



# Sacramento Archeological Society, Inc. Newsletter

---

[www.sacarcheology.org](http://www.sacarcheology.org)

---

September/October - 2022

---

## UPCOMING EVENTS

### September 2022

September 12, 2022 – Monday, 5:00 – 6:30 p.m. PDT **SAS Webinar** “*Mound Building Culture of Mississippi Valley Region*” by Jan Johansen, SAS officer

---

### October 2022 – **October is California Archaeological Month. Let's celebrate!!**

October 1, 2022 – Saturday, 10:00 a.m. – 2:00 p.m. PDT **SAS Tour** “*San Francisco Presidio*”

October 3, 2022 – Monday, 5:00 – 6:00 p.m. PDT **SAS Webinar** “*Tracking the First Americans*” by Vance Holliday, archaeologist

October 21, 2022 – Friday, 4:00 – 6:00 p.m. PDT **Webinar** Board Meeting

### November 2022

November 14, 2022 – Monday, 5:00 – 6:00 p.m. PDT **SAS Webinar** “*Digging Olompali*” by E. Breck Parkman, archaeologist

### December 2022

December 3, 2022, Saturday, PST - **SAS Annual Meeting** featuring “*Can we identify these 150 year-old remains? Recent archaeoforensic research in San Francisco, CA*” by Jelmer Eerkens, Professor of Anthropology at University of California Davis at U. C. Davis campus

December 12, 2022 – Monday, 5:00 – 6:00 p.m. PST **SAS Webinar** “*Water and Wind: Paleoenvironmental and Archaeological Correlations at Rimrock Draw Rockshelter*” by Pat O'Grady, Archaeologist for University of Oregon

Please note that our regular monthly Zoom presentations are rescheduled for the second Monday of the month from 5:00 p.m. to 6:00 p.m.

See announcements: <https://sacarcheology.org/announcements/> for **webinar access information** and calendar: <https://sacarcheology.org/archaeology-activities/calendar-of-events/> for the complete set of events in our website: [www.sacarcheology.org](http://www.sacarcheology.org).

---

# UPCOMING EVENTS

## SAS Webinar

*“Mound Building Culture of Mississippi Valley Region”*

by

Jan Johansen, SAS Officer

Monday, September 12, 2022

**5:00 p.m. – 6:30 p.m. PDT**

Jan and Tom Johansen experienced a driving tour of mound sites in the Mississippi Valley in April, 2022. In this Webinar Jan will discuss the Mound Building Culture of the Mississippi Region and highlight mounds visited in the following states: Louisiana, Mississippi, Tennessee, Missouri, Kentucky, Illinois, Wisconsin, and Iowa. The entire mound building culture can be organized into 6 periods in North America: Archaic era, Woodland period, Coles Creek culture, Mississippian culture, Fort Ancient culture, and Plaquemine culture. She will discuss these period and associate types of mounds viewed to their period. Poverty Point in Louisiana will be highlighted.



Poverty Point (Photo – Jan Johansen)

Friends are welcome to this webinar and also invited to join our organization. There is no participation fee.

You may join before 5:00 pm PDT and enjoy a social time. See announcements: <https://sacarcheology.org/announcements/> for **webinar access information**.

# **SAS Tour**

## ***“San Francisco Presidio”***

Led by

**GeorgeAnn DeAntoni**

**Saturday, October 1, 2022**

**10:00 a.m. – 2:00 p.m. PDT**

**49 Moraga Ave., San Francisco, CA 94129**

Come to San Francisco for a tour of the El Presidio. The Presidio is one of the United States National Parks with an active excavation site and is home to the largest public archaeology project west of the Mississippi. This tour will be led by GeorgeAnn DeAntoni, Archaeological Specialist. We will visit El Presidio’s Main Post excavations, Archaeology Lab, El Polin Spring, Presidio Officer’s Club and Presidio Heritage Gallery (museum).



Presidio History: <https://www.presidio.gov/welcome>

### **Main Post excavations and Presidio Archaeology Lab**

The Presidio Archaeology Lab’s primary research focus is the site of El Presidio de San Francisco, the original Spanish Colonial fort occupied by the Spain and Mexico from 1776-1846.

### **El Polin Spring**

Located in the heart of the Presidio's largest watershed, Tennessee Hollow, El Polín Spring is central in the area's history. From time immemorial the spring was a source of fresh water for native families. The native Ohlone lived just downstream near today's Crissy Field in a village they called Petlenuc. In 1776, the Spanish established their fort or "presidio" within walking distance of the spring. In 1812, colonial families set up a community of adobe houses, making El Polín Spring San Francisco's first suburb. Legendary healer and businesswoman Juana Briones lived here as a young girl. In the 1850s, the U.S. Army built a dam here, and a century later pushed the creek underground and built housing on top. Through all these periods, birds, butterflies, and other wildlife have found shelter and food in the area's diverse habitats.

### **Presidio Officer’s Club**

The Presidio Officers’ Club is one the most historic buildings in San Francisco—two adobe rooms date to the Spanish *El Presidio*. Throughout the 20th century, the Officers' Club was an exclusive gathering place for Army brass and their families.

### Presidio Heritage Gallery

In the Presidio Officer's Club experience the Presidio story from 10,000 years ago to the present through multi-media displays – including films, images, and artifacts. A first-person film gives deeper meaning to the Presidio's legacy and its new national park chapter.

For more information on El Presidio see <https://www.presidio.gov/>

### Tour Schedule

10:00 – 12:00 Tour of El Presidio (Main Post excavations and Lab) and El Polin Spring

12:00 – 2:00 Bag lunch or purchased lunch on premise and Presidio Officers' Club Museum (Presidio Heritage Gallery)

### Tour Details

The tour is a **Members only event** and attendance is limited. Reservations are accepted on a first come basis. **Contact Lynette Blumhardt** at **yellowbean14@yahoo.com** to make your reservation. A reservation fee of \$5 per person is suggested. All participants are required to sign a Hold Harmless Agreement waiver. Completed forms will be collected at the beginning of the tour.

We encourage carpooling and use of public transportation. We will meet at the trailer in Pershing Square. To locate public parking use 49 Moraga Ave, SF 94129. The cost of parking ranges between \$2.50 - \$3/hour and between \$12.50 - \$15/day. Be ready for any type of weather. Fog can initiate cool temperatures. Wear walking shoes, but we will drive to the natural spring.

## **SAS Webinar**

### **"Tracking the First Americans"**

by  
Vance Holliday, Archaeologist  
**Monday, October 3, 2022**  
**5:00 p.m. - 6:00 p.m. PDT**

The question of when people first arrived in the Americas, based on scientific evidence, has been argued for decades and even centuries. For many years the conventional answer was about 13,000 years ago with the appearance of people who made distinctive artifacts called Clovis points (named for a famous archaeological site near Clovis, New Mexico). Other sites have been proposed as being older than Clovis. A few early occupations ~14,000 to ~16,000 years old were about the oldest well-documented sites that were accepted by most (but not all) archaeologists. The White Sands locality changed that for many archaeologists. The site provides convincing evidence that humans were in what is now southern New Mexico between 23,000 and 21,000 years ago. Human activity in the form of footprints is quite clear and numerous and the dating is solid. At other sites considered older than Clovis, there are often debates over the age or presence of humans, which is usually based on interpretations of broken rocks or bones as tools.





White Sands has the largest collection of fossilized human footprints.

NPS Photo <https://www.nps.gov/whsa/learn/nature/fossilized-footprints.htm>

The time range for the tracks at White Sands is significant because it puts people here during the last Ice Age, which means they were likely here sooner, before the last Ice Age covered essentially all of Canada, from coast to coast (maybe >25,000 years). Getting to the Americas from Asia would be easiest as an Ice Age started or ended because sea level would be lower, and ice wouldn't full cover Canada. Another noteworthy aspect of the White Sands locality is that the presence of humans is based on the tracks. Very few archaeologists anywhere in the world deal with human tracks, and fewer still deal with tracks as such a critical aspect to date the presence of First Americans.

Vance Holliday received a B.A. in Anthropology from the University of Texas at Austin (1972), an M.A. in Museum Science (with a minor in Soil Science) at Texas Tech University (1977), and a PhD in Geological Sciences at the University of Colorado, Boulder (1982). He was on the Geography faculty at the University of Wisconsin-Madison (1986-2002) and is now retired from both Anthropology and Geosciences at the University of Arizona. His research career began on the Great Plains of the U.S., focused on reconstructing and interpreting the landscapes and environments in which the earliest occupants of North America lived, and how those conditions evolved during the Paleo-Indian period. Since arriving at the UA he became Director of the Argonaut Archaeological Research Fund, which is devoted to research on the archaeology and geoarchaeology of the Paleoindian period in the southwestern U.S. and northwestern Mexico. In addition, he has been part of an international project focused on the Upper Paleolithic archaeology and paleoenvironments of southwestern Russia and central Ukraine.

Friends are welcome and also invited to join our organization. There is no participation fee.

The webinar will start at 5:00 pm PDT and formally conclude at 6:00 pm. You may join starting at 4:30 pm to say “Hello” and enjoy a social time.

See announcements: <https://sacarcheology.org/announcements/> for **webinar access information**.

## **SAS Pre-Tour**

### ***“Eastern Nevada”***

A group of SAS members are planning to explore Eastern Nevada for a targeted Spring 2023 tour. A pre-tour week trip to **Eastern Nevada** to scope out the sites could take them to multiple caves with pictographs and petroglyphs, Native American village sites, sites with ancient fossils and historical mining sites. The sites to be investigated include Berlin Ichthyosaur Museum, Hickison Petroglyphs, Toquima Cave, Gatecliff Shelter, Crystal Was Petroglyphs, Mount Irish Archaeological District, Coal Valley, White River Narrows Petroglyphs, Rainbow Canyon/Etna Caves, Baker Village, Great Basin National Park petroglyphs and pictographs, Ward Charcoal Ovens and Honeymoon Hill/City of rocks and petroglyphs. Great Basin Park also has a significant cavern, Lehman Cave and a bristlecone pine forest. For those so inclined, a real locomotive can be rented and driven at the Northern Nevada Railway Museum.

For more information on the pre-tour and/or if you are interested to participate in this pre-tour, please contact Jan Johansen at [janjohansen@sbcglobal.net](mailto:janjohansen@sbcglobal.net).

# SAS Webinar

## “Digging Olompali”

by

E. Breck Parkman, Archaeologist

Monday, November 14, 2022

**5:00 p.m. - 6:00 p.m. PDT**

Breck Parkman’s first assignment as a State Archaeologist was to inventory the cultural resources of Olompali, a brand, new 760-acre State Park in Marin County. According to Breck, one of his most important discoveries was a cultural deposit consisting of artifact-rich fire debris inside the ruins of the former Burdell Mansion. It was here that he found a virtual time capsule of hippie material culture, items that once belonged to the Grateful Dead-affiliated, Chosen Family commune, the residents of the mansion when it was destroyed by fire on February 2, 1969. This presentation describes the importance of that discovery and how, more than fifty years later, it’s still informing our knowledge of the Recent Past.



The Grateful Dead and other bands such as Quick Silver and Jefferson Airplane would set up in front of the Burwell Mansion and play free music for hours on end during their brief stay in May and June of 1966. (Archived photo) <https://wandering-through-time-and-place.com/tag/burwell-mansion-at-olompali/>

Breck Parkman was born and raised in Georgia but has made California his home since 1971. He lives in Sonoma with his teenage son. Breck retired from State service in 2017, after four decades as a State Archaeologist. His work took him to all corners of the state, and to places like Kodiak Island, Alaska; the Canadian Plains; the South Coast of Peru; and Central Siberia. He has worked on five continents. Breck earned B.A. and M.A. degrees in Anthropology at California State University, Hayward. He was the founding Director of the UNESCO-sponsored Fort Ross ~ Global Village Project (1996-2000), is a Research Affiliate at the University of California at Berkeley, and a Past President of the Society for California Archaeology. Currently, Breck sits on the Board of Directors of the Sonoma Ecology Center. His research interests are broad and range from Ice Age megafauna to the archaeology of the Recent Past. Breck’s many publications address these and related topics. His work has been featured in hundreds of newspaper, radio, and television interviews and he has appeared in various films and



documentaries that have aired on PBS, BBC, and the History and Discovery Channels. Breck is perhaps best known for his work at Olompali, where he has helped develop the field of Contemporary Archaeology through his archaeological study of the Grateful Dead and the Chosen Family commune.

In addition, he has been part of an international project focused on the Upper Paleolithic archaeology and paleoenvironments of southwestern Russia and central Ukraine.

Friends are welcome and also invited to join our organization. There is no participation fee.

The webinar will start at 5:00 pm PDT and formally conclude at 6:00 pm. You may join starting at 4:30 pm to say "Hello" and enjoy a social time.

See announcements: <https://sacarcheology.org/announcements/> for **webinar access information**.

## PAST EVENTS

### SAS Webinar - *"Ancient sites in Chile - Highlighting Monte Verde, Tagua Tagua, and Chinchorro"*

On Monday, July 11, 2022 Ruth McElhinney highlighted ancient sites in Chile. These included Monte Verde, Tagua Tagua and Chinchorro. She discussed the landscape and archaeological artifacts that were discovered at these sites. Monte Verde may have been occupied as early as 33,000 years ago.

### Fourth Annual SAS Pool-Party/Pot-Luck/Social

On Saturday, July 30, 2022 Dan and Victoria Foster again offered their home for a pool party/pot-luck social. Sixteen SAS members attended including two new members. Conversations and delicious food were particularly noteworthy.

### SAS Webinar - *"Mayan Civilization- a Look into the Past"*

On Monday, August 8, 2022 Jan Johansen gave a presentation on Mayan civilization as reflected in the sites visited while a group of SAS members traveled there the end of May, 2022. She highlighted geography, climate, mythology and the history of six of the 16 sites that were visited.

## MEMBER'S CORNER

### New Members

We want to welcome new member: Elizabeth Zurawski. It was good to meet her at the pool party and we hope to see you at our Webinars and Tours.



## Support SAS through Amazon Smile

Amazon Smile provides a means to support non-profit organizations such as Sacramento Archeological Society, Inc. It doesn't cost you anything, but you must simply designate a charity or non-profit to ear-mark a small donation from Amazon. The percentage is small, but with 50+ members and our network, maybe we can all contribute to our SAS scholarship account.

Here's the link for setting it up on your system.

<https://www.aboutamazon.com/news/community/how-to-sign-up-for-amazonsmile>

If you purchase from Amazon, sign into <https://smile.amazon.com>

and proceed as you would when making a normal purchase through Amazon. Try it out and let us know if there are problems.

## 2023 Board of Director Nominations

Planning for 2023 is starting with nominations open for board members. All positions are open for applicants. Specifically, Tom Johansen and Diane Sangster will not be candidates for President and Secretary, respectively for 2023. Please contact Jan Johansen, the chair of the Nominating Committee at [janjohansen@sbcglobal.net](mailto:janjohansen@sbcglobal.net) if you have candidates for any position. The process for selecting candidates as defined in the SAS By-Laws is as follows:

### 3.03 Nominations

(1) Petition for Nomination. Any member may petition to be nominated to any office or to an at-large position on the Board by delivering to any elected member of the Board a petition signed by at least five (5) members of this Corporation. Such petition shall be delivered to any member of the Board not later than thirty (30) days prior to any Annual Meeting. The members of the Board receiving any such petition shall immediately forward it to the Nominating Committee for inclusion on the ballot master.

To remind members, the position title and duties of these board members from the SAS By-Laws are summarized as follows:

**3.01 Directors on the Board**. This Corporation shall have four (4) elected **Directors** on the Board, who shall be the Officers, who are the President, Vice President, Secretary, and Treasurer. The Board also may have seven (7) additional Directors, which may include one or more of the following:

Immediate Past President;  
Events Coordinator;  
Membership;  
Editor;  
Education;  
Publicity; and  
Society Relations

At Large Directors: Additionally, the Board may include up to nine (9) additional Directors at large who may be elected or appointed.

**8.01 Officers**. This Corporation shall have a **President**, a **Vice President**, a **Secretary**, and a

**Treasurer.** Collectively, they shall be known as the **Officers** of this Corporation. The Officers shall be Directors.

**8.02 Term; No Multiple Offices.** Officers of this Corporation shall hold office as provided in paragraph 3.06. No officer may hold the position of another officer during the same term.

**8.03 President.** The President shall be the chief executive officer of this Corporation and shall, subject to the control of the Board, supervise and control the affairs of this Corporation. The President shall perform all duties incident to the office and such other duties as provided by these By-Laws or as may be prescribed from time to time by the Board.

**8.04 Vice President.** The Vice President shall perform all duties and exercise all powers of the President when the President is absent or otherwise unable to act. The Vice President shall perform such other duties as may be prescribed from time to time by the Board. It shall be the goal of the Corporation, but not the requirement, that the Vice President shall become the President.

**8.05 Secretary.** The Secretary shall keep the minutes of all the meetings, shall be the custodian of the corporate records, shall give all notices as are required by the law or by these By-Laws and generally, shall perform all duties incident to the office of Secretary and such other duties as may be required by law, by the Articles of Incorporation, or by these By-Laws, or which may be prescribed from time to time by the Board.

**8.06 Treasurer.** The Treasurer shall have charge and custody of all funds of this Corporation, shall deposit such funds as required by the Board, shall keep adequate and correct accounts of this Corporation's properties and business transactions, shall provide reports and accountings to the Board and to the members as required by the Board, and shall in general perform all duties incident to the office of Treasurer and such other duties as may be required by law, the Articles of Incorporation, or by these By-Laws, or which may be prescribed from time to time by the Board.

**8.07 Auditor.** In each January the President shall appoint an Auditor. The Auditor need not be a member of this Corporation. The Auditor may appoint a committee of one or two persons to assist the Auditor. By May 15 the Auditor shall audit the records of the Treasurer for the prior year. By June 15 the Auditor shall present the Auditor's report to the Board.

## **Annual Memberships**

All memberships are renewable on **January 1** annually except for those who joined recently (after September 1 of the previous year). Please support the society by promptly paying your **2022** dues. **Remember your dues help make scholarships possible.** We keep overhead low so that the funds can be used to support students. You may now use our web site <https://sacarcheology.org/society-membership/pay-dues/> to renew and make payment using a **credit card or Paypal.** Remember a membership benefit is email receipt of archaeological/anthropological articles and notices of related events.

The annual dues are:

Student/Limited Member	\$15
Individual Membership	\$30
Family Membership	\$40
Sponsor	\$100 - 999 (individual) \$500 - 999 (business)
Patron	\$1000

Alternatively, please make out your check to “**Sacramento Archeological Society, Inc.**” and mail it to:

**Sacramento Archeological Society, Inc.**  
**P.O. Box 163287**  
**Sacramento, CA 95816-9287**

Thank you in advance for your prompt payment. We really appreciate your support.

\*\*\*\*\*

**Annual Dues for 2022**

Name(s): \_\_\_\_\_ Email: \_\_\_\_\_ Phone: \_\_\_\_\_

\_\_\_\_\_ Email: \_\_\_\_\_ Phone: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Student/Limited Member	\$15	_____	\$ _____
Individual Membership	\$30	_____	\$ _____
Family Membership	\$40	_____	\$ _____
Sponsor	\$100	_____	\$ _____
Scholarship Donation			\$ _____

Total enclosed \$ \_\_\_\_\_

## **Major Donors for 2022**

We are pleased to acknowledge our major contributors for 2022. These donations support our scholarship program.

**Patron (\$1000 or more)**

Carolyn and Gordon McGregor

**Sponsor (\$100 - \$999)**

Paul and Knuti Davis

Ruth McElhinney

Jan and Tom Johansen

# ARCHAEOLOGICAL REFERENCES



The Dirt – A podcast for all ages and backgrounds about archaeology, anthropology, and our shared human story <https://thedirtpod.com/>

## Recent Articles

The reviewed article(s) are:

- “Lidar reveals pre-Hispanic low-density urbanism in the Bolivian Amazon”
- “The Stargazers - The historic Maya oriented their lives by the heavens. Today, their descendants and Western scholars team up to understand their sophisticated astronomy”
- “Deer Glyph Hints at Roots of Maya Calendar”
- “Sacrificed Inca children given psychoactive drug”
- “Ancient Smells Reveal Secrets of Egyptian Tomb”
- “First Human Genome Erupts from Pompeii”
- “The source of the Black Death in fourteenth-century central Eurasia”
- “Ancient Europeans farmed dairy—but couldn’t digest milk – Giant study of ancient potter and DNA challenges common evolutionary explanation for lactase persistence”
- “Vikings sold ivory in Ukraine”
- “Tooth puts Denisovans in Laos”
- “Ancient DNA reveals five streams of migration into Micronesia and matrilocality in early Pacific seafarers”
- “Climate effects on archaic human habitats and species successions”
- “Droughts and societal change: The environmental context for the emergence of Islam in late Antique Arabia”
- “Native tribes and United States enter park management deal”

## “Lidar reveals pre-Hispanic low-density urbanism in the Bolivian Amazon”

“Lidar data of sites belonging to the Casarabe culture (around AD 500 to AD 1400) in the Llanos de Mojos savannah-forest mosaic, southwest Amazonia, reveals the presence of two remarkably large sites (147 ha and 315 ha) in a dense four-tiered settlement system. The Casarabe culture area, as far as known today, spans approximately 4,000 km<sup>2</sup>, with one of the large settlement sites controlling an area of approximately 500 km<sup>2</sup>. The civic-ceremonial architecture of these large settlement sites includes stepped platforms, on top of which lie U-shaped structures, rectangular settlement sites are surrounded by ranked concentric polygonal banks and represent central nodes that are connected to lower-ranked sites by straight, raised causeways that stretch over several kilometers. Massive water-management infrastructure composed of canals and reservoirs complete the settlement system in an anthropogenically



modified landscape. Their results indicate that the Casarabe-culture settlement pattern represents a type of tropical low-density urbanism that has not previously been described in Amazonia.” (Heiko Prömers *et al. Nature*, V. 606, 2022-6-9 pp. 325-328)

## “The Stargazers

The historic Maya oriented their lives by the heavens. Today, their descendants and Western scholars team up to understand their sophisticated astronomy”

This article summarizes research into Mayan time keeping and astronomical knowledge of the Maya as deduced from existing codex, glyphs, and murals. “Archaeological evidence suggests that between 2000 and 3000 years ago, Maya communities embraced a set of mathematical concepts linked to celestial events and other repeating patterns that influenced personal rituals and public life, eventually growing into an intricate, interlocking system.”

The measurement of time was an important Mayan development. “The first inscriptions of the **260-day cycle**, for example, date to this early period. No one agrees on the precise significance of the sacred count: It could be the approximate interval between a missed period and childbirth, how long it takes maize to grow or the product of 20, the fingers-plus-toes base of Maya math, and 13, another common Maya number that could itself be justified by the number of days between first crescent Moon and full Moon.

Around this time, the early Maya also invent a yearlong **solar calendar** that would have been helpful for seasonal tasks such as planting corn.

By 2000 years ago, they have begun to track a third calendar called the **Long Count**, a cumulative, ongoing record of days elapsed since the calendar’s putative zero date in 3114 BCE. This would have enabled Maya scribes to scan back through centuries of historical events on the ground and in the sky.” (Joshua Sokol, *Science*, V 376, 2022-6-3 pp. 1036-1041)

## “Deer Glyph Hints at Roots of Maya Calendar”

“A painting of a deer on a 2,200-year-old wall fragment from Guatemala could be the earliest-known evidence of the Maya calendar.

Researchers’ excavation at Maya site in lowland Guatemala called San Bartolo, uncovering a pyramid complex constructed over hundreds of years, with newer additions erected on top of the rubble of older structures. A razed wall fragment from one early phase—radio-carbon dated to between 300 and 200 BC— included a depiction of a deer head and the Maya numeral meaning 7, potentially representing a day in the Maya calendar system, report David Stuart at the University of Texas at Austin and his collaborators.

Ancient cultures across Mesoamerica, including the Maya, used a 260-day calendar, which identified each day using one of 20 names, including ‘deer’ and a number from 1 to 13. Deer symbols recur in numerous cultures. The authors say the ‘7 deer’ glyph might represent the earliest evidence yet for this religious calendar—which is still used by some Indigenous communities in the region.” (*Nature*, V. 604, 2022-4-28 p. 601)

## "Sacrificed Inca Children Given Psychoactive Drug"

"The naturally mummified remains of a boy and a girl, both 6-7 years old when they died, were found in 1995 about 500 meters below the summit of Ampato, a dormant volcano in the Andes of Peru.

Dagmara Socha at the University of Warsaw and her colleagues used liquid chromatography-mass spectrometry to analyze a hair sample from the female mummy and a fingernail sample from the male mummy. They discovered chemical traces of *Banisteriopsis caapi*, a liana vine, in both samples. The vine contains alkaloids with antidepressant properties and is a core ingredient of ayahuasca. The researchers speculated that the children were given the drink specifically to help reduce their feelings of anxiety before they were killed." (*Nature*, V. 604, 2022-4-21 p. 404)

## "Ancient Smells Reveal Secrets of Egyptian Tomb"

"More than 3,400 years after two ancient Egyptians were laid to rest; the jars of food left to nourish their eternal souls still smell sweet. Researchers used a mass spectrometer to identify components of the aromas from each sample from jars and jugs found in 1906 in the tomb of Kha and Merit in the Deir el-Medina necropolis near Luxor (J. La Nasa *et. al Journal of Archaeological Science* 141, 105577; 2022). They found aldehydes and long-chain hydrocarbons, indicative of beeswax; trimethylamine, associated with dried fish; and other aldehydes common in fruits. The findings will feed into a larger project to re-analyze the tomb's contents and produce a more comprehensive picture of burial customs for non-royals that existed when Kha and Merit died." (*Nature*, V. 604, 2022-4-21 p. 414)

## "First Human Genome Erupts from Pompeii"

"A man's skeleton has yielded the first ancient human genome from Pompeii, the city destroyed by the eruption of Vesuvius in AD 79. To obtain a genome, Fabio Macciardi at the University of California, Irvine, and his colleagues extracted and sequenced DNA from the inner ear bones of two individuals recovered from a building known as *Casa del Fabbro*, or House of the Craftsman. Remains from a woman aged over 50 yielded too little DNA to analyze but those from a 35-40-year-old man produced a partial genome sequence.

The man's DNA broadly resembled that of people in present-day central Italy and Sardinia. Yet it showed some differences from previously published genetic data from people who lived in Italy during the Roman imperial age, hinting at relatively high genetic diversity during this period." (*Nature*, V. 606, 2022-6-9 p. 231)

## "The source of the Black Death in fourteenth-century central Eurasia"

"Until now, the most debated archaeological evidence potentially associated with the Black Death pandemic's initiation derives from cemeteries located near Lake Issyk-Kul of modern-day Kyrgyzstan. These sites are thought to have housed victims of a fourteenth-century epidemic

as tombstone inscriptions directly dated to 1338-1339 state ‘pestilence’ as the cause of death for the buried individuals. This article reports on ancient DNA data from seven individuals exhumed from two of these cemeteries, Kaa-Djigach and Burana. Their syntheses of archaeological, historical and ancient genomic data show a clear involvement of the plague bacterium *Yersinia pestis* in this epidemic event. Two reconstructed ancient *Y. pestis* genomes represent a single strain and are identified as the most recent common ancestor of a major diversification commonly associated with pandemic’s emergence, here dated to the first half of the fourteenth century. Comparisons with present-day diversity from *Y. pestis* reservoirs in the extended Tian Shan region support a local emergence of the recovered ancient strain. Through multiple lines of evidence their data support an early fourteenth-century source of the second plague pandemic in central Eurasia.” (*Nature*, V. 606, 2022-6-23 pp. 718-724)

## “Ancient Europeans farmed dairy—but couldn’t digest milk Giant study of ancient potter and DNA challenges common evolutionary explanation for lactase persistence”

“Over the past 10,000 years, populations living far apart in Europe, Africa, South Asia, and the Middle East separately acquired a key genetic change: the ability to digest the milk sugar lactose as adults. Researchers thought people who had that ability and lived in dairy farming cultures got a nutritional boost and had more children; thus spreading the genetic changes.

But in recent years, unexpected findings—such as data from Mongolia, where people devour milk products but 95% of adults are genetically lactose intolerant—have changed that story. Now, a study combines large archaeological data sets on dairy farming with ancient DNA and finds that across Europe, people consumed dairy for millennia before lactase (the enzyme which enable lactose digestion) persistence into adulthood was widespread. The researchers suggest illness and famine may have turned lactose intolerance from uncomfortable to deadly, driving periods of intense selection for the adult form of the digestive trait.

In a new study, archaeologist compiled evidence of milk from nearly 7000 pieces of ancient pottery, taken from 554 European sites representing the past 9000 years. They tracked the rise and fall of dairy farming across Europe by analyzing the fats preserved in the pottery. With ancient DNA specialist, they then compared this with signs of lactase persistence in 1293 published human genomes from the same regions and period.

Fluctuating dairy use over time didn’t match up with changes in lactase persistence. Instead, the researchers found that what they considered signals of famine and sickness best matched the jumps in lactase persistence in ancient DNA, as reported in *Nature*.” (*Science*, V 377, 2022-7-29 p. 456)

## “Vikings sold ivory in Ukraine”

“Vikings shipped walrus ivory from Greenland far away to Kyiv, according to new analyses of ancient walrus skulls and ivory figurines discovered in Ukrainian capital. The 4000-kilometer trade route is much longer than was thought based on previous studies, which suggested eastern users of coveted material sourced it only from walruses caught in the Russian arctic.

After discovering finished ivory artifacts and discarded walrus skull fragment in a Kyiv lay dating to 1100s CE, an international team used DNA and chemical analyses to link the material to a genetic group of walruses found only in the western Atlantic Ocean. Vikings appear to have overhunted the Greenlandic walruses and the authors say consumer demand in Eastern Europe may have been responsible.” (*Science*, V 376, 2022-4-29 p. 439)

### “Tooth puts Denisovans in Laos”

“A molar recovered from a cave in northeastern Laos in 2018 closely resembles the few known examples of molars of the mysterious extinct human species known as Denisovans, close cousins of the Neanderthals. Previous Denisovan fossils have been found in Siberia and Tibet. The new finding, from Southeast Asia, already expands Denisovans’ known range and suggests they occupied several ecologically diverse landscapes. The research team dated the single, human-looking molar to approximately 130,000 to 160,000 years ago. Although they couldn’t extract DNA, they managed to identify strands of ancient proteins within the enamel that confirmed it was from a member of our genus, *Homo*, and was most likely female, the team reports in *Nature Communications*.” (*Science*, V 376, 2022-5-20 p. 781)

### “Ancient DNA reveals five streams of migration into Micronesia and matrilocality in early Pacific seafarers”

“Micronesia began to be peopled earlier than other parts of Remote Oceania, but the origins of its inhabitants remain unclear. The researchers generated genome-wide data from 164 ancient and 112 modern individuals. Analysis reveals five migratory streams into Micronesia. Three are East Asian related, one is Polynesian and a fifth is Papuan source related to mainland New Guineans that is different from the New Britain—related Papuan source for southwest Pacific populations but is similarly derived from male migrants ~2500 to 2000 years ago. People of the Mariana Archipelago may derive all of their pre-colonial ancestry from East Asian sources, making them the only Remote Oceanians without Papuan ancestry. Female-inherited mitochondrial DNA was highly differentiated across early Remote Oceanian communities but homogeneous within, implying matrilocality whereby women almost never raised their children in communities different from the ones in which they grew up.”

(Yue-Chen Liu *et al.*, *Science*, V 377, 2022-7-1 pp. 72 - 79)(*Nature*, V 605, 2022-5-26 pp. 602-30)

### “Climate effects on archaic human habitats and species successions”

“It has long been believed that climate shifts during the last 2 million years had a pivotal role in the evolution of our genus *Homo*. However, given the limited number of representative palaeo-climate datasets from regions of anthropological interest, it has remained challenging to quantify this linkage. In this article, the researchers describe an unprecedented transient Pleistocene coupled general circulation model simulation in combination with an extensive compilation of fossil and archaeological records to study the spatiotemporal habitat suitability for five hominin species over the past 2 million years. They show that astronomically forced



changes (Milankovitch) in temperature, rainfall and terrestrial net primary production had a major impact on the observed distributions of these species. During the Early Pleistocene, hominins settled primarily in environments with weak orbital-scale climate variability. This behavior changed substantially after the mid-Pleistocene transition, when archaic humans became global wanderers who adapted to a wide range of spatial climatic gradients. Analysis of the simulated hominin habitat overlap from approximately 300-400 thousand years ago further suggests that antiphased climate disruptions to southern Africa and Eurasia contributed to the evolution transformation of *Homo heidelbergensis* population into *Homo sapiens* and Neanderthals, respectively. The numerical simulations of climate induced habit changes provide a framework to test hypotheses on human origin.” (*Nature*, V. 604, 2022-4-21 pp. 495-502)

### “Droughts and societal change: The environmental context for emergence of Islam in late Antique Arabia”

“In Arabia, the first half of the sixth century CE was marked by the demise of Himyar, the dominant power in Arabia until 525 CE. Important social and political changes followed, which promoted the disintegration of the major Arabian polities. Researchers present hydroclimate records from around Southern Arabia, including a new high-resolution stalagmite record from northern Oman. These records clearly indicate unprecedented droughts during the sixth century CE with the most severe aridity persisting between ~500 and 530 CE. They suggest that such droughts undermined the resilience of Himyar and thereby contributed to the societal changes from which Islam emerged.” (Dominik Fleitmann *et al.* *Science*, V 376, 2022-6-17 pp. 1317-1321)

### “Native tribes and United States enter park management deal”

“The Bureau of Land Management (BLM) and U. S. Forest Service signed a first-of-its-kind agreement last week to co-manage Bears Ears National Monument in southeastern Utah with five Native American tribes. The five tribes have long wanted to help oversee this culturally significant monument, a 550,000-hectare expanse pocked by burnt-sienna buttes 1000-year-old Indigenous dwellings, and ceremonial sites. The co-management agreement is meant to incorporate the traditional knowledge and expertise of the tribes—Hopi, Navajo Nation, Ute Mountain Ute Tribe, Ute Indian Tribe of the Uintah and Ouray Reservation, and Pueblo of Zuni—and center their voices in land use decisions.” (*Science*, V 377, 2022-7-1 p. 9)

**Sacramento Archeological Society, Inc.**  
**P.O. Box 163287**  
**Sacramento, CA 95816-9287**