



## FROM THE DIRECTOR

# THE GOOD, THE BAD, AND THE REAL...

ERIC BLINMAN, PH.D.  
OAS DIRECTOR

The goal of archaeology is reconstructing the history of communities and regions by augmenting written and oral traditions with material evidence and interpretation. But archaeology as a discipline is part of a Euroamerican tradition of knowledge, and therefore archaeology is seen by some as an aspect of colonialism. The aspiration of history per se, and archaeology by extension, should be truthful or reality-based representations of the past. But the practice of history under the umbrella of colonialism (actually, its practice under the influence of all cultures) can be messy. History has been molded to validate or reify the status quo or aspirations within societies (the adage that "History is written by the victors"), regardless of the ideal of a dispassionate reality.

The challenges in writing and presenting archaeological histories today are avoiding conflicts of interest. Archaeologists need to be sufficiently self-aware that we can perceive and balance inherent cultural tendencies to perpetuate American stereotypes of past communities (Native and non-Native). We try to counter concepts of the "primitive" that were used to justify both "Manifest Destiny" and slavery, while we need to avoid idealizing past lifeways

See **Director**, on Page 8.



The Chachapoya built shrines and fortresses on the mountaintops; the entire precinct ranges from 60 to 90 feet in height.

# THE CHACHAPOYA CULTURE OF PERU

SHERILL SPAAR, PH.D.  
OAS RESEARCH ASSOCIATE

The Chachapoya Culture of the North Peruvian Andes flourished from ca. CE 800 to the Incan and Spanish conquests. The Chachapoya homeland, stretching 100 miles south from where the Marañon River begins to make its turn toward the Amazon basin to 60 miles east along the Andes divide, comprises a high rainy "cloud forest"—perhaps a translation of the Quechua word for Chachapoya. Friends of Archaeology's 2018 excursion into this area, primarily the Utcubamba river valley, focused on a number of sites, which encompassed the whole of this culture's 600+ year span. Known

especially for their fine wool and cotton textiles, medicinal herbs, and decorative terraced stone architecture, the people lived on the sides and hilltops of extremely steep canyons, and had distinctive burial traditions.

Grouped into family and clan units of 20 to 80 dwellings, the Chachapoya farmed on terraced slopes, building rock canals and dams extending up to 4,500 feet above the valley floors. Dwellings were carved into hills on solid clay and pebble bases and buttressed with half-moon-shaped stone and mortared walls. Thatched roofs and drip cornices kept the people dry. They also built shrines and

See **Culture**, on Page 7.

### EDUCATION

# STUDENTS FOCUS ON 'COLUMBIAN EXCHANGE'

Caitlin Ainsworth and Mollie Toll, of the Office of Archaeological Studies Education Outreach Program, are working with fifth-grade students at El Camino Real Academy to better understand the global event referred to as the Columbian Exchange and how it affected the food we eat today.

According to Mollie Toll, "European colonists introduced new animals, plants, diseases, ideas, and technology into New Mexico as part of a global event called the Columbian Exchange.

"This process dramatically changed the lives of New Mexico's peoples in many different ways," she continued. "One major area of change was in what people were eating and where those foods originated."

Students have been introduced to the key concept of the Columbian Exchange, learned about New Mexico's diverse fauna, and become familiar with some of the many ways the people of New Mexico used animals in the past and how things changed after European contact.

In future lessons, students will find out how people used plants in pre-Hispanic New Mexico and learn about the impact of the introduction of corn, beans, and squash from Mexico 3,000 years ago and what changed following the Columbian Exchange. Students will also be provided with lists of plants and animals introduced from Mexico and the Mediterranean via the Columbian Exchange.

As part of the final lesson, students will create a pair of menus: one dependent ONLY on foods available prior to Colonization and one utilizing key food plants and animals from the Columbian Exchange. Students will share some of their family food traditions, and use writing and illustration to portray the relationship between food and identity. ❖

# BROWN BAG TALKS

## LECTURES WILL BE AVAILABLE ON ZOOM

### THE UPPER SAN JUAN (ROSA) TO GALLINA POTTERY SEQUENCE: A MOUNTAIN TRADITION OF PUEBLOAN HISTORY

Dean Wilson, Ceramist Emeritus and OAS Research Associate

May 25, 2021, 12 p.m.

Dean Wilson is examining whole vessels from the Upper San Juan River and Gallina regions of northern New Mexico during MIAC's inventory of whole vessels as they are moved to their new home at CNMA. Through his career, and currently, he has analyzed many sherd collections from the area as part of salvage archaeological projects. This pottery from the highland areas to the northeast and east of the better known San Juan Basin (Chaco) region provides clues to the identity and history of different peoples within the Northern Pueblo World. This presentation will describe the temper, paint, technology, and stylistic characteristics of the Rosa and Gallina pottery traditions beginning in the seventh century. Consistencies through time reflect the perseverance and continuation of material and cultural traditions that were part of a high-elevation farming strategy associated with an "Ancestral Towa" history. This trajectory culminates in the farming communities that occupied the Jemez Highlands during the Protohistoric and Early Historic periods.

Please pre-register as online attendance is limited by emailing: [friendsofarchaeologynm@gmail.com](mailto:friendsofarchaeologynm@gmail.com). Subject: Brown Bag May 25

And, if you happen to forget to pre-register by the time of the talk, you can still attend, if there is room:

#### Join Zoom Meeting

<https://us02web.zoom.us/j/89580089363?pwd=ME5qbTdoQ0N5azRZdS9LMVFoMlo1dz09>

Meeting ID: 895 8008 9363

Passcode: 200034

### ARCHAEOLOGY, HISTORY, AND THE CHALLENGE OF IDENTITY

Eric Blinman, OAS Director

June 15, 2021, 12 p.m.

The Native American Graves Protection and Repatriation Act requires that museums and agencies come to conclusions about the cultural affiliation of burials and potentially sacred artifacts, linking them to modern communities in support of repatriation claims. If only it were that simple. Many archaeologists and institutions have avoided potential controversies by making broadly inclusive cultural affiliation decisions. Although a more comfortable path, this reticence minimizes the importance of NAGPRA as social justice legislation and misses an opportunity to make archaeological histories relevant to descendant communities.

Please pre-register as online attendance is limited by emailing: [friendsofarchaeologynm@gmail.com](mailto:friendsofarchaeologynm@gmail.com). Subject: Brown Bag June 15

And, if you happen to forget to pre-register by the time of the talk, you can still attend, if there is room:

#### Join Zoom Meeting

<https://us02web.zoom.us/j/86970149597?pwd=SC9JZjhEY1ZXWkVzeFpyVDkyO G5QQT09>

Meeting ID: 869 7014 9597

Passcode: 781980



## Office of Archaeological Studies

The Office of Archaeological Studies (OAS) was the first museum program of its kind in the nation. OAS staff conducts international field and laboratory research, offers educational opportunities for school groups and civic organizations, and works to preserve, protect, and interpret prehistoric and historic sites throughout New Mexico.

## Friends of Archaeology

The Friends of Archaeology is an interest group within the Museum of New Mexico Foundation that supports the OAS. To join the FOA, you need only become a member of the Museum of New Mexico Foundation and sign up. Visit [www.nmarchaeology.org](http://www.nmarchaeology.org) for information. We're also on Facebook; just search for "@FriendsofArchaeology."

## Mission Statement

The mission of FOA is to support the OAS in the achievement of its archaeological services mandate from the State of New Mexico through participation in and funding of research and education projects.

## Friends of Archaeology Board

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# UTILITY & DESIGN

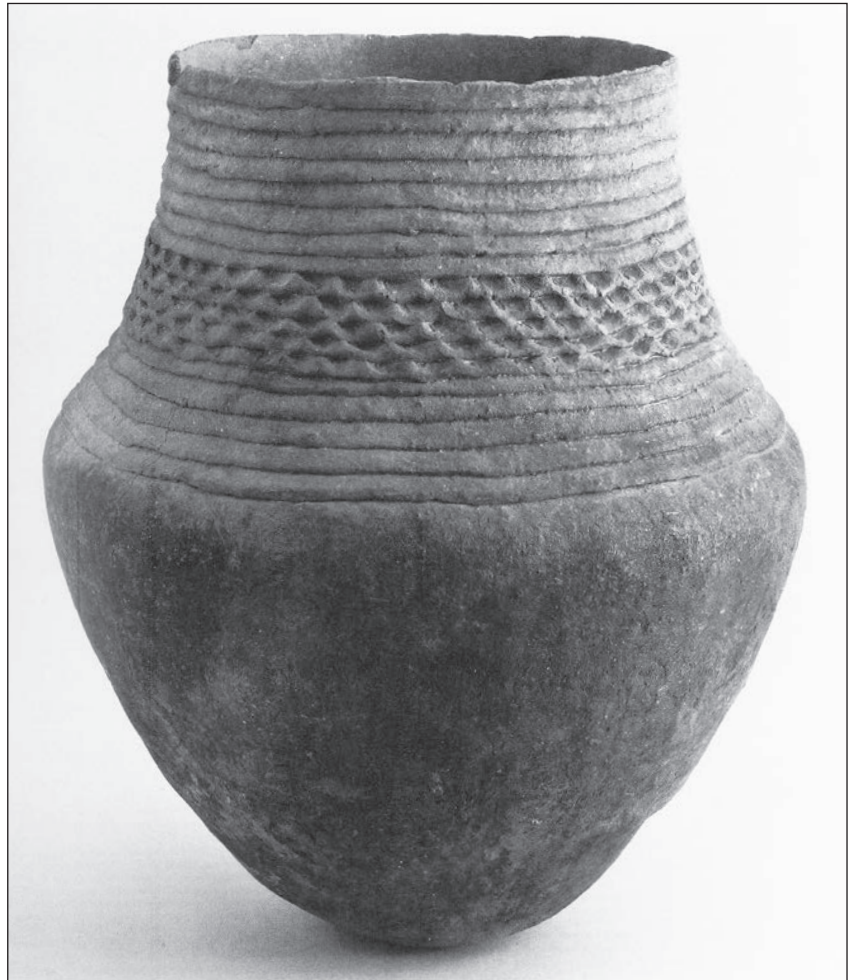


Illustration from Figure 42 of Stewart Peckham's *From This Earth*, 1990, Museum of New Mexico Press.

The award for excellence in functional ceramic design goes to...the Four Corners potters of the ninth century!

Exuberant expressions of neckbanding have encouraged archaeologists to embark on a frenzy of typology: Tocito Gray, Mancos Gray, Kana'a Gray, Sheep Springs Gray, Gray Hills Banded, Moccasin Gray, Coconino Gray, Neck Corrugated, Fillet Gray, and many more pottery types refer to regional expressions of plain-based and neckbanded cooking jar styles. Most expressions are so narrowly limited in time that neckbanded pottery provides some of the best clues for dating archaeological sites.

Beginning with the choice to leave neck coil junctures unobliterated in the very late eighth century, over the next 200 years potters embraced smaller and smaller coil

sizes while experimenting with different clapboard, patterned indented corrugated, and impressed textures.

Beyond just enjoying enhanced naming opportunities, archaeologists speculated on why potters indulged in this particular style so intensely. Tammy Stone reflected on underlying engineering principles of heat transfer related to a greater surface area on exterior (textured) surface compared with the interior (smooth) surface. Chris Pierce conducted heating and cooking experiments to explore the effects of exterior textures on performance.

The result...Texture, any texture, that increases the surface area on the exterior of vessel necks acts to reduce boilover. Women were making and using cooking jars, and the value of this innovation was perceived, shared, and elaborated! ❖



The Navajo homeland contains miles of canyon walls with suitable surfaces for pictographs, like these of the Warrior Twins.

# SURPRISING RESULTS

## FROM A FIELD ANALYSIS OF NAVAJO BLUE PICTOGRAPHS

BY BOB FLOREK AND  
CHUCK HANNAFORD

Dinétah is the Navajo name for their traditional ancestral homeland. This homeland is characterized by a labyrinth of canyons centered around Gobernador and Largo Canyons. The region was where one group of Athapaskan migrants became the Navajo. The Navajo are currently the largest tribe of Native Americans now occupying a big reservation in the Four Corners states of Arizona, Utah, Arizona, and New Mexico. Important to their traditional homeland are the presence of two holy mountains (Gobernador Knob and

Huerfano Mesa) associated with the creation story, and the lives of First Man, First Woman, Changing Woman, the Hero Twins, and the characteristic Ye'i, or Holy People. Today this region is the focal point of one of the largest gas fields in the United States, but the Navajo still revere this homeland with deep respect similar with how Christians might view the Holy Land in the Middle East.

Navajo culture and religion has a long history of ethnological, religious, linguistic, archaeological, and historical research. Distinctive archaeological features include forked-stick hogans and unique pueblitos typified by small stone structures usually built on boulders,

mesa rims, and prominent topographical features. These pueblitos represent defensive reactions to extensive raiding and warfare occurring during the period of occupation from around AD 1640 to 1760. However, intertwined with this crucible of defending their homeland the Navajo were also fashioning an incredible ceremonial and ritual heritage. Polly Schaafstma originally defined the Gobernador Representative Style based on her rock art studies in the Navajo Reservoir. She demonstrated that much of the ceremonial imagery preserved on cliff walls could be understood within the

See **Surprising**, on Page 5.



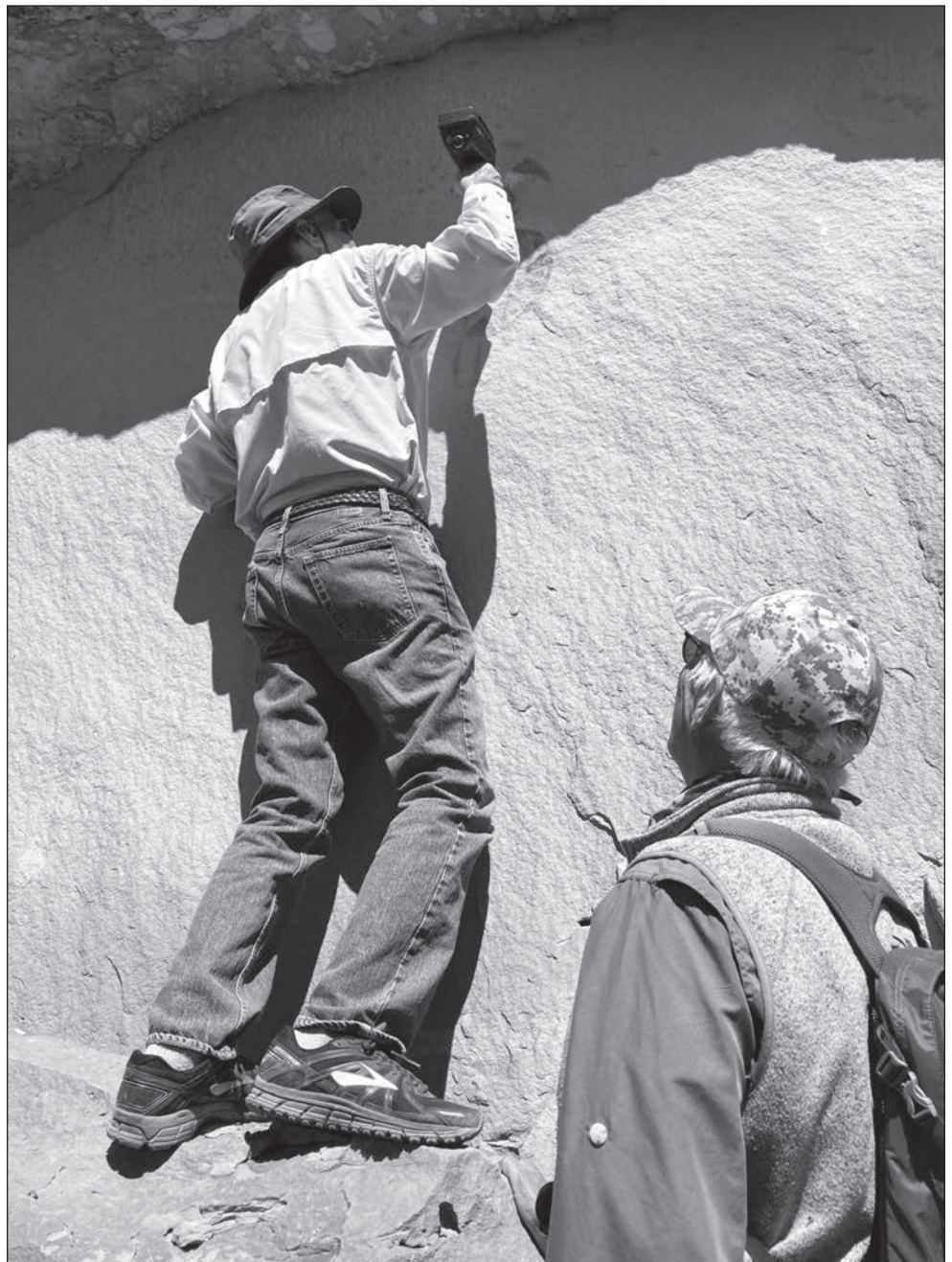
## SURPRISING

Continued from Page 4.

context of Navajo religion still practiced today. As an example, the Nightway Chant, a unique nine day Navajo healing ceremony may have had its origins in the Dinétah at this time. Images on cliff walls show great continuity with present day sand painting images created during the ceremony. Following fellow researchers, we view the pictographic images not as "rock art," but more appropriately as having a ceremonial and ritual function. These depictions of Holy People and events have a deeper theological meaning as yet little understood by our current anthropological studies.

Humming Bird Canyon in the Dinétah encompasses some inspiring ceremonial images including the Warrior Twins, the Navajo Humpback God, and other images associated with Navajo ritual. The Navajo homeland contains hundreds of miles of canyon walls with suitable surfaces for pictographs. It is not known exactly why a specific locality may have been chosen. The area may have been associated with traditional creation events, specific events such as the Nightway, or places associated with the Ye'i. A distinctive Navaho Humpback at this locality is depicted in a vibrant turquoise blue color, which has long captivated our curiosity as to what pigment was utilized in the depiction. Several other images on other nearby panels also exhibit this color. The blue paint stands out as being rarely utilized in the Dinétah. On April 8, a group of OAS staff and volunteers visited Humming Bird Canyon to examine these pictographs more closely, with the hope of discovering more about the nature and source of this interesting blue color.

Assuming the paint used was based on a mineral component, our assumption was that the paint consisted primarily of a copper compound. The presence of copper is what gives the beautiful blue color to many naturally-occurring minerals, turquoise being perhaps the most familiar example. Our thought was that the blue paint might be based on the copper mineral azurite; sources for this



On April 8, a group of OAS staff and volunteers visited Hummingbird Canyon to examine a series of pictographs more closely; images included the Humpback God.

mineral can be found to the south and east of the Dinétah. To search for copper in the pictograph paint, we brought along a portable X-ray fluorescence device (pXRF). The pXRF is an ideal instrument for this purpose, for three reasons: (1) it is portable, so we could easily carry it to the pictographs; (2) it is non-destructive, meaning that it does not destroy any material in the process of analyzing it; and (3) it gives immediate results, thus allowing us to make decisions in the field regarding next steps. In fact, one of the many uses of pXRF is by art curators to

analyze the composition of pigments in paintings. We aimed to do the same thing, except in our case the painting was on solid rock instead of canvas.

X-ray fluorescence spectroscopy works by shooting a narrow beam of low-energy X-rays into the material of interest; the energy of the incoming X-rays causes electrons to jump between different orbital levels in their atoms, and in the process release energy as X-rays of distinct wavelengths. The emitted

See **Results**, on Page 6.

## RESULTS

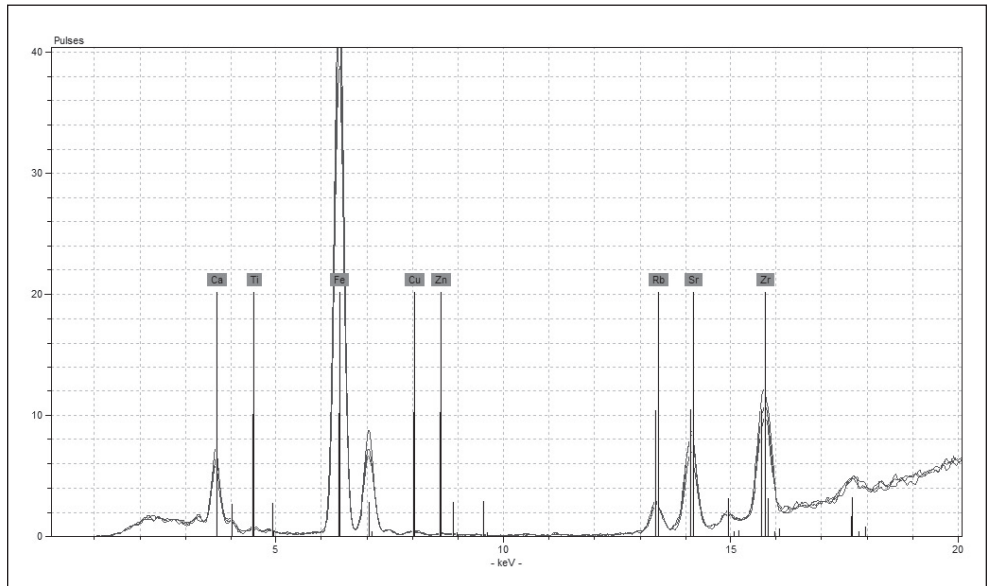
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X-rays form a spectrum containing peaks that are unique to specific elements. By analyzing the position and size of these spectral peaks, the relative concentration of various elements can be calculated. Fortunately, our pXRF device includes an on-board computer that does this analysis automatically, and presents the results in a display that shows each element identified and its approximate abundance. The whole process for a single measurement takes less than a minute. So with this tool in our backpack, we approached the pictographs with the expectation of confirming that copper was indeed the special ingredient in the vivid blue paint.

Our primary target was the Humpback God figure painted with broad patches of vivid blue pigment, in addition to areas of red, yellow, and white. The first pXRF reading was taken on one of the largest and bluest patches. Within a minute, our assumptions were overturned. To our surprise, no copper was detected. Subsequent readings on other parts of the figure, as well as other nearby figures, confirmed: whatever ingredient is in the blue paint, it is not a copper-based mineral.

In fact, no other distinctive metallic element (such as cobalt, a common element in blue pigments used by Chinese and European artists) was detected in appreciable quantities, with the exception of iron. Iron, of course, is ubiquitous; it was detected in all the paints as well as in the background sandstone (at a lower concentration than the paints). This suggests the red and yellow paints are probably based on hematite (red) and limonite (yellow), both commonly found iron minerals. But it does not help identify any mineral that might be responsible for the blue color.

This does not eliminate the possibility of a pigment based on a blue variety of an as-yet-unidentified mineral, but it does broaden the question to consider other possibilities. In particular, are there non-mineral or organic pigments that could be responsible? When considering blue



The first portable X-ray fluorescence device reading, above, was taken on one of the largest and bluest patches. To our surprise, no copper was detected.

The Humpback God figure, left, was painted with broad patches of vivid blue pigment.

as well, and it was commonly used in the rich blue paintings produced in Mexico during the Spanish colonial period. It is also known that the Spanish imported this dye to New Mexico in the late 1700s, and traded it to the Navajo for use in weaving and textiles. (The Museum of Spanish Colonial Art presented an exhibition on this subject in 2015: *Blue on Blue: Indigo and Cobalt in New Spain*).

So, as usual, science has provided an answer to a question, and raised several new ones. Did the Navajo use a copper mineral in their blue pictographs? Apparently not. Is there some other blue mineral that they used? Or is it possible that, in a religious ceremony over two hundred years ago, a Navajo artist added the same vivid blue pigment to their palette that was being used by Spanish artists to adorn their churches in Mexico?



To view color images of the Humpback God and the Warrior Twins, as well as other images related to this article, please visit <https://www.flickr.com/photos/nmarchaeology/>.

organic pigments, the most common that presents itself is indigo, which is derived from the indigo plant and has been used for centuries in Asia. But there is no native true indigo plant in the southwest region.

There is, however, an interesting possibility. As early as 800 CE, cultures in Mesoamerica used a blue dye extracted from the anil plant, a member of the indigo family. This dye, combined with a certain clay, was used to make Maya Blue, a pigment that was used extensively in murals. The Spanish adopted this pigment



## CULTURE

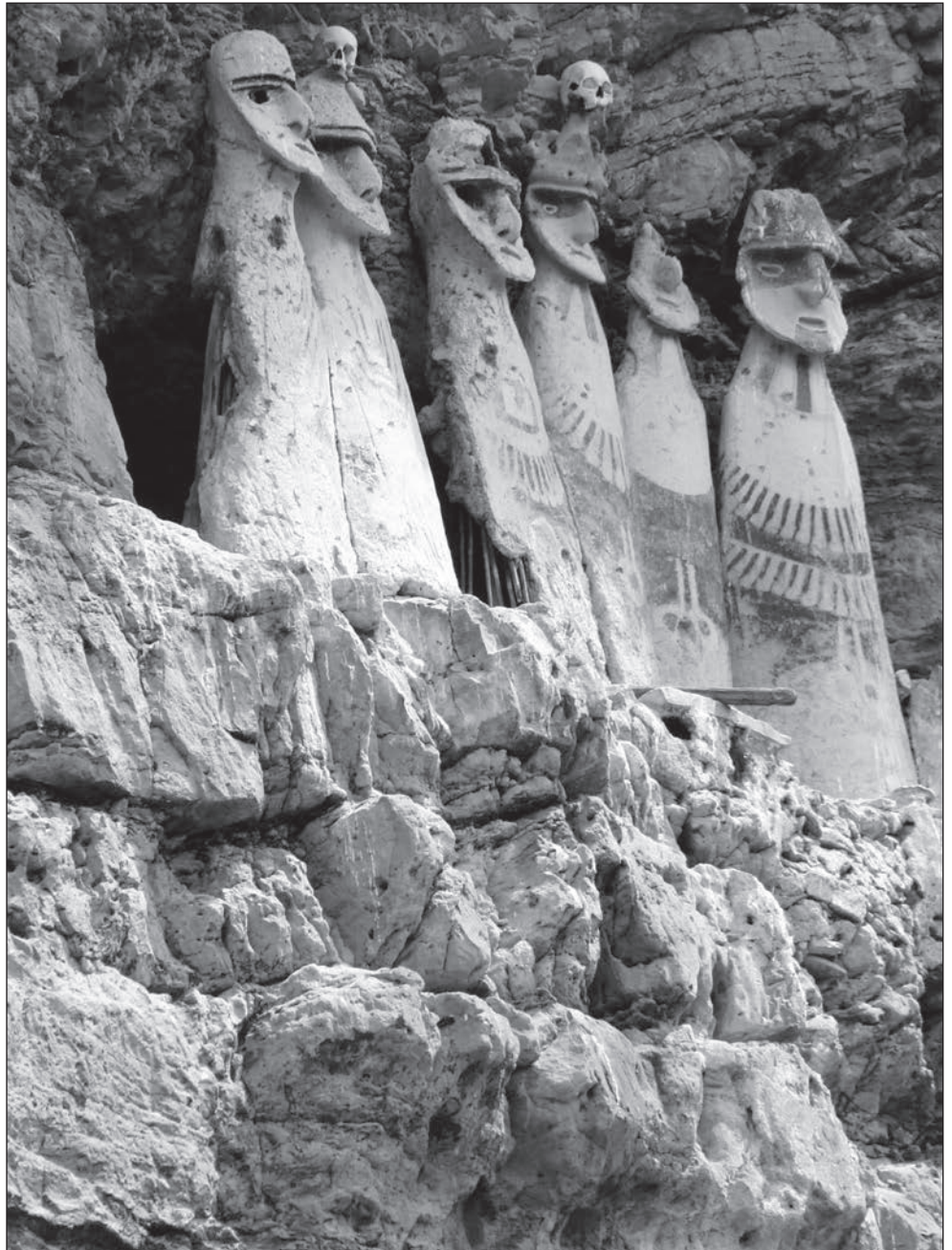
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fortresses on the mountaintops, including Kuelap, the largest ancient stone edifice in South America at an altitude of ca. 9,700 feet, which covers a 15 acre area. Some cut blocks weigh as much as 3 tons, and the entire precinct ranges from 60 to 90 feet in height. Inside are more than 550 separate structures, most rounded.

Chachapoya funerary architecture is just as distinctive, including sarcophagi built of cane and covered with painted mud plaster for individual burials (purunmachus), the most accessible of which are those at Karija. Chullpas, group burial chambers decorated with multicolored plaster and geometric friezes or pictographs, often contain balconies for mourners to visit their ancestors. Most burials were situated in cliff-side niches. Bodies were buried in a sitting fetal position and mummified in fine, multi-layered, colorful textile bundles, often with an exterior wrapping of deerskin for waterproofing. Funerary objects included tools, musical instruments, and other paraphernalia. The Leimabamba Museum has preserved more than 200 of these mummies from La Laguna de los Condores in a humidity-controlled vault.

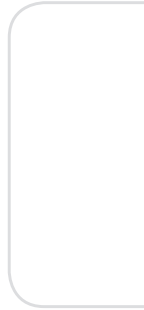
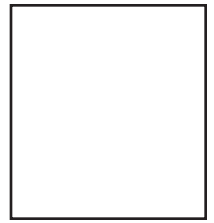
Known as fierce warriors, whose chiefs only led in times of warfare, the Chachapoya valiantly protected themselves against the Inca in a number of encounters, and were only completely overcome in the 1470s. The Inca built more connecting roads within the area, and this previously animistic shaman-based culture subsequently adopted Incan sun-god worship. Of course, Incan rule only lasted a short while, and the Spaniards rode into the territory within a few years after murdering Atauvalpa, the last Incan emperor in 1532.

Although this culture is lesser known than many of the more well-publicized ancient peoples of Peru, it was a sophisticated and complex system which proved instrumental in Incan architectural and agricultural development, especially at high altitudes. ❖



Chachapoya sarcophagi, seen above, were built of cane and covered with painted mud plaster.

Cut blocks at this mountaintop fortress, left, can weigh as much as 3 tons. The entire precinct ranges from 60 to 90 feet in height.



## DIRECTOR

Continued from Page 1.

inappropriately. All human communities can be violent and bigoted as well as being compassionate and altruistic. An expectation that a Native American past must conform to Rousseau's model of natural goodness is nearly as dehumanizing as stereotypes that come out of white supremacist tracts.

Conflicts of interest also exist between descendant communities, and examples are diverse. The Navajo Nation insists that we refer to the archaeological sites on Navajo land within the greater

Four Corners area as "Anasazi," while the Pueblo descendants would prefer anything but a Navajo term be applied to their ancestors. This is a legacy of both historical cultural conflict and colonial policies (American values) that privilege land ownership as an aspect of tribal cultural sovereignty.

In contemporary society, histories can be both poison and antidote to social justice issues. "History" can be used to hide or perpetuate discrimination, but revisions to history can be a strong foundation for the future. If archaeology is to play a positive role in social change, we need to not shy away from constructing evidence-based histories. We need to work from positions of self-awareness, and we need to accept criticism and act on it when that criticism is justified. The FOA students in my Southwest culture history class were probably sick of the introductory slide, but I truly believe that "Archaeology is a science only because our stories are intended to be criticized." ❖

## MAKE YOUR MARK ON NM ARCHAEOLOGY!

Please consider supporting the Office of Archaeological Studies by making a gift to education or research by check, credit, stock, IRA rollover, or planned gift this year.

Your tax-deductible donation through the Museum of New Mexico Foundation will have a lasting impact throughout the state. One hundred percent of your donation will be directed to the Office of Archaeological Studies. No administrative fees are charged.

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For questions about giving, or to donate, contact Lauren Paige, at (505) 982-2282, or via e-mail at [lauren@museumfoundation.org](mailto:lauren@museumfoundation.org).

## LOOKING FOR US?

If you are planning a trip to CNMA, we're located at 7 Old Cochiti Road, just off Caja del Rio Road. We're the first building on the left before you get to the animal shelter.