

SCAN

SANTA CRUZ ARCHAEOLOGICAL NEWSLETTER

CCATP Alumni Stella D'Oro

'Life after Cabrillo'



Stella D'Oro - Her favorite hat....

The Santa Cruz Archaeological Society would like to congratulate Stella D'Oro on the recent completion of her Masters Degree in Applied Anthropology from San Jose State. Her thesis entitled "Native Californian Prehistory and Climate Change in the San Francisco Bay Area" tests a Southern California Model which documents settlement disruption, increased violence, malnutrition, and intensification of resources during a period of drought called the Medieval Climatic Anomaly (MCA) which occurred during the Middle/Late Transition Period in California (1,100 - 750 B.P.). Her data demonstrate that similar phenomena did not take place in this study area. She proposes that

prehistoric populations in the Southern Bay Area were not significantly impacted by the MCA. Stella will present her thesis findings in January 2010 to the Society at the Sesnon House.

Stella received her A.S. in Multimedia from Cabrillo College in 1999, her Certification in Archaeological Technology in 2005, and her B.A. in Anthropology from UC Santa Cruz in 2005. She has also earned a GIS Certificate from San Jose State. Ms. D'Oro is an active member of the Santa Cruz Archaeological Society and the Society for California Archaeology.

Stella has worked for Albion Environmental, Inc. in Santa Cruz since 2004. In the course of her

duties, she has excavated at Los Osos, Paso Robles, Camp Roberts, Santa Cruz, and at Santa Clara University, in addition to working as a field monitor. In the office, Ms. D'Oro spends much of her time applying her skills in Adobe Illustrator, PhotoShop, Image-Ready, and HTML to compiling graphics and maps for ongoing projects, as well as designing and maintaining the Albion Environmental, Inc. website. She also produces illustrations for site records and professional reports using both computer graphics and traditional media. When she is not digging, she sings jazz standards with her band, Stella by Barlight, and creates websites for local musicians, artists, and companies.

Skeleton unearthed on Monterey's Cannery Row

By LAITH AGHA

Reprinted from the *Santa Cruz Sentinel*
May 31, 2009

MONTEREY ~ As soon as construction crew members working next to the Sardine Factory realized they had unearthed human remains, the back hoe was turned off and a call was placed to the Monterey Police Department.

Turns out the skeleton found under the parking lot near Cannery Row was that of woman, perhaps thousands of years old and probably a member of the Esselen Indian tribe.

The remains were found Wednesday as a ditch was being dug behind the restaurant. A skull and about half a skeleton came up in the back-hoe scoop.

"We immediately stopped the job," said Frank Donangelo, vice president of planning and development for the Cannery Row Company, which owns the property.

After the police department received word of the bones on Wednesday, officers secured the scene and a coroner and pathologist arrived to assess whether a crime was committed.

Once the bones were determined ancient and not to be investigated as the remains of a crime, a call was made to representatives of the Esselen Nation, which has local ancestral roots.

Louise Miranda Ramirez, who chairs the Ohlone Costanoan Esselen Nation, has been onsite overseeing the excavation.

The Esselen people prefer to leave remains where they are found, but if that is not an option, the remains are removed and buried elsewhere, Ramirez said. That is the

plan with the skeleton found Wednesday. When and where that will be has not been determined, she said.

"We want them to be reburied with a ceremony and make sure they don't show up on a shelf somewhere in a museum," said Ramirez, a former Peninsula resident who lives in San Jose.

Ramirez declined to allow the remains to be photographed by The Herald. She named the Esselen ancestor "Ichi Kolo," which means "Sister Love" in the Esselen language.

Archeologist Susan Morley, who lectures at CSU Monterey Bay, is leading the excavation. She worked Thursday and Friday on it and plans to continue the dig on Monday.

"Archaeology is about trying to learn about human behavior," Morley said. "We are trying to carefully document this individual to find out anything about when she was buried."

Morley said she could not estimate how old the remains are, but Indian remains found on the site in the past have been dated from 2,000-to 6,000-years-old. The skeleton found Wednesday was about four feet deep, which is a clue to the age of the bones, Morley said. Sea shells found during the dig a layer above the skeleton are probably 500 to 1,300 years old, she said.

Besides the bones dug up by the back hoe, no more have been removed and very little has been uncovered.

"I can see part of a foot," Morley said after wrapping up her work on Friday.

Morley said the land under the parking lot, which is between Foam Street and Wave Avenue, was excavated in 1980 and found to be the site of a "major village" from pre-colonial times.

"When they tore down the houses" that used to be where the parking lot is, "they found lots of burials," she said.

While discovery of Indian burial sites are not rare, Morley said, "findings like this are random."

Ramirez said she is grateful that the Cannery Row Company is allowing the excavation. Donangelo said the project has been halted until the excavation is completed, possibly by early next week.

"They have all of our cooperation," Donangelo said. "We have the highest respect for what they are doing and we will support them in any way."

Ancestral remains are considered sacred by Esselen Nation members, which is why Ramirez is working to preserve them.

"These are our people and we need to respect them," Ramirez said. "None of the nonnative people who have been brought into this area would want their families to be disturbed in this way."

While the remains are sacred to local Indians, they should be appreciated by all local residents, Ramirez said.

"It's Monterey history, life before the missions," she said. "Our rich culture should be honored and enjoyed."

Calendar

All General Meetings are held at Sesnon House Cabrillo College
6500 Soquel Drive, Aptos, California at 7:30 p.m. unless otherwise indicated.
SCAS website ~www.santacruzarch society.org

- September 19
Saturday, 10am *Ohlone Day* at Henry Cowell State Park in Felton, CA (831-355-7077)
Celebrate the Ohlone People of the past with those of the present at
Ohlone Day. You will see traditional dancers and Ohlone demonstrators
will share traditional crafts, language and history.
- October 3 SCA Southern California Data Sharing Meeting, Pomona College,
Claremont Contact Southern Vice President: colleen.delaney@csui.edu
- October 15 Our speaker this evening will be **Dr Ruben Mendoza**, CSUMB "*The
Earliest Chapel: Archaeology and Discovery at the Royal Presidio of
Monterey.*"
- October 17, 2009 SCA Northern California Data Sharing Meeting, USACE Bay Model
Facility, Sausalito, Contact for more info: Northern Vice President:
jfarquhar@albionenvironmental.com
- October 18
Sunday San Lorenzo Valley Museum, at the Senior Center Highland Park - Ben
Lomond, presents a "*Historical Talk - Floods, Fires, and Earthquakes of
SLV - Emergency Preparedness*" by Consultant **Pat Jocius**. Photos from
SLV disasters going back to the 1950's. Donation of \$5 per family
requested.
- October 29~31 **24th Annual California Indian Conference** The conference is an annual
event for the exchange of views and information among academics,
educators, California Indians, students, tribal nations, native
organizations and community members. It will be held at California
State University, East Bay, 25800 Carlos Bee Blvd., Hayward.
- November 19 **Charlene Duval**, will speak on "*The Current Status of the Los Coches Adobe
near Soledad*"
- December 17 This evenings speaker will be **Rae Schwadeder**, CalParks, Monterey,
"*Reevaluation of CA-MNT-12, The Hudson Mound near the Carmel River.*"
- January 21st CCATP alumni, **Stella D'Oro** will report on her Masters thesis, "*Climate
Change and People in the San Francisco Bay.*"

Roots of Humanity

Vast Language, Gene Study Unveils Our History

By David Perlman, Chronicle Science Editor
Reprinted from the San Francisco Chronicle

American scientists working with colleagues in six African nations and Europe have been boldly tracing the genetic roots of all humanity for the past 10 years, and their first results have just started coming in.

The effort - the most ambitious of its kind ever undertaken - is an attempt to learn in detail how remarkably diverse humans are; how our varied genes make some of us susceptible to deadly diseases and some immune; and just where in Africa our human ancestors first moved out of the continent more than 50,000 years ago to populate the world.

The researchers examined the genes and historical linguistics among thousands of remote African tribal peoples, carrying on a long and once-controversial study begun more than 50 years ago by Stanford geneticist Luigi Luca Cavalli-Sforza and continuing today in partnership with Stanford mathematician Marcus Feldman.

Geneticist Sarah A. Tishkoff of the University of Pennsylvania is leading the latest project with support from African researchers in Cameroon, Mali, Tanzania, Kenya, Nigeria and Sudan. The first results were reported Thursday in the online journal *Science Express*.

Over the past decade, the researchers analyzed the genes and languages of more than 3,000 people in 121 population groups across the most isolated regions of

Africa, plus 60 in Europe, and four groups of African Americans in various states across the United States. All of the participants volunteered blood samples for gene analysis, the scientists said.

Tishkoff's team also combined clues from the most ancient languages of Africa with their knowledge of the 2,000 languages now spoken on that continent. The scientists also examined the genomes of all the individuals they studied, and from all of that drew a picture of historic migration patterns among the many African population groups, linking them to the origins of African Americans in greater detail than ever before.

New insights into Africa

One of Tishkoff's colleagues, Dr. Muntaser Ibrahim, a molecular biologist at the University of Khartoum's Institute of Endemic Disease in Sudan, said in a phone interview from Khartoum that the project has revealed "spectacular insights into the history of African populations and indeed the origins of all mankind."

Because such projects in the past required drawing blood samples from so many thousands of African hunter-gatherers in isolated tribes, some scientists had branded them as unethical. But Ibrahim said that won't be an issue this time.

"These remote people are unique genetically, and they have been very, very cooperative because they too would like to know about their past," he said.

"The notion that these remote people are not interested in genetics is not at all true."

Christopher Ehret, a noted specialist in African historical linguistics at UCLA and a member of Tishkoff's team, said his analysis of tribal languages revealed striking patterns of migration across Africa.

"When people move, they borrow words from the people where they settle," he said. Those new words inserted into older languages, he said, can tell us when the newcomers arrived.

For example, Ehret said, the "click" language still spoken among people as varied as the San of South Africa, the Pygmy tribes of Central and West Africa and the Hadze people far to the east.

Scott M. Williams of Vanderbilt University, who searched for disease-causing genes among the most remote African populations, said he found genetic evidence of ancient susceptibility to disorders as varied as hypertension, prostate cancer and the lactose intolerance that is common today both among African Americans and other American ethnic groups.

The ancient migration patterns that the scientists followed indicated to them that the very first true humans must have emerged on the evolutionary scene nearly 200,000 years ago somewhere in southern Africa,

(Continue on page 8)

California's Channel Islands Hold Evidence Of Clovis-age Comets

Reprinted from *ScienceDaily*

July 21, 2009

ScienceDaily (July 21, 2009) — A 17-member team has found what may be the smoking gun of a much-debated proposal that a cosmic impact about 12,900 years ago ripped through North America and drove multiple species into extinction.

In a paper appearing online ahead of regular publication in the *Proceedings of the National Academy of Sciences*, University of Oregon archaeologist Douglas J. Kennett and colleagues from nine institutions and three private research companies report the presence of shock-synthesized hexagonal diamonds in 12,900-year-old sediments on the Northern Channel Islands off the southern California coast.

These tiny diamonds and diamond clusters were buried deeply below four meters of sediment. They date to the end of Clovis -- a Paleoindian culture long thought to be North America's first human inhabitants. The nano-sized diamonds were pulled from Arlington Canyon on the island of Santa Rosa that had once been joined with three other Northern Channel Islands in a landmass known as Santarosae. The diamonds were found in association with soot, which forms in extremely hot fires, and they suggest associated regional wildfires, based on nearby environmental records. Such soot and diamonds are rare in the

geological record. They were found in sediment dating to massive asteroid impacts 65 million years ago in a layer widely known as the K-T Boundary. The thin layer of iridium-and-quartz-rich sediment dates to the transition of the Cretaceous and Tertiary periods, which mark the end of the Mesozoic Era and the beginning of the Cenozoic Era.

"The type of diamond we have found -- Lonsdaleite -- is a shock-synthesized mineral defined by its hexagonal crystalline structure. It forms under very high temperatures and pressures consistent with a cosmic impact," Kennett said. "These diamonds have only been found thus far in meteorites and impact craters on Earth and appear to be the strongest indicator yet of a significant cosmic impact [during Clovis]." The age of this event also matches the extinction of the pygmy mammoth on the Northern Channel Islands, as well as numerous other North American mammals, including the horse, which Europeans later reintroduced. In all, an estimated 35 mammal and 19 bird genera became extinct near the end of the Pleistocene with some of them occurring very close in time to the proposed cosmic impact, first reported in October 2007 in PNAS.

In the Jan. 2, 2009, issue of the journal *Science*, a team led by

Kennett reported the discovery of billions of nanometer-sized diamonds concentrated in sediments -- weighing from about 10 to 2,700 parts per billion -- in six North American locations. "This site, this layer with hexagonal diamonds, is also associated with other types of diamonds and with dramatic environmental changes and wildfires," said James Kennett, paleoceanographer and professor emeritus in the Department of Earth Science at the University of California, Santa Barbara. "There was a major event 12,900 years ago," he said. "It is hard to explain this assemblage of materials without a cosmic impact event and associated extensive wildfires. This hypothesis fits with the abrupt cooling of the atmosphere as shown in the record of ocean drilling of the Santa Barbara Channel. The cooling resulted when dust from the high-pressure, high-temperature, multiple impacts was lofted into the atmosphere, causing a dramatic drop in solar radiation."

The hexagonal diamonds from Arlington Canyon were analyzed at the UO's Lorry I. Lokey Laboratories, a world-class nanotechnology facility built deep in bedrock to allow for sensitive microscopy and other high-tech analyses of materials. The analyses

(Continued on page 11)

(Ed. note: This article will be continued in the Winter issue of SCAN due to its length and great graphics.)

Let there be Light...

By Ray Iddings

August 2009

Throughout time the phenomena of light has integrated the human experience with the interpretation of landscape and religion. After all, it is by light that we perceive our world. The sun illuminates, gives us warmth, brings the seasons, renews the annual cycle, and bridges all humanity (Weightman 1996:59). Throughout the ancient world, humans exploited natural formations or constructed observatories by which to watch the sky and interpret meaning from the heavenly progression. Monuments like Stonehenge in England, the Temples at Konarak in India and Macchu Picchu in Peru are well-known earthly artifacts dedicated to the sun. Not only did ancient people revere the phenomena of light, but today we continue to observe the interplay of light through observatories and we seek to harness the sun's cosmic power at places like Global Solar Energy's photovoltaic array in Tucson, Arizona.

It is at these places, where the power of divine is seen breaking

into a seemingly ordinary world, that we find sacred centers of the world (Eliade 1968:20-29). Of course, light is not the only supernatural messenger; water, thunder and even geologic features, such as caves or pinnacles also stimulate human dialog with the supernatural world (Bean 1975). These are sacred places where the physical and spiritual worlds intersect, places where doctors, shaman, and spiritual leader commune and receive power or protection from the supernatural world (Hudson et al. 1979:51-52).

Native California ancestors were also well attuned to the supernatural world that regulated environmental cycles and their

and used their knowledge to regulate a host of cultural activities. Many of their leaders and healers believed that they acquired power from the sun (Hudson 1988:8; Hudson et al. 1979:40) and often undertook difficult journeys to mountain observatories to participate in the supernatural intercourse that controlled and destined their world. One such place is located in the southern Diablo Range overlooking the San Joaquin Valley. It is a place where massive rock outcroppings create a mystical landscape where the spirits of light, wind, rain, and sound influence the minds of people who visit.

Follow me to this place as I



Phenomenon of Light on the Distant Hill as Evening Falls

religious rituals. They carefully visit two sites . . . monitored celestial progressions

Phenomenon of Light on the Distant Hill as Evening Falls

June 20

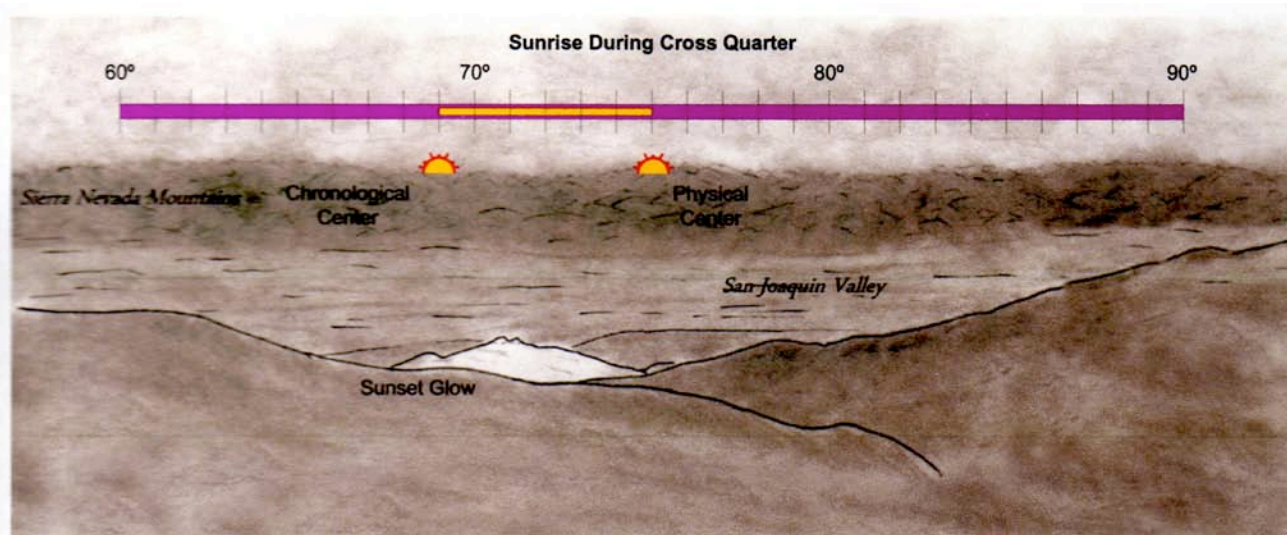
The hot June air is cooling as I sit on the summit looking off toward the open expanse of the San Joaquin Valley. The sun sets behind me and the shadows engulf the landscape before me. A single distant hill grips tightly to the light. I watch as that hill slowly releases the last of the daylight to the darkness of night. The bats arrive, fluttering above me. A coyote calls. Sitting in the coolness of that evening, I wondered why the ancestors came to this place. Did they make medicine in these bedrock mortars because that distant hill's ability to hold the light gave power to this place? When were they here? Did they come during the summer solstice as I have? Did they come during the period of cross-quarter—that halfway point between equinox and summer solstice—when the morning sun rises over that same distant hill?

Is there something more than just coincidence between this hill's evening illumination during the spring and summer, and its orientation to cross-quarter sunrise? The native people must have thought so because the observation point contains bedrock mortars, a cupule panel, and a cliff-top mortar/cupule site—all testimony to activity that once busied this now silent landscape.

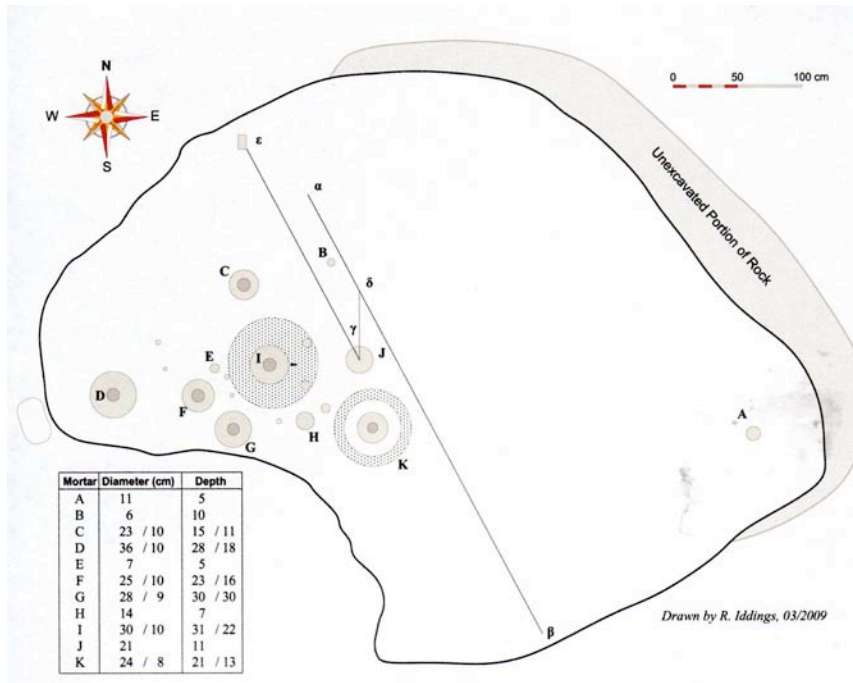
This site is located near the southern end of a ridge at a narrow point with a 325° vista of the San Joaquin Valley and surrounding land. Looking northeast from this site during the time of sunset in the summer a viewer observes the phenomenon of light on a hill located about 4800 meters away (). Cropped between two lateral ridges, this hill is the last feature to remain illuminated as the sunset shadows drift across the San Joaquin Valley.

Perhaps adding to the significance of this place is the recognition that the position of this feature as viewed from this location also coincides with spring and summer cross-quarter sunrise. Cross Quarter is the center period between the solstice and equinox. There are two parameters associated with this period: one is the middle of the chronological number of days and the other is the physical center of the distance between summer and equinox sunrise locations, that difference is about six degrees. The phenomenon, as viewed for this observatory site is graphically illustrated in .

The compass in, adjusted to true north, illustrates azimuth between summer solstice sunrise at 60° and equinox at 90°. Solar icons are inserted to represent two different sunrise locations: one for the physical center at 75°, and the other for the chronological center



Continued on page 8



Northern Portion of Observatory Site Showing Location of Features

at 69°, the difference caused by the apparent slowing and reversal of the solar progression during solstice. The interesting point here is that by a quirk of nature the difference between the physical center and the chronological center also brackets the illuminated hill that fades into darkness much slower than the surrounding background.

The site actually consists of three definable features, which may represent different utilization periods, or perhaps ritual variances in the site. The light phenomenon is observable from each of the features that define this site, yet each feature is unique. The BRM feature consists of a 2.5-meter tall boulder with five mortars on top and one mortar on a nature stone

shelf near the base. The cupule panel feature, located about 50 meters north from the BRM, is a highly eroded panel at the base of a 30-meter high south-facing cliff. A large crevice on the cliff face provides access to the top of the cliff. The cliff summit surface is relatively flat rock with two bedrock mortars at the south edge, above the cupule panel. Heat-modified red-oxide patina covers much of the stone surface suggesting that a large bonfire once burned here.

(To be continued FALL-SCAN)

'Roots of Humanity'

(Continued from page 4)
near where Namibia is now, Tshkoff said.

And while most of today's African American ancestors originated from West Africa during the infamous slave trade, Ehret and Tshkoff found strong evidence that many of those West African people came from groups that had migrated from the continent's eastern areas.

Stanford project led way

Stanford's Cavalli-Sforza and Feldman spent decades on what they called their Human Genome Diversity Project, and it continues today at Stanford's Morrison Institute.

The two Stanford leaders "paved the way for scientists like myself," said Tshkoff.

"They were the first to characterize global patterns of genetic variations and to show correlations between genetic and linguistic evolution," she said. "This is just the beginning of even more detailed studies of genetic variation in African and African American populations."

In a telephone interview from Italy on Thursday, Feldman said the new report "reinforces in a strong way the tremendous diversity and variability of population groups in Africa."

And the Tshkoff team's finding of such varied historical migration patterns in West Africa surely means any attempt by African Americans to learn the true origin of their earliest ancestors in Africa will be difficult, Feldman said.

Utah Town Unsettled by Doctor's Suicide and an Inquiry on Indian Artifact Looting

By William Yardley

Reprinted from the *New York Times*

June 21, 2009

BLANDING, Utah — For 30 years Dr. James Redd was always on call to care for the Mormon and American Indian families who share the remote canyon lands here in southeastern Utah. Upon his death on June 11, people found themselves mourning a man who provided not just medicine but a measure of common ground.



The New York Times

“I’ve been in his office when it was clear full of Native Americans,” Robert Carroll, who is 77 and a member of the Mormon Church, said after attending an emotional funeral service for Dr. Redd at a Mormon center here last week. “He took everybody.”

Yet even as residents of Blanding have joined in grief, the circumstances of Dr. Redd’s death have shocked this tidy little town

and threatened the delicate cross-cultural balance here that he helped preserve. Dr. Redd, 60, was found dead of a suicide a day after federal prosecutors charged him, his wife and 22 others with stealing, selling and trading Indian artifacts from the ancestral lands that stretch out from here in every direction.

On Friday, a second defendant, Steven L. Shrader of Santa Fe, N.M., was found dead of two self-inflicted gunshot wounds behind an elementary school in DeKalb County, Ill., according to the authorities there. Mr. Shrader, 56, had turned himself in to law enforcement officials in Albuquerque after being served a warrant in the case. The events have resonated deeply here in Blanding, the home of 16 of those charged and the site of a federal raid in the case. Many defendants have surnames — Lyman, Shumway, Redd — that have been prominent here since Mormon pioneers explored the area in the 1880s with plans to bring their education system to Indians.

Resentment of the federal government has long run deep among whites and American Indians here, for many reasons, but the arrests have prompted a particularly sharp backlash.

Many whites say Blanding, which had been raided before, has been unfairly singled out in a region where universities and museums

once paid residents to dig up artifacts. Residents, including Mr. Carroll, often grew up collecting objects as a hobby and still stumble upon arrowheads. (Mr. Carroll said he stopped collecting more than 30 years ago.) Many expressed outrage that residents were being portrayed as “grave robbers.”

Some say the government ginned up the trouble by sending an informant to pay cash for objects like ancient clay vases, burial effigies and sandals. “This is a special place,” said Connie Swenson, a friend of one defendant, Harold Lyman, 78, a grandson of Blanding’s founder. “We do a lot of good for a lot of people, including the Indians, but we’re just being crucified.”

Blanding was the site of a raid in the 1980s, and in the 1990s the Redds were charged in state court with stealing artifacts. They eventually paid \$10,000 to settle a related civil suit.

This time, said Bruce Adams, the San Juan County Commission chairman, “did the heavy-handedness of the federal government in making the arrest contribute to the death of a doctor?”

“His wife told me they handcuffed him and shackled his legs,” Mr. Adams continued. “They were yelling and screaming at him that he was a liar, that he would never practice medicine again.”

The Justice Department has portrayed the arrests as evidence of the Obama administration's commitment to justice for American Indians. Brett L. Tolman, the United States attorney for Utah, expressed sympathy for Dr. Redd and Mr. Shrader but said the arrests "went according to procedure." He disputed the notion that anyone was treated aggressively and said agents had their weapons drawn in some instances because several defendants were known to own firearms and some had arrest records.

"These are sacred artifacts that we should all care about," Mr. Tolman said. "Instead what we're talking about are the frustrations of those that are accused of these crimes. I think that is a tragedy."

While many Indians expressed sympathy for Dr. Redd and some questioned the arrests, others said they were upset that people they had known all their lives — including Dr. Redd, who delivered

many of their children and cared for their elderly parents — could be guilty of stealing what they consider sacred. Some said they suddenly felt like targets.

"I hear people whispering in the grocery store now, saying bad things about Native Americans," said Marrietta Scott, a Navajo who attended Dr. Redd's funeral. " 'It's all because of you.' They're blaming us."

Blanding, a modest grid of about 3,000 residents, once thrived on ranching and uranium mining and now bills itself as a "Base Camp to Adventure" into canyon country and the Four Corners area, where Arizona, Colorado, New Mexico and Utah meet. It is in San Juan County, the first county in Utah to elect an Indian to a county commission, in 1986.

In areas like education, there is much interaction in Blanding among Indians and the Mormons who dominate the white population. The local campus of the College of Eastern Utah has

made a point of recruiting Indian students. About a third of all residents are Indians, and the number has risen as more move in from reservations for jobs, schools or other services.

Many Mormons characterized relations as peaceful, while several Indians said there could be tension. Aaron Keith, a welder who is Navajo, said, "There's a lot of prejudice."

Mr. Keith said he was saddened by the death of Dr. Redd but glad the government had taken action. He said he had been struck by the complaints about the arrests.

"I don't see what they're complaining about with the handcuffs and everything," said Mr. Keith, 54, adding that his son had run into trouble with the police that he felt was related to the fact that he is Indian. "That's what happens when you get arrested."

SCAS Board Members ~ 2009

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were done in collaboration with FEI, a Hillsboro, Ore., company that distributes the high-resolution Titan microscope used to characterize the hexagonal diamonds in this study. Transmission electron microscopy and scanning electron microscopes were used in the extensive analyses of the sediment that contained clusters of Lonsdaleite ranging in size from 20 to 1,800 nanometers. These diamonds were inside or attached to carbon particles found in the sediments.

These findings are inconsistent with the alternative and already hotly debated theory that overhunting by Clovis people led to the rapid extinction of large mammals at the end of the ice age, the research team argues in the PNAS paper. An alternative theory has held that climate change was to blame for these

mass extinctions. The cosmic-event theory suggests that rapid climate change at this time was possibly triggered by a series of small and widely dispersed comet strikes across much of North America. The National Science Foundation provided primary funding for the research. Additional funding was provided by way of Richard A. Bray and Philip H. Knight faculty fellowships of the University of Oregon, respectively, to Kennett and UO colleague Jon M. Erlandson, a co-author and director of the UO's Museum of Natural and Cultural History.

The 17 co-authors on the PNAS paper are Douglas Kennett, Erlandson and Brendan J. Culleton, all of the University of Oregon; James P. Kennett of UC Santa Barbara; Allen West of GeoScience Consulting in Arizona; G. James West of the

University of California, Davis; Ted E. Bunch and James H. Wittke, both of Northern Arizona University; Shane S. Que Hee of the University of California, Los Angeles; John R. Johnson of the Santa Barbara Museum of Natural History; Chris Mercer of the Santa Barbara Museum of Natural History and National Institute of Materials Science in Japan; Feng Shen of the FEI Co.; Thomas W. Stafford of Stafford Research Inc. of Colorado; Adrienne Stich and Wendy S. Wolbach, both of DePaul University in Chicago; and James C. Weaver of the University of California, Riverside.

(A note for SCAN readers, Brandon Culleton was a graduate of UCSC and a student in the Arch, Tech. Program at Cabrillo.)

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Mail to SCAS P.O. Box 85, Soquel, CA 95073

A REMINDER!

The membership will be voting for a new Vice President in September as our current VP, Rick Morris, has decided he wants to concentrate on his studies in preparation for graduate school. The SCAS Nominating Committee is pleased to have Karen Johannson's name on the ballot for the position of Vice President.

Current Treasurer, Cathy Phipps, has agreed to serve for another term and the SCAS Nominating Committee is very pleased to have her on the ballot for Treasurer.

Members in good standing will receive a ballot in their September SCAN. Just mark or write in your choice for Vice President and Treasurer, fold and seal the pre-addressed ballot, put a first class stamp on it and drop it in the mail. Or you can bring your marked and sealed ballot to the September 17th general meeting and lecture at Sesnon House on Cabrillo College Campus, 7:30 p.m.

SCAS Officers serve for a term of 2 years. The President and Secretary, and the Vice President and Treasurer, are elected on alternate years. This insures there is continuity in the Society's Board.

SCAS welcomes students and the interested persons who are members in good standing to come forward and indicate their willingness to serving on the Board. In fact, we would appreciate input on any of the things the Society does. We will also be voting for your favorite archeology '*Bumper Sticker*.' Do you have suggestions for lectures, field trips, etc.? Let us know--this is your Society and we need your ideas and help.

Lyn O'Niel, President

~ SCAN ~

Santa Cruz Archaeological Society

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