

Sacramento Archeological Society, Inc. Newsletter

www.sacarcheology.org.

Jan/Feb - 2021

HAPPY NEW YEAR UPCOMING EVENTS

January 16, 2021 Saturday, 2:00 p.m. - SAS Webinar "Evaluating the Dog as A Hunting Tool in Prehistoric Alta and Baja California: Preliminary Results" by Jessica Morales

January 30, 2021 Saturday, 2:00 p.m. - SAS Webinar "Projectile point enlargement in the High Andean Archaic: an experimental atlatl study" by Caleb Chen

February 13, 2021, Saturday, 2:00 p.m. - **SAS Webinar** "Peopling of the Tibetan Plateau: the occupation history and high-altitude adaptation" by **Peiqi Zhang**

March 1, 2021, Monday, 10:00 p.m. - CSUS Renaissance Society Big History Webinar *"Religion the experience of being alive"* by Marty Lewis

March 13, 2021, Saturday, 2:00 p.m. - SAS Webinar "Seven Outstanding Petroglyph Sites in Central and Northwest California: Tales of Discovery and Collaboration" by Dan Foster

We are looking forward to continue monthly webinars via Zoom and hopefully we will be able to add other events such as tours. See announcements: <u>https://sacarcheology.org/announcements/</u> for **webinar access information** and calendar: <u>https://sacarcheology.org/archaeology-activities/calendar-of-events/</u> for the complete set of events in our website: <u>www.sacarcheology.org</u>.

UPCOMING EVENTS

Sacramento Archeological Society, Onc.'s (SAS)

Webinar

Saturday, January 16, 2021 2:00 p.m. PST Evaluating the Dog as a Hunting Tool in Prehistoric Alta and Baja California: Preliminary Results by Jessica Morales

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California hunter-gatherer (-fishers) archaeology has long focused in understanding forager decision making related to mobility, residency, subsistence practices, and technology. Notably, stone tools have dominated the discussion of technology in relation to human adaptation through time and space. Jessica's dissertation project aims to bring dogs to the discussion of tools employed by California hunter-gatherers. The goals of Jessica's study are to (1) identify dogs from other canids in the archaeological record, (2) identify hunting dogs from other dogs, and (3) examine changes in key prey before and after the adoption of dogs. The first step involves a combination of traditional zooarchaeological methods, geometric morphometrics, and stable isotopes. This first step is crucial to begin to address the second and third steps. The preliminary results of this first step are presented in this webinar.

Jessica Morales is a graduate student at University of California Davis. She received an M.A. from California State University, Los Angles in 2019 and a scholarship from Sacramento Archeological Society in 2020 to support her research.

You may join early at 1:30 pm PST and enjoy a social half hour. Friends are welcome. There is no participation fee.

SAS Webinar Saturday, January 30, 2021 2:00 p.m. PST Projectile point enlargement in the High Andean Archaic: an experimental atlatl study by Caleb Chen

Archaic projectile points from the Andean Altiplano exhibit a curious trend of increasing size over time in contrast to a size reduction commonly observed throughout North America. We hypothesized that the increase compensated for decreasing dart momentum or accuracy resulting from shortening of atlatl parts as wood became increasingly scarce. Counter to expectation, our atlatl ballistic trials show that point enlargement significantly reduces penetration depth. However, we are unable to refute the accuracy hypothesis, leading us to suggest that Archaic point enlargement may have compensated for accuracy losses due to resource depletion on the Altiplano.

Caleb Chen is a graduate student at University of California Davis. He participated in the first U.C. Davis field school in the Andean Altiplano, Peru in 2019 and worked in the Forage Complexity Lab at U.C. Davis to replicated and experiment with an alpaca bone atlatl and atlatl darts to assess projectile point trends in the Andes Mountains. Caleb also received a scholarship from Sacramento Archeological Society, Inc. in 2020.

You may join early at 1:30 pm PST and enjoy a social half hour. Friends are welcome. There is no participation fee.



Tibetan populations have successfully settled in the Tibetan Plateau for generations. As the largest and highest highland in the world, with an average elevation of 4,000 meters above sea level (masl), the Tibetan Plateau is not only surrounded by mountains and alpine peaks but also imposes many selective pressures on humans who live permanently on this plateau. However, when and how Tibetan populations permanently occupied the region are still under debate. To address these questions, the occupation history and evolution of Tibetans is critical. Therefore, to understand the process of human adaptation to this harsh high-altitude environment, here, the study starts from the human occupation history since Middle Pleistocene to the Holocene, then to investigate the behavioral and biological adaptations in the high-altitude plateau.

Peiqi Zhang. PhD candidate at University of California Davis, whose research interest is the Paleolithic Archaeology and Paleoanthropology, specifically about the behaviors and dispersals of *Homo sapiens* in eastern Eurasia including areas of Siberia of Russia, Mongolia, and China. Her research focuses on the hunter-gatherer migrations along the Northern route of modern human dispersal, and their response to environmental pressures during the movements, as well as the high-altitude adaptations to the Tibetan Plateau. In 2019 and 2020 Peiqi received scholarships from Sacramento Archeological Society, Inc. to pursue her research.

You may join early at 1:30 pm PST and enjoy a social half hour. Friends are welcome. There is no participation fee.

CSUS Renaissance Society

Big History Webinar Monday, March 1, 2021 10:00 a.m. PDT Religion the experience of being alive By Marty Lewis

Ever since men, women, and children, just like us, first began leaving their painted handprints on stone walls about 50,000 years ago, religious belief and public performance have been the foundation of every human society ever studied. Modern humans left Africa fully equipped with the power of our imaginations expressed in symbolic human language. It is human language that

distinguishes the human species from every other organism that has ever lived on earth. And religion is the universal metaphorical expression of people's longing for significance during our short lives.

Broadly defined, religion is a shared belief in supernatural agency and the shared cultural activities that community members practice in order to achieve what society claims is "right relationship" with the supernatural. This talk by Mary Lewis offers a brief overview of common modes of religious expression found in archeological and anthropological settings among unrelated cultures at different times and places throughout history. Has religion evolved? Most scholars argue that it has, but in many ways the human religious imagination today is no different from what it was when our ancestors were first able to describe their dreams and ascribe transcendent meanings to them. Joseph Campbell, in The Power of Myth, said that religion is not about seeking the meaning of life. It is "for the experience of being alive." Ancient handprints from all over the world speak to us about that experience. They are shouting, "Look at me! I am here! I am alive! I matter!"

This talk will be conducted via Zoom and available to the public. If you are interested, please contact janjohansen@sbcglobal.net for the sign in information.

SAS Webinar

Saturday, March 13, 2021 2:00 p.m. PDT Seven Outstanding Petroglyph Sites in Central and Northwest California: Tales of Discovery and Collaboration By Dan Foster

This presentation will discuss the early years of the Archaeology Program at the California Department of Forestry and Fire Protection (CalFire), and its successful outreach utilizing volunteers, landowners, and archaeologically-trained personnel. The result was some remarkable petroglyph site documentation. Dan Foster, a retired Cal Fire Archaeologist has first-hand experience with the discovery and recording of California petroglyphs.

PAST EVENTS SAS Webinar - "Cultural Resources and Parks - A View from California and Beyond"

On November 14, 2020 John Foster gave the webinar talk, "Cultural Resources and Parks – A View from California and Beyond" to 25 remote attendees. He discussed the history of the park system within the U.S. and especially its development in California. Parks arose not only to preserve natural beauty but also cultural resources were important factors in site selection. The parks that we enjoy today were a result of the dedication of Frederick Law Olmsted, Jr., Aubrey

Neasham, and Francis A. Riddell. Each left important legacies. California can be proud having the most parks in the nation, 280 parks compared to New York with 215; Washington 212, Oregon 195 and Florida 191. Today the California parks are expanding into underwater areas. These and the existing parks offer cultural resources that are integral to the California Park System.

SAS Webinar - "Ondus Valley Civilization"

On Saturday, December 5, 2020 Ruth McElhinney discussed the Harappan Civilization of the Indus Valley located in what is today Pakistan. This culture, which peaked during the period from 2600 to 1900 BCE, featured urban planning, far reaching trade and symbols on trade seals that may have been a written language. Ruth featured the ancient cities of Mohenjo-Daro, Harappa and Lothal.

MEMBER'S CORNER

2021 Board of Directors

During the Annual Meeting the 2021 Board of Directors were elected. The following lists the officers for 2021.

Directors	Office	Directors	Office
Tom Johansen	President	Lynette Blumhardt	Member at Large
Knuti VanHoven	Vice-President	Paul K. Davis	Member at Large
Diane Sangster	Secretary	Kim Frasse	Member at Large
Doug La Rocca	Treasurer	Jeremy Johansen	Member at Large
John Foster	Past President	Jan Johansen	Member at Large
		Tori Lyon	Member at Large
		Ruth McElhinney	Member at Large
		Carolyn McGregor	Member at Large
		Lydia Peake	Member at Large
		Roger Peake	Member at Large

Welcome New Members

We welcome new member: Tim Treichelt. He has just retired from California Department of Tax and Fee Administration (CDTFA) Tax Appeals Assistance Program (TAAP).

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 **2021** dues. Remember your dues 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.

The annual dues are:

Student/Limited Member	\$15
Individual Membership	\$30
Family Membership	\$40
Sponsor	\$100 - 499 (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.

Name(s):		Email:	Phone:
		Email:	Phone:
Address:			
Student/Limited Member	\$15	\$	
Individual Membership	\$30	\$	
Family Membership	\$40	\$	
Sponsor	\$100	\$	
Scholarship Donation		\$	
Total	\$		

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 articles are:

- "Denisovan DNA in Late Pleistocene sediments from Baishiya Karst Cave on the Tibetan Plateau" and "Denisovan DNA found in cave on Tibetan Plateau"
- "Denisovan ancestry and population history of early East Asians"
- "The major genetic risk factor for severe COVID-19 is inherited from Neanderthals" and "Neanderthal DNA raises risk of severe COVID"
- "Who invented bone points? Homo erectus, not humans, may have been the innovators"
- "A woman hunter in the early Andes"
- "Egyptian treasure from the magical Land of Punt"
- "The dead do tell tales"
- "The volcano that brought down a dynasty"
- "How the horse powered human prehistory Wide-ranging warriors made Mongolian empire a melting pot, sweeping gene study shows"

"Denisovan DNA in Late Pleistocene sediments from Baishiya Karst Cave on the Tibetan Plateau"

"A late Middle Pleistocene mandible from Baishiya Karst Cave (BKC) on the Tibetan Plateau has been inferred to be from a Denisovan, an Asian hominin related to Neanderthals, on the basis of an amino acid substitution in its collagen (*Science*, 3 May 2019, p 418). In this article the authors describe the stratigraphy, chronology, and mitochondrial DNA extracted from the sediments in BKC.

. Denisovans diverged from Neanderthals ~400,000 years ago and that at least two distinct Denisovan populations mixed with ancestors of present-day Asians. The half of a mandible from the Baishiya Karst Cave (BKC) on the northeastern margin of the Tibetan Plateau in Xiahe County, Gansu, China dated to at least 160,000 years ago was identified to be of Denisovan origin. At BKC from 2018 and 2019 excavations led by Zhang and Fahu Chen of the Institute of Tibetan Plateau Research, a total of 1310 stone artifacts and 579 animal bone fragments were recorded and collected. Preliminary analysis of the stone artifact assemblages suggests that they were made mostly from local metamorphic quartz sandstone and hornstone stream cobbles using a simple core and flake technology. Analysis of DNA fragments from four layers of sediments deposited ~100,000, ~60,000 years ago and 45,000 years ago identified Denisovan mitochondrial DNA. The chronology resulted from optical dating of 12 sediment samples and radio carbon dating of 14 bone fragments. The age estimates were used to develop a Bayesian model for the depositional chronology of the site and provide an age framework for hominin occupation.

The genetic adaptations to high altitudes seen in modern Tibetans could be associated with haplotype introgression from Denisovans that perhaps evolved during the extended occupation of this high-altitude environment by Denisovans. " (Dougju Zhang *et al*, *Science*, 2020-10-30, V 370 pp. 584-587)

"Denisovan DNA found in cave on Tibetan Plateau

'Molecular caving' shows archaic humans visited high-altitude cave over long period" This article introduces the previous article: "Denisovan DNA in Late Pleistocene sediments from Baishiya Karst Cave on the Tibetan Plateau"

Zhang's team reports the first Denisovan ancient DNA found outside Denisova Cave mitochondrial DNA (mtDNA) gleaned not from fossils, but from the cave sediments. Precise dates show the Denisovans took shelter in the cave 100,000 years and 60,000 years ago, and possibly as recent as 45,000 years ago when modern humans were flowing into eastern Asia.

The find shows that even though their bones are rare, Denisovans were widespread in this hemisphere." (Ann Gibbons, *Science*, 2020-10-30, V 370 pp. 512-513)

"Denisovan ancestry and population history of early East Asians"

"In this article the authors present analyses of the genome of a ~34,000-year-old hominin skull cap discovered in the Salkhit Valley in northeastern Mongolia. They show that this individual was a female member of a modern human population that, following the split between East and West Eurasians, experienced substantial gene flow from West Eurasians. Both she and a 40,000-year-old individual from Tianyuan outside Beijing carried genomic segments of Denisovan ancestry. These segments derive from the same Denisovan admixture event(s) that contributed to present-day mainland Asians but are distinct from the Denisovan DNA segments in present-day Papuans and Aboriginal Australians. In other words at least two Denisovan ancestry in populations in Oceania derived from only one of these sources." (Diyendo Massilani *et al, Science*, 2020-10-30, V 370 pp. 579-583)

"The major genetic risk factor for severe COVID-19 is inherited from Neanderthals"

"A recent genetic association study identified a gene cluster on chromosome 3 as a risk locus for respiratory failure after infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). A separate study (COVID-19 Host Genetics Initiative) comprising 3,199 hospitalized patients with coronavirus disease 2019 (COVID-19) and control individuals showed that this cluster is the major genetic risk factor for severe symptoms after SARS-CoV-2 infection and hospitalization. In this article they show that the risk is conferred by a genomic segment of around 50 kilobases in size that is inherited from Neanderthals and is carried by around 50% of the people in south Asia and around 16% of people in Europe." (Hugo Zeberg and Svante Pääbo, *Nature*, V 587, 2020-11-26 pp. 610-612)

"Neanderthal DNA raises risk of severe COVID"

This article introduces the previous article. "A key part of tackling COVID-19 is understanding why some people experience more severe symptoms than do others. Earlier this year, a segment of DNA 50,000 nucleotides long (corresponding to 0.002% of the human genome) was found to have a strong association with severe COVID-19 infection and hospitalization. Zeberg and Pääbo report that this region is inherited from Neanderthals. Their results not only shed light on one reason that some people are more susceptible to severe disease, but also provide insights into human evolutionary biology" (Yang Luo, *Nature*, V 587, 2020-11-26 pp. 552-553)

"Who invented bone points?

Homo erectus, not humans, may have been the innovators"

"A type of bone tool generally thought to be been invented by Stone Age humans got its start among hominids that lived hundreds of thousands of years before *Homo sapiens* evolved. A set of 52 previously excavated but little-studied animal bones from Olduvai Gorge in Tanzania includes the oldest known barbed bone point, an implement probably crafted by *Homo erectus* at least 800,000 years ago, researchers say. Made from a piece of a large animal' rib, the artifact features three curved barbs and a carved tip, the team reports in the November *Journal of Human Evolution*.

The Olduvai Gorge barbed bone point which had not been completed, shows no signs of having been attached to a handle or shaft. How *H. erectus* used such implements is unclear. This find and four other bone implements date to at least 800,000 years ago, based on their original positions below Olduvai sediment that records a known reversal of Earth's magnetic field about 781,000 years ago. Another bone artifact dates to roughly 1.7 million years ago." (Bruce Bower, *Science News*, 2020-12-19, p. 12)

"A woman hunter in the early Andes"

"The ethnographic record of modern hunter-gatherers indicates that men were the primary, almost exclusive hunters of big game. However, to what extent this pattern existed in prehistory has been challenged on both empirical and theoretical grounds. To examine this question, Haas *et al.* studied the artifacts recovered from a burial of a young woman at a site on the Andean Altiplano dated to more than 8000 years ago. Found with her was a tool kit used in animal processing and numerous projectile points, strongly indicating that she hunted. Additional examples of female hunters at late Pleistocene and early Holocene sites in the Americas were also identified, findings that support a model of relatively undifferentiated subsistence labor among early populations in the Americas." (*Science*, 2020-11-06, V 370 p. 678)

"Egyptian treasure from the magical Land of Punt"

"Ancient Egyptian legends tell of the magical Land of Punt with wondrous products including gold, frankincense, and myrrh. Archaeologists are convinced Punt really existed, and now they may have their hands on its first known treasure: a 3300-year-old baboon skull. The skull, which researchers found at the British Museum, belongs to a hamadryas baboon uncovered by 19th

century archaeologists in the ancient Egyptian city of Thebes. The Egyptians revered the animals, which are not native to Egypt, as the employment of Thoth, a god of wisdom. An analysis of isotopes in the skull's tooth enamel described this week in *eLife*, suggest the baboon was born in the horn of Africa—where most archaeologist think Punt was located." (*Science*, 2020-12-18, V 370, p. 1383)

"The dead do tell tales"

"Archaeologists recently unearthed more than 100 elaborately decorated wooden coffins at the Saqqara necropolis, a burial complex located 10 kilometers south of Cairo, stacked two and three deep at the bottom of deep underground shafts. The finds date back roughly 2500 years to Egypt's late period, an era separated from the reign\n of more familiar pharaohs like Tutankhamen and Ramesses II by more than 700 years of turmoil, civil war, and decline.

By 650 B.C Egypt was starting to get back on its feet and become a power in the Mediterranean again. Saqqara once more becomes the main cemetery for a thriving, wealthy city full of temples. Meanwhile, there is an intellectual movement to look back at Egyptian history and revive its traditions. You can see nostalgia for what was good in Egyptian history in the cemeteries at Saqqara, like inscriptions on the coffins replicating religious texts from the walls of nearby pyramids.

Many of the coffins at Saqqara are made from expensive wood brought in from southern Europe and elsewhere around the Mediterranean. Priests and undertakers at Saqqara were selling everything from mummification services to burial plots. The ideology of death had shifted. People weren't focused on the size of their tomb; they were happy to be buried in a sacred precinct and a nice coffin.." (*Science*, 2020-12-11, V 370, p. 1253)

"An ancient people that kept the departed close"

"Ancient Briton modified the bones of people in their communities and kept these relics close at hand, often saving pieces of skeleton for decades after a person's death, according to an analysis of artifacts from dozens of prehistoric sites. At 26 of the 60 sites studied by Thomas Booth and Joanna Brück, then at the University of Bristol, UK discovered that the human bones were older than surrounding materials, suggesting that the bones had been buried long after death. A human femur that had been converted into a whistle, for example, was found in another person's grave near Stonehenge, and the Yorkshire grave of an adult woman contained two substantially older skulls." (*Nature*, V 585, 2020-09-10 p. 163)

"The volcano that brought down a dynasty"

"The collapse of China's prosperous Ming dynasty, one of the most stable in Chinese history, has been attributed, in part, to the 1641 eruption of a volcano thousands of kilometers from the imperial capital in Beijing.

Geoscientist have long known that a mega-drought that parched eastern China between 1637 and 1643 was the most severe to affect the area during the last millennium, but they did not know precisely what made it so bad. The drought kicked off as a standard dry spell. Four years later, Mount Parker in the Philippines erupted. Volcanic particles blanketed the region, cooling the air more than the ocean's surface and setting up weather patterns that weakened the East Asian monsoon. The monsoon rains were much lighter than usual and the drought lasted for

another three years. The Ming dynasty's fall ushered in the Qing dynasty, which imposed conservative policies and ruled for nearly three centuries." (*Nature*, V 585, 2020-09-03 p. 9)

"How the horse powered human prehistory – Wide-ranging warriors made Mongolian empire a melting pot, sweeping gene study shows"

"Until now, the only accounts of the Xiongnu came from their enemies. Chinese records from 2200 years ago describe how these fierce mounted archers from the wide-open steppes of today's Mongolia clashed with armies in what is now northwestern China. Their onslaughts spurred the Chinese to build what would become known as the Great Wall of China on their northern border, as protection against the mounted nomads. They also started to raise cavalry armies of their own.

The equestrian empire of the Xiongnu left no written records. But biology is now filling out their story and those of other Central Asian cultures in antiquity. Two studies—a sweeping survey of ancient DNA from more than 200 individuals across 6000 years and an analysis of horse skeletons from just before the rise of Xiongnu—trace population movements across Central Asia and the key role played by horsemanship. The results show the horse was probably the driver of some of the ancestry shifts in human population. Chinese and U.S. archaeologists report that horse skeletons buried around 350 BCE in Tian Shan Mountains, now part of China's Xinjiang province, show bone abnormalities from ride, including spiral damage from the weight of a rider and changes to the bones of the mount from bits and bridles. This evidence suggests that horses were being ridden.

Also, after more than 1000 years in which three distinct, stable human populations lived side by side on the Mongolian steppe, genetic diversity raised sharply around 200 BCE. Populations from western and eastern Mongolia mixed with each other and with people carrying genes from as far away as present-day Iran and Central Asia. The results suggest mastery of the horse made possible stunning long-distance voyages on Central Asia's sea of grass." (Andrew Curry, *Science*, 2020-11-06, V 370 pp. 646-647)

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