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November/December 2020

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The Great Wall of Mongolia

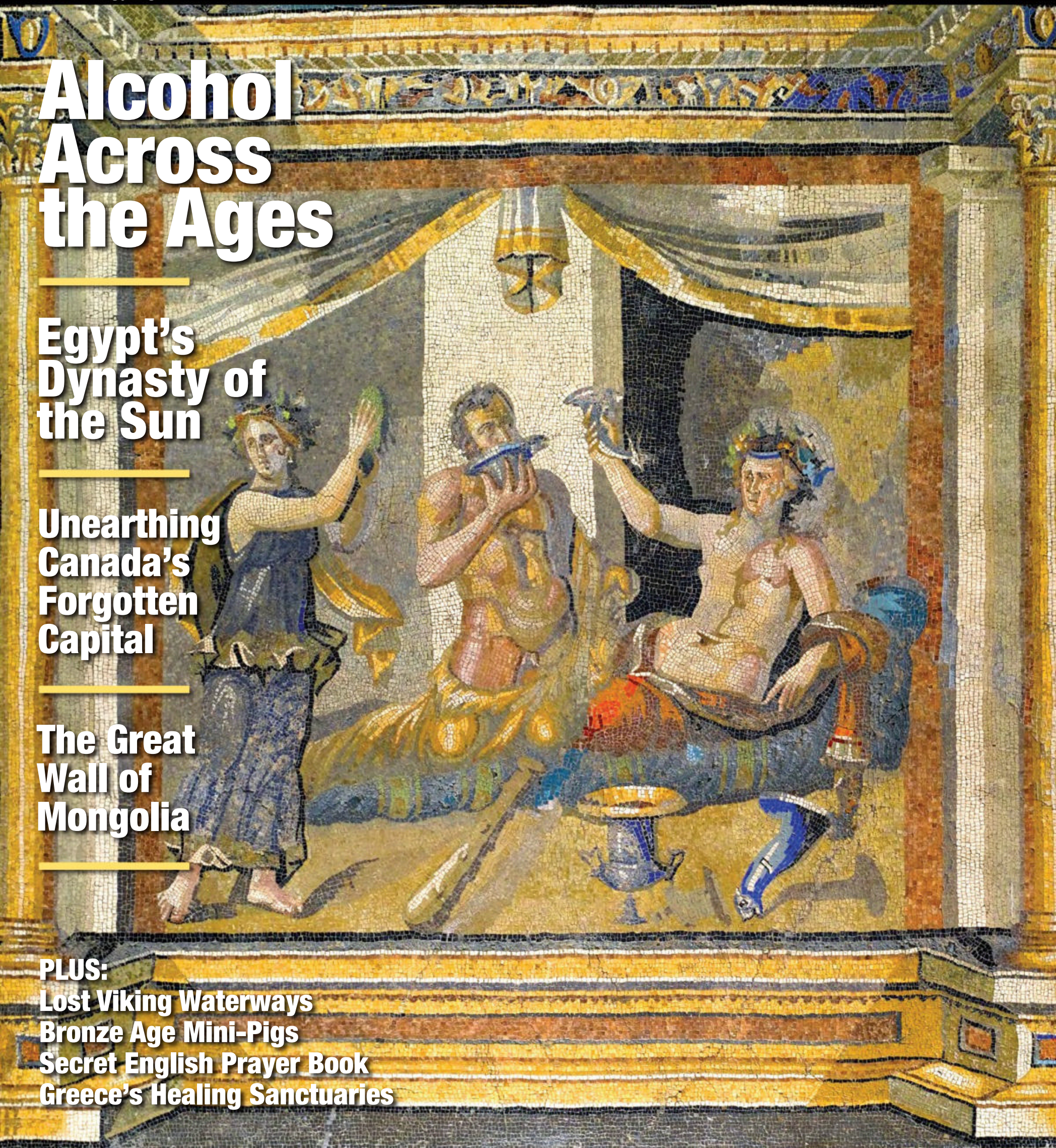
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Cover: Third-century A.D. mosaic depicting a drinking contest between Hercules and Dionysus
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Archaeologists have found new evidence of a robust dye industry that endured on the Mediterranean coast for millennia

BY SARA TOTH STUB

ARCHAEOLOGY.ORG

■ **MORE FROM THE ISSUE** To see more images from the excavations in the Egyptian necropolis of Abusir, go to archaeology.org/abusir. For a video tour of an ancient Wari chicha brewery in southern Peru, go to archaeology.org/chicha.

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EDITOR'S LETTER

A WORLD OF CONNECTIONS

One of the most fascinating things that happens when we are putting together an issue of *ARCHAEOLOGY* is that, more often than not, we start to see connections between the stories. Sometimes this happens when multiple archaeologists are looking at the same site or region. This is the case in three stories that explore early human history in South Africa. “Our Coastal Origins” follows the quest of early modern humans to find new sources of food, and “Alcohol Through the Ages” features the same Paleolithic people, who may have made the world’s first fermented beverages. You will also encounter these early humans in “Paleolithic Bedtime,” in which the residents of South Africa’s Border Cave looked for a good night’s rest after a long day hunting and gathering shellfish and honey. These stories, taken together, begin to give us a complete sense of these people, even though they lived many tens of thousands of years ago.



Sometimes the connections come from a similar type of artifact, as in the case of the vibrant textiles explored in “Weaving for Their Ancestors” and “Letter from Israel: The Price of Purple.” For the Paracas people of Peru, as well as the Phoenicians and later inhabitants of the Levant, creating brightly colored woven fabrics, whether to clothe and honor the dead, or to proclaim the status of the living and make a profit, was a vital part of their cultures.

Sometimes there are historical periods that are so emblematic of a culture that they appear in multiple stories. This happens with Old Kingdom Egypt, and especially the 4th and 5th Dynasties, in “Alcohol Through the Ages: Spirits for the Dead,” and “In the Reign of the Sun Kings.” In these stories, the habits of the Egyptian elite, from wine consumption to pyramid building, create a vivid picture of life along the Nile some 4,500 years ago.

And sometimes a common theme emerges in two or more stories, even though the cultures may be separated by thousands of years—and miles. In this issue, that is people’s efforts to stand against monarchy and fight for representation in their own government, as occurs in “In the Reign of the Sun Kings” and “Canada’s Forgotten Capital.” Whether in ancient Egypt or nineteenth-century Canada, efforts to shift the balance of power united people who wanted to change the status quo.

Possibly our favorite crossover comes in “Alcohol through the Ages: A Taste for the Exotic” and “The Great Wall of Mongolia.” In these stories you will meet the nomads of Mongolia, the rulers of the Liao Empire, and the contemporaneous princes of Korea’s Goryeo Period. It’s not impossible to imagine representatives of each group sharing a drink somewhere along the Silk Road.

Jarrett A. Lobell
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FROM THE PRESIDENT

SHIFTING PERSPECTIVES

Archaeology helps us tell the stories of our past where historical documents are silent. On the 400th anniversary of the sailing of the *Mayflower* in 1620, we can see this in two complementary ways: first, in the ongoing story that is unfolding about the ship itself. The original *Mayflower* sailed back to England in spring 1621. An appraisal of 1624 suggests the ship was in ruins; its material may have been sold for scrap. A full-scale reproduction designed by naval architect William Avery Baker was built between 1955 and 1957 in Brixham, England, as a gift to Americans from the British people. Over the course of 60 years in Plymouth, Massachusetts, the *Mayflower II* has welcomed some 25 million people aboard to imagine the Pilgrims' experiences on that historic crossing of the Atlantic.

Beginning in 2016, the ship underwent a full restoration at Mystic Seaport Museum's shipyard in Connecticut. An extraordinary five-year collaboration between maritime experts and shipwrights from Plimoth Plantation and the Mystic Seaport Museum has preserved over a quarter of the original 1950s construction, including its keel. The hull planking is all new Danish white oak from the royal forests of Denmark. In August 2020, the restorations complete, the *Mayflower II* sailed from Mystic back to Plymouth, where it continues to serve its educational role as a floating classroom for experiential archaeology.



Excavations at Burial Hill, Plymouth, MA

Equally exciting is the way archaeology is illuminating the close relationship between the Indigenous population and the Pilgrims at the site the Wampanoag call Patuxet, and the Europeans Plimoth. Excavations on Burial Hill in downtown Plymouth, conducted by the Plimoth Plantation Museum and the Town of Plymouth in partnership with the University of Massachusetts Boston's Fiske Center for Archaeological Research, are revealing stories of a vibrant transcultural society. The ground-

breaking exhibit *History in a New Light* is the first to display artifacts from the Wampanoag community of Patuxet together with those from the site of the original 1620 European village. The archaeological evidence of these overlapping landscapes is leading scholars to reevaluate our understanding of daily life in early Plymouth and the nature of Colonial-Indigenous interactions. It is fitting, in acknowledgement of its site on what was the ancestral home of the Wampanoag and other Native communities for 12,000 years before the *Mayflower's* arrival in 1620, that Plimoth Plantation Museum has chosen to change its name to Plimoth-Patuxet in this 400th commemoration year.

Laetitia La Follette

President, Archaeological Institute of America

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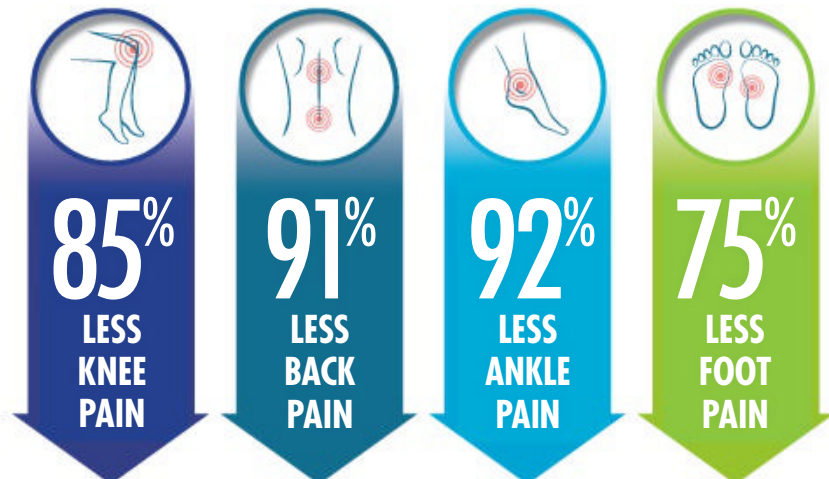
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FROM OUR READERS

A SPECTACULAR SETTING

Your September/October 2020 issue is just packed full of wonderful articles accompanied by excellent photos. Please ask the archaeologists working at Dukki Gel ("A Nubian Kingdom Rises") what the structures pictured on page 30 are. I have been a subscriber for decades and have never seen blocks of small round objects, U-shaped forms, circles with lobes, et cetera, in any ancient city.

Barbara A. Welch
Ruckersville, VA

Matt Stirn replies:

This type of curved architecture is fairly unusual in the ancient world and is what led Charles Bonnet to think that the style stemmed from traditional African architecture; it bears some similarities to structures in places such as South Sudan and southern Ethiopia. As far as the function of the buildings, the ones with more ornate features have been interpreted as fortifications, military storehouses, and a palace, among others.

After reading everything else before reading "A Nubian Kingdom Rises" in the

ARCHAEOLOGY welcomes mail from readers. Please address your comments to ARCHAEOLOGY, 36-36 33rd Street, Long Island City, NY 11106, fax 718-472-3051, or e-mail letters@archaeology.org. The editors reserve the right to edit submitted material. Volume precludes our acknowledging individual letters.

September/October issue, I am rewarded beyond expectations by Matt Stirn's overview of excavations in Nubia, more so than I have been by all the information I have in over a half dozen books, articles, and several popular videos specific to Nubia, not to mention sections in innumerable books on Egypt. I appreciate the further images on your website, especially the statues of Nubian kings. Now I look forward to much research on the web.

Donna Hyora
Missoula, MT

UNDER THE ROCK

Thank you for an edifying article on Fort Alcatraz ("Letter from Alcatraz: Inside the Rock's Surprising History," September/October 2020). I had no idea that "Isla de los Alcatrazes" contained such significant history and archaeological findings. On a trip down the Pacific Coast, a visit to Alcatraz was on the must-see list. After waiting in a long line, my traveling companions decided to hire a helicopter for a fly-over tour of Alcatraz. The bird's-eye view of San Francisco and the shore of the bay was truly spectacular! After reading the article, it felt like the helicopter finally landed in the middle of the island's pre-prison history. To Matthew Brunwasser, thank you for a grand tour, and for being an amazing first-rate guide to the past. ARCHAEOLOGY has always delivered well-researched and robust articles. Keep publishing; I'll keep reading.

Bob McGuire
Southampton, NB, Canada

A TWO-STORY STORY

Your September/October article "Wealth of a Medieval Power Broker," revealed a real jewel for me! I must thank author Daniel Weiss for his fine reporting on Bishop Antony Bek's Durham hegemony and, in particular, Bek's astounding chapel in two levels. I lived in Laon (Aisne), France, where I discovered another such episcopal effrontery—up for the nobles, down for the commoners. Many thanks from a long-time ARCHAEOLOGY reader.

Rodger Ewy
Boulder, CO

A TRULY MEMORABLE DAY

I was a little late in getting to the July/August 2020 issue, but "Letter from Normandy: The Legacy of the Longest Day" brought back memories. Living in Romford, England, close to the Southend arterial road, we were close to several airfields. That morning I stood on our front steps with my mother as waves of fighters with white-striped wings flew low over us, heading south. Years later as a student in London I watched the film *The Longest Day* at the Odeon in Leicester Square. When the marked aircraft appeared over the beaches I was stunned. Suddenly, I understood what I had seen as a child of five. I wanted to shout that I saw them, and nearly grabbed the person next to me. That remarkable feeling of recognition is one I can never forget.

Robert Hart
Ormond Beach, FL



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DIGS & DISCOVERIES

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OUR COASTAL ORIGINS



Steenbokfontein, South Africa

As much as 100,000 years ago, modern humans in southern Africa began to settle down. Just how and why this momentous shift in our distant ancestors' way of life occurred is difficult for scholars to say. Prehistoric hunter-gatherers from this era are among the most challenging humans to study. They did not leave behind any permanent structures as evidence of their presence, and their stone tools are rarely found along with contextual information such as the remains of plants or bones. Other artifacts, including beads or ochre paint, are very rare, and materials such as leather and wood do not survive. But one available resource is evidence of the food they ate. Changes in their diet may have had profound consequences in the transition from living in highly mobile bands of hunter-gatherers to more sedentary communities.

Among the numerous locations and environments in Africa where archaeologists are currently studying hunter-gatherers, coastal South Africa has some of the earliest evidence of organized social behaviors. At many sites there, the remains of ancient meals, and especially of marine mollusks and shellfish, are abundant. Archaeologist Emma Loftus of the University of Cambridge is using isotope analysis

to analyze prehistoric shell deposits—the remains of shellfish harvested by ancient humans—that have been discovered in South African rock shelters. Loftus explains that seashells are particularly informative because they grow in regular seasonal and annual increments, like trees, and survive well in the archaeological record. By measuring a shell's oxygen isotope ratios, researchers can obtain a record of every growth period in its history, as well as rainfall levels and air and sea-surface temperatures. As long as there is no recrystallization or dissolution where the carbonate structure of the shell partially

dissolves, causing irreversible damage, Loftus thinks that researchers could probably recover this information dating back as much as millions of years ago. Studying a shell's growth periods also allows archaeologists to determine the season in which it was harvested. "We can track where humans were on the landscape at different times throughout the year," Loftus says, "and this can shed light on the degree of group mobility, an important component of how ancient societies organized themselves."

Archaeologist Curtis Marean of the Institute of Human Origins at Arizona State University believes that placing the role of coastal living in the big picture of human evolution and identifying the shift to "dense and predictable" food resources such as shellfish are crucial to understanding early modern humans' social evolution. Marean also studies sites on the coast of South Africa and has found that their bountiful food resources encouraged territoriality and that social organization was needed to defend the newly established territory. This, he says, led to intergroup conflict and, in turn, to the development of technology such as projectile weapons. The high nutritional value of shellfish may also have helped boost *Homo sapiens*' cognitive capacity. "When

hunter-gatherers expanded their diet to include coastal resources, they ended up having characteristics unique among hunter-gatherers,” says Marean. “They didn’t move around the landscape much, and their population increased, as did the complexity of their tool kit.” Such social development is not known to have happened this early anywhere else.

Marean further hypothesizes that this sort of social development led to *Homo sapiens*’ perhaps most significant, and most unusual, quality—cooperation. “Cooperation is an extremely bizarre trait,” says Marean. “The high levels of cooperation with non-kin that modern humans express is completely unique in the animal king-



Limpet shells, South Africa

dom.” Eventually, cooperation fostered group migration and led to *Homo sapiens*’ domination of the planet. It also may have saved the species from extinction. Marean and others working on the South African coast have identified shards of volcanic glass from the cataclysmic eruption of Mt. Toba on Sumatra 74,000 years ago, which some scholars think may have come close to wiping out humanity. Marean believes that shared coastal food resources in South Africa helped several hundred *Homo sapiens* escape annihilation, and that these fortunate survivors may have become the common ancestors of today’s 7.8 billion modern humans.

—MATTHEW BRUNWASSER

OFF THE GRID

PREAH KHAN OF KOMPONG SVAY, CAMBODIA

Though it is perhaps the most heavily looted archaeological site in Cambodia, the vast settlement of Preah Khan of Kompong Svay still beguiles archaeologists and tourists with its size and beauty. Some 50 miles east of Angkor—the capital of the Khmer Empire, which spanned much of mainland Southeast Asia between the ninth and fifteenth centuries A.D.—Preah Khan is believed to have served as an important Buddhist pilgrimage center and a wealthy way station for the raw materials that fueled the empire’s expansion. First built in the eleventh century, the site consists of four concentric enclosure walls that surround several temples made of brick, laterite, and sandstone. “Preah Khan is an enigma because it is the single largest construction ever built by the Khmer,” says archaeologist Mitch Hendrickson of the University of Illinois at Chicago. “It’s even bigger than the complex of Angkor Thom inside Angkor itself.”

Though many artifacts and reliefs were stolen from Preah Khan in the 1970s and 1980s, the archaeological materials that do survive suggest the site may have been nearly as wealthy as Angkor. For decades, researchers have pointed to slag piles and possible furnace locations as evidence that Preah Khan was a center of iron production. However, Hendrickson and his colleagues have dated samples taken from multiple locations at the site and determined that smelting activities took place there starting only in the early fifteenth century. Hendrickson notes that Preah Khan was located roughly 20 miles from Phnom Dek, Cambodia’s largest source of iron oxide, an essential component in the smelting process. This positioned the settlement at its peak to act as a conduit between iron smelters based at Phnom Dek—who were members of an ethnic minority called the Kuay—and the metropolis at Angkor. “Part of the reason Preah Khan managed to reach the wealth that it had,” Hendrickson explains, “was that it served as a mediator for the production of iron between these two locations.”



THE SITE

The journey to Preah Khan takes four hours by car from the town of Siem Reap and the Angkor ruins. Four-wheel drive is advisable. Hendrickson recommends hiring a guide to help find Preah Khan’s most impressive

structures, including the island temple of Preah Thkol at the center of the site’s

reservoir, and Preah Chatumukh, a tower depicting a standing Buddha.



Temple, Preah Khan of Kompong Svay, Cambodia

WHILE YOU’RE THERE

Despite the grandeur of Preah Khan, the site’s remote location means you will likely be one of only a handful of visitors on any given day. Bring binoculars to catch sight of the many species of local birds or take a book and enjoy the solitude.

—MARLEY BROWN

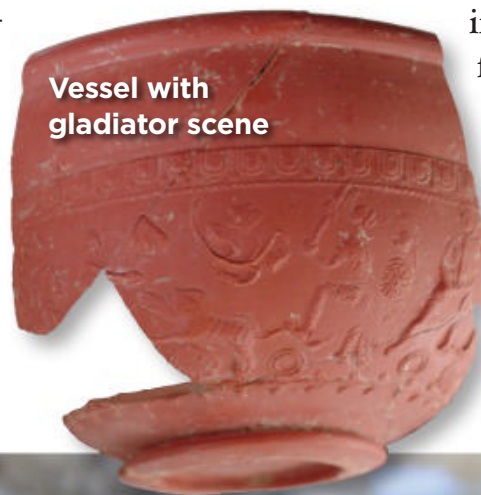
A DAY BY THE RHONE

To walk along the Rhone River in southeastern France 2,000 years ago was surely as lovely a way to pass the time as it is today. In the ancient Roman city of Vienna—modern Vienne—one of the most pleasant places to stroll would have been a wealthy neighborhood of houses, shops, and baths now called Saint-Romain-en-Gal. During recent excavations in advance of construction there, archaeologists from the French firm Archeodunum have unearthed artifacts that speak to the privileged lives of its ancient residents. Among the objects they have uncovered are colorful fresco fragments, pottery decorated with a scene of gladiatorial combat, and two six-inch-tall terracotta

figurines, one depicting the popular image of Venus emerging from her bath and the other a bearded man whose identity is not yet known. Archeodunum archaeologist Jérôme Grasso believes the statuettes were found right where they had been left, perhaps in a private act of devotion. “It’s moving to

imagine that someone carefully placed them there for an unknown reason almost 2,000 years ago, and that they weren’t moved until we rediscovered them,” Grasso says. A stone bench the team found also brings to mind a day spent relaxing riverside. Says Grasso, “I can easily imagine people sitting on the bench we discovered looking at the passing boats on the river below.”

—JARRETT A LOBELL



Vessel with gladiator scene



Terracotta Venus and male figurines, Saint-Romain-en Gal, France



Stone bench



Venus figurine after cleaning

PAINFUL PAST

People of non-African heritage living today share up to 2 percent of their DNA with Neanderthals, but scientists are still laboring to understand what those shared genes actually do. According to new research, one Neanderthal gene variant appears to make people who have inherited it more susceptible to pain. The variant in question affects the functioning of nerve fibers, which are responsible for sending signals to the brain that are perceived as pain. Hugo Zeberg of the Karolinska Institute cautions that the team's finding does not necessarily mean that Neanderthals were more sensitive to pain than modern people. He says they



Neanderthal skull

were probably “more sensitive to stimuli,” but the sensation of pain is a product of how the brain interprets signals from nerves throughout a person's body. How that worked in Neanderthal brains is an open question. Zeberg and colleagues at the Max Planck Institute for Evolutionary Anthropology are now studying other Neanderthal gene variants, including one linked to healthier pregnancies and another that makes people more susceptible to contracting the novel coronavirus. “People are interested in the meaning of their heritage,” says Zeberg. “This is, in a way, an archaeological excavation of our genome.”

—ZACH ZORICH

MINIATURE MASTERPIECES

Ancient artists all over the world created images featuring negative silhouettes by spraying paint against an object or stencil held against a rock face. But miniature stenciled figures, those measuring less than five inches, are exceptionally rare in ancient artwork. Recently, however, a team of researchers led by Flinders University archaeologist Liam Brady discovered a miniature stenciled human figure surrounded by four boomerangs at Yilbilingi rock

shelter in northern Australia, which is owned by the Aboriginal Marra people. “When we visited other nearby sites, we began finding similar miniature and small-scale stencils,” says Brady. “That made us think that we were onto something very different here in terms of the Australian rock art record.” This previously unknown tradition includes miniature depictions of kangaroo tracks as well as geometric and linear designs. The images' shapes suggest they were made with stencils molded



Petroglyphs at Yilbilingi rock shelter, Australia



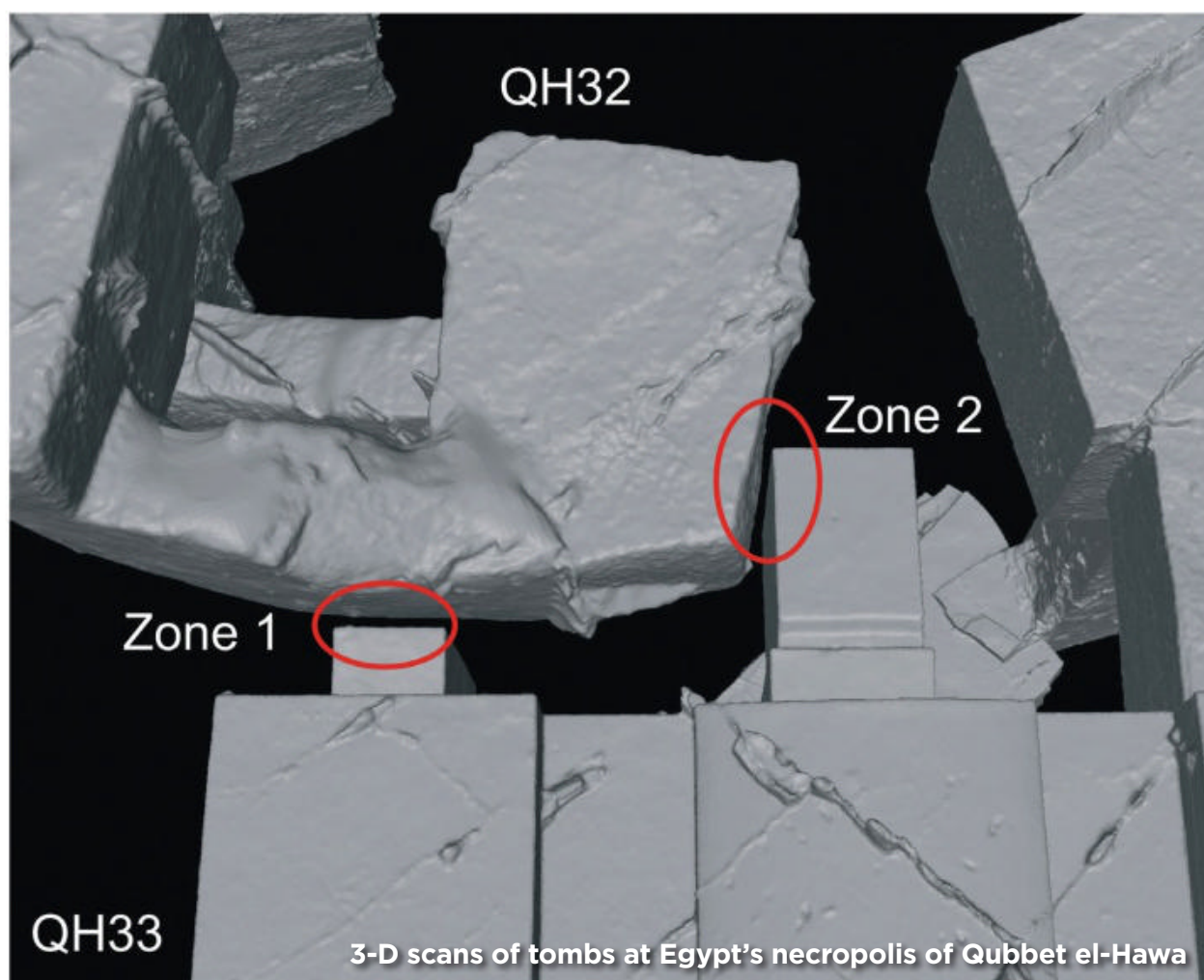
Reconstructed beeswax stencils

out of a malleable material, most likely beeswax, which Marra children are known to have used in the past to sculpt small figurines. The team created their own beeswax stencils, which they used to produce figures identical to the ones discovered at Yilbilingi and nearby sites. They hope that consulting with additional Marra people will yield further insight into the meaning of these miniature masterpieces.

—ERIC A. POWELL

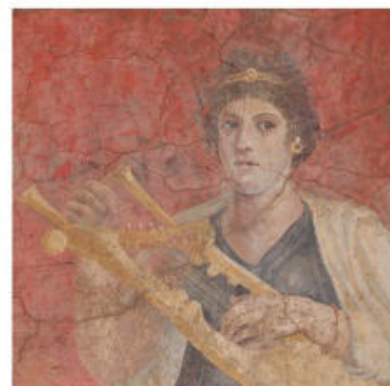
PRECISION MEASUREMENTS

A recent study of the necropolis of Qubbet el-Hawa in Aswan has revealed that ancient Egyptian engineers possessed an uncanny sense of space. A team led by University of Jaen cartographer Antonio Mozas-Calvache used laser scanning and photogrammetry to create 3-D models of three tombs at the necropolis that were cut into the same rock face during the 12th Dynasty (ca. 1981–1802 B.C.). The entrances to the large tombs—which were built for local governors and their families—were separated by about 65 feet. But the models showed that the interiors of the complexes were so close together that two of the tombs were separated by only four inches in two places. “Initially, we didn’t believe these results,” says Mozas-Calvache. “We supposed that both tombs were close, but not so close.” After rechecking their data, the researchers determined that the tombs were indeed constructed to within just one hand width apart. To see a video of the 3-D models of the chambers, go to archaeology.org/3dtomb.



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SHIP OF PLENTY

A well-preserved shipwreck lying in shallow water just a few hundred feet off the coast of Israel is providing new evidence of what life was like in the region when it sank, between the mid-seventh and mid-eighth century A.D. Volunteer student divers, who are part of a team led by archaeologist Deborah Cvikel of the University of

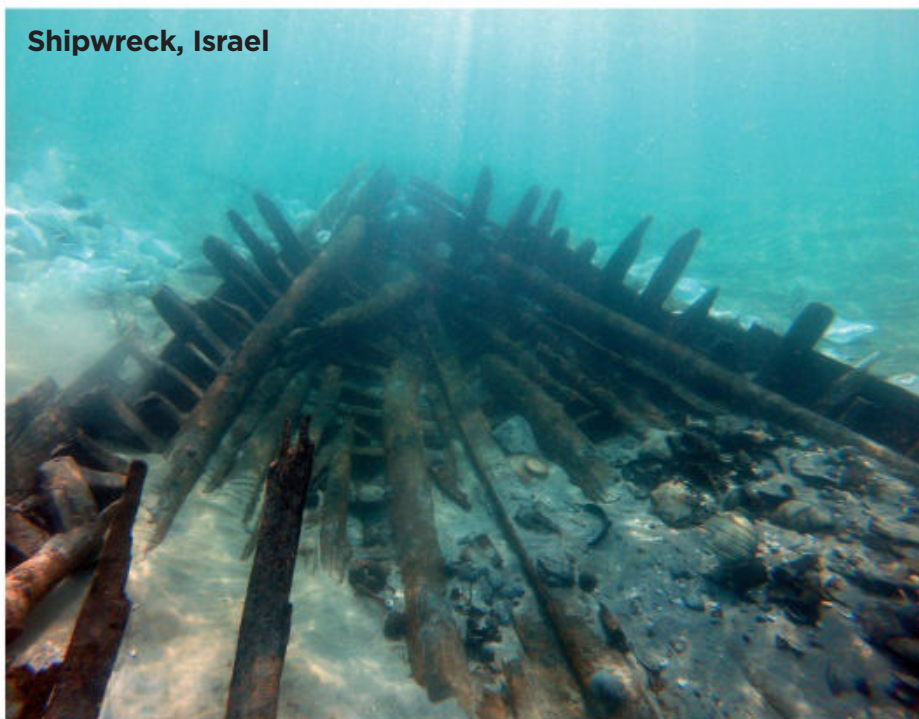


Storage vessels

Haifa, discovered almost 200 amphorae containing commodities such as olives, dates, fish, pine nuts, grapes, and raisins. This breadth of goods is surprising, as it has generally been thought that trade in the region declined greatly after the transition from Byzantine to Islamic rule in the mid-seventh century. “Here we have a large ship with cargo from all over the area,” says

Cvikel. “I think we have proved that there was some large-scale maritime commerce at the time.” The team has also found indications that the ship’s crew may have included members of different faiths. Some of the amphorae bear Islamic benedictions, while others are painted with crosses, and the word “Allah” in Arabic was found burned into the ship’s wood. Says Cvikel, “Now we are wondering, Was the crew a mixture of Christians and Muslims?”

—DANIEL WEISS



Shipwreck, Israel

A TALE OF TWO PIPES

Two pipes unearthed at Indigenous sites in central and southeastern Washington—one dating to before contact with Europeans, and the other used after their arrival in the 1700s—have revealed the changing smoking habits of Native Americans in the Pacific Northwest. An interdisciplinary team of researchers from Washington State University pioneered a process called ancient residue metabolomics, which has allowed them to extract multiple compounds from the pipes’ surfaces and interiors and to identify plants used for smoking.

In the precontact pipe, they detected the presence of smooth sumac (*Rhus*

glabra), which smokers likely added to tobacco to improve its flavor and to take advantage of the plant’s medicinal properties. This pipe, which was made of stone, also contains traces of *Nicotiana quadrivalvis*, a species of tobacco that was once cultivated locally by Native tribes. The post-contact pipe, which was made of clay and discarded in the late eighteenth century, is of a type introduced by Europeans and quickly adopted by Native Americans. The pipe contains *Nicotiana rustica*, a more potent tobacco species of South American origin that was grown by tribes in the eastern United States. Its presence in the pipe helps establish

Precontact stone pipe bowl



that it was co-opted by Europeans for use in their trade tobacco. “The presence of *rustica* in the post-contact pipe confirms that indigenous tobacco was an important trade commodity after contact,” says Washington State University archaeologist Shannon Tushingham. This suggests that smoke plants cultivated by Native people continued to be used alongside tobacco domesticated by Europeans.

—BENJAMIN LEONARD



Post-contact clay pipestem

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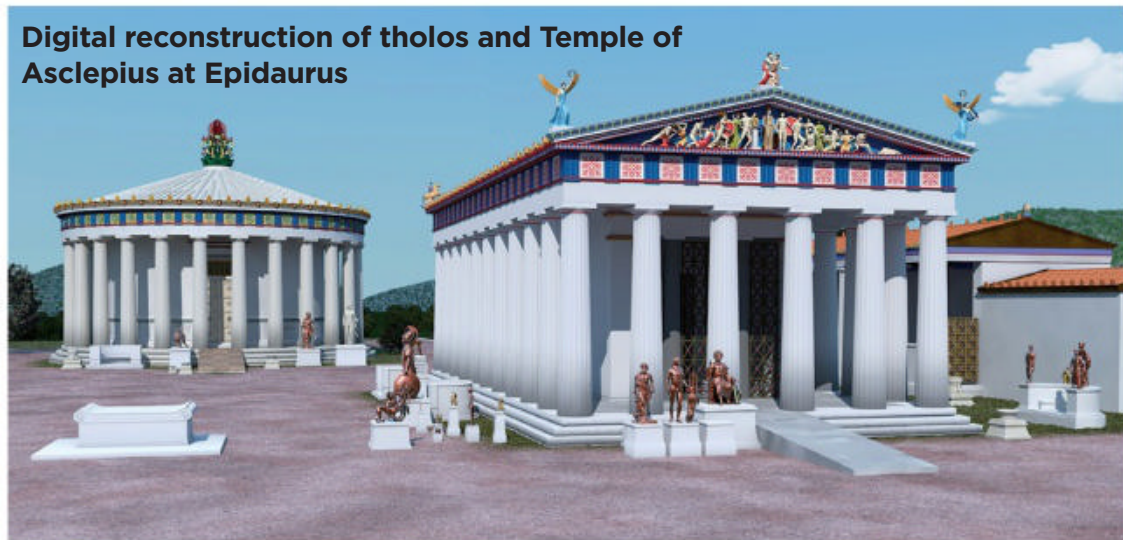
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TO REACH THE GODS

Digital reconstruction of tholos and Temple of Asclepius at Epidaurus



Ancient visitors to the sanctuary of Asclepius at Epidaurus in the northeastern Peloponnese traveled from all across Greece to be healed by the god. Many of these pilgrims are described in inscriptions as walking with canes and crutches or being carried on litters or wagons. By the fourth century B.C., the sanctuary had been equipped with at least 11 stone ramps that provided access to a number of

Attic red-figure amphora, ca. 480 B.C.



its raised temples and other public spaces. Archaeologist Debby Sneed of California State University, Long Beach, has found that such ramps were installed much more frequently at sanctuaries associated with healing, and contends that the ramps were purposely built to serve these sanctuaries' mobility-impaired visitors. In contrast to today's disability accommodations, however,

ancient Greek architects' design choices were not motivated by progressive social reforms, but by the desire to ensure the continued success of healing sanctuaries. "It was a very practical decision for the Greeks to make sanctuaries accessible," Sneed says. "Since their clientele was impaired, they needed infrastructure to enable these visitors to use all the spaces."

—BENJAMIN LEONARD

BRONZE AGE KEEPSAKES

Bronze Age Britons seem to have collected and kept as relics the bones of people they'd lost. The macabre keepsakes included skulls and long bones as well as bits of cremated bones. Archaeologists Thomas Booth of the Francis Crick Institute and Joanna Brück of University College Dublin radiocarbon dated some of these relics that were found in settlements or in graves, where they had been intentionally placed along with skeletons buried between 4,500 and 2,600 years ago. By comparing the age of the bone relics with that of the skeletons in the associated burials or other dateable organic material, the researchers determined that the redeposited bones belonged to individuals who had lived within memory of the deceased. "The retention of human remains was a very broad practice and it encompassed lots of different kinds of relationships," says Booth. "This included family members and social kin, but also enemies and people who had particular skills one wanted to take advantage of."

Some skulls were damaged after death, he says, perhaps suggesting that they were the remains of captives, while others



Skeleton buried with remains of three earlier individuals, Windmill Fields, North Yorkshire, England

were perforated and may have been hung on display in homes. Still other types of bones were fashioned into useful objects. These include a human femur that was carved into a musical instrument and buried with a man, tying him to the previously deceased individual's identity, occupation, or deeds in life.

—BENJAMIN LEONARD



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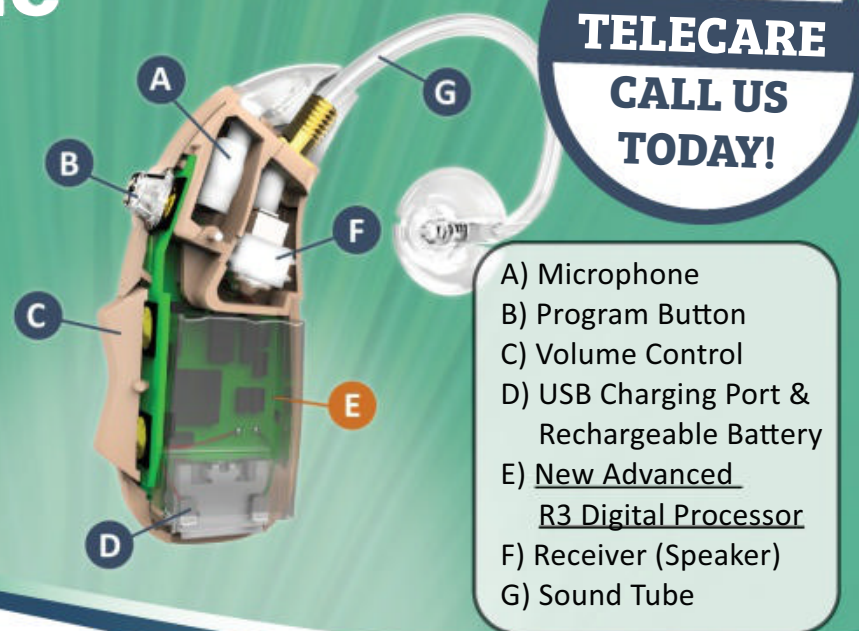
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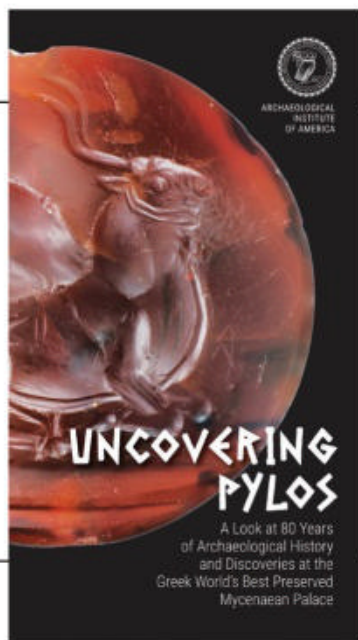
ARCHAEOLOGICAL INSTITUTE OF AMERICA

UNCOVERING PYLOS

In 1939, an archaeological team led by University of Cincinnati professor Carl Blegen unearthed the first traces of what would soon be recognized as the ancient Greek city of Pylos and the fabled Palace of Nestor. Celebrated as one of the greatest discoveries of its time, it would forever change the study of Aegean prehistory. The 3,200-year-old ruins are the best-preserved Mycenaean palace complex ever excavated in Greece, and the hundreds of inscribed Linear B tablets found there have provided archaeologists with a unique window into how these Bronze Age centers functioned.

Almost eight decades later, the legendary site continues to reveal its incredible

hidden treasures. Additional discoveries in 2015 and 2017 would once again indelibly change the field of Aegean Bronze Age archaeology: the grave of the so-called Griffin Warrior and two monumental tholos tombs. The burials contained a trove of finely crafted objects that have provided even more new information about the people that lived and died in Pylos thousands of years ago. These new discoveries continue to prove what an exceptional place ancient Pylos once was, and that, although the site has been investigated by archaeologists for more than three-quarters of a century, there is still much to be learned today while uncovering Pylos.



The AIA has created *Uncovering Pylos*, a special publication highlighting the history and archaeology of this ancient site.

To receive your copy of *Uncovering Pylos*, make a \$25 donation to the Annual Fund.

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The AIA thanks Richard C. MacDonald for his generous support of the *Uncovering Pylos* Project.

HONORING THE DEAD

From the medieval period to the twentieth century, there was a thriving Jewish community in the Polish market town of Leżajsk, and beginning in 1635, its dead were buried in the town's Jewish cemetery. But in 1939, the Wehrmacht occupied Leżajsk, deported its Jews to the Soviet Union, and began to destroy the cemetery. In recent months, during reconstruction of the town's Market Square, many Jewish tombstones, or *matzevot*, have been found, some still bearing their painted gold and red lettering. "The only thing that saved the inscriptions and the polychrome was that they were buried facing down," says archaeologist and regional monuments conservator Ewa Kedzierska. "I was really shocked. We expected maybe a few tombstones because some had been found during road renovation nearby, but no one expected there to be more than 150. Some are complete, others are in fragments. Some are modest, others have colorful inscriptions and beautiful carvings. They look wonderful." By studying the inscriptions, Kedzierska hopes to learn more about Leżajsk's former Jewish residents, their professions, and the roles they played in the greater community. According to Jewish custom,



Market Square, Leżajsk, Poland

the matzevot cannot be put back into the ground, explains Kedzierska, and are thus now in the care of the Leżajsk city authorities, who, in consultation with the larger Jewish community, will decide how best to display them in a way that properly honors the dead.

—JARRETT A. LOBELL



Tombstone



Tombstone

Border Cave, South Africa



Grass bedding

PALEOLITHIC BEDTIME

The people living in South Africa's Border Cave up to 200,000 years ago knew how to make a cozy home. Excavations that took place between 2015 and 2019 have revealed that the cave's residents slept on bedding that was made by piling broad-leafed grass on top of a layer of ash from the many fireplaces within the cave. The ash may have kept crawling insects from disturbing sleepers, says Lyn Wadley of the University of the Witwatersrand. Wadley believes that this type of bedding was very common in the distant past, but that it rarely survives in the archaeological record. The research team removed layers of the cave's sediment in blocks and excavated them in the lab, which enabled them to examine their contents under a microscope. This meticulous approach revealed tiny pieces of ash and plant fibers that made up the bedding used by the cave dwellers between 200,000 and 35,000 years ago.

—ZACH ZORICH



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LAURENS' LAST STAND



Laurens' Run, Tar Bluff, South Carolina

On the morning of August 27, 1782, Continental forces led by John Laurens—aide-de-camp to General George Washington and friend of Alexander Hamilton—clashed with 140 British soldiers in a minor skirmish on the shores of the Combahee River, about 50 miles south of Charleston, South Carolina.

Two days earlier, General Mordecai Gist had



Musket balls



Bayonet

prevented foraging British troops and their 18 vessels from landing on the east side of Combahee Ferry, 12 miles upriver of the battle site. On the evening of August 26, Gist dispatched Laurens, along with 40 men and a howitzer, to launch a surprise attack at a spot called Tar Bluff. "For Laurens, Tar Bluff, with its 20-foot elevation overlooking the river, was the best tactical location for the placement of his howitzer," says archaeologist Mike Yianopoulos of the South Carolina Battleground Preservation Trust.

Having spotted Laurens' column departing from Combahee Ferry with the howitzer, the British anticipated his plan and ambushed his contingent. In the ensuing battle, Laurens was killed, and the British captured the howitzer. With the aid of historical accounts and metal detectors, Yianopoulos and his team have now pinpointed the battle's exact location. A crude map drawn by a British officer marks the battle lines between two creeks connected by a smaller creek, which the researchers identified in dense forest using lidar. "Mapping the coordinates of dropped and fired musket shot and cannon grapeshot then allowed us to graphically see the pattern of troop positions and movements through the battle," Yianopoulos says.

—BENJAMIN LEONARD



Clay pig figurines, Maszkowice, Poland

PIGGY PLAYTHINGS

Researchers excavating a Bronze Age hillfort in Maszkowice, Poland, have unearthed two clay pig figurines in a house along the settlement's defensive wall. Dating to some 3,500 years ago, the 1.7-inch trinkets were likely either toys or sacred objects. "There are important similarities between religious ritual and child's play," says archaeologist Marcin S. Przybyła of Jagiellonian University. "They both pretend something, reenact a story." Regardless of the figurines' exact use, he says, swine were clearly crucial to local subsistence. Pig remains comprise up to one-fifth of the animal bones recovered from the site's Early Bronze Age levels.

—BENJAMIN LEONARD

WHAT'S IN A NORSE NAME?

Intrigued by a number of nautical-themed Norse place-names for inland locations on the Scottish island Orkney, researchers have identified a series of lost Viking waterways that ran across the island, connecting the North Atlantic with the Scapa Flow. Among the curiously named spots is Knarston, which comes from the Old Norse *knarrar staðir* and denotes a farm where transport vessels are moored. Using remote sensing and environmental data from sediment

Remote sensing, Orkney, Scotland



Map of western Orkney showing a possible Viking inland water route

samples, the team mapped several infilled channels that once connected farmsteads around the island's Loch of Harray to the stronghold of Viking earls at Birsay on the northwest coast. Environmental scientist Richard Bates of the University of St. Andrews says that farmers would have been able to trade and transport regular tribute to Birsay without having to brave Orkney's treacherous coastal waters. "Perhaps I've come home for the winter and I can get my boat right up close to where I live, get it repaired, and get goods on and off easily," Bates says. "The waters around Orkney are very difficult, even at the best of times, so if you can travel inland on a smaller craft, that's a much easier option."

—MARLEY BROWN

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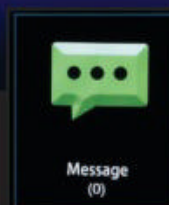
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Monitor heart rate



Track steps and calories



KANSAS: Imaging technology mounted on drones has identified the outline of a previously unknown earthen feature in southeastern Kansas. The 164-foot-diameter monument is likely one of the enigmatic “council circles” built by ancestral Wichita communities. These may have been used for ceremonial rituals, as residences for tribal elites, or for defensive purposes. The earthworks may once have been part of the lost settlement of Etzanoa, which was one of the largest Native American communities in North America before being abandoned around 1700.



SCOTLAND: The famous 4,800-year-old Maeshowe passage grave on Orkney may have been designed to facilitate the deceased’s journey into the afterworld.

A new study indicates that the tomb’s 3 side chambers, which branch off the large central chamber, may have been fashioned with inverted architectural elements the researcher likens to upside-down wallpaper. The tomb’s Neolithic builders envisioned the hereafter as the inverse of life on Earth. The doorways into the tomb’s side chambers may have acted as portals into the afterlife.



MEXICO: Portions of two historic buildings, one atop the other, were revealed during renovation work in the heart of Mexico City. The upper structure included flooring and walls that belonged to the home of Hernán Cortés, the Spanish conquistador who sacked the Aztec capital in 1521. Ten feet below these remains, workers uncovered stone slabs from the palace of Axayácatl, father of the Aztec emperor Moctezuma II. After the Spanish captured the city, they tore down the palace and reused its materials to construct Cortés’ residence.



PERU: One of the keys to the Inca Empire’s prosperity was bird guano harvested from islands off coastal Peru and northern Chile. The waste from seabirds such as cormorants and pelicans was an excellent fertilizer and was transported to the Inca highlands and other less fertile areas to boost agricultural productivity. The Inca even implemented stringent restrictions to safeguard the birds’ breeding grounds, and violations were punishable by death. Researchers say this may be the earliest conservation scheme created by humans to protect an animal species and its natural habitat.



EGYPT: Under Roman rule, the Red Sea port of Berenice blossomed into an important

trade hub, connecting Africa with India during the 1st and 2nd centuries A.D. Excavation of an animal necropolis revealed that along with spices, textiles, and luxury goods, rhesus macaques were also imported from across the Indian Ocean, to be kept as household pets. The skeletons of more than a dozen of the Indian monkeys were found carefully buried, some surrounded by grave goods and positioned like sleeping children.



SWEDEN: In 1495, King Hans of Denmark boarded a ship bound for Sweden, where he intended to lay claim to its throne. He traveled with a cargo meant to impress the Swedish nobles. However, his ship, *Gribshunden*, soon sank near the town of Ronneby. An investigation of the wreck site has recovered a wooden barrel that, to the divers' surprise, contained the well-preserved remains of a 6-foot-long Atlantic sturgeon. The highly prized fish was likely meant to be served as a prestige food item, conveying the Danish king's high status to his Swedish hosts.



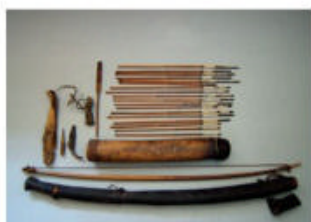
ISRAEL: Researchers have finally determined the location of the Battle of Arsuf, a key engagement in the Third Crusade (1189–1192). Relying on historical documents, environmental analysis, and material evidence, archaeologists pinpointed the spot on the Sharon Plain, north of modern-day Tel Aviv, where Christian troops led by Richard the Lionheart defeated the Muslim army of the sultan Saladin. Although the European forces won the battle that day, they ultimately failed to recapture Jerusalem, and returned home in 1192.



NEW ZEALAND: Demolition of 43 buildings in Invercargill is providing a fascinating glimpse of what the city's downtown area looked like in the late 19th and early 20th centuries. Newly uncovered remains represent a variety of businesses once located there, including banks, restaurants, a soda and cordial manufacturing company, a newspaper office, and other merchants. As many as 14 wells once used for rubbish disposal were found filled with a wealth of contemporaneous, and sometimes unusual, material, such as a sealed bottle of olives.



MADAGASCAR: Unique rock art in a remote part of western Madagascar is baffling experts. The black charcoal drawings, which were found in Andriamamelo Cave, depict anthropomorphic and zoomorphic figures, including the now extinct megafaunal sloth lemur, in ceremonial and hunting scenes. At this point, archaeologists are unsure how old the petroglyphs are. One theory holds that they may have been created more than 2,000 years ago, based on some of the compositions' similarities to Ptolemaic Egyptian motifs, including constellations.



SOUTH AFRICA: Applying poison to arrows has great benefits. The projectile does not have to be very substantial or to be shot with great force to cause a lethal wound—it only needs to penetrate deep enough for the poison to enter the bloodstream. An analysis of bone arrowheads from Blombos Cave indicates that this technology may date back 72,000 years. The shape and small size of the points found there suggests that they were likely coated in toxins; otherwise their diminutive nature would have rendered them virtually ineffective.

ALCOHOL THROUGH THE AGES

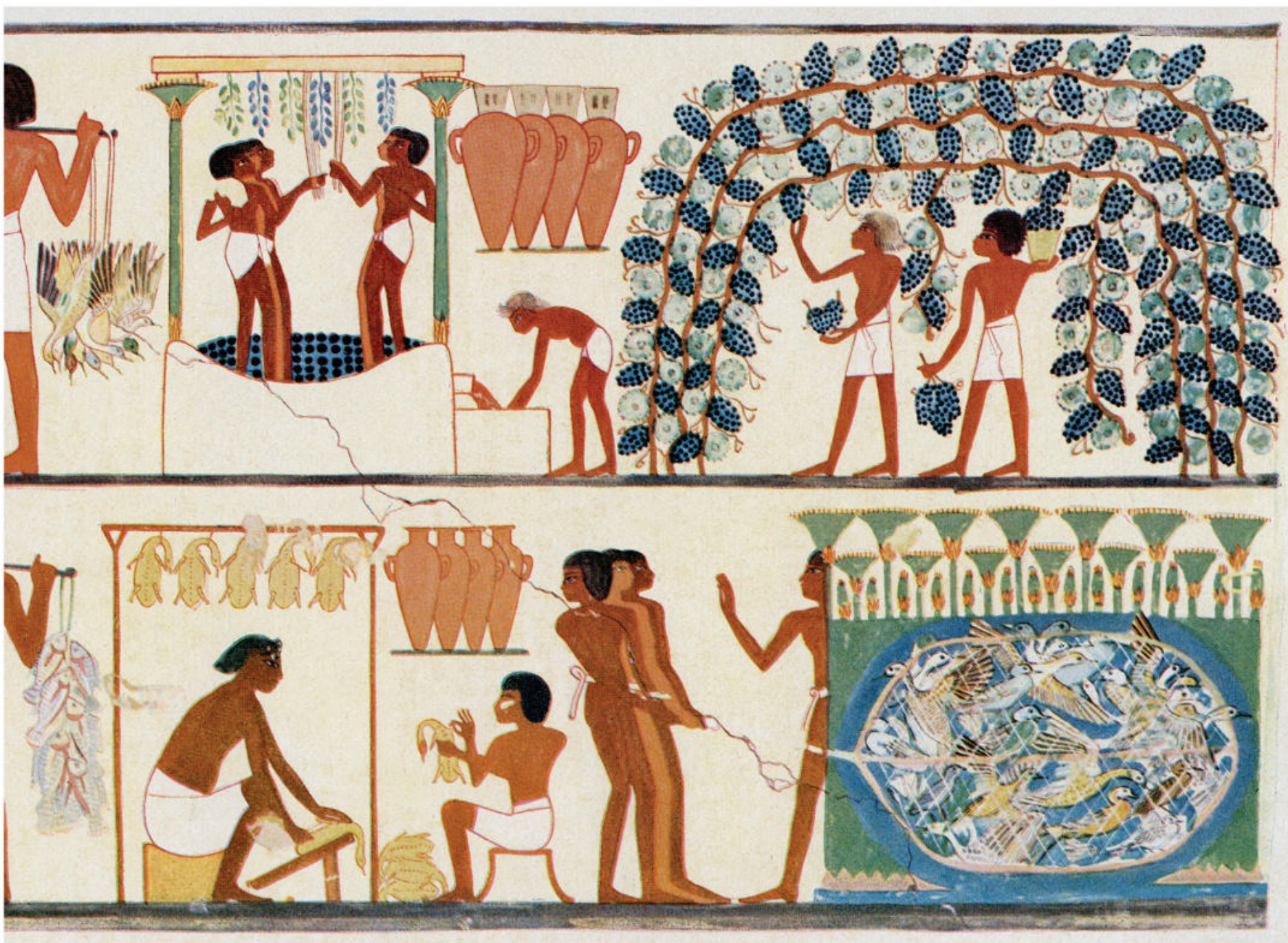
How the magic of fermentation has transformed the human experience

The happy accident of biting into a piece of fruit or sipping liquid imbued with the intoxicating properties imparted by fermentation must have beguiled innumerable early humans and their ancestors. At what point, however, did they first seek to control the process of alcoholic fermentation? A lump of beeswax wrapped in plant material and tied with twine discovered in South Africa's Border Cave in 2012 suggests that early hunter-gatherers may have been making a type of honey-based alcohol there as long as 40,000 years ago. The bundle also contained traces of a protein substance, possibly egg, and tree resin—a recipe lost to time. This possible progenitor of a type of mead that is still made by the nomadic San peoples of South Africa may have been among a variety of new foods and technologies produced during the Paleolithic period.

Since that time, people have never stopped seeking out new ways to enjoy their cocktails. However, alcoholic beverages, whether made from grapes or grain, have been sipped not only for pure enjoyment, but have also been used to nourish the dead and control empires, to establish trade relationships and manipulate the world economy, and sometimes just to eke out a living in tough times. For archaeologists, the consumption, creativity, and commerce associated with alcoholic beverages offers a unique window into one of humanity's most popular pastimes.

Roman fresco of a deity
holding a drinking horn and
wine bucket





Tomb of Nakht

SPIRITS FOR THE DEAD

Egypt

As early as the Predynastic period, beginning in the mid-fifth millennium B.C., the Egyptians placed wine jars in tombs as offerings to the dead. References to wine dating to the 1st and 2nd Dynasties have been identified on ceramic jar seals found in the burial grounds at Abydos and Saqqara, and the word for wine, “irp,” appears on 2nd Dynasty stelae. By the 4th Dynasty, in the mid-third millennium B.C., tomb designers had begun to illustrate viticulture and winemaking on tomb walls. For archaeologist Sofia Fonseca of the Autonomous University of Barcelona, such imagery offers valuable insights into the vintner’s entire process. “We have this idea that viticulture and winemaking originated in the ancient Near East, and that European wine culture is a legacy from Greece and Rome,” she says. “But the truth is that, starting more than 4,500 years ago, and for the next two millennia of Egyptian history, we have images that

show a traditional process similar to those winemakers in Mediterranean regions are still using. By studying these images, we can have a real change in the paradigm of wine history and bring awareness to the influence that Egyptian wine culture had on Mediterranean wine culture.”

While the Egyptians drank both red and white wine, only red wine is depicted in the tombs. “It’s interesting to see how the symbolism of wine is deeply related to the color red,” says Fonseca. “This recalls the relationship between wine and the blood of Osiris, the god of death and resurrection, who is called the Lord of Wine in the late Old Kingdom Pyramid Texts. It also recalls the relationship between wine and the reddish color of the Nile during the annual flood, when iron-rich sediment flows into the river from the mountains of Ethiopia at just the time when the grape harvest begins.”

—JARRETT A. LOBELL

ACHAEMENID WINE CONNOISSEURS

Iran

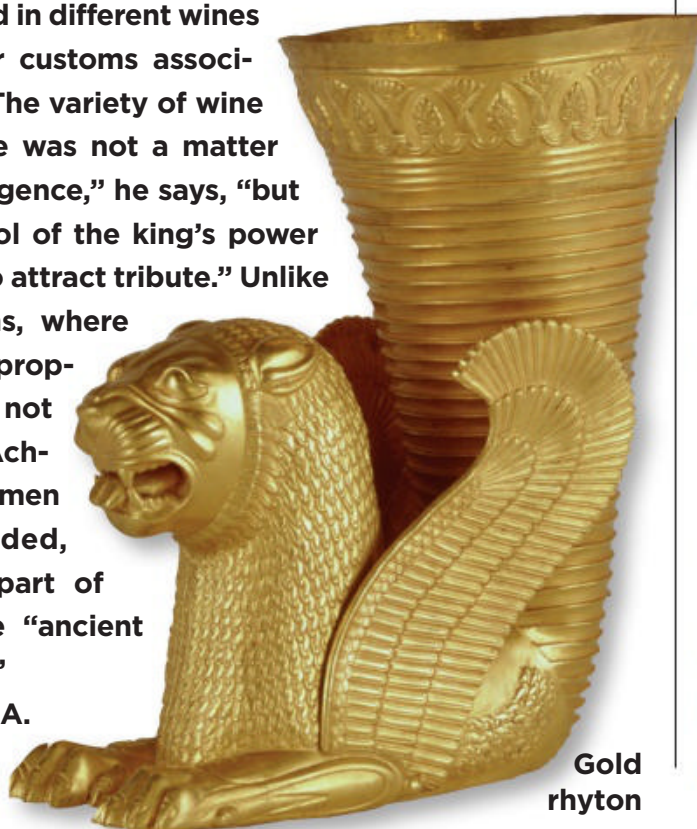


Tribute bearers, Achaemenid relief

For the kings of the Achaemenid Empire, who ruled much of the ancient Near East from 550 to 330 B.C., there was little—apart from hunting lions and conquering the world—that rivaled a rhyton of fine wine. But for these powerful potentates, wine was not just a pleasurable pastime. It was also not, despite what the fifth-century B.C. Greek historian Herodotus would have people believe, evidence of the kings’ profligate behavior and poor decision-making skills characterized by zealous over-imbibing. “Wine drinking and distribution not only embodied refinement, wealth, and power for the Achaemenids, but also provided an opportunity for rewarding loyalty and implementing political strategy,” says linguist Ashk Dahlén of Uppsala University. “Banquets were inherently public, political acts. They were central to the construction of royal identity and demonstrated that the empire was a supreme player on the world stage.”

At such splendid affairs, wine was served by the Royal Cup Bearer, a role known from records such as the Persepolis Administrative Archives to have been one of the highest trust. The bearer would have been an excellent sommelier and, says Dahlén, well versed in different wines and the particular customs associated with them. “The variety of wine at the king’s table was not a matter of sheer self-indulgence,” he says, “but served as a symbol of the king’s power and his capacity to attract tribute.” Unlike Greek symposiums, where the presence of “proper” women was not allowed, in the Achaemenid court, women were fully included, says Dahlén, all part of what he calls the “ancient Iranian dolce vita.”

—JARRETT A.
LOBELL



Gold
rhyton

SOCIALIZING AT THE SYMPOSIUM

Greece

Ancient Greek vases frequently depict the revels of men participating in the symposium, an intimate drinking party held in a private home, as well as the consequences of excessive consumption that may have occurred during such gatherings. But just how much wine, mixed with water in a bowl called a krater, would a group have consumed in the course of a typical symposium in early fifth-century B.C. Athens? To answer this question, archaeologist Kathleen Lynch of the University of Cincinnati and independent scholar Richard Bidgood calculated the capacity of serving vessels and drinking cups, including kylikes and skyphoi, excavated from early fifth-century B.C. houses in the Athenian Agora, the city’s main marketplace. Assuming each kylix was filled to just over half an inch below its rim—a level at which reclining guests could swill, but not spill, their wine—they estimated that the average cup’s capacity was roughly equivalent to that of a can of soda. Thus, a single krater could hold a few rounds of drinks for a moderate-size group.

Even if the krater were refilled throughout the night, Lynch explains, this suggests that symposiasts wanted to prolong the evening’s festivities without going overboard. The researchers also discovered that kylikes from a given house held varying amounts, even if they appeared to all be around the same size. “The symposium’s emphasis on equality was underscored by everyone having the perception of the same amount of wine,” says Lynch. “Even if it was technically a bit different, they wanted to look around the room and see people with similar-size cups filled to a similar level, so that no one felt that somebody was getting too much.”

—BENJAMIN LEONARD



Kylix

Skyphos



Symposium painting, Tomb of the Diver, Paestum, Italy

A TASTE FOR THE EXOTIC

Korea

Although the ancient city of Xi'an in what is now central China is often considered the eastern terminus of the Silk Road, the flow of goods, people, and ideas between Europe, the Middle East, and Asia did not end there. Drinking vessels that date to Korea's Goryeo Period (ca. A.D. 918–1392) suggest that imported spirits, including grape wines, a distilled anise-flavored drink called *arak*, and a fermented dairy product known as *kumis*, inspired artisans to craft novel types of ceramic containers to hold these newly enjoyed beverages. "New kinds of alcohol led to a proliferation in vessel shapes," says art historian In-Sung Kim Han of SOAS University of London. She explains that many traditional East Asian alcoholic substances made from grains such as rice, millet, and barley, were thick and porridge-like. Pre-Goryeo vessels uncovered during archaeological excavations, mostly of tombs, suggest that these were primarily consumed from drinking bowls. More delicate cups from the same period were probably reserved for drinking tea and filtered rice wine, which was relatively rare.



Celadon flask

Han suggests that while medieval Korea is often thought of as having been closed off to the rest of the world, the Goryeo Kingdom's contact with nomadic groups to the west kept it in touch with global trends and foreign commodities, including alcoholic beverages. Particularly after the kingdom became part of the Mongol Empire in 1270, elite members of Goryeo society adopted some of the consumption habits of their counterparts across Central Asia and the Islamic world, where alcohol was widely available despite its prohibition in the Koran. One particular type of long-necked bottle introduced during the Goryeo Period, which was used to store wine, appears to have come to Korea from Islamic Persia. "It seems that the tastes of the upper class in any era tend toward

the cosmopolitan," Han says. The *Goryeosa*, a history of the kingdom compiled in the fifteenth century, describes one Goryeo ruler who began wearing Mongolian clothing, sporting a pigtail hairstyle, and taking part in large-scale hunts, just like other princes across Eurasia. "Despite his courtiers' criticisms," Han says, "he and his immediate followers pursued a worldly lifestyle, including enthusiasm for exotic drinks."

—MARLEY BROWN

Long-necked celadon bottle

FORGING WARI ALLIANCES

Peru

High atop a mountain in southern Peru, leaders at the remote administrative center of Cerro Baúl once entertained local elites with elaborate feasts that helped sustain the Wari Empire from about A.D. 600 to 1000. Central to these gatherings was the ceremonial drinking of *chicha*, a typically corn-based fermented beverage. Based on the size of the spaces where the feasts took place, archaeologists think that they held 50 to 100 guests who imbibed *chicha* from vibrantly painted ceramic cups. These cups ranged in size to reflect the status of the drinkers and were decorated with images of Wari heroes and gods, such as the Front-Facing Deity, and more local stylistic flourishes, including llamas adorning the deities' faces. "One of the most effective ways to bring local elites into the hierarchy of the empire was through drinking Wari beer the Wari way," says archaeologist Donna Nash of the University of North Carolina at Greensboro, who codirects excavations at Cerro Baúl with archaeologist Ryan Williams of the Field Museum. "Many of the stories, songs, and ideas that went with that probably would have been expressed using the iconography on the vessels guests were drinking from."

Because Cerro Baúl was a provincial outpost on the empire's edge, the Wari relied on local resources and on-site brewing





to maintain a steady flow of chicha. Nash and Williams have unearthed a large brewery where high-status Wari women ground, boiled, and fermented corn and other ingredients to produce the beverage. Analysis of residue extracted from drinking cups, serving vessels, and oversize storage jars from the brewery's fermentation room indicate that the drink was likely a mixture of corn and molle, or Peruvian pepper tree berries, whose seeds the archaeologists found in large quantities in the brewery's trash pits. Although the Wari at Cerro Baúl didn't have direct access to fresh water, the region's temperate climate was a boon for chicha production, even during more arid periods. "Molle berries produce year-round in this environment," says Williams. "Corn can be double or triple cropped, so you can get two to three times the corn from a single year's harvest."

The Wari's self-sufficiency ensured that feasting events could continue regardless of political disruptions or trade delays elsewhere in the empire. The archaeologists have determined that even the cups the Wari used were made in a ceramic workshop on the mountaintop using high-quality clay from a source they controlled across the valley, rather than imported from the distant imperial capital.

—BENJAMIN LEONARD



Chicha brewery, Cerro Baúl

Serving jar



Front-Facing Deity cup



DESERT WINE

Israel

Grape seeds



Gaza jar



In the Byzantine era, *vinum Gazetum*, or Gaza wine, was shipped from the port of Gaza throughout the Mediterranean and beyond. "Gaza wine was considered a sweet, white luxury wine, praised by poets and mentioned in travelers' accounts," says archaeobotanist Daniel Fuks of Bar-Ilan University. The wine was packaged in ceramic "Gaza jars," whose long, thin shape made them appropriate for transport via camel and boat. These jars have been recovered as far away as Britain, Germany, and Yemen, a testament to the spirit's wide appeal.

The Negev Highlands, some 30 to 60 miles inland from Gaza, has long been considered a likely site for Gaza wine production. Texts from the fourth to seventh centuries A.D. describe vineyards there, and several large Byzantine winepresses have been discovered. Now, an archaeobotanical study led by Fuks provides clear evidence of the rise and fall of extensive grape growing in the Negev Highlands, as well as its apparent connection to the Gaza wine trade.

To track the intensity of local viticulture over time, Fuks and his team calculated the ratio of grape seeds to cereal grains from 11 trash mounds at three sites. They found the proportion of grape seeds rose from practically nothing in the third century to modest levels in the fourth to mid-fifth centuries. It peaked in the early sixth century before dropping sharply in the mid-sixth to mid-seventh centuries. The percentage of Gaza jars among the pottery in the trash mounds followed a strikingly similar trajectory. According to Fuks, this suggests that from roughly the fourth to sixth centuries, local farmers developed a commercial scale of viticulture connected to Mediterranean trade via Gaza.

Many scholars have linked the decline in the market for Gaza wine to the Islamic conquest of the region in the mid-seventh century. Fuks' findings, however, indicate grape production in the Negev Highlands fell off a century earlier. Among the possible explanations, he says, are global cooling that may have led to unusually destructive flooding in the area and the outbreak of the Justinian plague in A.D. 541, which could have eroded demand for luxury goods throughout the region and reduced the supply of farmworkers.

—DANIEL WEISS



Byzantine mosaic



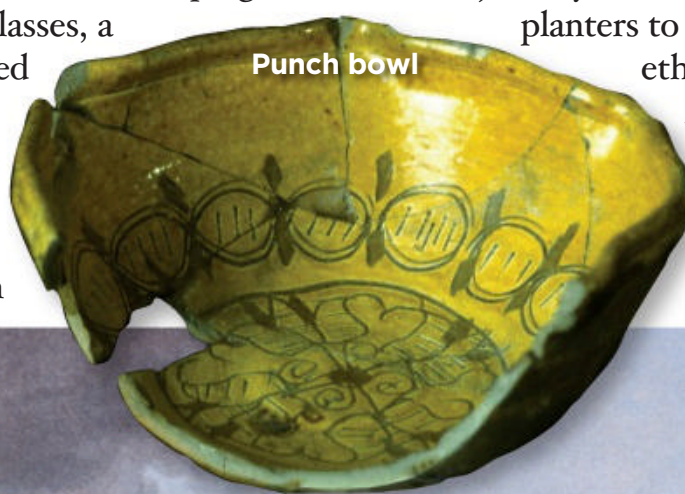
TRIANGLE TRADE

Barbados

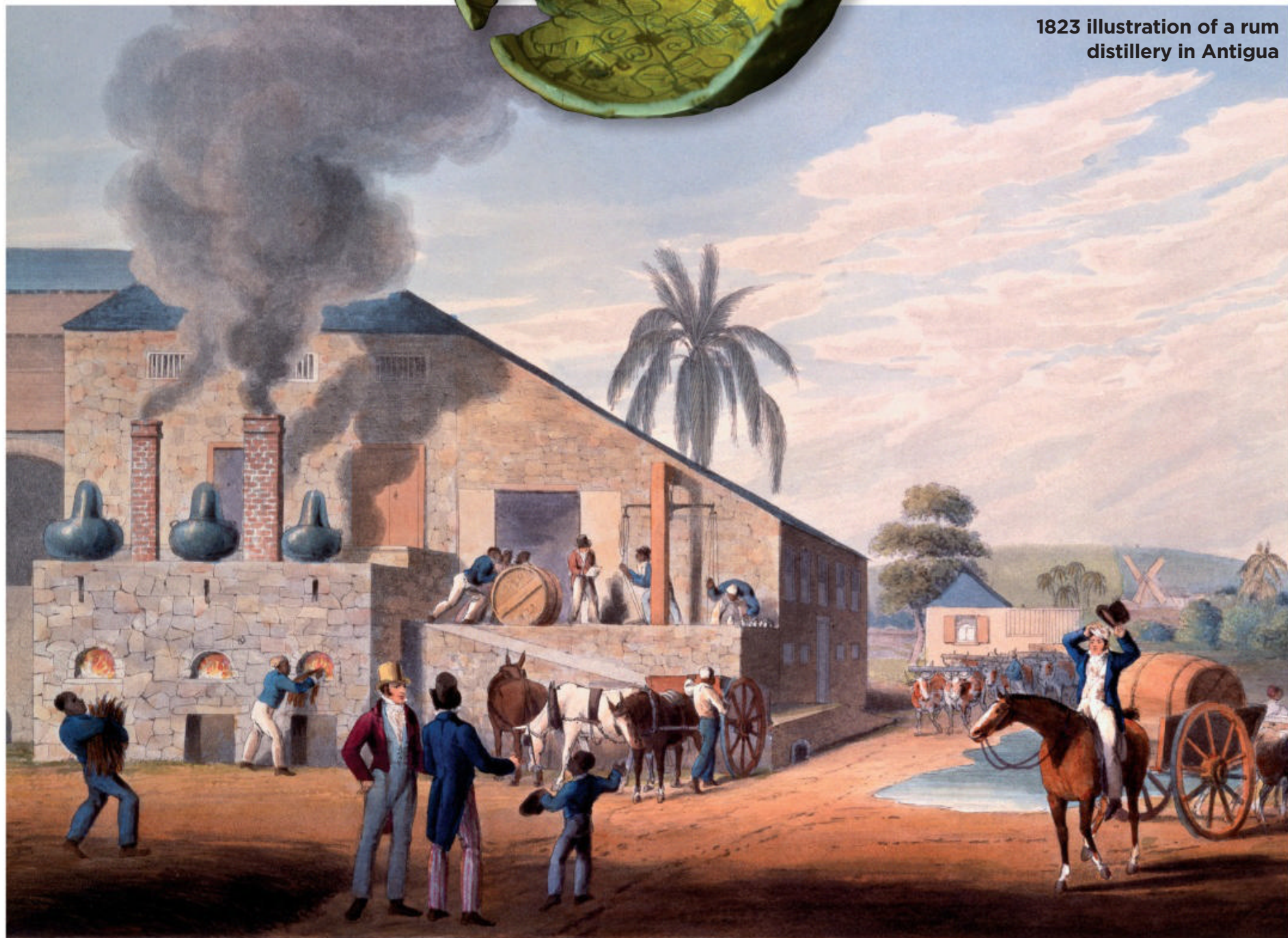
In the 1640s, English landholders in Barbados began cultivating sugarcane after failing to compete in the tobacco market dominated by Virginia planters, beginning a revolution that would transform sugar from a rare, exotic commodity into a staple of modern life. This profound shift in global commerce was founded on a system of slavery for which millions of captive Africans were transported to plantations across the Americas. These enslaved Africans brought with them millennia-old knowledge of fermenting grains and palm sap to produce alcohol. They were indispensable in developing the process by which sugarcane juice or molasses, a byproduct of sugar refining, was fermented into alcohol and distilled, producing rum. Archaeologist Frederick Smith of North Carolina A&T State University explains that while rum began as a drink for sailors and the lower classes, it grew in

popularity in both the New World and Europe. Eventually, it became an essential component of the Triangle Trade, in which valuable raw materials, including sugar, tobacco, cotton, and furs, were sent to Europe from the Americas, and manufactured goods were exchanged for enslaved people in Africa. “Rum was both a prized ingredient in punch served at elite gatherings in Europe and the colonies, and an important trade commodity in Africa,” Smith says. West Africans, he explains, also incorporated rum into religious ceremonies that survived the horrors of the journey across the Atlantic and attempts by slavers and planters to separate captives from members of their ethnic and linguistic communities. “Rum,” he says, “became a versatile substance that facilitated connection with the spiritual world and promoted group identity within enslaved communities.”

—MARLEY BROWN



1823 illustration of a rum distillery in Antigua





Moonshine still, ca. 1920



THE MOONSHINE ERA

United States

Since the earliest days of the Colonial Period, Americans of all backgrounds have distilled spirits from crops, especially grains. In the mid-nineteenth century, the imposition of taxes on alcohol and a growing temperance movement began to drive this cottage industry underground. After Prohibition began in 1920, the market for high-proof illegal alcohol, or moonshine, soared. But, says University of Nevada, Reno, archaeologist Cassandra Mills, this shadow economy is largely lost to history. “You only get records of moonshine production when people were caught and charged,” she says.

Hoping to fill in this gap, Mills has analyzed and dated the remains of more than 100 moonshine stills in Alabama using artifacts found with them. She learned that “pot stills,” aboveground stills often constructed in prehistoric rock shelters, were popular in the late nineteenth and early twentieth centuries.

During Prohibition, subterranean “groundhog stills” became the dominant type. She has also identified a localized tradition of “deadman stills,” low-lying contraptions shaped like coffins, which may have been constructed by a single extended family of moonshiners in northern Alabama. Mills points out that production of prohibited spirits offered an economic lifeline to impoverished rural communities, especially during the Depression. “Thirty dollars for a jug of moonshine was nothing for Al Capone,” says Mills. “But it meant everything for a family that didn’t know where next week’s groceries were going to come from.” She hopes future research into stills will show how much chemistry, craftsmanship, and ingenuity lay behind this essential, if illicit, American tradition.

—ERIC A. POWELL

The Great Wall of Mongolia

A nomadic medieval dynasty constructed a 450-mile barrier to help manage their sprawling empire

by DANIEL WEISS

IN THE EARLY TENTH CENTURY A.D., the Khitan, a coalition of nomadic tribes native to eastern Mongolia and parts of China, took advantage of political instability in the region to establish an empire. They conquered a vast swath of northern Asia, stretching from the border of the Korean Peninsula across large portions of northern China, southern Siberia, and Mongolia. Included in their realm, which came to be known as the Liao Empire, was a significant area of traditionally Chinese territory inhabited by settled farmers, as well as great expanses occupied by various other nomadic tribes, who raised herds of horses, sheep, goats, and camels on the grassy steppe. The Khitan elite themselves continued to follow a nomadic lifestyle, honing their skills as mounted warriors and tending their own herds. The Liao emperors and their courts moved among five different capitals, where they lived in tents, and spent a good deal of time at seasonal hunting and fishing camps.

Starting with the empire's founder, Abaoji, who united the often fractious Khitan tribes, the Liao operated an unusual hybrid government that consisted of a southern administration responsible for the heavily Chinese parts of their empire, and a northern administration that dealt with tribal areas. The former was modeled on Chinese dynasties of the time and was staffed by ranks of civil servants, many of them Chinese, selected through an exam system. The latter followed traditional Khitan practices, and those who rose to power were generally members of the royal clan, who inherited their positions. "The Liao approach was to control everyone according to what they were used to," says Michal Biran, a historian at the Hebrew University of Jerusalem. "They controlled the nomads as nomads did, and the Chinese as the Chinese did. It worked quite well because it kept them in power for two centuries."

The Liao had conflicts with the major powers to their south—the Goryeo Kingdom in Korea and the Song and



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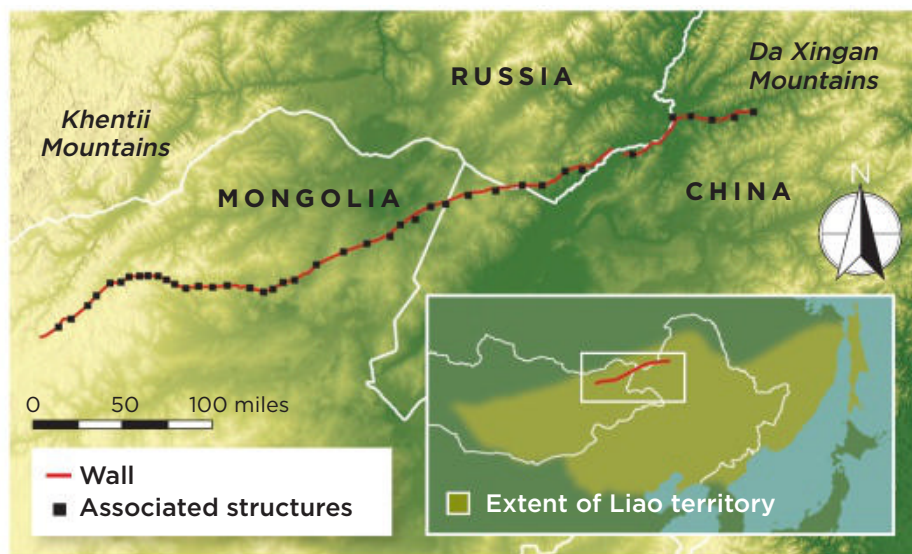
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Remains of a 1,000-year-old wall cut across the steppe in northeastern Mongolia's Dornod Province. Earth-and-stone structures south of the wall are believed to have been constructed at the same time.



Western Xia Dynasties in China—but eventually reached a wary detente with each of them. Managing relations with the non-Khitan nomadic tribes living within their territory and beyond, however, frequently posed confounding challenges. These tribes were required to pay taxes to the Liao, which were often delivered at assemblies where their chieftains were expected to dance for the emperor in a display of obeisance. The official history of the Liao Dynasty (907–1125), the *Liao Shi*, which was written during the later Yuan Dynasty (1279–1368), goes into particular detail about the relationship between the Liao and the Jurchens, a group of tribes based in Manchuria in northeastern China. The Jurchens reportedly resented their treatment at the hands of the Liao, in particular the expectation that they would provide the emperor with special gyrfalcons used in hunting, which necessitated dangerous forays into enemy territory. At the First Fish Feast in 1112, the *Liao Shi* relates, a Jurchen chieftain named Aguda refused to dance for the emperor, who considered executing the upstart but was talked out of it by an adviser. Inspired by Aguda’s defiance, the Jurchens banded together and went on to overthrow the Liao and establish the Jin Dynasty (1115–1234).

A loose affiliation of nomadic groups based in northern Mongolia called the Zubu is also known to have fought back against Liao rule. According to Chunag Amartuvshin of Mongolia’s Institute of Archaeology, the Zubu chafed at Liao demands for an ever-greater contribution of herd animals, skins, furs, and leather. Throughout the eleventh century, the Zubu mounted a series of rebellions against their imperial rulers. “It is likely that the primary cause of tensions between the Khitan state and Zubu groups was the increase with each coming year of the proportion of holdings expected as taxes,”

says Amartuvshin. While Liao military prowess surely helped subdue the Zubu, new research suggests that a wall stretching 450 miles across the sparsely populated steppe in the far northern reaches of Liao territory played an important role as well.

THIS EARTHEN BARRIER, which runs from the Khentii Mountains in the west to the Da Xingan Mountains in the east, through the border area of present-day Mongolia, Russia, and China, is popularly known as the Wall of Genghis Khan. There is, however, no evidence it was built by the founder of the Mongol Empire. Earlier scholars suggested the wall was hastily constructed by the Jin Dynasty in an attempt to block the southward advance of Genghis’ army. This is unlikely, though, as the Jin never controlled territory so far north and west. The Liao did rule the wall’s region, and modern scholars agree that they likely built it. However, solid evidence of this—much less a convincing explanation of why they built it—has, until recently, been lacking. “People often think of walls as forming borders or to stop armies, but does that make sense in this case?” says Gideon Shelach-Lavi, an archaeologist at the Hebrew University of Jerusalem. “This is an extremely remote area, so why would anybody build a wall there?”

In two recent field seasons focusing on a section of the wall in Dornod Province in northeastern Mongolia, a team led by Shelach-Lavi that includes Amartuvshin and William Honeychurch of Yale University has found some answers. By radiocarbon dating charcoal excavated from a ditch that runs alongside the wall and from nearby structures built of compacted earth and crushed limestone, the archaeologists have confirmed that the wall does indeed date to the Liao Dynasty, and was likely used sometime between 1000 and 1100. They also found gray ceramic sherds with comb-pattern decorations known to date to the Liao period in surface surveys, and unearthed bones of large mammals, most likely horses, in one of the structures near the wall.

Shelach-Lavi’s team has studied high-resolution satellite images of the entire length of the wall and determined that the structures built alongside it are grouped into several dozen clusters that are all on the southern side of the wall and are more or less evenly spaced out along its path. The

distance between groups of structures is generally less than 20 miles, which would have taken just a few hours to cover on horseback or by oxcart. These structures include circular enclosures measuring nearly 450 feet across and rectangular enclosures in a range of sizes, with the largest measuring up to 350 feet wide and frequently including a smaller inner rectangular enclosure. Near a number of these groups of structures, the archaeologists identified



Ceramic sherds with comb-pattern decorations discovered during surface surveys of structures near the wall are known to date to the Liao Dynasty (A.D. 907–1125). Scholars have concluded that Liao rulers built the wall.



Excavation of a section of the wall (above left) has revealed that it was made of compacted earth. An archaeologist (above right) unearths bones of large mammals, likely horses, in a structure near the wall.



openings in the wall that they believe represent ancient gates.

A team led by archaeologist Nikolai Kradin of the Russian Academy of Sciences has done similar work on the section of the wall that lies in present-day Russia. “This confirms that our observations from eastern Mongolia are consistent with his from neighboring Siberia,” says Honeychurch.

As they considered their findings, Shelach-Lavi’s team concluded that it made little sense that the wall had been built to serve for military defense. The remains of the wall, which was made of compacted earth, stand around three feet aboveground today. The wall likely measured just over six feet high when originally built—hardly a formidable impediment to a determined force. “It’s a barrier, but it’s not something that would stop an army for a long time,” Shelach-Lavi says. “The Mongol army could come, remove a section of it, and then ride on through.” Likewise, the structures near the wall were built on low ground, failing to take advantage of higher spots that would have offered clear lines of sight from one group to another or a commanding perspective on the landscape.

Shelach-Lavi believes the actual purpose of the wall was to regulate the movement of nomadic people in the area—and quite likely to make it easier to collect taxes from them. He points out that the groups of structures, and the gates near them, appear to have been built at points along the wall where it is easiest to travel from north to south. “We now think they channeled people through these gates and stopped them as they crossed to take some of their herds as taxes,” Shelach-Lavi says. The large circular structures, he adds, may have been used to corral the confiscated livestock, while the large rectangular structures could have served as base camps for those who staffed the crossing points. The smaller inner enclosures, which seem to have been raised above the other structures, may have been watchtowers.

ONE ENDURING MYSTERY of the wall is that it is not mentioned in the *Liao Shi*. “Why would you build such a great big thing and not document it or recognize

it?” wonders Shelach-Lavi. According to his team’s estimates, it would have taken about 20,000 workers four years to complete the wall. Biran says that building such an enormous, stationary structure was an unusual strategy for a nomadic people such as the Liao, and the great expenditure of labor it required suggests that the other nomadic groups in the area must have been more important to the Liao than has been previously appreciated—whether in terms of the

threat they were deemed to pose or the wealth of their herds.

Shelach-Lavi believes the wall was built in response to pressure from nomadic people who were migrating south to escape spates of unusually cold weather known to have occurred in the late tenth to early eleventh centuries, and again in the late eleventh to early twelfth centuries. A Liao record from the year 1118, for instance, states that people in some regions of the empire were so hungry that they ate bark from elm trees and at times resorted to cannibalism. “Very cold winters and springs can cause a lot of damage to the pastureland and force people to move south to look for better places to graze their animals,” says Shelach-Lavi. “We think this is what happened: There was climatic pressure that forced the nomadic population to move southward, and the Liao wanted to control or stop them.” Biran suggests that climate may help explain the movement of people during the Liao period, but another important factor was that the area south of the wall, which had earlier been home to various Turkic tribes, was depopulated after the Liao took it over. “We know that people from southern Siberia were coming into Mongolia during this period,” she says, “not necessarily because of the climate, but perhaps because many of the Turkic people who were living in Mongolia had migrated westward after the Liao conquest.”

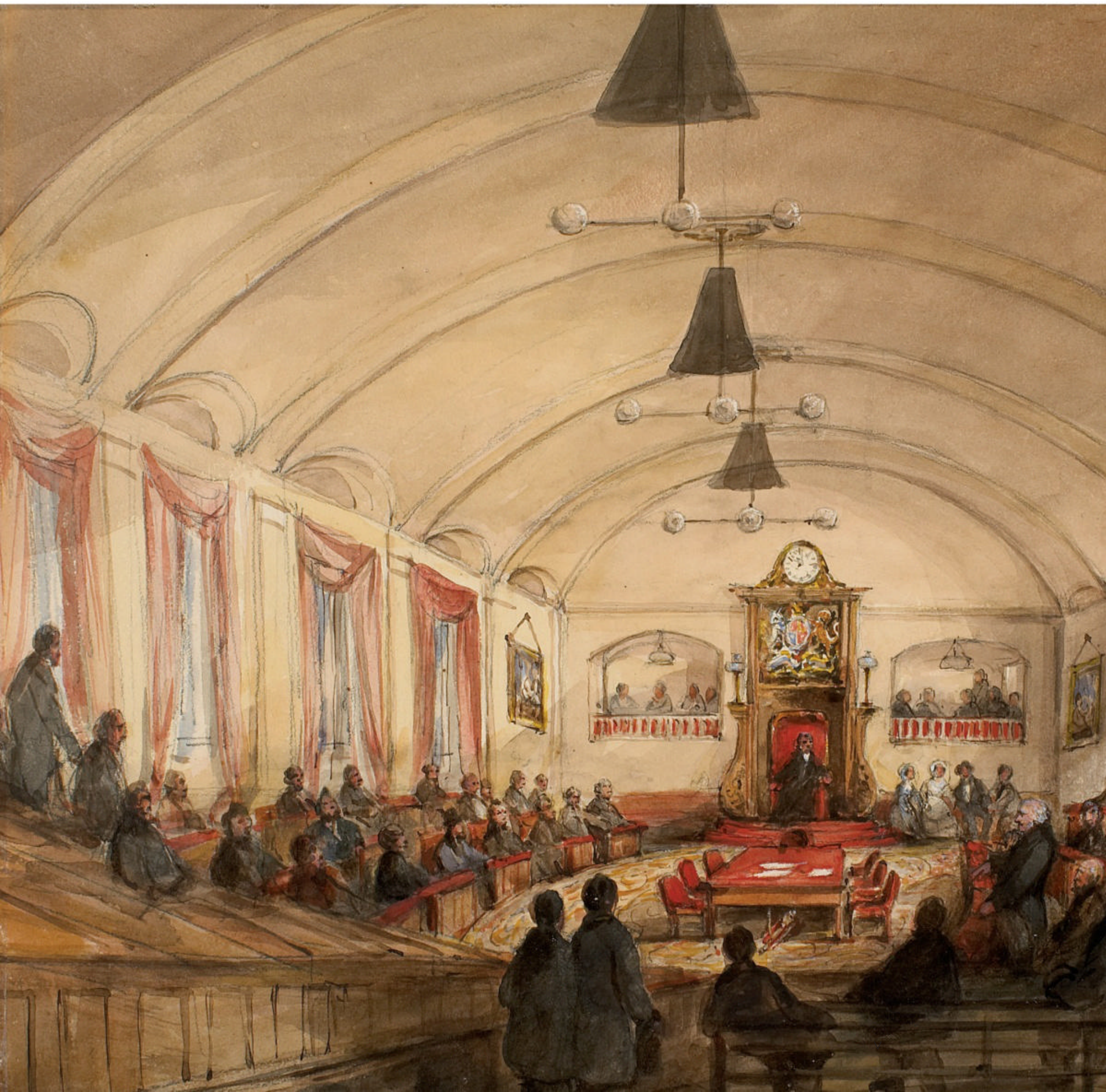
After being conquered by the Jin, the Liao themselves were also forced to migrate many hundreds of miles westward, where they established the Western Liao Dynasty (1124–1218), based in present-day Kyrgyzstan. A book written in the Liao script that was discovered there in the 1950s is known to refer to dates in the eleventh century. Its contents have not yet been deciphered, but they may hold further insights into the wall and its purpose. For now, at least, understanding of the Liao and their great wall will have to come from archaeological exploration of the remains that still snake across the remote landscape of the northern steppe. ■

Daniel Weiss is a senior editor at ARCHAEOLOGY.

CANADA'S FORGOTTEN CAPITAL

Beneath the streets of Old Montreal, the rubble of a short-lived Parliament building offers a glimpse into a young country's growing pains

By JASON URBANUS



A mid-19th-century watercolor (below) of the interior of the Legislative Assembly chamber of the Province of Canada's Parliament. Shown above the speaker's chair is the royal coat of arms of the British monarchy, which was taken from the building the night it burned down in 1849. The damaged artifact (bottom right) reappeared in the late 20th century in an antique shop in upstate New York.



IN THE LATE 1980s or early 1990s, Canadian politician Robert Kaplan was driving through upstate New York on his way from Toronto to his apartment in New York City. As he often did, he stopped to browse through the antiques at a flea market off the New York State Thruway. There, a Quebecois vendor showed his fellow Canadian a special item. It was a badly damaged three-foot-tall wooden carving depicting a lion and a unicorn as well as emblems representing England, Scotland, and Ireland. The antiques dealer shared a secret about its history that had been passed down in his family for generations. He told Kaplan that the object was the official royal coat of arms that had once hung in the old Province of Canada's Parliament building in Montreal and that it had been pillaged when a violent politicized mob burned the building to the ground in 1849. Kaplan, like most modern-day Canadians, was largely unfamiliar with that incident.

Although he was skeptical about its origins, Kaplan nonetheless purchased the piece. He hung it on his wall and didn't give it much thought for almost two decades—that is, until 2011, when he read an article in a Canadian newspaper announcing the excavation of a long-forgotten former Parliament building in Montreal that had supposedly been destroyed in the nineteenth century. At that moment he began to wonder whether the antiques seller had been telling the truth those many years ago, and whether he had in his possession an arcane piece of Canadian history.

Kaplan contacted Montreal's Archaeology and History Complex, Pointe-à-Callière, the museum conducting the excavations, and shared the alleged backstory of his unusual relic. He offered to donate it to the institution for further research. The museum's chief archaeologist, Louise Pothier, examined the object and began to delve into historical archives, searching for any reference to or image of the piece. When she came across an old watercolor painting of the Montreal Parliament's Legislative Assembly chamber, she was stunned. There, hanging above the assembly speaker's chair, was the coat of arms of the British monarchy. Its dimensions, colors, and composition perfectly matched the one on the table in front of her. "It was amazing, I couldn't believe it," Pothier says. "I realized there

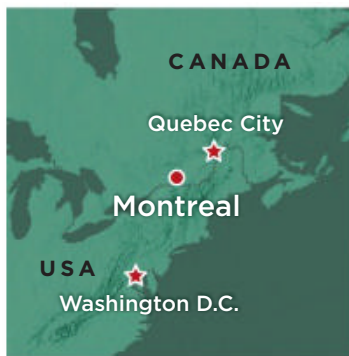


was an extremely strong possibility that it was the same coat of arms that was in the Parliament when a fire destroyed the building.”

Now, almost a decade later, that episode is no longer the obscure historical footnote it once was, thanks to the efforts of the Pointe-à-Callière, which led a series of campaigns to uncover the remnants of the old Parliament building. Researchers are also poring over historical documents and eyewitness accounts to better understand how and why the events of the night in 1849 when the building burned unfolded as they did. In the process, they have reintroduced Montreal’s own citizens, and Canadians everywhere, to a marginalized part of the nation’s history. “When we first started, people didn’t know about the existence of the site,” says Pothier. “It was a very well-kept secret.”

The possible reason why most people may have been unfamiliar with the existence of Montreal’s old Parliament is because the city’s stint as a capital was short-lived and ended in something of a national embarrassment. In a sense, it was neatly swept under the historical rug. Even some Canadians may still be unaware that Ottawa has not always been their nation’s capital. “Many people, even Montreal citizens, don’t know that Montreal was selected as the first capital of United-Canada,” says Hendrik Van Gijseghem, project manager in archaeology and history at the Pointe-à-Callière. “This chapter in the history of Canada has been largely forgotten as a shameful episode.”

The period when Montreal was the capital, from 1843 to 1849, was a turbulent time in Canadian politics, during which polarized parties fought over the direction that provincial policies should follow. On April 25, 1849, when one faction of the citizenry became enraged at a newly proposed government bill, they barged into Parliament’s chambers—with the politicians still in session—ransacked its halls, and lit it on fire. The building crumbled, the capital was transferred to another,



less tempestuous city, and by the next century the whole tumultuous affair was barely more than a historical afterthought.

THAT WAS THE SITUATION until the early 1990s. Until then, the burned-down Parliament building had remained unceremoniously buried 15 feet beneath the open-air Place d’Youville in Old Montreal, receiving little to no attention. Tourists and residents alike unwittingly walked atop its ruins. An immense active sewer that ran beneath the site made large-scale building projects requiring deep foundations impossible. Thus, the area was spared from the modern construction that touched other parts of the city. For most of the twentieth century, the site was a parking lot, which did little damage to the archaeological material below. In 1989, the sewer was decommissioned, and developers immediately jumped at the opportunity to build on the newly available prime real estate. A few local scholars, however, knew the story of the old Parliament. “City historians and archaeologists started saying, ‘Wait a minute, isn’t that the site of the old Parliament that we haven’t really thought about very much since it was destroyed?’” says Van Gijseghem.

Construction plans were halted, and, after some delays, archaeologists were eventually given the opportunity to assess the area. The initial surveys revealed that the foundations of the nineteenth-century building were not only remarkably intact but that there was also a great deal of contemporaneous cultural material still buried within them. Yet when the first full excavation campaigns began in 2013, the wealth of preserved material still shocked everyone. “What came out of the site was overwhelming,” says Pothier. “It certainly surprised the archaeologists, but also the historians, urbanists, everyone.” The Place d’Youville was soon transformed into one of the largest urban archaeological sites in North America and the largest ever to be excavated in the city of Montreal, covering nearly 7,000 square feet, and yielding more than 300,000 artifacts.

At its core are the remains of an extraordinary nineteenth-century structure originally known as St. Ann’s Market. When it was built in the 1830s, the building was an architectural masterpiece. Inspired by Boston’s Quincy Market and designed in the Neoclassical style, the structure stretched 340 feet long and had colonnaded porticoes at either end. Upon its completion, it was the city’s largest building. On the ground floor it had space for butchers, fishmongers, produce sellers, and other vendors of all kinds. The second floor had large spaces dedicated to exhibitions, concerts, and public gatherings. Concealed beneath the building was a feat of engineering astonishing for its time—the massive collector sewer that



The foundations of the old St. Ann’s Market, later the Parliament of the Province of Canada, have been exposed beneath Montreal’s Place d’Youville.

was still in service late into the twentieth century. St. Ann's Market had been built directly on top of the Petite Riviere, and the architects channeled its noxious and polluted waters under the building through a vaulted passageway, which helped cool the facility's food storage cellars and provided a convenient waste disposal conduit. When Montreal was chosen as the capital of the Province of Canada, the grand building was the only logical place for the Parliament to meet, and the market was transformed to serve its new function.

THE 1830s AND 1840s were a period of profound change in Canada. In the first half of the nineteenth century, Canada was still part of the kingdom of Great Britain and was divided into two colonies, Lower Canada, largely equivalent to today's Quebec, and Upper Canada, present-day Ontario. After several violent armed uprisings in both colonies, in particular the Rebellions of 1837–1838, the British decided it would be more efficient to govern the territories jointly under a single parliament and merged the colonies in 1840 to form the Province of Canada, also known as United-Canada. Initially the capital was established in Kingston, but the small town proved insufficient to the needs of the politicians, so in 1843, the government of the new unified province was moved to Montreal, Canada's largest city at the time.

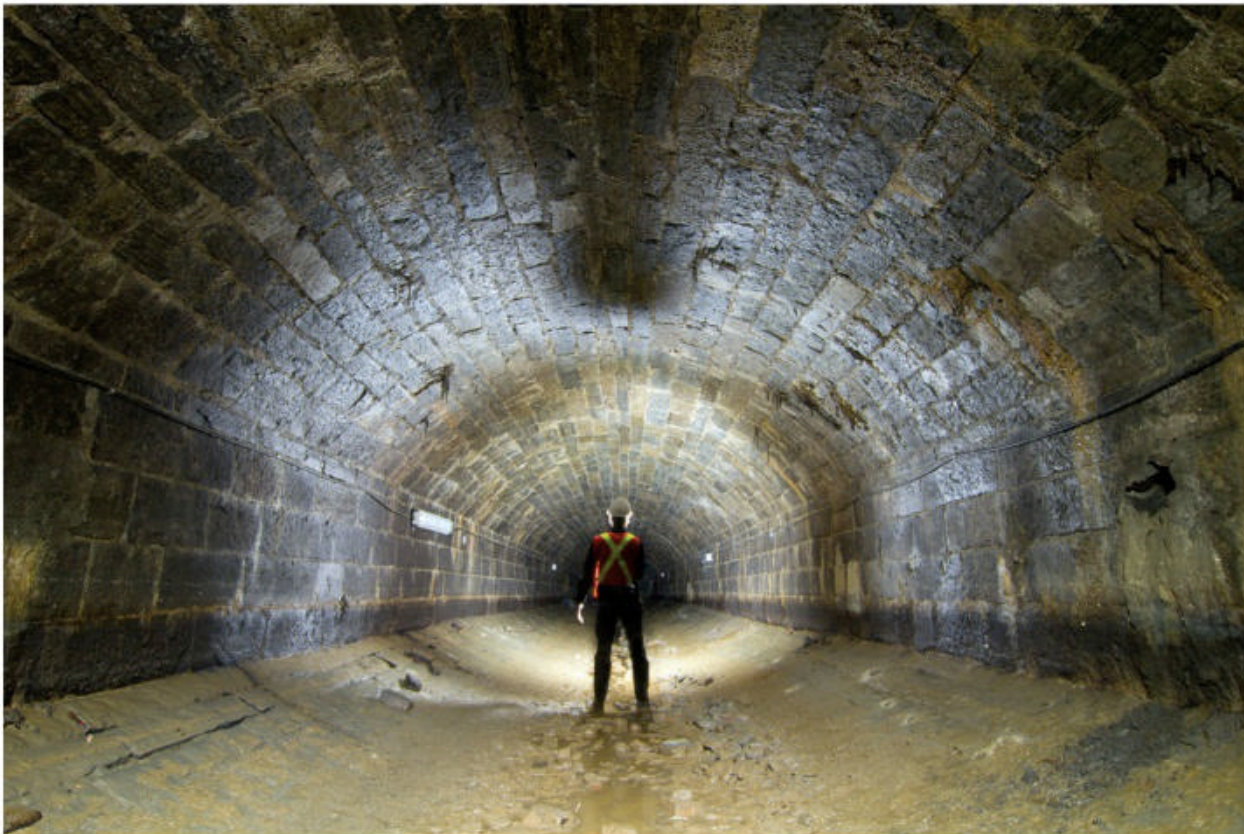
Canadian politics of the 1840s are probably best characterized as a struggle by elected officials to gain more control over their own affairs. Ultimately, decisions regarding the province were made 3,000 miles away in London by the throne, but for decades, a small sect of wealthy anglophone Canadians, closely aligned with the British Crown, influenced all aspects of government policy. However, with the unification of the provinces, not only did the large francophone population of Lower Canada demand to be more politically involved, but working- and middle-class anglophones also fought to have their say in the laws, finances, and affairs of the state. This created an incredibly tense situation in the province's capital. Among the Pointe-à-Callière museum's objectives are to reexamine the political atmosphere of the 1840s and to ascertain the causes and consequences of the incident that led to the building's destruction. "It has been written off historically as being a francophone-anglophone conflict, but it was actually a lot more complicated than that," says Van Gijseghem. "We are understanding that a little better now."

Essentially, it was a struggle between those with political power, who wished to maintain it, and those without it, who



A 3-D reconstruction (top) of the Neoclassical St. Ann's Market/Parliament shows what it may have looked like when it was built in the 1830s. At the time, it was Montreal's largest and most prestigious building. An 1849 painting (above) depicts the Parliament building the night it was set alight by an angry mob.

wanted to wrest it away. It was a tussle between factions who were fiercely loyal to the British Crown and those who wanted Canada to have more autonomy and to distance themselves from the mother country. There were also social, economic, cultural, and linguistic differences in the newly unified province's population that played a part as well. These tensions increased in 1848 when the Reform Party won control of the Canadian government for the first time, finally breaking the conservative Tory stranglehold. The following year, the new government introduced a controversial bill that planned to pay indemnities to the victims—particularly former Lower Canadian francophones—of the Rebellions of 1837–1838. To many conservatives, this meant that the government had essentially agreed to give taxpayer money to people they considered to be rebels and traitors to the Crown. "It was unbearable for the Tories, and they went absolutely mad," says Pothier. On the night of April 25, an angry protest against the bill descended into chaos, and rioters burst into the Parliament building. Although one of the mob's leaders claimed the fire was inad-



An illuminated section of Montreal's massive 19th-century collector sewer. This extraordinary feat of engineering once ran directly underneath Montreal's old Parliament building.

vertently started when a gas line broke, an eyewitness account records that the building was intentionally set on fire at all four corners by individuals wielding torches.

As the conflagration grew out of control, the Parliament's two floors and all the material housed there cascaded downward. The debris eventually settled in the subterranean sewer and the old riverbed beneath it, where it remained completely sealed and remarkably well-preserved by the wet, oxygen-free conditions. "The process of abandonment was unforeseen and it was sudden, so much of the material inside was left in place," says Van Gijseghem. "It's a pristinely preserved archaeological site."

THE MORE THAN 300,000 artifacts recovered there have provided archaeologists with insight into daily and political life in the mid-nineteenth century. They have also allowed researchers to reconstruct how the building was divided up into different spaces and where certain activities took place. "We had some historical information about the general layout of the building," says Van Gijseghem, "but now we are learning things we weren't really sure about or that we had no historical information about." For example, pipestems and tobacco products found in the ruins indicate the location of a smoking room. Dishes, utensils, and tableware reveal the site of the Parliament's cafeteria. Some of the pottery found there reflects the building's politically charged environment, such as a bowl commemorating the birth of Queen Victoria's first child, and a water pitcher depicting two British politicians who championed the repeal of the Corn Laws and rallied for free trade, an important liberal cause.

A pile of inkwells likely marks the spot of a storage closet. The charred covers and pages of books are all that remain of the two Parliamentary libraries, which housed approximately 22,000 volumes and documents that were mostly reduced to ash. Archaeologists were even able to ascertain the location of the building's lavatories, with their state-of-the-art flushing toilets, thanks to hundreds of fragments of their fancy Wedgwood ceramic bowls. There was a surprising number of personal hygiene products, including toothbrushes, perfume bottles, soap dishes, and shaving kits. Pothier suggests this is an indication that members of Parliament often put in long hours and had to refresh themselves periodically. "It was important for them to be good looking, clean, and smell good," she says.

Perhaps the most unexpected item recovered during the excavations is a small copper-alloy object from an area likely corresponding to the office of the clerk of the Legislative Assembly. Initially, the encrusted oval artifact appeared rather mundane, nothing more than a scrap of metal. It was only when it was cleaned in the laboratory that researchers noticed the words "LEGISLATIVE ASSEMBLY CANADA" written backward on its face. They soon realized that they had discovered the handstamp of the Legislative Assembly, which was used to label official government documents and was applied to all correspondence sent from Parliament. It is a one-of-a-kind object. "We knew we were excavating a parliament," says Van Gijseghem, "but that was the first time we had a real, tangible instrument of governance in front of us."

Van Gijseghem then began to search the Internet to see if he could find another example of the handstamp. Unsurprisingly, he found none, as such objects would almost certainly have been destroyed when they went out of use in order to prevent government forgeries, fraud, or counterfeiting. However, he did come across a letter that seemed to bear a similar stamp. After the Pointe-à-Callière acquired it, Van Gijseghem determined that the envelope had indeed been stamped with

the very same seal recovered during the excavations. "That was pretty crazy and really unusual for an archaeologist to find that kind of thing," says Van Gijseghem. "On one hand, we had a stamp that had been underground for more than a century, and on the other



A ceramic bowl commemorating the 1840 birth of Queen Victoria and Prince Albert's first child, Princess Victoria Adelaide Mary, was found in the Parliament building.

a letter bearing that very stamp. They had last met 160 years ago and were reunited again.”

The letter had been written by a Canadian member of Parliament named Malcolm Cameron to an acquaintance in England. Among other trivial matters, Cameron stated that things were going well in Montreal and he expected that the current Parliament would sit until July, after which he would return to his home in Ontario. The letter was dated April 17, 1849. Just a little over a week later, Parliament’s session came to its fiery conclusion. “Little did he know...” Van Gijseghem remarks.

FOR ITS EXCAVATORS, the historical significance of the old Parliament building goes far beyond its massive collection of nineteenth-century archaeological artifacts. It is what the building represents and the broader message it conveys that resonates most. “The site has this incredible capacity to tell a story of people trying to work together to build something,” says Pothier. “It’s a rare example of people who believed in their ideals and had the possibility to change things.”

During the 1840s, the world outside Montreal was also evolving. In 1848, all across Europe, ordinary citizens, who for so long had not had a say in government, began to push back against despotic monarchies and demand to have their voices heard. In Canada, things were no different, and although the seat of government was only in Montreal for a little more than five years, major advances in the way the nation was

Many ink bottles like this one were discovered well-preserved within the remains of the Parliament building.



governed were enacted within its halls. The most significant was the adoption of the system of responsible government, in which the British governor general agreed to devolve the responsibilities of government to the province’s own elected officials. In what was a historic step, the Crown agreed to comply with the will of the people. Pothier and Van Gijseghem both believe that the ruins of Montreal’s old Parliament and the events that surrounded its destruction should be viewed in the context of this global push for more democratic societies. During the brief period that Montreal was the capital, Canada began transitioning from a colony authoritatively ruled by the monarch and

a few wealthy, powerful, individuals into a modern liberal state. The ruins of the building are a tangible piece of that history.

As a consequence of the recent attention the Parliament site has received, the narrative surrounding the April 25, 1849, incident is beginning to change. “What we want to do is shift the shadow that was always on the site, the black shadow that it was a terrible moment in history,” says Pothier. She believes the burning of the Parliament should be recognized as belonging to a critical time when long-sought-after changes were finally implemented, the results of which are manifest today.

This process, as is often the case, was not always smooth or easy. Van Gijseghem characterizes it as the unfortunate growing pains of a democratic state. To Pothier, the building’s ruins have a didactic capacity today, however harshly events transpired more than a century and a half ago. “Archaeology has a lot to bring to our understanding of where we came from, what the path was, and the difficulties we faced,” she says. “I think a very interesting lesson we can learn from the site is to have an open mind about what happened in the past. We cannot judge the past from our eyes of today.”

In the future, the royal coat of arms serendipitously reacquired by Robert Kaplan will be housed once again at the site it originally came from in a new museum planned to be built atop the Parliament’s ruins. This symbol of the monarchy of Great Britain will still display the scars and ax marks inflicted upon it the day it was ripped from the walls, an inescapable allegory of the moment when the forces of Canada’s past and future clashed more than a century and a half ago. It will be an enduring emblem of the site and of the foundations of Montreal’s old Parliament building located below it, where the roots of modern Canada were born. ■



The official handstamp (top) of the Legislative Assembly. An envelope (above) stamped with the exact seal was found online by archaeologists from Montreal’s Pointe-à-Callière museum.

Jason Urbanus is a contributing editor at
ARCHAEOLOGY.

IN THE REIGN OF

Old Kingdom pharaohs faced a reckoning that reshaped Egypt's balance of power

By ERIC A. POWELL

The pyramid of the Old Kingdom pharaoh Neferirkare is the tallest in the necropolis of Abusir, where most of the kings of Egypt's 5th Dynasty were buried. Next to Neferirkare's monument are the pyramids of the pharaohs Sahure (center) and (far right) Niuserre. The Giza pyramids are visible on the horizon.



THE SUN KINGS

ONE OF EGYPT'S GREAT VISTAS, says archaeologist Miroslav Bárta, is the view from the top of the pyramid of the 5th Dynasty pharaoh Neferirkare in the necropolis of Abusir. On a clear day, you can see all the iconic monuments of Egypt's Old Kingdom from there.

Ten miles to the north are the Great Pyramids of Giza. To the south rise the Bent Pyramid at Dashur and the great pyramid complex of Djoser in the nearby necropolis of Saqqara. This majestic tableau on the Nile's west bank is the most visible legacy of the Old Kingdom pharaohs of the 3rd through 6th Dynasties, who reigned from about 2649 to 2150 B.C. and were celebrated throughout Egyptian history. The monarchs of the 3rd and 4th Dynasties oversaw the creation of the country's most massive pyramids and loomed large in the Egyptian historical imagination. But Bárta, head of the Czech Institute of Egyptology's Abusir Mission, says that the true legacy of the Old Kingdom lies in the momentous social changes that occurred during the reign of the 5th Dynasty pharaohs. Their relatively modest pyramids in the necropolis of Abusir may be somewhat overlooked by tour groups today, but the discoveries made by Czech teams there since the 1960s have shown how radical changes instituted during the 5th Dynasty irrevocably impacted the trajectory of Egyptian history. "Abusir tells the story of a time when Egypt changed utterly," says Bárta.

First built during the 3rd Dynasty near the newly established capital of Memphis, pyramids were symbols of the pharaohs' unrivaled ability to command vast resources and labor. At least initially, the pyramid-building projects also seem to have contributed to an increasingly sophisticated bureaucracy and the spread of resources throughout the kingdom. "During the construction of the Great Pyramid, I would say that perhaps a quarter of the whole population profited from this single project," says Bárta. By the end of the 4th Dynasty, though, these incredibly expensive royal construc-



tions came close to bankrupting Egypt. The pharaohs of the 5th Dynasty not only inherited a precarious financial and political situation from their predecessors, whose profligate tastes in mortuary practices may have soured large segments of the Egyptian populace on the entire concept of royalty, they also came to power during a period when the climate was becoming increasingly unstable. Decreased rainfall seems to have led to droughts, and the subsequent poor harvests threatened both the country's prosperity and the royal tax revenue, which would

have made the pharaohs' hold on absolute power tenuous. The model that had held sway during earlier dynasties—that of power being invested in a single royal family—was not adequate to the challenges the 5th Dynasty pharaohs faced when they inherited the task of running an increasingly complex government. Suddenly, they found themselves compelled to share authority with a new class of non-royal officials.

The necropolis of Abusir was the domain of most of the 5th Dynasty pyramids, but it is also densely packed with hundreds of other funeral monuments, including large rectangular tombs known as mastabas that held the remains of non-royal elites and testify to the growing social and political clout of this newly influential group, whose ranks included important priests and scribes. "It's a story familiar to us today," says Bárta. "A few families grew powerful and began to control more and more resources." This new breed of official made their standing clear by commissioning lavish tombs close to

5TH DYNASTY PHARAOSHS



A bust of Userkaf and his pyramid at Saqqara



A CHRONOLOGY OF EARLY EGYPTIAN DYNASTIES

EARLY DYNASTIC PERIOD

1st and 2nd Dynasties

ca. 3100–2649 B.C.

OLD KINGDOM

3rd Dynasty

ca. 2649–2575 B.C.

4th Dynasty

ca. 2575–2465 B.C.

5th Dynasty

ca. 2465–2323 B.C.

6th Dynasty

ca. 2323–2150 B.C.

FIRST INTERMEDIATE PERIOD

ca. 2150–2030 B.C.

those of the pharaohs. “There was a race for status,” says Bárta, one that included the pharaohs themselves, who had to find novel ways to compete with their newly potent subjects.

Recent discoveries made by Bárta’s team in Abusir and nearby Saqqara are providing a new look at this period, when a radical shift in political organization transformed the face of the Egyptian monarchy. It was also a time that witnessed an efflorescence of new styles of art and saw the rise of the cult of Osiris, the god of the dead. The 5th Dynasty pharaohs closely identified themselves with the sun god Ra, and controlled worship of

the deity. But veneration of Osiris was not overseen by the pharaohs and was available to all who worshipped the god in the proper manner. Osiris ruled over a netherworld that contained not just the pharaoh’s soul, but the souls of all Egyptians. “We can call this a process of ‘democratization’ or widening participation in sacred affairs,” says Bárta. “It was a new way to balance power.”

THE KINGS OF THE 5th Dynasty were not the first to retrench from their predecessors’ extravagant mortuary practices. This pattern had played out during the 2nd Dynasty, too. The pharaohs of the 1st Dynasty were buried in tombs in the necropolis of Abydos along with hundreds of sacrificial burials. But the practice of killing great numbers of citizens evidently became a burden on society, and the 2nd Dynasty pharaohs were buried along with fewer and fewer people. By the dynasty’s end, the number of sacrificial victims accompanying their rulers to the underworld had dwindled to zero. It may have been that in the face of popular resistance, the pharaohs curtailed the practice.

Even during the 4th Dynasty, the immense stress pyramid building must have placed on the royal treasury began to show. The last pharaoh of the 4th Dynasty chose not to build a pyramid, but was instead buried in a mastaba in Saqqara. This was a considerable downgrade from the Great Pyramid at Giza, which still towers 455 feet above the Nile Valley. By the time the 5th Dynasty began, around 2465 B.C., there must have been general agreement that such ambitious building projects were beyond the pharaoh’s means. The 5th Dynasty pharaohs built significantly smaller pyramids than their predecessors, first in Saqqara and then in Abusir, which freed up resources to construct increasingly sophisticated and richly decorated mortuary temples adjacent to their royal temples. The dynasty’s founder, Userkaf (r. ca. 2465–2458 B.C.), also instituted the practice of building solar temples, elaborate complexes centered around obelisks. These were dedicated to Ra and linked the pharaoh’s authority to the sun god’s supremacy. And there is some evidence in later texts that the 5th Dynasty pharaohs had good reason to cement their legitimacy. A Middle Kingdom (ca. 2030–1640 B.C.) document known as the Westcar Papyrus suggests the 5th Dynasty rulers may have come at least in part from non-royal origins, making them keen to prove their bona fides as deities on Earth. The story recounted



A statue depicting Sahure and his pyramid at Abusir



Niuserre’s solar temple north of the pyramids of Abusir and a figurine depicting the pharaoh



in this document is that the first two 5th Dynasty pharaohs, Userkaf and Sahure (r. ca. 2458–2446 B.C.) were sons of the god Ra. Because their royal lineage isn't mentioned, some scholars have inferred they were not of royal stock, which would have made their connection to Ra even more important in asserting their powers as gods on Earth. All the kings of the 5th Dynasty but one took regnal names that linked their power to Ra, testifying to their special connection to the god of the sun.

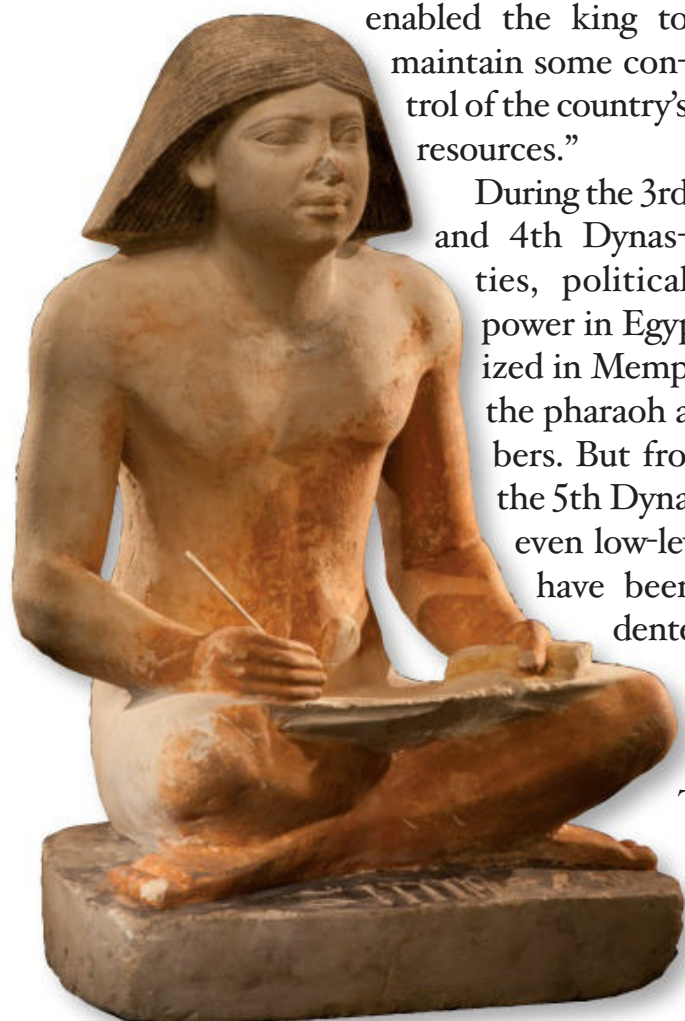
A total of six solar temples were built during the 5th Dynasty. Offerings for all the royal mortuary complexes were first taken to these temples, where they were “solarized,” or exposed to the sun for a set period of time to absorb its power. The sun temple of the 5th Dynasty pharaoh Niuserre (r. ca. 2420–2389 B.C.) lies just north of the necropolis of Abusir and had extensive storage facilities for these sacred gifts, which could include everything from food to furniture. “Rich and varied offerings flowed from the residence of the king to the solar temples and from there to individual mortuary temples where, after they were symbolically offered on altars, they were used as payments in kind to different ranks of officials,” says Bárta. “In a situation when more and more non-royal officials started to occupy even the highest positions in the state administration, this

enabled the king to maintain some control of the country's resources.”

During the 3rd and 4th Dynasties, political power in Egypt had been centralized in Memphis in the person of the pharaoh and his family members. But from the beginning of the 5th Dynasty, high-, mid-, and even low-level officials seem to have been granted unprecedented levels of authority and income. By the reign of Niuserre, an official named Ty, whose titles includ-



The tomb (top) of the 5th Dynasty official Ty at Saqqara was decorated with detailed reliefs such as one (above) depicting farmers.



A figurine from Abusir depicts a 5th Dynasty scribe.

ed King's Hairdresser, was buried in a monumental, multiroom, richly decorated complex in Saqqara that was first excavated in the late nineteenth century. Large reliefs in the tomb depict at least 1,800 people, mainly priests, but also farmers, hunters, and other common people going about their daily life and providing services to Ty and his family. The tomb embodies the social changes that were accelerating during Niuserre's reign. Expensive non-royal tombs and the appearance of family tombs at Abusir during this period show that new networks of power, likened by Bárta to those of nepotistic organized crime families, were beginning to compete with royal authority.

The reign of Niuserre was also the period when Osiris, the lord of the netherworld, was mentioned for the first time. Hieroglyphic inscriptions praising the god have been discovered in the tombs of officials in Abusir and Saqqara. He was first invoked as an important deity in texts discovered in a



The tomb (top) of Ptahshepses in Abusir is the site's most elaborate non-royal burial. Hieroglyphs (above) elsewhere at Abusir praise Osiris, the god of the dead.

tomb at Saqqara belonging to an official named Ptahshepses, who served Userkaf and died during the reign of Niuserre. The official's son, also named Ptahshepses, was Niuserre's son-in-law. The younger man's many titles included Privy to the Secret of the House of Morning and Overseer of All Works of the King. He seems to have been the first vizier whose power came close to equaling that of the pharaoh, and his many functions and titles were passed on to his descendants. In fact, his funerary monument in Abusir was more spectacular than the tombs of members of the royal family and rose in pride of place in front of the pyramids of Sahure and Niuserre. No hieroglyphs have been discovered in the tomb of the younger Ptahshepses acclaiming Osiris as the king of the dead, but it is likely that, just as his father had been, he was loyal not only to the pharaoh on Earth, but to the pharaoh in the next world as well.

A HOST OF SMALLER, but nonetheless dramatic, monuments in Abusir and Saqqara also chart the changes that transformed Egypt during the 5th Dynasty. "These are kind of time capsules," says Bárta. "They are badly known and poorly explored entities in Abusir and Saqqara that are, however, of significance in filling in our knowledge of this critical era in Egypt's history." Bárta's colleague Veronika Dulikova has conducted extensive analysis of the names and titles of officials buried in the cemeteries. This has enabled her to partially reconstruct a complicated network of family ties that kept the 5th Dynasty government functioning. These families constituted what Bárta only half-jokingly refers to as "the world's first deep state."

The Czech Mission has recently excavated tombs belonging to one of these powerful extended families in a cemetery at Abusir founded by the chief royal physician Shepseskafankh, who served the pharaoh Neferirkare. Inscriptions in the cemetery show that in many cases successive generations of the family held the same titles. "We can follow a strong tendency towards nepotism during a period when important offices were controlled by the same families," says Bárta.

In 2012, his team unearthed the rock-cut tomb complex of Niuserre's daughter Sheretnebt in the Shepseskafankh cemetery. They were surprised to find the tomb of a princess located so far from her father's pyramid, where her sisters were buried. Instead, her tomb was built next to that of her husband, an important non-royal official whose name is lost, but

who must have been related to the Shepseskafankh family. Inside the tomb, the team discovered limestone statues of Sheretnebt and her husband, along with his elegantly crafted limestone sarcophagus. Bárta notes that despite the man's evident influence, men of his station rarely married members of the royal family. "This shows that the king used the marriages of his daughters as a means of controlling the rising independence of powerful families," he says.

Another large tomb in the cemetery recently unearthed by the Czech team belonged to Kairsu, a powerful scribe who served under Niuserre. His tomb was built just north of Neferirkare's pyramid and featured dark basalt blocks in its facade and in an adjacent chapel. This particular material was typically used in royal tombs, and Kairsu's monument is thus far the only instance of an Old Kingdom non-royal tomb outfitted with these blocks. They may have been



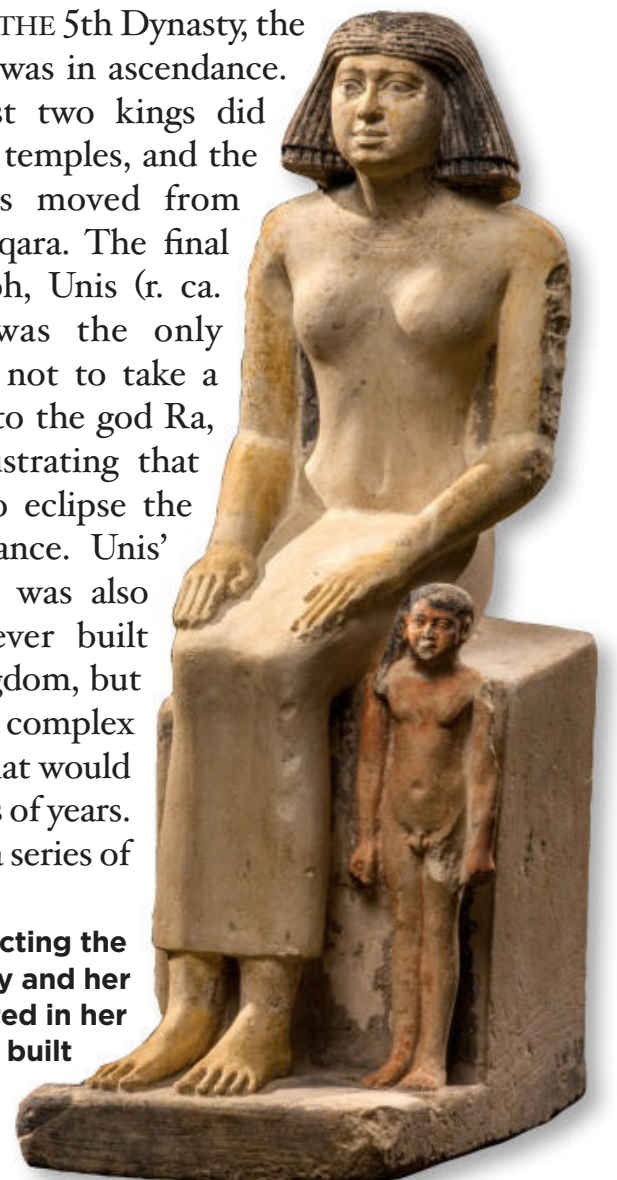
A statue (above left) depicting Kairsu, a 5th Dynasty sage, was found in his burial complex. The complex's facade (above) includes basalt blocks, which were an unusual building material in non-royal tombs of the period.

intended to serve as metaphors for the rich soil in the Nile Delta, where, according to myth, Osiris was miraculously reborn. Bárta and his team also unearthed a statue of Kairsu in front of his sarcophagus. This confirmed a long-held, but never proven, assumption that Old Kingdom officials set up statues of themselves in their burial chambers. Inscriptions in the tomb show that one of Kairsu's titles was Overseer of the House of Life, which seems to have been a new institution tasked with preserving knowledge and safeguarding original manuscripts of religious and mythological texts, as well as mathematical and medical treatises. "It was a kind of Library of Congress," says Bárta, "only more secret and sacred." He believes the tomb owner is likely the same Kairsu who later became renowned as a famous sage in Egyptian memory. His reputation was such that his tomb served as the center of a personal cult that flourished long after the end of the 5th Dynasty.

In 2019, Bárta's colleague Mohamed Megahed unearthed the vividly painted tomb of an official named Khuwy, who served Djedkare Isesi, one of the last 5th Dynasty pharaohs (January/February 2020, "Top 10 Discoveries of 2019"). Located near the pyramid of his pharaoh, Khuwy's tomb features elaborate paintings, including one of Khuwy himself. It also had a substructure modeled on that found in royal pyramids, perhaps another sign of the closing gap in the race for status between royalty and the rising class of non-royal officials.

BY THE END OF THE 5th Dynasty, the cult of Osiris was in ascendance. The line's last two kings did not even build solar temples, and the royal cemetery was moved from Abusir back to Saqqara. The final 5th Dynasty pharaoh, Unis (r. ca. 2353–2323 B.C.), was the only pharaoh of his line not to take a regnal name linked to the god Ra, perhaps further illustrating that Osiris had begun to eclipse the sun god in importance. Unis' pyramid at Saqqara was also the smallest one ever built during the Old Kingdom, but inside the modest complex was an innovation that would endure for thousands of years. Unis commissioned a series of

A statue depicting the princess Sheretnebtwy and her son was discovered in her tomb, which was built next to that of her husband, a powerful non-royal official.



sacred formulas or spells known as the Pyramid Texts to be carved on the walls of his burial chamber. These include instructions for properly carrying out a funeral and references to the sun that were both codified earlier, perhaps during the 4th Dynasty. But most of the text is devoted to the worship of Osiris. By this time, the god of death had finally become more important than the sun god, upon whose power the earlier 5th Dynasty rulers had relied. Nevertheless, the Pyramid Texts were still intended to reinforce the pharaoh's legitimacy. "On a symbolic level, the king needed to come up with a new unique form of his extraordinary standing, being a deputy of the gods on Earth," says Bárta. "The Pyramid Texts were just such a means of achieving this." Variations of the Pyramid Texts would be included in the tombs of the 6th Dynasty pharaohs, and even in the pyramids of their queens. Within just a few hundred years, the formulas and spells of the Pyramid Texts had spread beyond royal burials, and were inscribed on the coffins of officials throughout Egypt.

As more non-royal families ascended to power in Memphis, the system of local governorships that existed throughout Egypt also grew in importance. These governorships had largely been figureheads during the reigns of earlier pharaohs, but during the 5th Dynasty, it seems that the people who held these offices actually lived in their designated provinces, instead of ruling them from Memphis, as had previously been the norm. As the governors became more autonomous, increasing political and climatic instability after the end of the 6th Dynasty led to the fall of the Old Kingdom and the beginning of a period of political fragmentation known by scholars as the First Intermediate Period (ca. 2150–2030 B.C.). "The seeds of this period of disorder were planted during the 5th Dynasty," says Bárta. "Any civilization dissolves when its system of values, symbols, and communication disappears. But this collapse did not necessarily imply an end." When pharaohs once again consolidated some centralized power after the



The pyramid of the pharaoh Unis (top) in Saqqara is the smallest Old Kingdom pyramid. The earliest example (above) of the so-called Pyramid Texts are inscribed in Unis' burial chamber.

First Intermediate Period, non-royal families still wielded great influence and Osiris continued to reign as the god of an underworld where the souls of all Egyptians dwelled. While the mighty pyramids of Giza remained powerful symbols of the Old Kingdom, the fundamental social and religious changes ushered in during the 5th Dynasty would continue to shape Egypt long into the future. ■

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Between about 800 B.C. and A.D. 200, members of coastal Peru's Paracas culture created vibrant, expressive textiles of cotton and vicuña and llama wool both to wear and to wrap their dead. The textiles depict subjects such as the divine figure called the Oculate Being (above), who has a snake-like tongue and cat's whiskers; anthropomorphic female figures (right, top); flying humanoids with snake tongues (right, bottom); and warriors (opposite page) carrying trophy heads.



WEAVING FOR THEIR ANCESTORS

For 1,000 years, the Paracas people of Peru expressed their vivid conception of life and death through textiles

By ROGER ATWOOD

DRY, DESOLATE, AND NEARLY uninhabited, the Paracas Peninsula juts into the Pacific Ocean on Peru's south coast. Since at least the nineteenth century, the peninsula has been known as the site of ancient tombs, and looters would pillage its graves and sell the dusty textiles they unearthed to antiquities dealers. But when Peruvian archaeologist Julio C. Tello began excavations there in 1925, he was nevertheless astonished by what he found. Digging in places the looters had missed, in an area known as Cerro Colorado, Tello turned up two huge groups of graves. One group, which he called Cavernas because its long underground passageways resembled caves, contained mummies wrapped in earth-colored weavings surrounded by hundreds of ceramic jars decorated with animal forms. In the other, located about a mile away, which he called the Necropolis, there were few ceramics, but hundreds of vibrantly colored weavings made of vicuña and llama wool, cotton, tropical bird feathers, and human hair. Some textiles featured flying humanoids clutching knives, grinning as snakes crawled out of their mouths. Others depicted bird and fish deities, flowers, and bold, abstract patterns, or men in fanciful headdresses and tunics holding decapitated heads by their hair. A few were as large as dining room tables.

Although Tello usually wrote dispassionately about his finds, he marveled that the Necropolis textiles he had unearthed had "the most beautiful and complicated mythological figures...and constitute the most magnificent examples" of ancient South American weaving. When unwrapped, the mummy bundles were found to contain the bones and leathery, desiccated flesh of men and women whose skin had been preserved by the desert air of Paracas, a Quechua word meaning "sandstorm." Some were so well preserved that Tello thought he could make out their facial expressions. Most were high-status priests or dignitaries, he concluded, although there were also some more humble burials he speculated might have been those of their attendants in the afterlife.

Tello believed that the Necropolis textiles dated to the late first millennium B.C., while the Cavernas ceramics were a few centuries older. Radiocarbon tests conducted decades later roughly confirmed his estimates and showed that the finest textiles date from about 200 B.C. to A.D. 100, a time when, wrote Tello, people along the southern coast developed weaving "to an extraordinary degree." He noted, too, that the peninsula had no fresh



water or arable land. The graves contained plentiful offerings of food for the dead, including gourds and corn, but he could locate no land suitable for farming for at least 10 miles. "There is a marked contrast between the presence of highly developed cultures and the absolute absence of the basic elements of life," he wrote.

Since their discovery, the Paracas tombs have been celebrated for their textiles, 429 of which Tello and his team excavated and sent to Lima's National Museum of Archaeology, Anthropology, and History of Peru (MNAHP), where most remain today. The mystery of where the people who created them actually lived made them the subject of intense fascination. In the decades after Tello worked in Paracas, archaeologists searched dozens of sites up and down the south coast, unearthing ceramics that bear stylistic similarities to

those from the Paracas burials, but the relatively few textiles they found were far humbler than the Necropolis' galaxies of color. None of the sites they excavated seemed to offer definitive evidence of a place for the living, only for the dead.

In the last few years, however, by digging deeper than anyone had before—as much as 20 feet down in some places—archaeologists Charles Stanish of the University of South Florida and Henry Tantaleán of the National University of San Marcos believe they have found where the textile weavers made their homes. The team has excavated at four major ancient mounds, among a total of 21 located near the modern town of Chíncha, on a wide coastal plain about 25 miles north of where the Paracas Peninsula meets the mainland. There they have unearthed dozens of ancient weaving tools and pounds of cotton plant remains, wool, and imported feathers. Given the



A Paracas textile dating to 300 B.C. was used to wrap a sacrificed child.

combination of these large mounds and the discovery of remains of extensive irrigation systems dating from as far back as 1100 B.C., as well as abundant evidence of textile and ceramic production in and around Chincha, Stanish says evidence is accumulating that this was the main settlement area of what is now known as the Paracas culture, a name that commemorates the place where these people buried their most prized creations. “The sample we have is still small, but this does seem to be where they lived,” says Stanish. “I think we have established that Chincha was the capital of Paracas.”

BEGINNING SOMETIME BEFORE 3000 B.C., the ancestors of the Paracas people who would eventually bury their high-status dead on the peninsula fished and farmed this coastal plain, where rivers wash down from the Andes. In fact, the high level of sedimentation in the Chincha area that



A recently excavated 20-foot pit at Pozuelo mound is one of the deepest trenches dug into a Paracas mound. The discovery of weaving tools and materials there allowed archaeologists to identify the area where the weavers may have lived.



Everyday objects belonging to Paracas weavers at Pozuelo include (clockwise): an incised llama-bone tool, an amulet, and a whistle.

has made digging there so difficult was likely caused by deforestation for intensive agriculture on the valley’s upper slopes in the pre-Paracas period. Local residents made simple, unadorned, unfired ceramics, and around 1100 B.C., says Stanish, they began constructing tall mudbrick platforms with long, thick walls and solid floors. According to archaeologist Ann Peters of the University of Pennsylvania Museum of Archaeology and Anthropology, these

platforms are distributed across the agricultural areas of the Chincha Valley, and the Paracas people positioned them to line up with solar phenomena that would tell them when to plant and when to harvest. The mounds grew larger and larger over the course of the first millennium B.C. and became places where people would gather for major festivals that were probably tied to growing cycles.

These platforms, as well as the irrigation canals, would have required large groups of well-organized, well-fed workers to construct, which Stanish sees as evidence of a centralized authority capable of marshaling people, either through consensus or coercion. The Paracas people probably lived in a loose confederation of small, localized states that shared a common but not identical culture. Around 800 B.C. they were swept up in a new cultural order originating at a pilgrimage site in Peru’s northern mountains called Chavín. Whether that new order arrived as a result of mass migration, conquest, or by some other means is unclear, but it left a deep imprint on how the Paracas people worshipped. It also brought the new technology of fired ceramics to the region. People came to Chavín from all over to practice a prophetic religion based on semi-mythical animals and cosmic mysteries mediated by priests. While Chavín-style pottery in the Chincha Valley began simply and was at first decorated with basic designs, within a few centuries the Paracas people began to use the wild imagery associated with later Chavín pottery created elsewhere in Peru and to cover their pots with felines, snakes, and monkeys native to the Amazon jungle.

At the Pozuelo mound 12 miles south of the city of Chincha, which dates to the beginning of the first millennium B.C. and is thus one of the oldest mounds on the plain, Tantaleán excavated pottery that shows the early influence of Chavín at a time when fired ceramics were just starting to be made in this area. By 400 B.C., that simple pottery had evolved into the sort of luxuriantly black, burnished pots with depictions of snarling jaguars, monkeys, and fanciful sea creatures that Tello found in Cavernas. “The Chavín religion rested on the idea of pilgrimage and shamans who could manipulate the

hidden forces that people believed controlled the universe,” says Tantaleán. “It was a very powerful cosmological vision and the Paracas people embraced it in their objects.”

The mastery of textiles that reached its apogee in the weavings of the Necropolis tombs in Paracas began at places such as Pozuelo. In just a few trenches they dug there in 2019, Stanish and Tantaleán unearthed more than 20 small rings known locally as *piruros*, or spindle whorls, that Peruvians even today use for weaving. They also found small etched animal bones worn from use that may also have been weaving tools.

Although these recent excavations have provided new information about how the Paracas people farmed, worshipped, and crafted their textiles, archaeologists have found hardly any domestic structures and little information about how, or even where, they spent their daily lives or where ordinary people buried their dead. Stanish and Tantaleán have identified few human remains in the mounds, and those that they have found appear to be sacrificial victims killed during ceremonies. And although there are signs that people inhabited the ceremonial mounds in the final century of the Paracas culture, around A.D. 100 to 200, the buildings were made of perishable materials that have long since disappeared.

EACH OF THE MOUNDS once had a distinctive character and role that can still be discerned. The steep mound known as Huaca Santa Rosa, which is now covered in painted shacks made of cinder blocks and plywood, towers nearly 100 feet over the fields on the outskirts of Chincha and is the largest pre-Columbian structure on the south coast of Peru. Its central location and great size and height suggest that it was the capital of a coastal Paracas ministate some 2,500 years ago, culturally connected to neighboring states but ruled autonomously, explains Tantaleán. It is likely, too, says Stanish, that there were ancient residential structures on top of the mound and along its side, but the modern town has made it impossible to excavate. Another mound, Huaca Soto, contains the remains of a sunken plaza surrounded by



A teacup-size medallion made of the feathers of a scarlet-fronted parakeet was found in the Cerro del Gentil mound. It was likely worn by a worshipper during a ritual or ceremony.

high walls at its center, suggesting it may have been the site of private, high-status ceremonies.

At some of the mounds, the excavated detritus of everyday life points to how the Paracas people balanced their lives as farmers and cooks with their skill as weavers. The Cerro del Gentil mound, which dates from the late first millennium and thus is contemporaneous with the Necropolis, stands on a hill overlooking the Chincha Valley. There Stanish and Tantaleán have found thousands of tiny corncobs, mussel shells, lima beans, guava seeds, and peanuts. But their most striking discovery was more than 1,700 balls and strands of textile fragments, and cotton seeds and stems, which together make up a third of all the plant material found at the site, all dating from the time when Paracas textile weaving was its height. The archaeologists also excavated a comb with teeth made from cactus spines that the Paracas people used to straighten yarn as it was woven. Although burials in the mounds are rare, in the center of Cerro del Gentil they found the remains of three young women who had been interred with weaving implements. “They were certainly weavers,” says Tantaleán. Isotope analysis of the llama and vicuña

wool in the blankets that were wrapped around the women revealed that it came from animals raised in the distant Andean highlands, possible evidence that the Paracas weavers obtained high-quality wool through trade.

Tantaleán and Stanish’s excavations at Cerro del Gentil have shown that the site was abandoned around 200 B.C., when people filled its patio with tons of debris, including broken pottery, animal bones, corncobs, gourds, baskets, bits of cotton, and cassava plants—a potpourri of household objects that Tantaleán thinks were the remains of a rowdy event that marked the ritual closing of the site and lasted weeks, or even months. One object very likely used in that ceremony was a medallion fashioned of the head and yellow feathers of a scarlet-fronted parakeet that would have hung on a string on the wearer’s chest.



The mound known today as Huaca Soto once had a sunken court in which the elite of the Paracas people held religious rites.

AT THE CENTER OF THE WEAVERS' spiritual world was the peninsula, the stark, windswept landscape around which their cosmos orbited. "It was not military force that bound the society," says Tantaleán, but rather worship based on myths and ancestor veneration. "The people of Chíncha existed in a symbiotic theatrical landscape with the peninsula," explains



Finely made baskets (top) and ceramics decorated with geometric patterns (center) and stylized animal figures (above) were filled with food and buried with the dead.



The imposing mound of Santa Rosa, which is now covered in houses and bordered by artichoke fields, was likely a Paracas political hub.

Stanish. This landscape joined the earthly and the eternal, the mundane and the metaphysical. For the Paracas people, creating textiles was an act of consecration. "Textiles are incredibly time-consuming and expensive to make, and they were objects of devotion to accompany ancestors to the grave," he says. "They were wrapping the dead and taking them on a pilgrimage to an exclusive place." Although worshippers may have ferried their dead in boats down the coast to the peninsula, pilgrims probably went on foot, enjoying a full day's journey that likely was a sort of mobile festival. "The peninsula itself became an object of worship, the place where the dead continued to live and people could travel to visit them," Tantaleán says. Once at Paracas, the pilgrims would swaddle the dead in textiles, sometimes layering on more and more fabric years after they died until some bundles weighed up to 200 pounds. "They didn't make pyramids to honor their dead, as in Egypt," says Sonia Guillén, archaeologist and former director of the MNAAHP. "They made textiles as homage."

For about six centuries, between 400 B.C. and A.D. 200, pilgrims traveled to the Paracas Peninsula to leave dishes of food for the dead and to rewrap them in fresh textiles. Over those centuries, the styles of the ceramics in the Necropolis tombs evolved from the black burnished surfaces and phantasmagorical designs of Chavín-style pottery to the simple, unadorned style that appeared around 100 B.C. Archaeologists have found no pottery dating to later than A.D. 200 in the graves, which they interpret to mean that pilgrims eventually stopped coming to the Necropolis. For reasons that are unknown, says Tantaleán, the peninsula ceased to be important for the region and was abandoned. And although textiles continued to be objects of veneration and a method of transmitting ideas and symbols in ancient Peru, they never again reached the artistic heights or devotional power bestowed on them by the Paracas weavers. ■

Roger Atwood is a contributing editor at **ARCHAEOLOGY**.



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An aerial view of Tel Shikmona, on the rocky Mediterranean coast of northern Israel. Archaeologists have uncovered traces of nearly three millennia of habitation at the site, including evidence for a valuable sea snail-based dyeing industry going back to the Iron Age.

LETTER FROM ISRAEL

THE PRICE OF PURPLE

Archaeologists have found new evidence of a robust dye industry that endured on the Mediterranean coast for millennia

by SARA TOTH STUB

Not far from the foot of Mount Carmel and the industrial port city of Haifa on Israel's Mediterranean coast sits a grassy mound dotted with ruins of buildings and walls, the accumulation of more than three millennia of settlement. From the top of the mound, or tel, a view of the sea stretches out. Birds and fishermen perch on the numerous rocks that dot the shallow water, which is navigable only by the smallest of boats. Since the first excavations in the 1960s, archaeologists have found the site, called Tel Shikmona in Hebrew, or Tell es Samak, "Hill of the Fish," in Arabic, curious. They couldn't understand why, beginning in the Late

Bronze Age (ca. 1600–1200 B.C.), through the Iron Age (ca. 1200–550 B.C.), and continuing more than 1,000 years into the Byzantine period, people would settle somewhere with such a rocky, shallow coastline and no harbor, a place where farming and trade would have been difficult. But now, 50 years later, archaeologists examining artifacts from Tel Shikmona stored in a local museum have determined that its residents used the location to their advantage in an entirely different, and very lucrative, way.

Among the stored artifacts and original handwritten documents from digs at Tel Shikmona in the 1960s and 1970s, archaeologists Golan Shalvi and

Ayelet Gilboa, both of the University of Haifa, have found dozens of pottery vessels and sherds covered with purple and blue stains, evidence that people were producing a coveted dye using liquid extracted from the glands of murex sea snails at the site. Until now, such evidence from the Bronze and Iron Ages has been limited to scattered pieces of stained pottery and heaps of murex snail shells found at several sites in modern-day Lebanon and Israel.

In the ancient world, textiles colored with this dye were worth their weight in gold and were often listed along with precious metals in trade and tax records. These textiles

LETTER FROM ISRAEL



bestowed prestige, royal status, and even sacredness on those who wore or were buried in them. The dye is referenced in the Hebrew Bible, in which its purple and blue colors are called *argaman* and *tekhelet*, respectively, and instructions are given to hang strings dyed in the tekhelet shade from the corners of garments. In the twelfth century B.C., according to contemporaneous administrative documents, the kingdom of Ugarit in northern Syria paid tribute to the occupying Hittites in the form of purple wool. A ninth-century B.C. inscription attributed to the Neo-Assyrian king Shalmaneser III records that he received purple wool as an incentive to form an alliance with the seafaring traders known as the Phoenicians. Purple wool is also listed among the war spoils taken by Tiglath-Pileser, the Neo-Assyrian king who conquered ancient Syria and Palestine in the eighth century B.C. Much later in history, the dye was responsible for the distinctive purple togas worn by high officials of the Roman Empire. “We are talking about one of the most important industries in the Iron Age and across the ancient world,” says Shalvi. “Now we finally know what

would bring people to such a place.”

Shalvi is part of an interdisciplinary project led by Gilboa. They are attempting to better understand the cultural identities, economic activities, and trade relations of the people who lived at Tel Shikmona during the Iron Age. The site was first excavated by Israeli archaeologist Joseph Elgavish in the 1960s. Amid its ruins, which include Iron Age buildings, defensive walls, and olive presses, as well as remains from the sixth through fourth centuries B.C. and from later periods, too, Elgavish collected thousands of artifacts. These include the stained pottery, weaving and spinning equipment, carved figurines, and hundreds of storage vessels. He portrayed the

cians, whose coastal territories lay to the north of the Israelites’ settlements.

Shalvi and Gilboa believe their research may help track regional power shifts in the eighth and seventh centuries B.C., a tumultuous time during which the fearsome Neo-Assyrian Empire expanded from its base in Mesopotamia. While the Israelites fell to this new power, the Phoenicians maintained some control over their cities, colonies, trade routes, and territories, likely including Tel Shikmona. The dye industry there would have given them—or anyone else—access to a highly desirable commodity. “You can’t understand the region without understanding Tel Shikmona,” says Gilboa. “Controlling this site would have meant



Pieces of pottery stained with blue and purple dye made from murex sea snails are among the forgotten artifacts that sat in storage for about 50 years after they were excavated. They constitute the largest collection of direct evidence of Iron Age murex dyeing in the region.

site as a residential Israelite city that flourished in the tenth century B.C. After sorting through the artifacts and documents, however, Shalvi and Gilboa view it differently, seeing Tel Shikmona not as a city but as an industrial site focused on the dye industry, especially between the tenth and sixth centuries B.C. Further, they believe that defining the site as exclusively Israelite does not reflect the region’s complexity. Some archaeological layers also contain evidence of the Phoeni-

economic and political power.”

Meanwhile, another team from the University of Haifa, led by archaeologist Michael Eisenberg, is investigating the Roman and Byzantine areas of the site. There, over the years, archaeologists have uncovered villas, churches, and mosaics dating to the

third to fifth century A.D. More recently, they have unearthed industrial pools and murex shells, tantalizing evidence that the dye industry may have been resurrected to produce brilliantly colored textiles to feed the appetite of yet another powerful empire.

Shades of purple and blue are abundant in the sea and sky of the Levant, but were uncommon

(continued on page 62)

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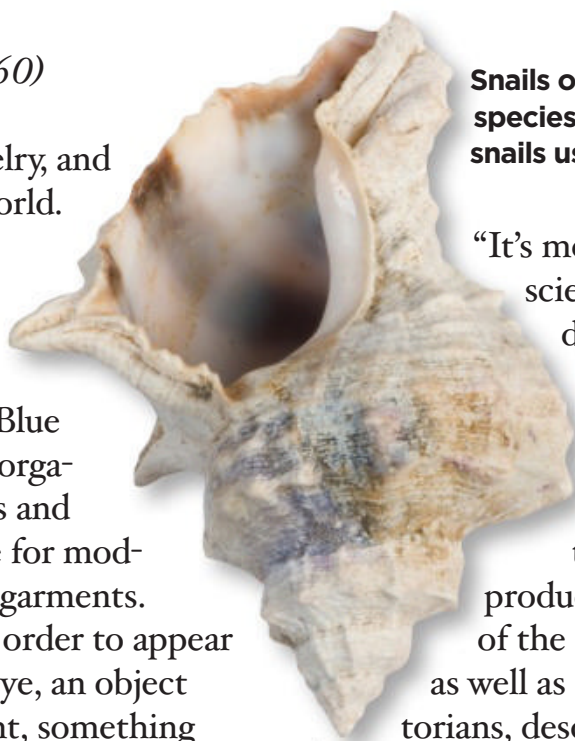
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LETTER FROM ISRAEL

(continued from page 60)

in the clothing, jewelry, and art of the ancient world. “Blue is incredibly rare,” says Baruch Stermán, a physicist and cofounder of Ptil Tekhelet (“A Blue Thread”), an Israeli organization that studies and produces murex dye for modern Jewish religious garments. He explains that, in order to appear blue to the human eye, an object must absorb red light, something few naturally occurring materials do. Among the handful of blue materials available in antiquity were stones, including lapis lazuli from what is now Afghanistan, and plants such as indigo, which grows in warm climates like India and Africa, and woad, which grows around the Mediterranean. Ground-up lapis lazuli can be used to make paint, but not to dye textiles. And, while indigo and woad can color fabric, they eventually fade. Part of what made murex dye so valuable was that its colors remain brilliant. For example, 2,000-year-old pieces of murex-dyed wool found in caves near the Dead Sea are still vibrant today.

Some aspects of the dye-making process remain unknown, but it involved breaking open sea snail shells, removing the hypobranchial gland, and harvesting the clear fluid inside. In a process taking several days, this liquid was then heated and dissolved in an alkaline solution believed to have been made from urine or certain plants. This eventually produced a yellow fluid, into which yarn was dipped. Upon being exposed to light or oxygen, the yarn turned a rich hue. At least three species of murex sea snails produce the color-changing liquid, and the dye’s final shade depends on the species used, the length of exposure to the elements, and the type of fabric.



Snails of the *Hexaplex trunculus* species are one of three types of snails used to make murex dye.

“It’s more of an art than a science,” says Julie Mendelsohn, a textile expert at the University of Haifa who works on materials found at Tel Shikmona. It takes thousands of snails to produce just a small amount of the dye, and the Talmud, as well as Greek and Roman historians, describe the dye-making process as messy, malodorous, and tedious. “The small fish are crushed alive, together with the shells, upon which they eject this secretion,” Pliny the Elder writes in his first-century A.D. *Natural History*. “The smell of it is offensive.”

For more than 2,000 years, historical sources have credited the discovery of this process to the Phoenicians, who, starting around 1500 B.C., settled a stretch of the Mediterranean coast in present-day Lebanon, Israel, and Gaza. They founded city-states such as Tyre, controlled key trade and shipping routes throughout the region, and established numerous colonies in places including Cadiz in modern Spain and Kition on Cyprus. According to a second-century A.D. account from the Greek historian Julius Pollux, a dog belonging to the Phoenician king Heracles of Tyre accidentally discovered the dye’s source by biting on a seashell. In fact, the word “Phoenician,” a moniker first bestowed by the Greeks, means purple.

Despite the long-standing association between the Phoenicians and murex dye, however, scholars believe they probably were not the first to develop it. Instead, evidence increasingly points to the island of Crete as its origin. There, from about 3000 B.C. until the mid-fifteenth century

B.C., the Minoans established extensive maritime trade networks around the Aegean. Ancient tablets from the Minoan palace at Knossos refer to the royal use of purple textiles. And, in 2016, chemical analysis of residue in stone vats and vessels from a Minoan-era dye installation on the nearby island of Pefka identified biomarkers of murex snails, along with lanolin, which was used to prepare raw wool for dyeing. This indicates that as far back as 1800 B.C.—at least 300 years before the rise of the Phoenicians—people there colored textiles using murex dye. Andrew Koh, an archaeologist and historian at the Massachusetts Institute of Technology, who conducted residue analysis of pottery and stone dyeing installations from Pefka, says the rugged shorelines of Crete and nearby islands were especially suitable for murex snails, which thrive along shallow, rocky coastlines. “In terms of pure numbers [of snails] and ecological conditions,” he says, “chances are this industry was invented in Greece.”

Other cultures, including the Phoenicians, eventually learned of the murex dyeing technique through trade relations, Koh suggests, and he and Gilboa agree that the Phoenicians likely improved on the Minoans’ techniques and expanded the dye’s reach. Says Koh, “It’s clear that by the eighth century, the Phoenicians have the hold on this industry.”

In the 1960s, when Elgavish began exploring Tel Shikmona, he uncovered evidence of habitation going back to the Bronze Age. But in his limited publications, he focused mostly on his discovery of the four-room house and olive presses, which he identified as typical of tenth-century B.C. settlements belonging to the ancient Israelites. He did mention finding a few scattered pieces of Phoenician pottery and vessels common in Cyprus, but said nothing further about

them. Most of the finds were then stored at the nearby National Maritime Museum.

In 2016, Shalvi and Gilboa began to study these finds. They uncovered substantial evidence of a Phoenician presence at Tel Shikmona, including figurines and pottery, and enough purple-stained sherds to determine that it had been a major murex dyeing installation at various times between the tenth and seventh centuries B.C. A few of the sherds had been tested for murex in the 1990s, but until the current project, the extent of the collection was unknown. “It was the volume of purple sherds that was surprising,” Shalvi says. “It’s considered extremely rare to find even one piece of such pottery. We found about thirty.”

Naama Sukenik of the Israel Antiquities Authority, together with researchers from Bar-Ilan University, has analyzed residue on the Tel Shikmona sherds and concluded that the stains were made by the *Hexaplex trunculus* snail. *Hexaplex trunculus* provides a greater quantity of dye-making liquid than the other two color-producing species, *Bolinus brandaris* and *Stramonita haemastoma*, and is found widely in the Mediterranean. Soot marks have also been identified on the outer layers of the stained sherds discovered at Tel Shikmona, indicating that the thick-walled jars were heated as part of the dye-making process. Sukenik says the vessels likely had narrow openings to control the amount of air the yarn was exposed to during the process.

The storeroom cache contained an additional surprise: more than 200 loom weights and 60 spindle whorls, disc-shaped stone objects that speed up the process of hand-spinning raw wool. These artifacts indicate that a substantial workforce at the site was

making wool into yarn, which was then dyed purple. “This is really a large number of spindle whorls,” Mendelsohn says, adding that the high quality of some of the objects, and the fact they may have been made from stone imported from Cyprus or Greece, suggests that those who used them were skilled professionals possibly connected with or originally from these places, which had long traditions of murex dyeing. “It seems Tel Shikmona wasn’t a residential site at all, at least not at this time,” says Shalvi. “It was a factory.”



This spindle whorl was likely imported from nearby Greece or Cyprus and points to the presence of a professional, well-connected textile workforce at Tel Shikmona.

He adds that the fact that the settlement was surrounded by a defensive wall underscores how valuable the dye industry was.

Murex dyeing at Tel Shikmona appears to have ceased for a short time toward the end of the eighth century B.C. Archaeologi-



This 2,000-year-old piece of wool dyed with murex-based blue was found in a cave on the western shore of the Dead Sea. It is one of the few surviving ancient textiles colored with the valuable hue.

cal layers from that period uncovered by Elgavish and analyzed by Shalvi contain no purple-stained vessels or sherds. This suggests that the Israelites may have taken Tel Shikmona over as part of their broader northern expansion, Gilboa says, ushering in a period of political instability and economic uncertainty that could have disrupted the dye industry. She adds that it’s quite possible that the Israelites did not use murex for dyeing.

About 100 years later, in the mid-seventh century B.C., the purple dye industry at Tel Shikmona underwent a resurgence. More stained sherds date to this period, and the pottery once again appears more typically Phoenician than Israelite. By then, the Assyrians had conquered much of the area that had been under Israelite control. However, the Phoenicians, who are known to have paid tribute to the Assyrians in exchange for some degree of independence, appear to have kept control of Tel Shikmona, or at least maintained a strong presence there. In



Dozens of loom weights dating from the 8th century B.C. through the Byzantine period are additional evidence of Tel Shikmona’s once-thriving textile industry.

LETTER FROM ISRAEL



A Roman-era pool along the shallow, rocky shore of Tel Shikmona may have been used to trap snails in order to use them as raw materials for dye.

the late seventh century, all evidence of dyeing at the site once again disappears, although archaeological layers from this period are difficult to study because construction later in antiquity disrupted them. It's possible that economic turmoil resulting from the Assyrian invasion of the region and a later Babylonian invasion, around 597 B.C., are responsible, Shalvi suggests, although no signs of destruction have been found at the site. "Maybe they lost their markets for purple," he says.

This would not, however, prove to be the end of murex dye. In the following centuries, the ascendant Persians, led by Cyrus the Great, who had wrested control of the region from the Babylonians, and later the forces of Alexander the Great, challenged the Phoenicians' dominance of the Mediterranean sea trade. Although the excavated areas of Tel Shikmona don't contain any sign of a dye industry during this era, archaeological evidence shows that purple dye production and textile dyeing continued widely around the Mediterranean, says Annalisa Marzano, an archaeologist at the University of Reading. As more

people began to acquire purple and blue garments as part of a trend toward increased availability of luxury goods, Marzano says, "Settlements that did not have other resources could prosper on the production and export of purple dye and dyed textiles." In another sign of more widespread consumption, the quality of the dye also began to vary, and certain areas became renowned for their superlative product. "In Asia the best purple is that of Tyre," writes Pliny the Elder, "in Africa of Meninx [in modern Tunisia] and the parts of Gaetulia [in northern Africa] that border the Ocean, and in Europe that of Laconia [in Greece]."

As the dye became more widely available, various Roman rulers, starting with Julius Caesar (r. 46–44 B.C.), attempted to maintain its exclusive status by restricting its use to society's elite. The emperor Nero (r. A.D. 54–68) is known to have fined those who wore certain shades of murex-based purple clothing without permission or who sold it to commoners. In the third century A.D., the *Historia Augusta*, a collection of emperors' biographies, records that the industry had become tightly controlled by the government.

In his excavations of the Roman and Byzantine areas of the site, Eisenberg has identified soil from an industrial pool complex dating to the third and fourth centuries A.D. that is stained various shades of red and purple. Recent analysis of pollen samples taken from the plaster coating the pools indicates the presence of flax, which was often dyed with murex. There are also heaps of murex shells and a shallow pool carved from the rocks that features a dam on two sides. "This would have been a perfect place to capture and keep snails," Eisenberg says, noting that in order to produce high-quality dye, the creatures would have been kept alive until just before their shells were cracked open. Luxurious fourth- and fifth-century A.D. villas originally uncovered by the Israel Antiquities Authority in the 1990s suggest Tel Shikmona's inhabitants had grown wealthy, possibly on profits from the dye industry. This evidence has led Eisenberg to question the identity of the site during the late Roman period. "I think this is actually a place called Porphyreon," he says, referring to a Roman town whose name means purple. A few texts, including the sixth-century A.D. account of a pilgrim named Antonini Placentini, indicate that Porphyreon was located in this region along the Carmel coast.

By the seventh century A.D., Tel Shikmona had been abandoned. In one of many parallels between the dye industry at the site and the fortunes of the region, broader use of murex dye also began to fade at this time, spurred partly by the rise of cheaper alternatives. The dye finally disappeared altogether in the fifteenth century, when its last major consumer, the Roman Catholic church, switched to a less expensive, insect- and plant-based dye to produce its clerical vestments. ■

Sara Toth Stub is a journalist living in Jerusalem.



TENTH INTERNATIONAL ARCHAEOLOGY DAY A SUCCESS!



Like so many activities around the world this year, the 10th anniversary of IAD was overshadowed by the global pandemic. Quarantines, lockdowns, and physical distancing meant that the in-person events that characterize IAD celebrations could not be held in most places. As a result, we shifted this year's focus to virtual programs.

To support collaborating organizations as they transitioned to virtual programming and planned for an uncertain future, the AIA held a series of weekly listening sessions starting in April. Participants joined the sessions to discuss issues they faced, ask questions, and share ideas. Session topics ranged from the technical aspects of presenting webinars and lectures to how to host virtual scavenger hunts and social hours. The outcomes of many of these discussions are detailed in the IAD blog at archaeological.org/archaeologyday/blog/.

In keeping with the idea of online programming, the AIA organized several new initiatives for IAD 2020. For example, the Institute partnered with the Veterans Curation Program (VCP) to present an “artifact of the day.” Each weekday, over a period of five weeks leading up to IAD, different artifacts curated by the VCP were featured on the AIA's social media channels and website. The VCP, a temporary employment program that

provides a bridging experience for veterans as they transition from military service into the public sector, trains veterans to process the U.S. Army Corps of Engineers' at-risk archaeological collections. The artifacts featured in the program were excavated from archaeological sites across the United States and range in age from more than 10,000 years old to less than 100.

The AIA also partnered with Skype a Scientist (SaS) to virtually bring archaeologists to classrooms, the public, and AIA Local Societies during the week leading up to IAD. Designated “Archaeology Week” by the SaS, the program featured five prominent archaeologists and AIA lecturers: Eric Cline, Ann O. Koloski-Ostrow, Steve Lekson, Maria Liston, and Heather McKillop.

In addition to these efforts, the AIA transformed all its planned lectures for the fall, including those intended for IAD, to webinars and virtual events. The transition to online programming increased accessibility and the audience for our lectures. Although unusual in its virtual format, the 10th IAD was a successful celebration of archaeology across the globe and a chance for us to strengthen partnerships and alliances with collaborating organizations.

AIA AT THE EAA

Our counterpart organization, the European Association of Archaeologists (EAA), also had to transform their annual meeting into a virtual event this year. The AIA co-organized a session titled “Sensitizing and Engaging the Public: The Role of Online Learning in Archaeology and Heritage Education.” This session focused on new technologies and methods for reaching the public virtually. The AIA contributed a paper, “From Interactive Digs to Mystery Cemeteries: The Role of AIA's Electronic Resources in Engaging and Educating the Public,” which highlighted the impact of the AIA's online resources and websites, which are seen by millions of people each year. In addition to participating in the academic session, AIA members joined representatives from several international archaeological associations in a roundtable discussion on the impact of climate change on archaeological heritage.

UPCOMING AIA-SCS JOINT ANNUAL MEETING WILL BE A VIRTUAL EVENT

For the first time in its 122-year history, the AIA-SCS Joint Annual Meeting will be a virtual event. As in past years, the meeting will feature a great variety of informative academic sessions, outstanding lectures from experts, and engaging workshops and roundtables. The meeting's schedule will be spread over six days from January 5 to 10, 2021. To learn more about how you can participate in the meeting from home, visit archaeological.org/annual-meeting.



DISPATCHES

FROM THE AIA
EXCAVATE • EDUCATE • ADVOCATE

AIA RESEARCH GRANTS FUND PROJECTS AROUND THE WORLD



Sarah James, winner of the Julie Herzig Desnick Endowment Fund for Archaeological Field Surveys

Each year the AIA provides over \$300,000 in grants and fellowships to professionals and students conducting archaeological research and analysis around the world. This year, grantees include:

- **Kathleen and David Boochever Endowment Fund for Fieldwork and Scientific Analyses:** Caroline Cheung (Classics, Princeton University), to identify contents of ceramic storage jars from ancient Roman sites in Italy.
- **Julie Herzig Desnick Endowment Fund for Archaeological Field Surveys:** Sarah James (Classics, University of Colorado Boulder), for a new project on the Adriatic island of Brač in the Dalmatian region of southern Croatia.
- **Richard C. MacDonald Iliad Endowment for Archaeological Research:**
 - Bonna Daix Wescoat (Art History and Greek Art and Archaeology, Emory University), to examine occupation and land use on Samothrace from the third to first millennium B.C.
 - Donald Easton (independent scholar), to analyze animal bone from the Troy excavations of 1932–1938 to determine whether there was a 170-year gap between the levels of Troy III and Troy IV.
- **Ellen and Charles Steinmetz Endowment Fund for Archaeology:** Elizabeth Cory Sills (Social Science, University of Texas at Tyler), to test soils at the Placencia Lagoon Salt Works, an ancient Maya salt industry in Belize, to distinguish production zones from residential areas.

Learn more about the AIA's grants and fellowships at archaeological.org/grants-awards.

AIA WEBINARS: CRITICAL CONVERSATIONS ON RACE, TEACHING, AND ANTIQUITY

In June, the AIA issued a Statement on Archaeology and Social Justice affirming that the Institute stands in solidarity with victims of systemic injustice around the world and is committed to working toward positive change in the field of archaeology (archaeological.org/aia-statement-on-archaeology-and-social-justice). In August, the AIA organized three free webinars that addressed issues of race, diversity, and inclusion in teaching archaeology, classics, ancient history, museum studies, and cultural heritage at the postsecondary level. The webinars provided concrete strategies for educators to incorporate new approaches and resources that promote inclusivity into their courses on the ancient Mediterranean.

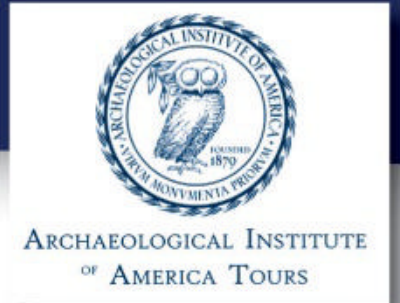
The webinars, “Decolonizing Syllabi in the Archaeology and History of the Mediterranean Region,” “Teaching Race and Material Culture in the Ancient Mediterranean,” and “Becoming Better Accomplices and Instructors: Justice, Activism, and Reflexivity in Teaching Museums and Cultural Heritage,” were seen by hundreds of people from around the world. Recordings of the webinars can be viewed at archaeological.org/aia-seminars-critical-conversations-on-race-teaching-and-antiquity/.

YOUR SUPPORT IS CRITICAL

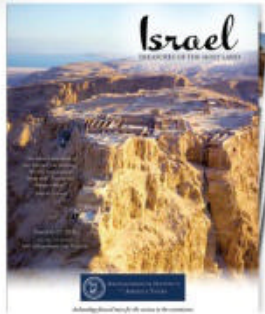
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Travel

AIA Tours.org
2021 Tours



Small-group, archaeology-focused tours for the curious to the connoisseur



March 6-17, 2021



May 1-17, 2021

Limited to just 16 guests!

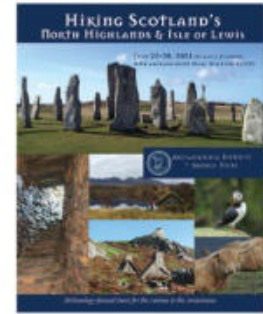


May 2-16, 2021



May 19-31, 2021

Limited to just 16 guests!



July 10-20, 2021



July 20-30, 2021

Limited to just 15 guests!

ISRAEL

Aclaimed AIA lecturer and archaeologist Jodi Magness has excavated at sites all over Israel and looks forward to introducing you to a variety of fascinating places. Join her on *Israel: Treasures of the Holy Land* in March and visit iconic ancient and religious sites, including five that are inscribed on UNESCO's World Heritage list. We are also pleased to announce a new tour, *Israel Revisited* in May: a more strenuous itinerary that includes several hikes in nature reserves in addition to visiting a variety of archaeological and cultural sites, with luxury hotel accommodations.



GREECE

Step back in time with archaeologist Gerry Schaus in May to explore the island of Crete, center of the Minoan civilization during the Bronze Age, as well as the nearby Cycladic Islands of Santorini, Mykonos, and Delos. Or, experience the *Legacy of Ancient Greece*, from the Bronze Age to the Classical era and beyond, amid springtime landscapes of the mainland and the Peloponnese peninsula.

Experience the wonders of Greek archaeology, art, and ancient history and witness how integral mythology, religion, drama, and literature are to their understanding.



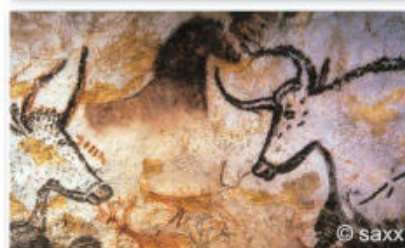
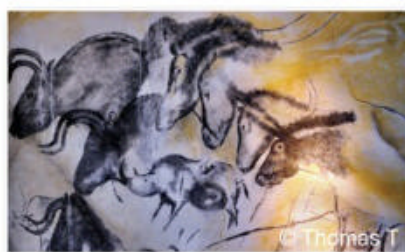
SCOTLAND

In July, join archaeologist Mary MacLeod Rivett in *Hiking Scotland's North Highlands & the Isle of Lewis*. This trip off the well-beaten Highland tourist trail has an abundance of archaeological remains, historical sites plus striking scenery. Or, see Scotland slowly with archaeologist Val Turner on *Hiking Scotland's Orkney & Shetland Islands*, exploring all that the Northern Isles has to offer, including prehistoric stone circles, burial chambers, and settlements all amidst dramatic landscapes.



PREHISTORY & EVOLUTION

Join us and delve deep into the origins of humankind – while delighting in the art and architecture of historic towns and cities, the comforts of charming accommodations, and delicious cuisine and wine – in the company of a leading expert AIA lecturer/host and a small group of like-minded fellow travelers.



DECORATED CAVES OF THE PYRENEES & THE RHONE VALLEY

April 15 - 25, 2021 (11 days)
with paleoanthropologist
Ian Tattersall



FROM STONEHENGE TO CARNAC: MEGALITHS, MONUMENTS & TOMBS OF WESSEX & BRITTANY

May 25 - June 5, 2021 (12 days)
with prehistorian Paul Bahn



PREHISTORIC CAVE ART OF SPAIN & FRANCE

September 22 - October 4, 2021 (13 days)
with prehistorian Paul Bahn

From the mid-fifteenth to the mid-sixteenth century, the Bedingfelds were a wealthy, prominent family with a splendid country house called Oxburgh Hall in Oxborough, Norfolk, and substantial influence in England’s royal court. Their station was only enhanced when Mary I (r. 1553–1558) became queen—like their new monarch, the Bedingfelds were devout Catholics. In addition to public worship in the parish church, family members would also have worshipped in private, using such accompaniments as a Book of Hours filled with prayer cycles, many of which were dedicated to the Virgin Mary. Other prayers were dedicated to remembrance of the dead.

This page, likely from a Book of Hours, was fortuitously discovered among rubble in the eaves during restoration of Oxburgh’s roof. It displays Psalm 39 from the Latin Bible. “This single page represents the family’s approach to devotional practice,” says National Trust curator Anna Forrest. “The vibrant illuminated initials in azurite blue and gold leaf in place of the more standard blue and red indicates that the book must have been quite expensive, and thus also represents the family’s wealth and prestige. Books of Hours were very important in the later Middle Ages and were often handed down through families.”

The Bedingfelds’ financial state and political standing were both threatened when Elizabeth I became queen in 1558. Unlike Mary, Elizabeth was a Protestant, and the Bedingfelds refused to abide by the Act of Uniformity, which outlawed Mass. “From that point on, they were recusants whose refusal to attend the services of the Church of England was a statutory offense,” explains Forrest. The family would have been forced to shelter at Oxburgh and worship in secret, perhaps using the Book of Hours to which this page belonged.

WHAT IS IT
Illuminated manuscript
CULTURE
Medieval European
DATE
15th century
MATERIAL
Parchment
FOUND

DIMENSIONS
5.6 inches wide by 5.9 inches long





“We were so enraptured by the sights, the scholarship,
the camaraderie, and the sensational cuisine.
We can’t wait to sign up again.”

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