Sacramento Archeological Society, Inc.
Newsletter

www.sacarcheology.org. **Mar/Apr - 2021**

UPCOMING EVENTS

March 1, 2021 - Monday, 10:00 a.m. PST - **CSUS Renaissance Society / Big History Webinar** ***"Religion - The Experience of Being Alive"*** by SAS Member, **Martha (Martie) Lewis**

March 4-6, 2021 – **SCA Annual Meeting "Inside Out, Reflecting on Our Community"**

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

April 10 2021 - Saturday, 2:00 p.m. PDT - **SAS Webinar** "***Evaluating the Dog as A Hunting Tool in Prehistoric Alta and Baja California: Preliminary Results"*** by **Jessica Morales**

April 30, 2021 – Scholarship applications are due

May 8, 2021 - Saturday, 2:00 p.m. PDT - **SAS Webinar** ***"Olmecs"*** by SAS Member**, Joanne Carpenter**

May 17-29, 2021 – SAS Four Corners Pre-Tour

June 2021 – SAS Nevada Archaeological Tour

September 12-25, 2021 – SAS Four Corners Tour

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.

UPCOMING EVENTS

CSUS Renaissance Society

Big History Webinar

Monday, March 1, 2021

10:00 a.m. PST

Religion - The Experience of Being Alive

By SAS Member, **Martie 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 Martie Lewis offers a brief overview of common modes of religious expression found in archaeological 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 sponsored by CSUS Renaissance Society and Big History will be conducted via Zoom and available to the public free of charge. If you are interested, please contact Ranny Eckstrom at ranny44@yahoo.com for the sign in information.

SCA Annual Meeting

Inside Out, Reflecting on Our Community

March 4-6, 2021

Information on **Society of California Archaeologists' 2021 Annual Meeting** is available at https://scahome.org/meetings/annual-meeting-2/ the meeting will be held in a virtual format though their program app.

SAS Webinar

Saturday, March 13, 2021

2:00 p.m. PST

Seven Outstanding Petroglyph Sites in Central and Northwest California: Tales of Discovery and Collaboration

by Archaeologist and SAS Member, **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. Dan received a B.A. degree in Anthropology from California State University Stanislaus where he studied archaeology and cultural resource management under Dr. L. Kyle Napton from 1973-1977. During his 34 years of public service he developed and led an archaeology program for the CA Department of Forestry and Fire Protection to identify and protect cultural resources within the 30 million acres of State Responsibility Area lands. He has prepared detailed site records and reports for hundreds of archaeological sites including five published articles on prehistoric California Rock Art. He retired from State Service in 2012 and has become an active member of the Sacramento Archaeological Society.

You may join early at 1:30 pm PST and enjoy a social half hour. Friends are welcome. There is no participation fee. See announcements: https://sacarcheology.org/announcements/ for **webinar access information**

SAS Webinar

Saturday, April 10, 2021

2:00 p.m. PDT

Evaluating the Dog as a Hunting Tool in Prehistoric Alta and Baja California: Preliminary Results

by **Jessica Morales**

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 Angeles in 2019 and a scholarship from Sacramento Archeological Society in 2020 to support her research.

You may join early at 1:30 pm PDT and enjoy a social half hour. Friends are welcome. There is no participation fee. See announcements: https://sacarcheology.org/announcements/ for **webinar access information**

Nevada Archaeological Tour

June 2021

We are planning an archaeological tour in Nevada for three days (2 nights) possibly June 16, 17 and 18. The dates and itinerary has not been set yet due to uncertainties related to COVID. The following lists possible sites to visit. Tour details and information on the reservation process will be forthcoming to SAS Members. Stay tuned.

Lovelock, NV

- **Lovelock Cave** https://en.wikipedia.org/wiki/Lovelock_Cave:
- **Leonard Rock shelter** https://en.m.wikipedia.org/wiki/Leonard_Rockshelter

Fallon, NV

- **Hidden Cave** https://www.ccmuseum.org/contact_us/
  Hidden Cave video https://youtu.be/oEc958dkotE
  https://en.wikipedia.org/wiki/Hidden_Cave
- **Grimes Point Petroglyphs** (Dan Foster and John Foster, guides)
  https://en.wikipedia.org/wiki/Grimes_Point
  BLM Grimes Point site link: https://www.blm.gov/visit/grimes-pointhidden-cave-archaeological-site

Austin, NV

- **Hickison Petroglphs** https://www.blm.gov/visit/hickison-petroglyph-recreation-area

Carson City, NV

- **Nevada State Museum**
  https://www.carsonnvmuseum.org/hours-and-location/
- **Lagomarsino Petroglyphs** (high-clearance, 4-wheel drive)
  https://en.wikipedia.org/wiki/Lagomarsino_Petroglyph_Site
- **Virginia City** (historical)
  https://en.wikipedia.org/wiki/Virginia_City,_Nevada
- **Fort Churchill State Historic Park** (historical)
  http://parks.nv.gov/parks/fort-churchill

Four Corners Archaeological Tour

September 13-25, 2021

Join us for an archaeological exploration in the four corners area. We will view pueblo ruins and rock art in Arizona, Colorado and Utah. Guides will lead us to sites and provide insight into the history and culture of the area. These include Dave Dove for Mitchell Springs, Dr. Bruce Bradley for Wallace Ruins, a ranger for Hovenweep National Monument, and more.

Wolfman panel - Comb Ridge

Lowery Pueblo

http://hikingwalking.com/index.php/destinations/ut/ut_se/bluff/wolfman_panel/wolfman_panel_detail

https://www.blm.gov/visit/lowry-ruins-national-historic-landmark

Canyon de Chelly

Navajo National Monument - Betatakin

https://www.nps.gov/cach/index.htm

https://www.nps.gov/nava/planyourvisit/guidedtours.htm

The following is a tentative schedule of events. It may be impacted by COVID. The schedule will be fine tuned after a pre-tour by SAS members in May, 2021. Additional site details and lodging recommendations will be provided to attendees.

SAS Four Corners Tour Tentative Schedule 2021

Day	Activity	Lodging
Day 1 – 9/13/21 M	Arrive Winslow, AZ Homolovi State Park – Visitor center and Homolovi II ruins. Welcome dinner La Posada Harvey House	Winslow, AZ – 1 night
Day 2 – 9/14/21 T	Rock Art Ranch –Guided Tour in Chevelon Canyon $35/person	Holbrook, AZ - 2 nights
Day 3 – 9/15/21, W	Petrified Forest Rainbow Forest Museum Options: Agate House - 2 mi hike or Martha's Butte - 2.2 mi hike Newspaper Rock – view rock art from above Puerco Pueblo - .3 mi loop hike Visitor Center	Holbrook -same
Day 4 – 9/16/21, Th	Hubble Trading Post Canyon de Chelly, AZ Options: White House Trail – 2½ mi hike or canyon tour or Rim overlook drive	Cortez, CO - 3 nights Canyon of the Ancients Guest Ranch
Day 5– 9/17/21, F	Canyon of the Ancients Guided Tour $70/person Yucca House National Monument	Cortez – same
Day 6 – 9/18/21, Sa	Mitchell Springs Ruins guided by Dave Dove Wallace Ruins guided by Dr. Bruce Bradley	Cortez – same
Day 7 – 9/19/21, Su	Lowry Pueblo Hovenweep National Monument Petroglyph Panel ranger tour@ **Square Tower** Group loop trail, 1.5 miles (2 hr) Horseshoe and Hackberry Units (option)	Blanding, UT - 4 nights
Day 8 – 9/20/21, M	Comb Ridge – Butler Wash Tour $50/person Target Cave, Ballroom Cave, Juniper House, Long Fingers, Sand Island	Blanding same
Day 9 – 9/21/21, T	Comb Ridge/Mule Canyon/Monezuma Canyon Tour $50/person – additional ruins: Kachina Panel, Wolfman Panel, Procession Panel	Blanding same
Day 10 – 9/22/21, W	Edge of the Cedars Museum Mule Canyon sites	Blanding same
Day 11 – 9/23/21, Th	Monument Valley Backcountry Tour – 4 hr ~$90/person 17 mi driving loop Wildcat Trail – 4 mi option	Kayenta, AZ – 2 night
Day 12 – 9/24/21, F	Navajo National Monument	Kayenta

	Betatakin – 3 - 5 mile guided hike	
9/25/21, Sa	Depart tour	

Tour Details

This is a Members only event and attendance is limited. Reservations are accepted on a first come basis. This event is fully booked and a waiting list has been established. Many participants signed up last year for the tour that was cancelled. A reservation fee of $50 per person is required with the reservation.

Participants are responsible for making their own lodging reservations, arranging their own transportation to and on the tour, and paying for their food, fees and incidentals.
The itinerary is subject to change at the discretion of Sacramento Archeological Society, Inc., but participants will be notified of significant changes in advance. All participants are required to sign a Hold Harmless Agreement prior to the tour.

To make reservations contact Jan Johansen janjohansen@sbcglobal.net Also, send the registration fee of $50 per person to Sacramento Archeological Society, Inc. at P.O Box 163287, Sacramento, CA 95816-9287 or use our web site https://sacarcheology.org/society-membership/sas-donations-and-membership-payment/.

PAST EVENTS

SAS Webinar - Tarim Mummies of the Silk Road

by **Ranny Eckstrom**

On Saturday January 16, 2021 Ranny Eckstrom, an SAS member took a group of 17 virtually via Zoom to Asia to marvel at the discovery of Tarim Basin Mummies and Tocharian culture. At the beginning of the 20th century a set of very well preserved mummies were found in present-day Xinjiang, China. The earliest Tarim mummies, found at Qäwrighul and dated to 1800 BCE, are of a Caucasian physical type whose closest affiliation is to the Bronze Age populations of southern Siberia, Kazakhstan, Central Asia, and the Lower Volga. They were nomadic sheep herders and wheat farmers and later traders of mined jade. They are associated with the presence of the Indo-European Tocharian languages.

SAS Webinar - Projectile point enlargement in the High Andean Archaic: an experimental atlatl study

by **Caleb Chen**

On Saturday, January 30th Caleb Chen, a graduate of University of California, Davis presented results from his honors senior thesis. He experimentally analyzed the use of a camelid atlatl with

various sized Archaic projectile points to explain the curious trend from the Andean Altiplano of increasing size of projectile points over time in contrast to a size reduction commonly observed throughout North America. He 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, the atlatl ballistic trials show that point enlargement significantly reduces penetration depth. However, he was 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.

.SAS Webinar - Peopling of the Tibetan Plateau: the occupation history and high-altitude adaptation

by **Peiqi Zhang**

On Saturday, February 13 approximately 20 SAS members and friends listened to Peiqi Zhang's talk on the peopling of Tibetan Plateau. She first provided general information on the hazards of high attitude habitation of the Tibetan Plateau. 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 the high altitude threatens the health of who visit and live permanently on this plateau. However, archaeological evidence suggests that the Tibetan Plateau has been occupied during portions of the last 160 thousand years before present (kbp).

Peiqi discussed four of the stages of possible occupation. Stage 1 – Archaic – A fossil was found by a monk in the Baishiya Cave that was dated to 160 kbp. This fossil could have a Denisovan ancestry; however; the permanent occupancy of the Baishiya Cave is still under debate. Stage 2 – Modern humans with blade technology – Excavations at the Nwya Devu site on the plateau, for example suggests presence during the 40 to 30 kbp. Stage 3 – Modern humans with micro technology – Archaeological surveys suggest that hunter gatherers seasonally visited the plateau during 15-12 kbp. Stage 4 – Neolithic expansion- Archaeological finds on the plateau suggest that there was permanent occupancy with agriculture (millet and barley) during the Holocene Climate Optimum (8-4 kbp). To understand the process of human adaptation to this harsh high-altitude environment, further study is required. Peiqi is involved in this investigation.

MEMBER'S CORNER

Welcome New Members

We welcome new member Ric Frasse, Kim Fraise's brother. He is a geologist living in Houston, Texas. He plans to join us on our Four Corners Tour.

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.

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Annual Dues for 2021

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

_____ Email: _____ **Phone:** _____

Address:

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

Total enclosed $_____

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:

- "Reintroduction of the archaic variant of NOVA1 in cortical organoids alters neurodevelopment"
- "Origins of modern human ancestry"
- "Early cave art from Sulawesi"
- "Early sea trip was probably no accident"
- "A genetic history of the pre-contact Caribbean"
- "Ice Age hunters' leftovers may have fueled dog domestication"
- "Siberia may be long-sought site of dog domestication"
- "The oldest known abrading tool dates to 350,000 years ago"
- "Exploring the origins of urban living"

"Reintroduction of the archaic variant of NOVA1 in cortical organoids alters neurodevelopment"

"Current views of human evolution, as supported by the fossil record, indicate that many hominin lineage branches arose, but only one survived to the present. Neanderthals and Denisovans, two of these extinct lineages, are our closest evolutionary relatives and therefore provide the most subtle genetic and phenotypic contrast to our species. Comparison of Neanderthal, Denisovan, and extant human genomes has shown that many humans today carry genes introduced through past admixture events and has allowed enumeration of human-specific genetic differences that may have been important for recent human evolution. Neuro-oncological ventral antigen 1 (NOVA1) includes one of the few protein-coding differences between modern human and archaic hominin genomes that could affect human neurodevelopment.

NOVA1 regulates alternatives splicing in the developing nervous system and is a master regulator of splicing genes responsible for synapse formation. Using CRISPR-Cas9 genome-editing technology in human induced pluripotent stem cells, the researchers replaced the modern human allele of the NOVA1 gene with the ancestral allele found in Neanderthals and Denisovans, which contains a single-nucleotide substitution at position 200 that causes an isoleucine-to-valine change. To investigate the functional importance of this amino acid change in humans, they followed iPSC neural development through functional cortical organoids.

Collectively, their data suggest that expression of the archaic NOVA1 leads to modified synaptic protein interactions, affects glutamateric signaling, underlies differences in neural connectivity and promotes higher heterogeneity of neurons regarding their electophysiological

profiles. This subset of genetic changes may underlie the phonotypic traits that separate our species from these extinct relatives." (Cleber A. Trujillo *et al*., *Science*, 2021-2-12 V 371 p. 694)

"Origins of modern human ancestry"

"New finds in the palaeoanthropological and genomic records have changed our view of the origins of modern human ancestry. In this article the authors review the current understanding of how the ancestry of modern humans around the globe can be traced into the deep past, and which ancestors it passes through during our journey back in time. They identify three key phases that are surrounded by major questions, and which will be at the frontiers of future research. The most recent phase comprises the worldwide expansion of modern humans between **40 and 60 thousand years ago (ka)** and their last known contacts with archaic groups such as Neanderthals and Denisovans. The second phase is associated with a broadly construed African origin of modern human diversity between **60 and 300 ka**. The oldest phase comprises the complex separation of modern human ancestors from archaic human groups from **0.3 to 1 million years ago**. They argue that no specific point in time can currently be identified at which modern human ancestry was confined to a limited birthplace, and that patterns of the first appearance of anatomical or behavioral traits that are used to define *Homo sapiens* are consistent with a range of evolutionary histories.*" (*Anders Bergströn, *et al*, *Nature*, V 590, 2021-2-11 pp. 229-237)

"Early cave art from Sulawesi"

"The karst landscapes of Island Southeastern Asia, especially Sulawesi, have large numbers of painted caves. Using uranium-series isotope analysis at the site of Leang Tedongnge, Brumm *et al*. dated the image of a Sulawesi warty pig, defined by its characteristic head crest and preorbital facial warts, to a minimum age of more than 45,000 years ago. Not only is this the earliest art known from the region, but it is also the earliest known drawing of a recognizable animal in the world. The authors speculated that art of this style was an important cultural element of the first groups of anatomically modern *Homo sapiens* to enter this region." (*Science*, 2021-1-15, V 371 p. 248)

"Early sea trip was probably no accident

A cruise to remote Pacific islands was deliberate, researchers say"

"Ancient mariners successfully navigated a perilous journey to arrive at Japan's /Ryukyu Islands, a new study suggests. Archaeological sites on six of the isles, part of a 1,200-kilometer-long chain, indicated that migrations to the islands occurred 35,000 to 30,000 years ago, both from south via Taiwan and from the north via the Japanese island of Kyushu.

Whether ancient humans navigated there on purpose or drifted there by accident on the Kuroshio ocean current, one of the world's largest and strongest currents, has been unclear until now. Satellite-tracked buoys that were released near or passed by Taiwan and the Philippine island of Luzon from 1989 to 2017 suggest that there is little chance that the seafarers reached the isles by accident. Only four of the buoys came within 20 kilometers of any of the Ryukyu Islands and did so only as a result of typhoons and other adverse weather, the team reports December 3 in

Scientific Reports. Furthermore, the geologic records show that the region's currents have remained stable for at least the last 100,000 years.

In 2019, a team of adventurers paddled more than 200 kilometers from Taiwan to one of the islands in a dugout cane that Kaifu and colleagues made using stone axes modeled off Paleolithic artifacts." (Charles Q Choi, *Science News*, 2021-1-16, p. 13)

"A genetic history of the pre-contact Caribbean"

"Humans settled the Caribbean about 6,000 years ago, and ceramic use and intensified agriculture mark a shift from the Archaic to the Ceramic Age at around 2,500 years ago. This report presents genome-wide date from 174 ancient individuals from collectively, Hispaniola, Puerto Rico, Curaçao and Venezuela where they co-analyzed with 89 previously published ancient individuals. Stone-tool-using Caribbean people, who first entered the Caribbean during the Archaic Age, derive from a deeply divergent population that is closest to Central and northern South American individuals; contrary to previous work, they found no support from ancestry contributed by a population related to North American individuals. Archaic-related lineages were >98% replaced by a genetically homogenous ceramic-using population related to speakers of languages in Arawak family from northeast South America; these people moved through the Lesser Antilles and into the Greater Antilles at least 1,700 years ago, introducing ancestry that is still present. Ancient Caribbean people avoided close kin unions despite limited mate pools that reflect small effective population sizes, which they estimated to be a minimum of 500-1,500 and a maximum of 1,530-8,150 individuals on the combined island of Puerto Rico and Hispaniola in the dozens of generations before the individuals who they analyzed lived. Census sizes are unlikely to be more than ten-fold larger than effective population sizes, so previous pan-Caribbean estimated hundreds of thousands of people are too large. Confirming a small and interconnected Ceramic Age population, they detected 19 pairs of cross-island cousins; close relatives buried around 75 km. apart in Hispaniola and low genetic differentiation across island. Genetic continuity across transitions in pottery styles reveals that cultural changes during the Ceramic Age were not driven by migration of genetically differentiated groups from the mainland, but instead reflected interactions within an interconnected Caribbean world.*" (*I. Rouse, *et al*, *Nature*, V 590, 2021-2-4 pp. 103-110)

"Ice Age hunters' leftovers may have fueled do domestication"

"Sometime between about 29,000 and 14,000 years ago, hunter-gatherers navigated northern Eurasia's frigid landscapes turned wolves into dogs by feeding them lean-meat leftovers. That, at least is a likely scenario that would have benefited both wolves and people, say archaeologist Maria Lahtinen of the Finnish Food Authority in Helsinki and colleagues. In harsh Ice Age winters, when game hunted by both species was largely free of fat, prey animals would have provided more protein than humans could safely consume, the research concluded January 7 in *Scientific Reports*. People could have fed surplus lean meat to capture wolves being raised as pets because the animals wouldn't have had the same dietary limitations, the team proposes. That idea is largely based on inferences, from previous research on how ancient hunter-gatherers survived in the Arctic and new calculations suggesting that to stay healthy, Ice Age group could not have eaten all of the lean meat that was hunted. Though far from the final word on the

controversial origins of dogs, Lahtinen's group offers a novel take on how that process may have unfolded. The group's calculations assume that, like some hunter-gatherers in the Arctic today, ancient humans acquired 45% of their calories from animal protein. Humans can't eat a completely carnivorous diet because the liver generated only part of our energy needs from proteins. Edible plants could have been stored for the winter as a source of carbohydrates, but supplies would have waned as the annual big freeze wore on, So, Ice age hunter-gatherers probably reached a point where they focused on hunter to extract fats and grease from the bones of prey to meet energy needs, leaving plenty of lean meat untouched and available as wolf food." (*Science News*, 2021-1-30, p. 15)

"Siberia may be long-sought site of domestication

Ancient DNA from people and dogs traces start of long companionship"

"A scenario laid out in a new study combining DNA data from ancient dogs and humans suggest that wolf-like creatures, more docile than their ancestors and remarkably willing to help their primate companions hunt down prey and drag it back to camp. These were the world's first dogs. Their descendants flowed both west and east, populating Eurasia and as well as accompanying the ancestors of Native Americans as they spread into the Americas. This analysis was published in the *Proceedings of the National Academy of Sciences*.

The mitochanondrial DNA of dogs showed that all ancient American dogs carried a genetic signature, dubbed A2b, and that they splintered into four groups about 15,000 years ago, as they spread around North America. The team also found that the A2b dogs descended from a canine ancestor that lived in Siberia about 23,000 years ago. That ancestral dog probably lived with people who belonged to a genetic grouping known as the ancient north Siberians, The group, which appeared more than 31,000 years ago, lived in a relatively temperate part of northeastern Siberia for thousands of years , and they shared this refuge with the gray wolf, the direct ancestor of today's dogs." (David Grimm, *Science*, V371, 2021-1-29, pp. 451-452)

"The oldest known abrading tool dates to 350,000 years ago"

"A round stone excavated at Israel's Tabun Cave in the 1960's represents the oldest known grinding or rubbing tool. The specimen marks a technological turn to manipulating objects using wide, flat stone surfaces. Up to that time, stone implements had featured thin points or sharp edges. Microscopic wear and polish on a worn section of the Tabun stone resulted from it having been ground or rubbed against relatively soft material, such as animal hides or plants, scientists conclude in the January *Journal of Human Evolution*." (Bruce Bower, *Science News*, 2021-2-13, p. 14)

"Exploring the origins of urban living

Ancient human settlements are brought vividly to life in an engaging new analysis"

"In Four Lost Cities, Annalee Newitz—a technology journalist and author of popular genre fiction—has turned their attention to the archaeology of the urban past. Each of the four sections of this volume describes a different case study: Çatalhöyük, Pompeii, Angkor Wat and Cahokia." (B. R. Hassett, *Science*, V371, 2021-1-29, p. 472)

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