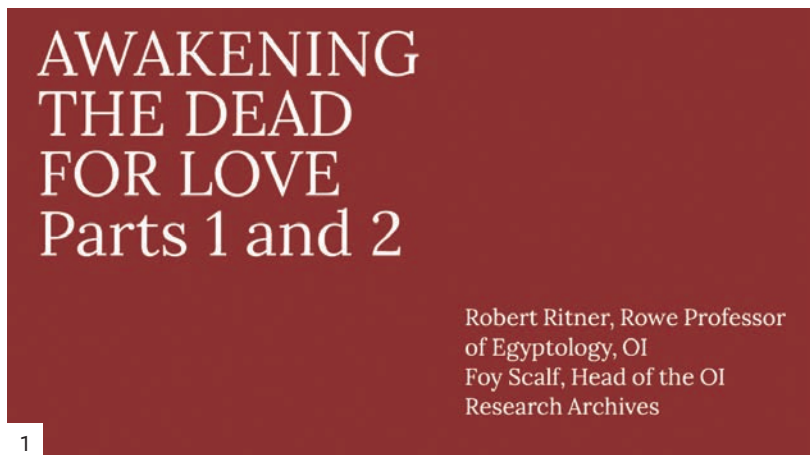
Oriental Institute (OI) Online Programming

OI programs continue, online. Over these past months of museum closure and social distancing, the OI restructured our social media and has enhanced our digital engagement. On March 16, 2020, we began offering weekly thematic at-home explorations across our social media platforms (Facebook, Twitter, and Instagram). Each Monday we announce a theme, and daily, through Friday, we post links, reading lists, videos, and workbooks for as long as the museum stays closed. Follow us on social media or visit www.oi.uchicago.edu for archived at-home material.

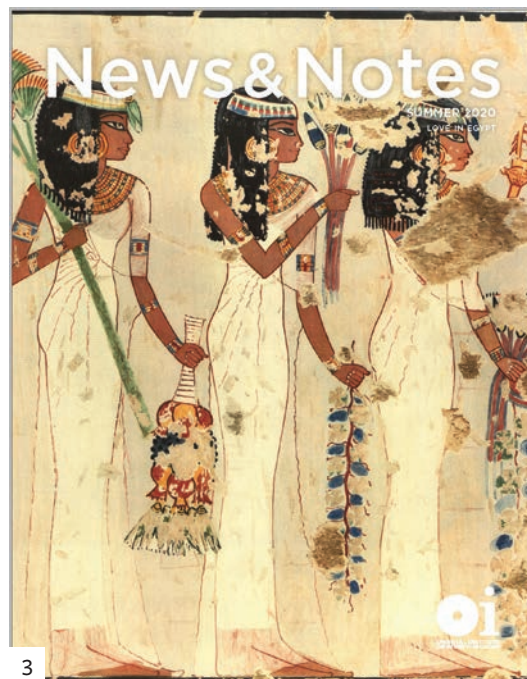
In addition to thematic social media, we have transitioned our planned events and new programming online. Our monthly Members' Lectures are now recorded by our faculty and scholars in their living rooms and presented on our YouTube channel. Our gallery talks have turned into Facebook Live lunchtime chats. Youth and family classes have transitioned out of the OI and now occur live on Zoom. These online offerings allow us to reach a global base, to cultivate a forum where our faculty, scholars, and grad students share OI research and scholarship with interested participants across the world.

We invite you to explore our free offerings on the Oriental Institute YouTube channel by visiting youtube.com/TheOrientalInstitute. You will find new and

archived Members' Lectures, at-home podcasts, ancient language seminars, youth and family classes and more. Current offerings include the lecture "Medinet Habu and Tel el-Amarna: Tales of Blocks and Towers" by W. Raymond Johnson, director of the Epigraphic Survey, Luxor, Egypt, and "Awakening the Dead for Love," parts 1 and 2, a podcast about an ancient Egyptian love spell presented by Robert Ritner, Rowe Professor of Egyptology, and Foy Scalf, head of the OI Research Archives. Click subscribe on our YouTube channel for first notice of each new video premiering throughout the year.



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1 Awakening the Dead for Love, OI podcast presented by Robert Ritner, Rowe Professor of Egyptology, OI and Foy Scalf, head of the OI Research Archives.

2 OI Members' Lecture, Medinet Habu and Tel el-Amarna: Tales of Blocks and Towers by W. Raymond Johnson, director of the Epigraphic Survey, Luxor, Egypt.

3 OI News and Notes. Nina de Garis Davies, drawing of a painting from the tomb of Menna (TT146) from Ancient Egyptian Paintings.

FELLOWS FORUM

Conversations with ARCE fellows past and present

Brooke Elizabeth Norton

ARCE Fellow 2019-20

Margaret Taylor Deane

ARCE Fellow 2019-20

Scribe caught up with two of ARCE's recent fellows, Brooke Elizabeth Norton (University of California, Berkeley) and Margaret Taylor Deane (University of Memphis). This exchange has been edited and condensed for clarity.



Fellows Brooke Norton (L) and Taylor Deane (R) visit royal and non-royal tombs at Amarna
PHOTO: HAZEM HELMY SHARED

Scribe: A good place to kick-off this discussion would probably be introductions! Taylor, your research focus is ‘Official’ Obliteration: Defaced Images and Texts in Eighteenth Dynasty Non-Royal Theban Tombs,’ and Brooke, yours is ‘Disentangling the Divine: Egyptian Cultic Installations in the Sinai and Levant.’ How has your respective fieldwork been going and when did you both arrive in Egypt?

BN: I arrived in Cairo at the very end of October 2019, and my clearances came through in December. I spent that gap time just getting situated and meeting everyone at ARCE, and then I started my fieldwork at the beginning of January. I’m looking at a couple different sites throughout the country so by mid-January I was in Luxor doing my research and had the chance to hang out with Taylor a bit. Generally, it’s been going very well. The sites are all amazing, and I’ve been very privileged to visit some sites that are not open to the general public, such as visiting the rock shrines at Hatnub, which is a fascinating site to visit. It was interesting to me to see another mining settlement because I work with the Wadi el-Hudi Expedition. Other sites I visited as a fellow are Deir el-Medina and Elephantine. My trips did get cut short though because of COVID-19. When things started shutting down and the airports closed in mid-March I still had another site or two to visit. I’m hoping next year I will be able to visit them.

MD: I originally applied to arrive mid-October 2019, but my security clearances were also delayed. I arrived in mid-November and received clearance a month later. From the end of December to early February I was in the necropolis in Luxor everyday, opening about 20 closed tombs. It was an incredible experience! One of my main goals from opening these tombs was to closely examine the deliberately damaged images and texts for these tomb owners because I was finding in my preliminary research that publications from the early 1900s did not accurately – if at all – document these erasures with photographs or line drawings. I also needed to examine a handful of tombs with unclear evidence of memory sanction. Since I didn’t have a lot of good publication material to work with, it was very important to study these tombs in person and fully document each memory sanction erasure. Part of my dissertation is to create an ‘Erasure Catalogue’

of memory sanction erasures, which is modelled after the dissertation of Alice McClymont who looks at Amarna Period erasures from the Theban necropolis.

Scribe: What sort of tools or data gathering methods have you been using during your fieldwork in Egypt?

BN: During my site visits I've been doing general photography of the structures, where they are located in their environments, and in the landscape. My focus for my research is on New Kingdom Egyptian temples and ritual installations located in the Sinai and in the Levant. So I spent my time as a fellow looking at comparative examples in Egypt to explore what sort of formal and informal features of these structures were incorporated abroad. I won't be directly comparing the ones in Egypt to the ones in the Levant but rather using it as a methodological tool to look at the layout and the architecture of these structures.

MD: The erasure catalogue records the exact location, context, and physical properties of each erasure of text and image pertaining to the tomb owner, which often extend to members of his entourage. For example, the shape, depth, and percussion style of intentional damage are important to note. This is because the mechanics of the erasures vary from tomb to tomb, so my goal was to do a comprehensive survey of all the memory sanctioned tombs and see what similarities and differences there are and what can be said about that. Richard Wilkinson has an article about 'damnatio memoriae' in the royal tomb of Ay, which he was able to study before hacked out areas were consolidated with cement. From the hacking patterns, Wilkinson was able to determine how many people carried out the memory sanction, what their average height was, and if they were left or right-handed. This is a little more detailed than what I'm going for, but it gives you an idea of how

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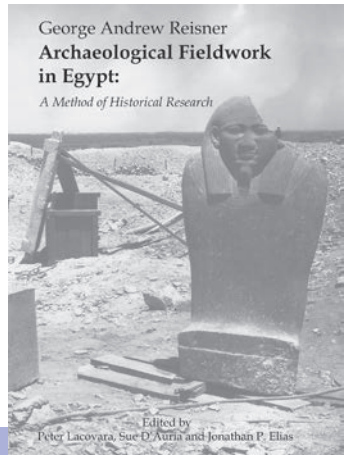
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much can be gleaned from a close examination of deliberate damage.

Because of the size and layout of the private tombs, it is nearly impossible to get an entire wall in a single photograph without distortion. I utilized photogrammetry to create an orthomosaic of each wall. This took a lot of processing time because each wall can require hundreds of photos that you have to then stitch together, but essential to my study.

Scribe: This is fascinating! How did you both arrive at your respective research topics? Have any of your initial assumptions changed now that you have been in the field in Egypt for a few months?

BN: I have always been interested in Egyptian connections with the Levant, specifically the southern Levant. There is a lot of previous research that's been done on Egypt in the Levant and I found it really interesting how these two cultures interact, especially in the New Kingdom when the Egyptians are asserting control over this area. As I was looking at what other research has been done on this, I came across some work on the question of whether Egyptian temples exist

in the Levant, and it was framed as 'can we identify formal Egyptian temples in the Levant?' It ended up raising more questions for me. I'm very interested in temples as a space where Egyptian and Levantine ritual practices and ritual objects are mixing and also in how temple layout and architecture and ritualistic objects can indicate the mixing of local and foreign rituals and customs. So this fellowship really allowed me the opportunity to think about this.

MD: I first was introduced to this topic during my masters at Georgia State University. I was taking a Theban tomb painting seminar with Dr. Melinda Hartwig, and she suggested that I research TT 75 for my final paper. I was instantly intrigued that all the images of the owner Amenhotep-si-se were hacked out of his tomb chapel. These monuments were so important to officials - for their mortuary cult, for their social identity, and memory. For this to happen to an ancient Egyptian was an annihilation of their social status as well as their eternal existence. As I looked through non-royal tombs in the Theban necropolis, the bulk of memory sanctioned officials lived during the 18th Dynasty. It started with that

Deane and Norton, along with Hazem Helmy Shared, visit the officials' tombs cut into the cliff face at Beni Hassan, which overlook the Nile



one tomb and now I have a couple dozen that I am working with right now.

Scribe: What are you taking away from your time in Egypt with ARCE?

BN: My fellowship ended in mid-August. I'm hoping to come back and stay next year so I can continue doing my research and writing. It's really been an amazing experience, I've been working in Egypt for a while now but it's been lovely to live here and to spend more time in Cairo. Before the COVID-19 shutdown I was able to go in to ARCE regularly and attend lectures and events there, so it was a good chance to meet other Egyptologists. It's also been really interesting learning how to navigate working with different Ministry officials and inspectors at the different sites I've visited. It was a steep learning curve getting used to how things are done, but I've found that everyone I've worked with has been so helpful and supportive and excited for me to be there. That's nice as a PhD student to see that people are excited that you're coming to do research. It's also been great spending time with the other fellows, even though Taylor and I have been in different cities we've been able to get to know one another and take the opportunity to do side trips to visit other parts of Egypt.

MD: It's been a very positive experience. This fellowship gave us firsthand experience going to the inspectorate and getting familiar with the different procedures and protocols. We were essentially the directors of our own missions, so it was a valuable experience to be on that side of it rather than be a team member where the director takes care of those details. As Brooke mentioned, the support and enthusiasm from the Ministry officials and inspectors in the field was encouraging. There were several opportunities in Luxor to meet Egyptologists and chat about our projects. Even though some travel plans and research in libraries were cut short due to COVID-19, I had plenty of data to sort through during quarantine. Throughout our entire time in Egypt, ARCE has been incredibly supportive, especially Djodi Deutsch, Academic Programs Manager, who was always checking in on us. For ARCE to give us the opportunity to stay or to leave – because of the pandemic – is pretty rare and we really appreciated that. The entire staff at ARCE has been great. 🌸

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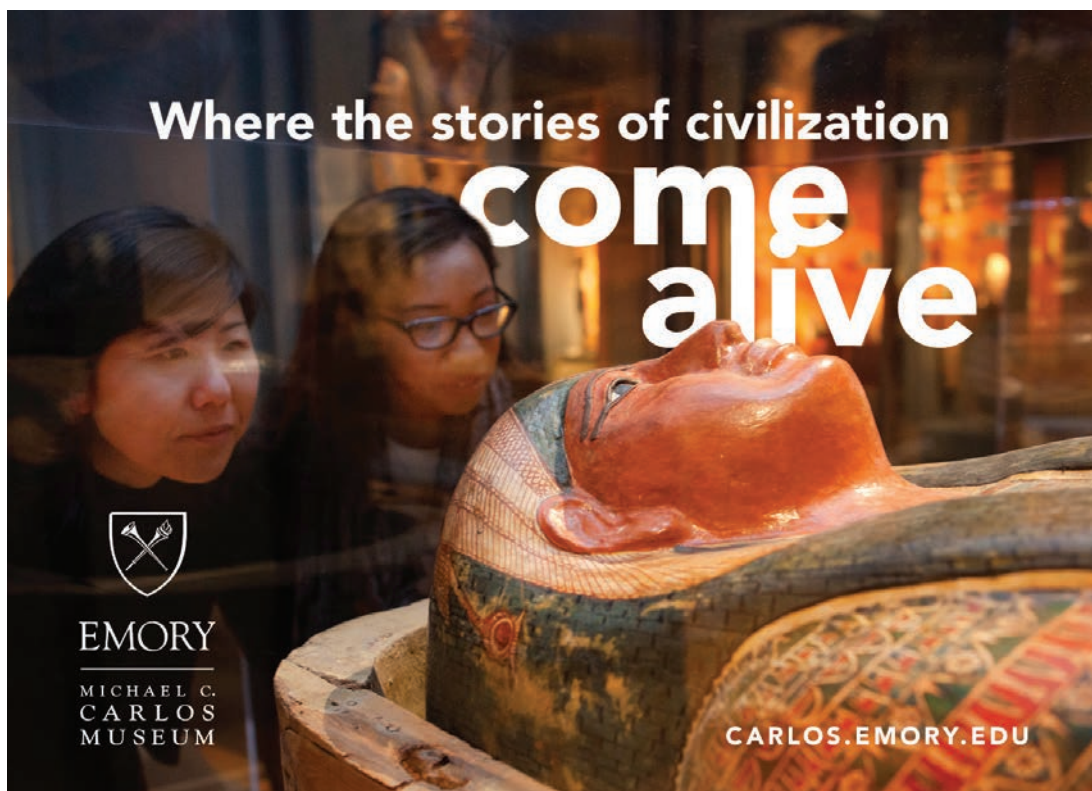
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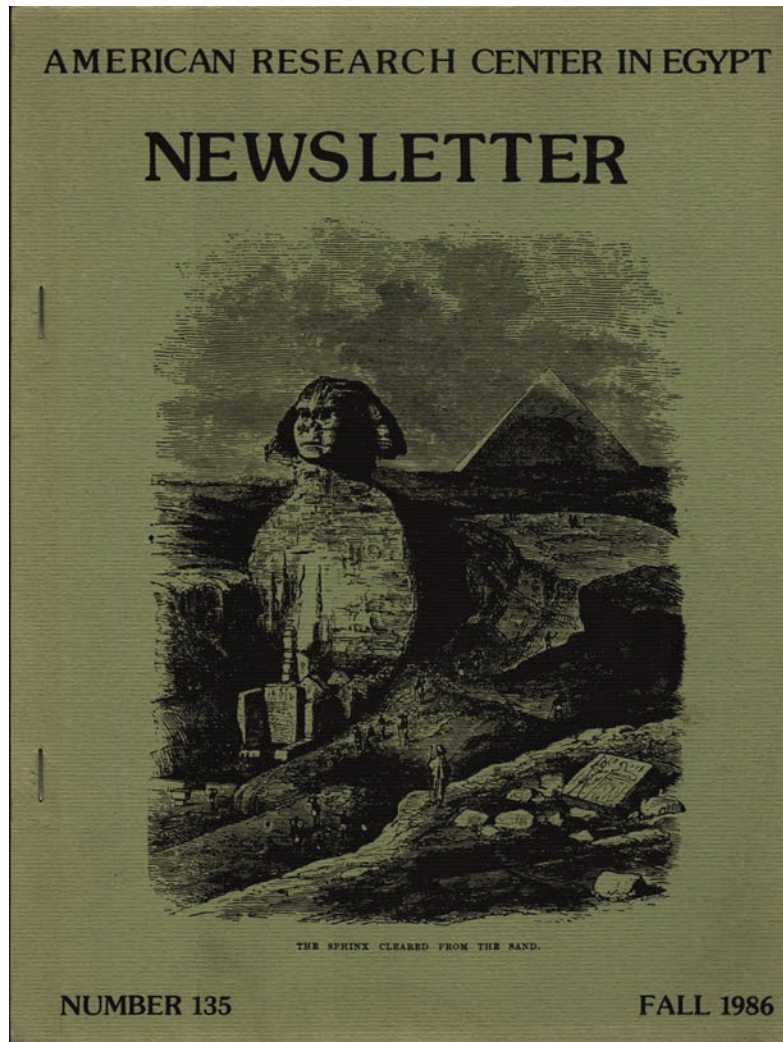
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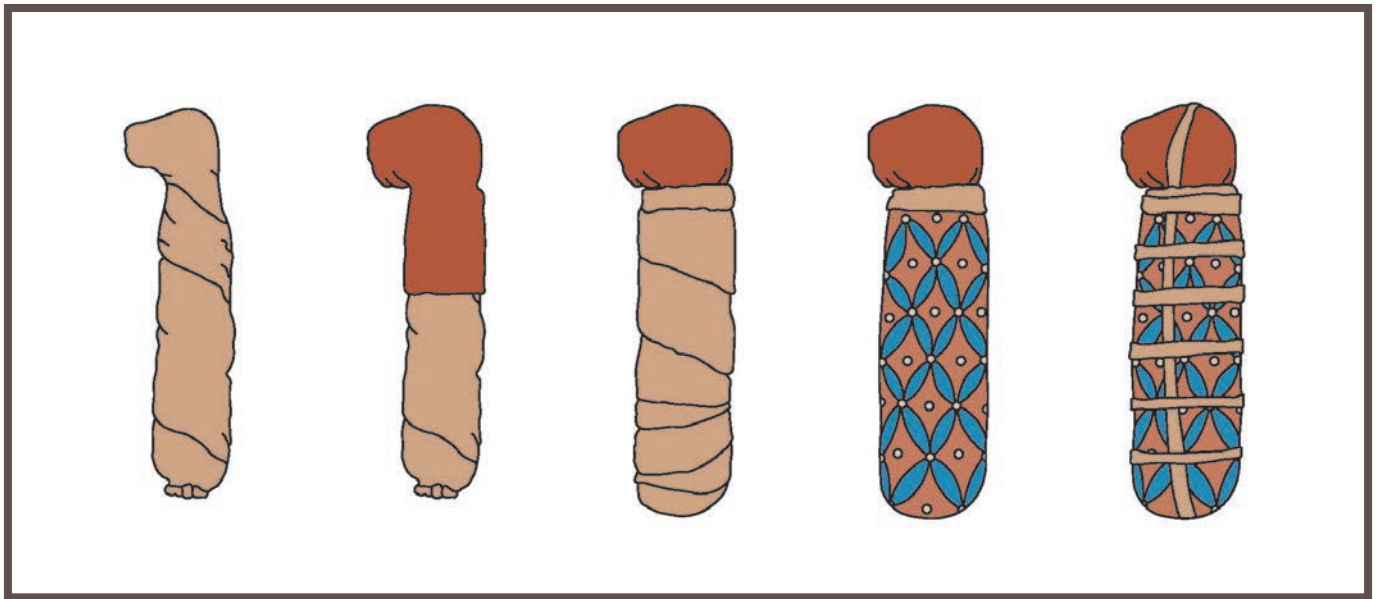
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From this issue's 'Sacred Beasts' feature (page 16) : Reconstruction of the cat mummy's wrappings.

DRAWING BY MIMI LEVEQUE AND ANDREA TEJEDA GÁMEZ