Sacramento Archeological Society, Inc.
Newsletter

www.sacarcheology.org. July/August - 2022

UPCOMING EVENTS

July 2022

July 11, 2022 - Monday, 5:00 – 6:00 p.m. PDT - **SAS Webinar** ***"Ancient sites in Chile Highlighting Monte Verde, Tagua Tagua, and Chinchorro"*** by **Ruth McElhinney,** SAS Member

July 30, 2022 – Saturday, 1:00 – 6:00+ p.m. **Fourth Annual SAS Pool-Party/Pot-Luck/Social** at Dan and Victoria Foster's home

August 2022

August 8, 2022 - Monday, 5:00 -6:00 p.m. PDT - **SAS Webinar** ***"Mayan Civilization – a Look into the Past"*** by **Jan Johansen** and **John Foster,** SAS members

August 20, 2022 – Saturday, 3:00 – 6:00 p.m. PDT Pot luck Board Meeting at Lydia and Roger Peake's home.

August 22, 2022 – Monday, 10:00 p.m. PDT – **Big History "History of Ukraine"** by **Paul K Davis,** SAS Member

September 2022

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

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. at least for the summer.
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.

Comments from the President

I really miss traditional SAS tours which have taken us to fascinating archaeological sites, for example older than Clovis in Texas with Mike Collins, Utah Rock Art or more recently Four Corners. These shared experiences put us in touch with archaeologists at their sites and provide valuable information regarding the lives of people who lived in North America centuries ago. The tours also provided a source of revenue for SAS that was combined with many generous donations to fund scholarship awards.

No one expected Covid-19 to linger on well into 2022 forcing us to continue to limit the scope of our SAS activities. We have adjusted by sponsoring webinars and focusing on short outings, such as, the very enjoyable Sacramento waterfront visit hosted by John Foster. (Nevertheless, Jan and I recently completed a seventeen state, seven thousand mile road trip which included important Mound Builder sites along the Mississippi River. We also teamed up with John and Dan Foster plus Jeremy for a tour of sixteen incredible Mayan sites in in the Yucatan.) Note the upcoming webinars.

I would like to tell you about some of the future outings SAS is considering, **China Camp State Park** on the shore of San Pablo Bay, **Miwok Brine Pits** in the Sierra and **Eastern Nevada** including Great Basin National Park near Baker NV. Let any board member know if you are interested in any of these.

China Camp is the site of at least three shell mounds; see Tsim D Schneider, *Shellmounds of China Camp and Tomales Bay State Parks, Marin County,* at *https://www.scahome.org/publications/proceedings/Proceedings.21Schneider.pdf*. At one time more than four hundred Shell mounds dotted the shores of the San Francisco Bay; see Nels Nelson's 1909 paper, *Shellmounds of the San Francisco Bay*, at (https://onlinebooks.library.upenn.edu/webbin/book/lookupid?key=ha100170034). It is painful to realize the magnitude of historical and archaeological treasure lost to development. Only a few Shell mounds have survived and most of those only with bitter legal battles. I believe surviving Shell mounds may be found at the base of San Bruno Mountain State and County Park, Coyote Hills Park in the East Bay, Glen Cove Park in Vallejo, and possibly Triangle Marsh near Ring Mt. in Tiburon. John Foster and other have recommended a China Camp outing for SAS.

A little farther afield are the **Miwok Brine Basins**. According to a very interesting USGS report, *The Saltiest Springs in the Sierra Nevada*, https://pubs.usgs.gov/sir/2017/5053/sir20175053.pdf five salt spring sites were used by the Miwok people to collect salt. To me the most intriguing salt collection site is at the eastern end of Salt Spring Reservoir. A more accessible site is located along highway 50 at Whitehall. You can see the one meter diameter pits the Miwok

people created in solid granite rock to collect salt water from the springs. The USGS report estimates that as much as two and a half tons of salt were produced annually by the pits above Salt Springs Reservoir. As you know, salt was a very precious commodity and the Miwok people would have traded it for other items.

USGS photo

A recon outing may happen this summer or fall. Good roads lead to the west end of the reservoir. From there the round trip distance is only 9.2 miles to the brine pits. The trail along the reservoir is in a wilderness area so no motor boats on the reservoir. Start working on your endurance now to be ready. The highway 50 Whitehall site is a drive by. You just hop out and look over the guard rail; not much fun in that. Given the investment the Miwok made in creating their salt works, it is reasonable to assume some interesting rock art might be found nearby.

A long weekend/short week trip to **Eastern Nevada** could take us to multiple caves with pictographs and petroglyphs and to open rock panels at a number of sites in and around Great Basin National Park. In addition, Coal Valley has layers of cryptocrystalline silicate, (chert) alternating with limestone that was used as a source for lithic material. The nearby valley floor is known to have lithics and debitage. At least one Clovis point was noted there in a survey conducted by DRI. The delightful little town of Caliente could serve as a base of operations. Excellent camping is located near Caliente. Toquima Cave and Berlin-Ichthyosaur State Park could provide way points to break up the journey. Rock Art can be found at Toquima cave, multiple caves and panels in Great Basin NP, Mt Irish, Shooting Gallery site in Basin and Range National Monument, Ash

springs and Crystal Wash plus other sites such as White River Narrows. 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.

References:

https://travelnevada.com/caves/toquima-cave/
http://parks.nv.gov/parks/berlin-ichthyosaur
http://npshistory.com/series/anthropology/wacc/53/report.pdf
http://npshistory.com/series/anthropology/wacc/49/report.pdf
http://npshistory.com/publications/foundation-documents/grba-fd-overview.pdf
https://www.nps.gov/grba/learn/historyculture/baker-archeological-site.htm
https://escholarship.org/content/qt0857z62j/qt0857z62j.pdf?t=p3olrj
https://www.youtube.com/watch?v=Kl0tHRYtwCQ

UPCOMING EVENTS

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

Saturday, July 30, 2022

1:00 – 6:00+ p.m.

Dan and Victoria Foster's home

After another year of semi-seclusion due to Covid let's get together for another social. Again Dan and Victoria Foster have offered their home for this event.

Bring your favorite dish and swimming suit. Please **RSVP** to Dan Foster at calfirearchy@gmail.com or (279) 444-2099 to log your attendance, obtain a parking map and sign up for a dish. There will be plenty of parking close to their house. Dan can offer a map showing the best places to park (really close to their home). A reminder with Dan and Victoria's address will be provided before the event. We will comply with Covid protocol. Bring your mask for indoor use.

Friends are welcome and also invited to join our organization.

SAS Webinar

"Ancient sites in Chile - Highlighting Monte Verde, Tagua Tagua, and Chinchorro"

by

Ruth McElhinney

Monday, July 11, 2022

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

People have been living in the southwest part of South America for more than eighteen thousand years - and some archaeologists say it could be as much as thirty-three thousand years. Ruth will review excavations in Chile that reflect this ancient presence. More specifically she will discuss the finds from Monte Verde, Tagua Tagua and Chinchorro sites. Monte Verde is renowned for finds dated to 18,300 years ago if not 33,000 years ago. Tagua Tagua has artifacts dated to 11,380. A Chinchorro male mummy bears the earliest tattoo found in the Americas. He has a mustache-like dotted line tattooed above his upper lip; the tattoo dates to c. 2300 BE.

Ruth McElhinney, a retired economic development, community relations and legislative professional has a keen avocational interest in history, anthropology and archaeology. She has been a member of the Board of Directors of the Sacramento Archeological Society, Inc. for more than twenty years. She has participated in archaeological excavations and lab work in Italy, Mississippi, and California; has attended historical classes at Oxford; co-led classes for the Renaissance Society, a lifelong learning community sponsored by Sacramento State University; and served as a board member of Friends of San Juan (San Juan de Oriente, Nicaragua). She has traveled widely, visiting archaeological sites in Great Britain, Ireland, Meso-America, and South Africa.

Friends are welcome 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 Webinar

"Mayan Civilization- a Look into the Past"

by

Jan Johansen and John Foster

Monday, August 8, 2022

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

John and Dan Foster and Jan, Tom and Jeremy Johansen, all SAS members had the pleasure of traveling to the Yucatán to visit Maya sites the end of May, 2022. They visited 16 Mayan sites. In this webinar Jan Johansen and John Foster will provide a presentation on Mayan civilization highlighting examples of architecture, landscape and culture from the sites visited. John will share his videos on selected sites.

Jan Johansen is a retired teacher, software development manager, sales representative, consultant, and business manager (taxes and bookkeeping). She has Bachelor of Science in Mathematics from University of Minnesota and an MBA from California State University Northridge. She has been a board member for Sacramento Archeological Society, Inc. (SAS) over 20 years, holding all officer positions. She has been interested in archaeology for years as

an avocation and has participated in excavations in Scotland and California. During the Covid period she has been a regular listener to archaeological webinars. Also, she has been fortunate to travel to many parts of the world to investigate ancient cultures.

John Foster attended UC Santa Barbara as an undergraduate and transferred to UCLA where he graduated with a degree in Anthropology. He continued his studies at Long Beach State, where he was awarded an MA degree in 1973. He continued his graduate studies at the University of Arizona before returning to California to begin his career with State Parks in the Cultural Heritage Section. He was assigned to "ride herd on the cultural resources of the State Park System," and that has allowed him to record, investigate and preserve historic sites and archaeological features throughout California. John expanded his career to under water archaeology and has worked in Mexico as an archaeologist in the states of Aguascalientes, Sonora, and Baja California. He has also visited several ancient sites in Mesoamerica. John was president of SAS for seven years and continues to be a board member.

Friends are welcome 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.**

Big History Webinar

"History of Ukraine"

by

Paul K. Davis

Monday, August 22, 2022

10:00 a.m. – 11:30 a.m. PDT

The region known as the modern nation of Ukraine has had a long, varied and difficult history. The first written information is about invasion by the Persian Empire. The region supplied grain to ancient Athens, and much of it came to be ruled by the Roman Empire. In the early Middle Ages, it was the center of a Jewish kingdom, which was then conquered by Vikings, who in turn were subjugated by the Mongols. In modern times it has sometimes been independent, but mostly fought over by Polish, Turkish, Austrian and Russian Empires. In the 1930s it was victim of the Holodomor, the second greatest genocide after the Nazi Holocaust of Jews. Now it again defends itself from imperial aggression. Paul K Davis will trace this history.

For information on the webinar please contact Paul K. Davis at paulkdavis@earthlink.net

SAS Webinar

"Mound Building Culture of Mississippi Valley Region"

by

Jan Johansen

Monday, September 12, 2022

5:00 p.m. – 6:00 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 Illinois. 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 especially be highlighted.

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.**

PAST EVENTS

SAS Webinar - *"Late Pleistocene tool technology from Nelson Bay Cave, South Africa"*

On Saturday, May 14, 2022 Sara Watson, PhD candidate at University of California, Davis discussed her Middle Stone Age to Later Stone Age research in South Africa. She began by reviewing three age classification of stone ages in Africa. Then she focused on the technology of Middle Stone Age and the environment in southern Africa during the late portion of the Middle Stone Age. Since Nelson Cave is one of the sites associated with this period, she discussed the stratigraphy of the site and the artifact analysis that she has been performing. She is very excited by the results of her investigation. We look forward to her dissertation.

SAS Webinar - *"Estimating Seasonality and harvesting practices for pre-contact site in Alameda-11*

On Saturday, June 11, 2022 Marcela Barron, PhD candidate at University of California, Davis discussed her research on shell fish harvesting. She reviewed her research process and provided preliminary results. She presented data on the most common shellfish species at CA-ALA-11, an estuarine site in the city of Alameda on the San Francisco Bay in December/January 2020-2021. The shell fish at this site included Olympia oysters, bay mussels and bent-nose clams. She looked at the frequency of each and examined the stable isotope signature in the growth rings

of clam shells to assess the seasonality of harvest. By analyzing a large sample she will be able to determine the seasonal occupation of the site. We look forward to more research and her dissertation on this topic.

SAS Webinar - *"Experimental Reproduction of Bone Tools - An Attempt to Quantify Relative Complexity of Bone Projectile Points From Middle/Late Stone Age Africa"*

On Saturday, June 11, 2022 Sean Begg, University of California Davis graduate and graduate student at University of Nevada discussed his experimentation with bone tool production. While at the University of California Davis he worked in the Center for Experimental Archaeology and was introduced to tool replication. He considered the difficulty of manufacturing bone tools using three different techniques: chipping, split and groove and marrow processing. He found that chipping method took little time to make crude points. Marrow processing was also a fast process. The split and groove method was the most cumbersome and time consuming process but afforded more suitable blanks. Additional research is necessary to make more definitive conclusions.

MEMBER'S CORNER

New Members

We want to welcome new members: Jean Leonard, Mark Rahman, and Peyton Connon. We hope to see you on Webinars and at our Pot Luck/Pool Party.

Renewal of 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)

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:

- "Early migration may have spread Celtic languages"
- "Stone Age Networking"
- "Lucy's kind had mysterious neighbors"
- "Neanderthals shaped European terrain"
- "Innovative ochre processing and tool use in China 40,000 years ago"
- "Oldest genomes from Africa offer glimpse of complex past" and "Ancient DNA and deep populations structure in sub-Saharan African foragers"
- "Inferring human evolutionary history"
- "Pointed Takedown of the Mammoth Hunters – Ancient people in the Americas may not have had weapons suited to big-game hunting"
- "Ancient 'paleo' diets included grains"
- "Southern roots for the Maya—and the maize that fed them"
- "Inferring human evolutionary history"
- "Greenland Vikings faced rising seas"
- "Bronze and Iron Age population movements underlie Xinjiang population history"
- "Arctic iron-making got an early start"
- "Ancient equine was a human-made hybrid"
- "Restoring and attributing ancient texts using deep neural networks"
- "How early trouser were designed"

"Early migration may have spread Celtic languages

Ancient DNA reveals 3000-year-old influx of people from France to Britain"

"Researchers David Reich of Harvard University and archaeologist Ian Armit of the University of York have been studying how the genetic makeup of British people evolved from 6000 to 2000 years ago. The data revealed an influx of people starting about 4400 years ago. They began to mix gradually. By the Late Bronze Age 2950 to 2875 years ago, the number of early European farmers originally from Anatolia surged to 38%. By the Iron Age, starting 2750 years ago, Early European Farmers were the source of about half of the DNA of people living in southern Britain. These results boost a theory that Celtic languages spread from France to Britain in the Late Bronze Age. The later migrations and political dominance of the English

eventually marginalized Celtic languages, leaving them spoken chiefly beyond England' borders" (Ann Gibbons, *Science,* V 374, 2021-12-24 p. 1549)

"Stone Age networking"

"Research in 2021 supports a scenario in which *H. sapiens* evolved across vast geographic expanses first within African and later outside it. The process would have worked as follows: Many *Homo* groups lived during the Middle Pleistocene about 789,000 to 130,000 years ago and were too closely related to have been distinct species. These groups would have occasionally mated with each other while travelling through Africa, Asia, and Europe. A variety of skeletal variations on the human theme emerged among far-flung communities. Human anatomy and DNA today include remnants of that complex networking legacy. In this framework, no clear genetic or physical dividing line separated Middle Pleistocene folks usually classified as *H. sapiens* from Neanderthals, Denisovans and other ancient Homo populations." (Bruce Bower, *Science News,* 2021-12-16 p. 30)

"Lucy's kind had mysterious neighbors"

"An individual from an enigmatic hominid species strode across a field of wet, volcanic ash in East African creating footprints. Five of these footprints were discovered at Tanzania's Laetoli site in 1976. In 2019 the footprints were excavated, cleaned and analyzed by McNutt, DeSiva and colleagues (Ohio University Heritage College of Osteopathic Medicine). Two of the prints were particularly well-preserved. Foot shapes, proportions and stride characteristics of the individual differed from those of *A. afarensis* individuals found at the same site. They don't match those from modern juvenile black bears and modern chimps walking upright or present-day East Africans or East African hunter-gatherers dating to between about 12,000 and 10,000. The Laetoli individual possessed a wider, more chimp like foot than *A. afarensis* or humans. Its big toe stuck out slightly from the second toe, but not to the degree observed in chimps. On one step, the Laetoli individual's left leg crossed in front of the right leg, leaving a left footprint directly in front of the previous impression. This cross-stepping particularly points to a hominid track maker." (Bruce Bower, *Science News,* 2022-1-15 p. 8)

"Neanderthals shaped European terrain

The hominids are the first known to have left marks on nature"

"Around 125,000 years ago Neanderthals are believed to transform a largely forested area bordering two central European lakes into a relatively open landscape, says archaeologist, Wil Roebroeks of Leiden University in the Netherlands (Dec 17, 2021 *Science Advances*). Analyses of pollen, charcoal, animal fossils and other material previously unearthed at two ancient lake basins in Germany provide the oldest know evidence of hominids reshaping their environment." (Bruce Bower, *Science News,* 2022-1-29 p. 8)

"Innovative ochre processing and tool use in China 40,000 years ago"

"The findings from the excavation of Xiamabei in northern China on the southern bank of the Huliu River suggest that *Homo sapiens* were present by around 40,000 years ago. This excavation found evidence of the processing of ochre, a distinctive miniaturized lithic assemblage with bladelet-like tools bearing traces of hafting, and a bone tool. These suggest that the cultural adaptations at Xiamabei may reflect a first colonization by modern humans, potentially involving cultural and genetic mixing with local Denisovans." (Fa-Gang Wang *et al. Nature, V. 603,* 2022-3-10 pp. 284-89)

"Ancient 'paleo' diets included grains

A taste for wild cereals sowed farming's spread in Europe"

"Hunter-gatherers in southeastern Europe gathered and ate wild cereal grains for several millennia before migrants from southwest Asia introduced the cultivation of domesticated cereals and other plants say archaeologist Emanuela Cristiani of Sapienza University of Rome and colleagues. A taste for wild cereals among hunter-gatherers of the central Balkan Peninsula, near Turkey smoothed the way for farming to take root in Europe, the team concludes in an article from January 21 in *eLife*. The team found microscopic signs of plant-eating on the teeth of 60 people excavated from five sites in Serbia and Romania. Food particles from crusty deposits on the teeth contained starch granules and cell structures typical of regional wild cereal species. Starch granules from the same wild cereals were found on the grinding surfaces of 17 stone tools, dating to as early as round 8,600 years ago at one Balkan site." (Bruce Bower, *Science News,* 2022-2-26 p. 14)

"Southern roots for the Maya—and the maize that fed them

Migrants from the south may have helped spread early farming Central America, ancient DNA suggests"

"In Maya creation myths, the gods created humans out of corn. Now a new study from a site in Belize suggests corn really was important to the origin of ancient Maya: More than half of their ancestry can be traced to migrants who arrived from the south sometime before 5600 years ago, likely bringing with them new cultivars of maize. The new study by archaeologist Keith Prufer of the University of New Mexico, wildlife biologist Said Gutierrez of the Ya'axché Conservation Trust and colleagues analyzed remains from two rock shelters in the Bladen Nature Reserve in southwestern Belize. DNA analysis showed that Living Maya have inherited more than half of their DNA from an influx from South American and northern Central America and it may eventually lead to a new diet. Between 5600 years ago and 4000 years ago the diet of maize by hunter-gatherers surged from 10% to 50%. That shift happened hundreds of years after the migration but the team says the results fit with emerging story of maize cultivation. Improved plants developed in South America at 6500 year old sites in Peru and Bolivia were possibly the maize the migrants brought to Belize by 5600 years ago." (Ann Gibbons, *Science News,* 2022-3-25 p. 1325)

"Inferring human evolutionary history

Unified genetic genealogy improves our understanding of how humans evolved"

"Genomes are invaluable tools for inferring the demographic and adaptive history of human population spits, admixture, and genetic adaptations. Growing datasets of modern and ancient genomes make this possible, but their massive size comes with important challenges, demanding techniques that analyze immense amounts of data in reasonable amounts of time while using as much information as possible.(Wohns *et al, Science*, p 836).

Unfortunately, the DNA in ancient remains is usually highly degraded and most ancient genomes are not of sufficient quality to be fully incorporated into tree-recordings. Wohns et al. present an approach that aims to skirt inaccuracies introduced by ancient DNA by using such ancient genomes only to help time the emergence of alleles. This allows the use of hundreds of ancient genomes while limiting the effects of errors. They generated an impressive, unified human genealogy from >3500 modern and high-quality ancient genomes from >215 different human populations using >3000 additional ancient genomes to improve inferences from the trees. With this unified genealogy, key events in history, such as population size changes splits or migrations, become clearly apparent. They identify well-resolved events, such as the out-of-Africa migration, and suggest multiple sever reductions in population size through human history." (Jasmin Rees and Aida Andrés, *Science, V 375,* 2022-2-25 pp. 817-818)

"Oldest genomes from Africa offer glimpse of complex past

Signs of ice age isolation match archaeological clues" and "Ancient DNA and deep population structure in sub-Saharan African foragers"

"An analysis of ancient DNA from six individuals from southeastern Africa offers a glimpse of the lives, movements and relations of people who occupied the continent between 18,000 and 5000 years ago; it also hints at the complex commingling of African populations. The work suggests that during the last ice age, some African societies may have become more sedentary and isolated as their environments fragmented. The team led by anthropologist Jessica Thompson, Yale University analyzed samples from the remains of four infants and two adults buried in Malawi, Tanzania, and Zambia and dated respectively to 14,000, 5,000 and 18,000 years ago. The team ran the data through a computer program that compares similar snippets of DNA to estimate relatedness; they also reconstructed a rough family tree dating back 18,000 years. Their model suggests the 34 individuals (including 28 previously reported from across the continent) descend from three major source populations. Two of them from northeastern Africa and southern Africa and the third came from Central Africa. The distinct genetic signatures of those ancestral populations indicate they were mostly isolated from one another 200,000 years ago before coming back together maybe 50,000 years ago. " (Michael Price, *Science,* V. 375*,* 2022-2-25 pp. 803 -4) and (Mark Lipson *et al*., Nature, V. 603, 2022-3-10, pp. 290-96)

"Pointed Takedown of the Mammoth Hunters

Ancient people in the Americas may not have had weapons suited to big-game hunting"

"It has long been assumed from "Clovis" point finds at Blackwater Draw and other "kill sites" that Clovis hunters must have left spear points lying among the bones of mammoths and other massive creatures after killing and butchering them. If so, Clovis big-game hunters possibly contributed to the extinction of their enormous prey. But the Clovis people's status as adept killers of tusked-beasts weighting up to about 9 metric tons has come under fire. New experimental and archaeological studies suggest an entirely different scenario. Spear-throwing hunters might have occasionally killed a mammoth, especially one separated from its group or slowed due to injury. More often, these tool served as knives to cut meat off carcasses of already dead mammoths or as dart tips hurled to scare away other scavenging animals drawn to mammoth remains (Metin Eren, Kent State University, October, 2021).

If Clovis people effectively hunted mammoths, their spears would have often hit ribs or other bones. Those impacts should have left behind many broken Clovis points at presumed kill sites. Yet of 93 Clovis points previously found at 15 presumed kill sites, only 12 of 74 discovered among mammoth, mastodon or gomphothere bones had broken, probably after the points hit bone. In contrast, 10 of 19 Clovis points associated with bison bones—smaller prey with thinner hides likely hunted by Clovis people had fragmented due to hard impacts. Also, although more than 10,000 Clovis points have been recovered in North America, mostly at campsites and in storage slots called caches; none have been found embedded in bones of big game." (Bruce Bower, *Science News,* 2022-12-15 pp. 22-26)

"Greenland Vikings faced rising seas

Climate change might have hastened the society's end"

"Vikings first colonized Greenland in 985 AD. Settlers arrived during the Medieval Warm Period, when conditions there and across Europe were unusually temperate for a handful of centuries. In 1721 when a Norwegian missionary arrived in Greenland, he found only traces of settlements that had been abandoned in the 1400s. The last written record of this society is a letter describing a wedding in 1408. That couple moved to Iceland soon after

By 1350, the climate took a turn for the worse with the beginning of the Little Ice Age, a period of regional cooling that lasted well into the 19th century. The changing climate probably resulted in colder temperatures during the last 100 years of Norse occupation, which would have made farming and raising livestock difficult. But the lower temperatures would have had another impact on Greenland: the expansion of the island's ice sheet. Counter intuitively, sea level around Greenland tends to rise when the ice sheet grows. That is because the ice pushes the land down while gravitationally pulling on the seawater; hence the coast of Greenland flooded by hundreds of meters in some areas at the start of the Little Ice Age. The rising sea levels may have been just another challenge that these Vikings faced." (Freda Kreier, *Science News,* 2022-1-29 p. 8)

"Bronze and Iron Age population movements underlie Xinjiang population history"

"The Xinjiang region in northwest China is a historically important geographical passage between East and West Eurasia. By sequencing 201 ancient genomes from 39 archaeological sites, the researchers attempted to clarify the complex demographic history of the region. Bronze Age Xinjiang populations are characterized by four major ancestries related to Early Bronze Age cultures from the central and eastern Steppe, central Asian, and Tarim Basin regions. Admixtures between Middle and late Bronze Age Steppe cultures continued during the Late Bronze and Iron Ages, along with an inflow of East and Central Asian ancestry. Historical era populations show similar admixed and diverse ancestries as those of present-day Xinjiang populations. These results document the influence that East and West Eurasian populations have had over time in the different regions of Xinjiang." (Vikas Kumasr *et al*., *Science, V. 376,* 2022-4-1 pp. 62-69)

"Arctic iron-making got an early start

Ancient hunter-gatherers were metal smiths, new finds show"

"Hunter-gatherers who lived more than 2,000 years ago in north-eastern Sweden appear to have run ironworking operations as advanced as those of farming societies far to the south. Excavations at Vivungi uncovered two iron-smelting furnaces containing iron ore and by-products of iron production. Hunter-gatherers repeatedly occupied this location from around 5300 BC to AS 1600 with iron production starting around 100 BC." (Bruce Bower, *Science News,* 2022-1-29 p. 9)

"Ancient equine was a human-made hybrid"

"The list of human-made hybrid animals is long and it turns out, even more ancient than scientist thought. The kunga—an equine that existed in Syro-Mesopotamia around 4,500 years ago—is a cross between a donkey and a type of Asiatic wild ass, making it the earliest known hybrid animal bred by people as reported by paleogeneticist, Eva-Maria Geigl and colleagues in Jan 14 *Science Advances*. Domesticated horses didn't appear in this region of Asia until 4,000 years ago. But dozens of equine skeletons found at a royal burial site in northern Syria date back to about 2600 BC. The animals, whose features don't match any known equine species, appear to be kungas: horse-like animals seen in artwork and referenced in clay tablets that predate domesticated horses by centuries. Geigl's team analyzed one skeleton's genome and compared it with those of horses, donkeys and Asiatic wild asses including the extinct hemippe. The kungas' mother was a donkey and its father a hemippe, making it the oldest evidence of humans creating hybrid animals." (*Science News,* 2022-2-12 p. 5)

"Restoring and attributing ancient texts using deep neural networks"

"Ancient history relies on disciplines such as epigraphy—the study of inscribed text known as inscriptions—for evidence of the thought, language, society and history of past civilizations. However, over the centuries many inscriptions have been damaged to the point of illegibility, transported far from their original location and their date of writing is steeped in uncertainty. In this article the authors present Ithaca, a deep neural network for the textual restoration, geographical attribution and chronological attribution of ancient Greet inscriptions. Ithaca is designed to assist and expand the historian's workflow. The architecture of Ithaca focuses on collaboration, decision support and interpretability. While Ithaca alone achieves 62% accuracy when restoring damaged texts, the use of Ithaca by historians improved their accuracy from 25% to 72%." (Yannis Assael *et al., Nature, V. 603,* 2022-3-10 pp. 280-283)

"How early trousers were designed

The oldest known pants stitched together Eurasian cultures"

"Herders and horse riders who buried their dead in the Tarim Basin's Yanghai graveyard pioneered pants making about 3,200 to 3,000 years ago. Their deft combination of weaving techniques and decorative patterns, displaying influence from societies across Eurasia, yield a pair of stylish yet durable trousers now recognized as the oldest such garment ever known. Now an international team of archaeologists, fashion designers, geoscientist, chemist and conservators has untangled how those trousers were made and painstakingly created a modern replica. The source of this fashion was a naturally mummified body. The man, now referred to as Turfan Man because the Yanghai site lies about 43 kilometers southeast of Turfan, China wore an outfit that consisted of the trousers, a poncho belted at the waist, one pair of braided bands to fasten the trouser legs below the knees, another pair to fasten soft leather boots at the ankles and a wool headband with four bronze disks and two seashells sewn on it. The pants had a sophisticated modern look. They feature leg pieces that gradually widen at the top, connected by a crotch piece that widens and bunches in the middle to increase leg mobility. Close examination of Turfan Man's trousers revealed a combination of three weaving techniques. A re-created version of the find—fashioned by an expert weaver from the yarn of coarse-wooled sheep similar to those whose wool was used by ancient Yanghai weavers—confirmed the observation." (Bruce Bower, *Science News,* 2022-3-12 pp. 14-15)

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