

Florida: Roots of the Muscogee Nation

ARCHAEOLOGY

archaeology.org

A publication of the Archaeological Institute of America

May/June 2016

The Mediterranean's
**Greatest
Traders**

World's
First
Writing

Death at
a Desert
Oasis

Inca Tax Time

PLUS:

Turtle Spirit Guides,
A Dress for the Ages,
Fermented Swedish Fish,
Legend of the Wild Man



DISCOVER THE BEST OF THE ANCIENT WORLD AND EXPLORE FURTHER BY LINKING YOUR TOUR...

Founded and run by archaeologists, Andante Travels invites you to join our experts to glimpse the vanished cultures, cities and sites of the ancient world. You can experience even more by linking your tour... We have scheduled many of our 2016 tours to make it easier for you to link one with another – thematically and geographically. If you're boarding an international flight, why not make the most of your airfare and extend the adventure?

SARDINIA TO DALMATIA & DUBROVNIK

Become acquainted with historic human cultures of the Mediterranean and Adriatic
Sardinia: 16–24 May 2016
Croatia: 25 May–3 Jun 2016



CORSICA TO SAMNITES – ENEMIES OF ROME

Explore rugged landscapes finding stone remnants of a prehistoric past...
Corsica: 22–29 May 2016
Samnites: 30 May–5 Jun 2016



BERLIN TO CZECH REPUBLIC

Discover thousands of years of history, from prehistoric caves to Cold War cities
Berlin: 25–29 Aug 2016
Prague: 1–8 Sep 2016



CYCLADES TO CRETE

Traverse the beautiful Aegean, experiencing island life as it is, and as it was...
Cyclades: 6–16 Sep 2016
Crete: 17–24 Sep 2016



BOLOGNA TO BASILICATA & CALABRIA

Take a lesser-traveled path through Italy's culinary culture and ancient treasures
Bologna: 15–22 Sep 2016
Basilicata: 24 Sep–2 Oct 2016



SICILY TO POMPEII

Visit the global crossroads of the ancient world, and some of its most astonishing sites
Sicily: 29 Sep–9 Oct 2016
Pompeii: 10–17 Oct 2016



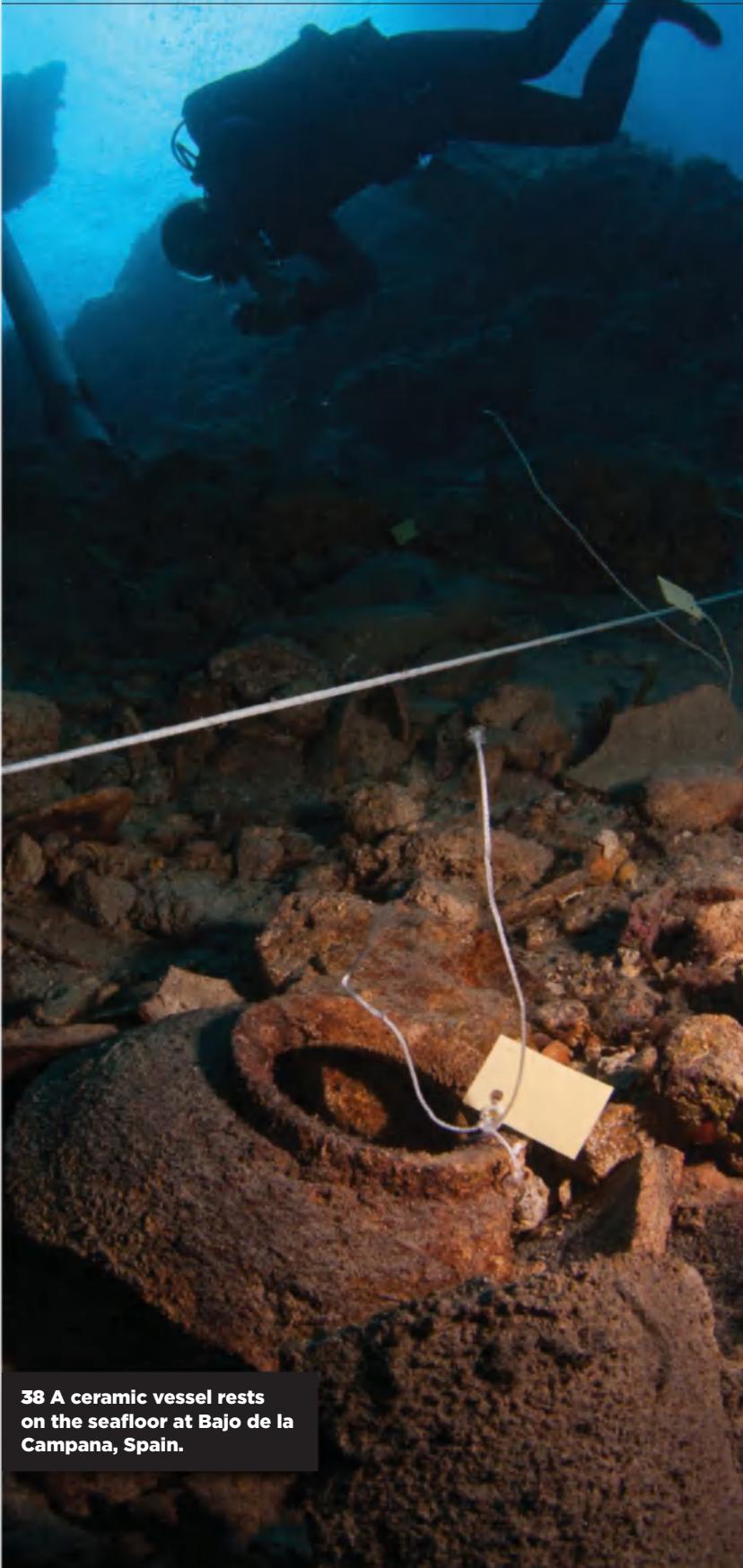
- FROM AS LITTLE AS \$895 | EXPERT-LED | ALL-INCLUSIVE ARCHAEOLOGICAL TOURS -

FULL 2016 PROGRAM OUT NOW, CONTACT US FOR A BROCHURE

TOLL-FREE 1-888-331-3476 | tours@andantetravels.com | www.andantetravels.com



CONTENTS



38 A ceramic vessel rests on the seafloor at Bajo de la Campana, Spain.

features

26 The World's Oldest Writing

Used by scribes for more than three millennia, cuneiform writing opens a dramatic window onto ancient Mesopotamian life

BY THE EDITORS

34 An Overlooked Inca Wonder

Thousands of aligned holes in Peru's Pisco Valley have attracted the attention of archaeologists

BY ERIC A. POWELL

38 Masters of the Ancient Mediterranean

The rare discovery of a Phoenician shipwreck off southeastern Spain is providing new information about their centuries-long dominance of the sea

BY JASON URBANUS

44 Coup de Grâce for a Desert Castle

A group of murder victims discovered in a frontier stronghold in Jordan may define the last chapter in its history

BY DANIEL WEISS

48 A Myth in Stone

The delicate work of conserving a 2,000-year-old story

BY ROSELLA LORENZI

Cover: An archaeologist excavates a tripod mortar from the wreck of a Phoenician ship at Bajo de la Campana, Spain.

PHOTO: SUSANNAH H. SNOWDEN-SMITH,
COURTESY INSTITUTE OF NAUTICAL ARCHAEOLOGY



TAKE 76% OFF
INSTANTLY!
When you use your
INSIDER OFFER CODE

Limited to First
2500 Respondents
to This Ad Only

Mermaid Reunites Long Lost Lovers

The perils of the sea are no match for the mermaid's treasure known as aquamarine.

Ever since ancient times, sailors have sworn by aquamarine as a talisman and protector for anyone traveling on the open water. According to legend, aquamarine originated in the treasure chest of mermaids, and has since ancient times, been regarded as "the sailor's lucky stone."

We've heard the legend of men heading out to sea with an aquamarine amulet around their neck and once they safely return, that same stone becomes a ring for their sweetheart. That romantic tradition is carried forward in our stunning Aquamarine Ice Ring.

Derived from the Latin words for "water of the sea," the refreshing blue aquamarine gemstone is embraced by a polished, .925 sterling silver setting and surrounded by shimmering white DiamondAura®—our signature lab-created stone. You get the full effect of the aquamarine in a stunning 1.40 carat emerald cut, which floods the icy blue color with waves of brilliant light.

Aquamarine has excellent clarity and transparency. In fact, a member of the beryl family, aquamarine is a sister of the rich green emerald. And, with its gorgeous baby blues, it's easy to see why the emerald may get a tad green with envy.

You can easily find one carat aquamarine rings for over \$5,000 at Fifth Avenue jewelers. Bringing you luxury for less is our

mission at Stauer, so we priced our Aquamarine Ice Ring so you can make a splash without shelling out too many clams.

No need to test the waters. Slip this remarkable ring on her finger and create a legend of your own without risking the perils of the sea.

Your satisfaction is 100% guaranteed. Wear the Aquamarine Ice Ring for 60 days and if you're not completely delighted, send it back for a full refund of your purchase price. So, go ahead and make a splash!

Aquamarine Ice Ring (1.40 carat) ~~\$399[†]~~
Offer Code Price **\$95 + S&P Save \$304**

1-800-333-2045

Your Insider Offer Code: AIR154-01

You must use this insider offer code to get our special price.

Stauer®

14101 Southcross Drive W.,
Dept. AIR154-01
Burnsville, Minnesota 55337
www.stauer.com



† Special price only for customers using the offer code versus the price on Stauer.com without your offer code.

1.40 carat emerald-cut aquamarine • 20 lab-created DiamondAura® rounds • .925 sterling silver setting • Whole ring sizes 5–10

Smart Luxuries—Surprising Prices™

departments



14



20



East View of the Cottage in Homer's Lane near Warden, Northumberland, where the atrocious Murder was committed Tuesday night 3rd Jan: 1826. On the body of Joseph Holley, commonly called 'See the Quiller' a man who had attained to a greater proficiency in quilling than any ever known in the north of England.

on the web

■ **Interactive Digs** Read about the latest discoveries at the Minoan site of Zominthos in central Crete; Johnson's Island, a Civil War site in Ohio; and Achill Island in Ireland at www.interactivedigs.com.

■ **Archaeological News** Each day, we bring you headlines from around the world. And sign up for our e-Update so you don't miss a thing.

4 Editor's Letter

6 From the President

8 Letters

Revisiting the scene of an ancient Swedish massacre and how Muhammad protected the monks of St. Catherine's

9 From the Trenches

World's oldest dress, turtles in the afterlife, Silk Road tea trade, Peru's temple of death, and bad Viking genes

24 World Roundup

Ancient Southwestern footprints, Salem's witch executions, fermented Mesolithic fish dish, Siberian mammoth hunt, and a seven-foot-tall Aussie bird

55 Letter from Florida

In Florida's Panhandle, tribal leaders and archaeologists reach into the past to help preserve a native community's identity

BY MIKE TONER

68 Artifact

The Wild Man of the medieval world

www.archaeology.org

■ **Stay in Touch** Visit Facebook and like Archaeology or follow us on Twitter at @archaeologymag.

A Different Take

Early this year, news spread quickly that a recently deciphered 2,000-year-old tablet contains calculations laying out the movements of the planet Jupiter. The artifact was embraced as evidence that Babylonian astronomers and scientists were far more sophisticated than had been previously known. ARCHAEOLOGY's editors, equally taken with the tablet's cuneiform script, immediately set to work on "The World's Oldest Writing" (page 26). There, they offer an introduction to this robust, long-lived system of notation, and present some of the ancient world's most impressive examples of cuneiform texts tied to the lives of kings, the rule of law, the practice of medicine, and more.



"Jupiter" tablet

"An Overlooked Inca Wonder" (page 34), by online editor Eric A. Powell, surveys the work of researchers in Peru's Pisco Valley who are contending with a puzzling feature called the Band of Holes. Possibly dating to the fifteenth century, this mile-long series of depressions runs straight up a hill known as Monte Sierpe, and its character, rather than being otherworldly, might actually be of a more practical cast.

Contributing editor Jason Urbanus, in "Masters of the Ancient Mediterranean" (page 38), details the discovery and excavation of an exceedingly rare seventh-century B.C. Phoenician shipwreck off the coast of southeastern Spain. The Bajo de la Campana site, named for the rocky outcropping that scuttled the vessel, is precisely what archaeologists have long hoped to find. More than four tons of cargo once aboard the ship is providing crucial evidence for researchers to begin to fully understand the most sophisticated trade network of its time.

In "Coup de Grâce for a Desert Castle" (page 44), by senior editor Daniel Weiss, researchers working at the long-abandoned site of Qasr Hallabat in Jordan have assembled the story of a desert castle and oasis, from roughly the second to eighth centuries A.D. The ascendency and decline of a succession of major powers are much in evidence—as are the circumstances of the murder of six individuals found there.

In "A Myth in Stone" (page 48), journalist Rossella Lorenzi writes of a group of unusual statues believed to depict the myth of Niobe, in which her 14 children are murdered after she boasts of her fertility. Found buried at the bottom of what was once a pool at the villa of the Roman general Marcus Valerius Messalla Corvinus, the sculptural group speaks to his reputation as a patron of the arts, and particularly to his support of the great poet Ovid.

And don't miss "Letter from Florida" (page 55) for a tale of past-meets-present as archaeologists work with the Muscogee people to preserve their identity.

ARCHAEOLOGY

Editor in Chief	Claudia Valentino
Executive Editor	Deputy Editor
Jarrett A. Lobell	Samir S. Patel
Online Editor	Senior Editor
Eric A. Powell	Daniel Weiss
	Editorial Assistant
	Malin Grunberg Banyasz

Creative Director
Richard Bleiweiss

Contributing Editors

Roger Atwood, Paul Bahn, Bob Brier, Andrew Curry, Blake Edgar, Brian Fagan, David Freidel, Tom Gidwitz, Andrew Lawler, Stephen H. Lekson, Jerald T. Milanich, Heather Pringle, Neil Asher Silberman, Julian Smith, Nikhil Swaminathan, Jason Urbanus, Zach Zorich

Correspondents

Athens: Yannis N. Stavrakakis
Bangkok: Karen Coates
Islamabad: Massoud Ansari
Israel: Mati Milstein
Naples: Marco Merola
Paris: Bernadette Arnaud
Rome: Roberto Bartoloni, Giovanni Lattanzi
Washington, D.C.: Sandra Scham

Publisher
Kevin Quinlan

Director of Circulation and Fulfillment

Kevin Mullen

Director of Integrated Sales

Gerry Moss

Account Manager

Karina Casines

Advertising Assistant

Kiesha Graham

Account Manager

Jeff Posner

PRI Communications Inc.
Jeff@pricommunicationsinc.com
516-594-2820 x11

Circulation Consultant

Greg Wolfe, Circulation Specialists, Inc.
Newsstand Consultant

T.J. Montilli

Pro Circ Retail Solutions

Office Manager

Malin Grunberg Banyasz

For production questions
contact production@archaeology.org

Editorial Advisory Board

James P. Delgado, Ellen Herscher, Ronald Hicks, Jean-Jacques Hublin, Mark Lehner, Roderick J. McIntosh, Susan Pollock, Kenneth B. Tankersley

ARCHAEOLOGY MAGAZINE

36-36 33rd Street, Long Island City, NY 11106
tel 718-472-3050 • fax 718-472-3051

Subscription questions and address changes should be sent to Archaeology, Subscription Services, P.O. Box 433091 Palm Coast, FL 32143 toll free (877) ARKY-SUB (275-9782) or subscriptions@archaeology.org

Claudia Valentino

Claudia Valentino

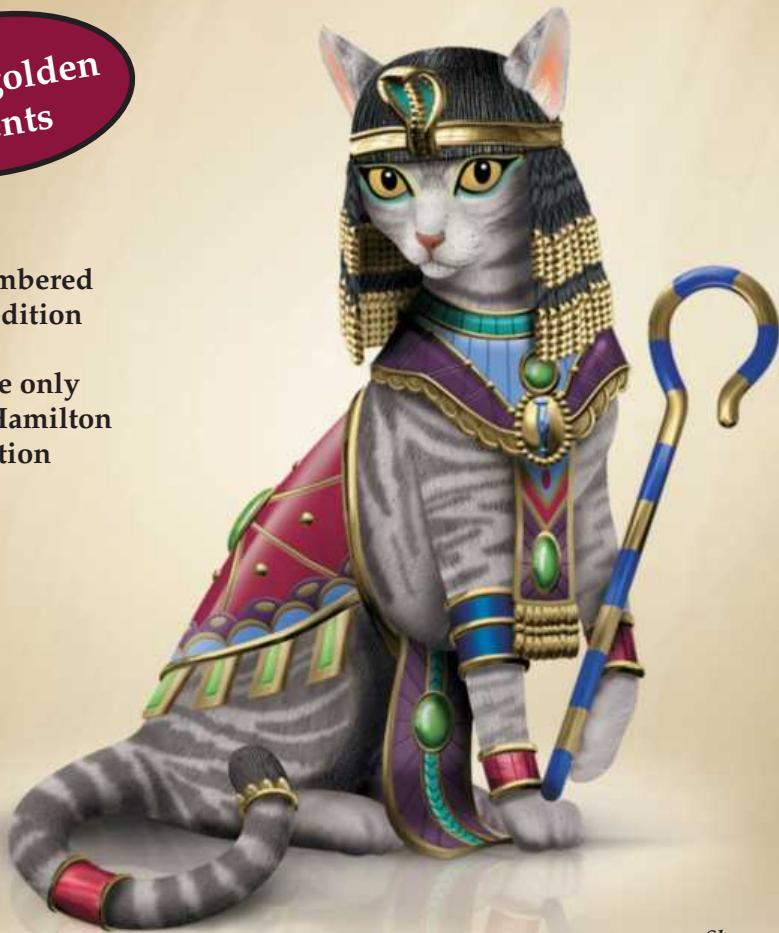
Editor in Chief

HAIL CLEO-CAT-TRA

Shiny golden
accents

Hand-numbered
limited edition

• Available only
from The Hamilton
Collection



Like us on
Facebook

Shown approximate size of 4" high

A Divine Feline Inspired by Cleopatra

The sacred companion of the ancient pharaohs of Egypt, the cat was once celebrated and worshiped.

The Creation of Artist Blake Jensen



This elegant "Cleo-CAT-tra" is adorned with rich golden accents. From the imaginative mind of artist Blake Jensen, this new figurine is completely handcrafted and hand-painted, from her elaborate headdress and sultry eyes to her ornate costume, which would impress even Cleopatra.

Satisfaction Assured or Your Money Back!

Our 365-Day Guarantee means you order risk free. Demand is expected to be strong for this limited-edition figurine. Reply today!

HamiltonCollection.com/cleocattra

©2012 HC. All Rights Reserved.

MAIL TO:

H The Hamilton Collection
9204 Center For The Arts Drive, Niles, Illinois 60714-1300

Please Respond Promptly

YES! Please accept my order for "Cleo-CAT-tra" for the issue price of \$29.99*. I need send no money now. I will be billed with shipment.

Name _____
(Please print clearly.)

Address _____

City _____ State _____ Zip _____

Signature _____

09-04672-001-E98003

*Add \$8.99 for shipping and service. Deliveries to FL and IL will be billed appropriate sales tax. All orders are subject to product availability and credit approval. Edition limited to 95 casting days. Allow 6 to 8 weeks for shipment.

09-04672-001-BD1

Heritage in Peril

As of this writing, a humanitarian and cultural heritage disaster continues to unfold across the Middle East. Conflicts in Iraq and Syria are causing massive loss of life, the displacement of people, and the destruction of ancient sites. The Archaeological Institute of America (AIA), along with many other organizations, has frequently spoken out in order to raise awareness of the impacts these conflicts are having on the people and heritage of the region. Archaeological, historical, and cultural sites in Syria and Iraq are the patrimony of their citizens and also represent the shared heritage of us all, documenting key stages in the development of human civilization.



Palmyra, Syria, 2005

To address this crisis, the AIA and the American Schools of Oriental Research, with grants from the National Endowment for the Humanities and the Rust Family Foundation, and generous support from the National Geographic Society and the Council of American Overseas Research Centers, cohosted a summit in Washington, D.C., this past December, that brought together 19 organizations from North America, Europe, and the Middle East. *Seeking Collaboration: A Summit for Projects Collecting Cultural Heritage Data in Syria and Conflict Zones* created an opportunity for these committed stakeholders to share vital information.

Archaeologists from Syria spoke fervently about the need to document the damage to archaeological and other ancient sites and to prepare for a post-conflict future.

Presenters spoke of projects currently underway that are using the latest technologies to map the destruction and looting. Several are using virtual imagery to reconstruct major monuments that have been destroyed. Other organizations are training local specialists to protect sites in the conflict zones and to conserve archaeological artifacts. Several groups are monitoring the traffic in looted antiquities and are taking action to halt it.

All of these efforts are being carried out under the most difficult of circumstances. The participants acknowledge that the responsibility they bear is significant and believe that the key to success lies in greater collaboration. To this end, summit participants approved a set of principles and practical steps ensuring the continuation of their efforts.

Everyone involved looks forward to the day when peace will return to the region. The work of these groups represents a new, collaborative model for how to mitigate heritage loss in times of conflict and prepare for a better future. Once it is safe to resume comprehensive heritage management, these groups will have a vital role to play in the massive task of conservation and restoration. We join them in looking forward to that day.

Andrew Moore
President, Archaeological Institute of America



OFFICERS

President	Andrew Moore
First Vice President	Jodi Magness
Vice President for Outreach and Education	Deborah Gangloff
Vice President for Research and Academic Affairs	Carla Antonaccio
Vice President for Cultural Heritage	Laetitia La Follette
Treasurer	David Ackert
Vice President for Societies	Ann Santen
Executive Director	Ann Benbow
Chief Operating Officer	Kevin Quinlan

GOVERNING BOARD

Elie Abemayor
David Adam
Andrea Berlin
David Boocher
Bruce Campbell
Arthur Cassanos
Derek Counts
Sheila Dillon, ex officio
Ronald Greenberg
Michael Hoff
James Jansson
Lynne Lancaster
Mark Lawall
Deborah Lehr
Thomas Levy
Kathleen Lynch
Richard C. McDonald
Bruce McEver
Barbara Meyer
Meg Morden
Sarah Parcak
J. Theodore Peña
Robert Rothberg
Ethel Scully
David Seigle
Monica L. Smith
Charles Steinmetz
Claudia Valentino, ex officio
P. Gregory Warden
Michael Wiseman
John Yarmick
Past President
Elizabeth Bartman
Trustees Emeriti
Brian Heidtke
Norma Kershaw
Charles S. La Follette
Legal Counsel
Mitchell Eitel, Esq.
Sullivan & Cromwell, LLP

"To you, it's the perfect lift chair. To me, it's the best sleep chair I've ever had."

— J. Fitzgerald, VA

Easy-to-use remotes for massage/heat and recline/lift



We've all had nights when we just can't lie down in bed and sleep, whether it's from heartburn, cardiac problems, hip or back aches – it could be a variety of reasons. Those are the nights we'd give anything for a comfortable chair to sleep in, one that reclines to exactly the right degree, raises feet and legs to precisely the desired level, supports the head and shoulders properly, operates easily even in the dead of night, and sends a hopeful sleeper right off to dreamland.

Our Perfect Sleep Chair® is just the chair to do it all. It's a chair, true – the finest of lift chairs – but this chair is so much more! It's designed to provide total comfort and relaxation not found in other chairs. It can't be beat for comfortable, long-term sitting, TV viewing, relaxed reclining and – yes! – peaceful sleep. Our chair's recline technology allows you to pause the chair in an infinite number of positions, including the Trendelenburg position and the zero gravity position where your body experiences a minimum of internal and external stresses. You'll love the other benefits, too: It helps with correct spinal alignment, promotes



This lift chair puts you safely on your feet!

back pressure relief, and encourages better posture to prevent back and muscle pain.

And there's more! The overstuffed, oversized biscuit style back and unique seat design will cradle you in comfort. Generously filled, wide armrests provide enhanced arm support when sitting or reclining. The high and low heat settings along with the dozens of massage settings, can provide a soothing relaxation you might get at a spa – just imagine getting all that in a lift chair! Shipping charge includes white glove delivery. Professionals will deliver the chair to the exact spot in your home where you want it, unpack it, inspect it, test it, position it, and even carry the packaging away! Includes one year service warranty and your choice of fabrics and colors. – Call now!

The Perfect Sleep Chair® Call now toll free for our lowest price.

Please mention code 103085 when ordering.

1-888-785-0581

46402



© 2016 firstSTREET for Boomers and Beyond, Inc.

Hiding the Goods

Many thanks for a wonderful March/April issue. I especially enjoyed "Legends of Glastonbury Abbey," which was particularly interesting to me because my wife and I had spent two weeks in Glastonbury in September.

I also hope future articles will help to dispel the mysteries of the Öland massacre ("Öland, Sweden, Spring, A.D. 480"). There is one minor point I disagree with the archaeologists about. I wonder whether householders, in preparation for the impending attack, hurriedly buried their valuables. I'd conjecture that the valuables were already stored in these small underground compartments beside the door, since there would probably not have been time when the attackers were approaching to dig a hole and bury coins and jewelry.

Christopher B. Sanford
Durham, NC

An Alternate Interpretation

I read with forensic interest the article on the Sandby Borg fort in Öland in the March/April issue. It occurs to me that this event may have been a cleansing. Throughout history, cleansing has been for religious, ethnic, and disease reasons. At Sandby Borg, the fort was not well defended, whole families were killed, and the site was avoided even

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.



Sandby Borg jawbone

until more modern times. I liken the fort to a leper colony, where families and individuals bearing some strange, contagious disease were forced to live. The fear of the disease spreading would eventually lead to the more drastic measure of killing all those in the fort, and fearing to actually bury the dead. It's possible that some people in the fort may have even been related to their killers.

Brian Pearson
Calgary, Canada

Muhammad's Memorandum

St. Catherine's Monastery owes its pres-

ervation not to its six-foot-thick granite walls, but to the fact that the monastery provided shelter to Muhammad during his early travels. He gave specific orders that the monastery was to be left unmolested. His protective order was included in the Koran, and obeyed throughout the subsequent centuries.

Paul Floto
Florence, OR

Online editor Eric A. Powell responds:

According to tradition, a delegation of monks from St. Catherine's Monastery visited Muhammad in A.D. 626 to ask for a letter of protection. He granted their request, and gave them a document known as the Ashtiname of Muhammad, which was sealed with a depiction of his handprint. The letter extended prerogatives to the monks that were reaffirmed by subsequent rulers, including the Ottoman sultan Selim I. In 1517, the sultan took the original document to the royal treasury in Istanbul for safekeeping. He left behind a certified copy of the letter, which remains one of the most prized manuscripts in the St. Catherine's collection.



St. Catherine's Monastery



Magazine Publishers of America

ARCHAEOLOGY (ISSN 0003-8113) is published bimonthly for \$23.95 by the Archaeological Institute of America, 36-36 33rd Street, Long Island City, NY 11106. Periodicals postage paid at Long Island City, NY, and additional mailing offices. POSTMASTER: Send address changes to Archaeology, P.O. 433091, Palm Coast, FL 32143.

Subscriptions should be addressed to Archaeology, Subscription Services, P.O. 433091, Palm Coast, FL 32143, toll-free (877) ARKY-SUB (275-9782), subscription@archaeology.org. \$23.95 per volume. Single numbers, \$5.99. Foreign

and Canadian subscriptions, \$38.95; includes all government taxes (130277692-RT). Canadian Publication Agreement #1373161. Allow six weeks for processing new subscriptions. Send manuscripts and books for review to 36-36 33rd Street, Long Island City, NY 11106 or editorial@archaeology.org. All manuscripts are reviewed by experts. Advertisements should be sent to the Advertising Director, 36-36 33rd Street, Long Island City, NY 11106, (718) 472-3050, advertising@archaeology.org. We are not responsible for unsolicited manuscripts and photographs. For subscription problems please call (877) 275-9782; AIA members with subscription problems should call the membership office at (617) 353-9361. All rights reserved. Printed in USA. The views and opinions expressed do not necessarily reflect the policy of the AIA or ARCHAEOLOGY.

©2016 The Archaeological Institute of America

From the Trenches

LATE-BREAKING NEWS AND NOTES FROM THE WORLD OF ARCHAEOLOGY

Dressing for the Ages

Over the two-plus years Alice Stevenson has been curator of the Petrie Museum of Egyptian Archaeology in London, she has looked at the delicate cream-colored garment hundreds of times, wondering at both the fineness of its workmanship and its extraordinary age. Thought to date from nearly 5,000 years ago, the “Tarkhan Dress” was once part of a large pile of dirty linen cloth excavated by Sir Flinders Petrie in 1913 at the site he named Tarkhan after a nearby village 30 miles from Cairo. In 1977, researchers from the Victoria and Albert Museum, while sorting through the pile of textiles as they prepared to clean them, discovered the dress, remarkably well preserved. They conserved the fabric, sewed it onto a type of extra-fine, transparent silk called Crepeline to stabilize it, and mounted it for display. The dress came to be known not only as Egypt’s oldest garment, but also as the oldest woven garment in existence. Yet in the absence of a precise original archaeological context—the mudbrick tomb in which the linen had been found had been plundered in antiquity—the exact age of the dress remained a subject of contention.

In 2015, as part of the reinstallation of the museum’s collection on its 100th anniversary, Stevenson asked Michael Dee of the University of Oxford’s Radiocarbon Accelerator Unit to help her put the question to rest. Linen associated with the garment, but not the dress itself, had been dated in the 1980s to the late third millennium B.C. since the sample size required at the time might have damaged the garment. In addition, the precision of the accelerators used for radiocarbon dating is far greater today. Using sterilized tweezers and scissors, Stevenson took a tiny thread from the dress, a process she describes as nerve-racking. “You can’t help



The Tarkhan Dress likely was worn by a young or slim female member of the royal court, and then placed in the tomb as a funerary object. Although the bottom does not survive, it may once have been full-length.

but envision the whole thing suddenly unraveling before you," she says. In the case of linen, the smallest sample that can be tested corresponds to a piece of string about half a centimeter long, weighing between two and three milligrams. (The sample from the Tarkhan Dress weighed just 2.24 milligrams.) "You're never pleased about removing a piece from an artifact, however small," says Dee. "But it's also exciting because you're presented with the opportunity of confirming the item's antiquity, and in many ways enhancing its cultural value." For example, another ancient Egyptian artifact Dee tested is the Ramesses III Girdle, a woven linen waistband thought to date to the twelfth century B.C. Dee's results cor-

roborated that date, silencing rumors that the artifact might be a fake.

Fortunately, linen is particularly easy to analyze. "Linen is a robust plant fiber composed of the carbon-rich biopolymer cellulose," Dee explains. "This is much easier to handle and date than proteinaceous fibers like those found in wool and leather." Flax, from which linen is woven, also has a short growing time, making precise dating results easier to obtain. The major obstacle the team confronted was the size of the sample. "It was just so small," Dee says, "so I am actually pleased, and somewhat surprised, we were able to produce a date."

Perhaps even more surprising was the date itself—the Tarkhan Dress is

from between 3482 and 3102 B.C., not only making it the oldest woven garment in the world, but also pushing the date of the linen back, perhaps to before Egypt's 1st Dynasty (ca. 3111–2906 B.C.). "We'd always suspected it was old, and even if it wasn't near the 1st Dynasty, even a 5th Dynasty dress [ca. 2500 B.C.] is still pretty old by archaeological standards for this type of object," says Stevenson. "But this new dating has affirmed my appreciation of the garment. With its pleated sleeves and bodice, together with the V-neck detail, it's a very fine piece of clothing. There's nothing quite like it anywhere of that quality and of that date. It's amazing to think it has survived some 5,000 years."

—JARRETT A. LOBELL

OFF THE GRID

In 1954, two ranchers digging a small pond in Sioux County, Nebraska, stumbled across a bonebed containing the 10,000-year-old remains of up to 600 bison. The ranchers, Bill Hudson and Albert Meng, tried for years to convince professional archaeologists to take a look. Finally, Larry Agenbroad of Chadron State College saw the potential of the site and excavated there for six years in the 1970s. Further excavations have taken place at the Hudson-Meng Bison Kill, as it is known, ever since. The site represents the largest known related to the Alberta Paleo-indian culture, and has left an enduring mystery—how all those bones came to rest there—that archaeologists have been trying to solve for more than 40 years.

"Hudson-Meng is a unique place where visitors can come and learn about early humans' culture and their way of life 10,000 years ago," says Ryan Means, supervisor of the Hudson-Meng Education and Research Center. "The exciting part is knowing that there is still more evidence waiting to be discovered and interpreted."

The site

The bonebed is the size of a football field, and much of it now lies under a climate-controlled shelter. In addition to the massive layer of bones, Alberta

projectile points and tools have been found in and around the site. There have been several excavations over the years, and each research team has had its own explanation for how the bonebed formed. Agenbroad believed that hunters had driven bison over the edge of a steep cliff nearby several times over a few weeks. Larry Todd of Colorado State University and David Rapson of the University of Wyoming, who excavated there in the 1990s, theorize, instead, that the bison died naturally, and that humans



Hudson-Meng Bison Kill, Nebraska

occupied the site later. Mark Muñiz of St. Cloud State University, the last to excavate there, in the 2000s, has found evidence of a series of occupations, suggesting that humans traveled to the area to hunt seasonally. Visitors can watch, and even volunteer to help, as a new generation of scientists searches for additional clues.

While you're there

Hudson-Meng is located in the Oglala National Grassland, where a memorable three-mile trail connects the



bonebed to Toadstool Geologic Park, known for its haunting sandstone formations and abundance of fossils. Hearty Western country fare can be found in nearby Crawford, and several other famed attractions are not far away: Mount Rushmore or Badlands National Park can be reached in just two hours.

—MALIN GRUNBERG BANYASZ

Exclusive Urban Blue Watch
Limited to the first 1900
responders to this ad only!



CLIENTS LOVE THE
STAUER WATCH...



"The quality of their
watches is equal to many
that can go for ten times the
price or more."

— Jeff from McKinney, TX

It's Enough to Make You Blue in the Face

**Time to take a stand against overpriced watches with the Stauer Urban Blue. AND, get a
FREE pair of Flyboy Optics® Sunglasses as our gift to you!**

You need a new watch...the one you are wearing was made when Nixon was in office, but extravagantly-priced watches that add zeros just because of a high falootin' name are an insult to your logic. Why shell out big money so some foreign company can sponsor another yacht race? It's time to put an end to such madness. It's absolutely possible to have the highest quality, precision classic timepiece without the high and mighty price tag. Case in point: The Stauer *Urban Blue*.

Packed with high-end watch performance and style, minus the high-end price tag. It's everything a high-end watch should be: Sturdy stainless steel and genuine leather construction. Precision timing that's accurate to four seconds a day—that's more precise than a 27-jewel automatic watch priced at over \$6,000. And, good looking—with simple, clean lines and a striking metallic blue face.

"Blue watches are one of the growing style trends seen in the watch world in the past few years"—WATCHTIME®, Sept. 2015

Your great escape from the overpriced watch craze. At Stauer, we go directly to the source (cutting out the middleman), and engineer our own watch designs. This means we can offer a top quality timepiece that happens to only cost the same as two well-made cocktails at your favorite bar.

So, while we're busy revolutionizing the watch industry to bring you more real value, you can take your own stand against overpriced watches with the *Urban Blue*. We'll even throw in a pair of Flyboy Optics® Sunglasses (a \$99 value) to show how much value you can still get for your dollar.

Your satisfaction is 100% guaranteed. Wear the *Urban Blue* for 60 days. If you're not convinced that you achieved excellence for less, send it back for a refund of the sale price. You can even keep the \$99 sunglasses, no hard feelings.

The *Urban Blue* is one of our fastest sellers. It takes six months to engineer this watch so don't wait. Take a stand against overpriced watches in impeccable style. Call today!

Stauer Urban Blue Watch \$199†

Offer Code Price \$49 + S&P Save \$150

1-800-333-2045

Your Insider Offer Code: UBW139-01

You must use this insider offer code to get our special price.

Stauer®

14101 Southcross Drive W,
Dept. UBW139-01
Burnsville, Minnesota 55337
www.stauer.com



Rating of A+



† Special price only for customers using the offer code versus the price on Stauer.com without your offer code.



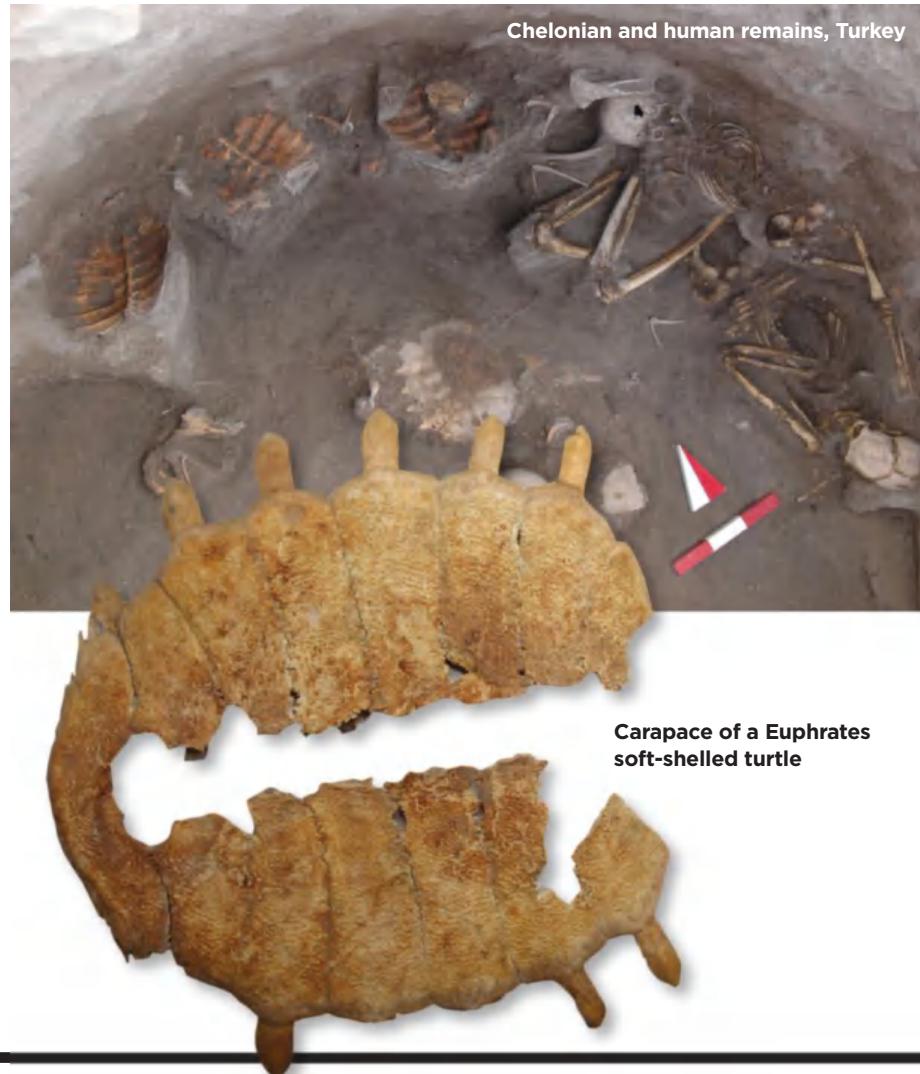
Precision movement • Stainless steel caseback and crown • Cotswold™ mineral crystal • Date window
• Water resistant to 3 ATM • Genuine leather band fits wrists 6 3/4"-8 3/4"

Smart Luxuries—Surprising Prices™

Let a Turtle Be Your Psychopomp

Excavations at the site of Kavuşan Höyük in southeastern Turkey uncovered the unique burial of a woman and a child—the pair were interred with as many as 21 turtles, tortoises, and terrapins. The grave dates to around the sixth century B.C., and was discovered by a team led by Gülriz Kozbe of Batman University. Archaeologists were stunned to find the grave so littered with chelonian remains, most of which belonged to the Euphrates soft-shelled turtle. Turtles were not normally part of the local diet, but the evidence indicates that these were butchered and consumed as part of a funeral ritual before their shells were deposited in the grave. Researchers believe that shelled reptiles had symbolic roles as psychopomps, or guiding spirits, in the afterlife. “Very few examples of burials containing both turtle and tortoise are known,” says Rémi Berthon from France’s National Museum of Natural History. “We think that it proves that the deceased had either a high social status or a high ritual value, sort of as a shaman.”

—JASON URBANUS



The Price of Tea in China

Archeologists have identified what they believe is the earliest archaeological evidence of the consumption of tea: plant remains in two tombs excavated in Tibet and Chang'an, today called Xi'an, a city that marks the beginning of the Silk Road in northern China. The finds contain traces of caffeine and theanine—substances particularly characteristic of tea. The tombs are more than 2,000 years old, indicating the beverage was consumed during the Han Dynasty

(206 B.C.–A.D. 220). A Chinese document from 59 B.C. that mentions a drink that might be tea was previously the earliest known record of the beverage.

Tea field, China



age. Tea does not grow near the tombs, so the discovery indicates that the Silk Road was a “much more complicated and complex long-distance trade network than was known from written sources,” says researcher Dorian Fuller, an archaeobotany professor at University College London. Tea-producing regions, including remote areas of China and even Myanmar, he adds, had “well established supply lines” feeding into the Silk Road.

—LARA FARRAR

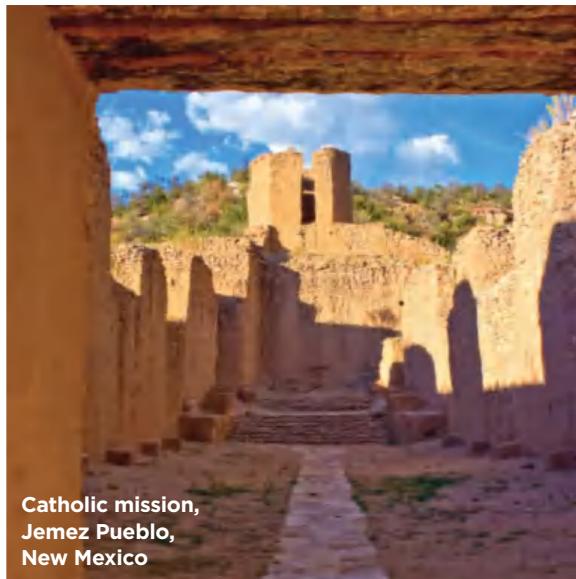
What Happened After 1492?

No one disputes that European colonization of the New World devastated native populations. But the timing and scale of that demographic crash are sources of debate among archaeologists and historians. Some believe that Old World diseases, for which Native Americans had no resistance, spread even faster than explorers and colonists, in some regions wiping out peoples before they had any direct contact with Europeans. A team led by Harvard University archaeologist Matthew Liebmann has now tested that hypothesis in northern New Mexico, which the Spanish first reached in 1539. Using lidar images of 18 ruined villages once occupied by the Jemez people, the team estimated the population of these Puebloans through time. They found that it was

stable throughout the sixteenth century—well after the first Spaniards arrived in New Mexico. “In this part of the Southwest, massive pandemics did not arrive ahead of or with the initial Spanish occupation,” says Liebmann.

But the study also showed that the founding of a mission church near the Jemez almost a hundred years later had deadly consequences. Liebmann found that the population dropped by almost 90 percent between 1620 and 1640, probably as a result of sustained contact with disease-ridden livestock from the mission. His team also discovered that the number of fires in the area began to increase after this time, probably a consequence of forest regrowth following the drastic depopulation.

—ERIC A. POWELL



Catholic mission,
Jemez Pueblo,
New Mexico

Discover Newfoundland and Labrador

The rich and diverse human history of this place is unlike anywhere else in the world. This is where East met West, when two streams of humanity finally came face-to-face at L'Anse aux Meadows around AD 1000, at the only confirmed Norse site in the New World.

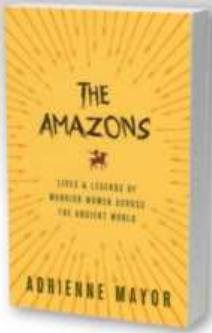
We invite you to trace the steps of 9000 years of Indigenous and European explorers and settlers as you drive across Newfoundland and into the south coast of Labrador.

MAXXIM
Vacations
Creating Memorable Experiences

Call Maxxim Vacations today to learn more.

1 800 567 6666
maxximvacations.com

L'Anse aux Meadows National Historic Site © Newfoundland and Labrador Tourism



The Amazons

Lives and Legends of Warrior Women across the Ancient World

Adrienne Mayor

"A fascinatingly detailed account."
—Emily Wilson, *Wall Street Journal*

"A book as erudite as it is riveting, one that is surely destined to serve as the definitive work on the subject."
—Tom Holland, *Literary Review*

Paper \$17.95



PRINCETON
UNIVERSITY
PRESS

See our E-Books at press.princeton.edu

CROW CANYON ARCHAEOLOGICAL CENTER

field trips summer camps for teens and school groups

800.422.8975, ext. 455 | Cortez, CO crowcanyon.org

CST 209944750

FROM THE TRENCHES

Remains of sacrificed woman, Pucalá, Peru



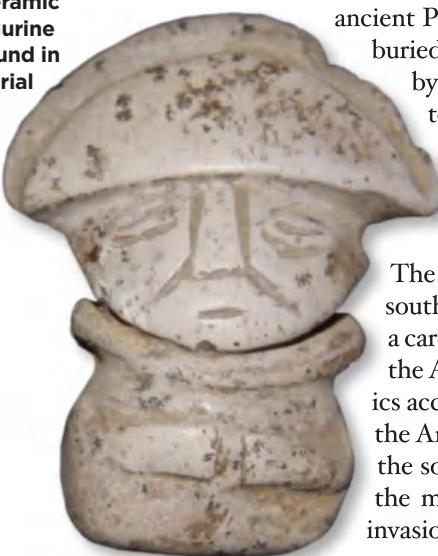
Women in a Temple of Death

Archeologists have long known that ancient societies on Peru's north coast killed male prisoners of war and drank their blood in grisly sacrifice ceremonies. Now researchers have found an unusual twist on that scene: the remains of six young women, sacrificed in a ritual in about A.D. 850. Their bones were found under the floor of a mudbrick temple complex in Pucalá, near the city of Chiclayo. The women show no signs of disease and had been wrenched into odd positions. Four lay atop each other in a single grave, and two others rested a few feet away, accompanied by a baby llama. Most are missing rib bones, indicating that their remains were left exposed and that their organs had been eaten by vultures after death, a "purification rite" that the bodies of male sacrifice victims were also subjected to, says archaeologist Edgar Bracamonte of the Royal Tombs of Sipán Museum.

Human sacrifices were often public spectacles in ancient Peru, but not in this case. "They were buried in a ritual space that was surrounded by high walls, indicating a private context," Bracamonte says. The burial occurred "at a time of great ideological change," he adds, when the old Moche culture was yielding to a new order, known as Lambayeque.

The Moche buried their dead on a north-south axis. These women were buried on a careful east-west axis, their heads toward the Andes Mountains to the east. Ceramics accompanying the women are also from the Andes, suggesting that the women and the society that buried them originated in the mountains and came to the coast by invasion or migration.

—ROGER ATWOOD



Ceramic figurine found in burial

Guaranteed the most comfortable pillow you'll ever own!™

How Well Did You Sleep Last Night?

Did you toss and turn all night? Did you wake up with a sore neck, head ache, or was your arm asleep? Do you feel like you need a nap even though you slept for eight hours? Just like you, I would wake up in the morning with all of those problems and I couldn't figure out why. Like many people who have trouble getting a good night's sleep, my lack of sleep was affecting the quality of my life. I wanted to do something about my sleep problems, but nothing that I tried worked.

The Pillow Was the Problem

I bought every pillow on the market that promised to give me a better night's sleep. After trying them all, with no success, I finally decided to invent one myself. I began asking everyone I knew what qualities they'd like to see in their "perfect pillow." Their responses included: "I'd like a pillow that never goes flat", "I'd like my pillow to stay cool" and "I'd like a pillow that adjusts to me regardless of my sleep position." After hearing everyone had the same problems that I did, I spent the next two years of my life inventing MyPillow.



In the early days, Mike and his family spent countless hours hand-making each MyPillow. This hard work and dedication to "doing it right" helped MyPillow become a classic American success story.

MyPillow® to the Rescue

Flash forward eleven years and MyPillow, Mike Lindell's revolutionary pillow design, has helped 12 million people improve the quality of their sleep. MyPillow has received thousands of testimonials from customers about how MyPillow has changed their lives.

"Until I was diagnosed with various sleep issues, I had no idea why my sleep was so interrupted throughout the night. I watch Imus each morning and heard endless testimonials about MyPillow. I took his advice and ordered a MyPillow. Now I wake up rested and ready to conquer the day ahead. Thank you for helping me remember what it's like to sleep like a baby!" - Jacqueline H.

Lindell has been featured on numerous talk shows, including *Fox Business News* and *Imus in the Morning*. Lindell and MyPillow have also appeared in feature stories in major magazines and newspapers across the country. MyPillow has received the coveted "Q Star Award" for *Product Concept of the Year* from QVC, and has been selected as the Official Pillow of the National Sleep Foundation.

MyPillow's patented interlocking fill allows you to adjust the pillow to your individual needs regardless of sleep position.



Unprecedented Guarantee and Warranty

I do all of my own manufacturing in my home state of Minnesota and all materials are 100% made in the U.S.A. I'm so confident MyPillow will help you, I'm offering an unprecedented 60-day money back guarantee and a 10-year warranty not to go flat! I truly believe MyPillow is the best pillow in the world and that if everyone had one, they would get better sleep and the world would be a much happier place. God Bless.

Mike Lindell



Don't wait—Order MyPillow and get sleep you've been dreaming about!

Save 50% when you use promo code "arch6"

BUY NOW AT: mypillow.com OR call 800.873.3167



Islam North of the Pyrenees

In the eighth century A.D., the Umayyad Islamic caliphate conquered the Visigothic Kingdom, which occupied the Iberian Peninsula and southwestern France. The Muslim presence in Spain and Portugal during this period is well documented, but evidence from north of the Pyrenees has been scant. Now archaeologists believe they have found three Muslim burials in Nimes, France, that date to this period. "The presence of Muslim burials suggests the existence of a Muslim community," says Yves Gleize of the French National Institute of Preventive Archaeological Research.

In accordance with Muslim burial practices, all three bodies were buried on their right sides, facing southeast toward Mecca, and in one case the arrangement of bones suggests that the body was wrapped in a shroud upon burial. Genetic analysis shows that all three individuals had North African paternal ancestry, leading the researchers to conjecture that they were Berber soldiers, who made up a large portion of the Umayyad forces that conquered the Visigoths.

—DANIEL WEISS



Mesolithic Markings

An 11,000-year-old shale pendant engraved with an enigmatic network of lines has been discovered at Star Carr in North Yorkshire, England. The Mesolithic site was among the first in the British Isles to have been permanently settled after the end of the last Ice Age, during which Britain was likely depopulated. The engravings are similar to those found on amber pendants from the same period in Denmark,



Engraved shale pendant

which was then accessible by land from Britain. Researchers believe the engravings may depict a tree, a map, a leaf, or tally marks. "Personally, I'm happiest with the idea that they're counting something," says Nicky Milner of the University of York, "but it's impossible to say."

—DANIEL WEISS

Vikings, Worms, and Emphysema

The woeful state of Viking bathrooms could be a factor behind smokers' coughs in Scandinavia. Sometimes in human evolution, populations adapt in ways that aren't always beneficial in the long run. For example, the sickle-cell trait evolved in humans because it provides some protection against malaria, but people who inherit the trait from both parents develop sickle-cell disease, a serious blood disorder. In this new case, molecular biologists have connected intestinal parasites in the Viking Age to modern lung disease.

Last year, Danish scientists studying the remains of a Viking privy found that the ancient Norse and their domestic animals were infested with a variety of intestinal parasites. These parasites release enzymes called proteases that cause disease. The

Whipworm egg



immune system also creates proteases that can cause inflammation and damage, but the body has natural defenses against those, including a molecule called alpha-1-antitrypsin (A1AT). Because they were more or less constantly infected, Vikings evolved to produce "deviant" forms of A1AT that were specifically useful against worm-related proteases instead of the body's own. In the absence of normal A1AT, the immune system's own proteases are free to damage tissue, including in the lungs and liver. At the time, the benefits of this genetic mutation outweighed the risks. Not so today.

Today, this deficiency of normal A1AT is the only known genetic risk factor for lung diseases such as chronic obstructive pulmonary disease (COPD) and emphysema. People also live longer and smoke tobacco, which allows the damage caused by the deficiency to accumulate. "It is only in the last century that modern

medicine has allowed human populations to be treated for disease-causing worms," says Richard J. Pleass of the Liverpool School of Tropical Medicine. "Consequently, these deviant forms of A1AT that once protected people from parasites are now at liberty to cause emphysema and COPD."

—SAMIR S. PATEL

JOURNEY INTO THE HEART OF HISTORY

Since 1983, Far Horizons has been designing unique itineraries led by renowned scholars for small groups of sophisticated travelers who desire a deeper knowledge of both past and living cultures.

AMERICAN SOUTHWEST

With Dr. Todd Bostwick
August 6 – 14, 2016

WESTERN TURKEY

With Dr. Charles Stewart
September 3 – 18, 2016

SICILY

With Dr. Thomas F.X. Noble
September 12 – 26, 2016

BULGARIA

With Dr. Andrew Poulter
September 17 – October 3, 2016

ETHIOPIA & OMO VALLEY

With Dr. Cinzia Perlingieri
Sept 23 – Oct 7, 2016

CHINA'S SILK ROAD

With Dr. Johan Elverskog
October 6 – 23, 2016

CHINA'S MARITIME SILK ROAD:

From Shanghai to Macau
With Dr. Andrew R. Wilson
October 14 – 30, 2016

MAJESTY OF EGYPT

With Dr. Bob Brier
November 5 – 18, 2016

INDIA'S GUJARAT & RAJASTHAN

With Dr. Jennifer Rose
February 4 – 20, 2017

...AND MUCH MORE!

Jordan • Sri Lanka • Greece • Iran
Scotland • Wales • Ireland • Sudan
Georgia and Armenia • Italy
Maya World • Cambodia and Laos
Peru • Easter Island • Myanmar

FEATURED JOURNEYS
SPAIN & MOROCCO:
In the Path of the Moors
With Dr. Teofilo Ruiz
September 24 – October 9, 2016

ENGLAND:
An Archaeological Pub Crawl
With Dr. James Bruhn
August 7 – 19, 2016

Far Horizons
Archaeological & Cultural Trips, Inc.

1-800-552-4575 • www.farhorizons.com

Make Room for the Memories.

An adventure of historic proportion is waiting for you – at two living-history museums that explore America's beginnings. Board replicas of 1607 ships. Try on English armor. Grind corn in a Powhatan Indian village. Then, explore a Continental Army camp and period farm to learn about the Revolution's end.

Save 20% with a combination ticket to both museums.

JAMESTOWN & YORKTOWN
SETTLEMENT & VICTORY CENTER

1-888-593-4682 or www.historyisfun.org

Yorktown Victory Center is transitioning to American Revolution Museum at Yorktown in late 2016.

Here's to you for loving what you do.

Learn more about our partnership and special discounts.

nationwide.com/AIA
Local Agent
1-886-688-9144



Nationwide Insurance has made a financial contribution to this organization in return for the opportunity to market products and services to its members or customers. Products underwritten by Nationwide Mutual Insurance Company and Affiliated Companies. Home Office: Columbus, OH 43215. Subject to underwriting guidelines, review, and approval. Products and discounts not available to all persons in all states. Nationwide and the Nationwide N and Eagle are service marks of Nationwide Mutual Insurance Company. © 2015 Nationwide AFR-025040 (09/15)

FROM THE TRENCHES

Medieval River Engineering

After years of careful planning, archaeologists have raised a well-preserved late medieval ship from the bottom of the IJssel River in the Netherlands. The ship was discovered in a 2012 survey associated with a river-widening project. Archaeologists believe that the ship, an oceangoing trading vessel known as a cog, was intentionally sunk around 600 years ago to help increase water flow

on the river. "Today, river works are planned to control the river's flow," says Wouter Waldus, the project's lead maritime archaeologist, "but in the fifteenth century, the problem was too little water flowing."

The 66-foot-long cog rested perpendicular to the river's flow, along with a barge and a riverboat. Waldus

believes engineers of the time would have sunk the boats to block one arm of the river, increasing flow to its other arms. Today, the river's swift current and heavy boat traffic made raising the boat complicated. The team built a wall to dull the current, used screws to reinforce the ship's fastening, and constructed an iron cage to protect the ship as it was lifted.

—DANIEL WEISS



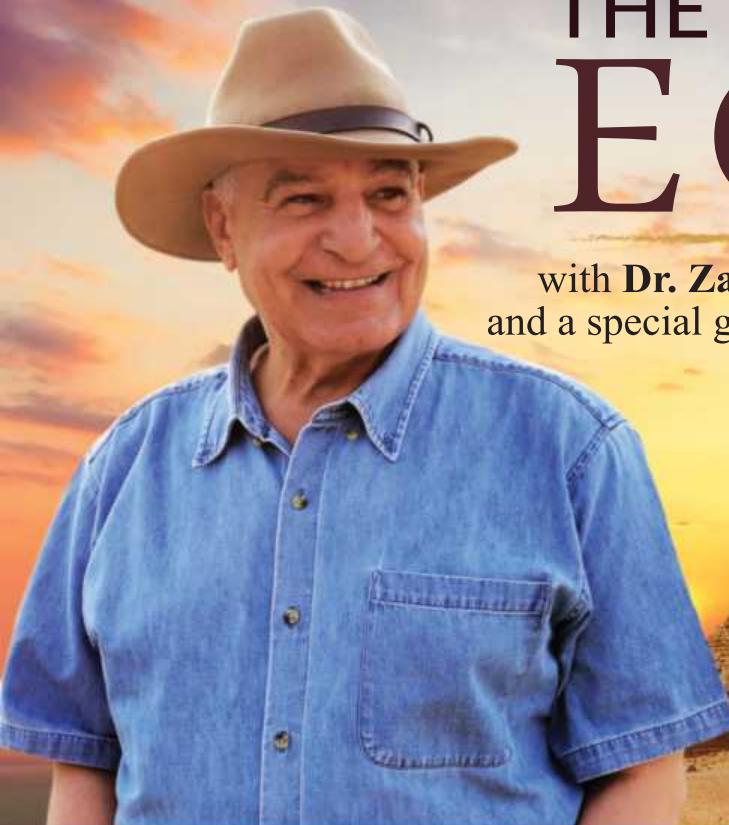
Raising of late medieval ship



IJssel River, Kampen, Netherlands

THE ROYAL TOUR TO EGYPT

with **Dr. Zahi Hawass**, world-famous archaeologist
and a special guest **Mrs. Jehan Sadat**, Egypt's First Lady



TOUR DATES



2016
September 17-30
November 6-19

2017
February 5-18
March 18-31

Introducing the most exciting tour to Egypt ever offered. Visit the Land of the Pharaohs with the most famous archaeologist in the world – Dr. Zahi Hawass! Enjoy the lecture and dinner with the former First Lady of Egypt – Mrs. Jehan Sadat, the wife of president Anwar El Sadat. With Archaeological Paths company you will experience Egypt like no one else. You will stay in a 5-star hotel and on a luxury Nile Cruise ship, taste delicious local cuisine and embrace the outstanding Egyptian culture.



Thanks to the special permissions from the Minister of Antiquities, our one-of-a-kind Royal Tour includes private entrances to the Giza plateau before opening hours, the Great Sphinx enclosure, the Luxor temple after hours and the Tombs of Pyramid Builders in Giza, an active excavation site closed to the public.

Dr. Zahi Hawass: *"I am inviting you to join me with Archaeological Paths company to tour Egypt and to see the wonders of the pharaohs. I will meet you at the sites to tell you about the discoveries that I made for the last 20 years. No one can tour Egypt like this. Except for you – when you come and join me".*



For more information visit:
www.archaeologicalpaths.com



📞 contact@archaeologicalpaths.com
✉️ US phone: 917-719-1974

FROM THE TRENCHES



Flagstones and walls from the cottage of Joseph Hedley, Northumberland, England



Postcard published shortly after Hedley's murder



Reward notice



Quilt made by Hedley

The Death of Joe the Quilter

On the evening of January 3, 1826, someone entered the Northumberland home of Joseph Hedley—known locally as “Joe the Quilter” for his great skill with needle and thread—and brutally murdered the lonely old man. Joe’s murder was a sensation that drew even the attention of King George IV, who issued a reward for information leading to the culprit. The reward was never claimed and the crime went unsolved, but Joe was never forgotten. More than 60 years later, a newspaper article was published about his murder, and when archaeologist John Castling of the Living Museum of the North in Beamish began speaking with locals last year, he was surprised to find that people remember the story.

Inspired by an 1826 postcard and using old maps of the area, Castling and his team began to look for Joe’s cottage.

On a piece of unfarmed land, they identified pottery dating to Joe’s time and mortar associated with a building. Castling excavated the site for four weeks and uncovered 10 tons of material: stones from walls, flagstones, fireplace bricks, buttons, and pins made of bone—and lead weights possibly associated with quilting. “We were lucky because the house is so isolated, no other buildings were ever built there, and it wasn’t destroyed until 1872,” he says. Plans are now under way to reconstruct Joe’s cottage. “It’s so rare to find anything related to an individual, and especially so because Joe and those who knew him weren’t wealthy or particularly famous,” says Castling. “It’s a real insight into the life and home of a genuinely ordinary man only made famous by his extraordinary death.”

—JARRETT A. LOBELL

gravity defyer®
COMFORT FOOTWEAR TECHNOLOGY



They are awesome, saved my job... I work on my feet all day and used to pack my knees with ice, now I come home with no pain.
– Ron B.

G-DEFY
SUPER WALK

Scientifically ENGINEERED to DEFY GRAVITY



VersoShock Patented Technology In Every Step



Feel better. Do more.

The stress and discomfort of being active and on your feet can destroy your quality of life. As you age, cartilage and other tissues that protect your joints become thinner and less resilient. Gravity Defyer® footwear helps protect your body and provide shock absorption from the ground up. Jogging, running, walking – even routine standing, generate punishing impact. These forces produce lasting damage and wear on the body. Gravity Defyer footwear changes how our bodies

relate to the forces that prevent us from leading more active lives.

The Ultimate Shock Absorbing Footwear

With each step our patented shoe technology returns energy to you, to help you stay active and on your feet longer. A more active you means your muscles build strength and endurance, your body receives more oxygen and nutrients, and the heart and lungs work more efficiently. As your body gets more efficient you will have more energy to live the life you've always dreamed of!

Super Walk \$129.95

WOMEN · SIZES 5-11

Medium & Wide Widths

- BLK/PURP TB9004FBP
- WHT/PINK TB9004FWSP



MEN · SIZES 7.5-15

Medium & Wide Widths

- BLACK TB9004MBS
- WHITE TB9004MWS



**\$30 OFF
YOUR ORDER**

PLUS

**FREE SHIPPING ON
ORDERS OVER \$200**

Free Exchanges • Easy Returns

COUPON CODE: PJ8EHY6

Call 1 (800) 429-0039

GravityDefyer.com/PJ8EHY6

Gravity Defyer Corp.
10643 Glenoaks Blvd
Pacoima, CA 91331

* Payment options and terms available at checkout. Credit or debit accepted. Shoes must be returned within 30 days in like-new condition for full refund or exchange. Credit card authorization required. See website for complete details. Free shipping on orders over \$200 in the United States.

Egypt's Immigrant Elite

Two shrines at Gebel el-Silsila on the banks of the Nile River in southern Egypt—thought to have been completely destroyed by an earthquake and erosion—have been discovered largely intact. The shrines, located by a team from Lund University in Sweden led by Maria Nilsson, served as memorials to elite families. One includes statues of a man, his wife, and a son and daughter. Hieroglyphics identify the man as Neferkhewe, the “overseer of foreign lands” under pharaoh Thutmose III (r. 1479–1425 B.C.), and his wife as Ruiuresti. “The mother’s name is foreign and the part that we have of the daughter’s name is also foreign,” says John Ward, the project’s associate director. “So it looks as if we have a Nubian family who have taken on the Egyptian religion and produced this shrine in order to gain immortality.”

—DANIEL WEISS

Shrine dedicated to Neferkhewe and his family, Gebel el-Silsila, Egypt

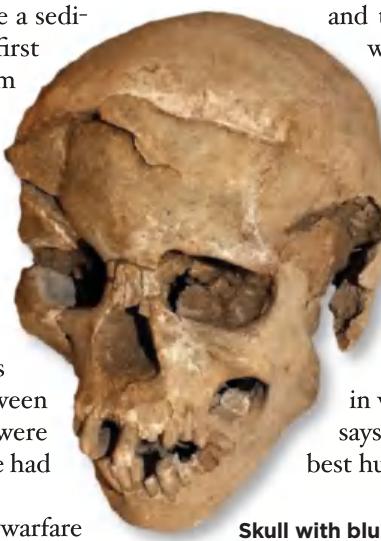


The First Casus Belli

The massacre took place roughly 10,000 years ago, but the victims’ bones weren’t buried; they lay on the ground at the site of Nataruk near the shore of Kenya’s Lake Turkana. Millennia later, they were discovered entirely by accident. Marta Mirazon-Lahr of the University of Cambridge had planned to explore a sediment layer dating to the time when the first *Homo sapiens* lived in the area, but her team first found 12 skeletons emerging from the ground due to erosion. Ten of the skeletons show signs of violent deaths: heads had been smashed with clubs, an obsidian arrow tip was embedded in the top of one skull, and another person’s face has a deep cut that may have come from a club inset with obsidian blades. Mirazon-Lahr believes the attack was not the result of a chance encounter between bands of hunters because the wounds were caused by fragile weapons that would have had little use in hunting.

Archaeological evidence of prehistoric warfare

is hard to find, and mostly comes from much later villages or settlements. This had previously led researchers to believe that sedentism was a prerequisite for organized conflict. What is interesting about the incident at Nataruk is that it appears to have occurred between groups of hunter-gatherers, and the discovery is upending assumptions about



what provokes violence between groups of people. According to Mirazon-Lahr, the area around Lake Turkana was an excellent hunting ground 10,000 years ago—a paradise, in effect. The attackers were probably not starving and probably did not go to war as a last resort. Lake Turkana is surrounded by mountains, which might have allowed one group of people to control access to the area near Nataruk. The critical issue was not sedentism, thinks Mirazon-Lahr, but differences in wealth. “In the world of hunter-gatherers,” she says, “wealth is probably defined as access to the best hunting grounds.”

—ZACH ZORICH

Skull with blunt force damage

Cell Phone Inspires Chicago Doctor to Design Affordable Hearing Aid

Outperforms Most Higher Priced Hearing Aids

Reported by J. Page

CHICAGO: A local board-certified Ear, Nose, and Throat (ENT) physician, Dr. S. Cherukuri, has just shaken up the hearing aid industry with the invention of a medical-grade, affordable hearing aid. This revolutionary hearing aid is designed to help millions of people with hearing loss who cannot afford—or do not wish to pay—the much higher cost of traditional hearing aids.

"Perhaps the best quality-to-price ratio in the hearing aid industry" — Dr. Babu,
Board-Certified ENT Physician

Dr. Cherukuri knew that untreated hearing loss could lead to depression, social isolation, anxiety, and symptoms consistent with Alzheimer's disease. **He could not understand why the cost of hearing aids was so high when the prices on so many consumer electronics like TVs, DVD players, cell phones, and digital cameras had fallen.**

Since Medicare and most private insurance plans do not cover the costs of hearing aids, which traditionally run between \$2,000-\$6,000 for a pair, many of the doctor's patients could not afford the expense. Dr. Cherukuri's goal was to find a reasonable solution that would help with the most common types of hearing loss at an affordable price, similar to the "one-size-fits-most" reading glasses available at drug stores.

He evaluated numerous hearing devices and sound amplifiers, including those seen on television. Without fail, almost all of these were found to amplify bass/low frequencies (below 1000 Hz) and were not useful in amplifying the frequencies related to the human voice.

Inspiration from a Surprising Source

The doctor's inspiration to defeat the powers-that-be that kept inexpensive hearing aids out of the hands of the public actually came from a new cell phone he had just purchased. **"I felt that if someone could devise an affordable**

- **Designed by a Board-Certified Ear, Nose, and Throat (ENT) Doctor**
- **Doctor-Recommended, Audiologist-Tested**
- **★★★★★ Top Rated Hearing Aid Online—Thousands of Satisfied Customers**
- **Batteries Included! Comes Ready To Use**
- **FDA-Registered**
- **Save Up To 90%**
- **Free Shipping Available**
- **100% Money-Back Guarantee**



device like an iPhone® for about \$200 that could do all sorts of things, I could create a hearing aid at a similar price."

Affordable Hearing Aid with Superb Performance

The high cost of hearing aids is a result of layers of middlemen and expensive unnecessary features. Dr. Cherukuri concluded that it would be possible to develop a medical-grade hearing aid without sacrificing the quality of components. The result is the **MDHearingAid PRO**, under \$200 each when buying a pair. **It has been declared to be the best low-cost hearing aid that amplifies the range of sounds associated with the human voice without overly amplifying background noise.**

Tested by Leading Doctors and Audiologists

The **MDHearingAid PRO** has been rigorously tested by leading ENT physicians and audiologists who have unanimously agreed that the **sound quality and output in many cases exceeds more expensive hearing aids.**

MDHearingAid® PRO



Proudly Assembled in the USA
from Domestic & Imported Components.



45-DAY
RISK-FREE
TRIAL



**Doctors and patients agree:
"BEST QUALITY SOUND"
"LOWEST AFFORDABLE PRICE"**

"I have been wearing hearing aids for over 25 years and these are the best behind-the-ear aids I have tried. Their sound quality rivals that of my \$3,500 custom pair of Phonak® Xtra digital ITE."

—Gerald L.

"I have a \$2,000 ReSound® Live hearing aid in my left ear and the MDHearingAid PRO in the right ear. I am not able to notice a significant difference in sound quality between the two hearing aids."

—Dr. May, ENT Physician

"They work so great, my mother says she hasn't heard this well in years, even with her \$2,000 digital! It was so great to see the joy on her face. She is 90 years young again."

—Al P.

**For the Lowest Price
Call Today**

800-873-0680

**Phone Lines Open 24 Hours
EVERY DAY**

www.MDHearingAid.com

**Use Offer Code CQ57 to get
FREE Batteries for a Full Year!**

FREE Shipping Available

©2016

WORLD ROUNDUP



ARIZONA: On a day more than two millennia ago, a group of farmers—at least three adults, with a child and dog—tended fields and irrigation ditches north of Tucson. They left tracks in the mud, and subsequent flooding from a nearby creek covered the footprints in a layer of fine silt. Roadwork has revealed dozens of these preserved prints from that day across 11 separate planting plots. Researchers think they might be the oldest yet found in the Southwest.

MASSACHUSETTS: Who can forget the Salem witch trials, when 19 were hanged in an episode of mass hysteria in 1692? Documentation of the trials is voluminous, but there are few records of the executions, and the location of the hangings had been forgotten. Experts have now confirmed an earlier theory and pinpointed the site—an outcrop called Proctor's Ledge—by studying eyewitness accounts, using mapping technology, and analyzing sightlines. Tests show that no remains were buried on the site.



PANAMA: Dolphin appears to have been on the menu of the residents of Pedro González Island some 6,000 years ago. In a midden, archaeologists found a relatively high percentage of dolphin bones—common and bottlenose—more than probably would have been available from scavenging beached animals. It is difficult to hunt dolphins from a dugout canoe, so the hunters may have waited until a pod entered a shallow bay, and then used boats to drive their quarry onto the beach.

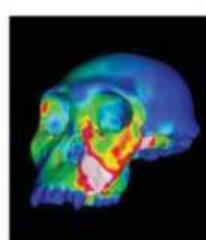


SWEDEN: Osteologists studying a 9,000-year-old lakeside site believe they have found the earliest known example of an important method of food preservation. Below an area thick with fish bones they found a 10-foot-long pit surrounded by postholes. Evidence led them to conclude that these early Mesolithic people were fermenting fish 1,500 years before fermentation was used anywhere else in the world—to make wine. This suggests people may have formed settlements here 3,000 years earlier than previously thought. Surströmming, anyone?

SCOTLAND: A skeleton found beneath the playground of Victoria Primary School in Newhaven, Edinburgh, is a reminder that the area once wasn't so child-friendly. The skeleton was dated to the 16th century, when the site was



part of the harbor complex. The bones were quite degraded, and the local graveyards were located elsewhere, so excavators believe that the man may have been a pirate, executed and then displayed—gibbeted, the postmortem punishment is called—to discourage would-be buccaneers.

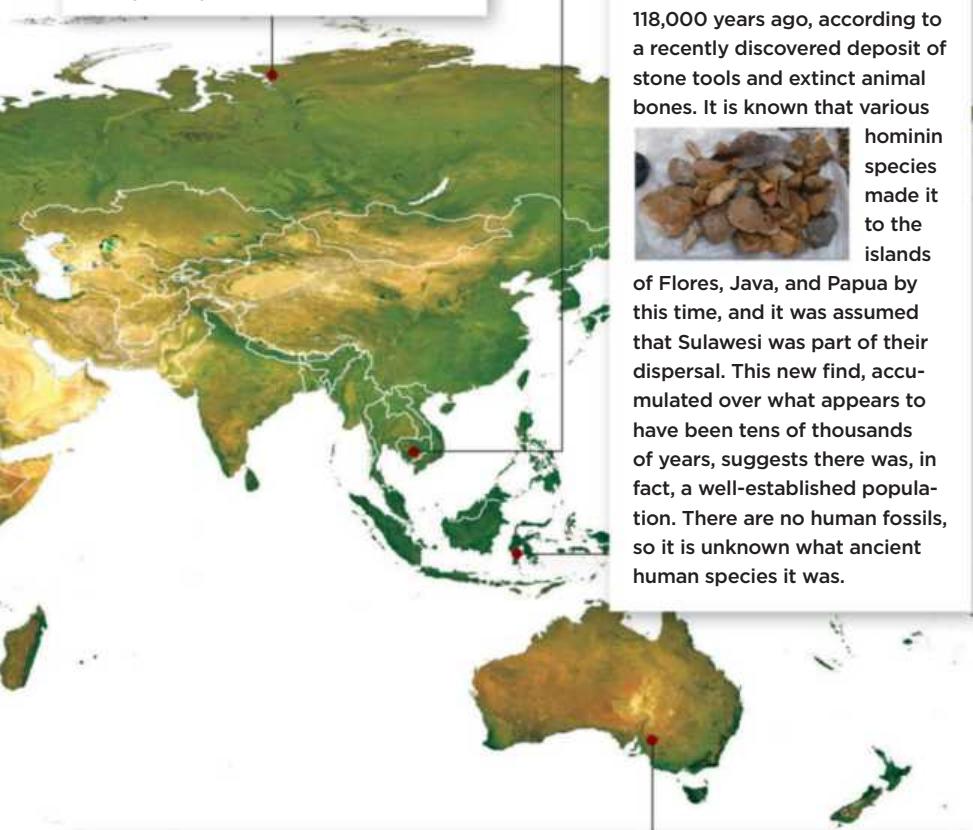


SOUTH AFRICA: *Australopithecus sediba*, the two-million-year-old hominin, differed from other australopiths in its poor ability to bite down on hard foods. Biomechanical tests using a digital model of an *A. sediba* skull, found in 2008, determined that if *A. sediba* bit down with all the force of its chewing muscles, it would dislocate its jaw—just like humans, but unlike other australopiths. While this is not proof that *A. sediba* evolved into modern humans, it does suggest that diet may have played a strong role in human evolution.



RUSSIA: Modern humans developed the skills to survive just about anywhere on Earth far earlier than was once thought.

That is the conclusion after radiocarbon dating the well-preserved remains of a mammoth found by an 11-year-old boy in 2012. The skeleton is studded with signs of a prolonged battle with a group of humans, and dates to about 45,000 years ago, placing humans in the Arctic more than 10,000 years earlier than previous evidence suggested. In fact, the researchers believe that innovations in mammoth hunting made this northern occupation possible.



AUSTRALIA: *Genyornis newtoni* was a seriously large bird: 7 feet tall and 500 pounds. But size doesn't matter when humans develop a taste for your eggs. Analysis of *G. newtoni* eggshell fragments from 200 sites across the country describes telltale burn marks produced by a localized heat source rather than the all-encompassing heat of a wildfire—an indication that the eggs had been harvested and cooked. More than 8 in 10 species weighing over 100 pounds, including *G. newtoni*, became extinct shortly after humans arrived down under around 50,000 years ago.

CAMBODIA: Sometimes the archaeology and ancient history of Cambodia seem to begin and end with Angkor Wat, and it was widely assumed that the period between the decline of Angkor and the modern era was a kind of "dark age." Excavations at Longvek, the capital after Angkor, are dispelling this notion with evidence of extensive trade links, including maritime trade with China and Japan. The Khmer Empire that built Angkor had not taken advantage of this potential source of wealth, which may have contributed to its decline.



INDONESIA: Archaic humans arrived on Sulawesi at least 118,000 years ago, according to a recently discovered deposit of stone tools and extinct animal bones. It is known that various hominin species made it to the islands of Flores, Java, and Papua by this time, and it was assumed that Sulawesi was part of their dispersal. This new find, accumulated over what appears to have been tens of thousands of years, suggests there was, in fact, a well-established population. There are no human fossils, so it is unknown what ancient human species it was.

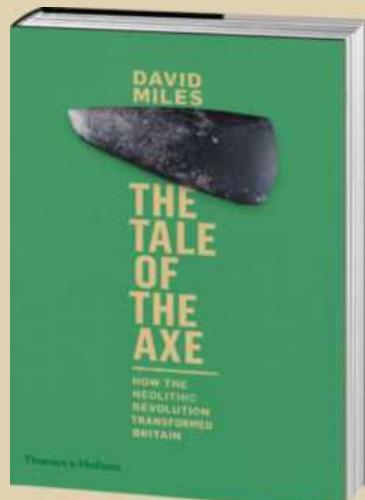


New from Thames & Hudson



Ireland's oldest traditions excavated via archaeological, genetic, and linguistic research, culminating in a truly groundbreaking publication

\$29.95 | 65 illustrations



A journey through the New Stone Age in Britain by way of its ancestors, geographical neighbors, and the species from which humans emerged

\$29.95 | 70 illustrations

 **Thames & Hudson**
thamesandhudsonusa.com
Available wherever books are sold

THE WORLD'S OLDEST WRITING

Used by scribes for more than three millennia, cuneiform writing opens a dramatic window onto ancient Mesopotamian life

by THE EDITORS



SCRIBE STATUE

FOUND: Lagash, Iraq
CULTURE: Sumerian
DATE: ca. 2400 B.C.
LANGUAGE: Sumerian



CLAY TABLET

FOUND: Babylon, Iraq

CULTURE: Late

Babylonian

DATE: ca. 350–50 B.C.

LANGUAGE: Akkadian

In early 2016, hundreds of media outlets around the world reported that a set of recently deciphered ancient clay tablets revealed that Babylonian astronomers were more sophisticated than previously believed. The wedge-shaped writing on the tablets, known as cuneiform, demonstrated that these ancient stargazers used geometric calculations to predict the motion of Jupiter. Scholars had assumed it wasn't until almost A.D. 1400 that these techniques were first employed—by English and French mathematicians. But here was proof that nearly 2,000 years earlier, ancient people were every bit as advanced as Renaissance-era scholars. Judging by the story's enthusiastic reception on social media, this discovery captured the public imagination. It implicitly challenged the perception that cuneiform tablets were used merely for basic accounting, such as tallying grain, rather than for complex astronomical calculations. While most tablets were, in fact, used for mundane bookkeeping or scribal exercises, some of them bear inscriptions that offer unexpected insights into the minute details of and momentous events in the lives of ancient Mesopotamians.

First developed around 3200 B.C. by Sumerian scribes in the ancient city-state of Uruk, in present-day Iraq, as a means of recording transactions, cuneiform writing was created by using a reed stylus to make wedge-shaped indentations in clay tablets. Later scribes would chisel cuneiform into a variety of stone objects as well. Different combinations of these marks represented

syllables, which could in turn be put together to form words. Cuneiform as a robust writing tradition endured 3,000 years. The script—not itself a language—was used by scribes of multiple cultures over that time to write a number of languages other than Sumerian, most notably Akkadian, a Semitic language that was the lingua franca of the Assyrian and Babylonian Empires.

After cuneiform was replaced by alphabetic writing sometime after the first century A.D., the hundreds of thousands of clay tablets and other inscribed objects went unread for nearly 2,000 years. It wasn't until the early nineteenth century, when archaeologists first began

to excavate the tablets, that scholars could begin to attempt to understand these texts. One important early key to deciphering the script proved to be the discovery of a kind of cuneiform Rosetta Stone, a circa 500 B.C. trilingual inscription at the site of Bisitun Pass in Iran. Written in Persian, Akkadian, and an Iranian language known as Elamite, it recorded the feats of the Achaemenid king Darius the Great (r. 521–486 B.C.). By deciphering repetitive words such as "Darius" and "king" in Persian, scholars were able to slowly piece together how cuneiform worked. Called Assyriologists, these specialists were eventually able to translate different languages written in cuneiform across many eras, though some early versions of the script remain undeciphered.

Today, the ability to read cuneiform is the key to understanding all manner of cultural activities in the ancient Near East—from determining what was known of the cosmos and its workings, to the august lives of Assyrian kings, to the secrets of making a Babylonian stew. Of the estimated half-million cuneiform objects that have been excavated, many have yet to be catalogued and translated. Here, a few fine and varied examples of some of the most interesting ones that have been.



CARVED INSCRIPTION

FOUND: Bisitun, Iran

CULTURE: Achaemenid

DATE: ca. 500 B.C.

LANGUAGES: Persian, Akkadian, Elamite

CLAY TABLET

FOUND: Ur, Iraq
CULTURE: Old Babylonian
DATE: 1750 B.C.
LANGUAGE: Akkadian



LETTERS

Among the thousands of Mesopotamian tablets containing both official and personal letters, one example stands out as the first recorded customer complaint and evidence of a business relationship gone very sour. Nearly 4,000 years ago, a man named Nanni expressed his extreme displeasure to the merchant Ea-nasir about a recent copper shipment:

When you came, you said to me as follows: "I will give Gimil-Sin (when he comes) fine quality copper ingots." You left then but you did not do what you promised me. You put ingots that were not good before my messenger (Sit-Sin) and said: "If you want to take them, take them; if you do not want to take them, go away!" What do you take me for, that you treat somebody like me with such contempt....Take cognizance that (from now on) I will not accept here any copper from you that is not of fine quality. I shall (from now on) select and take the ingots individually in my own yard, and I shall exercise against you my right of rejection because you have treated me with contempt.

RECIPES

The earliest known recipes, by many centuries, are found on three tablets dating to the Old Babylonian period. Though seemingly simple, their minimal instructions could only have been followed by experienced chefs working for the highest echelons of society. This particular tablet features 25 recipes for stews and soups, both meat and vegetarian, including some directions—though no measurements or cooking times—for an *amursanu*-pigeon stew:

*Split the pigeon in half—add other meat.
Prepare the water, add fat and salt to taste;
Breadcrumbs, onion, samidu, leeks, and garlic
(first soak the herbs in milk).
When it is cooked, it is ready to serve.*

With the exception of *amursanu*, which is probably a type of pigeon, and *samidu*, an unknown spice, the ingredients are certainly recognizable. But the dish would, in fact, be impossible to replicate, says Benjamin Foster, curator of the Yale Babylonian Collection. “People often think that because they can cook Arab or Persian food that they can make this stuff, but they don’t know how much regional cooking was changed by the Muslim conquests. If you cook these up using modern Near Eastern ingredients, it is pure fantasy—but often delicious.”



CLAY TABLET

FOUND: Possibly Larsa, Iraq
CULTURE: Old Babylonian
DATE: ca. 1800 B.C.
LANGUAGE: Akkadian

CLAY CONES

FOUND: Girsu, Iraq
CULTURE: Sumerian
DATE: ca. 2500–2340 B.C.
LANGUAGE: Sumerian



LAWS

The best known and most influential of the Mesopotamian law codes was that of King Hammurabi of Babylonia (r. 1792–1750 B.C.). Featuring nearly 300 provisions covering topics ranging from marriage and inheritance to theft and murder, it is the most comprehensive of these codes. While it famously includes retributive, eye-for-an-eye clauses, it also takes on more complex scenarios, imposing harsh punishments for accusation without proof and for errors made by judges.

The code appears written in intentionally archaic cuneiform on a towering seven-and-a-half-foot-tall diorite stela that was recovered from Susa, in present-day Iran, where it was taken after being stolen in the twelfth century B.C. Featuring a relief of Hammurabi receiving divine sanction from the sun-god Shamash in its upper portion, this stela and others like it would have been publicly displayed during Hammurabi's reign and long after. "The code was certainly set up in city squares, in temple courtyards, in public places—where it was seen by populations," says Martha Roth, an Assyriologist at the University of Chicago. It was also used in the training of scribes for at least 1,000 years after its composition, and several manuscripts of it were found in King Ashurbanipal's (r. 668–627 B.C.) seventh-century B.C. library at Nineveh, in present-day Iraq.

The precise legal function of Hammurabi's code is unclear, as there are few references to it in legal records from his era. However, says Roth, these records do suggest that "the provisions as outlined in Hammurabi map onto the daily reality in a fairly close way." The code was also clearly intended to establish Hammurabi as the guarantor of justice for his people. "In order that the mighty not wrong the weak, to provide just ways for the waif and the widow," reads its epilogue, "I have inscribed my precious pronouncements upon my stela."

This trope of the king as protector of the downtrodden appears regularly in Mesopotamian inscriptions, but the earliest known example is found on several cone tablets known as the reforms of Urugagina (r. ca. 2350 B.C.), a king of the Sumerian city-state of Lagash, in present-day Iraq. According to the inscriptions, the king addressed a number of social inequities, including reducing the power of greedy temple overseers and abusive foremen. "There's a consciousness about reform in it that is unique until now," says Roth, "and in history it comes about here for the first time."



DIORITE STELA

FOUND: Susa, Iran
CULTURE: Late Old Babylonian
DATE: ca. 1750 B.C.
LANGUAGE: Akkadian

CLAY TABLET

FOUND: Sippar, Iraq
CULTURE: Late Babylonian
DATE: ca. sixth century B.C.
LANGUAGE: Akkadian

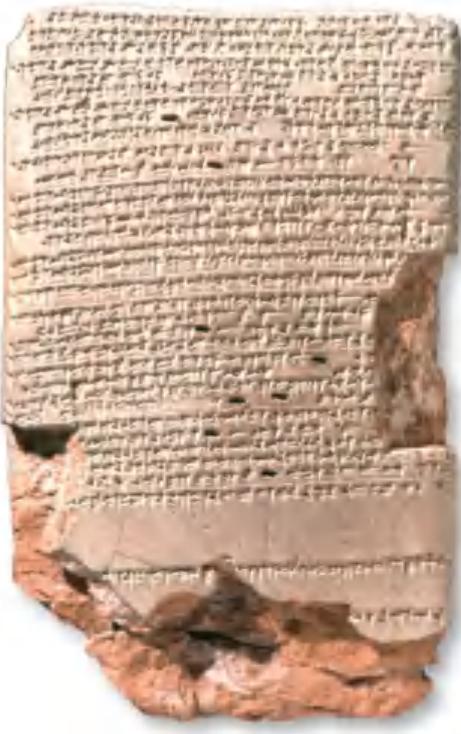


MAPS

Cuneiform tablets were long used for making maps and plans of towns, rural areas, and houses, but rarely for anything larger or without commercial interest. A unique tablet, thought to have come from Sippar in present-day Iraq and dating to around the sixth century B.C., shows much more and reflects something of how ancient Babylonians saw themselves in the world. This Mesopotamian *mappa mundi* consists of a circular map surrounded by triangles, with explanatory text above and on the opposite face. The central circle shows the Babylonian realm, bisected by the Euphrates, which is straddled by Babylon itself. Several other geographical areas are labeled by name, and the continent is surrounded by a ring called the “ocean”

or “Bitter River.” Beyond the boundary waters are seven or eight outlying regions or islands represented by triangles, of which portions of four survive. The text is largely concerned with these far-flung, perhaps mythological, places. One is described as a “place where the sun is not seen,” another as a place where “a winged bird cannot safely complete its journey.” Further descriptions speak of “ruined” cities and gods, and animals both fantastic (great sea-serpent, scorpion-man) and exotic (lion, monkey, chameleon).

According to Wayne Horowitz of the Hebrew University of Jerusalem, the tablet “reflects a general interest with distant areas during the first half of the first millennium, when the Assyrian and Babylonian Empires reached their greatest extents.”



CLAY TABLET

FOUND: Possibly

Babylon, Iraq

CULTURE: Late Babylonian

DATE: ca. sixth century B.C.

LANGUAGE: Akkadian

MEDICINE

In the ancient Near East, illness was as much a spiritual affliction as a physical one. Demons and ghosts played large roles in diagnosis and treatment, but that's not to say that the practice of medicine wasn't codified. One collection of cuneiform texts lists hundreds of medically active substances. And the Late Babylonian diagnostic manual called *Sakikku*, or "All Diseases," reveals the careful diagnostic observation of *ashipu*, or doctor-scholars. The manual, which dates to around the sixth century B.C., consists of 40 tablets, including a treatise on the diagnosis of epilepsy, called *miqtu*, or "the falling disease." The writer explains the subtleties of the neurological disease's presentation in great detail, provides basic prognoses, and ascribes different kinds of seizures to particular malevolent spirits. "[If the epilepsy] demon falls upon him and on a given day he seven times pursues him—[he has been touched by the] hand of the departed spirit of a murderer. He will die."

RELIGION

In November 1872, a self-taught Assyriologist named George Smith working as an assistant at the British Museum happened upon a fragment of a tablet that would soon become the most famous cuneiform text in the world. One of thousands excavated decades earlier at Nineveh, in present-day Iraq, the tablet told a story eerily similar to that of Noah in the Old Testament. In it, the gods resolve to destroy the world and all life with a great flood, but one of the chief gods warns one man in time to prevent the extinction of all living things: "Demolish the house, build a boat!" the god urges. "Abandon riches and seek survival! Spurn property and save life! Put on board the boat the seed of all living creatures!"

The man, his family, and assorted animals wait out the flood in the boat while all other living things perish. Smith presented his translation several weeks later at the Society of Biblical Archaeology to a packed audience that included the prime minister, the archbishop of Canterbury, and many members of the press. "When Smith announced that one of these unappetizing-looking tablets from the barbaric, strange world of the Middle East contained a parallel text to Holy Writ, people were astonished," says Irving Finkel, a cuneiform expert at the British Museum.

The tablet deciphered by Smith turned out to be the 11th

part of the 12-tablet *Epic of Gilgamesh* and had belonged to the library of the Assyrian king Ashurbanipal (r. 668–627 B.C.), who aspired to gather all known cuneiform writings. Since Smith's discovery, more than a dozen cuneiform tablets containing some portion of the flood myth have been identified, the earliest of which predate the earliest known versions of the biblical flood text by a thousand years.



CLAY TABLET

FOUND: Nineveh, Iraq

CULTURE: Neo-Assyrian

DATE: Seventh century B.C.

LANGUAGE: Akkadian

KINGS

MAGNESITE STATUE

FOUND: Alalakh, Turkey
CULTURE: Middle Babylonian
DATE: ca. 1400–1150 B.C.
LANGUAGE: Akkadian

CLAY PRISM

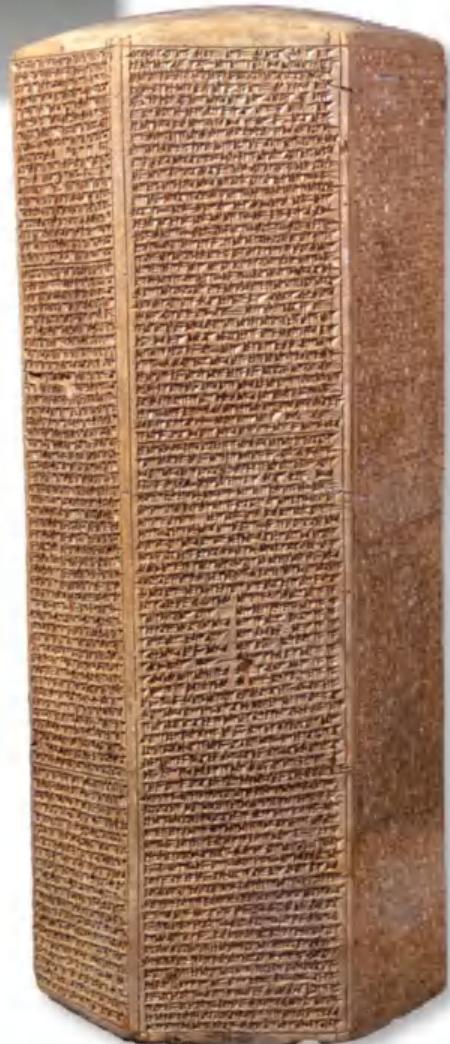
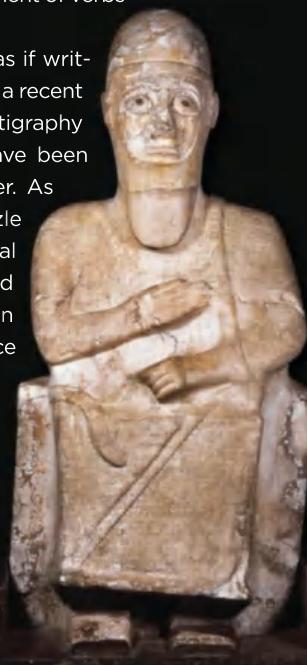
FOUND: Nineveh, Iraq
CULTURE: Neo-Assyrian
DATE: 691 B.C.
LANGUAGE: Akkadian

Royal inscriptions are among the most important sources of ancient Near Eastern history. One of the most intriguing examples is found on the statue of King Idrimi, who ruled Alalakh, a city in present-day Turkey, in the fifteenth century B.C. A lengthy cuneiform inscription sprawls across the statue, spinning a first-person tale of exile, triumph, and redemption.

"In Aleppo, the house of my father," it begins, "a bad thing occurred, so we fled to the Emarites, my mother's kin." Idrimi, a younger son unwilling to play a diminished role, decamps for Canaan, where he finds countrymen who recognize his royal lineage. With their help, he wins over his home city and is proclaimed its rightful ruler by the king of Mitanni, the major regional power. Idrimi then repairs Alalakh's toppled city wall, conquers more cities, builds a palace, cares for his people, and performs the necessary prayers and sacrifices.

The portion of the inscription that covers Idrimi's reign is very similar to inscriptions left behind by kings from across the ancient Near East, from Hammurabi of Babylonia (r. 1792–1750 B.C.) to Ashurnasirpal II of Assyria (r. 883–859 B.C.). "The things Idrimi does once he becomes king are the things that Near Eastern kings conventionally claimed to have done in their inscriptions," says Jacob Lauinger, an Assyriologist at Johns Hopkins University. However, Lauinger adds, the portion covering Idrimi's exile is more akin to the Old Testament stories of Joseph and David, both younger sons who reach great heights. Just as the inscription's narrative is a hybrid, so is its language. It is written in Akkadian cuneiform—as was only proper for a royal inscription at the time—but with clear Canaanite influences, such as the placement of verbs at the beginning of clauses.

Although the text reads as if written by Idrimi during his reign, a recent reanalysis of the statue's stratigraphy suggests it may actually have been written several decades later. As scholars continue to puzzle over this most unusual royal inscription, the wish expressed in its final lines has been fulfilled: "I wrote my service down on my tablet. May one regularly look upon them [the words] so that they [the words] may call blessings on me regularly."



WARFARE

During the millennia in which cuneiform script was used, Mesopotamia saw city-states jockey for resources, empires grow and dissipate, and seemingly countless kings made and unmade on the battlefield. Successful military campaigns brought land and resources, affirmed royal power, and granted privileged access to the gods. In turn, sculptures, reliefs, and cuneiform writings were commissioned to memorialize victories and legitimize claims. The Stela of the Vultures documents one of these conflicts from Sumer's Early Dynastic III period (2600–2350 B.C.). "The monument stands at the beginning of a long line of historical narratives in the history of art," says Irene J. Winter, a professor emeritus at Harvard University, in her analysis of the stela.

During this period, Sumer was a collection of city-states surrounded by agricultural land. As the city-states grew, so did the potential for border conflicts, such as one that raged for 200 years between Lagash and Umma, both in present-day Iraq. The Stela of the Vultures, which survives as seven fragments of what was once a six-foot slab of limestone, records Lagash's eventual victory. One side depicts the god Ningirsu, holding his enemies in a sack, while the other shows a series of scenes from the conflict. A cuneiform account by Lagash's leader, Eannatum, wraps around the stela: "Eannatum struck at Umma," it reads. "The bodies were soon 3,600 in number....I, Eannatum, like a fierce storm wind, I unleashed the tempest!"

The historical side depicts Eannatum leading a phalanx of soldiers trampling enemies underfoot, a victory parade, a funeral ceremony, and another, poorly preserved tableau—along with, at top, the image that gives the stela its name, a kettle of vultures consuming the heads of Umma soldiers. It is, in a way, a document both poetic and legal—it invokes the grace and power of Ningirsu, and stakes a claim to land won by force.

Lagash's primacy was short-lived. By the end of the period, Umma had plundered its rival and begun the consolidation of power that would result in the rise of the Akkadian Empire. The tradition of documenting battles in words and pictures continued, perhaps reaching a peak with the Assyrians in the seventh century B.C., when they carved elaborate battle reliefs in the North Palace of Nineveh in present-day Iraq, and documented the siege of Jerusalem on a series of octagonal clay prisms called Sennacherib's Annals.

CLAY TABLET

FOUND: Babylon, Iraq
CULTURE: Late Babylonian
DATE: A.D. 62
LANGUAGE: Akkadian



THE LAST TABLETS

Though Akkadian as a spoken language in Mesopotamia died out toward the end of the first millennium B.C., cuneiform continued to be used by temple scribes and astrologers. Greek scholars are known to have flocked to Babylon during this time to learn astronomy, and excavated tablets inscribed in both Greek and Akkadian show that at least a few of these visiting astronomers even tried to master the art of writing cuneiform. But the end was near. The last known tablets that can be dated were written in the late first century A.D. Some scholars believe cuneiform ceased to be used around that time, but Assyriologist Markham Geller of the Free University of Berlin believes it endured for another two centuries. He points to classical sources that mention that Babylonian temples continued to thrive, and believes that they would have maintained scribes still capable of reading and writing cuneiform to ensure that rituals were properly performed. He also thinks cuneiform medical texts may have continued to be used to diagnose illnesses during this era.

But in the third century A.D., the neighboring Sassanian Empire, known to be hostile to foreign religions, seized Babylon. "They shut the temples down," says Geller, "and they sent everyone home." He believes it was only when the very last of these temple scribes died that the rich, 3,000-year-old cuneiform record finally fell silent.

LIMESTONE STELA

FOUND: Girsu, Iraq
CULTURE: Sumerian
DATE: ca. 2450 B.C.
LANGUAGE: Sumerian





MEMBERS OF THE public regularly get in touch with Charles Stanish, an expert on Andean cultures at the University of California, Los Angeles. Two years ago, Stanish received a call from a man in Pittsburgh who

had just seen a program claiming that aliens played a large role in the lives of ancient people. He was interested in getting Stanish's take on a particular Peruvian site purported to be the handiwork of extraterrestrials. "I always try to be nice to people like that," says Stanish. "For whatever reason, they are interested in the ancient past, and

An Overlooked Inca Wonder

Thousands of aligned holes in Peru's Pisco Valley have attracted the attention of archaeologists

by ERIC A. POWELL

A 1931 aerial photograph (left) is the first known documentation of Monte Sierpe, an ancient Peruvian site popularly known as the “Band of Holes.” It is a mile-long arrangement of depressions, visible here in a recent image taken from a drone.



I share with them what archaeologists know about the subject.” In this case, the man asked Stanish what he thought about the idea of aliens constructing a strange alignment of pits, known popularly as the “Band of Holes,” in Peru’s Pisco Valley. Though he has worked in the area for more than 30 years, Stanish had never heard of the site. He and his colleague Henry Tantaleán took a look at its coordinates on Google Earth for themselves, and were surprised by satellite imagery showing that the Band of Holes is indeed a highly unusual artificial feature. It seemed to be made up of thousands of small depressions running upslope. “I’d never seen anything like it,” says Stanish. “It really seemed unique.” It was also only 10 miles from Stanish and Tantaleán’s own excavations in the nearby Chincha Valley. Intrigued, they decided to try to understand the curious site.

Together, Stanish and Tantaleán speculated as to what the Band of Holes might have been. They reasoned it could have been part of a defensive structure, or served as a marker for a trail, or might even be a geoglyph in the tradition of the nearby Nazca lines. In searching the archaeological literature, they



The holes are on average about 3 feet wide and between 20 and 40 inches deep. They may have been used to measure produce being paid to the Inca state as tribute.

found that the site had first been documented in 1931 by aerial photographer and geographer Robert Shippee. Since then, a few archaeologists had visited and described it as being made up of segments of shallow holes running a mile up a hill known as Monte Sierpe. The consensus seemed to be that the holes were made to store something, but exactly what remained unclear. Despite the fact that previous generations of archaeologists knew about the site, no excavations had been conducted, and no obvious artifacts had been found near the holes. There was no agreement on when it was built or by what culture. For Stanish and Tantaleán, the mystery was deepening.

IN THE 2015 FIELD SEASON, Stanish set up his team in the Chincha Valley and then drove with Tantaleán to Monte Sierpe. From below, the row upon row of holes creeping up the slope made for an imposing view. “Really, it is very impressive,” says Tantaleán. “I’d never seen anything like it in my entire career.” They quickly found a small amount of pottery dating to just before the time the Spanish invaded Peru,

when the Inca ruled this part of it. There were also other signs it could be an Inca site. “I began to suspect it dated to the Inca period because at the base of the site there are tombs similar to those in the Chincha Valley that date to the time of the Incas,” says Tantaleán.

A survey showed that most of the holes were about three feet across and 20 to 40 inches deep. They were made in various ways, some dug into artificial mounds of soil and others made up of small rock structures on the surface. None were dug into the hill’s volcanic bedrock, as some who believe in their extraterrestrial origin claim. The archaeologists also noted that the band is divided into several unique groupings, which they called blocks, each of which have different patterns of holes.

Using a drone, they collected aerial images and created a new, detailed map of the Band of Holes, which they estimate is made up of between 5,000 and 6,000 depressions. While others have maintained that the sheer number of holes makes it unlikely that prehistoric people could have constructed it on their own, Stanish calculates that if created all at once, the band could have been completed by a team of 100 workers in a month. A smaller group of 10 workers could have made it in perhaps 300 days, though it’s likely the holes were dug gradually over a long period of time. As impressive a feat as the Band of Holes appears, a well-organized group of people would have had no trouble creating it.

After surveying and studying the site, Stanish began to think that their initial hunch that it dated to the period when the Inca had conquered the area was right. They found not only the remains of an Inca road nearby, but also a series of *colcas*, Inca-period storage houses. Together with the discovery of Inca-period pottery near the band, these finds seem to suggest that the Band of Holes dates to sometime around the fifteenth century, after the Inca Empire conquered the Chincha people, who were native to the region. “It was all circumstantial,” says Stanish, “but it seemed to fit.” They also felt the holes were once used to store something, but just what and why still wasn’t clear.

BACK AT UCLA, Stanish attended a lecture given by Harvard University archaeologist Gary Urton. Urton spoke about recent discoveries at the Inca site of Inkawasi, which is about 75 miles north of Monte Sierpe. The Peruvian archaeologist Alejandro Chu had found a number of the knotted-string recording devices known as *khipus* in colcas there. Many of the *khipus* were associated with the remains of various agricultural produce, such as peanuts and chilies, that had been laid out on a floor that was divided like a checkerboard (“Reading an Inca Archive,” March/April 2016). Farmers would have brought produce to the colcas as tribute to the Inca state. Urton and his colleagues speculate that each nine-by-nine-inch square in the checkerboard was used to measure the specific amount of tribute owed by each farmer or family. An official state accountant, known as a *khipukamayug*, or a “*khipu* reader,” then recorded the tax on a string.

Stanish was impressed, and immediately saw a similarity between the Inkawasi checkerboard and the layout of the Band



The floor of a recently excavated Inca storehouse at the site of Inkawasi is divided into a checkerboard pattern used as a means of tallying tribute.

of Holes. "They had a really good explanation for how these squares would have been used to measure tribute," says Stanish. "It seemed likely to me that the holes at Monte Sierpe could have been used to measure out tribute as well."

The rest of the puzzle began to fall into place. Stanish notes that Monte Sierpe is only four miles from Tambo Colorado, a massive fifteenth-century Inca administrative center built above the agriculturally productive Pisco Valley. The Band of Holes is constructed along a road leading from the valley floor to Tambo Colorado. "It's the perfect place to stop, measure your produce, and make sure you have the proper amount of tribute," says Stanish. He thinks that each individual block of holes might have belonged to a different extended family, or *ayllu*, that would have been a distinct tax-paying group. "You may have had each social group come up and fill up their block with squash, maize, or any other produce in front of the state's accountants, who could have been keeping a tally with khakis. The goods could have then been taken to Tambo Colorado, or wherever else the authorities wanted to take them."

If, in fact, the thousands of holes at the site were dug in order to measure tribute, the Band of Holes might be suggestive of the inner workings of the Inca Empire. "Troops were, of course,

An Inca official displays a *khipu*, or string-recording device, in this depiction from a Colonial-era chronicle of Andean history.



the blunt force of the state's power," says Urton. "But it was the khipukamayuqs who really established and maintained control over the regions." Simply being conquered by the Inca didn't make one a citizen of the empire, but paying taxes certainly did. And pouring beans and chilies into holes in front of state accountants would have brought the average farmer in the Pisco Valley face to face with the power of the state. "Inca accounting practices were the keys to maintaining control over the empire," says Urton. "Khipukamayuqs really shaped the world of the Incas' subjects."

Stanish points out that as strong as the Inca state was, it was a far-flung empire, and its separate regions retained some autonomy. The fact that no exact parallel to the Band of Holes has yet been found may be because administrators in the Pisco Valley devised a local solution to the problem of measuring tribute. "The farther you get from the big Inca centers and Machu Picchu, the more local influences become apparent," says Stanish. "Monte Sierpe may have satisfied a very local need."

STANISH HOPES TO HAVE a graduate student continue research at the Band of Holes, with excavation of carefully selected sections a priority. If the depressions were indeed used to measure produce, they could still hold pollen or even phytoliths, the telltale bits of silica in plant tissue that can allow archaeologists to detect the presence of particular species. "We need to find some phytoliths of maize, beans, squash, or peppers," says Stanish. "That could help clinch it."

Stanish will need to produce hard evidence to convince his fellow scholars. Jean-Pierre Protzen, a specialist in Inca architecture at the University of California, Berkeley, has his own theories about Monte Sierpe. Protzen has spent years working at Tambo Colorado, and feels the Band of Holes is not contemporaneous with the massive Inca center. "There are other, earlier major sites close to Monte Sierpe that could have been associated with it,"

says Protzen. He thinks the holes may have been used to store guano, an important fertilizer. "It's amazing visually," says Protzen, "but we still don't know much about it."

Stanish agrees that his hypothesis needs to be tested. "Sure, it's speculative," he says. "But we could be on the cusp of a whole new understanding of Inca accounting." He points out that other sites in the area with unusual alignments that have traditionally been considered religious might also have had roles in administering the tribute system. "If I'm right, then we're going to have to think differently about a lot of sites that have been regarded as strictly ritual," says Stanish. Should his theory about the site be proved, the Band of Holes will stand as a monument to the idea that for the Inca, too, death and taxes were the only certain things in life. ■

Eric A. Powell is online editor at ARCHAEOLOGY.



An archaeologist excavates the site of a late-7th-century b.c. Phoenician shipwreck. The vessel had more than four tons of cargo aboard when it struck a rock outcropping off the Iberian coast.

Masters of the Ancient Mediterranean

The rare discovery of a Phoenician shipwreck off southeastern Spain is providing new information about their centuries-long dominance of the sea

by JASON URBANUS

TOWARD THE END of the seventh century B.C., a Phoenician ship laden with cargo encountered catastrophe off the Iberian coast. The vessel had been sailing a few miles offshore when rough weather drove it onto a shallow reef. Although their homeland lay nearly 2,500 miles to the east, the crew was in familiar waters, as Phoenician sailors had been trading and living along the Iberian coast for almost four centuries. The treacherous rock outcropping, known today as Bajo de la Campana, was nonetheless unavoidable and punched a hole in the ship's hull, sending the vessel and at least four tons of cargo to the seafloor.

Among ancient Mediterranean cultures, the Phoenicians were renowned for both their superb maritime capabilities and their aptitude for trade. The Roman historian Velleius Paterculus characterized them as the “fleet that controlled the sea.” In Homer’s *Odyssey*, they are called the “men famed for their ships.” In the Bible, the prophet Ezekiel refers to the Phoenician city of Tyre as “the merchant to the peoples of many coastlands.” But while the accolades heaped upon them in ancient written sources have helped inform an understanding of Phoenician culture, tangible archaeological details about their voyages, ships, and cargoes have long remained sparse. “Phoenician archaeology in general lags [behind] that of the ancient Greeks and

Romans,” says maritime archaeologist Mark Polzer of Flinders University in Australia. “What is missing is evidence from their ships and sea voyages—in other words, shipwrecks. No attempt to truly understand the Phoenicians and their reach will be complete without them.” Now, 2,600 years later, extensive excavations of the Bajo de la Campana wreck site are helping archaeologists retrace the ship’s fateful last voyage—and study of its enormous and varied cargo is providing important insights into the most sophisticated trade network of its time.

Polzer says, “Before our excavation at Bajo de la Campana, no wreck of a seagoing Phoenician ship had been found and explored.” Polzer served as co-director of the Bajo de la Campana project, led by the Institute of Nautical Archaeology and the Spanish Ministry of Culture, which, between 2007 and 2011, conducted more than 4,000 dives at the wreck. The site, he believes, has enormous potential to provide an unparalleled glimpse of

Phoenician commercial activity in the west—specifically colonial trade along the coast of Iberia—carried out on an impressive scale. The preservation of the Bajo de la Campana shipwreck is itself astonishing, as the site had been exploited by both recreational and commercial divers for more than 50 years.

THE BAJO DE LA Campana reef is a cruel bit of nature that is responsible for a veritable graveyard of wrecks, both modern and ancient. Located two-and-a-half miles offshore, around 20 miles northeast of Cartagena, Spain, today the Bajo de la Campana rock formation rises up suddenly from a depth of 50 feet to within three feet of the surface, although in antiquity it protruded above the water. In the 1950s, salvage divers seeking scrap metal from modern shipwrecks began to explore the site. They exposed the first ancient artifacts, and, over the next few decades, the site was frequently looted by sport divers. At one point, it was even used by the Spanish



An octopus peers out from a wine dipper nestled in sands at the wreck site. The ship's ceramic storage containers, of every kind and size, are evidence of the enormous variety of goods traded by the Phoenicians.

navy for underwater demolition training. However, modern interventions may have inadvertently preserved the wreck site. In the early twentieth century, the Spanish government decided to blow the top off the rocks to reduce the risks for passing ships. “The rock debris from these explosions fell mostly onto the wreck site below, damaging most of the archaeological material lying exposed on the surface,” says Polzer, “but likely also protecting the site from looting and further damage.”

For maritime archaeologists, the discovery of a Phoenician wreck offered a rare opportunity to analyze the structure and engineering of a Phoenician ship and discover details about the origin and evolution of ancient ship construction. Polzer says, “My initial interest in finding and excavating a Phoenician shipwreck was very much tied to questions of construction practices, technological changes, and technology transfer between cultures.”

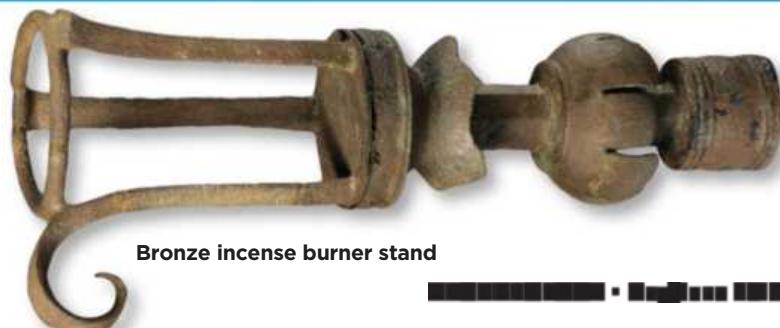
However, the team found only a one-and-a-half-foot-long wooden plank from the ship’s hull. That small surviving fragment did preserve half of a mortise and corresponding tenon peg hole, from which the team could conclude only that the Phoenician ship was constructed using mortise-and-tenon joinery.

While not finding more of the ship itself was somewhat of a disappointment, archaeologists soon realized that buried beneath the boulders and thick sea grass, much of the ship’s cargo still remained. In their initial survey of the site, the team recovered an assortment of fascinating material that suggested that the Bajo de la Campana site had the potential to be the most significant Phoenician maritime wreck to date. “A shipwreck site, as opposed to other archaeological contexts, represents a unique study opportunity,” says Polzer. “It preserves an assemblage of material from one specific moment in time.” Terrestrial sites, he says, often fall short of being able to provide the same level of detail. Amazingly, there was a lot left to study

Precious Cargo



Copper ingot



Bronze incense burner stand

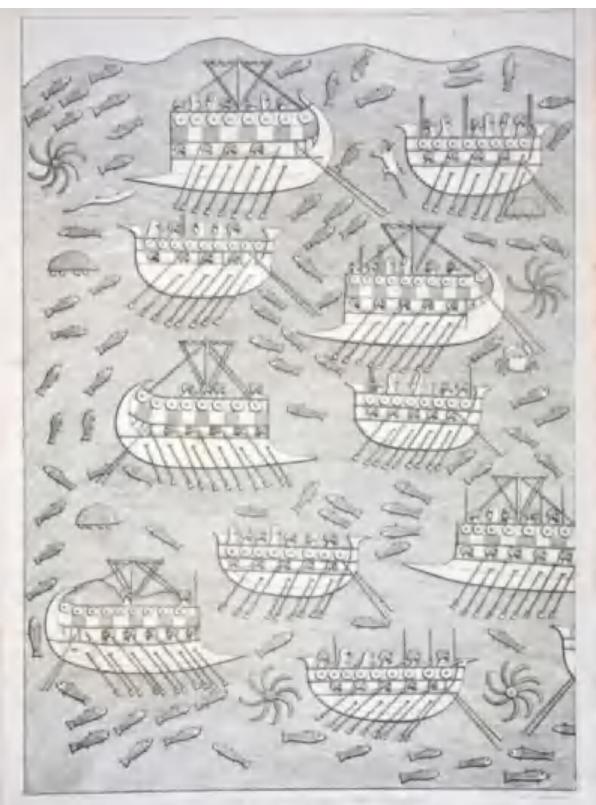
despite the fact that the ship's contents were strewn across 4,300 square feet of seafloor, having been buffeted by currents and storms for the last 26 centuries. Hundreds of artifacts were salvaged over five seasons, comprising the most substantial cache of evidence ever retrieved from an ancient Phoenician merchant ship. "While I was surprised by how much material remained," says Polzer, "I was even more surprised by the variety that we found and the number of unique items we recovered."

The Bajo de la Campana ship's artifacts are allowing researchers to distinguish between types and scopes of trade and to identify spheres of procurement, production, and exchange. In the largest sense, Polzer says, the discovery and analysis of this wreck can reveal the nature of Phoenician trade, colonization, and settlement development, all of which have been only partially understood.

FROM A HOME along the coast of present-day Lebanon, at

the outset of the first millennium B.C., Phoenician sailors were crisscrossing the Mediterranean, establishing trading outposts as far away as Morocco and Portugal. They made the world smaller by linking the eastern and western Mediterranean shores in a way that no other civilization previously had. "The Phoenicians are not the first ones sailing the sea," says Brown University archaeologist Peter van Dommelen. "People have been going around and trading stuff for a very long time. The Phoenicians, however, are the long-distance traders of the world. They are the ones making long-distance connections."

Ancient Phoenicia was made up of a loose conglomeration of independent city-states, the most prominent being Tyre, Sidon, and Byblos. The cities' inhabitants probably referred to themselves as Canaanites, and certainly not Phoenicians. The word "Phoenician" is derived from a Greek word meaning "blood-red," and was probably first used by Greek speakers in reference to the Phoenician civilization's manufacture of a



A 7th-century B.C. relief from the palace of Sennacherib in Nineveh depicts Phoenician ships at sea, rendered here in a lithograph by 19th-century archaeologist and artist Austen Henry Layard.

famous purple dye from murex sea snails—a greatly sought-after commodity in the ancient world.

By the turn of the first millennium B.C., the Phoenicians had developed into the foremost naval and commercial power in the eastern Mediterranean, controlling the major maritime trade routes between ancient Near Eastern cultures. During this period, there was widespread demand for precious metals, especially silver, which was the preferred currency of the day. In addition, Phoenicians owed their neighboring Assyrians large quantities of silver in annual tribute. This demand for silver would prove pivotal to Phoenician expansion.

The best source of silver, as yet untapped, was located thousands of miles away, in southern Iberia. Although in antiquity this meant a three-month-long journey, the pursuit of metals compelled Phoenicians (especially those representing Tyre) to sail westward. "The conventional explanation, which by and large still stands, is that

they were looking for minerals—silver in the first place—and mining resources in the south of Spain," says van Dommelen. Iberia, especially the Rio Tinto region of southwestern Spain, turned out to be one of the ancient world's richest sources of metals. By the end of the tenth century B.C., Phoenician merchants were frequenting this area and establishing commercial relationships with the indigenous Tartessian culture that controlled the Iberian metal trade. In doing so, they created a vast long-distance trade circuit that eventually spanned not only the entire Mediterranean Sea, but extended into the Atlantic as well. Van Dommelen says, "The east-west connection in the tenth century B.C., from Tyre and Sidon to Iberia and past the Pillars of Hercules, is something that had never been done before."

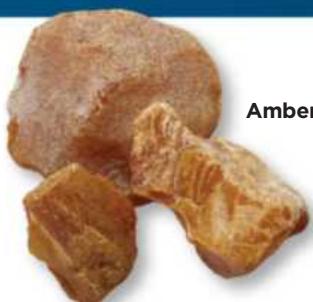
As Phoenician traders continued to sail westward more and more frequently, they began to establish permanent colonies throughout the central and western Mediterranean. The oldest



Alabaster jar fragment



Wooden comb



Amber

and most important Phoenician settlement in Iberia was Gadir (modern-day Cádiz), located west of the Strait of Gibraltar in southwestern Spain. Recent archaeological digs have revealed that a community of Phoenicians was living there from at least the late ninth century B.C.

Thanks to the advent of cultural resource management and rescue archaeology, over the past few decades archaeologists have been able to conduct excavations and gain a better understanding of what Phoenician settlements were like, especially in Iberia. They were almost always located on small coastal promontories, peninsulas, or islands with good natural anchorages and river access to inland resources. The two major determining factors of a settlement's location seemed to be an availability of trade with local Iberian communities and proximity to prominent shipping routes.

However, these settlements were more than just simple trading posts inhabited by Phoenician merchants. They became complex communities that farmed the surrounding fields, manufactured their own products, excelled in metallurgy, had organized urban plans, and were home to diverse populations. "They were not just merchants who stuck it out for a few years to earn a fortune and then go back home," says van Dommelen. "The evidence [suggests] fully developed communities with elites, commoners, craftsmen, women, children, and slaves, among others."

In the opening centuries of the first millennium B.C., the Phoenicians established such commercial centers and colonies all over the Mediterranean: Cerro de Villar, Los Toscanos, and La Fonteta in Spain, Sa Caleta in Ibiza, Sulcis in Sardinia, Utica and Carthage in Tunisia, Motya in Sicily, Malta, and Kition in Cyprus. From Gadir in the Atlantic to Tyre in the Levant, these sites and many others formed the commercial links that provided the essential infrastructure enabling the Phoenicians to construct their unparalleled Mediterranean-wide trade network.

THE BAJO DE LA Campana ship, before it met its end, had been sailing off the most densely settled Phoenician territory in the western Mediterranean. From Gadir in the southwest to La Fonteta in the east, the Iberian coast, especially the modern regions of Málaga and Granada, was dotted with Phoenician sites. According to Polzer, the Bajo de la Campana ship likely stopped at various ports along this coast during its final journey, specifically Cerro de Villar and Abderra, where the crew off-loaded goods and acquired new cargo. Its wreckage provides the best insight archaeologists have so far into what a

Phoenician merchant ship was actually transporting during a critical period in Mediterranean history. Polzer says, "It sank at the height of Phoenician colonial and commercial activity in the region, just prior to the fall of Tyre [to the Babylonians] back east, and the subsequent collapse of the socioeconomic system in Iberia."

What excavations have revealed is that the Bajo de la Campana ship's extensive and diverse cargo was destined for different markets. Some products were intended for trade and exchange with local Iberians, while others were headed to Phoenician workshops along the coast and communities farther east. These goods made their way on board from a variety of distant places.

Phoenician traders are believed to have routinely exchanged products such as wine and olive oil, as well as more luxurious items such as perfume jars, decorated ivories, and ornate bronze vessels for the much-sought-after Iberian metal ore. Phoenician-made products from the east were in great demand among native Iberian communities, especially the upper classes, and exotic goods were often given to high-ranking Iberian officials to maintain good relations and secure ongoing economic partnerships.

The project was able to recover from the wreck a combination of luxury and common goods, as well as both unprocessed commodities and manufactured items. The archaeologists, observing stylistic nuances and using technology, have been able to trace many of the objects to specific locations around the Mediterranean and Atlantic. Large quantities of metal—mainly lead, tin, and copper—were apparently on board. Archaeologists collected over a ton of raw galena (lead ore) nuggets in addition to more than 170 tin and copper ingots. Isotopic analysis of these minerals indicates that the ship's cargo of metals was mined from many geological sources. The lead came from mines in southeastern Spain and the tin from the far northwest. The copper in the ingots was mined from at least eight different regions, ranging from southern Iberia to Sardinia and Cyprus. Polzer believes that these raw minerals may have been destined for La Fonteta, a

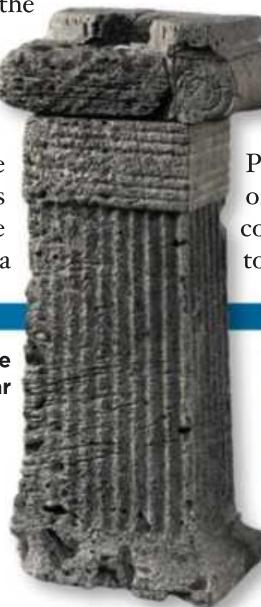
site 25 miles to the north of the wreck site, where archaeological excavations have revealed an active Phoenician metalworking industry.

Every category of artifact found amid the wreckage points to a different aspect of the Phoenician trade network. The enormous quantities of ceramics discovered attest to the broad range of containers the ship carried, from large storage vessels to elegant cosmetic jars. The ship's distinctive types



Limestone altar

Ceramic amphoras



Bronze and lead balance weights



An archaeologist (above, left) examines a concentration of artifacts on the seafloor, including an elephant tusk. More than 50 elephant tusks (above, right) have been found at the site, including 11 that bear Phoenician religious inscriptions.

of transport amphoras were manufactured both in local Phoenician workshops in Iberia and in colonial centers in the central Mediterranean. The amphoras likely contained Phoenician agricultural products to be traded to local Iberians. Hundreds of other ceramic vessels, both fragmentary and intact, included Phoenician tripod mortars, plates, bowls, perfume bottles, jugs, urns, and pitchers.

An assortment of mundane items that may have been used by the crew, such as balance weights, whetstones, oil lamps, resin for flavoring wine, and even pitch for waterproofing the ship, were also found. These are all helping researchers reconstruct everyday aspects of a Phoenician merchant ship. Polzer says, “The benefit, from an archaeological standpoint, of shipwrecking events, as with other catastrophic occurrences, is that they preserve indicators of normal, daily life.”

The Bajo de la Campana ship also sank with a cargo of valuable items likely intended for Iberia’s own native elite clientele: carved ivory artifacts, lumps of amber, alabaster jars, decorated combs, a bronze incense burner, ostrich shells, a limestone pedestal altar, and even what might be either a fan or a fly swatter. The bronze remains of chair legs and a couch frame suggest that the ship was carrying a set of ornate furniture. According to Polzer, all of these objects may have been destined for the household of an important native Iberian. “They seem to form a single, complete set of feasting equipment—couch and side table, accompanying incense burners, tableware, wine preparation dishes, and a fan or fly whisk,” he says. He believes



it is an indication of gift exchange, possibly with a specific individual. Also found aboard was the raw material, in the form of elephant tusks, for the manufacture of luxury items. They were likely headed for carving workshops along the Iberian coast. Elephant ivory would have been common and available to Phoenician merchants through their colonies in North Africa.

While a collection of more than 50 tusks was discovered, at least 11 of those have proved perplexing to archaeologists. They have been found to bear Phoenician religious inscriptions, which made their inclusion in a cargo of unprocessed ivory odd. All of the inscriptions are votive in nature,

containing a personal name and a declaration of piety to a god or a request for a blessing. One asks the Phoenician goddess Ashtart for protection, another entreats the god Eshmun to deliver the dedicatee from harm. These objects would have been intended to be deposited in a Phoenician shrine or sanctuary and remain there in perpetuity. “They really should not be on board this or any other ship,” Polzer says. “I believe that their presence on this ship indicates that temple priests were selling objects on the sly, presumably for personal gain.” With everything that was discovered at the Bajo de la Campana wreck site, all of the varied human enterprise and activity represented there, it is perhaps no surprise that evidence of nefarious ancient cargo came to light as well.

FOR RESEARCHERS, this single ship stands as a microcosm of everything that was described in historical accounts of the Phoenician talent for maritime trade and their inspired seamanship. Archaeological evidence now shows that this single vessel was transporting cargo that originated from more than a dozen far-flung places: elephant tusks from North Africa, tin from northwest Iberia, copper from throughout the Mediterranean, amber from the Baltic, and ceramics from local Phoenician workshops in southern Iberia, North Africa, and the Near East. It is no wonder that the ancient cultures the Phoenicians encountered often referred to them as the “princes of the sea.” ■

Jason Urbanus is a contributing editor at ARCHAEOLOGY.

COUP DE GRÂCE FOR A DESERT CASTLE

A group of murder victims discovered in a frontier stronghold in Jordan may define the last chapter in its history



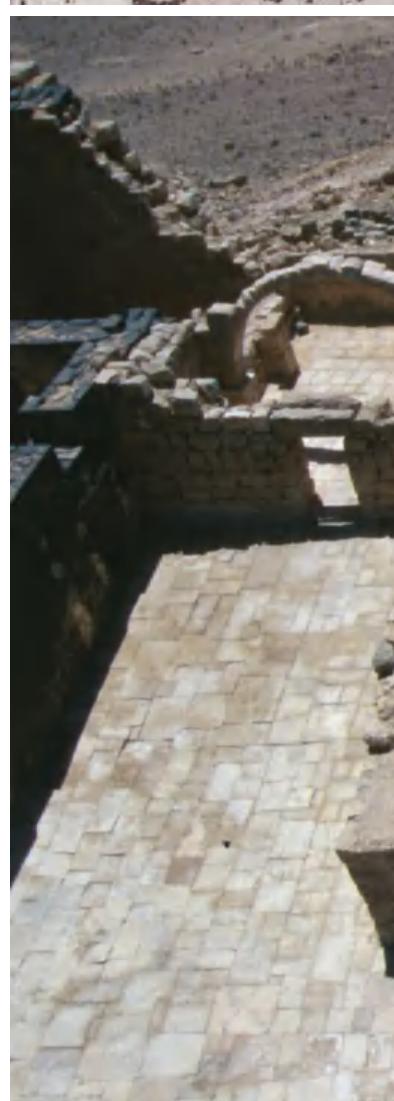
by DANIEL WEISS

FOR AT LEAST 500 YEARS, a dusty limestone hilltop in Jordan known as Qasr Hallabat was occupied by a succession of major powers—each placing its unique stamp on the site. “It was an ideal spot from which to observe the surrounding area, and there was water there,” says Ignacio Arce, who directed a team from the Spanish Archaeological Mission in Jordan that started restoration work on the site in 2002. “It was also near the Via Traiana Nova, a north-south highway that connected Aqaba on the Red Sea to Bosra in southern Syria.”

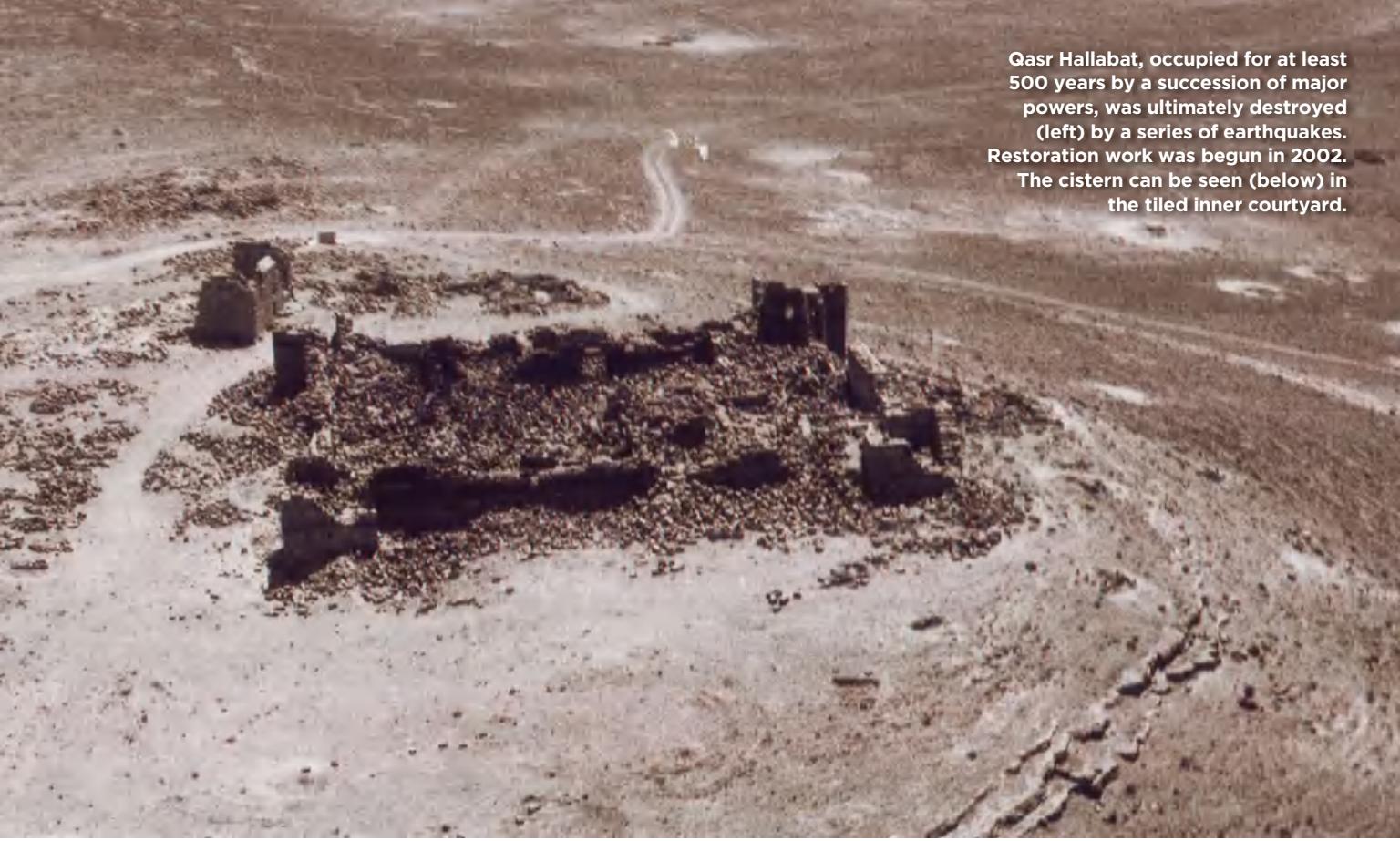
Beginning in the second or third century A.D., Rome took advantage of the site’s commanding location and constructed a square fort as part of a line of fortifications along the empire’s frontier with Persia. Later, the Romans enlarged the fort and added towers at each corner. Eventually, they turned defense of this territory over to local Arab Christians led by the Ghassanid tribe. The original fort, destroyed in 551, most likely by an earthquake, was rebuilt following the same Roman plan. But since the Ghassanids typically based their armed forces in seasonal encampments rather than stationary forts, they ultimately transformed the structure into a monastery and palace, featuring richly decorated rooms designed to serve as reception halls.

With the rise of Islam in the seventh century, the region came

The opening of the cistern at a desert castle in Jordan where, in 2007, archaeologists discovered the remains of six people who died under mysterious circumstances more than 1,000 years earlier



Qasr Hallabat, occupied for at least 500 years by a succession of major powers, was ultimately destroyed (left) by a series of earthquakes. Restoration work was begun in 2002. The cistern can be seen (below) in the tiled inner courtyard.



under the control of the Umayyad caliphate, whose empire stretched from its capital in Damascus as far west as Spain and as far east as northern India. The Umayyads did not enjoy universal support among the area's population and focused on winning the allegiance of local pastoralists and nomadic Bedouin tribes, with the latter serving as the core of the caliphate's military force. The Umayyads opened the doors of Qasr Hallabat to merchants and travelers, and also significantly upgraded the complex's water catchment system, enabling it to collect millions of gallons during the rainy season. In a wise political move, this water was then distributed throughout the year to support agriculture and the local population—a welcome amenity in a region where annual rainfall totaled just two to eight inches.

Arce notes that while the Umayyads left the palace, or *qasr*, generally intact, they embarked on a comprehensive and lavish refurbishment campaign, adding new ornamental features such as murals, carved stucco, and mosaics. Arches at the entrance to several rooms may have been decorated with mosaics of bluish-green glass and gold tesserae. It is believed these could have featured royal inscriptions similar to those found at other Umayyad constructions, such as the Dome of the Rock in Jerusalem. Outside the main structure, they built a mosque to promote conversion to Islam, serve the existing Muslim population, and advertise the faith's dominance in the area. The Umayyads also constructed a bathhouse nearby. "This was a place for diplomacy and for making serious agreements and alliances," says Arce, "but where afterwards you could celebrate and have some fun with the people with whom you had established an accord."

The good life at Qasr Hallabat, however, was not destined to last. A major earthquake struck in 748 or 749, destroying the *qasr*. Then, in 750, the Abbasids overthrew the Umayyads



This mosaic dates to the period when the Ghassanids occupied Qasr Hallabat and used part of it as a monastery.

IN JUNE 2007, while clearing out a 20- to 26-foot-deep cistern in Qasr Hallabat's courtyard, members of Arce's team uncovered the skeletal remains of six people. Arce says that it seemed obvious from the skulls' appearance that the people had been killed violently, and the team immediately suspected they had discovered ancient evidence of foul play. Arce turned the case over to Megan Perry, a bioarchaeologist at East Carolina University who has helped investigate many crime scenes in eastern North Carolina. Arce contacted Perry, saying, "We have a very interesting CSI crime scene here."

Working with Tyler Montgomery, one of her graduate students, Perry examined the bones recovered from the cistern and

determined that the six individuals—five men and one woman, ranging in age from 20 to 44 years old when they died—were indeed the victims of a vicious attack. Five of the skulls had separated sutures and fractures, apparently caused by blows from blunt objects. The remaining skull was only partially preserved and may have testified to violence as well had it been completely recovered. Perry and Montgomery's analysis shows that the damage to the intact skulls did not result from their fall into the cistern and that the wounds were unhealed, suggesting they occurred shortly before death. Additionally, Perry says, "Most of the injuries are to the side and the back, so they were probably trying to get away rather than engaging the people who were attacking them." The arm and leg bones found in the cistern show that at

least three of the individuals were also stabbed or struck with sharp objects shortly before dying. In one case, a forearm was apparently slashed with a long blade while fending off a blow, and this and other wounds indicate that the victims took defensive action. In all, Perry argues, the evidence shows that at least five of the individuals—and probably all six—were mortally wounded and then thrown into the cistern.



Qasr Hallabat was refurbished in lavish style by the Umayyads, who installed ornamental features such as this glass tesserae mosaic.

and moved the caliphate's capital from the relatively accessible Damascus to distant Baghdad. One of the Abbasids' criticisms of the Umayyads was that they pursued too lavish a lifestyle, as exemplified by palatial building projects such as Qasr Hallabat, so the Abbasids made no attempt to restore the structure. It is very likely, too, that the water catchment system was no longer capable of supporting local agriculture.

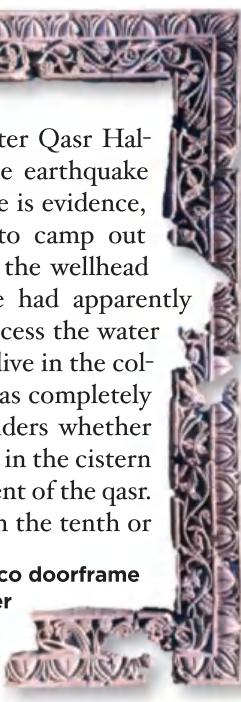


The skulls found at Qasr Hallabat show damage that occurred shortly before death, was probably caused by blunt objects, and could not have resulted from the fall into the cistern.

To learn more about the lives of the victims, Perry and another graduate student, Kathryn Parker, analyzed the strontium and oxygen isotopes in their tooth enamel for information on where they spent their first few years. The strontium isotope signatures indicate that the victims were not originally from the area around Qasr Hallabat but instead grew up in a region with more volcanic activity. The oxygen isotope signatures suggest that they were from an inland area. While not pinpointing exactly where the victims came from, "their isotopic signatures were very homogeneous," says Perry, "so it is clear that they all grew up in a similar region. You can assume that they were part of the same social group and were not just six random people who were killed."

Radiocarbon dating was able to narrow down the window of time when the murders occurred to between 772 and 895, after Qasr Hallabat had been both destroyed by the earthquake and abandoned by the Abbasids. There is evidence, nonetheless, that people continued to camp out at the qasr for some period. "Around the wellhead where we found the corpses, people had apparently removed some debris so they could access the water source," says Arce. "They also tried to live in the collapsed areas for a while, but the site was completely abandoned at some point." Arce wonders whether the murders and disposal of the bodies in the cistern could have precipitated the abandonment of the qasr. Another earthquake struck, possibly in the tenth or

Reintegrated fragments of a carved stucco doorframe display the artistry of Qasr Hallabat under the Umayyads. Their successors, the Abbasids, criticized them harshly for their opulent tastes.



eleventh century, sealing off the cistern containing the bodies and much of the rest of the qasr until archaeological work began in 2002.

AFTER THE UMAYYADS were defeated, Perry says, there was a power vacuum in the area surrounding Qasr Hallabat. The local pastoralists and Bedouin tribes, previously allied with the Umayyads, entered a less stable, more chaotic period, and raids on travelers may have become increasingly common. This could be the context in which the murders occurred. A likely scenario, Perry believes, is that a group of people were passing through the area, came to Qasr Hallabat seeking water and possibly shelter, were set upon by a group of attackers, and then thrown into the cistern. "This is sort of an archaeological dark age in this area," says Perry. "We know there were tribal skirmishes and a history of raiding from the Roman period on, so it is possible they were thrown into the cistern to hide the fact that they were killed and to prevent a retaliatory attack."

Throwing the bodies into the cistern would have rendered its water stores unusable, effectively turning an attack on six individuals into an attack on what remained of Qasr Hallabat as a functioning site. For Arce, this is a potential key to solving the murder mystery. He believes the victims may have been members of the Umayyad ruling family or their allies who were hunted down by the Abbasids and thrown into the cistern to prevent people from continuing to live there. "Putting a corpse in a well so the water is not usable anymore is a traditional way of killing a well," he says. "In this case, it may have coincided with an attempt to erase the memory of the site."

The Abbasids are, in fact, known from the historical record to have tracked down and killed members of the Umayyad family wherever they could, but there is no way to definitively prove that this occurred at Qasr Hallabat. For Perry's part, she notes that while some Umayyads may still have been in the area in 772, the earlier end of the date range for when the murders took place, they would have been long gone by 895, the later end of the range. She also points out that an Abbasid attack would most likely have been military in nature, with wounds primarily from sharp objects, such as arrows and swords, rather than the blunt objects that inflicted the worst damage on the victims at Qasr Hallabat.

There are few ways forward for investigating these murders. Additional isotopic analysis on the victims' remains could reveal what their diet consisted of, and further study of their skeletons might show, for instance, whether they spent a lot of time riding horses or camels. But DNA analysis cannot confirm whether the victims were part of the Umayyad family as there are no remains of known Umayyads with which to compare it. Precisely why the six people at Qasr Hallabat were killed may never be known, but after spending more than a millennium buried at the bottom of a cistern, they are now helping to illuminate what life was like there after the once-palatial site fell into decline and disorder. ■

Daniel Weiss is a senior editor at ARCHAEOLOGY.

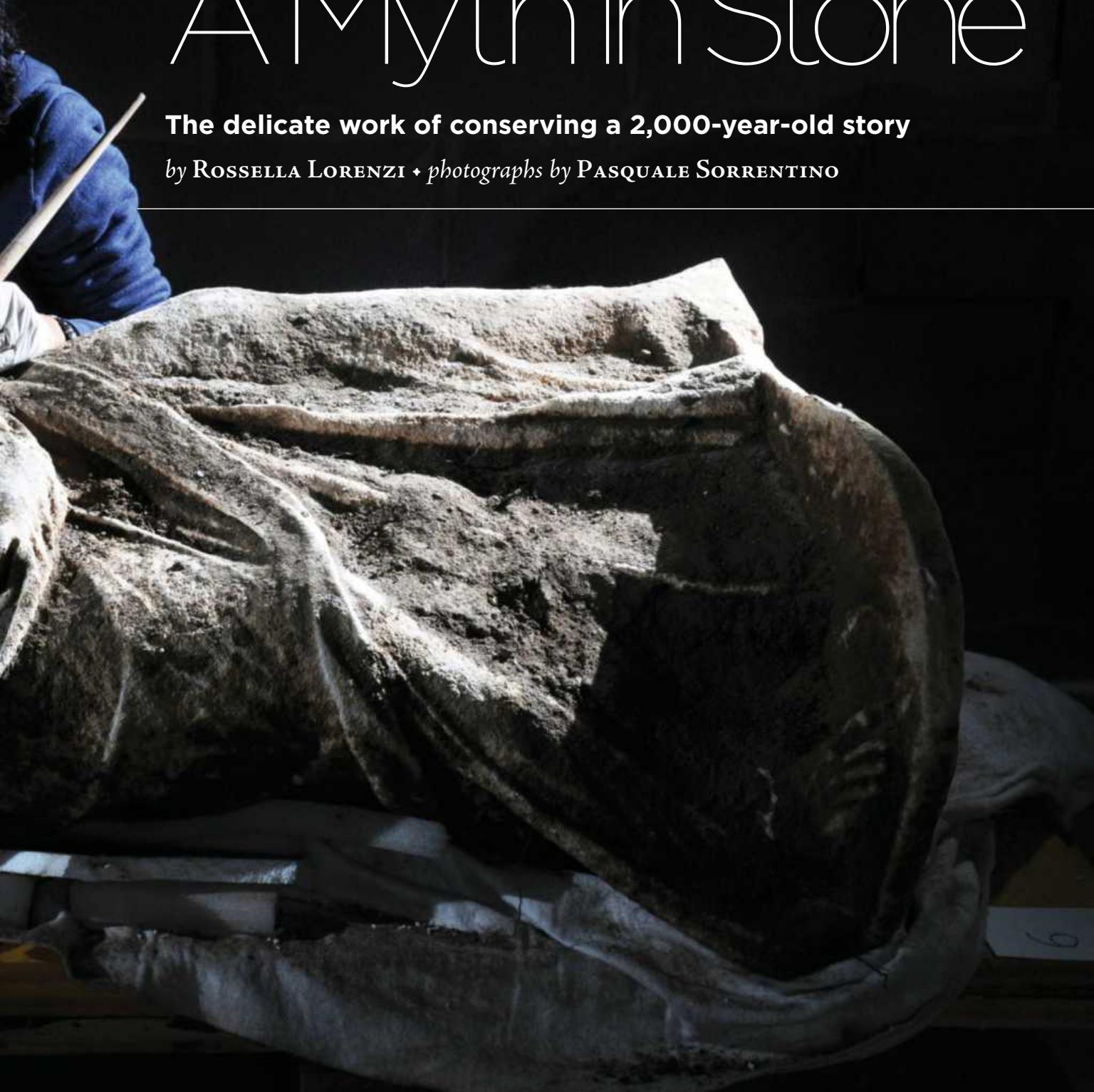


A conservator cleans a more-than-6-foot-tall marble statue of a girl found at an ancient villa in the suburbs of Rome. The sculpture formed a group depicting the massacre of the Niobids, the 14 children of the mythological Greek woman Niobe.

A Myth in Stone

The delicate work of conserving a 2,000-year-old story

by ROSELLA LORENZI • *photographs by PASQUALE SORRENTINO*





The conservation team has worked for three years to clean away more than 2,000 years of dirt accumulated as the sculptures, including this one of a male Niobid, lay buried at the bottom of the large pool they once decorated.

WHILE WORKING IN Ciampino, outside Rome, archaeologists unexpectedly came across a jumble of marble sculptures and fragments at the bottom of what was once a nearly two-and-a-half-foot-deep pool on the grounds of a luxurious suburban Roman villa. Pipes stamped “Valerii Messallae” discovered at the site more than a hundred years earlier had identified the property as the residence of the Roman general and consul Marcus Valerius Messalla Corvinus (64 B.C.–A.D. 13).

When the dirt that covered the sculptures was removed, it became clear that they had been part of a group depicting the myth of Niobe, the prideful daughter of Tantalus, whose 14 children had been killed after she boasted of her fertility to Leto, who had only two children, the god Apollo and goddess Artemis. “This is the first Niobid group that

has been discovered in situ,” says excavation director Alessandro Betori of the Superintendency for the Archaeological Heritage of Lazio. “These statues have been lying on the herringbone brick floor of the pool for about 2,000 years.” Betori believes some of the figures once decorated the four sides of the 66-foot-long pool and others possibly served as a centerpiece. “Most likely, they were knocked down by an earthquake,” he adds.

Restorers have only just finished cleaning and piecing together the sculptures, which they have determined were made from marble quarried at Aphrodisias in Caria in today’s Turkey. Their work has revealed finely carved details, such as tortured facial expressions and waving cloaks clinging to the children’s bodies that tell of the terrified youths’ vain attempts to flee from the arrows shot by Leto’s vindictive twins. It has also provided some clues that may help scholars understand the artistic environment in which they were created.



No sooner had she spoken, than the cord twanged from the ever-ready bow; and all who heard the fatal sound, again were filled with fear—save Niobe, in misery bold—defiant in misfortune. Clothed in black, the sisters of the stricken brothers stood, with hair disheveled, by the funeral biers. And one while plucking from her brother's heart a shaft, swooned unto death, fell on her face on her dear brother's corpse. Another girl, while she consoled her mother, suddenly, was stricken with an unseen, deadly wound; and doubled in convulsions, closed her lips, tight held them, till both breath and life were lost. Another, vainly rushed away from death—she met it, and pitched headfirst to the ground; and still another died upon her corse, another vainly sought a secret death, and, then another slipped beyond life's edge. So, altogether, six of seven died—each victim, stricken in a different way. One child remained. Then in a frenzy fear the mother, as she covered her with all her garments and her body, wailed—"Oh, leave me this one child! the youngest of them all! My darling daughter—only leave me one!" But even while she was entreating for its life—the life was taken from her only child. Childless—she crouched beside her slaughtered sons, her lifeless daughters, and her husband's corpse. The breeze not even moved her fallen hair; a chill of marble spread upon her flesh, beneath her pale, set brows, her eyes moved not, her bitter tongue turned stiff in her hard jaws, her lovely veins congealed, and her stiff neck and rigid hands could neither bend nor move—her limbs and body, all were changed to stone. Yet ever would she weep: and as her tears were falling she was carried from the place, enveloped in a storm and mighty wind, far, to her native land, where fixed upon a mountain summit she dissolves in tears—and to this day the marble drips with tears.

Ovid, *Metamorphoses*, VI, lines 270-312
Trans. Brookes More



All of the statues display the sculptor's great skill, which is particularly evident in the suggestion of tension and motion in the body position and draping of the robes of this female figure.

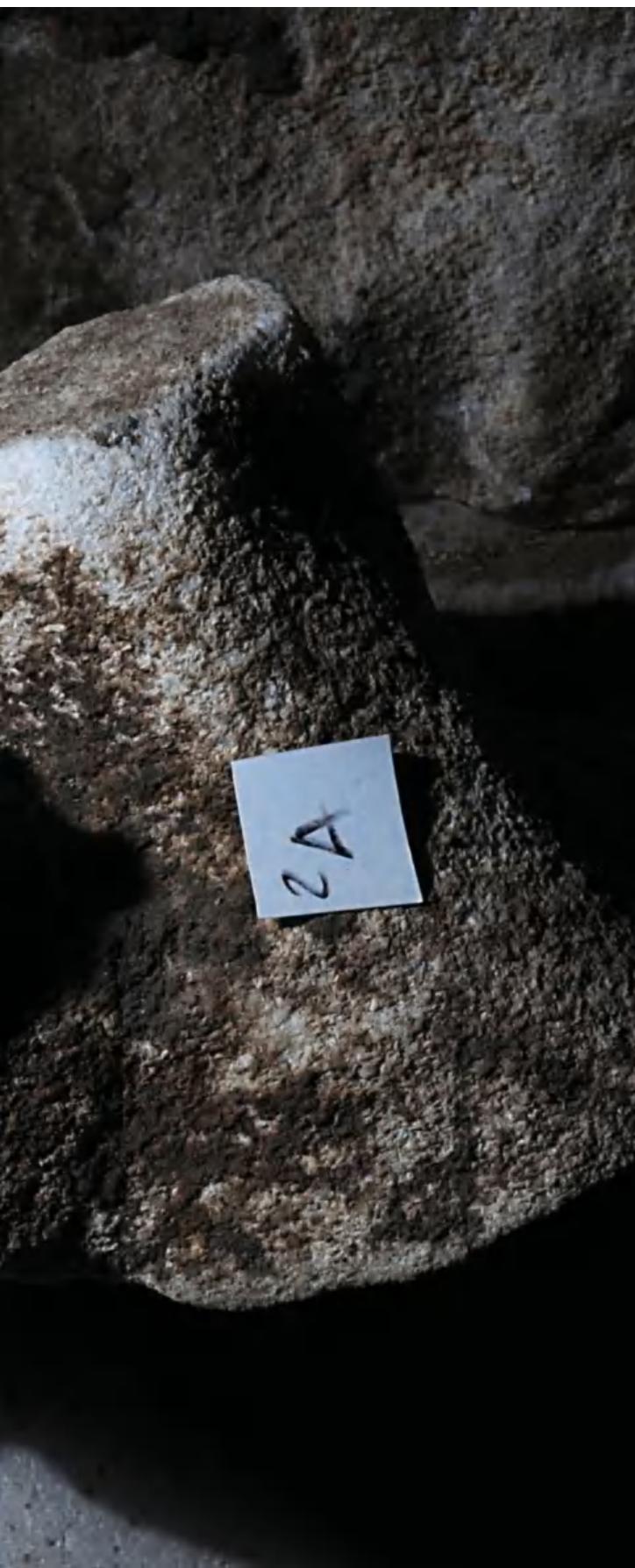
IN ADDITION TO BEING a general and statesman, Messalla was known as a great literary patron, second only to Gaius Maecenas, a close friend of the emperor Augustus and patron of the great Augustan poets Virgil and Horace. Among the poets Messalla sponsored were the elegiac poet Tibullus and the young Ovid. The tale of Niobe is vividly told in Ovid's epic poem of transformation, *Metamorphoses*, which was published in A.D. 8. For scholars a question arose as to whether there might be a direct link between the statues, Ovid, and Messalla's family. Is it possible that Messalla had ordered the creation of the statues after reading the myth of Niobe in the work of his favorite poet? Or had the statues inspired the poem? Betori says, "I am certain that these statues existed before Ovid." He notes, too, that scholars are still debating the dating of this sculpture group. While some believe it can be linked to late classical sculpture from the fourth century B.C., others date it to the late Hellenistic period, in the years around 100 B.C.

In addition, differences emerged when researchers compared the group with Ovid's poem. "In Ovid's narration, the first to fall are Niobe's sons," says Betori, "whereas the sculptures from Ciampino appear to tell a story in which Niobe's daughters succumb first." Appealing though the idea might be, there may be no direct connection between the poem, the patron, and the statues. Niobe's myth was already a popular literary and artistic theme in antiquity—reason enough for Messalla to commission the sculptures and for Ovid to write about it.

THE MOST COMPLETE and best-known group depicting the Niobids was found in a vineyard in Rome near the Lateran in 1583. These statues were brought to Florence in 1755 and are now on display in the Uffizi Gallery. The fully restored sculptures and fragments from Ciampino—six more or less complete figures as much as six and a half feet tall,

Despite erosion caused by millennia buried in the earth, the Niobids, such as this boy who appears in no other known Niobid group, still evoke the fear the children must have felt as their siblings lay slain around them.





The team has been able to pair the Niobids' heads with their bodies. An earthquake likely caused the sculptures to tumble, break, and be buried.

two sculptures that once were joined together, Niobe's head, two other heads, and various other pieces—are now in the superintendency's storage rooms at the Sanctuary of Hercules Victor at Tivoli, near Rome. "We don't know where the statues will be displayed, but we hope they will be shown in 2017 on the 2,000th anniversary of Ovid's death," Betori says. Interestingly, the group unearthed in Ciampino includes a sculpture of a boy who does not appear in the known iconography of the Niobe myth. According to the restorers, the figure belongs with a large fragment that depicts the trunk and part of the legs of a male individual. If the two were to be combined, the boy would lie on the knee of his brother, who would hold him with a hand under his head and another under his armpit. "We can see a totally new, powerful scene," Betori says.

"Such finds occur only once in the course of an archaeologist's career. We got to study the sculpture group in its archaeological context, under the spell of Ovid and Messalla Corvinus. I could ask for no more." ■

Rossella Lorenzi is a journalist based in Florence, Italy.

Choose Life Grow Young with HGH

From the landmark book *Grow Young with HGH* comes the most powerful, over-the-counter health supplement in the history of man. Human growth hormone was first discovered in 1920 and has long been thought by the medical community to be necessary only to stimulate the body to full adult size and therefore unnecessary past the age of 20. Recent studies, however, have overturned this notion completely, discovering instead that the natural decline of Human Growth Hormone (HGH), from ages 21 to 61 (the average age at which there is only a trace left in the body) and is the main reason why the body ages and fails to regenerate itself to its 25 year-old biological age.

Like a picked flower cut from the source, we gradually wilt physically and mentally and become vulnerable to a host of degenerative diseases, that we simply weren't susceptible to in our early adult years.

Modern medical science now regards aging as a disease that is treatable and preventable and that "aging", the disease, is actually a compilation of various diseases and pathologies, from everything, like a rise in blood glucose and pressure to diabetes, skin wrinkling and so on. All of these aging symptoms can be stopped and rolled back by maintaining Growth Hormone levels in

the blood at the same levels HGH existed in the blood when we were 25 years old.

There is a receptor site in almost every cell in the human body for HGH, so its regenerative and healing effects are very comprehensive.

Growth Hormone first synthesized in 1985 under the Reagan Orphan drug act, to treat dwarfism, was quickly recognized to stop aging in its tracks and reverse it to a remarkable degree. Since then, only the lucky and the rich have had access to it at the cost of \$10,000 US per year.

The next big breakthrough was to come in 1997 when a group of doctors and scientists, developed an all-natural source product which would cause your own natural HGH to be released again and do all the remarkable things it did for you in your 20's. Now available to every adult for about the price of a coffee and donut a day.



GHR now available in America, just in time for the aging Baby Boomers and everyone else from age 30 to 90 who doesn't want to age rapidly but would rather stay young, beautiful and healthy all of the time.

The new HGH releasers are winning converts from the synthetic HGH users as well, since GHR is just as effective, is oral instead of self-injectable and is very affordable.

GHR is a natural releaser, has no known side effects, unlike the synthetic version and has no known drug interactions. Progressive doctors admit that this is the direction medicine is seeking to go, to get the body to heal itself instead of employing drugs. GHR is truly a revolutionary paradigm shift in medicine and, like any modern leap frog advance, many others will be left in the dust holding their limited, or useless drugs and remedies.

It is now thought that HGH is so comprehensive in its healing and regenerative powers that it is today, where the computer industry was twenty years ago, that it will displace so many prescription and non-prescription drugs and health remedies that it is staggering to think of.

The president of BIE Health Products stated in a recent interview, I've been waiting for these products since the 70's. We knew they would come, if only we could stay healthy and live long enough to see them! If you want to stay on top of your game, physically and mentally as you age, this product is a boon, especially for the highly skilled professionals who have made large investments in their education, and experience. Also with the failure of Congress to honor our seniors with pharmaceutical coverage policy, it's more important than ever to take pro-active steps to safeguard your health. Continued use of GHR will make a radical difference in your health, HGH is particularly helpful to the elderly who, given a choice, would rather stay independent in their own home, strong, healthy and alert enough to manage their own affairs, exercise and stay involved in their communities. Frank, age 85, walks two miles a day, plays golf, belongs to a dance club for seniors, had a girl friend again and doesn't need Viagran, passed his drivers test and is hardly ever home when we call - GHR delivers.

New Doctor Recommended

The Reverse Aging Miracle

RELEASE YOUR OWN GROWTH HORMONE AND ENJOY:

- Improved sleep & emotional stability
- Increased energy & exercise endurance
- Loss of body fat
- Increased bone density
- Improved memory & mental alertness
- Increased muscle strength & size
- Reverse baldness & color restored
- Regenerates Immune System
- Strengthened heart muscle
- Controlled cholesterol
- Normalizes blood pressure
- Controlled mood swings
- Wrinkle disappearance
- Reverse many degenerative disease symptoms
- Heightened five senses awareness
- Increased skin thickness & texture

All Natural Formula

This program will make a radical difference in your health, appearance and outlook. In fact we are so confident of the difference GHR can make in your life we offer a 100% refund on unopened containers.

1-877-849-4777

www.biehealth.us | code: "ARCH"

A Product of
Global Health
Products

GHR

BIE Health Products
3840 East Robinson Road
Box 139
Amherst, NY 14228

DIV 2037839 ON



HGH is known to relieve symptoms of Asthma, Angina, Chronic Fatigue, Constipation, Lower back pain and Sciatica, Cataracts and Macular Degeneration, Menopause, Fibromyalgia, Regular and Diabetic Neuropathy, Hepatitis, helps Kidney Dialysis and Heart and Stroke recovery.

For more information or to
order call 877-849-4777
www.biehealth.us
©copyright 2000



During the annual harvest ceremony of the Muscogee Nation of Florida, women and girls approach the fire at the center of the tribe's ceremonial grounds with offerings of food.

People of the White Earth

In Florida's Panhandle, tribal leaders and archaeologists reach into the past to help preserve a native community's identity

by MIKE TONER

On a crisp autumn morning in Florida's Panhandle, the people of *Ekvmi Hvtke*, White Earth Tribal Town, gather across from the soccer field on the outskirts of Blountstown to affirm traditions that echo the time before Europeans came to America. People have parked their pickup trucks a respectful distance away from the clearing where, for the next few days, ancient traditions will rule. Surrounded by towering longleaf pines, a ring made up of sand and sun-bleached shells encircles four open-air shelters engraved with the icons of the bear, deer, otter, owl, and other clans

of the Muscogee Creek people. Here, for now, the twenty-first century takes a back seat to one community's reverence for the past. A mournful blast on a whelk shell signals the start of White Earth's annual harvest ceremony.

Around the fire pit of the ceremonial grounds everyone has their assigned place at each of the cardinal points on the compass, much as their ancestors did in the days when earthen mounds dominated the landscape of the Southeast. The "old warriors" occupy benches under a willow-thatched arbor on the north side of the grounds. Younger men sit in a simi-

lar arbor to the south. The west arbor is reserved for tribal leaders, among them Dan Penton, a former Florida archaeologist who is the community's traditional chief and *heles-haya*, the maker of medicine. The women remain outside the grounds until their time comes to enter.

The ceremony, or "busk"—an English derivation of the Creek *puskita*, meaning "to fast"—begins at mid-morning with ritual sweeping of the grounds, the lighting of the fire, a traditional stomp dance, and a display of a bundle of relics the community holds sacred. Later, the women perform the



Sitting some 40 miles west of the tribe's ceremonial grounds, the Muscogee Nation council house in Bruce, Florida serves as the tribe's headquarters.

traditional ribbon dance and offer the first food of the day—not to the men, but to the fire.

Even a casual observer would have no trouble recognizing the ceremony as a gathering steeped in Native American traditions. To the U.S. Bureau of Indian Affairs (BIA), however, this is not—at least not yet—a gathering of one of the more than 500 tribes that are recognized by the federal government. For nearly 70 years, the Muscogee Nation of Florida has petitioned for official government acknowledgment, which tribal leaders say will give them access to social and medical programs, protection for tribal lands and graves, and the right to govern themselves as a recognized sovereign people.

Despite the group's appeals, the BIA's Office of Federal Acknowledgment has insisted that without documentation of "continuous tribal existence" the Muscogee simply don't meet the government's definition of a tribe. Nonetheless, under new streamlined rules for tribal recognition, in late 2015 the BIA began a new review of the Muscogee petition that might resolve the matter. As the standoff goes on, unfortunately, the tribe's elders, including some of its last speakers of the Hitchiti language, have been dying. Penton himself, whose grandfather was a maker of medicine, is pushing 70. And

Penton is worried that, as the years winnow the ranks of elders, the traditions that bind his people to their past are slipping away. "Without more of our young people coming to these busks, I don't know that this ground will survive much longer," he says. "It's hard to compete for their attention in this age of video games." The threats to Muscogee identity come on a variety of fronts. But the responses to those threats arrive from many quarters, too.

Among the "old warriors" in the north arbor, you will often find Texas State University anthropologist F. Kent Reilly III, a specialist in the prehistoric art and iconography of the Mississippian chiefdoms that ruled the Southeast from A.D. 1000 to 1550. As a field consultant and adopted member of the tribe, Reilly has spent 20 years observing White Earth's ceremonial events and getting to know the community. Reilly has been helping them uphold a past that, for many younger members, often seems distant and remote. In addition to advising the tribe on historical research—the paper trail of land ownership and cemetery records that documents their years in Florida—he shares his knowledge of prehistoric Mississippian symbols, rituals, and administration with tribal officials. In return, Reilly and the graduate students who often accompany him to

the busks get a glimpse of traditions that once could only be inferred from the archaeological record or gleaned from reports by nineteenth-century ethnographers.

"When I first came here, I was just blown away by what I saw," Reilly says. "Everything—from the layout of the square ground, to the order of the dances, to the plants they use to make their medicine, to the contents of the sacred bundle they unwrap at every ceremony—was straight out of Swanton." John R. Swanton was the ethnographer extraordinaire of the Smithsonian Institution's Bureau of American Ethnology. He spent a half-century studying Indian cultures in America, including Muscogee Creek communities in Oklahoma, where most of the people of the Creek Confederacy went after being forced off ancestral lands in Georgia and Alabama in the 1830s—a removal known today as the Trail of Tears. That infamous event was a watershed in the history of the Florida Muscogee.

Today, the persistence of Muscogee traditions over five or six generations in a remote corner of Florida is remarkable. The Florida Muscogee's ancestors didn't go to Oklahoma with the rest of the Muscogee Creeks. They broke off from the larger portion of the Creek Confederacy, creating a swerve in the stream of their history. To escape removal to Oklahoma, small bands fled south, down the Choctawhatchee and Apalachicola rivers into Florida. Once settled there, however, these groups faced a new problem. In the mid-1800s, Florida banned all trade with Indians and made it illegal for anyone to identify as an Indian. Local and state laws allowed just three racial identities: black, white, or mulatto. By fiat, if not in fact, there were no Indians in northern Florida. Nearly a century would pass before federal authorities acknowledged the presence of the Muscogee there.

In 1957, the United States agreed to pay reparations—a few hundred

Brazil Expedition Uncovers Thousands of Carats of Exquisite Natural Emeralds

Brandish a whopping 50 carats of genuine South American emeralds in a handcrafted new necklace design for less than \$100!

Halfway into our ambitious trek through the rain forest I had to remind myself that "Nothing good comes easy." These days it seems that every business trip to Brazil includes a sweltering hike through overgrown jungles, around cascading waterfalls and down steep rock cliffs. But our gem broker insisted it was worth the trouble. To tell you the truth, for the dazzling emeralds he delivered, I'd gladly go back to stomping through jaguar country.

Now our good fortune is your great reward. Don't miss this rare opportunity to own an impressive 50 total carat strand of genuine South American emeralds for under \$100.

Faced with this embarrassment of riches, our designer transformed this spectacular cache of large stones (each is over 8 carats average weight) into a stunning 50 total carat necklace of faceted emeralds set into .925 sterling silver. Each emerald is surrounded by delicate sterling silver rope work and filigree in the Bali-style. The 18" necklace dangles from a sterling silver chain that fastens with a secure double-sided shepherd's hook clasp.

What is the source of our emerald's timeless appeal? The enchanting color of the Stauer Carnaval Faceted Emerald Necklace comes from nature's chemistry. Our polished and faceted, well-formed natural emeralds are immediately recognized as something special. Indeed, when we evaluated these emeralds, color was the most important quality factor. Today, scientists tell us that the human eye is more sensitive to the color green than to any other. Perhaps that is why green is so soothing to the eye, and why the color green complements every other color in your wardrobe.

Emeralds are, by weight, the most valuable gemstone in the world. Now you can wear genuine emeralds and feel great about knowing that you were able to treat yourself to precious gems without paying a precious price. A top-quality 50 carat emerald necklace found on Rodeo Drive or 5th Avenue could cost well over \$100,000...but not from Stauer. Wear and admire the exquisite Stauer Carnaval Faceted Emerald Necklace for 60 days. If for any reason you are not dancing the Samba with pure satisfaction after receiving your faceted emerald necklace, simply return it to us for a full refund of the purchase price. But we're confident that when you examine this stunning jewelry, you'll be reminded of the raw beauty of the Amazon rain forests mixed with the flash and dazzle of the exotic Carnaval in Rio de Janeiro. Call today! This cache of genuine emeralds is extremely limited.

Carnaval Faceted Emerald Necklace (50 ctw) ~~\$299[†]~~

Offer Code Price—\$95 + S&P Save \$204

1-800-333-2045

Your Insider Offer Code FEN451-10

You must use this insider offer code to get our special price.

†Special price only for customers using the offer code versus the price on Stauer.com without your offer code.

50 ctw of genuine emerald (6 stones) • Oxidized sterling silver settings and chain • 18" length (+2" extender) with double-sided shepherd's hook clasp

Smart Luxuries—Surprising Prices™

**TAKE 68% OFF INSTANTLY
when you use your
Insider Offer
Code**



50 ctw of
genuine emeralds.
Enlarged to show
exquisite details.

*"You will rarely find
an emerald necklace with
50 carats and certainly not
at this price!"*

— JAMES T. FENT, Stauer
GIA Graduate Gemologist

Stauer®

14101 Southcross Drive W.,
Dept. FEN451-10,
Burnsville, Minnesota 55337
www.stauer.com



Rating of A+

dollars apiece to Indians living in the Southeast who could prove their Creek ancestry—for the government's failure to honor terms of the 1814 Treaty of Fort Jackson with the Creeks, which was supposed to compensate them for lost territory. Several hundred of the Muscogee in Florida received such payments. Thus they were officially Indians. But they were still not, in the eyes of the federal government, a tribe. While the state of Florida recognized the tribe in 1986, the BIA continued to insist that, without proof of the community's "continuous tribal existence by external identification," there could be no federal recognition. And that, for the Florida Muscogee, has been the catch-22.

"The BIA wants written documents that don't exist because Jim Crow laws criminalized interactions with our tribe," says Ann Denson Tucker, chairwoman of the Muscogee Nation of Florida, now headquartered in Bruce, Florida. The tiny town is 40 miles west of Blountstown's White Earth Tribal Town, the last of several ceremonial grounds—including one near Bruce that is no longer in use—that once dotted the Florida Panhandle. Blountstown itself, the county seat of Calhoun County, attests to the region's heritage. It was named after Chief John Blount, a Creek warrior who fought with Andrew Jackson in the early 1800s.

Those deep ties to the landscape are of little help to the Muscogee today. "When the category of 'Indian' as a race was eliminated, it left a documentary void in the tribe's history," says Tucker. "Outside anthropologists never visited us because everyone 'knew' there were no Indians in Florida." As recently as the early 1970s, when Tucker, who is now 62, registered to vote, she was ordered to list her race as "other."

But Tucker's Muscogee roots—and those of many of the roughly 600 other people on the tribal rolls—are literally etched in stone. In the nearby Antioch tribal cemetery, a simple headstone marks the grave of the community's

founder, Diamond Joe Ward, who guided Creeks from their traditional home in Alabama to the thick pine forests along Florida's Choctawhatchee River. Diamond Joe, born in 1830, was Tucker's great-great-grandfather. Her other ancestors lie nearby, their graves marked in traditional style with mussel shells and weathered cypress stakes bearing diamond and circle motifs. In and around Bruce, the tribe's history is solidly anchored in the unbroken chain of land held for a century and a half by Indian families, in the 110-year-old Pine Level School attended by generations



A shell medallion excavated from Spiro Mounds, Oklahoma, depicts two dancers at the *axis mundi*, the point in some indigenous belief systems where the upper, lower, and middle worlds meet.

of Indian children, and in the nearby Methodist mission church that has ministered to the Indians since the early 1900s. "Despite all the government has done to try to erase us from history, my tribe has lived on this land as a cultural, social, and political unit for more than 150 years," says Tucker. "Whether the government chooses to recognize us or not, we know who we are."

While Tucker presses the legal case for federal recognition, Penton is struggling to preserve another, more ephemeral, aspect of the tribe's legacy. The busks over which he presides nurture traditions that are firmly rooted in the agrarian Creek communities of the Southeast and in the Mississippian

culture from which they descend. The first ceremony of the year, the onion busk, coincides with the early spring emergence of wild onions. The berry busk comes as the mulberries ripen. As the year unfolds, green corn, little green corn, harvest, and the winter soup ceremonies follow the procession of nature's seasons.

As a former senior archaeologist for a Tallahassee cultural resource management firm, Penton holds convictions that are firmly planted in two worlds. He has a degree in anthropology, and much of what he knows about the Muscogee past comes from the world of science. But while he keeps the works of Swanton and the pioneers of Southeastern archaeology such as Clarence Bloomfield Moore on his bookshelf, he also keeps his grandfather's carved wooden staff—embellished with a coiled snake—as the symbol of a different kind of knowledge and authority. He says most of what he knows about the use of traditional medicines and the busk ceremonies comes from his upbringing and that of other members of the tribal town. His archaeological career was deeply influenced by his familiarity with his tribe's traditions, especially those associated with the busks held at the tribe's ceremonial grounds.

According to Penton and other scholars, there is good evidence that the square ground itself, with the sacred fire at the center and the four arbors aligned to the cardinal points, existed during Mississippian times and even earlier. The remains of these grounds are often found at larger sites that would have been associated with the ceremonial life of these ancient peoples. "Every one of these traditional tribal towns would have had its own interpretation of the busk," says Penton, "but the ceremonies did follow a template associated with the square ground."

While digging at Florida sites such as the Mississippian mound complex of Lake Jackson or the earlier Swift Creek culture (A.D. 100–800) site of Bird Hammock, he used his

knowledge of the Muscogee ritual template to help understand what he unearthed. When studying likely ceremonial remains, he focused on the significance of cardinal directions at the site, as well as the delineation of ritual space and the role different parts of the site may have played in the seasonal ceremonial calendar.

When he discovered artifacts made of such materials as shell, copper, mica, greenstone, and quartz, his Muscogee background gave him insight into their possible significance as objects of ritual "medicine." In the 1990s, he excavated what turned out to be an eighteenth-century ceremonial square ground near Panama City, Florida.

"I'm not sure I would have recognized it," says Penton, "if I had not experienced a bush."

As the harvest ceremony continues at the White Earth ground, Penton nods toward the center of the square ground. There, the ceremonial fire burns brightly, sending a faint column of smoke skyward. "That fire has been in this area for over 200 years," says Penton. Early ethnographers in the Southeast noted that the embers of Creek ceremonial fires were distributed to individual households at the conclusion of each ceremony so that "the one fire" would be there to relight the next ceremonial blaze. While continuity may well be the hallmark of such traditions, adapting the old ways to changing times is often the key to their survival. The eternal fire continues, but these days White Earth's flame lives in the pilot light of a water heater and returns to the busks in a kerosene lantern when it is needed.

The fire itself has multiple meanings. "What you don't see—and won't see if you're an outsider—is what's down there beneath the fire mound," explains Reilly as he warms himself by the flames. A number of important objects have been buried by the community there. One of them is a clay turtle, a symbol of the turtle upon

(continued on page 62)

EXPERIENCE THE RISE AND FALL
OF THIS PHENOMENAL EMPIRE

NATIONAL GEOGRAPHIC
THE GREEKS
AN ILLUSTRATED HISTORY
DIANE HARRIS CLINE

NATIONAL GEOGRAPHIC AVAILABLE WHEREVER BOOKS ARE SOLD

NatGeoBooks @NatGeoBooks © 2016 National Geographic Partners, LLC

CROW CANYON
ARCHAEOLOGICAL CENTER

Archaeology DIGS

June, September, October 2016

Archaeology Research Program

Excavate ancestral Pueblo Indian sites in southwestern Colorado.
What will you discover?

Cultural EXPLORATIONS

October 3–9, 2016

Zuni Origins

Scholars: Dan Simplicio (Zuni)
Kim Spurr, M.A.

October 16–22, 2016

The Navajo World

Scholar: Harry Walters (Navajo)

crowcanyon.org | Cortez, CO | 800.422.8975

CST 2059347-50

ARCHAEOLOGY Free Information Service

Visit archaeology.org/products and click on "Free Info" for products and services featured by our advertisers. You can also get this information by filling out and mailing the attached card, or by faxing the card to the number provided.

Tourist Boards

1. Innovation Norway Visit Norway and experience seven UNESCO World Heritage sites, from Stave churches to magnificent fjords. The experience will be powered by nature.
www.visitnorway.com

Travel and Tours

2. AIA Tours Join distinguished lecturers at the greatest archaeological sites with the Archaeological Institute of America's Tour program.
www.archaeological.org/tours, p.67, Brochures, Free

3. Andante Travels are leading specialists in archaeological and ancient world travel. Owned and run by archaeologists for 22 years.
www.andantetravels.com, Inside Front Cover, Brochures, Free

4. Archaeological Paths presents the Royal Tour to Egypt. Visit the Land of the Pharaohs with world famous archaeologist, Dr. Zahi Hawass. Enjoy a lecture and dinner with the former First Lady of Egypt, Mrs. Jehan Sadat. Tour dates are September 17-30 and November 6-19, 2016 and February 5-18 and March 18-31, 2017.
www.archaeologicalpaths.com, p.19, Brochures, Free

5. Archaeological Tours Looking for a stimulating, insightful, and educational experience in the Ancient World? Archaeological Tours has the trip for you. We have an amazing collection of 12- to 21-day tours available, which offer travelers a unique mix of culture and history. Each tour is led by a noted scholar, who will offer an insightful introduction to great archaeological sites.
www.archaeologicaltrs.com, Back Cover, Brochures, Free

6. Caravan Tours Fully Escorted

Tours \$1095, Costa Rica, Mexico, Guatemala, USA, and Canada. 64 years, since 1952. 800-Caravan
www.CaravanTours.com, p.61, 28-Page color brochure, Free

7. Jamestown Yorktown Foundation Jamestown Settlement and Yorktown Victory Center. Explore America's colonial beginnings through museum gallery exhibits and living history depicting 17th-and 18th-century Virginia. p.18, Brochures, Free

8. Maya Research Program Excavate Maya ruins in Blue Creek, Belize, with a professional team that needs volunteer help. No experience necessary. Please include your email address for more information.
www.mayaresearchprogram.org, p.61, Brochures, Free

9. Maxxim Vacations Maxxim Vacations is a team of travel experts who have traveled extensively throughout Atlantic Canada to find the best vacation destinations. Each team member has a wealth of firsthand knowledge to share about the region. Visit us today to find out how we can make your next getaway an unforgettable experience. Based in Newfoundland and Labrador, Maxxim Vacations has earned a solid reputation as a leader in the tourism industry within Canada. We are the experts in Atlantic Canada vacation planning.
www.maxximvacations.com, p.13, Brochures, Free

10. Peter Sommer Tours A specialist in expert-led cultural, luxury, and archaeological tours. Gulet cruises and private charters to some of the world's best preserved ancient sites in Turkey, Greece, and Italy.
www.petersommer.com, p.61, Brochures, Free

11. Tara Tours, Inc. Your online source for great service and tours

to Central and South America with more excitement, contrast, and mystery than you could experience in a lifetime of travel. We can take you there, with great service and tour programs, designed with your desires and budget in mind, since 1980.
www.taratours.com, p.61, Brochures, Free

Publishing

12. Morris Publishing Publish your book! Our free guide to self-publishing gives you all the features and prices up-front. p. 61, Guide to self-publishing, Free

Field School

13. Crow Canyon Archaeological Center Looking for a learning vacation? Crow Canyon offers archaeology, cultural, and adventure travel programs in the Southwest and beyond for adults, teens, and families.
www.crowcanyon.org, p.14 & p.59, Brochures, catalogs, prospectuses, Free

14. The Irish Fieldschool of prehistoric Archaeology Where first-class education and cutting-edge research go hand in hand. Our field school is fully accredited and transferable academic credits are available for international students. 2-, 4-, and 6-week courses are available in 2016.
www.prehistoricfieldschool.ie

AIA

15. Archaeological Institute of America Join the oldest and largest society devoted to the study and preservation of the record of the human past. www.archaeological.org



CLASSIFIEDS

BOOKS

THE PIRATE EMPRESS by Deborah Cannon. "An intensely readable and well-done work of fantasy-infused historical fiction." - Historical Novel Society. Available from Amazon.

Publish Your Book



- low up-front prices
- paperback & hardcover
- 20-day production
- 100 minimum order

Request a FREE Kit

Call 800-650-7888, ext. ARC5

Visit www.morrispublishing.com

FIELD SCHOOL

Journey through time!

Tour the MAYA world...

...or help excavate a MAYA city in Belize!

maya
RESEARCH PROGRAM
817-831-9011
mayaresearchprogram.org

TRAVEL & TOURS

ARCHAEOLOGICAL TOURS: Peru: Visit Machu Picchu, Moche tombs, Cuzco and more. **French and Indian War Tour:** Visit Ganondagan, Fort Ticonderoga and more. **Best of the Southwest:** Explore Acoma, Canyon de Chelly, Mesa Verde and more. **Mississippi Valley:** Visit Emerald Mound, Parkin, Watson Brake Mounds and more. **Oaxaca:** Experience Day of the Dead, visit Mitla, Monte Albán and more. **archaeologicalconservancy.org/tours** Archaeological Conservancy, Albuquerque, NM, (505) 266-1540.

MACHU PICCHU & CUZCO: Explorations since 1992! Inca archaeology, Spanish colonial history, Quechua culture, Andean ecology. Amazon, Nazca, Titikaka extensions. (800)446-9660. AdventuresofDiscovery.com

WORLD HERITAGE TOURS: Small group journeys experiencing cultures and heritage of some of the most intriguing civilizations. Destinations include Persia, India, Sri Lanka, Central Asia, Caucasus, the Balkans, Pakistan, IndoChina, Biblical lands, Poland, Romania, Russia, Columbia, Peru, Ecuador, South Africa, Egypt, China etc. Details at: worldheritagetours.com 1-800-663-0844

Easter Island
Machu Picchu
Discover the most amazing sites of Latin America.

Call: 1-800-327-0080
tara@taratours.com
www.taratours.com

Contact Info:

Karina Casines, Account Manager
karina@archaeology.org
(718) 472-3050 ext. 4905

Materials for the July/August issue
are due on May 13, 2016



Peggy's Cove

Explore the Canadian Maritimes with Caravan

Nova Scotia

10-Day Tour \$1395

Visit Nova Scotia, New Brunswick and Prince Edward Island!—Join the smart shoppers and experienced travelers who rely on Caravan for a wonderful vacation.

Guided Vacations Since 1952. +tax&fees

Guatemala, Tikal, Antigua	10 days	\$1295
Costa Rica Natural Paradise	9 days	\$1195
Panama with Canal Cruise	8 days	\$1195
• Nova Scotia & P.E.I.	10 days	\$1395
Canadian Rockies, Glacier	9 days	\$1595
Grand Canyon, Bryce, Zion	8 days	\$1395
California Coast, Yosemite	8 days	\$1395
Mt. Rushmore, Yellowstone	8 days	\$1295
New England, Fall Foliage	8 days	\$1295

"Brilliant, Affordable Pricing"

—Arthur Frommer, Travel Editor



Free Brochure

caravan.com 1-800-CARAVAN

caravan

Expert-led Archaeological & Cultural Tours & Gulet Cruises

One of the world's "Top 10 Learning Retreats"
—National Geographic Traveler

A "100 Best Holidays" company 2016, 2015, 2014"
—The Sunday Times



PETER SOMMER



ABTA No.Y9191

www.petersommer.com - Tel: 855 443 3027 (US toll free)

Like us on facebook and follow us on twitter
for daily updates on the latest discoveries
facebook.com/archaeologymag
twitter.com/archaeologymag



(continued from page 59)

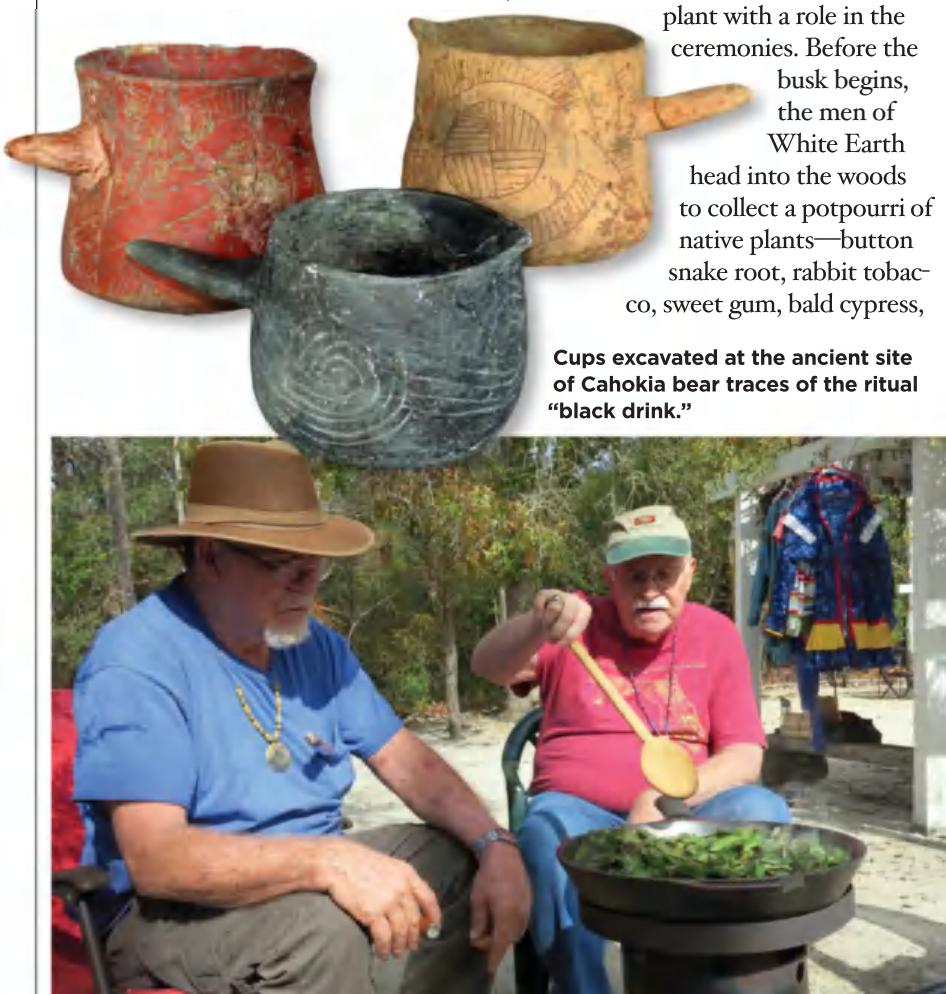
which the Earth was built. "This spot right here," he says, "with the turtle below and the smoke rising into the sky, is the *axis mundi*, the place in indigenous belief systems where the upper world, the middle world, and the world below meet." Reilly says the convergence of the three parts of the cosmos is found in iconography from several major sites—including the well-known "pole of the world" inscribed shell medallion from Spiro Mounds in eastern Oklahoma.

Another of the busk ceremonies with deep roots in prehistoric North America is one in which Reilly himself often plays a key role. Soon after the busk begins, you will find him hunched over a hot iron skillet, roasting freshly gathered leaves of yaupon holly, *Ilex*

vomitoria, on a propane stove. Once they are blackened, the pungent leaves are boiled in a kettle of water to produce a soupy, caffeine-rich brew that becomes the feed stock for the "black drink," which indigenous people have used in rituals for thousands of years. Residues of the drink have been found in engraved ceramic cups that date to A.D. 1100 at the Mississippian city of Cahokia. Similar shell cups found at Hopewell sites in the Midwest suggest that the drink was used there more than 2,000 years ago. Although the black drink—now called *asi-hvtke*, the "white drink," by the Muscogee—is thought to have been used as a purifying emetic to cause ritual vomiting, Reilly says it actually tastes like a semi-palatable cross between coffee and cough medicine.

Yaupon holly is not the only plant with a role in the ceremonies. Before the busk begins, the men of White Earth head into the woods to collect a potpourri of native plants—button snake root, rabbit tobacco, sweet gum, bald cypress,

Cups excavated at the ancient site of Cahokia bear traces of the ritual "black drink."



Anthropologist Kent Reilly (right) and tribal member Jim Hines roast the yaupon holly leaves used to make the black drink consumed during Muscogee rituals.

Photo Credits

COVER—Photograph by Susannah Snowden-Smith, Courtesy Institute of Nautical Archaeology; 1—Photograph by Susannah Snowden-Smith, Courtesy Institute of Nautical Archaeology; 3—Photo: Theodore Greer Photography, Courtesy Museo Tumbas Reales de Sipán, Courtesy Beamish Museum; 4—© The Trustees of the British Museum; 6—Pasquale Sorrentino; 9—Courtesy Petrie Museum of Egyptian Archaeology; 10—Courtesy Nebraska Tourism, Courtesy Hudson-Meng Education and Research Center; 12—Courtesy Kavuşan Höyük Archaeological Project, Photo: R. Berthon, Photo: S. Turga, AdobeStock; 13—Photo: Theodore Greer Photography; 14—Courtesy Museo Tumbas Reales de Sipán (2); 16—Copyright P. Pliskine, Inrap, Courtesy POSTGLACIAL project, University of York; 17—Wikimedia Commons, Joel Mills; 18—Courtesy Rijkswaterstaat/Ruimte voor de Rivier (2); 22—Courtesy © The Gebel el Silsila Survey Project, Image by Marta Mirazon Lahr, enhanced by Fabio Lahr; 24—(clockwise from top left) Courtesy Suzanne Griset, SWCA Environmental Consultants, Courtesy Emerson W. Baker, Salem State University, Courtesy Adam Boethius, Lund University; Courtesy Victoria Primary, MH1 by Brett Elloff, Courtesy Lee Berger, University of the Witwatersrand, AdobeStock; 25—(clockwise from top left) Courtesy Vladimir Pitulkov, Institute for the History of Material Culture, Russian Academy of Sciences, Photo: Tikhonov, Courtesy Flinders University, Courtesy University of Wollongong, Peter Trusler, Monash University; 26—Erich Lessing / Art Resource, NY; 27—© The Trustees of the British Museum, Babek Tafresi/Gettyimages; 28—© The Trustees of the British Museum, Courtesy Yale Babylonian Collection; 29—Erich Lessing / Art Resource, NY (2); 30—© The Trustees of the British Museum; 31—© The Trustees of the British Museum, © The Trustees of the British Museum / Art Resource, NY; 32—Erich Lessing / Art Resource, NY (3); 33—© The Trustees of the British Museum; 34—American Museum of Natural History; 35—Courtesy Charles Stanish; 36—Courtesy Charles Stanish; 37—Courtesy Alejandro Chu, Art Resource; 38-39—Photograph by Susannah Snowden-Smith, Courtesy Institute of Nautical Archaeology; 40—Photograph by Susannah Snowden-Smith, Courtesy Institute of Nautical Archaeology, copyright The Metropolitan Museum of Art (2); 41—The Stapleton Collection / Bridgeman Images, Photograph by Mark Polzer, Courtesy Institute of Nautical Archaeology (3); 42—Photography by Mark Polzer, Courtesy Institute of Nautical Archaeology, copyright The Metropolitan Museum of Art (2); 43—Photograph by Susannah Snowden-Smith, Courtesy Institute of Nautical Archaeology (2); 44—Courtesy Ignacio Arce; 45—Courtesy Jordanian Department of Antiquities, Courtesy Ignacio Arce; 46—Courtesy Ignacio Arce (2); 47—Courtesy Megan Perry, Courtesy Ignacio Arce; 48-53—Pasquale Sorrentino; 55—Courtesy Mike Toner; 56—Courtesy Ann Denson Tucker; 58—Courtesy Sam Noble Oklahoma Museum of Natural History; 62—Courtesy Illinois State Archaeological Survey, Courtesy Mike Toner; 64—Courtesy David H. Dye; 65—Courtesy Jessi Paladini and the Vernon Township Historical Society; 68—© Suffolk County Council

No
Contract

"My friends all hate their cell phones... I love mine!"

Here's why.

Say good-bye to everything you hate about cell phones. Say hello to Jitterbug5.

"Cell phones have gotten so small, I can barely dial mine." Not Jitterbug®, it features a larger keypad for easier dialing. It even has an oversized display so you can actually see it.

"I had to get my son to program it." Your Jitterbug set-up process is simple. We'll even pre-program it with your favorite numbers.

"I tried my sister's cell phone... I couldn't hear it." Jitterbug is designed with a powerful speaker. There's an adjustable volume control, and Jitterbug is hearing-aid compatible.

"I don't need stock quotes, Internet sites or games on my phone, I just want to talk with my family and friends." Life is complicated enough... Jitterbug is simple.

"What if I don't remember a number?" Friendly, helpful Jitterbug operators are available 24 hours a day and will even greet you by name when you call.

"I'd like a cell phone to use in an emergency, but I don't want a high monthly bill." Jitterbug has a plan to fit your needs... and your budget.



Available in
Blue and Red.

Order now and receive a
FREE Car Charger for your Jitterbug –
a \$25 value. Call now!

jitterbug®



IMPORTANT CONSUMER INFORMATION: WE TALK offer valid on 400 minute plan and applies to new GreatCall customers only. Offer valid until plan is changed or cancelled. Jitterbug is owned by GreatCall, Inc. Your invoices will come from GreatCall. All rate plans and services require the purchase of a Jitterbug phone and a one-time set up fee of \$35. Coverage and service is not available everywhere. Other charges and restrictions may apply. Screen images simulated. There are no additional fees to call GreatCall's U.S. Based Customer Service. However, for calls to an Operator in which a service is completed, minutes will be deducted from your monthly balance equal to the length of the call and any call connected by the Operator, plus an additional 5 minutes. Monthly minutes carry over and are available for 60 days. If you exceed the minute balance on your account, you will be billed at 35¢ for each minute used over the balance. Monthly rate plans do not include government taxes or assessment surcharges. Prices and fees subject to change. We will refund the full price of the GreatCall phone and the activation fee (or set-up fee) if it is returned within 30 days of purchase in like-new condition. We will also refund your first monthly service charge if you have less than 30 minutes of usage. If you have more than 30 minutes of usage, a per minute charge of 35 cents will be deducted from your refund for each minute over 30 minutes. You will be charged a \$10 restocking fee. The shipping charges are not refundable. Jitterbug and GreatCall are registered trademarks of GreatCall, Inc. Samsung is a registered trademark of Samsung Electronics Co., Ltd. ©2016 Samsung Electronics America, LLC. ©2016 GreatCall, Inc. ©2016 firstSTREET for Boomers and Beyond, Inc.

FREE
Car
Charger

Get
Double
Minutes for Life
with WE TALK.

Monthly Plan	\$14.99	\$19.99
Monthly Minutes	was 50 NOW 200	was 200 NOW 600
Operator Assistance	24/7	24/7
Long Distance Calls	No add'l charge	No add'l charge
Voice Dial	FREE	FREE
Nationwide Coverage	YES	YES
Friendly Return Policy ¹	30 days	30 days

More minute plans available. Ask your Jitterbug expert for details.

"My cell phone company wants to lock me in on a two-year contract!" Not Jitterbug, there's no contract to sign and no penalty if you discontinue your service.

"My phone's battery only lasts a couple of days." Unlike most cell phones that need to be recharged every day, the Jitterbug was designed with one of the longest-lasting batteries on the market, so you won't have to worry about running out of power.

Enough talk. Isn't it time you found out more about the cell phone that's changing all the rules? Call now, Jitterbug product experts are standing by.

Jitterbug5 Cell Phone

Call toll free today to get your own Jitterbug5.

Please mention promotional code 103086.

1-888-671-8540

www.jitterbugdirect.com

We proudly accept the following credit cards.



bay laurel, and other species that will be used for rituals or medicine. This Muscogee pharmacopoeia covers a broad range of physical and emotional ailments. Swanton's *Creek Religion and Medicine*, in fact, documents at least 105 plant-based medicines used by the Muscogee people. As the maker of medicine, Penton still prepares many of them and distributes them to members of the community as needed.

As in earlier Creek and Mississippian cultures, Penton is also the custodian of the community's sacred bundle—a collection of artifacts and revered objects that have been handed down from generation to generation. Similar bundles, wrapped in cloth or hide, have been found in the graves of high-status Mississippian individuals. Excavations at Cahokia, Moundville, Etowah, and other Mississippian sites have unearthed examples with widely varying contents—from bits of bone, antlers, and wooden carvings to the dish-sized decorated stone palettes that were used for the ritual mixing of paint. White Earth's objects, which include lithic points, stone axheads, rattles, shell medallions, and a peace medal awarded by President James Madison, are carefully unwrapped for public display at each busk.

In a less visible but more fundamental way, the White Earth community also echoes another enduring aspect of indigenous culture. "All of these societies were matrilineal," says University of South Carolina archaeologist Adam King, who often attends the ceremonies as a guest. "The men's role at these busks is ceremonial. It is the women—led by the matriarch—who own the grounds. And they are the ones who choose the leaders, including the maker of medicine. This is a set of principles and beliefs that goes way back. It's not something they got by reading it in a book."

For anthropologists like Reilly and his students, the opportunity to observe and participate in the Muscogee busks provides a rare glimpse of a culture that, even while



At the site of Moundville, Alabama, archaeologists found a deteriorated copper palette (top) thought to represent a hawk, along with hawk bones that were kept together in a sacred bundle.

threatened by the modern world, maintains its identifiable roots in prehistoric America.

"Artifacts can't tell us everything, especially about religion and belief systems as an organizing factor in society," says Reilly. "But we can get a much clearer picture if we use a combination of the archaeological record, historical and ethnographic sources, and the testimony of living people like these. Their traditions provide us with a unique door to their past. And right now Dan Penton is the gatekeeper."

As both the tribe's maker of medicine and a former archaeologist, Penton is well aware of his custodial role at the intersection of past and future. And he is worried. The community's traditions are in danger of slipping away—and it is his responsibility to preserve them.

Every busk now includes an educational session that, in another setting, might pass for Sunday school. Penton and other tribal leaders intently quiz younger members on the meaning, origins, and proper etiquette of the Creek traditions. The exchanges are good-humored but serious. Why must

all movement around the central fire be in a counterclockwise direction? Why do the women wait outside the ground until they are invited in? Ceremonial etiquette is also part of the instruction.

"In one form or another, the harvest busk has been around for a thousand years or more," Penton says. "Its traditional purpose is to realign the cosmos—to temporarily stop time in order to mark the transition from the growing time of the year to the time for hunting."

Increasingly, however, it has also become a time to learn. "A lot of what we discuss would have been common knowledge a generation or two ago," says Penton. "But almost no one is raised in the tradition any more. So the busk is an open discussion of what's behind the symbolism. We are more open about things than we used to be. If we are going to survive, we have to share it. We are the custodians of our culture, whether the federal government recognizes us or not." ■

Mike Toner is a freelance writer and former science writer for The Atlanta Journal-Constitution.



Dispatches from the AIA

www.archaeological.org

EXCAVATE, EDUCATE, ADVOCATE

2016 Award for Best Practices in Site Preservation Presented to Historical Society in Vernon, New Jersey



Procession at the
Black Creek Festival

THE AIA'S 2016 AWARD for Best Practices in Site Preservation was presented to the Vernon Township Historical Society in acknowledgment of the excellent work the organization has done—and continues to do—as steward of the Black Creek Indian Site in Vernon, New Jersey.

For over a decade, members of the Vernon Township Historical Society

have worked with the Nanticoke Lenni-Lenape Indians of New Jersey to preserve, protect, and promote the Black Creek Site. Home to some of the area's earliest residents, the site includes more than 6,000 artifacts representing 10,000 years of occupation.

The Society's interpretive plan and cultural resource program involve close collaboration with local residents and state and national officials. The program includes regular monitoring and maintenance, the installation of explanatory signage, and the creation of a walking path through the site. It also includes education and outreach initiatives targeting school groups, community organizations, and the public. Thousands of students have benefited from the Society's

education programs about the Lenape Indians and Black Creek through lesson plans integrated into local school curricula, guided tours, and hands-on learning opportunities.

Working with the Lenape and other local residents, the Society successfully nominated the Black Creek Site for inclusion in the New Jersey and National Registers of Historic Places. As steward of the site, the Society is taking a comprehensive and multifaceted approach to preserving a wonderful and important resource for future generations. The Society's interpretive plan provides an aspirational model for other site stewards and represents the best practices that the AIA promotes through its Site Preservation Program—efforts that combine sustainable heritage preservation with local community involvement.

Conservation and Heritage Management Award Presented to the City of Toronto and ASI

THE AIA PRESENTED the 2016 Conservation and Heritage Management Award to the City of Toronto's Heritage Preservation Services and the archaeological and cultural heritage consulting firm ASI. The two groups were recognized for their work in developing and implementing an exemplary archaeological management plan for the City of Toronto.

The plan defines the process by which sites should be identified, evaluated, and managed. While addressing the needs of the city's known archaeo-

logical resources, the plan also incorporates predictive models to identify upcoming developments that could impact archaeological sites and should therefore be subject to archaeological assessment. The plan is a visionary archaeological management practice that exceeds legislative requirements and was developed and implemented at a scale unseen in other jurisdictions. The City of Toronto has recognized the importance of this model and is particularly rigorous in its application.

In addition to recommendations

for identifying and mitigating the impact to sites, the plan also includes provisions for interpretation and commemoration. The City of Toronto requires developers to fund and maintain permanent displays related to the heritage and archaeology discovered on their properties. This interpretive display initiative is, again, not a legal requirement of the province of Ontario, but an independent requisite of the city to engage the public in the appreciation of heritage.

Aspects of the City of Toronto's

archaeological management plan have been used as models for other municipalities in Ontario. The AIA hopes that this successful marriage of protecting the old while embracing the new inspires more municipalities to consider and preserve their archaeological heritage as they plan for the future.

AIA Holds Second Conference for Heritage Educators in San Francisco

ON JANUARY 9, 2016, the AIA held its second conference for heritage educators. The daylong event built on the success and momentum of last year's conference in New Orleans. The 2016 program focused on creating a statement of ethics for heritage education and on the professionalization of outreach efforts.

The themes for the 2016 meeting were generated from conversations held at the New Orleans meeting and the online discussions that followed. Educators commented on the need for an ethics statement that could be distributed to people conducting and planning heritage education activities, and this year's conference attendees worked together to draft such a statement. It is currently being circulated for review and comments and will soon be available on the AIA website.

The idea of professionalizing heritage education, especially in terms of generating more research and publication, was also first mentioned at the 2015 meeting. In response to a specific call for publications, a group of conference attendees submitted a proposal for a special issue on evaluating heritage education to *Advances in Archaeological Practice*. The proposal was accepted, and the issue will be available by late 2016. This year's attendees discussed strategies for producing more well-researched and data-driven reports and essays on heritage education and outreach programs for inclusion in archaeological

(and educational) publications.

A number of educators at the San Francisco meeting disclosed that they had heeded last year's call to implement more rigorous evaluation and assessment of their programs. These efforts have produced measureable results that will be useful for comparative studies. Further, 2016 attendees plan to conduct coordinated evaluations of International Archaeology Day 2016 events. Educators agreed that by using similar evaluation strategies, their data will be easier to compare across programs. Participants brainstormed strategies for evaluating different types of education programs, and in the coming months, a list of these strategies will be circulated.

Conference attendees also identified long- and short-term goals for heritage education. Short-term goals include the creation, distribution, and wide adoption of the ethics statement on heritage education, increased communication within the heritage education community, especially through

the AIA's Outreach and Education Google Group, compilation of a list of relevant publications, providing more professional development opportunities, producing more articles for archaeology and education journals, coordinating efforts to evaluate International Archaeology Day events, and planning a follow-up meeting at the AIA's 2017 Annual Meeting in Toronto (January 5–8). Long-term goals include raising visibility and building legitimacy for heritage education within the academic community and archaeological organizations, reiterating and formalizing the idea that education extends beyond K–12, and considering the possibility of holding a stand-alone heritage education conference.

Conference participants left San Francisco reenergized, focused, and excited about the momentum that heritage education is gaining. We look forward to hearing updates about progress made and to another productive meeting in Toronto.

AIA Award Winners

EACH YEAR, THE AIA holds an awards ceremony at the AIA-SCS Joint Annual Meeting to recognize important contributions that AIA members and others have made to the discipline and the Institute. The AIA is pleased to announce the 2016 award winners:

Gold Medal Award for Distinguished Archaeological Achievement:

Malcolm Bell III, University of Virginia

Pomerance Award for Scientific Contributions: Melinda Zeder,
Smithsonian Institution

Martha and Artemis Joukowsky Distinguished Service Award: Brian Heidtke
James R. Wiseman Book Award: Thomas F. Tartaron, *Maritime Networks
in the Mycenaean World* (Cambridge University Press, 2013)

Felicia A. Holton Book Award: Patrick Vinton Kirch, *A Shark Going Inland
Is My Chief: The Island Civilization of Ancient Hawai'i* (University of California Press, 2012)

Excellence in Undergraduate Teaching Award: Ann Olga Koloski-Ostrow,
Brandeis University

Conservation and Heritage Management Award: City of Toronto Heritage
Preservation Services and archaeological and cultural heritage consultancy ASI
Best Practices in Site Preservation Award: Vernon Township Historical Society,
Vernon, New Jersey

Outstanding Public Service: Cindy Ho, SAFE/Saving Antiquities for Everyone
Outstanding Work in Digital Archaeology Award: Open Context

Graduate Student Paper Award: Rachel Kulick, University of Toronto,
and Johanna Boyer, University of Missouri, Columbia



ARCHAEOLOGICAL INSTITUTE
OF AMERICA TOURS

CRUISE with the AIA

"Our lecturers and guides were super!"

"Fabulous sites, overall logistics were very well organized."

"I enjoyed the ease of travel."

"We were well taken care of"



Aboard an intimate, 18-stateroom, motorized sailing yacht:

- *Greece: Circumnavigating the Peloponnese* with William Parkinson
- *Exploring the Cyclades Islands* with Joan Breton Connelly
- *Malta to Rome via Sicily, the Amalfi Coast & Naples* with Shelley Wachsmann



Aboard an elegant mega-yacht with 57 suites:

- *Adriatic Sea Voyage: Venice to Dubrovnik* with Andrew Moore
- *Circumnavigating the Black Sea* with Kathleen Lynch
- *The Gulf States: Dubai, Qatar, Bahrain, Saudi Arabia, Abu Dhabi & Oman* with Tarek Swelim



Aboard a sophisticated, 132-stateroom cruise ship:

- *Island Life of Ancient Greece* with Shelley Wachsmann
- *Ancient Sites & Natural Wonders of Peru & Chile* with James Kus

Aboard a luxurious, 12-suite riverboat:

- *Vietnam, Cambodia & the Mekong River* with Joyce White

ARTIFACT

One of the most common mythical figures of the European Middle Ages among both rich and poor was the lustful woodland deity known as the Wild Man. As far back as the fifth century B.C., in the writings of the Greek historian Herodotus, and later the Roman historian Pliny, distant, little-known peoples were considered to be uncivilized—in contrast to the civilized world in which the historians lived—and this was embodied by beastly, amoral gods, such as the debauched, hairy, club-carrying, half-goat, half-man creatures called satyrs. With the coming of Christianity and in the writings of its great scholars, including Saints Jerome and Isidore of Seville, these pagan deities often became devils, demons, and monsters, says historian Ronald Hutton of the University of Bristol. One of these monsters was the Wild Man, a single deity with a complex pagan past and a powerful Christian present.

During the High Middle Ages, beginning in the twelfth century, images of the Wild Man began to appear regularly on coats of arms of cities across Europe, on architectural decorations such as the roof bosses of Canterbury Cathedral, in illuminated manuscripts, on costumes worn by members of the French royal court, in paintings and engravings, and even on everyday objects—including this spoon, found recently in Suffolk. Like the faraway barbarians of the classical world, explains Hutton, in the medieval world, the Wild Man served as a reminder of the dangers of life at the edges of civilization and of the risks of a lack of religious and social order.

WHAT IS IT

Spoon finial or knob

CULTURE

Medieval European

DATE

ca. A.D. 1300–1400

MATERIAL

Gilded silver

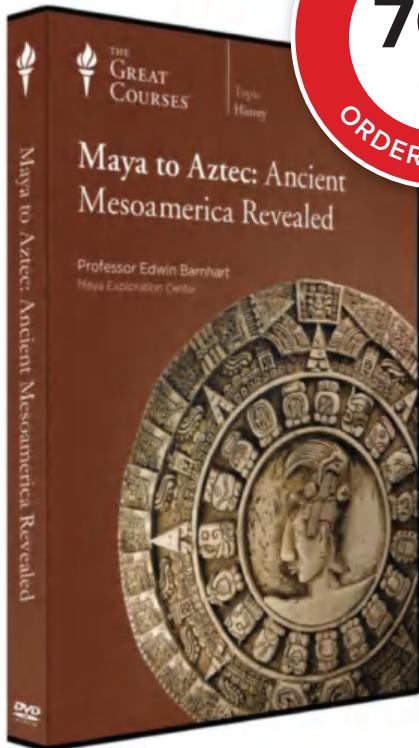
FOUND

Suffolk, England

DIMENSIONS

*1.06 inches high,
0.52 inches wide,
0.30 inches thick
0.32 ounces*





Explore the Secrets of the Ancient Maya and Aztecs

Centuries ago, Spanish conquistadors searching for gold and new lands encountered a group of sophisticated city-states in Mesoamerica. The Aztecs, the Maya, and related cultures equaled the world's greatest contemporary civilizations, and were in many ways more advanced than European nations of their time.

Immerse yourself in this epic story with **Maya to Aztec: Ancient Mesoamerica Revealed**. Your guide is Dr. Edwin Barnhart, a noted archaeologist and the Director of the Maya Exploration Center. Lessons focus on the Maya, who have resided in the region for thousands of years, and the Aztecs, who mysteriously appeared late and swiftly built an empire. The Spanish eventually conquered all of Mesoamerica, but much remains of the original cultures. Beautiful artifacts fill museums, impressive ruins dot the landscape, and millions of descendants of ancient Mesoamericans still maintain native languages and traditions. Marvel at the accomplishments and genius of these exceptional civilizations.

Offer expires 06/11/16

THEGREATCOURSES.COM/7AR
1-800-832-2412

Maya to Aztec: Ancient Mesoamerica Revealed

Taught by Director Edwin Barnhart
MAYA EXPLORATION CENTER

LECTURE TITLES

1. The Maya, Aztecs, and Mesoamerica
2. Olmec Civilization Emerges
3. Olmec Art as the Mother Culture
4. Olmec Contemporaries
5. Mesoamerican Plants, Cuisine, and Medicine
6. Early Highland Maya—Izapa to Kaminaljuyu
7. Preclassic Maya Lowlands—El Mirador
8. The *Popol Vuh*—Creation and Hero Twins
9. The Great City of Teotihuacan
10. How the Maya Mastered Mathematics
11. The World's Most Elaborate Calendar
12. Tikal—Aspiring Capital of the Maya World
13. Maya Hieroglyphs—Breaking the Code
14. Maya Astronomy and Building Orientations
15. The Dresden Codex
16. Palenque—Jewel in the West
17. Sacred Geometry in Art and Architecture
18. Illuminating Works of Maya Art
19. Copan—Jungle Dynasty of the East
20. Calakmul—The Mighty Snake Kingdom
21. The Mesoamerican Ball Game
22. Enigmatic West Mexico and Shaft Tombs
23. Classic Maya Collapse—Cities Abandoned!
24. New Cities and the Terminal Classic—Uxmal
25. Monte Albán and Zapotec Rule over Oaxaca
26. The Mixtec Rise—Gold and Epic Stories
27. The Great Pyramid and Cholula and El Tajín
28. Cacaxtla Murals and Xochicalco
29. The Toltecs—Role Models or Myth?
30. Chichen Itza—Maya Capital of the Yucatan
31. League of Mayapan—Maya New World Order
32. Mesoamerican Religion
33. Aztec Origins—Arrival and Rise of the Mexica
34. The Aztec Capital of Tenochtitlan
35. Life in the Aztec World
36. How the Aztecs Expanded Their Empire
37. Independent Tarascans—Desert Warriors
38. Paquime—Northernmost Mesoamerican City?
39. Illuminating Works of Aztec Art
40. Tulum—Aztecs at the Ancient Maya Port City
41. First Contact with Europe in Mesoamerica
42. The Siege of Tenochtitlan
43. Conquest of the Maya and Landa's Legacy
44. Fall of the Last Maya Kingdom—The Itza
45. The Caste Wars of Yucatan
46. Echoes of the Past in Mexico
47. Maya Survival and Revival
48. Frontiers of Mesoamerican Archaeology

Maya to Aztec: Ancient Mesoamerica Revealed
Course no. 3100 | 48 lectures (30 minutes/lecture)

SAVE UP TO \$370

DVD \$519.95 NOW \$149.95

+\$20 Shipping, Processing, and Lifetime Satisfaction Guarantee

CD \$369.95 NOW \$109.95

+\$15 Shipping, Processing, and Lifetime Satisfaction Guarantee

Priority Code: 126449

For over 25 years, The Great Courses has brought the world's foremost educators to millions who want to go deeper into the subjects that matter most. No exams. No homework. Just a world of knowledge available anytime, anywhere. Download or stream to your laptop or PC, or use our free mobile apps for iPad, iPhone, or Android. Over 550 courses available at www.TheGreatCourses.com.



archaeological tours

Led by noted scholars | superb itineraries | unsurpassed service



Inspiring Archaeological Study Tours across the World in 2016...

Spaces are filling fast on our 2016 tours. Book your place now to avoid disappointment! Here's a small selection of what we have to offer:

China

Experience China as it was in ages past: its walled cities, vibrant temples, and mountain scenery.

May 15 - June 4, 2016 | \$7,975

Scotland & its Islands

Discover Neolithic and Bronze Age monuments across Scotland's brilliant green valleys and rugged rocky shores.

June 17 - July 3, 2016 | \$6,990

Indonesia

Explore three islands, continuously occupied for the last million years. We visit Java, Sulawesi and Bali.

August 1 - 21, 2016 | \$6,370

Peru

Encounter the legendary remains of the Incan empire, including a two day visit to spectacular Machu Picchu.

Aug 26 - Sep 11, 2016 | \$6,595

Sicily & Southern Italy

Visit some of the best preserved Classical archaeology in the world, in the cities and countryside of Sicily

September 3 - 18, 2016 | \$6,375

Ireland

Encounter prehistoric Kings, Celtic art, Viking raiders and English invaders surrounded by verdant Irish landscapes.

September 7 - 22, 2016 | \$6,290

Led by noted scholars | superb itineraries | unsurpassed service

Order your catalog today or visit our website for more information

Call 212-986-3054 | Toll-free 866-740-5130 Email: info@archaeologicaltrs.com | Book Online: www.archaeologicaltrs.com

*Price excludes international airfare