



**Loveland Archaeological Society, Inc.**  
A Colorado Non-Profit Corporation

## Arrowheadlines



**The Newsletter of the Loveland Archaeological Society**



February 2020



### Club Minutes

The February meeting of the Loveland Archaeological Society was held on Tuesday February 4th in the McKee Bldg. at The Ranch. Andy called the meeting to order at 7:18 PM after everyone had gathered for refreshments and artifact talk starting at 6:30 PM. The first order of business was a reminder of our *Spring Into Archaeology* show at The Ranch on Saturday, March 14th. Once again, The Ranch does not have a room for us on Tuesday, July 7th. Andy suggested changing our usual scheduling of our August picnic meeting to July if The Ranch could give us meeting space on the first Tuesday in August. Unfortunately, after contacting Liz Jack at The Ranch, she said she did not have a room available for us on the first Tuesday in August either. So, we will have our normal August picnic meeting and we're open for suggestions for our July meeting. Remember we already cancelled our June meeting because of The Ranch scheduling problems. We are trying to schedule these meeting rooms six months in advance which is the earliest they allow reservations. Makes me (Andy) wonder how August can already be booked! We will advise. **Our March meeting will be on Tuesday March 3rd in the McKee Building, Loveland & Fort Collins meeting rooms at The Ranch.** Refreshments start at 6:30 PM and business portion of the meeting begins at 7:15 PM.

Our program will be given by Marie Taylor from CSU, our 2019 Eugene Eisenbarth Memorial Scholarship recipient. The title of her presentation will be "The Hidden Archaeology of Playa Lakes in Eastern Colorado." This sounds like it will be a great program so let's have a big turnout for our March meeting. If you have artifacts that were found in or around ancient playas, please bring them in for Marie to examine as part of her research. Marie has worked extensively with avocational archaeologists and collectors on her project, and here's another opportunity for the LAS to demonstrate our continuing cooperation and support of the Professional and Avocational archaeology community working together to further knowledge and appreciation of our hobby.



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Our program for the February meeting was presented by Paul Buckner from CSU, our 2019 Dorothy Mountain Memorial Scholarship recipient. His program was on *"Multi Cultural Prehistoric Landscape Usage in the Southern Medicine Bow Mountain Range in Colorado."* That's a mouthful to say!

Our **Find of the Month** winner was Andy Coca with a 1-3/4" shouldered McKean point made of translucent agatized wood. It was found on January 20th in far eastern Adams County.

**Door prize winners were:**

<b>Donor's Name</b>	<b>Donated Gift</b>	<b>Winner/Recipient</b>
Shane Skutvik	Archaeology magazines	Levi Evensiosky
Shane Skutvik	Southwestern Lore CAS journals	Andy Coca
LAS	Central States journals	Mark Loader
Jennifer Miller	Two Mugs	Shellene Karst
Rick Miller	Frame of points	Shellene Karst
Rick Miller	Frames of scrapers	Levi Evensiosky
Rick Miller	Flint chip art frame	Shellene Karst



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## LAS Find of the Month

Members can bring an artifact to be entered into the competition at the monthly meeting, which will be judged based on the following rules:

1. Must be a member of LAS in good standing.
2. The artifact must be a personal find.
3. It must have been found within the specified time frame, i.e., within the month prior to the meeting.
4. The artifact doesn't have to be a Colorado find - all that matters is that it was found in the last month.

The **Find of the Month** for February 2020 was made by Andy Coca as judged by all members present.

**Type:** 1-3/4" shouldered McKean point

**Material:** Translucent agatized wood

**Where Found:** It was found on January 20th in far eastern Adams County, CO.



## Archaeology in the News

### 8,000-Year-Old Woolly Mammoth Cells Show Biological Signs Of Life



The 28,000-year-old woolly mammoth was dug out of Siberian permafrost in 2011. Now scientists have found that its DNA is partially intact.

#### *Yuka, the 28,000-year-old mammoth*

Eight years ago, an impressively well-preserved woolly mammoth was dug out of the Siberian permafrost. With the species having met its extinction some 4,000 years ago, finding such a relatively pristine specimen was an astounding feat-particularly since this one was 28,000 years old. Scientists have since been eagerly studying the uncovered mammoth in an attempt to learn how viable its biological materials still are, all these millennia later. In a new study published in *Scientific Reports*, it's clear that substantial progress has been made in that attempt.



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Cells from the 28,000-year-old specimen have shown “signs of biological activities” after being infused into mouse oocytes - cells found in ovaries that are capable of forming an egg cell after genetic division. “This suggests that, despite the years that have passed, cell activity can still happen and parts of it can be recreated,” said study author Kei Miyamoto from the Department of Genetic Engineering at Kindai University. “Until now many studies have focused on analyzing fossil DNA and not whether they still function.”

The process to establish whether the mammoth DNA could still function wasn't easy. According to *IFL Science*, researchers began by taking bone marrow and muscle tissue samples from the animal's leg. These were then analyzed for the presence of undamaged nucleus-like structures, which, once found, were extracted. Once these nuclei cells were combined with mouse oocytes, mouse proteins were added, revealing some of the mammoth cells to be perfectly capable of nuclear reconstitution. This, finally, suggested that even 28,000-year-old mammoth



remains could harbor active nuclei. Five of the cells even showed highly unexpected and very promising results, namely signs of activity that usually only occur immediately preceding cell division. The study maintains, however, that there's much work left to be done. “In the reconstructed oocytes, the mammoth nuclei showed the spindle assembly, histone incorporation and partial nuclear formation; however, the full activation of nuclei for cleavage was not confirmed,” the study said.

“We want to move our study forward to the stage of cell division, but we still have a long way to go,” said Miyamoto. While most mammoths died out between 14,000 and 10,000 years ago, this particular mammoth - which the research team has dubbed “Yuka”- belonged to a resilient population of the species that managed to live in the Arctic Ocean's Wrangel Island until **4,000** years ago.

The discovery that Yuka's ancient cells have shown signs of structural DNA integrity, while not confirming the ability to bring the species out of extinction, does complement longstanding research efforts in the scientific community to do just that.

While Miyamoto admits that “we are very far from recreating a mammoth,” plenty of researchers attempting to use gene editing to do so are confident that that achievement is around the corner. Recent efforts, using the controversial CRISPR gene editing tool, are arguably the most promising, of late. Harvard and MIT geneticist George Church, who co-founded CRISPR, has been leading the Harvard Woolly Mammoth Revival team for years now in an attempt to introduce the animal's genes into the Asian elephant - for environmental purposes related to climate change.

“The elephants that lived in the past - and elephants possibly in the future - knocked down trees and allowed the cold air to hit the ground and keep the cold in the winter, and they helped the grass grow and reflect the sunlight in the summer,” he said. “Those two (factors) combined could result in a huge cooling of the soil and a rich ecosystem.” As it stands, Miyamoto's team is focused on reaching the stage of cell division - and with the progress made thus far, his efforts seem rather promising.



*A boy touches a mammoth carcass outside the Shemanovsky Museum in Russia.*

There are other great candidates up for de-extinction as well as the woolly mammoths. Sitting at the top of the list are the dodo, woolly rhinoceros, passenger pigeon, gastric-brooding frog, Pyrenean ibex, Carolina parakeet, moa, and Tasmanian tiger.



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DNA from all of these animals has been preserved and there are species living today which are genetically close enough to help create a complete genome and provide surrogacy. In the future, any of these species could possibly reach the ultimate goal of de-extinction research: they could become a naturally reproducing species, reintroduced into their former environment.

### **The discovery of child-sized weapons at a site in Oregon is shedding new light on ancient Native American childhood**

A new analysis of items recovered from the Par-Tee archaeological site (c. AD 100–800) at the mouth of the Columbia River in Northern Oregon revealed fragments of a number of atlatls; throwing tools that increased the velocity of darts. Atlatls were used in hunting and warfare to throw projectiles.

“Until the invention of the bow and arrow, these ancient dart-throwing weapons were the pinnacle of projectile weaponry and their proper use was key to survival,” the researchers said.

Because the atlatls found at Par-Tee varied greatly in size, archaeologists concluded that many of them were designed to be used by children.

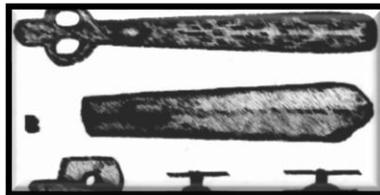


“Basically, they scaled-down their atlatls so they were more easily usable in small hands,” said Robert Losey, associate professor of anthropology at the University of Alberta and lead author of a study on the weapons. “This helped children master the use of these weapons” he said.

*Different-sized Atlatl grips discovered at Par-Tee.*



Several whalebone atlatls from the site appear to have been crafted specifically to fit the hands of children. This is the result of equipment scaling - the process of adjusting the size of an object to fit the body size of the intended user. That proficiency in the skills required to use the atlatl was probably acquired during childhood.



**Illustrations of Par-Tee atlatls.**



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### **Native American lost city of Cahokia: Experts debunk myth surrounding its demise**

A team of archaeologists is debunking the myth surrounding the demise of the lost Native American civilization that was once at Cahokia Mounds near Collinsville, Ill. Experts analyzed ancient human feces to shed new light on the lost city, challenging the narrative about its legendary end.

“In its heyday in the 1100s, Cahokia — located in what is now southern Illinois — was the center for Mississippian culture and home to tens of thousands of Native Americans who farmed, fished, traded and built giant ritual mounds,” explained the University of California, Berkeley, in a statement. “By the 1400s, Cahokia had been abandoned due to floods, droughts, resource scarcity and other drivers of depopulation.”

The pre-Columbian Mississippian culture lasted from approximately 700 A.D. until the arrival of Europeans.



***The largest earthen mound in North America, aerial view of Monk's Mound at Cahokia.***

The new research, which is published in the journal *American Antiquity*, argues that the exodus from Cahokia was short-lived. “One would think the Cahokia region was a ghost town at the time of European contact, based on the archeological record,” said UC-Berkeley doctoral student A.J. White, the study’s lead

author, in the statement. “But we were able to piece together a Native American presence in the area that endured for centuries.”

By studying the remains of human feces, fossil pollen and charcoal, researchers found that the region was repopulated by a fresh wave of Native Americans in the 1500s. A steady population presence was kept in the area through the 1700s, until migrations, war, disease and environmental change took their toll.

Key evidence was found in the form of fecal stanols – microscopic organic molecules produced in our guts when food is digested. Excreted in feces, fecal stanols can be preserved in sediment for thousands of years, according to UC-Berkeley.

Researchers dug up core samples of mud from 10 feet beneath a lake adjacent to Cahokia Mounds State Historical Site. These were used to measure population changes in the area from the Mississippian era through to contact with Europeans.

“There’s very little archaeological evidence for an indigenous population past Cahokia, but we were able to fill in the gaps through historical, climatic and ecological data, and the linchpin was the fecal stanol evidence,” White said in the statement.

The doctoral student said that the decline of the Mississippian culture did not mark the end of the Native American presence at Cahokia. Instead, the region experienced complex migrations, war and ecological changes in the 1500s and 1600s, he explained.

“The story of Cahokia was a lot more complex than, ‘Goodbye, Native Americans. Hello, Europeans,’ and our study uses innovative and unusual evidence to show that,” White said.



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## **ARTIFUNFACTS TRIVIA QUIZ**

**The Answer To Last Month's Trivia Question: Why do people yell "Geronimo" when they parachute/jump from airplanes?**

**Answer:** It dates all the way back to the origin of paratroopers. In 1940, the Army was still developing the strategy of dropping troops out of planes. On the eve of the first test jump, soldiers from Fort Benning started a night of drinking with a viewing of a wild west movie beforehand. This was likely the 1939 film "Geronimo" starring Andy Devine and Chief Thundercloud. After the movie, *Pvt. Aubrey Eberhardt* boasted that he wasn't scared of the jump, despite being the tallest man in the unit. This caused his fellow soldiers to call him out on his bragging, saying he would forget his name at the door, as the troops were supposed to



shout their name when they jumped. Everyone in their jump group successfully jumped - all the soldiers remembered their names and shouted them as they made their jumps. The 6'8" Eberhardt did them one better - when his turn at the door came, he shouted "Geronimo!" and a new military tradition was born. Some of the top military brass weren't in love with the new tradition, but others thought it evoked the bravery and daring of the Apache chief - the last holdout against American expansion to the West. They let the paratroopers keep the tradition.

**This Month's Trivia Question: Recently, one of the last of the Navajo Code Talkers died. Of the 400-500 Navajo Code Talkers that were operating by the end of WWII, how many were in the *initial group* that started it all?**

Answer in Next Month's *Arrowheadlines Newsletter*