



Concho Valley Archeological Society Newsletter

March 2014

A letter showing how we, as an archeological society, are making a difference, even beyond the border of Texas.

Dear Concho Valley Archeological Society,

I would like to thank you for posting links to multiple archeological reports and articles on stagecoach stations on your website. I am a graduate student getting my Masters degree in historical archeology at the University of Nevada, Reno and stagecoach station archaeology is the focus of my thesis. Archeological reports of projects at stage stations also happen to be very difficult to locate and are often buried within archeology's grey literature or published only in local journals and not widely circulated. The articles and reports you have on your website have been great comparative material for my thesis fieldwork which focuses on Granite Creek Station, a stagecoach station in Nevada's Black Rock Desert used as an emigrant camp, trading post, stagecoach station, and military camp occupied between 1852 and 1868 along the Nobles Trail/Honey Lake Wagon Road. This past summer I conducted survey and limited testing of the site.

I am writing to you to request your permission to cite your report on Johnson's Station titled Archeological Investigations Johnson's Station [411R1-23J. Irion County. Texas written by Tom Ashmore, in my Masters thesis as a comparison between the findings at that station and what I found at Granite Creek Part of my thesis involves comparing the architecture of stagecoach stations across the American West and it would be a very helpful comparative resource. I will also be citing Larry Riemenschneider's articles on Head of the Concho Stage Station and Smith's Station as comparisons, but on your website you state that unpublished reports are not to be used by non-CVAS members and I didn't want to use the source without asking you first.

Thank you for your time, and don't hesitate to contact me.

Sincerely,

Laura Sechrist
Teaching and Research Assistant
Anthropology Department
University of Nevada, Reno

Fort McKavett West Texas Heritage Days

Fort McKavett's educational event is March 21st and 22nd. The CVAS is invited to participate again this year. CVAS will have a 'mock dig' and/maybe the Bow and Arrow shoot and the Atlatl throw. Friday is for the school kids and Saturday is open to the public.

For volunteers the meals include:

Thursday: Hamburgers, chips, coffee, tea, lemonade

Friday: Breakfast: sausage, pancakes, eggs, fruit, cereal, juice, coffee

Lunch: Ham or Turkey sandwiches, chips, cookie, and drink

Supper: Indian stew, cornbread, salad, coffee, tea, lemonade

Saturday: Breakfast: cheese omelet, sausage, fruit, cereal, juice, coffee

Lunch: Brisket, sausage, beans, salad, desert, coffee, tea, lemonade

(See more on page 5)

Earth Oven: Searching for the Trifecta

by Jake Sullivan and Brooke Bonorden, [Ancient Southwest Texas Project – Texas State University](#),

Let me begin by explaining what an earth oven is. An earth oven is a cooking technology that has been widely used in the Lower Pecos for thousands of years. To create an earth oven, a pit is dug into the ground and a fire is built. Large stones are placed amongst the flames; these stones retain the fire's heat and become the oven's heating element long after the fire has died out. Next, a layer of packing material is laid across the hot stones in order to insulate the food from direct heat and provide moisture. Prickly pear pads work great for this and can be found in abundance in the Lower Pecos. The food load, the trimmed hearts of the desert succulents sotol and lechuguilla, is placed on top of the packing material followed by another layer of packing material. The oven is then capped by a thick layer of earth to prevent precious steam heat from escaping. After cooking for at least 36 hours the food is ready to be unearthed and consumed.

The baking process turns the complex carbohydrates within the plants into sugar. These plants also contain a chemical called saponin, which is inedible in its raw form but is rendered harmless by the cooking process. I can tell you from experience that baked sotol doesn't always taste good, but it is a reliable food source in a harsh and highly variable environment.

As part of the ENC project, one of the research topics we are interested in is calculating how much earth oven processing occurred at different sites, i.e. how many times each earth oven locale was used. Fire-cracked rock (FCR) is the most common remnant of an earth oven cooking facility found in an archaeological context. In the field we have been sizing, counting, and weighing the FCR that we find in each layer of our excavation units. What we find most often, and what makes up the majority of the enormous talus slopes in front of the shelters, are FCR that have been discarded after multiple heating events and are now too small to store heat efficiently. However, in order to find out how much earth oven processing has occurred we need to do more than just count and weigh the burned rock coming out of our units. We are planning to do this by trying our hand at some Experimental Archaeology.



One of the challenges for archaeologists is understanding how the things you find in the ground are related to human activity—especially when it comes to burned rocks. So, we carry out different experimental archaeology projects to help us figure out what burned rocks in the ground might represent. Collectively, we have built many earth ovens to demonstrate the plant baking process from start to finish. However, beyond demonstrating how local edibles were processed by those who occupied the rocks shelters we work in, we did not collect any real scientific data to help us answer questions related to earth oven processing. So, we are planning a series of long-term experiments by creating our own earth ovens. We hope to document the number of plant baking episodes necessary to significantly reduce the size of our heating elements (rocks) to the size of the FCR that we are finding in burned-rock middens (BRM) throughout the canyon.

On Thursday the ENC crew searched the property surrounding the Shumla campus for a new site for our upcoming experimental earth oven. When seeking out the new oven location we tried to keep in mind the qualities that would have appealed the natives who were using this cooking technology for their survival. The vast majority of optimal locations we saw while traipsing through the always-thorny local shrubbery were already occupied by evidence of prehistoric plant baking – fire-cracked rocks. What makes a location optimal is its proximity to the trifecta: fuel, food, and dirt. Native peoples would have tried to find a location that was relatively close to all the fuel, food, and dirt they needed to construct and fill the oven so they wouldn't have to expend extra energy hauling in supplies. Eventually we found a pristine location untainted by archaeological evidence.

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Earth Oven: Searching for the Trifecta

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In anticipation of building our first earth ovens in the new locale, our first task is to collect phosphate samples at the recommendation of our ge archaeologist colleague Ken Lawrence. Phosphorous (or P) analysis looks at the phosphate that accumulates in sediment by many aspects of human activity. What's great about phosphorous is that it decays very slowly through geologic time, so it's a reliable element for targeted study. Our goal in using this method is to analyze how quickly and at what levels phosphate will accumulate in sediment that has been manipulated by plant processing and baking. To accomplish this we will be taking initial baseline samples at the oven location, and then Ken will come back and collect more once we have started processing. This is important to archaeologists because it gives us another way to interpret the intensity of the plant processing that occurred at local sites. By understanding how much earth oven processing occurred, we will be able to compare how many times different sites were used, and gain a better understanding of how people moved across the LP landscape.

In a few weeks we will tap the trifecta and start building ovens and monitoring the cracking rocks. We will also be following a pattern that native peoples must have relied on – in the winter, lechuguilla and sotol are among the few potentially edible plants that can be harvested.

Researchers find 300,000-year-old hearth in Israel

Digging History, Published January 28, 2014, FoxNews.com

CVAS newsletter editor's note: *Last month we saw the astonishing archeological news that artifacts found in the same location as ancient dart points in Africa could be dated as far back as 280,000 years. This article takes it back even further and is a great article to accompany the previous one on earth ovens. I think we can see now that our history books of how long intelligent man has existed on this Earth are in need of a rewrite.*

A team of researchers has uncovered the oldest hearth in Israel, a 300,000-year-old fire pit where prehistoric humans roasted ancient meats. Scientists estimate that humans discovered fire over a million years ago, and this find helps determine when our ancestors learned to cultivate it and use it as a tool, said Ruth Shahack-Gross of the Kimmel Center for Archeological Science at the Weizmann Institute of Science.

“These findings help us to fix an important turning point in the development of human culture – that in which humans first began to regularly use fire both for cooking meat and as a focal point – a sort of campfire – for social gatherings,” Shahack-Gross said in a press release.

“They also tell us something about the impressive levels of social and cognitive development of humans living some 300,000 years ago.”

The hearth was discovered in the Qesem Cave near the central Israel town of Rosh Ha'ayin, a spot archaeologists have plumbed for nearly 15 years. During recent work there, Shahack-Gross spied a thick deposit of wood ash, hardened and compressed over the centuries into sediment and buried in the center of the cave.



By taking thin slices of it and studying it under a microscope -- using a technique called infrared spectroscopy -- she and her colleagues Avi Gopher and Ran Barkai of Tel Aviv University determined that bits of bone and soil that had been heated to very high temperatures were mixed in with the ash.

There were also tiny but clear layers in the ash, which she called conclusive proof that the area had been the site of a large hearth that was used over and over again.

Around the hearth area they found flint tools that were clearly used for cutting meat -- early knives and forks, in a sense. Flint tools found just a few feet away had a different shape and were clearly designed for other activities.

Also in and around the area were burnt animal bones -- further evidence for use of the fire pit for cooking meat.

Prehistoric Paint to Shield European Sun Probe from Solar Inferno

By Miriam Kramer, Staff Writer February 17, 2014, space.com

A European spacecraft set to launch toward the sun in 2017 will be protected by a paint once used in prehistoric cave art.

The European Space Agency's Solar Orbiter probe will be coated in a substance derived from burnt bone charcoal — a type of pigment once used by early humans to create art on the insides of caves in France. The robust substance traditionally made from burned bones should help protect the Solar Orbiter when it flies as closer to the sun than any spacecraft before it.

The probe will fly about 26 million miles (42 million kilometers) from the sun, a bit more than a quarter of the distance from Earth to the star. The Earth is about 93 million miles (150 million km) from the sun on average. Mercury, the closest planet to the sun, approaches within 28.5 million miles (48.8 million km) at its closest point to the star.

While observing the sun from space, the Solar Orbiter will have to face temperatures up to 968 degrees Fahrenheit (520 degrees Celsius), ESA officials said. Scientists working with the spacecraft realized that they needed to re-work the heat shield when they ruled out their initial choice to use a carbon fiber fabric in 2010, they added.

"We soon identified a problem with the heat shield requirements," Andrew Norman, a materials technology specialist, said in an ESA statement. "To go on absorbing sunlight, then convert it into infrared to radiate back out to space, its surface material needs to maintain constant 'thermo-optical properties' — keep the same color despite years of exposure to extreme ultraviolet radiation.

"At the same time, the shield cannot shed material or outgas vapor, because of the risk of contaminating Solar Orbiter's highly sensitive instruments," Norman added. "And it has to avoid any build-up of static charge in the solar wind because that might threaten a disruptive or even destructive discharge."

ESA officials found Enbio, a company that produces Solar Black, a material made from burnt bone charcoal, to help them solve the heat shield problems. The "black calcium phosphate processed from burnt bone charcoal" will be applied to the outer sheet of titanium on the orbiter's layered heat shield, ESA officials said.

"The big advantage is that the new layer ends up bonded, rather than only painted or stuck on," John O'Donoghue, Managing Director of Enbio, said of the Solar Black material in a statement. "It effectively becomes part of the metal — when you handle metal you never worry about its surface coming off in your hands."

March Meeting Program

CVAS president, Callan Clark, will give a report on the recent Toyah Creek survey, conducted by members of both Iraan Archeological Society and CVAS members.

TAS Geoarcheology Academy to be held at Ft Concho

TAS will be holding the Geoarchaeology Academy at Fort Concho in the Living History Stables Classroom on April 5th and 6th. So far, 21 folks have signed up for the academy. CVAS members can help by providing some snacks and cookies for the breaks during the Saturday class. I will coordinate with Bob regarding the chairs and the projector and screen. Sunday April 6th will be a field trip with little or no class room. Those attending the academy will leave for their homes after the Sunday field trip. The classroom has been reserved with Bob and I'll be working with him on this project.....CA

**You are invited to attend the
Southwestern Federation of Archeological Societies 50th Symposium
Saturday, May 3, 2014 from 9:00 - 4:30**

[Friday evening social, informal Saturday dinner, Sunday tours to Alibates Ruin 28 or Adobe Walls]
Currently, eight speakers are confirmed and possibly four more to be added.

Fort McKavett West Texas Heritage Days

Fort McKavett Historic Site will come to life on March 22, 2014.. (Education day for area schools will be held on Friday, March 21st.) Gates will open at 8 a.m. followed by a 10 a.m. flag raising ceremony.

Throughout the day, activities will include cavalry, artillery, and infantry drills, Native American demonstrations, Buffalo Soldiers, buffalo, hunters, chuck wagon demonstrations, the Texas Camel Corps, the Texas Longhorn herd, a one-room school house, frontier woodworking, soap making, and much more. The Ice House Brass Band will perform during a barbeque lunch offered to the public by the Friends of Fort McKavett. At 2 p.m., the Sahawe Indian Dancers and members of Boy Scout Troop and Venture Troop 181 from Uvalde will present a colorful and fast moving variety of Native American dances. The day will conclude with a flag lowering ceremony at 4:30 p.m.

Fort Chadbourne Days

Join us on **May 3rd**, 2014 for the Living History event . Historians bring the Fort to life. 1850 s military and civilian life is re-enacted. Artillery drills, Cavalry drills, sutlers, hay rides to see the buffalo, black powder shoot, spinners, buffalo hunters, Native American displays, and so much more!

Friday is school day and anywhere from 1,200 to 1,500 students attend each year! Saturday is open to the general public!

Independence Creek 2014 Schedule

April 26th:

Day visit to scout upper portions of the south half of the preserve - and GPS features found. No facilities are available that weekend, but anyone who wishes to camp with trailer or tent is welcome to do so.

June 27th-29th:

This will really be an all-day survey on Saturday the 28th, but housing will be available if folks want to come Friday evening and stay over through Sunday. This trip will be to help survey the creek bank and find any newly exposed bones post-flood, as well as record what was torn up during the floods this past fall. This will be an "in-the-water" survey, so we figured summer would be ideal for this one.

October 3rd-5th:

Return trip to survey mesa tops on south end of ranch (recording what was found in April and looking for any new features).

2014 Dues

Please don't forget that annual dues. The new application form is on the back of this newsletter or you can pay at the meeting to our treasurer, Peter Norris, or send it in via mail using the application on the last page of this newsletter.

WE'RE ON THE WEB AT
CVASSANANGELO.ORG

Meeting Location

Please remember that our meetings are now in the classroom at the Fort Concho Living History Stables, **236 Henry O. Flipper St.** We enter **through the side door.**

2014 Membership Application

Name _____

Address _____

City _____

Zip _____ Phone _____

Cell _____

Family members _____

Email _____

I pledge I will not intentionally violate the terms or conditions of any current or future state or local statute concerning cultural resources or engage in the practice of buying or selling artifacts for commercial purposes, or engage in the willful destruction of archeological data, or disregard proper archeological field techniques

Signature _____ Date _____

Mail to: CVAS, 4063 Green Meadow Dr., San Angelo, TX 76904

Individual	\$15	<input type="checkbox"/>
Family	\$20	<input type="checkbox"/>
Student or military N/C		<input type="checkbox"/>

(active military only)