



Sacramento Archeological Society, Inc. Newsletter

www.sacarcheology.org.

May/June - 2023

UPCOMING EVENTS CALENDAR

Access calendar: <https://sacarcheology.org/archaeology-activities/calendar-of-events/> for the complete set of events in our website: www.sacarcheology.org.

May 2023

May 6, 2023, Saturday 12:00 – 4:00 PM PT – Nevada Caves, Rock Art, Fossils and Mining Tour Meeting and Board Meeting at Roger and Lydia Peake's home

May 8, 2023, Monday 5:00 – 6:00 PM PT - **SAS Webinar Danielle Marie Huerta**, PhD candidate at UC Santa Cruz, "Glittering and Glassy: Understanding The Intersection Of Colonial Mineral Extractivism and The Production of Late Rio Grande Lead Glaze-Painted Pottery In Seventeenth-Century New Mexico"

May 13, 2023, Saturday 2:00 – 4:00 PM PT- **SAS Webinar Patricia McNeill**, PhD Candidate at UCD – "Understanding Hunter-Gatherer Mobility Using Isotopes in Ostrich Eggshell" and Sara Watson, PhD Candidate UCD – "Knysna Eastern Heads Cave 1 and the beginnings of the Later Stone Age"

May 20, 2023 – May 26, 2023 – **Nevada Caves, Rock Art, Fossils, and Mining Tour**

June 2023

June 12, 2023, Monday 5:00 – 6:00 PM PDT – **SAS Webinar Melissa Darby**, archaeologist at Lower Columbia Research and Archaeology, "Sir Francis Drake landed in California?"

July 2023

July 29, 2023 – Saturday, 1:00 – 6:00+ p.m. PT - **Fifth Annual SAS Pool-Party/Pot-Luck/Social** at Dan and Victoria Foster's home

August 2023

August 14, 2023, Monday 5:00 – 6:00 PM PT - **SAS Webinar Jessica Weinmeister**, graduate student at New Mexico State University – "X Marks the Spot: Mapping as the Key to Unlocking the Crosspatch Site's Past"

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

UPCOMING EVENTS

SAS Webinar

“Glittering and Glassy: Understanding the Intersection of Colonial Mineral Extractivism and the Production of Late Rio Grande Lead Glaze-Painted Pottery in Seventeenth-Century New Mexico

by

Danielle Marie Huerta

Monday, May 8, 2023

5:00 PM – 6:00 PM PT

What happens to Indigenous technologies when the dissemination of Traditional Ecological Knowledge (TEK) is forced to occur within a historical context characterized by colonial regimes of labor exploitation and religious/ideological subjugation? In order to understand how Colonialism affects the very systems of knowledge it appropriates, it is necessary to understand how that knowledge is situated within Indigenous ways of interacting with and viewing the world around them.

Danielle Marie Huerta will be presenting initial results from her multi-sited and methodologically diverse dissertation project that aims to understand how Spanish colonial mining practices in New Mexico may have impacted the ability of Pueblo potters to create and maintain communities of practice, cultural perceptions of place, and the ability to pass down sociotechnical knowledge from one generation to the next, ultimately leading to the decision by said potters to stop producing glaze-painted pottery in the early eighteenth-century. Using a combination of methods such as lead isotope sourcing, chemical characterization of lead glaze paints using LA-ICP-MS, and ceramic petrography, late Rio Grande Glaze Ware pottery was analyzed from four sites, San Marcos Pueblo (LA 98), Paa’ko (LA 162), Patokwa (LA 96), and the Sanchez Site (LA 20000). These seventeenth-century sites all represent different but interconnected temporal windows and settlement contexts during the Colonial period that have archaeological evidence for the intersection between late Glaze Ware use and/or production and colonial metallurgical activities and/or exploitation of Pueblo labor and Traditional Ecological Knowledge.

Danielle Marie Huerta is a PhD Candidate at University of California, Santa Cruz. She received her B.A. in Anthropology from Texas A & M University, College Station in 2015 and M.A. from University of California, Santa Cruz in 2017. She is currently a Graduate Student Researcher and Archaeological Technician at Los Alamos National Laboratory where she supports their Environmental Protection and Compliance group with managing cultural resources. She has served as an Archaeological Technician with the Cibola National Forest, SEARCH, Inc., Aspen CRM Solutions, and Bureau of Land Management – New Mexico State Office. She has participated in multiple survey and excavation projects in the state of New Mexico since her first field school in Abiquiu in 2014.

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

The webinar will start at 5:00 PM PT and formally conclude at 6:00 PM. You may join starting at 4:40 PM to say “Hello” and enjoy a social time.

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

SAS Webinar
South Africa during Later Stone Age
Saturday May 13, 2023
2:00 p.m. – 4:00 p.m. PT

“Understanding Hunter-Gatherer Mobility Using Isotopes in Ostrich Eggshell”

by

Patricia McNeill

and

“Knysna Eastern Heads Cave 1 and the beginnings of the Later Stone Age”

by

Sara Watson

Two graduate students from University of California, Davis will take you to South Africa and discuss their research into trade and tool making in the North West corner of Cape Province in South Africa during the Later Stone Age.

2:00 PM “Understanding Hunter-Gatherer Mobility Using Isotopes in Ostrich Eggshell”

Ostrich eggshell beads are a common artifact in South Africa and were widely traded. To reconstruct trading networks Strontium isotopes ($^{87}\text{SR}/^{86}\text{SR}$) can be used as a tracing tool for biogenic materials, such as teeth, bone, and egg shell. Strontium from the local geology gets incorporated into biological tissues as they grow, but the ratio of strontium isotopes varies across the landscape. This regional signature becomes permanently embedded in these tissues and when a bead for example is traded from one region to another, archaeologists can trace the bead back to place of origin; hence the reconstruction of trading networks. **Patricia McNeill** in her dissertation research has been investigating hunter-gatherer mobility and resource catchment area in the arid Knersvlakte of Namaqualand, Western Cape, South Africa. In this presentation she will talk about Varsche River 003 archaeological site and her work on this site for her dissertation. One of the tools she used to analysis mobility of Stone Age people in the region was radiogenic strontium isotopes.

Patricia McNeill is a PhD candidate at University of California, Davis. She received her B.A. *Summa com laude* Evolutionary Anthropology and M.A. at University of California, Davis. She has conducted extensive research at the Center for Experimental Archaeology at Davis. Her field experience includes Varsche Rivier 003, Namaqualand, South Africa, Ranis, Saale-Orla Kreis, Thüringen, Germany and Bureau of Land Management, Eagle Lake Field Office, California. She has four publications.

3:00 PM “Early Later Stone Age at Knysna Cave, South Africa: Analysis of lithic assemblages”

The beginning of the Later Stone Age is argued to correspond to the introduction of subsistence, mobility, and land use patterns documented in the ethnographic record. However, the earliest technologies of this period, known as the Early Later Stone Age, or ELSA, are poorly defined. The ELSA can be found as early as 40 ka and as late as about 19 ka. There are very few sites with well-described ELSA assemblages, with some researchers suggesting that the apparent variability between assemblages would reflect a shift in occupation to the now submerged continental shelf to follow the receding coastline. In this presentation, Sara will discuss the ELSA from Knysna Eastern Heads Cave 1, a currently unpublished site located on the southern coast of South Africa. In this presentation Sara will define the Stone Age periods, focus on lithic changes in the ELSA in South Africa, and provide a first look at the beginnings of the Later Stone Age along the southern coast.



Sara Watson is a graduating PhD candidate at University of California Davis. She has a B.A. *Summa cum Laude* Anthropology from University of Texas at Arlington, and an MA from University of California, Davis. She has been involved with extensive field work and research projects associated with South Africa including GeoArcheology Working Group; Experimental investigation of costs and benefits of lithic heat treatment in the Middle Stone Age; Middle Stone Age technological organization at Nelson Bay Cave, South Africa; Doring River Archaeology Project; Center for Experimental Archaeology at Davis; Knysa Paleocape and Middle Stone Age Research Project; Experimental examination of structural changes in silcrete during heat treatment; small tool production at Montagu Cave, South Africa and McNair Scholars Summer Research Internship. She has two publications as a first author and a third one as co-author.

The webinar will start at 2:00 PM PT and formally conclude at 4:00 PM. You may join starting at 1:40 PM to say “Hello” and enjoy a social time.

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SAS Webinar

“X Marks the Spot: Mapping as the Key to Unlocking the Crosspatch Site's Past”

by

Jessica Weinmeister

Monday, August 14, 2023

5:00 PM – 6:00 PM PT

The Crosspatch Site (5DL858, formerly Carvell Site and Berry Ruin) is a large Ancestral Pueblo community center with Basketmaker through Pueblo II components. Crosspatch is located between the Central Mesa Verde region and southeast Utah and has influence from Kayenta and Chaco. **Jessica Weinmeister's** Master's thesis intends to address the question whether flaked stone tools were made at the site and/or exchanged and whether these behaviors changed over time. To gather data for this research Jessica and crew conducted field work at Crosspatch including site mapping and collecting of ceramics and lithics in June 2022. In this presentation Jessica will introduce the Crosspatch Site and share her research results.

Jessica Weinmeister is a graduating student at New Mexico State University (M.A. May, 2023). She received her B.A. *Summa cum Laude* in Anthropology from Western Colorado University. She will be pursuing my PhD at Binghamton University under Ruth Van Dyke's supervision starting this fall. Her professional experience includes Museum Graduate Assistant at the University Museum, New Mexico State University, Los Cruces, NM; Public Archaeology Intern at Crow Canyon Archaeological Center, Cortez, NM, and Cultural Resource Management at Woods Canyon Archaeological Consultants, Cortez, CO and Western Colorado University, Gunnison, CO. Her field work included Maya Archaeological Field School and Haynie and Dillard excavation sites through Crow Canyon Archaeological Center, Cortez. Her independent research included Ceramics Analysis Research Project and Lithic Analysis Honor Thesis, and Lithic Analysis Research Project where she analyzed flaked stone tools from the Crosspatch site. She has two publications.

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SAS Tour

“Mission San Jose”

This tour that was scheduled for Sunday, March 12 was cancelled due to weather. It is expected to be rescheduled on or about October 7, 2023. Stay tuned.

SAS Tour

“Nevada Caves, Rock Art, Fossils, and Mining”

Saturday, May 20, 2023 through Friday, May 26, 2023

This will be a multi-dimensional tour in Nevada. The tour will feature excavated caves/shelters inhabited by Native Americans, rock art in caves and rock outcroppings, Ichthyosaur and Trilobite fossils, ghost mining town(s), and steam engine railway excursion. These sites are located in central and eastern Nevada. The tour itinerary is as follows:

Day 0 – May 20, Sat – Drive to Fallon. Optional visits – Fort Churchill State Park and/or Grimes Point Petroglyphs

Day 1 – May 21, Sun - Ichthyosaur Museum and Berlin, an abandoned mining town

Day 2 – May 22, Mon. - Toquima Cave and Gatecliff Shelter

Day 3 – May 23, Tuesday - Mount Irish Archaeological District, White River Narrows, Crystal Wash, Trilobite Fossils

Day 4 – May 24, Fri - Rainbow Canyon/Etna Caves

Day 5 – May 25, Thursday – Baker Village, and Great Basin National Park

Day 6 – May 26, Friday - Nevada Railway Museum, Ward Charcoal Ovens, and Honeymoon Hill/City of Rocks

The tour will accommodate lodging in motels and/or camping. The number of motels is limited in the small Nevada towns; hence **early reservations are essential**. The suggested motel and camping sites are as follows. Participants are expected to make their own lodging reservations and transportation.

Dates	Lodging
Day 0 – May 20, Sat	Fallon Motel – Holiday Inn 775-249-0761 Fort Churchill State Park camp ground
Day 1 – May 21, Sun (1 night)	Austin Motel – Cozy Mountain Motel 40 Main St. Austin NV 775-346-1566 Camping - Bob Scott Campground
Day 2 – May 22, Mon (1 night)	Alamo Motel – Alamo Inn 300 N US 93 775-725-3371 Camping – Rodeo Park, Alamo or Pharanagat Wildlife Refuge
Day 3 – May 23, Tues (1 night)	Caliente Motel – Shady Motel 430 Front St, Caliente 775-726-3106 Camping – Kershaw Ryan Campground

Day 4 – May 24, Wed (1 night)	Baker Motel – Stargazer Inn 115 S Baker Ave 775-234-7323 Camping – Great Basin National Park Lehman Cave
Day 5 – May 25, Thur (2 nights)	Ely Motel – Bristlecone Motel 775-289-6128 Camping – Ward Charcoal Ovens or Willow Creek Rec Area State Park
Day 6 – May 26, Fri	Same as Day 5 in Ely

The number of participants will be limited. If you plan to attend, please notify Jan Johansen at janjohansen@sbcglobal.net and make your reservation payment. The payment of \$50 / person to Sacramento Archeological Society, Inc. either in the form of a check or via SAS website (<https://sacarcheology.org/society-membership/sas-donations-and-membership-payment/>) will confirm your reservation. Participants are expected to be Society members and are required to sign a Hold Harmless Agreement. Bring completed forms that will be provided in advance with you or email them to Jan Johansen. A pre-tour pot luck meeting will be held at Roger and Lydia's home on May 6, 2023 at 12:00. All participants are encouraged to attend.

Grocery stores and restaurants are minimal in Austin and Baker. Bring food. Also bring cooler with drinks, snacks, etc. pack good humor, hiking sticks, sunscreen, water, hat, and more good humor. Fill gas tank before group travel. Use your car navigation or mobile phone navigation to street addresses.

PAST EVENTS

SAS Webinar - “All bones great, small, and unidentifiable: analysis of faunal remains from Wallace Great House, Colorado” by Lucy Maun

On Saturday, March 11 Lucy Maun, a graduate student at London's Global University; UCL discussed her research at Wallace Great House (5MT6970) in Cortez, Colorado. She gave a brief introduction to the site which has been excavated intermittently since 1969, and consistently since 2008 with Dr. Bruce Bradley as the primary investigator. Lucy review the fauna remains in Room 62. Upon the review of 876 bones she found that 16 different species were represented. Rabbit bones were the most frequently found. Unusual species found included porcupine, beaver and bob cat. No big horn sheep bones were identified. She concluded from her analysis that 1) The bone distribution in Room 62 was similar to other ritual deposits 2) There was less evidence of feasting than expected. 3) The high number of bones in Strata 2 confirmed that this was period of reoccupation. 4) The unusual presence of some species could indicate ritual use or trade. 5) The presence of bone tools suggests that this area was a refuse pit.

SAS Webinar - “Analyzing Upper Paleolithic blank cutting edge efficiency at Tolbor, Mongolia” by Corey Johnson

On Monday, March 13 Corey Johnson, PhD candidate at University of California Davis discussed his dissertation research related to lithics from the Tolbor Valley, Mongolia. The appearance of Initial Upper Paleolithic (IUP) technology in northern East Asia ca. 45 kya marks a significant change in the lithic archaeological record of the region. Understanding the economic trade-offs within IUP tool kits can help reveal important information regarding how those systems operated, and how they compare to later Upper Paleolithic (UP) technologies that developed thereafter. Corey has devised a method for comparing lithics by tabulating the dimensional characteristics of the blank cutting-edge length of the lithic tool kit. Corey analyzed and compared data from four different lithic assemblages dating between ca. 45-20 kya including IUP and later UP variants. The results of the diachronic analysis of cutting-edge efficiency suggest that, in the Tolbor Valley, larger IUP blanks were made relatively more efficiently than smaller ones, and that during the later stages of the UP there was a gradual shift toward the economization of smaller blanks, particularly with the introduction of pressure microblades during the Last Glacial Maximum.

SAS Seminar/Webinar - “Born with a Lead Spoon in their Mouth: Life History & Health in 19th Century San Francisco” by Diana Malarchik and “Canid Analysis” by Jessica Morales

On Saturday, April 8 two University of California Davis students: **Diana Malarchik** and **Jessica Morales** gave presentations at 224 Young Hall. Their talks were also viewable via Zoom.

Diana is a graduate student at University of California Davis. She discussed her research of human skeletal teeth buried in San Francisco Cemeteries (Golden Gate City, Yerba Bueno and the Big Four (Calvary, Laurel Hill, Masonic and Odd Fellows)) and Santa Clara Medical Center Cemetery. She observed that teeth reflected economic differences between economic groups. She noted differences in the duration of breast feeding and the time of weaning by analyzing nitrogen isotopes in the first molar. Finally analysis of enamel identified ingestion of heavy metals such as mercury and lead by children.

Jessica is a PhD candidate at University of California Davis. She gave a presentation on her dissertation topic: “The potential use of dogs for hunting”. First she is striving to identify domestic dogs from other canids by examining their diets through stable isotope analysis. The canine surrogating approach recognizes that dogs’ diet overlaps with human diets; hence the analysis of bones from domestic dogs can be separated from those of other canines such as wolves or coyotes by comparing nitrogen and carbon isotope levels for each with human diet levels. Given that dogs are domesticated are they used primarily for hunting? This question continues to be the topic of her research.

SAS Webinar - “Living on the Spine of the World: Placemaking at Early Community Centers Rincon, UT” by Daniel Hampson

On Monday, April 10th Daniel Hampson, graduate student at New Mexico State University gave a presentation on pre-historic settlements on Rincon Bench, located on the northern bench above the San Juan River at the intersection of Comb Ridge in southeast Utah. His extensive survey of Basketmaker II and III and Pueblo I sites from 500 BCE through 900 CE in this area was described in his Master’s thesis. Discussing his thesis he explained the existence of large circles and that the location of Rincon is a part of a bigger cultural landscape with ritual and astronomical dimensions and communities such as Rincon may have formed around ritual structures.

MEMBER’S CORNER

Association with Renaissance Society of Sacramento and Lincoln Hills Big History Club

We are pleased to announce collaboration of SAS with Renaissance Society of Sacramento [The Renaissance Society](#) and Lincoln Hills Big History Club. The Renaissance Society of Sacramento provides opportunities for participatory lifelong learning and community engagement for older adults. Their learning opportunities include seminars and other programs on widely varied subjects proposed and presented by members. The Renaissance Society is involved with California State University Sacramento to provide these varied learning opportunities.

The Big History Club is an association with the Renaissance Society (RS) to offer the Big History education to residence of Sun City Lincoln Hills. Ranny Eckstrom started Big History sessions at RS and later brought it to Sun City Lincoln Hills when she moved there. With COVID limiting in person sessions, a natural option was to switch to Zoom and continue offering Big History jointly to both organizations. About that time, Ranny also joined SAS, and again it seemed a natural partnership among the three organizations.

Big History, (Cosmos, Earth, Life, and Humanity) is a big picture interdisciplinary view of history, science, and the humanities that explores human existence. It investigates concepts ranging from the Big Bang to the physical and cultural evolution of humans. It looks at the big picture of humanity and narrower histories as examples of what was and is happening globally to our species.

Members of Sacramento Archeological Society have been giving presentations to the RS and Big History Club. This association has borne a relationship of mutual interest. As a result Sacramento Archeological Society will continue to offer speakers to them and in return our members will be invited to attend these talks. If you wish to join the Renaissance Society to

participate in their numerous other events and Zooms, you can get more information here:
<https://www.csus.edu/college/social-sciences-interdisciplinary-studies/renaissance-society/>.

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 **2023** 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

or **pay at the annual meeting.** We really appreciate your support.

Annual Dues for 2023

Name(s): _____ **Email:** _____ **Phone:** _____

_____ **Email:** _____ **Phone:** _____

Address:

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

Total enclosed \$ _____

New Members

Welcome as our returning member: Barb Niepelt and new members: Marie Lewis and Jeffery Mulford.

We are sad to report the passing of Eloise Barker, archaeologist and former member of Sacramento Archeological Society. To plant trees in memory, please visit the [Sympathy Store](#).

Major Donors for 2022/2023

We are pleased to acknowledge our major contributors for 2022/2023. These donations support our scholarship program.

Patron (\$1000 or more)

Carolyn and Gordon McGregor
Jan and Tom Johansen
Ruth McElhinney

Sponsor (\$100 - \$999)

Paul K. Davis and Knuti VanHoven
George Foxworth
John and Kathy Foster
Dan and Victoria Foster
Jeremy Johansen
Doug and Sami La Rocca
Roger and Lydia Peake
Diane Sangster
Teresa Steele

ARCHAEOLOGICAL REFERENCES

New Book Releases

Fluted Points of the Far West Hardcover – March 10, 2023 by Michael F Rondeau (Author)

Fluted Points of the Far West provides the first large-scale overview of fluted points in the far western United States, including details of their attributes, trends in production, and range of variability. It serves as a compendium of groundbreaking research by the California Fluted Lanceolate Uniform Testing and Evaluation Database (CalFLUTED) project. Details regarding size, morphology, material, basal flaking technology, breakage patterns, repair patterns, manufacturing (as revealed by unfinished fluted bifaces), margin grinding, and flute scratching are provided through this research, both in terms of general trends and noteworthy exceptions.

Designed as a ready reference, these data are also summarized for each of the four sample states covered: California, Nevada, Oregon, and Utah. Summaries introduce the history and circumstances of fluted point studies by state, a list of references for each state used in the

CalFLUTED study reports, a comprehensive listing of the relevant CalFLUTED study reports, and a breakdown by state of fluted point attribute details as listed above. Reviews and discussions cover a range of topics, including classification of fluted points, identifying use scars, and indicative traits that a fluted point is not from the prehistoric Far West. Additional discussions cover hafting alternatives, fluted point dating, far western fluted point typology, and the likely direction of further research on a range of fluted point

Recent Articles

The reviewed article(s) are:

- “Neanderthals lived in groups big enough to eat giant elephants”
- “The genomic history of ice-age Europeans” and “Palaeogenomic of Upper Palaeolithic to Neolithic European hunter-gatherers”
- “Bone Collectors: did Neanderthals keep trophies?”
- “A Neolithic narrative?”
- “Severe multi-year drought coincident with Hittite collapse around 1198-1196 BC”
- “Pot residues show how ancient Egyptians made a mummy”
- “Keeping TB in the lung”
- “Entwined African and Asian genetic roots of medieval peoples of the Swahili coast”
- “Meeting the Ancestors – DNA from a medieval German cemetery opens a window on the history of today’s largest Jewish population”
- “Maya Kingdom used vast labor force to build cities”
- “Horse nations” and Early dispersal of domestic horses into the Great Plains and northern Rockies”

“Neanderthals lived in groups big enough to eat giant elephants Meat from the butchered beast would have fed hundreds”

“On the muddy shores of a lake in east-central Germany, Neanderthals gathered some 125,000 years ago to butcher massive elephants. With sharp stone tools, they harvested up to 4 tons of flesh from each animal. The find comes from a trove of animal bones and some stone tools uncovered in the 1980s by coal miners near the town of Neumark-Nord. The finds date to a relatively warm period in Europe known as the Eemian interglacial, 75,000 years before modern humans arrived in Western Europe. They include the bones and tusk of more than 70 mostly adult male straight-tusked elephants, an extinct species almost twice the size of modern African elephants. Most had been left in dozens of piles along the ancient lakeshore over the course of about 300 years. Lutz Kindler and Sabine Gaudzinski-Windheuser, archaeozoologist and archaeologist respectively at the MONREPOS Archaeological Research Center spent months examining the 3400 elephant bones. Under the microscope nearly every bone showed signs of butchery. The bones hadn’t been gnawed by scavengers, suggesting nothing was left for them. Refer to researchers report in *Science Advances*” (Andrew Curry, *Science*, V 379, 2023-2-3 p. 428)

“Bone collectors: did Neanderthals keep trophies”

“Neanderthals collected dozens of skulls of large mammals in a cave in central Spain, in what researchers say is a unique example of complex “symbolic” behavior. Enrique Baquedano at the Archaeological and Palaeontological Museum of Madrid and his colleagues analyzed bone fragments found at a site call Cueva Des-Cubierta, which was used by Neanderthals, and identified the animal group or species to which the fragments belonged. Bones from three extinct animals—the steppe bison (*Bison priscue*), steppe rhinoceros (*Stephanorhinus hemitoechus*) and the ancestor of modern cattle, the aurochs (*Bos primigenius*)—were represented, along with red deer (*Cervus elahpus*) and others. The unearthed bones are dominated by remnants of skulls, nearly all of them from animals that have horns or antler. Limbs, jaws, teeth and all other bones are comparatively rare at the site. The researchers say their findings suggest that the skulls were hunting trophies, and that the cave was a shrine in which they were kept (*Nature Hum, Behav.*<http://doi.org/grpvn> (2023).” (*Nature*, V 614, 2023-02-9 p. 199)

“The genomic history of ice-age Europeans

An extensive genomic time series has been produced for 356 humans from across ice-age Europe. The data reveal how climate change affected the range of hunter-gatherer populations as the developed diverse cultures.” and

“Palaeogenomic of Upper Palaeolithic to Neolithic European hunter-gatherers”

“Modern humans have populated Europe for more than 45,000 years. Our knowledge of genetic relatedness and structure of ancient hunter-gatherers is however limited, owing to the scarceness and poor molecular preservation of human remains from that period. In this article the researchers report of the results of an analyses of 356 ancient hunter-gatherer genomes, including new genomic data for 116 individuals from 14 countries in western and central Eurasia, spanning between 35,000 and 5,000 years ago. They identify a genetic ancestry profile in individuals associated with Upper Paleolithic Gravettian assemblages from western Europe that is distinct from contemporaneous groups related to this archaeological culture in central and southern Europe, but resembles that of preceding individuals associated with the Aurignacian culture. This ancestry profile survived during the Last Glacial Maximum (23,000 to 19,000 years ago) in human populations from southwestern Europe associated with the Solutrean culture, and with the following Magdalenian culture that re-expanded northeastward after the Last Glacial Maximum. Conversely, they reveal a genetic turnover in southern Europe suggesting a local replacement of human groups around the time of the Last Glacial Maximum, accompanied by a north-to-south dispersal of populations associated with the Epigravettian culture. From at least 14,000 years ago, an ancestry related to this culture spread from the south across the rest of Europe, largely replacing the Magdalenian-associated gene pool. After a period of limited admixture that spanned the beginning of the Mesolithic, they find genetic interactions between western and eastern European hunter-gatherers, who were also characterized by marked differences in phenotypically relevant variants.” (Ludovic Orlando,

Nature, V 614, 2023-02-23 pp. 41-42) and (Cosmimo Posth, *et al*, *Nature*, V 615, 2023-03-2 pp. 117-126)

“A Neolithic narrative?”

“A stone panel carved some 10,500 years ago by Neolithic hunter-gatherers in what is now southern Turkey could be the region’s oldest known example of a story told in art. Discovered in 2021 in the village of Sayburç, the 3.7-meter-long panel portrays two human figures encountering wild animals. One, with six fingers, crouches beside a sharp-horned bull. The other, flanked by two snarling leopards, clutches an erect penis. Unlike other Neolithic carvings from the region, this panel show characters interacting and appears to have “narrative integrity”. (*Science*, V 378, 2022-12-9 p. 1029)

“Severe multi-year drought coincident with Hittite collapse around 1198-1196 BC”

“A 300-year, low-frequency shift to drier, cooler climate conditions around 1200 BC is frequently associated with the collapse of several ancient civilizations in the Eastern Mediterranean and Near East. However, the precise details of synchronized climate and human-history-scale associations have been lacking. It is likely that consecutive multi-year occurrences of rare, unexpected extreme climatic events may push a population beyond adaptation and centuries-old resilience practices. This article examines the collapse of the Hittite Empire around 1200 BC. The Hittites were one of the great powers in the ancient world across five centuries, with an empire centered in a semi-arid region in Anatolia with political and socioeconomic interconnections throughout the ancient Near East and Eastern Mediterranean, which for a long time proved resilient despite facing regular and intersecting sociopolitical, economic and environmental challenges. Examination of ring width and stable isotope records obtained from contemporary juniper trees in central Anatolia provides a high-resolution dryness record. This analysis identified an unusually severe continuous dry period from around 1198 to 1196 (± 3) BC, potentially indicating the tipping point for the civilization.” (Stuart W. Manning *et al*, *Nature*, V 614, 2023-02-23 pp. 719-723)

“Pot residues show how ancient Egyptians made a mummy Analysis reveals the chemical applied to corpses in a 2700-year-old mummification workshop”

“For the ancient Egyptians, mummification was a spiritual process imbued with deep meaning. Ancient texts show it took 70 days, with carefully defined ritual and invocations, to prepare the deceased for an eternal afterlife. It also required specialized skill, a long list of ingredients, and a professional class of embalmers steeped in religious and chemical knowledge. New evidence on the process was uncovered by research by now deceased, Ramadan Hussien, University of Tübingen archaeologist. A proto-industrial mummification workshop was found at Saqqara, south of Cairo. Analysis of material found in embalming containers revealed traces of animal fats, beeswax, vegetable oils, and bitumen and multiple plant resins. These ingredients were

probably mixed and heated to form ointments. This ointment was placed on the corpses' skin to block decay and decomposition by bacteria. Almost all the things embalmers needed came from outside Egypt. The substances themselves may have been selected because they were hard to get." (Andrew Curry, *Science*, V 379, 2023-2-3 pp. 424-425. Also note Maxime Rogeot et al. *Nature*, Vol 614, 2023-2-9, pp. 287-293)

"Keeping TB in the lung"

"Bacterial DNA from *Mycobacterium tuberculosis* has been detected in the skeletons of ancient Egyptian mummies. This means that although tuberculosis (TB) is largely a lung disease. *M. tuberculosis* can sometimes disseminate to bone. Studying a TB outbreak with unusual high levels of skeletal disease, Saelens *et al.* found that the presence of an ancestral version of a specialized bacterial secreted protein called EsxM likely helped to define the clinical cause of infection. The authors also found that the ancestral version of EsxM rewired infected host macrophages to become more migratory which promoted the dissemination of infection. *M. tuberculosis* strains from modern lineages that are broadly distributed geographically contain an inactivation mutation in EsxM, likely limiting the extent of extrapulmonary dissemination and promoting transmission." (Cell 185, 1(2022)." (*Science*, V 378, 2022-12-2 p. 961)

"Entwined African and Asian genetic roots of medieval peoples of the Swahili coast"

"The urban peoples of the Swahili coast traded across eastern Africa and the Indian Ocean and were among the first practitioners of Islam among sub-Saharan people. The extent to which these early interactions between Africans and non-Africans were accompanied by genetic exchange remains unknown. In this article the researchers report ancient DNA data for 80 individuals from 6 medieval and early modern (A 1250-1800) coastal towns and an inland town after AD 1650. More than half of the DNA of many of the individuals from coastal towns originates from primarily female ancestors from Africa, with a large proportion—and occasionally more than half—of the DNA coming from Asian ancestors. The Asian ancestry includes components associated with Persia and India, with 80-90% of the Asian DNA originating from Persian men. Peoples of African and Asian origins began to mix by about AD 1000, coinciding with the large-scale adoption of Islam. Before about AD 1500, the Southwest Asian ancestry was mainly Persian-related, consistent with the narrative of the Kiwa Chronicle, the oldest history told by people of the Swahili coast. After this time the sources of DNA became increasingly Arabian, consistent with evidence of growing interactions with southern Arabia. Subsequent interactions with Asian and African people further changed the ancestry of present-day people of the Swahili coast in relation to the medieval individuals whose DNA they sequenced." (Ester S. Brielle, *et. al.*, *Nature*, V 615, 2023-03-30 pp. 866-873)

“Meeting the Ancestors

DNA from a medieval German cemetery opens a window on the history of today’s largest Jewish population”

“The Ashkenazi Jewish population in medieval Europe was concentrated in central Germany; in Erfurt a community alternately thrived and suffered persecution. During a period of calm in the late 14th century, Jewish homes and religious centers occupied the heart of the city and a cemetery just outside its walls received remains that are now yielding clues to Ashkenazi origins. By comparing the Erfurt genomes identified from teeth excavated from a cemetery in Erfurt, Germany with modern and ancient DNA data from many different populations, researchers suggested the Ashkenazi circa 1350 had a mix of ancestry resembling populations from southern Italy or Sicily today, with components found in modern Eastern Europe and the Middle East mixed in. One traditional tale about Ashkenazi roots may not be far from the truth: A family or small group of Jews arrived in Germany around 800 C.E., crossing the Alps at the invitation of Charlemagne, the first Holy Roman emperor, and settled in the Rhineland.” (Andrew Curry, *Science*, V 378, 2022-12-2 p. 940-943)

“Maya Kingdom use vast labor force to build cities”

“An aerial survey has revealed a previously unknown wealth of Maya cities, towns and villages in northern Guatemala: more than 400 settlements, many connected by causeways that would have taken huge amounts of labor and material to build.

Richard Hansen at Idaho State University in Pocatello and his colleagues surveyed a lowland region near the Guatemala-Mexico border using airborne technology that records archaeological features and contours of Earth’s surface. The survey revealed a dense web of more than 700 archaeological sites including cities, small settlements, pyramids, reservoirs, courts for ball games and 177 kilometers of network of elevated causeway. Most of these sites dated to between 1000 B.C. and AD 150.” (*Nature*, V 612, 2022-12-22 p. 593)

“Horse nations” and “Early dispersal of domestic horses into the Great Plains and northern Rockies”

“The horse is central to many Indigenous cultures across the American Southwest and the Great Plains. However, when and how horses were first integrated into Indigenous lifeways remain contentious, with extant models derived largely from colonial records. The researchers conducted an interdisciplinary study of an assembly of historic archaeological horse remains, integrating genomic, isotopic, radiocarbon, and paleopathological evidence. Archaeological and modern North American horses show strong Iberian genetic affinities, with later influx from British sources, but no Viking proximity. Horses rapidly spread from the south into the northern Rockies and central plains by the first half of the 17th century CE, likely through Indigenous exchange networks. They were deeply integrated into Indigenous societies before the arrival of 18th-century European observers, as reflected in herd management, ceremonial practices, and culture”. (Andrew Curry, *Science*, V 379, 2023-3-31 pp. 1288-1293 and William Timothy Treal Taylor *et al.* V 379, 2023-3-31 pp. 1316-1324)

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