

INVESTIGATING 19TH-CENTURY MINING • A LEGENDARY ARCHAEOLOGIST • INSIDE A CIVIL WAR PRISON

WINTER 2013-14

american archaeology

a quarterly publication of The Archaeological Conservancy

Vol. 17 No. 4

PLAYING ANCIENT GAMES

\$3.95



3 4 >

7 25274 91765 5

Archaeological Tours

led by noted scholars

Invites You to Journey Back in Time

ARCHAEOLOGICAL
YEARS **39** TOURS
CELEBRATING

Brittany & the Salisbury Plain (15 days)

Amidst the picturesque Breton villages, we explore Brittany's intriguing megalithic sites with Dr. Roy Larick, Cleveland State U.. Visits include the "great stones" at Carnac, regional museums, enormous dolmen and cairns dating back to 5000 BCE, the parish closes typical to Brittany and the amazing Abbey of Mont Saint-Michel. The tour ends in England with the prehistoric sites of the Salisbury Plain, including Avebury and Stonehenge, where we have been granted permission to walk among the stones.



Classical Greece (16 days)

Visit the major Mycenaean, Classical and Byzantine sites of mainland Greece with Prof. Gerald Schaus, Wilfrid Laurier U. Starting in Athens, highlights include the Acropolis, Panhellenic Olympia, Byzantine Mistra, the great healing center at Epidaurus and Tiryns and Mycenae. Traveling north, we tour mystical Delphi, the monasteries at Meteora, Pella's mosaics, the treasures in Thessaloniki's museum and many monuments associated with Philip and Alexander.



Malta, Sardinia & Corsica (18 Days)

Explore these gorgeous islands, each unique in its ancient monuments, and physical beauty with Prof. Robert R. Stieglitz, Rutgers U. Highlights include Malta's immense megalithic temples, Sardinia's amazing nuraghes and the mysterious cult sites and enigmatic menhirs set amidst Corsica's wild mountain scenery. Along the way we visit Phoenician ports and cities built by Romans, Greeks and Crusader knights, fine museums and historic villages.



Central Asia (18 days)

Uzbekistan & Turkmenistan

The magical names, Samarkand and Bukhara, conjure up images of Alexander the Great and Kublai Khan. We will travel in their footsteps with Prof. Craig Benjamin, Grand Valley State U., visiting Tamerlane's glorious cities, monuments of intricately designed glazed tiles and the UNESCO World Heritage Sites of Khiva and Nisa. Highlights include ancient Merv and the ongoing excavations at Gonur-Depe in the Kara Kum desert. Interspersed with the ancient sites are visits to excellent museums, cultural programs and Central Asia's legendary bazaars.



China: South of the Clouds (18 days)

Yunnan and Sichuan

Study the history of this beautiful remote region with Prof. Robert Thorp, Washington U. Traveling to two distinctive ethnic and cultural areas, Dali and Lijiang, we will visit traditional villages and temples famed for their frescoes. In Sichuan, touring includes fine museums, Chengdu, Imperial tombs, Taoist temples, recently excavated sites, the Panda Reserve and Dazu's amazing Buddhist grottoes rich in sculpture. The tour ends with the fabulous museum in Shanghai.

2014 tours: Gujarat India • Sicily Revisited • Peru • Scotland • Ireland • Northern Chile & Easter Island • Cyprus, Crete & Santorini
Viking Scandinavia • Indonesia • Provence • Zimbabwe • Israel • Turkey • China: Beyond the Great Wall • Sri Lanka...and more

Journey back in time with us. We've been taking curious travelers on fascinating historical study tours for the past 39 years. Each tour is led by a noted scholar whose knowledge and enthusiasm brings history to life and adds a memorable perspective to your journey. Every one of our 37 tours features superb itineraries, unsurpassed service and our time-tested commitment to excellence. No wonder so many of our clients choose to travel with us again and again.

For more information, please visit www.archaeologicaltrts.com, e-mail archtours@aol.com, call 212-986-3054, toll-free 866-740-5130. Or write to Archaeological Tours, 271 Madison Avenue, Suite 904, New York, NY 10016.

And see history our way.



archaeological tours

led by noted scholars

superb itineraries, unsurpassed service

american archaeology

WINTER 2013-14

a quarterly publication of The Archaeological Conservancy

Vol. 17 No. 4

COVER FEATURE

12 THE GAMES PEOPLE PLAYED

BY ALEXANDRA WITZE

What did ancient people do once the day's work was done? They played games.

19 REINTERPRETING AN ANCIENT ISLAND

BY LINDA MARSA

A research project on California's Santa Catalina Island is using ethnographic evidence and sophisticated technology to develop new interpretations of the island's past.

24 LIFE IN THE WORLD'S LARGEST PRISON CAMP

BY MIKE TONER

Archaeologists are discovering what took place in Camp Lawton, a huge Civil War prison.

32 WHEN COPPER WAS KING

BY CHRISTIE BLECK

The Cliff Mine in Michigan's remote Upper Peninsula triggered a copper boom in the mid-19th century. Archaeologists are investigating the mine to understand how it happened.

39 THE BEST OF HER PROFESSION

BY KRISTIN OHLSON

Linda Cordell excelled at many things during her long career in archaeology.

44 new acquisition

ELEVEN THOUSAND YEARS OF HISTORY

The Conservancy's first site in South Carolina contains one of the oldest known features in the state.

45 new acquisition

ARCHAIC SITE SAVED THROUGH PUBLIC-PRIVATE PARTNERSHIP

Sopris is one of the few Archaic sites in the region.

46 point acquisition

RENOWNED BURIAL SITE PRESERVED

The Conservancy is in the process of obtaining the famous Windover site near Cape Canaveral, Florida.



48 point acquisition

LEARNING ABOUT THE MOHAWK

The Conservancy acquires the Cayadutta site.

JAMES SNEAD

2 LAY OF THE LAND

3 LETTERS

5 EVENTS

7 IN THE NEWS

- A New View of Paleo-Indian Migration
- Did Ancient Fire Affect Cahokia?
- Rare Ancient Alpine Villages Found

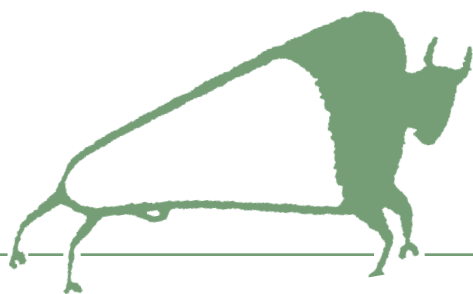
50 FIELD NOTES

52 REVIEWS

54 EXPEDITIONS

COVER: Archaeological evidence indicates the Mississippians liked to play a game called chunky. A court where the game was played is shown in the lower right of this illustration of Cahokia, the great Mississippian city.

CREDIT: William R. Iseminger, Cahokia Mounds State Historic Site



Lay of the Land

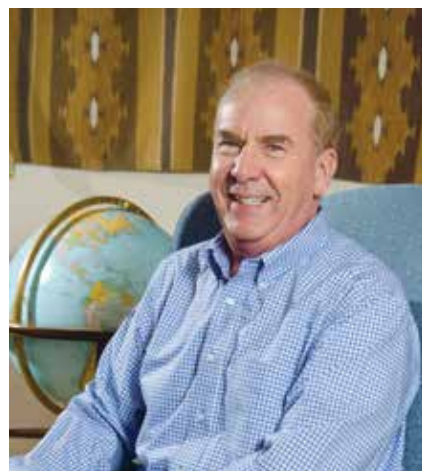
Good Old Fun

Ball games, board games, dice games, track and field games—ancient Native Americans played them all with some regularity. We have no evidence of card games, but then cards are not the kind of things that survive over centuries. In this issue of *American Archaeology* we take a look at some of the recreational aspects of ancient life. (See “The Games People Played,” page 12.) Too often archaeologists focus on just the mundane aspects of Native American culture, such as settlement patterns and food production, to name two of the most popular.

We now know that as ancient people developed more sophisticated

cultures, they included all sorts of games in their lives. Some games seem to be just for fun and were often accompanied by heavy drinking and wagering. Others, like the Mesoamerican ball game, may have had deep ceremonial meaning, where the winners, or maybe the losers, lost their heads. Some were played in small groups, but others may have attracted large audiences where there was a lot at stake. Ballcourts and chunky fields became important public venues in which the society invested considerable wealth.

Sorting all of this out is a difficult task for archaeologists. It requires a combination of meticulous excavations



LIZ LOPEZ

Mark Michel, President

and a vivid imagination to put it all back together. That's why it's a fun exercise for scholars that also provides a much better understanding of ancient cultures. Games like baseball bind our culture together, and there is every reason to believe that it was not that different in the ancient world.

Mark Michel

Change the way you see the world.

Southwest Indian Art

Scholars: Charles King, Joe & Cindy Tanner

Grand Canyon River Adventure

Scholars: Kimberly Spurr, Lyle Balenquah

Chaco's Southern Frontier

Scholars: Dr. Ruth Van Dyke, Dan Simplicio

Pueblo Ruins of Chaco & Mesa Verde Country

Scholars: Select Crow Canyon scholars

Comb Ridge Archaeology

Scholars: Dr. Catherine Cameron, Jonathan Till

Ancient Peoples of Arizona

Scholars: Dr. Christian Downum, Lyle Balenquah

Travel with Crow Canyon in 2014.

INTERNATIONAL

Adriatic Crossroads: N. Italy & Croatia

Scholar: Dr. Don McGuire

Pre-Inca Cultures of Peru

Scholars: Dr. David Keefer, Dr. Daniel Sandweiss

The Ancient Maya: Belize & Guatemala

Scholar: Dr. Christopher Powell

CST 2059347-50



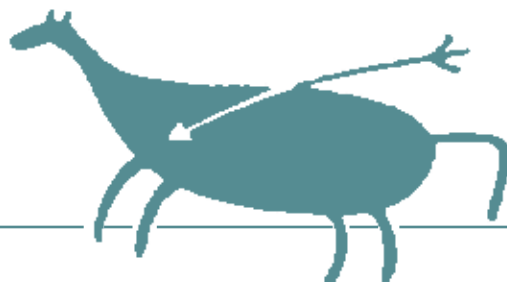
(CROW) (ANYON)
ARCHAEOLOGICAL CENTER

Discover the Past, Share the Adventure

800.422.8975, ext. 136

www.crowcanyon.org/travel

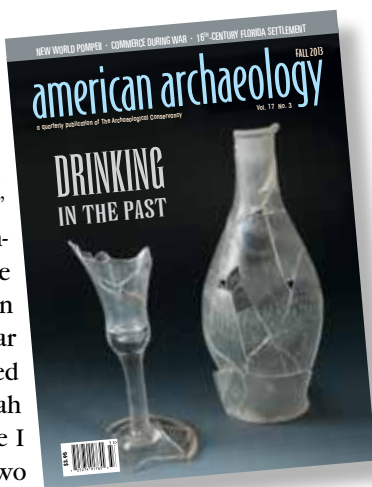
Kate Thompson



Remembering A Formative Experience

The article on preserving Fremont sites in Utah ("A Remarkable Collaboration," Fall, 2013) had special meaning for me. I was part of the UCLA field school there in 1964. We excavated a site near Summit, Utah and were housed at the College of Southern Utah in Cedar City. The experience I gained there, along with two years of subsequent work with the UCLA Archaeological Survey and UCSB archaeologists James Deetz, Lew Binford, and Albert Spaulding, enabled me to become field director of the 1966 Anasazi Origins Project in New Mexico with Cynthia Irwin-Williams.

*Dennis E. Shaw
Professor Emeritus,
Miami-Dade College
Tavares, Florida*



Avoid "Prehistory"

Dear *American Archaeology Magazine*, Please come into the 21st century! Do not use the term "prehistory" any longer! Prehistory refers to the time before the Big Bang. Use appropriate terms such as "ancient times." Follow the new rules in our areas of research. Thank you.

*Richard Kimball
Professor Emeritus
in Anthropology
University of California, Hayward*

Editor's Corner

Michigan's Upper Peninsula is remote, and the sparsely populated Keweenaw Peninsula may be the remotest part of the UP. However, in the mid-19th century, this isolated area became the center of a copper boom, and it was bustling with activity.

It was long known that the Keweenaw was rich in copper, as Native Americans mined it for thousands of years. Then the turning point came in 1842 when the U.S. Government took control of the Keweenaw's mineral rights. Copper was of considerable value, and the government in turn sold leases to anyone and everyone who had dreams of making a fortune mining the metal.

But dreaming of fortune and actually making it are two different things. The people who were involved in the Cliff Mine achieved the latter. The Cliff was a remarkably productive mine that served as a catalyst for the boom. The Cliff proved there was money to be made, and people flocked to the area from other states and countries for a piece of the action. The Cliff Mine and the Keweenaw Peninsula became internationally renowned.

For the last several years archaeologists have been investigating the mine and the adjacent town of Clifton that sprang up as a result of the boom. (See "When Copper Was King," page 32.) They're trying to understand the details of how the Cliff became so successful, and the effects of this success on the people who worked there and on the mining industry in general. Historical accounts provide some of this information, but the archaeologists are uncovering many more details that for years were buried underground.

Michael Bawaya

Statement of Ownership, Management, and Circulation

1. Publication Title: American Archaeology. 2. Publication No.: 1093-8400. 3. Filing Date: September 24, 2013. 4. Issue Frequency: Quarterly. 5. No. of Issues Published Annually: 4. 6. Annual Subscription Price: \$25.00. 7. Complete Mailing Address of Known Office of Publication: The Archaeological Conservancy, 1717 Girard Boulevard NE, Albuquerque, NM 87106. 8. Complete Mailing Address of Headquarters or General Business Office of Publisher: same as No. 7. 9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor: Publisher—Mark Michel, address same as No. 7. Editor—Michael Bawaya, address same as No. 7. Managing Editor—N/A. 10. Owner: The Archaeological Conservancy, address same as No. 7. 11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities: None. 12. Tax Status: Has Not Changed During Preceding 12 Months. 13. Publication Title: American Archaeology. 14. Issue Date for Circulation Data Below: Spring 2013. 15. Extent and Nature of Circulation: Average Number of Copies Each Issue During Preceding 12 Months: (A) Total No. Copies (net press run): 28,913. (B) Legitimate Paid and/or Requested Distribution (By Mail and Outside the Mail): (1) Outside County Paid/Requested Mail Subscriptions Stated on PS Form 3541 (Include direct written request from recipient, telemarketing, and Internet requests from recipient, paid subscriptions including nominal rate subscriptions, employer requests, advertiser's proof copies, and exchange copies.); 18,399; (2) In-County Paid/Requested Mail Subscriptions stated on PS Form 3541 (Include direct written request from recipient, telemarketing, and Internet requests from recipient, paid subscriptions including nominal rate subscriptions, employer requests, advertiser's proof copies, and exchange copies.); 0; (3) Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid or Requested Distribution Outside USPS: 3,724; (4) Requested Copies Distributed by Other Mail Classes Through the USPS (e.g. First-Class Mail): 1,213. (C) Total Paid and/or Requested Circulation (Sum of 15b (1), (2), (3), and (4)): 23,336. (D) Nonrequested Distribution (By Mail and Outside the Mail): (1) Outside County Nonrequested Copies Stated on PS Form 3541 (include Sample copies, Requests over 3 years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists and other sources); 0; (2) In-County Nonrequested Copies Stated on PS Form 3541 (include Sample copies, Requests over 3 years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists and other sources); 0; (3) Nonrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mail, Nonrequestor Copies mailed in excess of 10% Limit mailed at Standard Mail or Package Services Rates); 50; (4) Nonrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showrooms, and Other Sources); 1,315. (E) Total Nonrequested Distribution (Sum of 15d (1), (2), (3) and (4)): 1,365. (F) Total Distribution (Sum of 15c and E): 24,701. (G) Copies not Distributed: 4,212. (H) Total (Sum of 15f and G): 28,913. (I) Percent Paid and/or Requested Circulation (15c divided by F times 100): 94.47%. 15. Extent and Nature of Circulation: Number Copies of Single Issue Published Nearest to Filing Date: (A) Total No. Copies (net press run): 29,000. (B) Legitimate Paid and/or Requested Distribution (By Mail and Outside the Mail): (1) Outside County Paid/Requested Mail Subscriptions Stated on PS Form 3541 (Include direct written request from recipient, telemarketing, and Internet requests from recipient, paid subscriptions including nominal rate subscriptions, employer requests, advertiser's proof copies, and exchange copies.); 18,530; (2) In-County Paid/Requested Mail Subscriptions stated on PS Form 3541 (Include direct written request from recipient, telemarketing, and Internet requests from recipient, paid subscriptions including nominal rate subscriptions, employer requests, advertiser's proof copies, and exchange copies.); 0; (3) Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid or Requested Distribution Outside USPS: 2,521; (4) Requested Copies Distributed by Other Mail Classes Through the USPS (e.g. First-Class Mail): 921. (C) Total Paid and/or Requested Circulation (Sum of 15b (1), (2), (3), and (4)): 21,972. (D) Nonrequested Distribution (By Mail and Outside the Mail): (1) Outside County Nonrequested Copies Stated on PS Form 3541 (include Sample copies, Requests over 3 years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists and other sources); 0; (2) In-County Nonrequested Copies Stated on PS Form 3541 (include Sample copies, Requests over 3 years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists and other sources); 0; (3) Nonrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mail, Nonrequestor Copies mailed in excess of 10% Limit mailed at Standard Mail or Package Services Rates); 45; (4) Nonrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showrooms, and Other Sources): 1,592. (E) Total Nonrequested Distribution (Sum of 15d (1), (2), (3) and (4)): 1,637. (F) Total Distribution (Sum of 15c and E): 23,609. (G) Copies not Distributed: 5,391. (H) Total (Sum of 15f and G): 29,000. (I) Percent Paid and/or Requested Circulation (15c divided by F x 100): 93.07%. 16. Total circulation includes electronic copies: N/A. 17. Publication of Statement of Ownership for a Requester Publication is required and will be printed in the Winter 2013 issue of this publication. 18. I certify that all information furnished on this form is true and complete. Michael Bawaya, Editor.

WELCOME TO THE ARCHAEOLOGICAL CONSERVANCY!

The Archaeological Conservancy is the only national nonprofit organization that identifies, acquires, and preserves the most significant archaeological sites in the United States. Since its beginning in 1980, the Conservancy has preserved more than 465 sites across the nation, ranging in age from the earliest habitation sites in North America to a 19th-century frontier army post. We are building a national system of archaeological preserves to ensure the survival of our irreplaceable cultural heritage.

Why Save Archaeological Sites?

The ancient people of North America left virtually no written records of their cultures. Clues that might someday solve the mysteries of prehistoric America are still missing, and when a ruin is destroyed by looters, or leveled for a shopping center, precious information is lost. By permanently preserving endangered ruins, we make sure they will be here for future generations to study and enjoy.

How We Raise Funds:

Funds for the Conservancy come from membership dues, individual contributions, corporations, and foundations. Gifts and bequests of money, land, and securities are fully tax deductible under section 501(c)(3) of the Internal Revenue Code. Planned giving provides donors with substantial tax deductions and a variety of beneficiary possibilities. For more information, call Mark Michel at (505) 266-1540.

The Role of the Magazine:

American Archaeology is the only popular magazine devoted to presenting the rich diversity of archaeology in the Americas. The purpose of the magazine is to help readers appreciate and understand the archaeological wonders available to them, and to raise their awareness of the destruction of our cultural heritage. By sharing new discoveries, research, and activities in an enjoyable and informative way, we hope we can make learning about ancient America as exciting as it is essential.

How to Say Hello: By mail:

The Archaeological Conservancy,
1717 Girard Boulevard NE,
Albuquerque, NM 87106;
by phone: (505) 266-1540;
by e-mail: tacmag@nm.net;
or visit our Web site:
www.americanarchaeology.org
You can also follow us on Facebook.



The Archaeological Conservancy®

1717 Girard Boulevard NE
Albuquerque, NM 87106 • (505) 266-1540
www.americanarchaeology.org

Board of Directors

Gordon Wilson, *New Mexico* CHAIRMAN
Cecil F. Antone, *Arizona* • Carol Condie, *New Mexico*
Janet Creighton, *Washington* • Jerry Golden, *Colorado*
W. James Judge, *Colorado* • Jay T. Last, *California* • Bill Lipe, *Idaho*
Leslie Masson, *Massachusetts* • Dorinda Oliver, *New York*
Rosamond Stanton, *Montana*

Conservancy Staff

Mark Michel, President • Tione Joseph, Business Manager
Lorna Wolf, Membership Director • Sarah Shuler, Special Projects Director
Laurie Dudasik, Web Developer • Melissa Montoya, Administrative Assistant
Jessica Alden, Administrative Assistant • Emily Collom, Administrative Assistant

Regional Offices and Directors

Jim Walker, Vice President, *Southwestern Region* (505) 266-1540
1717 Girard Boulevard NE • Albuquerque, New Mexico 87106
Tamara Stewart, Projects Coordinator • Chaz Evans, Field Representative
Paul Gardner, Vice President, *Midwestern Region* (614) 267-1100
3620 N. High St. #307 • Columbus, Ohio 43214
Josh McConaughy, Field Representative
Jessica Crawford, Regional Director, *Southeastern Region* (662) 326-6465
315 Locust St. • P.O. Box 270 • Marks, Mississippi 38646
George Lowry, Field Representative
Cory Wilkins, Regional Director, *Western Region* (530) 592-9797
620 3rd St. #300 • Lincoln, California 95648
Deanna Commons, Field Representative
Andy Stout, Regional Director, *Eastern Region* (301) 682-6359
8 E. 2nd. St. #101 • Frederick, Maryland 21701
Kelley Berliner, Field Representative

american archaeology®

PUBLISHER: Mark Michel
EDITOR: Michael Bawaya (505) 266-9668, tacmag@nm.net
ASSISTANT EDITOR: Tamara Stewart
ART DIRECTOR: Vicki Marie Singer, vicki.marie@comcast.net

Editorial Advisory Board

Darlene Applegate, *Western Kentucky University* • Nicholas Bellantoni, *Connecticut State Archaeologist*
Jennifer Bengtson, *Southeast Missouri University* • Cynthia Bettison, *Western New Mexico University*
Jonathan Burns, *AXIS Research, Inc.* • Michael Clem, *Cultural Resource Analysts*
Michael Collins, *Texas State University* • John Cottier, *Auburn University*
John Doershuk, *Iowa State Archaeologist* • Glen Doran, *Florida State University*
Stacy Hathorn, *Alabama State Archaeologist* • Kathleen Hull, *University of California-Merced*
Don Linebaugh, *University of Maryland* • Maxine McBrinn, *Metropolitan State College of Denver*
Michael Michlovic, *Minnesota State University-Moorhead* • Sue Miller, *Idaho State University*
Laura Murphy, *Muckleshoot Tribal Archaeologist* • Steve Simms, *Utah State University*
Douglas Wilson, *Ft. Vancouver NHS*

National Advertising Office

Marcia Ulibarri, Advertising Representative
1717 Girard Boulevard NE, Albuquerque, New Mexico 87106;
(505) 344-6018, mulibarri@earthlink.net

American Archaeology (issn 1093-8400) is published quarterly by The Archaeological Conservancy, 1717 Girard Boulevard NE, Albuquerque, NM 87106. Title registered U.S. Pat. and TM Office, © 2013 by TAC. Printed in the United States. Periodicals postage paid Albuquerque, NM, and additional mailing offices. Single copies are \$3.95. A one-year membership to the Conservancy is \$25 and includes receipt of *American Archaeology*. Of the member's dues, \$6 is designated for a one-year magazine subscription. READERS: For new memberships, renewals, or change of address, write to The Archaeological Conservancy, 1717 Girard Boulevard NE, Albuquerque, NM 87106, or call (505) 266-1540. For changes of address, include old and new addresses. Articles are published for educational purposes and do not necessarily reflect the views of the Conservancy, its editorial board, or *American Archaeology*. Article proposals and artwork should be addressed to the editor. No responsibility assumed for unsolicited material. All articles receive expert review. POSTMASTER: Send address changes to *American Archaeology*, The Archaeological Conservancy, 1717 Girard Boulevard NE, Albuquerque, NM 87106; (505) 266-1540. All rights reserved.

American Archaeology does not accept advertising from dealers in archaeological artifacts or antiquities.

Events

MUSEUM EXHIBITS • TOURS • FESTIVALS • MEETINGS • EDUCATION • CONFERENCES



❖ NEW EXHIBITS

ASU Museum of Anthropology

Arizona State University, Tempe, Ariz.—The new exhibit “City Life: Experiencing the World of Teotihuacán” focuses on the daily life of ordinary people at Teotihuacán, and the historic, cultural, and social dynamics that shaped North America’s first urban civilization which long pre-dated the Aztec culture. The exhibit is enhanced by the loan of numerous original archaeological artifacts borrowed from major museums across the country. (480) 965-6224, <http://asuma.asu.edu> (Through May 15, 2014)



Middle American Research Institute

Tulane University, New Orleans, La.—“Faces of the Maya: Profiles in Continuity and Resistance,” the inaugural exhibit of the recently renovated Middle American Research Institute (MARI), celebrates the development of the Maya civilization from its beginnings in 1000 B.C. to the present. Displaying objects from MARI’s collection that have never before been on public display, the exhibit attempts to dispel erroneous notions of the Maya civilization that have recently gained currency due to the 2012 end of the world myth. This is MARI’s first new exhibit in over 50 years. (504) 865-5110, <http://mari.tulane.edu/exhibits.html> (Ongoing)

Haak’u Museum

Acoma Sky City, N.M.—Experience the Pueblo Indian living tradition through a

visual feast of Acoma pottery brought together for the first time in the exhibit “Haakumé Dyuuni: The Painted Pottery of Acoma Pueblo.” The exhibit features fine examples of historic ceramics, as well as unique dyuuni (large, globular, highly burnished pots with small openings, short necks, and shallow shoulders) created during the last century. Located within the 40,000-square-foot Sky City Cultural Center, the Haak’u Museum showcases the culture, history, traditional customs, and artwork of the Acoma Pueblo Indians. (505) 552-7861, <http://museum.acomaskycity.org> (Through August 31, 2014)

Dumbarton Oaks

Washington, D.C.—Dumbarton Oaks celebrates the 50th anniversary of the Robert Woods Bliss Collection of Pre-Columbian Art with select works on loan from U.S. and international museums, brought together in the exhibit “50 Years of Pre-Columbian Art.” Between 1912 and his death in 1962, founding museum donor Robert Bliss acquired works of art from some 30 ancient American cultures, many of them theretofore unstudied. A gilded Mixtec atlatl, a painted Maya figurine, ancient glyphs, and delicate Andean mosaics showcase the heights of ancient American artistic achievement and highlight recent advances in object research.

Objects loaned from Harvard University’s Peabody Museum recall a tradition of institutional ties originally cultivated by Bliss himself, who consulted regularly with the museum’s curators and conservators. After five decades, his Pre-Columbian collection continues to incite scholarly inquiry, reveal ancient craftsmanship, and delight the eye of the viewer. (202) 339-6960, www.doaks.org/museum (Through January 5, 2014)



Autry National Center

Mount Washington Campus, Los Angeles, Calif.—Featuring more than 100 rare ceramic pieces from the Autry’s Southwest Museum of the American Indian Collection, “Four Centuries of Pueblo Pottery” traces the dramatic changes that transformed the Pueblo pottery tradition in the era following 16th-century Spanish colonization to the present. Organized by Pueblo language groups, the show includes pieces by such well-known potters as Maria and Julian Martinez (San Ildefonso Pueblo), Nampeyo (Hopi) and her descendants, Juan Cruz Roybal (San Ildefonso Pueblo) and Tonita Peña Roybal (San Ildefonso Pueblo), Gladys Paquin (Laguna Pueblo), and many others. (323) 667-2000, www.theautry.org/exhibitions (Ongoing)





Pueblo Grande Museum Indian Market

December 14-15, Phoenix, Ariz.
This annual event features over 200 top Native American artists selling items such as paintings, sculptures, jewelry, and baskets. There will be music and dance performances scheduled throughout the event, as well as artist demonstrations and traditional native foods.
(602) 495-0901,
www.pueblogrande.com



PUEBLO GRANDE MUSEUM

❖ CONFERENCES, LECTURES & FESTIVALS

Salmon Ruins Museum Holiday Arts and Crafts Fair

December 7, McGee Park, Bloomfield, N.M.
This year is the 25th annual Holiday Fair, the main fundraiser for educational outreach and programs at Salmon Ruins Museum. The remodeled facilities at McGee Park will provide plenty of space for the fair, making it one of the largest in the region.
(505) 632-2013, www.salmonruins.com

Archaeology Day at the Burke Museum

January 4, 2014, Burke Museum of Natural History and Culture, Seattle, Wash.
Discover the exciting world of archaeology through a variety of activities and games. See unusual artifacts found in the Puget Sound region, try your hand at the ancient hunting skill of atlatl throwing, or join in hands-on archaeology-themed crafts.
(206) 543-7907,
www.burkemuseum.org/events

Conference on Historical and Underwater Archaeology

January 8-12, 2014, Québec Convention Center, Québec City, Canada. The Society for Historical Archaeology's annual conference will explore the theme "Questions that Count: A Critical Evaluation of Historical Archaeology in the 21st Century" through workshops, presentations, sessions, roundtable luncheons, and local tours. Located in the birthplace of French America, the Old Québec UNESCO World Heritage District, the conference offers myriad opportunities to visit historic sites and world-class museums, to experience fine dining,

and to appreciate Old World charm in a New World setting. registration.sha2014@conferium.com, www.sha2014.com

Southwest Symposium

January 10-11, 2014, Philip J. Cohen Theatre, University of Las Vegas, Nev.
"Social Networks in the American Southwest." How ideas spread across the landscape, how individuals integrated themselves with others, and how they interacted with people within and outside of their social groups in the distant past will be explored in three of the symposium's four sessions. A fourth session focuses on new methodological approaches being used in Southwestern archaeology. The meeting includes a Friday evening reception at the Barrick Museum, a poster session, and Sunday field trips.
(702) 895-3590, <http://2hzaurtpu.site.aplus.net/swsymposium.asp>

Heard Museum World

Championship Hoop Dance Contest
February 8-9, Heard Museum, Phoenix, Ariz. Top hoop dancers from across North America will showcase their skill as they compete for the prestigious world champion title. The tradition of hoop dancing has an extensive history among native people, for whom the hoop is symbolic, representing the Circle of Life and the continuous cycle of summer and winter, day and night, male and female. During performances, dancers will incorporate speed and agility as they manipulate their bodies through one to more than 50 hoops. (602) 252-8848, www.heard.org/hoop



ARIZONA STATE MUSEUM

Southwest Indian Art Fair

February 22-23, Arizona State Museum, University of Arizona, Tucson, Ariz. Meet more than 200 native artists, many of them award-winning, and talk with them about their work and the cultural significance that informs, inspires, and imbues it. Top-quality, handmade art includes pottery, Hopi katsina dolls, paintings, jewelry, baskets, rugs, blankets, and other items. Artist demonstrations, native food, music, and dance performances round out the two-day celebration. (520) 621-6302, www.statemuseum.arizona.edu

A New View of Paleo-Indian Migration

IN THE
News



Archaeologists have assumed early Americans migrated south from Beringia. New evidence from northwest Alaska suggests they could have also migrated south to north.

A team of researchers has recently discovered the first fluted projectile points in a datable context on the Seward Peninsula of northwest Alaska. Led by Ted Goebel of Texas A&M, the group discovered the points near Serpentine Hot Springs, now part of the Bering Land Bridge National Preserve. The find suggests that American fluting technology made its way north, and that early migration patterns may be more complex than previously believed.

In their paper published in the online version of the *Journal of Archaeological Science*, the researchers note that fluted points have been found in Alaska, but not in a datable context. The points discovered at Serpentine Hot Springs, however, were in a geologic deposit that was dated to approximately 12,000 years ago. Until now, the general consensus among scholars was that fluted point makers in Alaska represented either a pre-Clovis population that carried the technology southward into the Americas from Alaska or a post-Clovis population that brought the technology with them from temperate North America as they travelled to Alaska at the end of the Ice Age.

The team's recent work supports the latter theory. Because the Clovis culture dates to some 13,000 years ago, the Serpentine points are too young to have been left by pre-Clovis humans coming to the Americas from Asia.

This new information suggests a different view of the peopling of



An archaeologist excavates a test pit at the site.

Beringia as well as how technology was transmitted during the late Pleistocene period. "The traditional theory of people simply crossing the land bridge, entering the America, moving south, and becoming Clovis have changed," says Smith. While researchers are still unsure of how this unique American technology reached Beringia, they speculate that it may have occurred through trade or migration. "Plains bison are known genetically to have dispersed northward from western Canada at about this time—perhaps human hunters did, too."

"For decades, hypotheses regarding the peopling of the Americas have considered the Bering Land Bridge to be the route late Pleistocene peoples

traversed when moving from Northeast Asia to Alaska; however, only recently have archaeological sites been found that actually confirm human presence on the land bridge during that time, and Serpentine is among the oldest and westernmost of these," says Smith.

So far, no evidence of the fluted point technology has surfaced in Asia. Goebel and his team suggest that by this time, the Bering Land Bridge was flooding and becoming the Bering Strait. "Fluting technology simply arrived too late in eastern Beringia to be transmitted terrestrially into western Beringia," they write. "Serpentine may represent the northwestern-most outpost of late Paleo-Indian in the Americas." —*Melissa Montoya*



New Research Suggests Old Massacre

Revised dating indicates 2,000-year-old mass killing.

Revised radiocarbon dating of human remains at a Utah cave site has revealed a single event mass killing more than 2,000 years ago. Archaeologist Phil Geib of the University of Nebraska redated collagen samples for the site known as Cave 7 in southeast Utah and, with Utah archaeologist Winston Hurst, published the findings in a paper in *the Journal of Archaeological Science*.

In 1893 amateur archaeologist Richard Wetherill excavated the site. Wetherill's interpretation of the site—that a massacre had taken place—was based on the recovery of over 90 individuals, many of who exhibited signs of violence prior to their demise such as embedded dart point tips, broken limbs, and fractured skulls. His massacre account was accepted and given credence in the 1980s after a detailed examination of the remains by the late Christy Turner, a noted physical anthropologist.

But direct dating of virtually all the human remains from the site by University of Utah archaeologist Joan Coltrain led her to conclude that the violence took place over several centuries. Her work was published in an earlier issue of *the Journal of Archaeological Science*.

Geib redated Coltrain's samples and found some of her dates were inaccurate. He and Hurst also contend that Coltrain overemphasized the radiocarbon dates and largely ignored Wetherill's contextual evidence, such as body placement and groupings.

Geib and Hurst concluded that



PHIL GEIB

Richard Wetherill first excavated Cave 7 in 1893.

He concluded a mass killing had taken place there.

roughly 58 individuals, most of whom were adult males, were the victims of a single mass killing. "One interment event accounts for a majority of the skeletons and qualifies as a massacre assemblage," they write, "It involved mostly adult males, many of which exhibit perimortem damage, along with adult females and children."

Their dating placed the killing of the large group of males between A.D. 20 and 80. While they point out that not all remains found in Cave 7 are from the same time period, their research indicates that some kind of internal warfare occurred in one instance. They write, "The number of

individuals killed, especially the tally of males, implies an attacking force of considerable size and thus ability to mobilize a coalition of unprecedented scale for this early time period in the Southwest."

Evidence of this magnitude of violence among people of this period, which archaeologists refer to as Basketmaker II, is unusual because their settlements are small and scattered. Geib attributes the violence to infighting, "I think that the evidence from Cave 7 is most consistent with what ethnographers would classify as internal warfare—fighting within a cultural group." —*Melissa Montoya*



Rare Alpine Prehistoric Villages Discovered

Researcher develops predictive model that helps find sites.

Researchers have discovered a new group of rare prehistoric high altitude villages in the Wind River Mountain Range of Wyoming. Archaeologist Richard Adams of Colorado State University and his team previously discovered six village sites at Wind River and also at nearby High Rise village. Thanks to a predictive model developed by Matthew Stirn, a graduate student at the University of Sheffield in England, 13 additional villages have been added to the list, bringing the total of documented villages in the Wind River Range to 19. These high elevation villages are extremely unusual in North America, and researchers are trying to understand what prompted prehistoric people to migrate to these high places and what took place during their stays there. The evidence suggests that some of them are as much as 2,500 years old.

Extreme conditions in the Wind River Range make investigating these sites a difficult task. Alpine villages can be difficult to locate, as they're often built on steep slopes at an elevation above 10,000 feet. After the first



A researcher records an Archaic site in the northern Wind River Range.

six villages in the Wind River Range were recorded, Stirn and his colleagues began to see a pattern in the way the villages were situated. "While each village was located on a different mountain in a different drainage, all of them were located in nearly identical micro-environments," Stirn says, "It was like we had found the same exact site six times over."

He discovered that each of the initial six sites were similar in their elevation, slope, sun exposure, and close proximity to whitebark pine forests. Stirn then looked for other such locations in the mountain range containing these characteristics. Using this predictive model, the researchers were able to find 13 new villages.

The discovery of these villages located around whitebark pine forests leads researchers to believe the

occupants processed and consumed the fatty pine nuts in addition to hunting big horn sheep, which were plentiful in the high altitudes. While seasonal hunting and nut gathering may have been the initial pull for migrating here, Stirn believes that later generations could have used the high villages to escape invaders or seek more abundant food sources, but alpine village use in the summer became a way of life. "It is dangerous to transfix the reasons a group first built a site onto future generations that resided there," says Stirn, "the reasons we choose to live or stay in our home towns is very much different than our parents." Stirn notes that while food may have initially been a factor in establishing the villages, "the vast majority of their use was much more complex and culturally intertwined." —Melissa Montoya



This grinding stone was found at one of the villages. It was most likely used to grind whitebark pine nuts and was probably carried into the mountains from far away.

MATTHEW STIRN



Five Cannon Raised at Queen Anne's Revenge Shipwreck

Researchers have recovered thousands of artifacts from the site of Blackbeard's flagship.

Five cannon were raised in a single day during the year's last week of fieldwork at the *Queen Anne's Revenge* shipwreck site, the most recovered at one time from the site. Three of the cast iron cannon weighed about 2,000 pounds each and fired six-pound cannon balls. While 30 cannon have been identified at the site and 22 recovered so far, the ship is said to have carried as many as 40 when it ran aground.

Archaeologists with the Underwater Archaeology Branch of the North Carolina Department of Cultural Resources have been excavating the shipwreck site at Beaufort Inlet on North Carolina's Atlantic coast, with the U.S. Coast Guard, who offered to help bring up some of the heavier items.

"We had a really great, productive field season this year," says John "Billy Ray" Morris, the state underwater archaeologist and director for the *Queen Anne's Revenge* project. "It was really neat to work with the Coast Guard, who did the heavy lifting for us with their cutter *Smilax*, their oldest ship, known as the 'Queen of the Fleet.'"

The site is believed to contain the remains of the English pirate Blackbeard's flagship, which he ran aground in 1718 at Beaufort Inlet. The site was discovered in 1996, and archaeological and historical evidence strongly support the belief that the shipwreck is the *Queen Anne's Revenge*. Earlier this fall, researchers recovered two smaller cannon and a seven-foot timber from



The researchers pose with four of the five cannon they raised.

the ship. Two large concretions, each the size of a twin bed, containing barrel hoops, cannonballs, and other artifacts, were also raised.

Some 280,000 artifacts have been recovered from the shipwreck site to date, including anchors, cannonballs, gold dust, animal bones, lead shot, a bronze bell dated to 1705, medical and scientific instruments, and pottery fragments. The artifacts are transported to the *Queen Anne's Revenge* conservation laboratory at East Carolina University in Greenville, where they are cleaned and readied for conservation, a process that takes

five to seven years per cannon.

An extensive exhibit is on display at the North Carolina Maritime Museum in Beaufort, the official repository for artifacts recovered from the site. Morris expects the excavation to be complete by the end of next year.

"This is one of the rare instances where everything will be recovered," Morris says. The reason for this is that "given the significance of the shipwreck site and its location in a high energy environment that would likely destroy what's left, all of the remains will be collected, conserved, and placed on exhibit." —*Tamara Stewart*



Did Ancient Fire Signify Cahokia's Decline?

Archaeologists think the conflagration could have marked the beginning of the end of the great city.

Extensive excavations by the Illinois State Archaeological Survey (ISAS) around the winding highways of modern day St. Louis for the Illinois Department of Transportation have uncovered signs of an ancient fire that researchers believe marked the beginning of the decline of Greater Cahokia. In a paper published in the *Journal of Field Archaeology*, archaeologists Tim Pauketat and Thomas Emerson of the University of Illinois at Urbana-Champaign and their colleagues suggest the conflagration was intentionally set, and that it may have been directly related to the demise of Greater Cahokia.

Cahokia flourished from approximately A.D. 1050-1200. The fire, which according to radiocarbon dates took place about A.D. 1170, occurred in what is now East St. Louis. Back then it was a sort of Cahokia suburb, a place of religious and administrative activities that was primarily inhabited by the elite class.

ISAS has investigated East St. Louis since the 1990s, but it was within the last five years that the archaeologists discovered signs of widespread fire. Pauketat believes the fire was intentionally set because of the abundance of unusual physical evidence found at the site. For example, not all the buildings were burned, and the items found within the burned structures were of a ceremonial nature. "Each burned building had token amounts of things from temples including fancy pots and things used for communal agricultural rituals such as tools, daggers, and bowls full of

american archaeology



This figurine was found on the floor of a burned house.

shelled corn," says Pauketat. He notes that there were not large amounts of corn or granaries burned, which would possibly indicate an attack.

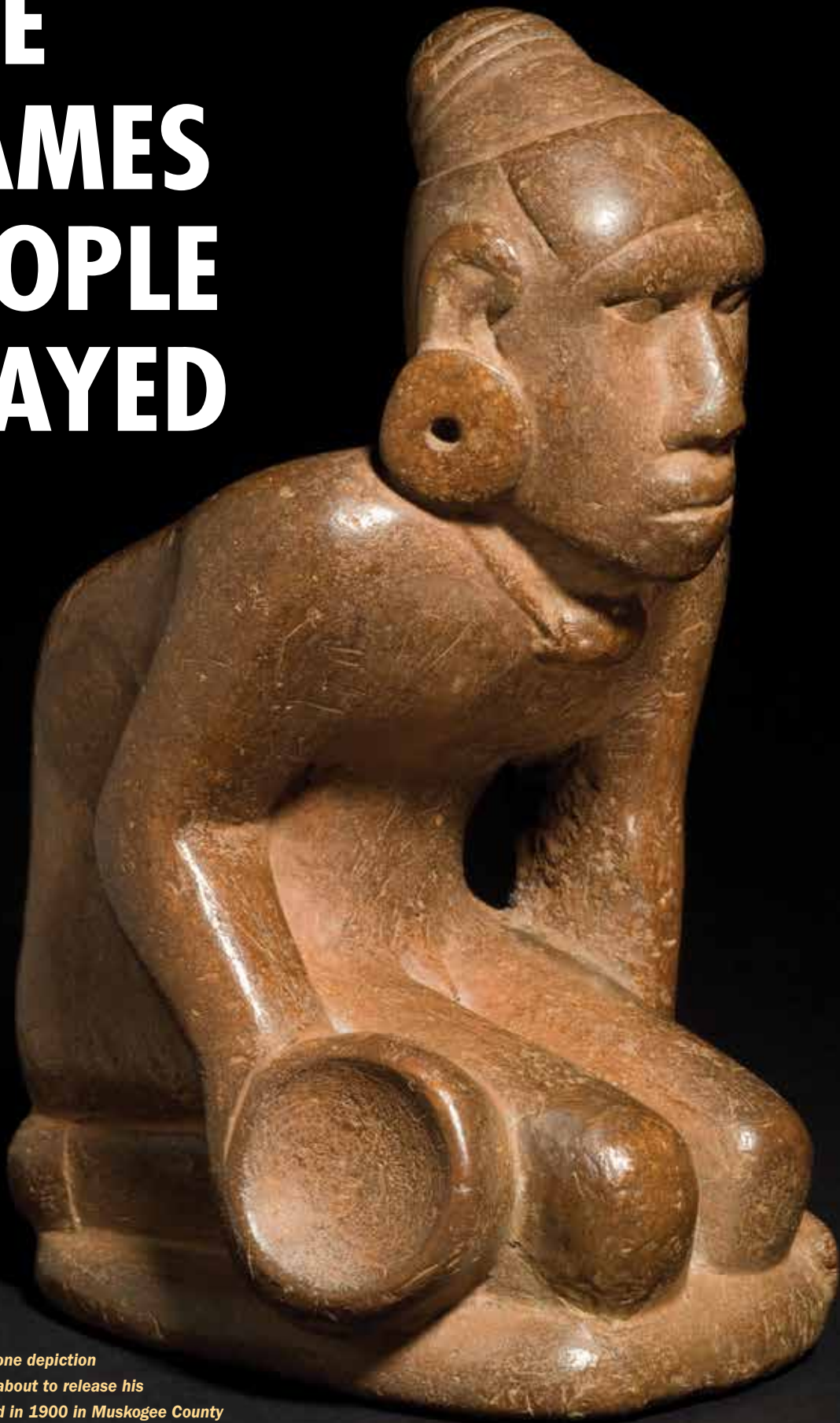
Aside from the physical evidence left at the site, the archaeologists suggest it is the circumstantial evidence that may prove the fire to be an important event marking the beginning of the end of greater Cahokia. "The fact that most structures were never rebuilt coincides with the disappearance of certain kinds of architecture," Pauketat says. "People go back to put up a few religious buildings, but never rebuild the whole complex." The occupation of East St. Louis also changed after the

fire. People returned to clean and maintain the ceremonial complexes, but they no longer resided there.

While researchers are unsure of the motive for setting an important civic and religious city ablaze, the coincidence of the fire with the disappearance of ritual sweat lodges and rural temples and the dramatic exodus of the residents suggests these potentially violent events are related and could signify a political and religious transformation that, as the archaeologists write in their paper, "marked a turning point in the history of this once great elite-residential, civic-ceremonial complex."

—Melissa Montoya

THE GAMES PEOPLE PLAYED



This nine-inch-tall stone depiction of a chunky player about to release his stone was discovered in 1900 in Muskogee County in eastern Oklahoma. It was likely carved in Cahokia.

JOHN BIGELOW TAYLOR AND DIANNE DUBLE

RESEARCHERS HAVE FOUND THAT ANCIENT PEOPLE DIDN'T BELIEVE IN ALL WORK AND NO PLAY.

By Alexandra Witze

BARBARA VOORHIES HAS EXCAVATED AT TLACUACHERO, a shell mound in coastal Chiapas, Mexico, four times over the last four decades. Yet only after her last trip, in 2009, did she finally unravel one of the site's biggest mysteries: the purpose of a feature consisting of 24 holes punched into a floor arranged in the shape of an open circle. An imprint of a large stone is in the middle of the circle.

The holes of this feature were much smaller and shallower than postholes marking the floor nearby. They formed a striking C shape approximately four and one-half feet across—about the right size, she noted, for someone to sit beside the feature and reach all the holes without having to get up. But she didn't know what this circular feature might mean, until a colleague referred her to *Games of the North*



H.B. THAKAR

Barbara Voorhies works at Tlacuachero. The small holes on the partially exposed floor are part of oval arrangements that may have been used to play an early type of board game.

American Indians, Stewart Culin's comprehensive ethnographic account, first published in 1907, of modern games played by 130 tribes across the continent.

She learned that Walapai women in Arizona played a board game based on an open circle of carefully placed stones. The women would grasp three small wooden billets, flat on one side and rounded on the other, and throw them as dice onto a central stone. How the billets fell determined how far the player could move her game token along the circle of stones. The winner was the first person to reach a large stone placed within the circle opposite the opening.

The whole setup looked almost identical to the circular feature from the Chiapas site. "When I discovered this book on games, I really had a eureka moment—I became quite convinced that that is the explanation," Voorhies says. The ancient people of Tlacuachero, she proposed, must have been playing a dice-like game similar to the modern Walapai. The shell mound's buried floor dates back more than 4,000

years, so if Voorhies is right that Tlacuachero's holes represent a game board, it is among the oldest known evidence of gaming in the Americas.

For millennia, people have played all sorts of games in North America, and, like games played anywhere else, they can be divided into two main categories: games of dexterity, like archery contests or ball games, and games of chance, like those that rely on dice. They may have served as pure entertainment, accompanied in some instances by heavy drinking and raucous gambling. But in other cases they could have also had a deeper purpose, such as providing an experience that bonded their participants.

Archaeological, historical, and ethnographic research suggests that many early Americans found ways to pass the time competitively. "What I've found to my astonishment is that there are a lot of game boards reported in the archaeological literature," Voorhies says. "It isn't an unusual thing at all."

EXCAVATIONS AT TLACUACHERO HAVE REVEALED

portions of two floors—one dated to around 4,700 years ago and the other to about 4,400 years ago—that contain at least 10 of these features. Both floors are deeply buried in the piles of clamshells and other seafood debris left by hundreds of years of food preparation. Such discoveries suggest that Tlacuachero was likely a special-purpose work site for gathering food from large coastal lagoons. "People came from their residential locations farther inland into the swamp to get fish, clams, and probably shrimp," says Voorhies.

But fishing wasn't a fulltime job, even at a fish camp. Fishing is best done in the early morning and in the evening, and ethnographic studies indicate that clams are harvested from estuaries only for a couple of weeks each month when tides are low. The same was likely true some 4,000 years ago. "All of this suggests to me that these fishermen and fisherwomen had a lot of down time when they were hanging out," she says. "It's sort of delightful to think of them as playing dice games while they were waiting for their fish and clams to dry."

There are no remains of small objects that might have served as dice, but then materials such as wood would have almost certainly disintegrated over time. Voorhies and her colleagues have also studied five nearby shell mounds, and none of them show any signs of a game board. Even so, she is convinced that the Tlacuachero holes are the vestiges of a game of chance similar to that played millennia later by Walapai women. "I've built this argument strictly on ethnographic analogy," she says, "which is about all you can do with something like this."

Dice games were wildly popular, as Culin found in his exhaustive survey. The project began in 1891, when Culin started working on an exhibit of world games for an 1893 World's Fair in Chicago. Eventually it turned into an exhaustive literature search, a survey of all possible gaming material in American and European museums, and multi-year trips to

ELIZABETH GRAHAM



A section of what was likely a patolli board was found at a site in Belize.

Native American reservations to observe gaming firsthand. Culin, whose affiliations included the University of Pennsylvania and the Brooklyn Museum, also went on to publish extensively on Asian and Asian-American games.

Games played a major role in Native American creation myths, Culin noted. Often the hero of the story is a man who defeats his enemy through skill or smarts at a game such as dice. In fact, dice games appeared in some form in every tribe Culin studied. They can take various forms, but all rely on tossing some kind of object that yields a randomly generated result (the dice were nearly always two-sided) and a scoreboard or other method for keeping track of who is winning.

Dice can be made of almost any material, from animal teeth or bone, to wooden canes or reeds, to food objects such as walnut shells and corn grains. Some players rolled the dice in their hands, while others used a basket. The scoring varied and could include not only what side a die landed on, but also how it fell in relation to the other dice or other objects on the ground. To keep a running count during the game, players might pass around a stick that served as a tally, or on which they notched the score, or

someone might be in charge of a counting board or abacus in which stones or other markers served as counters.

Such games appear to have been played not only in larger settlements but also in smaller, transitory camps. In the Dragoon mountains of southeastern Arizona, archaeologist Deni Seymour has uncovered a probable game board at the Three Sisters site, a small ancestral Apache encampment from the 14th or 15th century. The remains of three dwellings, known as wickiups, suggest the site was likely occupied by three related families. The game board is a small rock circle, about three feet across, with a cobble in the center.

Like the Chiapas oval, the Three Sisters' circle resembles stick dice games played by Native Americans in historic times. Seymour envisions the Apaches taking a break from their stressful lives to toss some dice and gamble during their down time. "In the case of the Apache, they would have been pursued by their enemies on a regular basis, and the pressure must have been incredibly intense," she says. "To be secluded in the canyon among the trees, to play a game and be able to laugh out loud without having to worry about being discovered—that would have reinforced their camaraderie, that feeling of closeness and family."



MESA SCHUMACHER

A drawing from the Codex Magliabechiano depicting an Aztec game of patolli overseen by the god Macuilxochitl.

Because ethnographic accounts usually describe women playing dice games, Seymour thinks that could have been the case at Three Sisters. “That’s the significance of this gaming feature,” she says. “It actually tells us something about gender.” As a family encampment, Three Sisters would have

likely had men, women, and children living together. The men may have passed their time with more active games of sport; ethnographic accounts of Apache, for instance, describe boys engaging in archery and running competitions. But the women likely sat down near this rock circle, after gathering water and firewood, to chat and play.

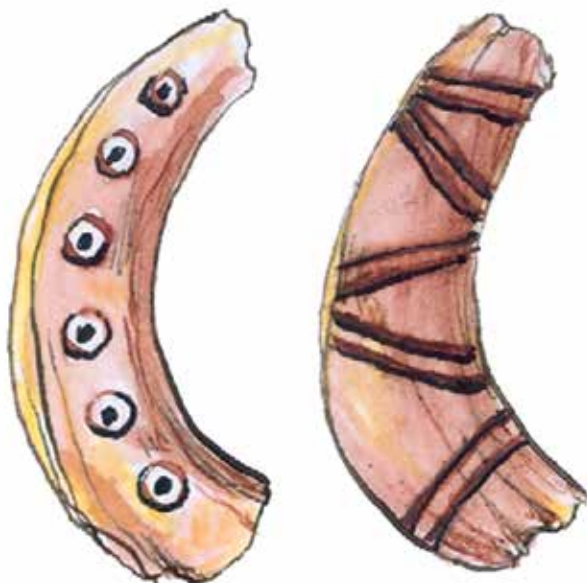
THE GENDER DIVIDE FOR NORTH AMERICAN DICE

games is striking. “Women played with women, and men played with men, but almost never with each other,” says Warren R. DeBoer, professor emeritus at Queens College of the City University of New York in Flushing.

DeBoer argues that archaeologists are missing important information by not paying more attention to the role that women and gaming played in early North America. “For instance,” he says, “the shell beads and ornaments that are so pervasive in the North American archaeological record may in part have been shunted across the landscape through women’s gambling rather than trade as normally imagined by archaeologists.”

After all, gambling almost certainly happened wherever games were held. In the 17th century, the Massachusetts people gambled not only money, but also houses, crops, and reportedly even themselves, on a game involving plum stone dice. More recently, historical accounts show how members of the Blackfoot tribe would wager horses, robes, weapons, and other valuables on the outcomes of dice games.

With so much at stake, it’s not surprising that gambling quickly led to cheating. “Cheating was rampant, it was expected, it was even admired as long as you weren’t caught,” says DeBoer, citing historical accounts. In the Pacific Northwest, one variant of a beaver-tooth dice game involved three single dice and a fourth tied with a string of sinew. Particularly talented players were supposedly able to hold onto the string for a fleeting moment and thereby surreptitiously influence the outcome of the roll, a technique that was a kind of skilled cheating. And among the Western Apache, at least one report describes a player being killed during a fight over accusations of cheating.



Beaver-tooth dice such as these were used by the Bella Coola people in British Columbia, Canada.



The Papago in Arizona played patolli with dice like these.



The Onondaga tossed plumstone dice in a wooden bowl.

Gaming was so widespread that it was even possible to make a living at it. After the Spanish arrived in the New World, friars wrote of traveling professional gamblers who played the dice game called patolli, which was perhaps the most popular Mesoamerican board game.

Patolli was played by moving markers along squares on an X-shaped board painted onto a rollable mat. Gamblers would travel with their own game mats, dice, and tokens. To play, a person would throw four to six beans, each marked on one side, onto the ground; the position they fell in would determine how far the player could move his or her token along the board. The game seems to have been popular for a very long time; patolli boards have been unearthed at many Classic and Postclassic Maya sites, including Tikal, Calakmul, and Chichén Itzá.

Patolli was a raucous game played on feast days when people were drinking. There was even a special god of dice, known as Macuilxochitl, to call on when playing. So perhaps it's not surprising that patolli endured until almost modern times; some groups in Puebla and Michoacán, Mexico, were still playing a version of it in the early 20th century. As the earliest evidence for patolli are boards dated to around A.D. 250 from the city of Teotihuacán. This means that people enjoyed the game for some 1,700 years.

Along with board games, Mesoamericans also played a variety of games of dexterity, sports such as archery, blow-gun hunts, and shimmying up a smooth bark pole. Their best-known sport was the ball game, which, for millennia, was played on a court with a rubber ball. The oldest known ball court, located in Chiapas, Mexico, dates back 3,600 years.

More recently, Native Americans played other games of dexterity. Perhaps the most famous of these was chunky, which involves rolling a small stone across the ground and trying to throw a stick as close to the rolling stone as possible. Chunky played a major role in the Mississippian culture.

Excavations at Cahokia, which is located near the Mississippi River just east of St. Louis, have uncovered a multitude of chunky stones, as well as large plazas where the game

was probably played, and even a pipe carving of a chunky player. Many of the stones come from quartzite boulders near the riverbank downstream from Cahokia, says Timothy Pauketat, an archaeologist at the University of Illinois at Urbana-Champaign and a Cahokia expert.



Halved walnut shells filled with pitch served as dice for the Yokut people of California. They studded the dice with abalone shell fragments.



These split-stick dice were used by the Western Apache.



The Hupa of California played with mussel shell dice.



Split dice were bounced off a metate in a patolli-like game played in the Southwest.



CAHOKIA MOUNDS STATE HISTORIC SITE

These chunky stones were recovered from Cahokia, where, according to archaeologist Tim Pauketat, the game originated.

For the Cahokians, chunky was likely more than just a game, and it could have verged on being a communal or spiritual experience, according to Pauketat. “Playing it may be like believing in a certain world view,” he says. It appears that



This Sobaipuri gaming feature is similar to the Apache gaming feature found at the nearby Three Sisters site. The Sobaipuri have occupied Arizona for centuries.

chunky started as a fairly localized game, and then it spread across a wide region. Archaeologists have found chunky stones that date to around A.D. 600 in Illinois and Missouri, the place where Cahokia would arise centuries later. Stones dating to several centuries later have been found in places farther upriver, such as Wisconsin, and by the time Cahokia became a major urban center, after A.D. 1050, they appear as far away as South Carolina. “These are ‘made in Cahokia’ stones,” he says. “That’s why I’ve made this argument that the game starts with Cahokia and later develops.”

Cahokian emissaries would have likely carried the chunky stones with them while exploring the outer regions of their world. Playing chunky with peoples they encountered on their travels would have demonstrated Cahokian culture and provided a way to interact and share their message with the locals. “It was all part of getting Cahokia up and running,” he says.

In that respect, Pauketat thinks chunky could have been similar to shared games of today. Baseball may be just a sport by definition. But anyone going to a World Series game, and hearing the roar of the crowd and the smell of the hot dogs, can attest it is so much more than that.

ALEXANDRA WITZE is a science journalist based in Boulder, Colorado.

DENI SEYMOUR

REINTERPRETING AN ANCIENT ISLAND



DESIREE MARTINEZ

Students survey the hills above the USC Wrigley Marine Science Center.

For decades archaeologists have excavated California’s Santa Catalina Island, a place where people intermingled and traded goods over the course of thousands of years. The Pimu Catalina Island Archaeology Project is using ethnographic evidence and sophisticated technology to reevaluate existing data and make new discoveries.

BY LINDA MARSA

“This was a series of native settlements where the Tongvas lived for thousands of years,” says archaeologist Wendy Teeter, making a sweeping gesture across a vast expanse of lush ravines and rolling hills deep in the interior of Santa Catalina Island. “But it wasn’t a bunch of separate encampments—this whole canyon was used by the people who lived here.”

We’re standing on a flat patch of land on a high ridge that runs almost the length of the island, which is 26 miles off the coast of Los Angeles. The rugged terrain is home to thousands of unique native plants and animals, and most of the interior remains largely unchanged since the Pimu people, who were the ancestors of the Tongva, called the 76-square mile island home.



Wendy Teeter (right) and several students record rock art located in one of the island's many drainages.

We had driven up here one hazy Saturday morning, rattling along rock strewn dirt roads with vertiginous drops on the edges of the canyons, inching our way up to the pinnacle of the 1,600 foot incline, far above the bustle of the thousands of tourists who flock to the quaint seaside town of Avalon 10 miles away. But only a handful of them venture into the 42,000-acre interior, which is strictly controlled by the Santa Catalina Conservancy, a private nonprofit founded in 1972 by the Wrigley Family—the chewing gum magnates who bought the island in 1919—to preserve its natural beauty.

There are more than 40 soapstone quarry outcrops in this valley alone and another 150 or more scattered across the island, Teeter tells me, as she points to a large gray boulder that's flecked with white streaks and still bears the tool marks where natives chipped off chunks of soapstone to create bowls, grinding stones, and other utensils. The outcropping is so well preserved it could have been chiseled yesterday instead of hundreds, perhaps even thousands, of years ago. "You can still see the tool marks. The ancient inhabitants apparently noticed this was easy to carve and it also has asbestos, so it's a high conductor of heat."

The sheer density of the mining activity on this outcrop and others in the valley suggests it had been a communal production area site that, according to ethnographic evidence, was also used by people from neighboring regions. "We

informally call this the 'industrial complex' area because there's nothing but manufacturing going on here," Teeter says. "The whole valley is made up of soapstone." The soft Catalina soapstone, which is composed primarily of talc, was likely highly prized because it didn't crack when put on an open fire. The Pimu people traded the sturdy bowls fashioned from these stones to people on neighboring islands and villages on the mainland.

Called Pimu or Pimungna by the original inhabitants, Santa Catalina is one of three southern Channel Islands, which include Kiinkepar (San Clemente) and Xaraashnga (San Nicolas), that the Tongvas' ancestors first inhabited at least 8,000 years ago. Archaeological evidence indicates that, in addition to settlements on the mainland, they had villages all over Catalina, the largest of which sat on natural bays. By the time the Europeans arrived in the mid-1500s, it

is estimated that about 2,000 to 3,000 people lived on the island, which was part of an extensive trade network that extended throughout the American Southwest and as far north as Oregon.

In addition to soapstone items, the Pimu people traded dried fish, marine mammal pelts and meat for mainland goods like furs, skins, seeds, and obsidian, according to René Vellanoweth, an archaeologist at California State University, Los Angeles. They used large canoes, called ti'ats, which were made of redwood planks and lashed together with plant fibers, to carry up to 30 people to the other Channel Islands and across the Pacific to the mainland.

Teeter, who is curator of archaeology at UCLA's Fowler Museum, has co-directed the Pimu Catalina Island Archaeology Project (PCIAP) since 2007. She and the PCIAP team, which includes descendants of the first people who lived here, have embarked on a herculean task. They're doing an exhaustive analysis that incorporates and reevaluates past work done by other archaeologists—"We have all these sites, but they're not well defined," says Teeter—and they're augmenting this with their own extensive research that includes discovering hundreds of new sites.

Since the 1890s, various archaeologists have found more than 2,000 sites on Catalina, but much of the research focused on coastal villages and their connections to the

RACHEL NUZZO

mainland. “We know relatively little about the island because the work that has been done was sporadic and there’s a big black hole in our knowledge of Catalina’s archaeological record because all these disparate pieces of information haven’t been synthesized,” says Vellanoweth, who has done extensive excavations on nearby San Nicolas Island, but is not part of the PCIAP. “Teeter and her team are in the initial stages of doing exactly that.”

“The PCIAP envisioned bringing together multiple disciplines and different communities to understand the past in a more holistic and scientifically rigorous way,” according to Teeter. Toward that end, the researchers have adopted what is called an indigenous archaeology approach, partnering with descendant communities to interpret the archaeological record with the help of ethnographic accounts and oral histories gathered from Southern California tribes with traditional connections to the Channel Islands. “The project was first conceived with members of the Tongva community who were interested in a less pre-conceived notion of the past that incorporated some of their traditional explanations of their past as hypotheses,” Teeter says. Informed by ethnographic, archaeological, and environmental data, the researchers’ ultimate goal is to paint a more complete picture of what daily life was like for the Pimu people over time.

PCIAP co-director Desiree Martinez, an archaeology doctoral student at Harvard and a member of the Tongva tribe, notes that “because my community was under missionization, we’ve lost a lot of that history and knowledge. But there are stories, not only within our community, but also in other tribal communities, about the specialness of Catalina. We’d like to link these stories to what we’re seeing in the archaeological record.”



Intricate designs are often found carved on soapstone plaques such as this one housed in the Catalina Island Museum.

Several miles away from the airport, 19 students who are participating in a field school sponsored by California State University, Northridge, sit hunched over workbenches in a classroom at the USC Wrigley Marine Science Center. They laboriously go through zip lock plastic bags containing bone fragments, shells, and other artifacts that have been unearthed over the past century by other archaeologists. The students identify, label, and catalogue these items, which are part of the Catalina Island Museum’s collections. Teeter notes that five students are doing master’s theses that focus on their analyses of the artifacts.

The museum also houses some of the artifacts found by the notorious amateur archaeologist Ralph Glidden, who was hired by George Gustav Heye in 1919-20 to recover items that would be displayed in Heye’s Museum of the American Indian. Glidden excavated hundreds of sites on the island between 1919 and 1928, digging up cemeteries that contained numerous human skeletons as well as thousands of artifacts, including mortars and pestles used for preparing food, cooking stones, bone and stone knives, arrowheads, war clubs, and fishhooks. He displayed some of them in a makeshift museum that was a sensationalized



Native American student Priscilla Naylor inspects an artifact while surveying near Two Harbors.

american archaeology

DESIREE MARTINEZ



DESIREE MARTINEZ

Students identify some of the artifacts in the Catalina Island Museum's archaeology collections.

tourist attraction in the first half of the 20th century.

Organizing and analyzing all this material from past excavations helps the researchers to better understand the island's past. This information is put into a computer database that will also be available to other researchers. "There's a long history of archaeological research on Catalina where there was more collecting going on than report writing, and inventories and catalogues have been lost over time, or were simply sitting in the back rooms of museums or collections and were just overlooked," says Karimah Kennedy Richardson, a staff archaeologist for the Autry National Center/Southwest Museum of the American Indian and the PCIAP's third co-director. "Synthesizing and cataloguing all this information gives us a better idea of what we have." Kennedy Richardson and her colleagues are also combining this information with data from Tongva sites on the other Channel Islands and the mainland in order to get a regional picture of the lives of the ancestral Tongva.

What they've discovered so far upends some long held beliefs about the island's original inhabitants and their settlement patterns. The density of the settlements has surprised the archaeologists. Virtually none of the island lacks evidence of human occupation. The Pimu people also appear to have been more sophisticated than was previously thought. It had been assumed by cultural ecologists that, as their population increased, the Pimu people depleted their food supply, which consisted primarily of seafood, and were struggling to survive.

But the PCIAP researchers have found sufficient remains of seafood, as well as edible plants, which date throughout

the island's occupation, to suggest the Pimu people had an adequate supply of food. Furthermore, analysis of the human bones recovered by Glidden suggests they were healthy and active. "You see the thickening of the bones, where the muscles attach, and they have a much more robust skeleton, and tend to be a little huskier as compared to our modern skeletons," says Martinez. "My ancestors were able to run and climb up and down the hills without a second thought; their skeletons show that. As a modern people we see a hill and it takes us forever to climb. Our project is showing that these heights and distances were not seen as an obstacle to the Pimu ancestors."

With the help of the Catalina Island Conservancy's environmental scientists and the native community, the archaeologists have also found evidence that the Pimu people practiced simple horticulture, growing trees and plants they imported from the mainland that better suited their needs than the indigenous varieties. For example, Catalina is dominated by the island scrub oak, whose acorn is small and has tannic acid that must be leached before eating. So the Pimu people brought over the seeds of a Valley Oak from the mainland and began to harvest its much larger and tastier acorns for food. Indian tobacco, which is identified as a medicinal plant and was apparently used in ceremonies on Catalina, was also brought over from the mainland, as were plants that were particularly good for weaving baskets.

Using information from their own survey work, the archaeologists are incorporating the natural environment—the modern locations of springs, stone outcrops, and the general topography—into their analysis, something that the

previous researchers, to Teeter's surprise, apparently didn't do. This information is fed into a geographic information system (GIS) program that also includes the archaeological data generated by the PCIAP and earlier researchers. "We're looking at the trails and pathways and the landscape alterations that link people and resources, and how these connections were constructed and maintained," she says.

The archaeological literature, which focuses on the coasts and travel by boat, gives the impression that the Pimu people "never walked," says Teeter. But given that soapstone trade goods were produced in the interior, they had to be transported to the coast somehow. To determine how, and where, the goods were transported, the archaeologists are using an analytical model called least-cost path that assumes people will take the easiest route to get from point A to point B. Having identified, say, a soapstone quarry in Catalina's interior (point A), they query the GIS database to determine the easiest way to get to the nearest bay (point B), from which soapstone goods would have been conveyed to other islands or the mainland. Once the GIS gives them the least-cost path, they can determine if the Pimu people did in fact take this route centuries ago by surveying it for artifacts.

Employing this approach, the archaeologists have discovered a prehistoric trail, with a number of associated middens, under a paved road that ran from a soapstone quarry to a bay known as Little Harbor. Discoveries like this prove that, contrary to the literature, the Pimu people "walked around the island a lot," Teeter says.

Furthermore, informed by the GIS data, she and her

DESIREE MARTINEZ



Co-director Karimah Kennedy Richardson helps students record a historic hunting lodge that was built on the island in 1898.



LUCIUS MARTIN

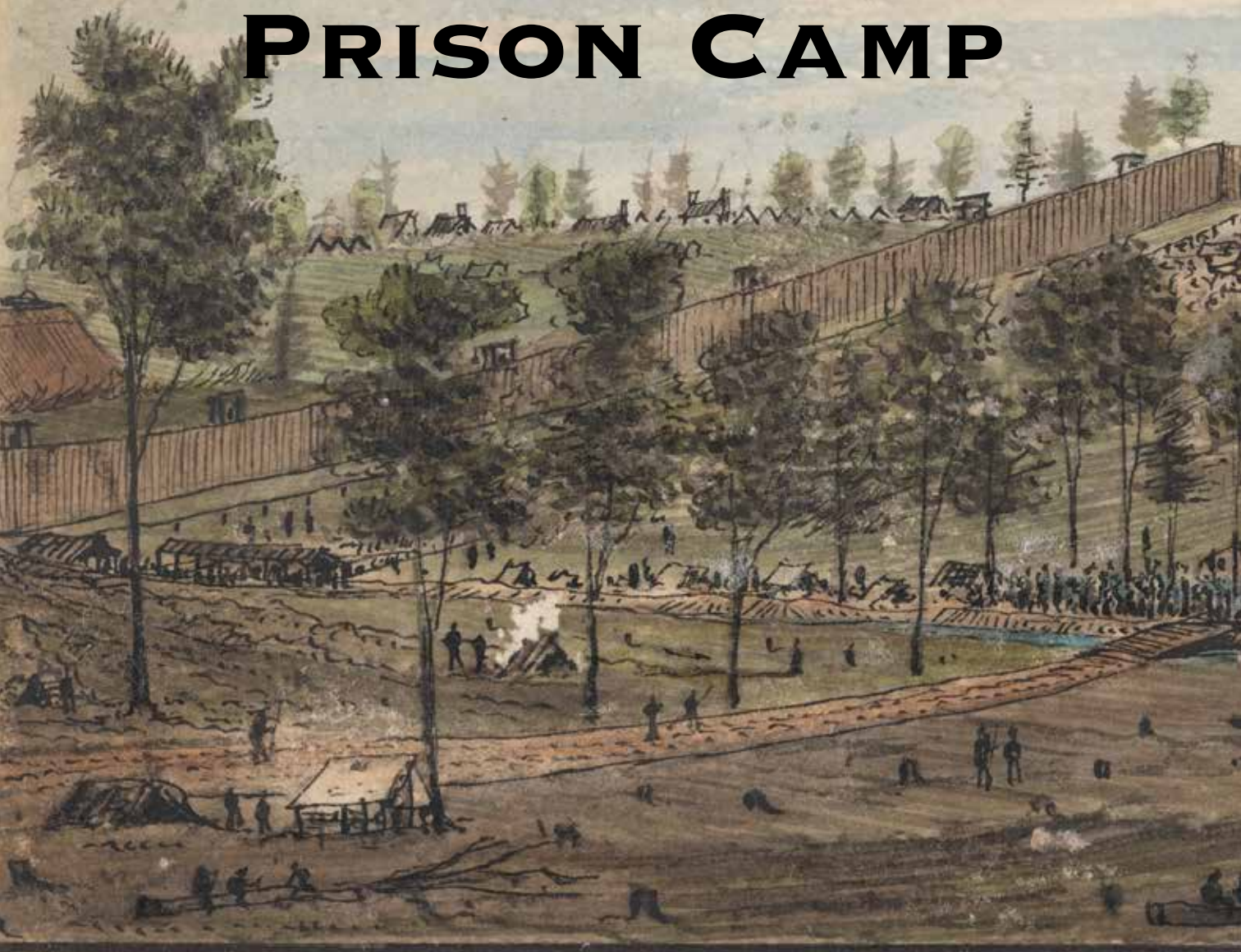
PCIAP co-director Desiree Martinez (center right) teaches students about the different types of artifacts found on Santa Catalina.

colleagues have concluded that a number of occupation areas—some of which are separated by as little as about 150 feet—that other archaeologists recorded as separate sites, are in fact individual sites that contain several activity areas. For instance, in cases where previous researchers determined there are two or more sites, though there's only one nearby source of water, it's more likely that these sites were actually different households or areas where various activities took place that were part of a larger site, according to Teeter. The archaeologists have expanded the concept of what constitutes a settlement, says Martinez, "by identifying areas outside the immediate habitation areas that include food processing areas, food gathering area, soapstone quarrying, etc. This acknowledges a landscape approach that is consistent with how the Island Tongva viewed the space that they lived in."

Though the PCIAP is six years old, it's "just getting started," Teeter says. "There are endless questions and endless avenues to explore, but overall it is way more exciting to undertake this adventure collaboratively with descendent communities, environmental scientists, and archaeology."

Linda Marsa is the author of *Fevered: Why a Hotter Planet Will Hurt Our Health and How We Can Save Ourselves*.

LIFE IN THE WORLD'S LARGEST PRISON CAMP



ROBERT KNOX SNEDEN

THE REBEL PRISON and STOCKADE at MILLEN. GEORGIA
Sketch by R. K. Sneden. 4

IN 1864, THE CONFEDERATES HASTILY BUILT CAMP LAWTON TO RELIEVE OVERCROWDING IN THEIR NOTORIOUS ANDERSONVILLE PRISON. THOUGH THE FACILITY WAS SAID TO BE THE LARGEST IN THE WORLD, IT HAD A VERY SHORT LIFE AND WAS QUICKLY FORGOTTEN. ARCHAEOLOGISTS ARE NOW DISCOVERING WHAT TOOK PLACE THERE.

BY MIKE TONER



View from inside the Gate. November 1864.
 1st N.Y. Vols while a prisoner of War.

VIRGINIA HISTORICAL SOCIETY

The faint gray stains in the reddish clay are right where Georgia Southern University archaeologist Lance Greene expected to find them, just a few inches below the surface and a stone's throw from a picnic shelter. The telltale color differences in the freshly exposed soil—traces of the posts in a wooden stockade wall that once stood here—attest that life at Georgia's Magnolia Springs State Park was not always a picnic. This was once the location of the world's largest prison, which was built in the waning

days of the Civil War to house thousands of prisoners being moved from the Confederacy's notorious, overcrowded prison at Andersonville.

As Hubert Gibson, one of Greene's graduate students, trowels away the soil for a better view of the telltale stain, Greene gestures toward the park's swimming pool where a handful of visitors are seeking relief from the mid-day heat. "A century and a half ago, this was the southeast wall of the Camp Lawton stockade," he says. "The main gate was



probably under the parking lot over there. We haven't found that yet, but we have located the back wall of the stockade over on the other side of the spring."

Some members of Greene's team are excavating there too, but they are too distant to be seen. It's a vivid reminder of the sprawling prison's scale. When completed in 1864, Camp Lawton's stockade was over a mile long. The walls, built with more than 3,600 upright yellow pine logs, enclosed 42 acres, a space designed to hold up to 40,000 Union prisoners.

As vast as it once was, Camp Lawton has long been a brief, forgotten footnote in the Civil War, a tenuous memory overshadowed by the legacy of Andersonville, the squalid Confederate prison where nearly 13,000 of the 45,000 Union soldiers died of starvation and disease. By the summer of 1864, with 100 prisoners dying there daily, appalled Confederate authorities ordered Gen. John H. Winder to find a new location for the South's prisoners. Winder chose a spot 140 miles to the east, near the small railroad town of Millen, Georgia. The railroad provided a way to transfer prisoners from Andersonville. The artesian water gushing from Magnolia Springs assured the new prison an ample supply of clean water. And large stands of native pine provided the raw material necessary to build the world's largest stockade.

Winder wasted no time. Construction of the stockade—using a combination of Union prisoners and slave labor from local plantations—began in August, 1864. By September, the stockade, hospitals, barracks, and administrative buildings were ready. Over the next six weeks, approximately 10,000 prisoners were moved into the camp. But they wouldn't be there for long.

The fall of Atlanta to Union troops in early September set the stage for Gen. William T. Sherman's punishing "march to the sea" through rural Georgia. Because Camp Lawton was in the line of Sherman's march, the prison population was evacuated. Few prisoners spent more than six weeks at the camp. The last of them were whisked away just days before Union soldiers reached Millen. Sherman's outraged troops burned most of the empty prison's buildings.

As the war wound down, what was left of Camp Lawton slowly melted back into the eastern Georgia landscape. Over the next century and half, some of the land was farmed, and the forest grew back. As it had been before the war, the spring once again became a favorite picnic spot for local residents. In the 1930s, the Civilian Conservation Corps built some structures for public recreation. The state made a portion of the site a park. A fish hatchery was built and subsequently shut down. Except for the earthen embankment around a Confederate gun battery on a hill above the prison, it was widely assumed that no tangible traces of Camp Lawton remained. Looters ignored the site. It had, after all, been occupied for only six weeks. What could possibly remain in the ground?

Among the myriad artifacts recovered from the site are (from top to bottom) a modified smoking pipe, tourniquet buckle, brass friendship ring, key, and an iron boot heel.

Even among archaeologists, the general sense was not much," says Greene. "None of us had any idea how much was still here." When a ground



Lance Greene studies the outline of a shebang, one of the crude, temporary shanties erected by prisoners held at Camp Lawton. Loose bricks in the shelter are thought to have been pirated from brick ovens built for prisoners' use.

penetrating radar survey by the Georgia-based nonprofit LAMAR Institute found an L-shaped feature that proved to be one corner of the stockade in 2009, interest in the prison revived. Three years later a section of the southeast wall was unearthed, yielding logs still smelling of fragrant pine resin.

In 2010, when Georgia Southern archaeologist Sue Moore was directing the project, a team of students searched for more of the outline of the stockade, and, to their surprise, they encountered an astonishing array of artifacts: buttons from Union uniforms, bullets, eating utensils, a tourniquet buckle, a brass picture frame, a pocket knife, a small clay pipe. In the haste to evacuate Camp Lawton, most of the prisoners' meager belongings had been left behind. "It didn't take long to realize that we had a pretty undisturbed site," recalls Kevin Chapman, who was one of the students working on the project.

"When we went into the woods with a metal detector, I could hear signals going off everywhere," says Dan Battle, of Cypress Cultural and Environmental Consultants, which developed the team's metal detecting strategy. "This place is going to be amazing. And we haven't even scratched the surface yet."

"Since those initial discoveries, we have identified well-preserved archaeological deposits that include Union
american archaeology

prisoners' huts, stockade trenches, and Confederate facilities outside the prison," says Greene, who now directs the investigation. "All of this material gives us a chance to answer questions that have been asked since 1864—what were conditions like for the Union prisoners at Camp Lawton, and did the Confederate officers and guards intentionally create the horrible conditions that killed dozens of prisoners a day within the stockade?"



Archaeologists recovered these tokens that were used to buy groceries before the war.



Sue Moore maps excavations at the site.

In the aftermath of the Civil War, a flood of South-bashing books, personal memoirs, and other accounts painted a draconian picture of the conditions in Southern prisons. “Winners of wars—and in this case many of the prisoners—tend to write the histories of wars,” explains John K. Derden, a professor of history at East Georgia College and author of *The Story of Camp Lawton*. “Especially at a site as undisturbed as this one, archaeology may help us understand how accurate these accounts are. Archaeology and history go hand in glove.”

“Eyewitness accounts from the camp tell how rations, meager to start with, dwindled rapidly in quantity and quality,” says Greene. Estimates of the number of men who died at Camp Lawton range from 450 to 1,600. Prisoners reported having to catch and eat alligators, snakes, and turtles to supplement the small amount of meat they received. “By comparing any food remains we find and the artifact assemblages of Union and Confederate soldiers at the camp, we hope to be able to answer those questions in a clear and unbiased fashion,” says Greene.

Outside the stockade, along the vestige of the road on which the prisoners were marched from the Millen railroad depot to Camp Lawton, a metal detector survey produced a host of “hits,” including what appeared to be the brass eyepiece from a telescope or binoculars. A jumble of hand-made bricks, still bearing the fingerprints of their makers, attests that a house once stood on the spot. This year, archaeologists uncovered a brass field tent fitting similar to ones found at other Civil War-era military sites, brass

GEORGIA SOUTHERN UNIVERSITY



A portion of the excavated stockade trench showing a post remnant (left) and banded trench soils. The banded soils suggests that slaves could have been used to build the stockade.

GEORGIA SOUTHERN UNIVERSITY/US. FISH AND WILDLIFE SERVICE



Mick Worthington and Chelsea Rose take a dendrochronology core of one of the timbers possibly associated with the stockade.

boot clips, and broken glass from stemware, medicine, and whisky bottles. Greene says the dwelling was also occupied after the war, but he suspects this was the location of the Confederate officers' quarters.

Artifacts from a small number of test excavations inside the stockade paint a very different picture of the prisoners' lives—crude iron spoons and eating utensils that were part of prison mess kits, a broken pocket knife, an axe head, brass buckles, and corroded coins that attest to the rudimentary commerce that existed inside the walls. A clay pipe with a makeshift lead bowl suggests that prisoners had to repair their possessions with any materials available. A German game piece and a one-pfennig Austrian coin indicate that many Union soldiers were immigrants, and as the evidence accumulates, Greene hopes to learn whether prisoners clustered together in ethnic groups.

At two locations, Greene and his team have identified soil stains that appear to be the outlines of shallow depressions made for the makeshift lean-tos, called shebangs, that prisoners built to ward off the elements. He says a scatter of bricks on the floor of one lean-to confirms accounts that prisoners pilfered building material from formal prison structures as fast as they were built. Given that the prisoner population reached a high of 10,000, there could be hundreds of these features.

Ground penetrating radar and magnetometer surveys have also detected areas of disturbed soil indicating additional sections of the stockade wall. "The west end of the

stockade is probably under Highway 25, but we have three walls and one corner pretty well defined," says Greene.

The walls may have their own story to tell. The archaeologists are trying to understand how this huge prison was built so quickly. They know that Camp Lawton was erected by prisoners and slaves, but little is known about the plight of slaves who were forced to support the Confederacy's war efforts. For example, historical documents are silent as to the number of slaves that worked on Fort Lawton. Consequently Greene and his colleagues have studied the report of a previous investigation of Andersonville, which was also built by prisoners and slaves, some of whom were likely moved to Camp Lawton to construct that facility.

Excavations at Andersonville identified distinct construction "signatures" that differentiate the portions of the stockade that were built by the slaves from those built by the prisoners. "The slaves were much more methodical," says National Park Service archaeologist Guy Prentice, who led the work at the Andersonville National Historic Site for four years. "When they dug the five-foot trench for the posts, they piled the orange top soil on one side, and then piled the lower soil on the other. As they refilled around the post, they refilled the trench from each side, leaving a banded pattern that you can still see today. Fill from the sections built by the prisoners was much more haphazard."

Thus far, the construction signature of Camp Lawton's stockade trenches matches that of the slaves at Andersonville. "Once we excavate a few more sections of the stockade,



Amanda Morrow uses an x-ray fluorescence machine to measure the corrosion of in situ artifacts. This information helps the researchers to determine how best to conserve the corroded items.

we hope to be able to begin calculating the number of laborers involved,” Greene says. They’ll do that by determining the amount of earth moved during the construction. “We know roughly how long it took, so we can begin to make calculations” as to the number of slaves it would have required.

The archaeologists are also interested in knowing where the slaves lived, but so far they’ve found no archaeological or

historical evidence of slave quarters. Historical documents do indicate Camp Lawton had numerous kitchens, and it’s possible that the slaves lived near them, as they were probably also tasked with preparing food.

Though the historical record is informing Greene’s investigation of Camp Lawton, the information is sometimes confusing. Winder’s plan for the prison, for instance, shows a square stockade with orderly blocks for the prisoners’ shelters. “The problem is we don’t know if things were actually built according to the plan,” says Greene.

The discovery, in the 1990s, of more than 1,000 previously unknown watercolors, sketches, and maps by Private Robert Knox Sneden, a Union mapmaker who spent 18 months as a Confederate prisoner, have added to the storehouse of information, and also posed more questions. Sneden, trusted enough by his captors to have been granted a fair amount of freedom, saw scores of sites behind enemy lines. A dozen or so of his sketches, published by the Virginia Historical Society in the book *Images from the Storm*, provide unique and compelling images of Camp Lawton.

“Sneden’s sketches have been absolutely invaluable to us, but we have to keep in mind that many of them were done years after the war,” says Greene. “He visited so many places that he may have confused some of them.” Contrary to Winder’s plan, for instance, Sneden shows the stockade at Camp Lawton as rectangular. Other post war sketches of the “Rebel prison at Millen,” published in magazines of the time, were done by artists who never saw the camp.



Doug Carter and Nina Raeth have connections to Camp Lawton. Carter is the great grandson of one of the Confederate prison guards. Raeth is the great granddaughter of a Union soldier who was imprisoned there in 1864.



Jenkins County public school students watch a researcher excavate along the stockade trench.

To sort out such discrepancies and begin assembling an accurate picture, not only of the 42-acre prison, but the lifestyles of the 10,000 prisoners, the 600 guards, and the cadre of officers, Greene's team is employing an array of modern technology. Using precision survey instruments, they electronically plot every artifact and feature they find on the sprawling site to an accuracy of less than an inch. With that survey as a basis, they use geographic information software to overlay Winder's map, turn of the century county maps, Sneden's sketches, modern aerial photographs, records of the Civilian Conservation Corp's public works in the 1930s, and contemporary satellite images.

Ground penetrating radar and magnetometer surveys identify places where the soil has been disturbed or burned, and Greene is also using LIDAR, which incorporates rapid pulses of light to map minute topographic differences in the surface too small to be seen with the naked eye in hopes that subtle surface variation will offer hints about what lies below. Ironically, metal detectors, which are often used by looters, revealed the area that's thought to be the Confederate quarters outside the prison. In the future, Greene hopes to identify other areas such as the prison hospital and the quartermaster's storehouse.

"It's going to be a real challenge," he says. "Archaeologists' investigations tend to deal with small sites that were occupied for a very long time. What we have here is a very large site that was occupied for a very short period of time. But it's an incredible site and it's so well preserved there's a lifetime's worth of work here,"

David Bush, the director of the Center for Historic and Military Archaeology at Heidelberg University, is quick to affirm that sentiment. Bush has spent much of his career investigating the prison the Union Army maintained for Confederate officers at Johnson's Island near Sandusky, Ohio.

"As with Camp Lawton, we have official records and accounts written by the prisoners, but archaeology can tell us about the physical conditions and how they changed over time," says Bush. "I've been working there for 25 years and I keep thinking of new questions to ask and new ways of going about answering them."

As the archaeology at Camp Lawton proceeds, federal, state, and local authorities are working to assure that the site is protected and accessible. The U.S. Fish and Wildlife Service, which owns a portion of the property, has fenced it and installed electronic intrusion detection systems. Visitors to the park are allowed to peer over archaeologists' shoulders as they work, and a \$500,000 museum and field laboratory on the grounds of the park will open later this year.


"We want to make sure that the public can learn about the one-of-a-kind site at the same time we are learning about it," says Sue Moore. "We want our archaeology to add to the texture of history. And we want the artifacts they see to speak to the reality of what happened here."

MIKE TONER is a Pulitzer-Prize-winning writer who lives in Atlanta, Georgia. His article "Where the Prehistoric Buffalo Roamed" appeared in the spring 2013 issue of *American Archaeology*.



When Copper Was King

By Christie Bleck



The Cliff Mine in Michigan's Upper Peninsula triggered a copper boom in the mid-1800s. Archaeologists are investigating the mine and an adjacent town to learn what made it so successful.

It's been known for millennia that the Keweenaw Peninsula, the northern-most part of Michigan's Upper Peninsula, harbored veins of copper. Native Americans mined copper there for 5,000 years, and the French and English attempted mining during Colonial times. But it wasn't until the 1840s and the Treaty of La Pointe that the Keweenaw became synonymous with copper.

In this 1842 treaty, the Ojibwe peoples ceded the Keweenaw's mineral rights to the U. S. government, which began issuing mining leases to interested parties, both professional and amateur. Many people saw an opportunity to make money. Three of those leases were acquired by the Pittsburgh & Boston Mining Company, and one of those three created a copper boom that changed the area.

The 1935 photograph by J.T. Reeder shows the ruins of Cliff Mine's stamp mill, which was destroyed by fire in 1926-1927. The photograph shows the in situ remains of eight stamps in the stamp house.



MARK DICE, LIDARCH

The mine had six shafts. This photo shows the remains of the engine house at Cliff's number 4 shaft.

In 1845 a vein of copper-bearing quartz was discovered at the base of a 200-foot basalt cliff. This prompted a group of miners to dig 70 feet into the cliff, where, to their amazement, they discovered a huge vein of pure copper. The Pittsburgh & Boston Mining Company abandoned its other two leases and focused on the challenge of extracting this massive amount of copper. So began the Cliff Mine.

The Cliff Mine is important because it was the first successful mining operation on the Keweenaw, says Tim Scarlett, an archaeologist at Michigan Technological University (MTU). Scarlett and his colleague Sam Sweitz are codirecting an investigation of the mine and the adjacent community of Clifton that sprung up to serve it. By successful, Scarlett means that the mine's owners and employees adopted a "broad strategy" that included managerial savvy, advanced technology, and an inventiveness that was sufficient to meet the considerable challenges of mining this deeply buried copper in a remote area with a harsh climate.

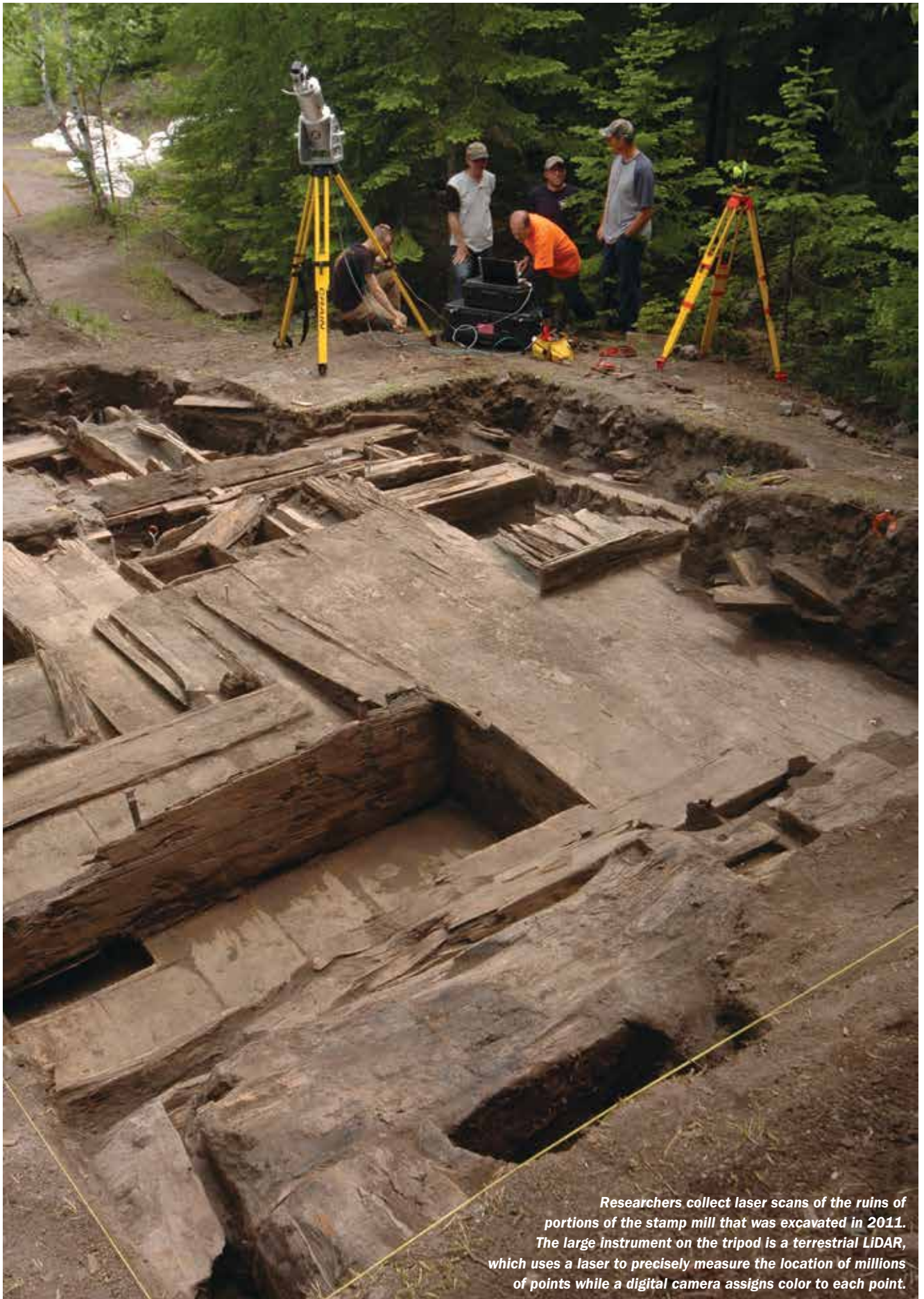
The Cliff Mine was not only profitable—which many other mines on the Keweenaw weren't—it became internationally renowned. It produced more than 38 million pounds of refined copper over a 40-year period in the 1800s, and paid investors \$2.5 million. Cliff "guaranteed" the copper boom, according to Scarlett, by proving to investors there was money to be made. Clifton expanded with the mine, growing from nothing into a diverse, relatively sophisticated community of about 1,500 people in 12 years. "The whole area was famous around the world," he says. "It was like a magical place."

Scarlett, Sweitz and their team are trying to understand exactly how it was that the Cliff Mine became so

successful and what the consequences of that success were for the people associated with the mine. The archaeologists, having studied the historical record, know the type of technology—the equipment, buildings, etc.—and system of labor and management that were used to extract and process the copper. They also know that experienced miners were recruited from Germany, England, and other places. But the historical record doesn't reveal "the process of adapting to the local environment," says Sweitz. He and his colleagues wonder how miners who had worked in Germany, England, and other foreign locales adapted their experience and knowledge to meet the challenges presented by the Keweenaw Peninsula and the Cliff Mine. "We know they did it, but we don't know the details of how."

"Keep in mind miners had never encountered this circumstance," says Scarlett, referring to the size of the vein of pure copper and its remote location. For the first several years the owners were reluctant to invest in steam power, the most effective, and expensive, technology of that time, so the copper was extracted and hoisted to the surface by man and horsepower.

"All the mining technologies that existed for breaking rock didn't apply to copper," he adds. It couldn't be blasted or drilled due to its consistency, so the miners resorted to chiseling off bowling-ball-sized pieces from the vein. The ore they extracted had to be taken by boat to distant places like New York, Boston, and even England for smelting, but as Sweitz observes, Lake Superior, from which the boats departed, was frozen half of the year, and the locks that connect Superior with the other Great Lakes weren't yet installed.



Researchers collect laser scans of the ruins of portions of the stamp mill that was excavated in 2011. The large instrument on the tripod is a terrestrial LIDAR, which uses a laser to precisely measure the location of millions of points while a digital camera assigns color to each point.



MARK DICE, LIDARCH

James Dau and Sean Gohman collect digital survey data while mapping the site in 2010. Mine waste has buried part of the 1860s' chimneystack in the background.

This was the advent of industrial mining in the region, but such things as “scientific management” didn’t exist, according to Scarlett. In fact, the owners originally adopted a traditional management system used in Cornwall, England, in which independent teams of workers annually contracted with the mine agent to do a particular job. These teams, which often consisted of family members, managed themselves. This system had been used for years, but it was better suited to smaller mining operations. Because of Cliff’s explosive growth, a more sophisticated management system gradually evolved there. They were inventing a workplace that was suggestive of modern times, Scarlett notes.

Cliff’s owners were cautious about investing in the mine, and it wasn’t until the mine became profitable in 1849 that they upgraded to steam power, and in the process Cliff was transformed from a prospecting mine to an industrial one. There’s also a change in the construction material of the mine’s buildings from wood, which was cheaper but less durable, to stone. The wooden structures were built when the owners were “proving the mine,” Sweitz says. Having attained profitability, they invested in more expensive and durable stone architecture. As the operation grew, the old stamp mill was replaced by a new one three times its size.

The Cliff yielded masses of pure copper, as well as copper ore, in which the copper was embedded in small pores within the rock. Once the copper ore was extracted it was

run through a stamp mill, a series of buildings where the ore was crushed into sand by large iron stamps, and the heavier copper sand was separated from that of the lighter basalt rock. Part of the adaptation to the local environment, and a



JAN UNDERWOOD

The archaeologists are trying to understand how the Cliff Mine became so successful despite its remote location.

key factor in the profitability of most any mine, was the “fine tuning” of the stamp mill, according to Sweitz. Crushing the rock and extracting the copper quickly and efficiently was both art and science, and the success of a mine is based on “how good you are” at it, he says.

To identify the fine-tuning that took place at Cliff, the archaeologists excavated about one-third of the area where the mill once stood. The copper in the mill tailings served as a preservative, and consequently they uncovered “excellently preserved wood floors and working surfaces,” says Sean Gohman, an MTU student working on his Ph.D. “The result was that we had the ability to note where equipment was housed, how the mill workers adapted the building to changes in technology, adding and removing equipment, and just how a mill building was constructed.” When combined with historical accounts, this data shows “when certain technologies were used and/or replaced.” The sequence of changes shows how the workers improved the process over time by making various adjustments.

The researchers also mapped the mill and the rest of the industrial core, including the shafts, engine houses, and stacks. Gohman compared modern and historic maps, historic and modern aerial images, and satellite imagery to identify the development of the mine and town as the years passed. The research team will soon add LIDAR scans to their database and eventually build 3-D models of the buildings.

With the Cliff Mine’s success came Clifton’s explosive growth. Married men, who managers assumed would be more reliable than their single counterparts, were

recruited to work at the mine, and they brought their families with them. As the town expanded, it added such necessities as a school, roads, stores, and churches.

As historical accounts are also largely silent regarding the details of the lives of Clifton’s residents, uncovering these details “is a critical part of understanding what’s happening” at the mine, Sweitz observes. “We get to fill in that part of the story and think about the social life of the workers,” says Lee Presley, another Ph.D. student at MTU. “What was their community like? How did their community react with other communities next door; like what were they buying and trading from each other?”

Sweitz is interested in the effects of capitalism, which even then was global in its reach, on small communities such as Clifton. Some of the artifacts reveal that the people who had immigrated to the town “tried to replicate the societies they came from,” he says. “What we’re seeing here is the initial tug of war” between Clifton’s geographic isolation and its link to the outside world through its copper exports and international citizenry. “These people were connected, yet they were disconnected.” That duality, he notes, was illustrated by the townspeople’s celebrations when the winter’s ice broke on Lake Superior and the year’s first supply ship was able to dock nearby.

How Clifton’s residents adapted to the town’s growth, which must have severely taxed its infrastructure, is one of the questions the archaeologists hope to answer. “It’s not just a matter of what people did to the environment, it’s also what the environment did to the people,” says Scarlett, referring to the carrying capacity of the land.

MARK DICE, LIDARCH



Timothy Scarlett (seated on bucket) talks with students about cast iron stove parts that were recovered from the site. A broken stove door lies at his feet.

Presley is searching for evidence of how the residents fed themselves, given what she describes as their “relative scarcity of resources.” Were they able to provide their own food, or did they have to obtain most of it from neighboring communities? “I suspect there is a mix,” she says, meaning Clifton’s residents probably supplied some of their food and acquired the rest. She and her colleagues have excavated open spaces between some of Clifton’s residential structures to see what activities took place there. They’ve found a number of animal bones, including cows and pigs, with cut marks that suggest livestock could have been butchered in the town. Despite the town having been so close to Lake Superior, they’ve uncovered scant evidence of seafood. Historical accounts also tell of a plot of land on the east side of town being set aside for farming.

The researchers also excavated the yards of several houses in order to learn who lived where. The workers came from various places—England, Germany, Ireland, Canada, and the Eastern U.S.—and the material patterns will help determine if people gathered into ethnic neighborhoods. The census data of that time lists the names of the residents, but it doesn’t reveal who lived where. Thousands of artifacts were uncovered from the yards, but the analysis of these items, which will provide more information about the identities and lifestyles of their owners, won’t be completed until next spring.

Eventually the miners had to dig to a depth of 1,000 feet to reach the Cliff’s copper, which made it more labor intensive than other productive copper mines in the Keweenaw, the U.S., and the world. At the same time, gold and silver mining booms were taking place in the West. As valuable as copper was, gold and silver were more so, and skilled miners left the Keweenaw for Nevada, California, and Alaska. These events, along with the demand for soldiers to fight in the Civil War, caused a labor shortage at the Cliff Mine.

Another factor in Cliff’s decline was that “the philosophy of mining changed,” Scarlett says. The emphasis was no longer on mining veins—chasing seams of pure metal



Samuel Sweitz (center) speaks with visitors during an open house event.

was unpredictable because a rich vein could suddenly attenuate into a narrow one, or abruptly expand, or vanish entirely—but on lodes, which were massive deposits of copper trapped as tiny particles within rocks. Lode mining required removing huge amounts of rock and then crushing and processing it to obtain the ore. Mining companies were building enormous steam stamp mills to process the rock. This approach was cost-efficient even if, as was sometimes the case, the extracted rock contained only small amounts of valuable ore.

By 1869, Cliff, once a leader in the development of industrial mining, had fallen behind the times. Saddled with outdated technology, it lost money for the first time in 20 years. Pittsburgh & Boston sold the mine in 1870 for \$100,000. Cliff yielded copper for smaller-scale operators for approximately 60 more years, but its heyday was over. Having risen with the mine, Clifton declined with it, eventually becoming a ghost town in the early 20th century. “Nature has taken over the site again,” Sweitz says.

Though Clifton and its residents are long gone, people from the neighboring towns remain interested in the history of copper mining on the Keweenaw. During their field seasons, MTU researchers hold regular open houses so the public can learn about the project. “On its most basic level the Cliff Mine project is important because it documents a historic place—and an industry—that was terribly important in late 19th-century America. But the project is much more than that,” says Jamie Brandon, an archaeologist with the Arkansas Archaeological Survey who has done extensive research on industrial sites in Arkansas. Through MTU’s community outreach, the project “examines how copper as a resource and mining as an industry play into the identity of the region.”

According to Scarlett, the Keweenaw supplied most of the copper used in electrical wiring in American homes built before 1910. Though the lights have gone out in the Cliff Mine and Clifton, the memory of the boom they created still lingers here.

CHRISTIE BLECK is a staff writer for the Marquette Mining Journal.

MARK DICE, LIDARCH



Children inspect student Kaeleigh Herstad’s work as she cleans artifacts.

The Best of Her Profession

Over the course of her long career Linda Cordell proved to be an exceptional archaeologist, teacher, and colleague.

By Kristin Ohlson

David Hurst Thomas ushered Linda Cordell up a winding staircase in New York's American Museum of Natural History to the tower office that had been the late Margaret Mead's professional home for half a century. "This is our museum's most sacred spot and few people get to see it," said Thomas, the museum's curator of North American Archaeology. He was shocked when Linda chuckled a bit, and even more surprised when she explained how many times she'd been there when the storied Mead had been in residence.

Thomas and Cordell were old friends, having known each other for nearly all of Cordell's half-century career in archaeology. They met when both were sweaty-palmed young scholars about to present their doctoral dissertation research at a national conference in San Francisco. Over the years, they became so close that they called each other "bro" and "sis." Cordell became so highly regarded in the field that the museum made her a Research Associate in Anthropology—a rare honor—and that's why Thomas was showing her around. But as it turns out, even he didn't know this part of her history.

"Linda told me Mead had been her godmother."



This picture of Linda Cordell was taken in 1975.



Cordell excavates at Sapawe Pueblo in 1964.

Thomas says. “Her mother (Evelyn S. Kessler) had gone into cultural anthropology later in life, and she studied with Mead. Part of the deal was that young Linda would become Mead’s anthropological charge—even required to discuss her latest term papers. I worked with Margaret Mead for half-a-dozen years, but Linda had this guiding hand from the illustrious Dr. Mead that none of us knew about.”

Cordell died alone in her Santa Fe home on March 29, 2013, just before she was about to deliver the opening presentation at the Galisteo Basin Symposium at the New Mexico History Museum. The other speakers and organizers of the symposium knew something terrible must have happened when she failed to make an appearance, because it was so unlike Cordell to let anything interfere with her many commitments to archaeology. By this time, she was an illuminating and gifted speaker whose lectures drew audiences around the country. While her career may not have reached the mythic proportions of her famous godmother, this tiny woman with the big bright eyes and infectious laugh represented to many the best of her profession.

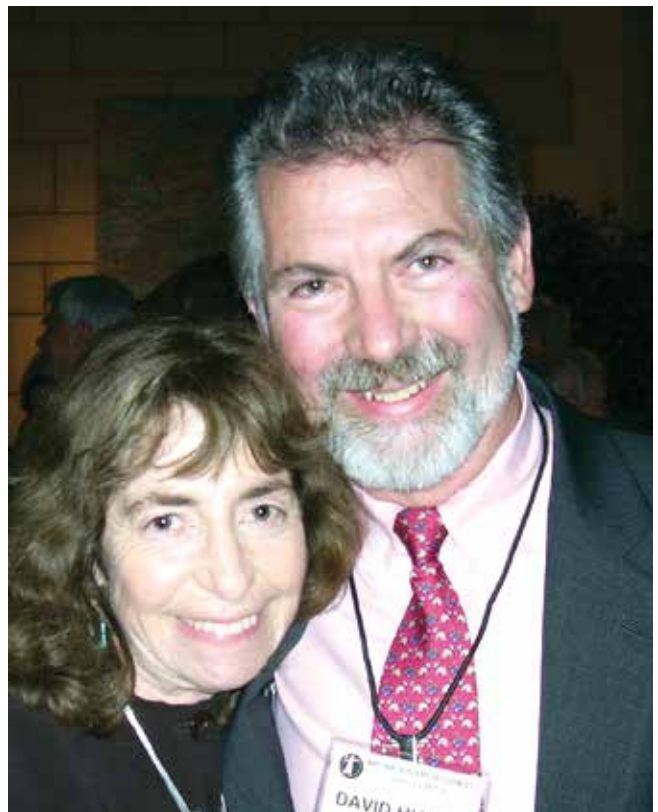
Cordell was the recipient of many honors, including the A. V. Kidder Award for Excellence in American Archaeology in 2001—only the second woman to receive this award in its 60-year history—and the Lifetime Achievement Award from the Society for American Archaeology in 2009. She was elected to both the National Academy of Sciences in 2005,

and the American Academy of Arts and Sciences in 2008. But even these honors, colleagues say, don’t give the full picture of Cordell’s achievements.

“One of the most remarkable things was her versatility,” says Bill Lipe, professor emeritus at Washington State University and a prominent Southwestern archaeologist. “Linda made substantial contributions in so many areas. There were her syntheses, books and articles that pulled together and summarized all the research literature and extracted the major patterns. Some of her articles were also important general contributions to archaeological theory and research design. She also did significant fieldwork, taught and mentored several generations of students, held high-level administrative positions, and did substantial service projects for several professional organizations. She was extremely productive in all these areas, which is a very rare thing.”

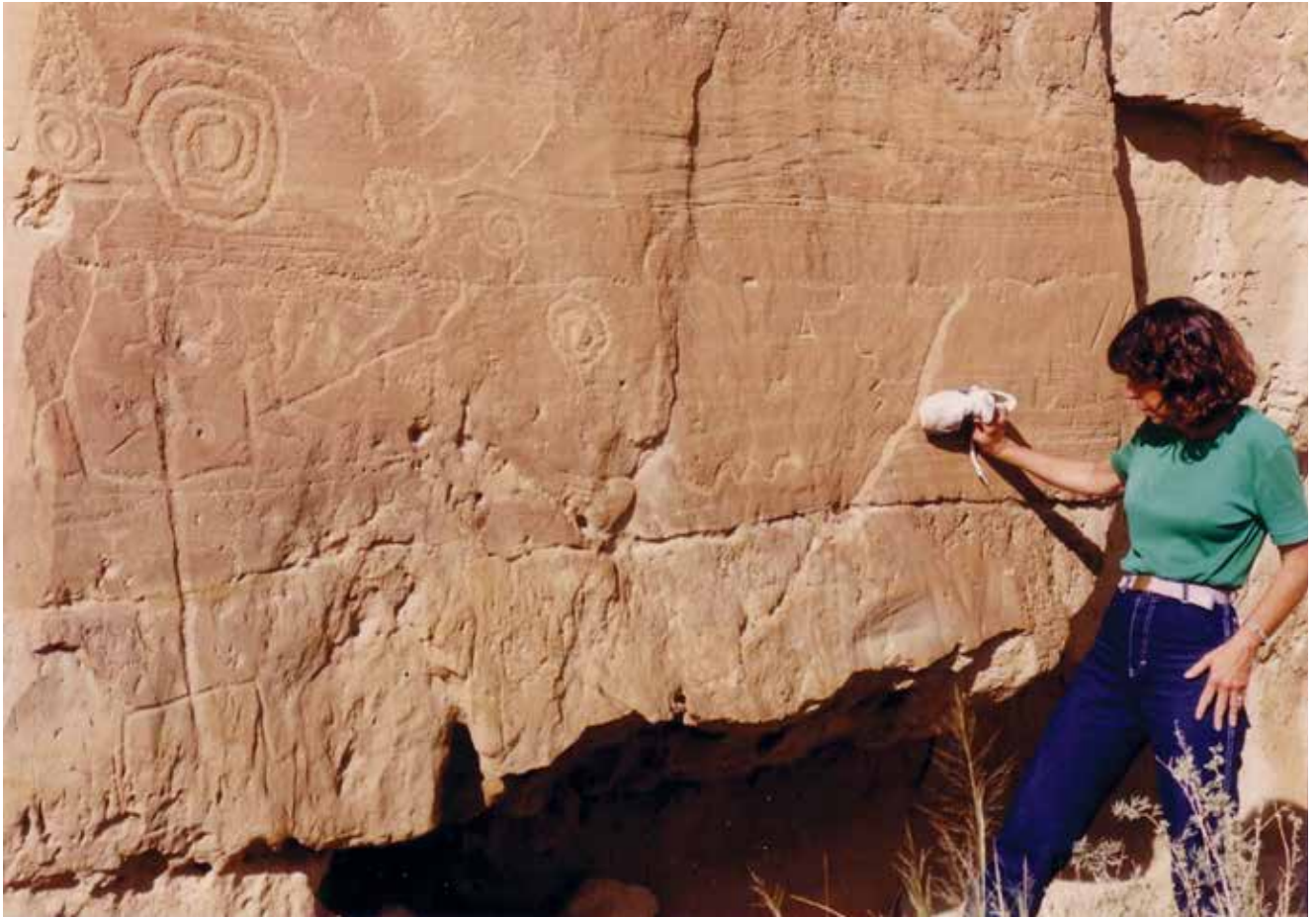
Cordell was born in New York City in 1943. She went to George Washington University and was one of five students to join the noted archaeologist Florence Hawley Ellis’s University of New Mexico field school at Sapawe pueblo in northern New Mexico. From that point on, she immersed herself in the archaeology of the American Southwest. “A lot of people come from New York to the Southwest, and it’s like an epiphany for them,” says Don Fowler, the Mamie Kleberg Professor of Historic Preservation and Anthropology, Emeritus, at the University of Nevada, Reno. “They discover a whole different world. Linda kept that enthusiasm until the

UNKNOWN



Cordell with her longtime friend David Hurst Thomas.

LORANN S. PENDLETON



While leading a tour at Chaco Canyon in 1989, Cordell used her shoe to point out different petroglyphs in a rock art panel.

day she died.”

At that time it was hard for women to find meaningful work in archaeology. They were limited to certain tasks, Thomas recalls, and excavating alongside the men was not one of them. He was then running a field school at

the University of California at Davis and was told he could not accept women. When he protested, the injunction was altered: he could take women if they were 21 or older, whereas men only had to be 18.

“There were a lot of remarkable women working in Southwest archaeology when Linda arrived, but she was one of the few who overcame the notion that women just couldn’t do this stuff,” Thomas says. “She just went on to become the best archaeologist of her era in her field.”

After getting her Ph.D. from the University of California, Santa Barbara, Cordell joined the faculty of the University of New Mexico in 1971. She stayed there for 16 years, running the field school for eight seasons. During that time she excavated Tijeras Pueblo, an important 14th-century site near present-day Albuquerque that may have been one of the places where the technology for glaze-painted pottery was first introduced to the Eastern Pueblos, according to University of California, Santa Cruz, archaeologist Judith Habicht-Mauche.

The 1960s and ‘70s saw an explosion of discovery in Southwest archaeology, says Steve Lekson, a student of Cordell’s at the University of New Mexico and later, when she was director of the University of Colorado Museum



This 2012 picture shows Cordell with some of the crew that excavated the Roadmap site in southern New Mexico.

american archaeology



Cordell is interviewed while directing a field school at Tijeras Pueblo in the mid-1970s.

of Natural History from 1993 to 2006, her colleague. The National Historic Preservation Act of 1966 mandated that federal agencies determine if any of their undertakings posed a threat to cultural resources. This resulted in myriad archaeology projects, which yielded an abundance of new data.

“The quantity and quality of publications expanded enormously after the 1960s, and it was hard to keep up with it all,” Lekson says. “Linda, bless her heart, tackled the task and wrote the only rigorous textbook on the material. She really gave you a handle on the range of thinking on the subject, and hers is still the go-to volume.”

This go-to volume was *Prehistory of the Southwest*, which was published in 1984 and has since been updated in two new editions. The third edition, *Archaeology of the Southwest*, was published in 2012 with co-author Maxine McBrinn, who was one of Cordell’s last students. “We have all three editions on the shelf,” says Cathy Cameron, an archaeologist at the University of Colorado, Boulder. “They are foundational.”

Cordell advocated incorporating new technologies in archaeological analysis. Her Ph.D. dissertation used computer simulation to model settlement pattern changes on Wetherill Mesa in Colorado. “She was using this technology in the early 1970s, back when computers were the size of rooms,” says Habicht-Mauche.

Cordell’s excavation of Tijeras Pueblo employed the

newest technologies of the time, such as remote sensing to locate buried features, laser transits for site mapping, and on-site computers to record excavation data and create artifact inventories. And she was always looking for new ways that technology could be employed to advance archaeology. “She stayed in Albuquerque a few years ago and found out that her next-door neighbor worked for the Earth Data analysis Center at UNM,” recalls Habicht-Mauche. “She talked him into digitizing the old maps generated by surveys at Tijeras, geo-referencing them, and overlaying them on topographic and aerial maps.”

Fowler notes her relationship with the Santa Fe Institute, “a think tank in which scientists and scholars from different disciplines come together.” This allowed Cordell to rub elbows with physicists, biologists, and other specialists “to share concepts, ideas, and procedures.” Indeed, Santa Fe Institute president

Jerry Sabloff, says “Linda was an active and welcome participant in a number of interdisciplinary discussions at the Santa Fe Institute and, throughout her career, was very open to looking to other disciplines for new techniques, methods,



Cordell (center) meets with U.S. Forest Service personnel during the Tijeras Pueblo excavations.

MAXWELL MUSEUM OF ANTHROPOLOGY, UNM

and theoretical approaches that she could apply to her own archaeological thinking and research.”

Much of Cordell’s work involved collaboration. She loved pulling together smart people with different expertise to discuss a topic together, much as a group of friends might gather around a table to fit pieces of a jigsaw puzzle together from different angles. Cordell’s so-called “ceramics slumber parties” grew from this impulse. In the early 2000s she contacted Habicht-Mauche and some other younger scholars, and thus began a yearly gathering in which the group visited 14th-century sites and museum collections and pondered each other’s questions and insights about the material.

These parties, which lasted for a decade, proved to be exceptionally fun and fertile undertakings that resulted in two symposia at the Society for American Archaeology meetings and two workshops at the Santa Fe Institute. The Ceramics Slumber Parties not only underscored Cordell’s enthusiasm for the work, but also her eagerness to work with young colleagues and to learn from them as well as help them along.

“Linda always extended her hand,” says Habicht-Mauche. “Many people of my generation have examples of her stepping in and making an opportunity happen. Someone would call, maybe to (ask you to) write a review article, and you’d find out later that she had dropped your name. She’d make sure people knew about your work. She created networks.”

Cordell was still inspiring and helping young people shortly before her death. In November 2012, and she gave a lecture at Washington State University titled, “Creating, Re-creating and Decoding Active Landscapes in the Prehispanic Pueblo Indian Southwest.” The lecture, and lecturer, were well received. “It was a terrific visit,” Lipe says. “She was full of energy, full of ideas, and she got our grad students very excited. One of them talked her into joining his Ph.D. committee.”



Cordell visited the Woodrow Ruin in New Mexico in June, 2012

That student was Kyle Bocinsky, and his experience with Cordell echoed that of hundreds of other young scholars she influenced and encouraged over the course of her career. “We had a committee meeting over the phone right away,” he remembers. “We were discussing my research proposal, and then she shifted the discussion and asked what kind of job I’d ultimately like to get. She wasn’t just interested in my research, but she also cared about me as a person.

“It was really lovely.”

KRISTIN OHLSON is a Portland, Oregon, writer and the author of the soon to be published book *The Soil Will Save Us*. Her article “The Dean of Texas Archaeology” appeared in the Winter 2011-12 issue of *American Archaeology*.



Eleven Thousand Years of History

The Conservancy's first site in South Carolina contains one of the oldest known features in the state.

Foxwood Farms, which sits in the shadow of the Blue Ridge Mountains in northwest South Carolina, is a premier facility for hunter jumper horse training, as well as horse showing, breeding, and sales, that's owned and managed by Michael and Jodi Robertson. In one of the fenced paddocks, looking a little out of place, is a metal carport. Beneath the carport are several very deep excavation units, which are part of the investigation of the site.

Several years ago, while pulling up a tree stump, Michael's brother, Jesse, found a piece of 4,500-year-old fiber-tempered pottery. The discovery, which is unusual for this area, led to the investigation by Terry Ferguson, an archaeologist at nearby Wofford College. Ferguson is leading a team of archaeologists with the South Carolina Institute of Archaeology and Anthropology in Columbia, as well as scores of volunteers, who are excavating the site.

To date, dozens of features and artifacts have been recovered beneath and outside of the metal shelter, while the Robertsons continue to raise and train horses, and their



GEORGE LOWRY

Tommy Charles excavates a row of palisade posts.

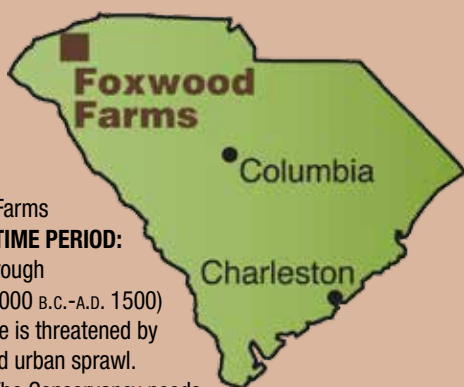
clients practice jumps nearby. The data suggests near continuous occupation of the site from approximately 9000 B.C. to A.D. 1500.

One of the most interesting finds is a Late Woodland/ Mississippian period (ca. A.D. 1350) palisade that surrounded the village. Another remarkable discovery is 20 flat stones that were found covering a shallow pit at the 10,000 year-old level. The arrangement of the stones, which resembles a tabletop, suggests humans placed them there, though it's not clear what their purpose was. What is clear is that it's one of the oldest known features in the state.

What's also clear is that the site is one of the most significant sites in the state. Tommy Charles, who retired from the South Carolina Institute of Archaeology and Anthropology, said it is especially important to clarifying the poorly understood archaeological chronology of this region of the state, which is known as the Piedmont.

To ensure that research can continue, the Robertsons have agreed to sell the Conservancy approximately nine acres containing the site. The Conservancy, in turn, will make sure the excavations continue to have no adverse impact on the Robertsons' horse farming operation. This is the first of what the Conservancy hopes will be many acquisitions in South Carolina. —*Jessica Crawford*

CONSERVANCY Plan of Action



SITE: Foxwood Farms

CULTURE AND TIME PERIOD:

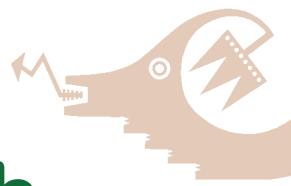
Early Archaic through
Mississippian (9000 B.C.-A.D. 1500)

STATUS: The site is threatened by
development and urban sprawl.

ACQUISITION: The Conservancy needs
to raise \$110,000 to purchase approximately nine acres.

HOW YOU CAN HELP: Please send contributions to
The Archaeological Conservancy, attention:

Foxwood Farms, 1717 Girard Boulevard NE, Albuquerque, NM 87106.



Archaic Site Saved through Public-Private Partnership

Sopris is one of the few Archaic sites in this region.

CHAZ EVANS

Colorado's Pitkin County Open Space and Trails Department and the Conservancy have agreed to jointly hold an easement to preserve the Sopris site, a very unusual high altitude site near Aspen. Situated at an elevation of over 7,800 feet, Sopris was identified and documented by Metcalf Archaeological Consultants, a cultural resource management firm, and the Colorado Office of the State Archaeologist. The site could be more than 5,000 years old, and it was apparently occupied from the Middle Archaic to the Late Prehistoric periods. Of the 187 prehistoric sites recorded in Pitkin County, only nine date to the Archaic period.

Sopris' age is based on the styles of projectile points and other lithic artifacts that were found there. Some of these items, which were not made from local stones, could have been procured from sources hundreds of miles away. These artifacts suggest a long occupation or multiple episodes of seasonal occupations over thousands of years. Archaic period groups tended to move from one area to the next during the most advantageous times, a



Assistant Colorado State Archaeologist Kevin Black shows a groundstone to visitors.

pattern known as "seasonal round." For example, they would settle in on a riverbank when the fish were most plentiful, or camp in an oak grove when the acorns were ready to harvest. It's not clear what attracted people to the Sopris site.

An easement is a partial ownership interest that restricts how the owner can use the surface of the property. The easement protecting the Sopris site prohibits building on the property and prevents further subdivision of the land. The easement document is recorded in the courthouse and it binds future owners of the land to this agreement.

Pitkin County was deeded the easement in exchange for two transferable development rights (TDRs) that were

granted to the owners by the county. The county's TDR program, which was implemented in 1994, grants property owners transferable credits in exchange for forfeiting their development rights to preserve open space, archaeological sites, and even historic houses. Once granted, TDRs can then be sold to property owners and developers. The market value of TDR rights has changed over the years based on supply and demand. The rights can be used to allow a holder to build in Aspen's restricted urban growth boundary. They can also be used to allow an owner to build homes larger than the county's maximum square footage of 5,750.

The Conservancy was invited to co-hold the easement by Pitkin County because of our expertise and experience in managing archaeological preserves. The Conservancy has already drafted a management plan for the preserve. —Jim Walker





POINT-5 acquisition

Renowned Burial Site Preserved

The Conservancy is in the process of obtaining the famous Windover site near Cape Canaveral, Florida. Archaeologists have found a large number of incredibly well preserved Archaic-period skeletons there.



GLEN DORAN

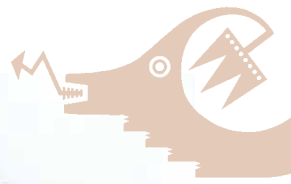
These are some of the thousands of people who visited the site during the excavations.

Around 8,000 years ago near the east coast of central Florida, a group of Archaic people lived by a small pond. Eventually they died,

and their remains were buried in the pond. Their existence was unknown until, in the early 1980s, a backhoe operator preparing the land for the

construction of a subdivision, scooped up a human skull.

The discovery of the skull and other human remains initially resulted



This piece of incised and stained wood disintegrated shortly after the photo was taken.

in the suspicion of a recent mass murder, but county medical examiners determined that the human remains were very old, and consequently they contacted the anthropology department at Florida State University. Under the direction of Florida State archaeologist Glen Doran, the excavation of the one-half acre pond, now known as the Windover site, was soon underway, and over the next several years discoveries were made that informed archaeologists about Florida's ancient people. The shallow pond turned out to be an ancient burial site for these early people and the peat sediments and water chemistry was such that it preserved both human remains and grave goods.

The excavations uncovered more than 160 human skeletons, many of which were fully articulated. Some of these skeletons had complete brains—though the brains were shrunk to a third of their normal size—and numerous others included brain tissue. The stomach of a female around the age of 35 still had remnants of her last meal: fish scales and bones, grass and berry seeds, and pieces of nuts. Radiocarbon dating indicated the skeletons ranged in age from about 7,000 to 8,000 years old. Hand tools made of bone and wood and cloth made of woven plant fiber were also recovered.



The fine detail is preserved in a piece of fabric.

Located in a subdivision, the Windover site is approximately 8.5 acres and consists of five wooded lots that surround the small pond. Doran is of the opinion that only half of the pond has been excavated and more cultural resources remain buried within the peat as well as in undisturbed areas around the ancient pond.

Scientists from around the world have taken part in the study, preservation, and analysis of materials recovered from the pond. Many of the artifacts are displayed at the Brevard Museum of History and Natural Science in Cocoa, Florida, and other are housed at Florida State University. The site has also been well documented in books and films and featured in *National Geographic* magazine.

Windover is listed on the National Register of Historic Places and is also designated a National Historic Landmark. It's one of the country's most significant archaeological sites, and it will now be preserved by the Conservancy.

—George Lowry



This is the entire lithic inventory from Windover, in contrast to the hundreds of bone, antler, and fabric items.



POINT-5 acquisition

Learning About the Mohawk

The Conservancy acquires the Cayadutta site.

The Cayadutta site is a large, isolated 16th-century Mohawk village located in the southern foothills of the Adirondack Mountains in Johnstown, a town in east-central New York. Its position on a hilltop adjacent to Cayadutta Creek provided its inhabitants with a resource-rich location that was naturally defensible. The site was discovered in 1892, and since then it has been studied by archaeologists and raided by collectors. Over 2,000 artifacts from the site can be found in a number of public and private collections.

Despite being disturbed by collectors, Cayadutta has intact features and an impressive artifact assemblage. The site was initially investigated by members of the New York State Archaeological Association, and later by Harrison Follette for the Rochester Museum and avocational archaeologist Vincent Schaefer. These early investigations explored middens on the site's terraces and uncovered 47 postholes, some of which still contained original pieces of the wooden posts that formed part of a defensive palisade. Most recently, in 1988-89, the site was excavated by Pennsylvania State University archaeologist Dean Snow as part of his Mohawk Valley Project.

The project began in the 1982 when Snow and one of his colleagues and former graduate students, William Starna, began to discuss the value of the more than 100 sites in New York's Mohawk River Valley. At the time, archaeologists knew less about the Mohawks than other Iroquois groups. This project, which consisted of excavating sites along the Mohawk River that date to later than A.D. 900 and documenting private and public collections from the area, informed archaeologists about Mohawk settlement and demographic patterns over time. The project also examined interactions between the Mohawks and Europeans, as many of these



The site yielded this human effigy carved from bone.

DEAN SNOW



A miniature ceramic pot recovered from the Cayadutta site.

sites were inhabited at the time of contact between the two peoples.

Snow, who was on faculty at the University of Albany at the time, established that Cayadutta covered an area of over 24,000 square feet. He and his team also confirmed the location of the line of posts forming a portion of the village palisade on the southern and southeastern sides, and found evidence of stone hearths in the center of the village. This

data led to the conclusion that 600 to 700 people lived in the village.

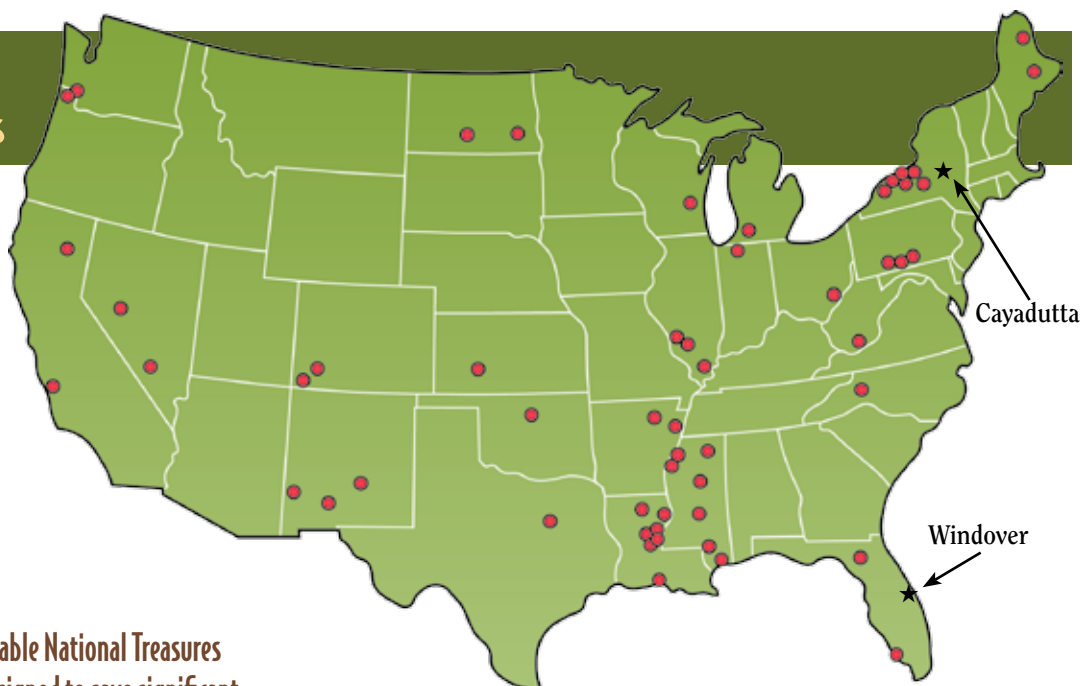
The site's artifacts include finely engraved bone awls, a harpoon, stone and ceramic beads, stone celts, ceramic pipes, and numerous fragments of shell and pottery. One particularly interesting find was a human effigy carved from bone. There are also a few possible European trade artifacts, including a copper tube and an iron object that could be a knife blade.

Samples of maize were dated using accelerator mass spectrometry, a radiocarbon dating technique used to measure carbon isotopes. The quantities of different carbon isotopes change as organic matter decays, allowing researchers to determine when a plant was last alive. The results, as well as a comparison of the site's ceramics to those with known dates from other sites in the region, suggest Cayadutta was primarily occupied from A.D. 1525 to 1545. However one of the maize samples appears to be about 100 years older, suggesting that there could be an earlier component to the site. Additional investigations will be required to confirm this.

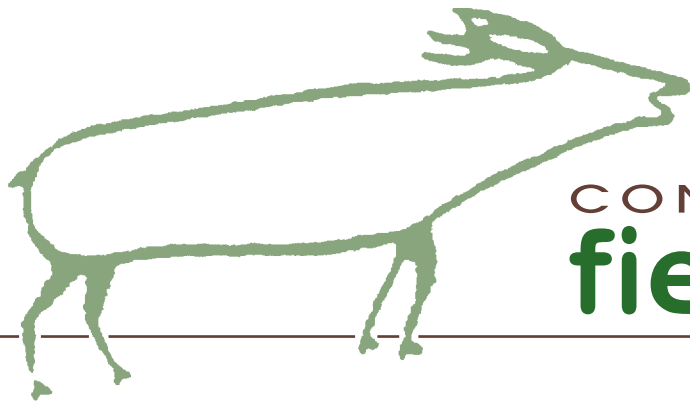
The Conservancy acquired the site from Margery Decker, with the assistance of her son, Randy. Margery's late husband, Louis, who served as the historian for Fulton County, originally obtained the property. Realizing the significance of the site, Louis purchased the property in the 1950s to preserve it.

Much of the site remains undisturbed, and it is likely that evidence of house structures and additional intact features could be found during future excavations. This, as well as the artifact assemblage recovered from the site, make it immensely valuable for future research on New York's early history and the Mohawk. —*Kelley Berliner*

POINT Acquisitions



The Protect Our Irreplaceable National Treasures (POINT) program was designed to save significant sites that are in immediate danger of destruction.



CONSERVANCY field notes

Barnesville Track Rocks Elephants Not From the Ice Age

MIDWEST—Located in eastern Ohio, the Conservancy's Barnesville Track Rocks Preserve protects a number of pieces of exposed bedrock that are covered with prehistoric petroglyphs. Tracks of turkeys, deer, bears, and humans carved into the relatively soft Waynesburg sandstone give the site its name, but geometric figures such as stars and circles are present as well. Like so many rock art sites in the United States, the prehistoric art has accumulated a substantial amount of modern graffiti, mostly names and dates from the early 20th century carved among the native glyphs. Among the more unusual contributions to the panels are two glyphs of what seem to be elephants.

Generally dismissed as modern additions to the panels, the elephant glyphs received renewed attention after rock art researcher Ekkehart Malotki, professor emeritus from North Arizona University, asserted two elephant glyphs from Utah are authentic Ice Age depictions of Columbian mammoths. Alerted to the Barnesville petroglyph by James Leslie of the Midwest Epigraphic Society, an organization with a long-standing interest in the site, Malotki arranged for Australian rock art researcher Robert Bednarik to visit Barnesville last June to conduct a microerosional analysis of the Barnesville elephant glyphs in hopes of ascertaining their age.

Bednarik pioneered the use of microerosional analysis as an archaeological dating tool. It's based on the premise that the extent of weathering exhibited by rock surfaces is to some degree a factor of time. Bednarik's technique involves making a microscopic



Robert Bednarik does a microerosional analysis at Barnesville Track Rocks.

PAUL GARDNER

examination of the rock crystals broken during the incision of the glyphs and measuring the degree of rounding of these broken edges. By comparing the relative microerosion of modern dates carved into the rocks, Bednarik was able to calculate a calibration curve for the Barnesville rocks that correlates the degree of crystal edge rounding to age. Fitting the measurements from the elephant glyphs to the

calibration curve indicated a probable age of about one hundred years, which places it in the period of the other modern graffiti.

While it is disappointing not to have an example of the oldest rock art in North America, it was exciting to see a Conservancy preserve used as early test case for a technique that has the promise to revolutionize rock art studies.

Waterside Shell Heap Research

EAST—Waterside Shell Heap is one of only a few known shell middens preserved from the Late Archaic period Moorehead Phase (circa 2000 B.C.) in Maine, and it was last excavated by archaeologist John Rowe in the 1930s when he was a young man and the site was located in his mother's front yard. Rowe donated the site to the Conservancy in 1990. This past summer researchers from the University of Maine, under the direction of Brian S. Robinson, and as part of archaeologist Sky Heller's doctoral dissertation project, conducted the first professional archaeological investigations at the site in over 70 years.

Archaeological evidence indicates Waterside's residents ate a lot of swordfish, but little is known about the other types of fish they consumed. This is because Waterside and other Archaic period shell middens weren't screened for small fish bones when originally excavated, so no systematic study of small fish species has been undertaken for this period.

Robinson and Heller reexcavated two of the pits that Rowe dug, and they exposed and profiled the north and east walls of the midden. They also removed four column samples of the midden that they took to their laboratory for analysis. While removing the samples they plotted the bone fragments and drew a plan view of each level in the column. Each column was correlated directly with Rowe's original excavations and stratigraphic profile from the site. The more the researchers dug into the site, the more they became impressed with the detail of Rowe's original work and the value it brought to the current project.

Heller's dissertation project will use the data from the Waterside project and apply it to the analysis of the



The stratigraphy of an exposed midden wall is compared to Rowe's drawings.

ecology, changing marine currents, and culture change during a period when the climate was cooling in the late Holocene in Maine. Preliminary fine screening has yielded a rich deposit of tiny fish bones. Given the lack of direct evidence for fish ecology in the distant past, this research at the Waterside Shell Heap Preserve has the potential to contribute important evidence for prehistoric environment and culture change on the Gulf of Maine. Such research is especially pertinent at a time when sea level rise and marine warming are threatening the existence of coastal shell middens such as Waterside and also changing the current ecology of our fisheries.

Chissa Talla Addition

SOUTHEAST—The Conservancy has recently added five acres to its Chissa Talla preserve, a Chickasaw village site in the tribe's homeland in northeast Mississippi near the city of Tupelo. The Conservancy originally acquired the site in 2005, when it received a grant from the Chickasaw Nation in Oklahoma to purchase 35 acres of the village.

The site was occupied from the early 1700s until the Chickasaw, once one of the most powerful and influential Southeastern tribes, were forcibly removed from their land in the 1830s by the U.S. government. A former cattle farm, the site was called Cedarscape for years by its previous owners, John Ray and Lottye Betts Beasley. Cedarscape has since been renamed Chissa Talla, which means "a tall grove of trees" in Chickasaw, as it's situated on a high ridge and covered with a grove of cedar trees.

Upon purchasing the site, the Conservancy agreed to a long-term lease with the Chickasaw Nation, so the site can be used as an educational and cultural center for the Chickasaw and, eventually, the general public. Chissa Talla is rich in information about the lives of the Chickasaw, including how they were affected by the presence of the English

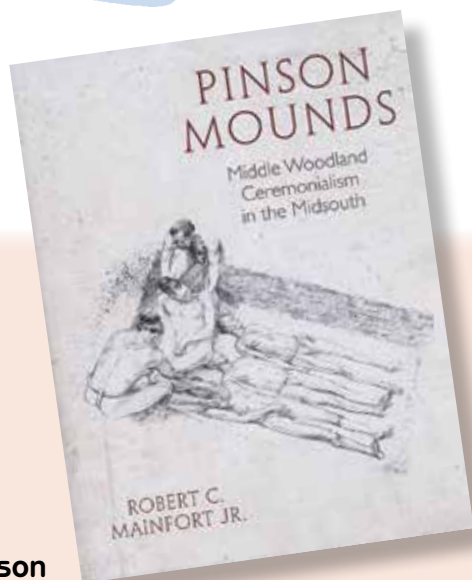
and French in the Lower Mississippi Valley. Chickasaw victories in several battles against invading French armies and their Indian allies consistently thwarted France's efforts to control an important portion of the Lower Mississippi Valley. But despite this, and despite the fact that the Chickasaw were thought to have been allies and trading partners with the English, Chissa Talla has yielded evidence of French trade goods, suggesting that the Chickasaw also traded with them.

Many Chickasaw village sites in this area have been destroyed by development. Chissa Talla is the only protected site other than a few small, excavated sites along the Natchez Trace Parkway.

The five acre-addition covers a small amount of the village plus an archaeologically sterile area that will be used for parking and a visitor's center. The Conservancy and the Chickasaw Nation are committed to ensuring that Chissa Talla remains a shining example of a partnership between a preservation organization and an Indian tribe, as well as a tool for educating the public about the importance of archaeological and historic preservation.



Reviews



**Pinson
Mounds:
Middle Woodland Ceremonialism
in the Midsouth**

By Robert C. Mainfort, Jr.

*(University of Arkansas Press, 2013;
310 pgs., illus., \$60 paper;
www.uapress.com)*

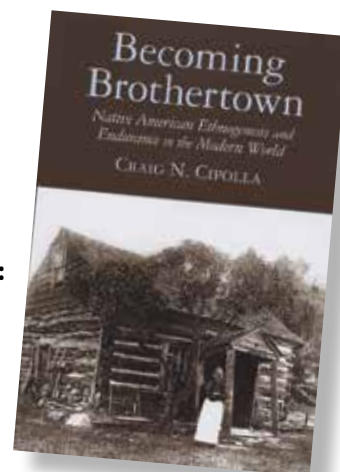
Pinson Mounds is a stunning complex of Middle Woodland mounds and earthworks that tower above the western Tennessee landscape, 10 miles south of Jackson. Around A.D. 100, Pinson Mounds was a pilgrimage center that drew visitors from many miles away. Non-local ceramics are found in virtually every excavation, and their sources represent a large part of the Southeast. Today there are at least 30 mounds, geometric earthworks, and short-term occupation areas, all within a 400-acre site.

Robert Mainfort of the University of Arkansas has been studying Pinson Mounds since 1976 when he went to work for the Tennessee Division of Archaeology. This is the first comprehensive study of one of the largest and most complex sites in the South and a must for everyone with an interest in the archaeology of the region. Pinson Mounds is a Tennessee State Park with an informative site museum.

**Becoming Brothertown:
Native America
Ethnogenesis and
Endurance in the
Modern World**

By Craig N. Cipolla

*(University of Arizona Press, 2013; 240
pgs., illus., \$50 cloth; www.uapress.arizona.edu)*



The story of Brothertown begins with the story of Samson Occom, a Mohegan Indian who spoke fluent English and adopted the customs of Europeans of mid-17th-century New England. Occom was ordained as a Presbyterian minister and spent three years in England raising money for the impoverished Natives of southeastern Connecticut and the surrounding areas. Upon his return in 1768, Occom found the funds diverted to other purposes including the founding of Dartmouth College in far away New Hampshire.

Seeing no future for Native Americans living in white society, Occom, Joseph Johnson, also a Mohegan, and others brought together members of seven Algonquin speaking tribes—Misquamicut, Narragansett, Niatig, Eastern Pequot, Mashantucket Pequot, Tunxis, and Mohegan—to form a new ethnic group known as the Brothertown Tribe, thereby resulting in the ethnogenesis of a new Indian tribe. They received a grant of land from the Oneidas in central New York and migrated there to begin a new life. When the Natives were pushed out of New York in the early 1800s, the Brothertown people migrated again, this time to Lake Winnebago in Wisconsin, where they remain today.

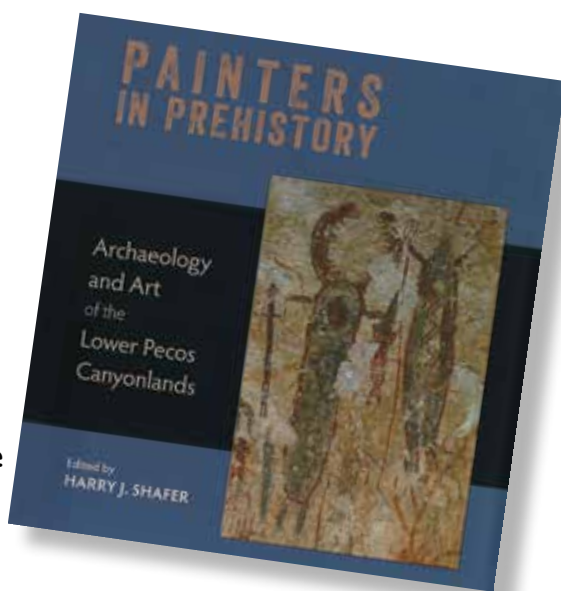
In this compelling study, Craig Cipolla, a historical archaeologist at the University of Leicester, utilizes historical archaeology, including gravestone studies, to tell the story. He focuses not only on the captivating story of the Brothertown people, but also examines the larger issues involved in colonial archaeology and the creation of new ethnic identities. His close examination of gravestones is a major contribution to archaeological method.

Becoming Brothertown is a significant addition to historical archaeology and the study of ethnic identities. It adds an archaeological element to the history of an important Native American movement and provides both professionals and amateurs with a compelling story.

Painters in Prehistory: Archaeology and Art of the Lower Pecos Canyonlands

**Edited by
Harry J. Shafer**

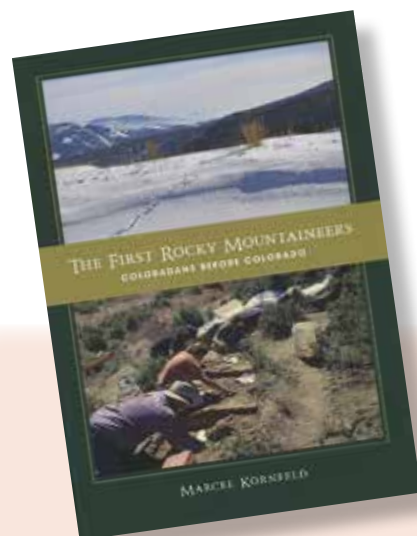
(Trinity University Press, 2013; 296 pgs.,
illus., \$55 cloth; www.tupress.org)



The region around the confluence of the Pecos River and the Rio Grande in south Texas is one of dry, rugged canyons and scenic vistas. Preserved on the limestone cliffs and many caves is a legacy of human history that goes back at least 11,000 years. The magnificent polychrome pictographs, panels, and murals here rival any in the world, though they are so remote that they are seldom seen by anyone but the most dedicated visitors. A comprehensive collection of well-preserved artifacts is found in the dry caves and rock overhangs, including baskets, mats, and other woven objects as well as stone tools and bones. Items that ordinarily perish quickly, like food remains and human excrement, are also commonly found. Altogether, this is a remarkable archaeological record of an ancient people.

Harry Shafer, a noted professor emeritus at Texas A & M University, has assembled this collection of observations by 14 scholars, three artists, and several photographers. The essays explore the daily lives, social relations, and environment of these early inhabitants. *Painters in Prehistory* is beautifully illustrated with dozens of color images of the stunning pictographs including the remarkable White Shaman. Artifacts from the region are also well represented, mainly from the collections of the Witte Museum at Trinity College in San Antonio, which helped produce this volume.

The Pecos Canyonlands has produced remarkable assemblages of art and material remains that are unrivaled anywhere in North America, and *Painters in Prehistory* does an admirable job of bringing this very remote area to the reader. Sadly, those well-preserved paintings and artifacts that have stood the ravages of time so well are a target for vandals and looters who have decimated the archaeological record. Damming the Rio Grande at Amistad flooded many sites, and the border drug wars have severely limited research on the Mexican side of the river. This national treasure deserves better, and *Painters in Prehistory* makes the case for protection and preservation in the strongest possible way. —Mark Michel



The First Rocky Mountaineers: Coloradoans Before Colorado

By Marcel Kornfeld

(University of Utah Press, 2013;
296 pgs., illus., \$65 cloth, \$52 eBook;
www.UofUpress.com)

This important volume explores the early hunters and gatherers who populated Colorado's Middle Park, a natural basin high in the Rocky Mountains. At the end of the last Ice Age some 13,000 years ago, hunter-gatherers moved into this harsh mountain setting, an environment that demanded unique adaptive strategies. These people mastered the severe mountain climate, developing serviceable shelters and clothing as well as food supplies. They left behind a rich archaeological record, including shelters, tools, and food residues including bison bones.

The author Marcel Kornfeld is an archaeologist at the University of Wyoming who has spent 40 years researching the early people of the Rocky Mountains. This volume is written for both the general public and professional archaeologists. It is an important contribution to a growing body of work that continues to illuminate the lives of the first Americans.



The Archaeological Conservancy

Expeditions



Guatemala Highlands and Copán

When: February 13 – 23, 2014

Where: Guatemala and Honduras

How Much: \$2,895 per person
(\$300 single supplement)

Rain forests, snow-capped volcanoes, and magnificent lakes make up the landscape of the ancient Maya in the highlands of Guatemala. On our tour you'll experience a complete spectrum of history from ancient Maya ruins to modern Maya cities. Our travels will take us from beautiful Lake Atitlán to the Honduran rainforest, where we will visit Copán, considered the crown jewel of the southern Maya cities. Cornell archaeologist John Henderson, author of *The World of the Ancient Maya*, will lead the tour.

This stele depicts 18 Rabbit, one of Copán's greatest rulers.

THE ARCHAEOLOGICAL CONSERVANCY

Aztecs, Toltecs and Teotihuacános

When: March 29 – April 7, 2014

Where: Mexico

How Much: \$2,395 per person
(\$325 single supplement)

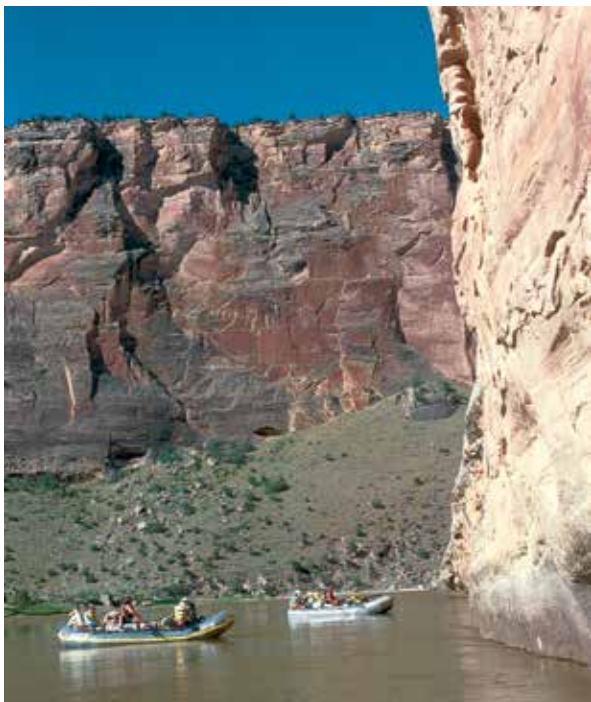
Two thousand years ago, cultures that have long since vanished from Central Mexico constructed magnificent temples and pyramids. Today, these monuments of the Aztecs, Toltecs, and Teotihuacános remain a testament to the fascinating people who built them.

This tour takes you to a number of sites, including those previously inhabited by the Olmec, a culture once known throughout the region for its art style. You'll also visit the monuments of the Aztec, a civilization that witnessed the arrival of the Spanish. You'll explore Teotihuacán, once a great urban center with a population of 200,000. Cornell archaeologist John Henderson will accompany us on the tour.



Teotihuacán was once one of the great cities of the New World.

MARK MICHEL



The Yampa River offers breathtaking scenery.

Yampa River

When: June 1 – 8, 2014

Where: Colorado, Utah

Join us for a downriver adventure in Colorado and Utah, where we'll float through Dinosaur National Monument and experience incredible scenery first described by explorer John Wesley Powell. On our 70-mile journey down the Yampa and Green Rivers we'll visit remote archaeological sites, including Fremont culture rock art panels and prehistoric rock shelters.

— UPCOMING TOUR —

Peru

When: June 20 - July 5

Where: Peru

Machu Picchu remained a secret to the outside world until 1911, when archaeologist Hiram Bingham discovered it almost by accident. Perched on a ridge more than 2,000 feet above the Urubamba River, this ancient city is among the most spectacular sites in all of the Americas. And Machu Picchu is just one of the many highlights of the Conservancy's two-week Peruvian tour. From the coastal city of Lima to the magnificent tombs of the Moche at Sipán, we'll explore some of Peru's most fascinating sites.

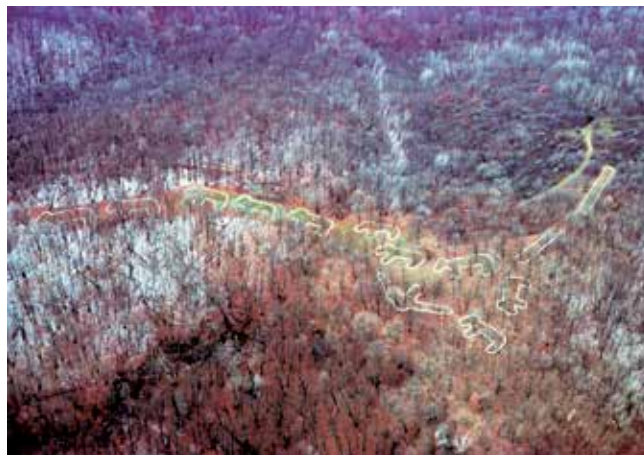
Accompanied by John Henderson, an expert in the region's archaeology, we'll learn about the vast empires that once reigned in the land. The adventure begins with visits to several archaeological museums in Lima, where you'll learn about the country's past cultures. Next we'll explore the pyramids at Sipán and Túcume, and then tour the remains of one of the largest

american archaeology

— UPCOMING TOUR —

Effigy Mounds of the Upper Mississippi Valley

Where: Wisconsin and Iowa



Thirty-one of the 195 mounds in Effigy Mounds National Monument are effigies. These mounds are known as the Marching Bear Group.

In what is now Wisconsin, prehistoric Native Americans constructed about 20,000 earthen mounds, more than in any other area of comparable size. We'll visit the best surviving examples of these fascinating constructions with an emphasis on the sites of the Effigy Mound Culture, the characteristic mound-builder culture of the upper Midwest. Some of the sites we'll visit include Lizard Mounds Park, Effigy Mounds National Monument, and Aztalan State Park. The tour will begin and end in Milwaukee.



The complex architecture of Machu Picchu is a testament to the Incas' sophistication. It's one of the New World's most amazing sites.

pre-Colombian cities in the New World at Chan Chan. Several days in the Inca capital of Cuzco will give us ample time to explore sites such as Coricancha, an Inca temple where the walls were once covered in gold.



Patrons of Preservation

The Archaeological Conservancy would like to thank the following individuals, foundations, and corporations for their generous support during the period of August through October 2013. Their generosity, along with the generosity of the Conservancy's other members, makes our work possible.

Life Member Gifts of \$1,000 or more

Alfred E. Allen, *Kentucky*
 Valerie L. Amerkhail, *District of Columbia*
 Elisa Artusa, *Florida*
 Dennis Clason, *Colorado*
 Bob Gresham, *Texas*
 Howard and Virginia Hight, *Illinois*
 Wythe W. Holt, *Virginia*
 Kathryn Kobe, *Virginia*
 Arthur M. Martin, *Illinois*
 Paul C. Rissman, *New Jersey*
 Kenneth Sassen, *Alaska*
 Catherine Sawyer, *Texas*
 Theodore P. Shannon, *Illinois*
 Richard and Susan Westin, *Maryland*

Anasazi Circle Gifts of \$2,000 or more

Anonymous
 Barbara L. Brown, *Washington*
 Mary Faul, *Arizona*
 Dennis T. Fenwick and Martha J. Lewis, *California*
 Jeanine J. Keating, *Florida*
 Gretchen H. Munroe, *South Carolina*
 Gavine Pitner, *North Carolina*

Foundation/Corporate Gifts

Chickasaw Foundation, *Oklahoma*
 Elfrieda Frank Foundation, *New York*
 George S. and Dolores Doré Eccles Foundation, *Utah*
 Marjory Kassabaum Graff Charitable Lead Annuity Trust, *Missouri*
 PNM Foundation, *New Mexico*



Since the inception of the Conservancy's Living Spirit Circle in 2002, participation has grown to over 100 members. These dedicated members have included the Conservancy in their long-term planning to ensure that America's past will always have a future.

This elite group is open to those who wish to make a lasting contribution by including the Conservancy in their will or estate plans, or by making a life-income gift such as a charitable gift annuity. The Conservancy would like to thank the following Living Spirit Circle members for their thoughtfulness and generosity.

Albert and Becky Abel, *Illinois*
 Charlotte Adelman, *Illinois*
 Michael F. Albertini, *Washington*
 Nancy A. Anderson, *California*
 Dorothea E. Atwell, *Maryland*
 Carol M. Baker, *Texas*
 Olive L. Bavins, *California*
 Lawrence R. Benson, *New Mexico*
 Earl C. Biffle, *Missouri*
 Judith A. Bley, *California*
 Denis Boon, *Colorado*
 Marcia M. Boon, *Colorado*
 Robert E. Bouley, *Tennessee*
 Robert L. Buell, *Indiana*
 Harryette Campbell, *Missouri*
 Jean Carley, *Oregon*
 Suzanne and Donald Carmichael, *Maine*
 Al Crossman, *Arizona*
 George R. Dalphin, *New Mexico*
 Richard W. Dexter, *Wisconsin*
 William G. Doty and Joan T. Mallonee, *Alabama*
 Willa H. Drummond, *Florida*
 Mary D. Dunnell, *Mississippi*
 Ray L. Elliott, *California*
 Hazel L. Epstein, *California*
 Phoebe B. Eskenazi, *Virginia*
 Mary Faul, *Arizona*
 Barbara Fell, *Illinois*
 Marygwyn Fitzgerald, *Colorado*
 Mr. and Mrs. Preston Forsythe, *Kentucky*
 Robert A. Freed and Barbara Hollenbeck, *Washington*

Veronica H. Frost, *Ohio*
 Mr. and Mrs. Derald L. Glidden, *California*
 Maiya and Ross Gralia, *California*
 Sonja A. Gray, *Florida*
 Norman and Gilda Greenberg, *North Carolina*
 Daniel A. Grossman, *Ohio*
 Dale and Barbara Henning, *Iowa*
 Susan F. Hodgson, *California*
 Judith Hollander, *Illinois*
 Rodney and Virginia Huppi, *California*
 Judith Husted, *California*
 Barbara J. Jacobs, *District of Columbia*
 Mr. and Mrs. Felipe C. Jacome, *Arizona*
 Diane Jones, *Maryland*
 Joyce S. Kaser, *New Mexico*
 Lawrence J. Kazura, *New Mexico*
 Jeanne L. Kennedy, *California*
 Dona P. Key, *Oregon*
 Walter and Allene Kleweno, *New Mexico*
 Derwood K. Koenig, *Indiana*
 Eliot A. Landau, *Illinois*
 Luella and George Landis, *Connecticut*
 Elva J. Lane, *Arizona*
 William J. Lannin, *Illinois*
 Gail A. Larson, *Iowa*
 Jay Last, *California*
 Debby Leitner Jones, *Maryland*
 Joyce E. Lively and Ronald J. Karden, *California*
 Margaret A. Lussky, *Minnesota*
 Nancy L. Malis, *Indiana*
 William L. Mangold, *Indiana*

Laura Marianek, *Ohio*
 Robin Marion, *New Jersey*
 Barbara Mead, *Michigan*
 Mark Michel, *New Mexico*
 Gerald and Becky Mitchell, *Tennessee*
 Janet E. Mitchell, *Colorado*
 Jeffrey M. Mitchem, *Arkansas*
 Lois Monteferrante, *New York*
 Sandra Moriarty, *Colorado*
 Lynn A. Neal, *Arizona*
 James A. Neely, *New Mexico*
 Lee Newman, *Virginia*
 David G. Noble and Ruth Meria, *New Mexico*
 Mr. and Mrs. Jan Novak, *New Mexico*
 Lee O'Brien, *Indiana*
 Dorinda J. Oliver, *New York*
 Margaret Ann Olson, *Wisconsin*
 Priscilla A. Ord, *Maryland*
 Jonathan F. Orser, *Ohio*
 Margaret P. Partee, *Tennessee*
 Tim Pertulla, *Texas*
 Donald E. Pierce, *New Mexico*
 Gavine Pitner, *North Carolina*
 Mary Lynn Price, *California*
 Helen Marie Redbird-Smith, *Oregon*
 Barbara A. Reichardt, *California*
 Caryl Richardson, *New Mexico*
 Jean L. Ring, *California*
 Joy Robinson, *California*
 James W. Royle, *California*
 Susan J. Rudich, *New York*

Jon and Lydia Sally, *Ohio*
 Richard A. Sanders and Janice Hand, *Montana*
 Kenneth Sassen, *Alaska*
 Beverly A. Schneider, *Tennessee*
 Anita G. Schroeder, *Virginia*
 Charles Sheffer, *Arizona*
 Walter Sheppe, *Virginia*
 Sarah C. Sherwood, *Tennessee*
 Harriet N. Smith, *New York*
 Rosamond L. Stanton, *Montana*
 Jerry M. Sullivan, *Texas*
 George and Jolene Tanty, *New Mexico*
 Michael and Kellee Taylor, *Washington*
 Ronald and Pat Taylor, *Virginia*
 Don and Jeanne Tucker, *Oregon*
 Anne W. Vanderslice, *California*
 Elizabeth W. Varsa, *New Mexico*
 Steven Vastola, *Connecticut*
 James B. Walker and
 Michael R. Palmer, *New Mexico*
 Stephen Walkinshaw, *Texas*
 Mark and Sandra Walters, *Texas*
 Karl and Nancy Watler, *Colorado*
 Richard and Jean Weick, *Oregon*
 Ron and Carol Whiddon, *New Mexico*
 Katheryne Willock, *Arizona*
 Gordon and Judy Wilson, *New Mexico*
 David L. Wilt, *Maryland*
 Barbara E. Nichols Wolf, *Colorado*
 Kathrin W. Young, *Washington*
 Robert D. Zimmerman, *Nevada*

Archaeology Research Program

Excavate with professional archaeologists.

June, August, September & October 2014



Career exploration? Career change?

The June 15–21 session will focus on archaeology as a career.



CROW CANYON
ARCHAEOLOGICAL CENTER
Discover the Past, Share the Adventure

800.422.8975, ext. 146
www.crowcanyon.org/archaeology

CST 2059347-50

Helping you answer questions on past environments associated with archeological sites.



EARTH SCIENCES RESEARCH, LLC

Specialized in:

- Geoarchaeology
- Limnogeology
- Environmental Sciences
- Geophysics
- Biological & Paleontological Remains
- Geochemistry

And Much More!

Find out how we can help you at tnesr.com or email info@tnesr.com today.

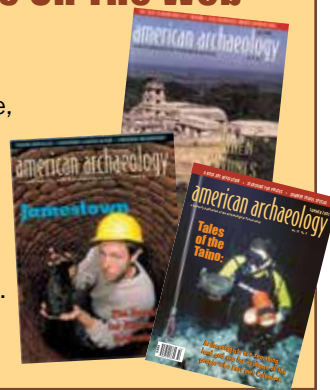
An 8(a) DBE Firm

American Archaeology Magazine On The Web

You can now read complete back issues of *American Archaeology* on the Web. The available issues range from Spring 1997, *American Archaeology*'s debut issue, to Winter 2011-12. There will be a two-year lag between the most recent print and Web issues.

American Archaeology also has a subject index on the Web that is searchable by key word as well as a list of all the books that have been reviewed in the magazine.

www.americanarchaeology.org



The Archaeological Conservancy charitable gift annuity can:

- Increase your financial security by receiving guaranteed fixed payments for your lifetime.
- \$10,000 minimum donation.
- Reduce your tax burden with savings on capital gains and income taxes.
- Help protect America's cultural heritage.

To receive more information and our brochure, mail information requests to:

The Archaeological Conservancy

Attn: Planned Giving

1717 Girard Boulevard NE

Albuquerque, NM 87106

For more information call 505-266-1540 or email tacstaff@nm.net



Yes, I'm interested in making a planned-giving donation to The Archaeological Conservancy and saving money on my taxes. Please send more information on:

☐ Gifts of Stock ☐ Bequests ☐ Charitable Gift Annuities

Name: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Phone: (_____) _____

Protect archaeological sites while increasing your income

Current Annuity Payout Rates

Age	Rates
65	4.7%
75	5.8%
80	6.8%
85	7.8%

MAKE YOUR MARK IN TIME.

Some Conservancy members think the only way to help save archaeological sites is through membership dues. While dues are a constant lifeline, there are many ways you can support the Conservancy's work, both today and well into the future. And by supporting the Conservancy, you not only safeguard our past for your children and grandchildren, you also may save some money.

OLD FORT EARTHWORKS, MIDWEST REGION

ESTABLISHED AS
A CONSERVANCY
PRESERVE IN 2003

Whatever kind of gift you give, you can be sure we'll use it to preserve places like Old Fort Earthworks and our other 465 sites across the United States.

Place stock in the Conservancy.

Evaluate your investments. Some members choose to make a difference by donating stock. Such gifts offer a charitable deduction for the full value instead of paying capital gains tax.

Give a charitable gift annuity.

Depending on your circumstances, you may be able to make a gift of cash and securities today that lets you receive extensive tax benefits as well as an income for as long as you live.

Leave a lasting legacy.

Many people consider protecting our cultural heritage by remembering the Conservancy in their will. While providing us with a dependable source of income, bequests may qualify you for an estate tax deduction.

Yes, I'm interested in making a planned-giving donation to The Archaeological Conservancy and saving money on my taxes. Please send more information on:

☐ Gifts of stock ☐ Bequests ☐ Charitable gift annuities

Name: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Phone: () _____

The Archaeological Conservancy
Attn: Planned Giving
1717 Girard Boulevard NE
Albuquerque, NM 87106

Or call:
(505) 266-1540

