

# Ancient Salvadoran village buried by ash freezes daily life in time

November 3 2015

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Structures at Ceren were buried in up to 17 feet of ash over a period of several days, freezing the 1,400-year-old village in time. Credit: University of Colorado

A continuing look at a Maya village in El Salvador frozen in time by a blanket of volcanic ash 1,400 years ago shows the farming families who lived there went about their daily lives with virtually no strong-arming by the elite royalty lording over the valley.

Instead, archaeological evidence indicates the significant interactions at the ancient village of Ceren took place among families, village elders, craftspeople and specialty maintenance workers, says a new University of Colorado Boulder study funded by the National Science Foundation. The best preserved ancient Maya village in all of Latin America, Ceren was blasted by toxic gas, pummeled by lava bombs and then choked by a 17-foot layer of ash falling over several days after the Loma Caldera volcano less than half a mile away erupted about A.D. 660.

Discovered in 1978 by University of Colorado Boulder anthropology Professor Payson Sheets, Ceren has been dubbed the "New World Pompeii" by some media and scientists. The degree of preservation is so great that researchers can see the marks of finger swipes in ceramic bowls and human footprints in gardens that host ghostly ash casts of corn stalks. Researchers also uncovered thatched roofs, woven blankets and bean-filled pots.

Some Mayan archaeological records document "top-down" societies where the elite living among palaces, pyramids, temples and tombs made most political and economic decisions in a particular region, at times exacting tribute or labor from villages, said Sheets. But at Ceren, the villagers appear to have had free reign regarding their architecture, crop selections, religious activities and economics.

"This is the first clear window anyone has had on the daily activities and the quality of life of Maya commoners back then," said Sheets, who is directing the excavation. "At Ceren we found virtually no influence and certainly no control by the elites."

A paper on the subject appears in the current issue of *Latin American Antiquity* published by the Society for American Archaeology. The 10-acre Ceren research area was declared a UNESCO World Heritage Site in 1993.

Ceren is believed to have been home to about 200 people. Thus far 12 buildings have been excavated, including living quarters, storehouses, workshops, kitchens, religious buildings and a community sauna. There are dozens of unexcavated structures, and perhaps even another settlement or two under the Loma Caldera volcanic ash, which covers an area of roughly two square miles, he said. Thus far, no bodies have been found, an indication a precursor earthquake may have given residents a running start just before the eruption.

The only relationship Ceren commoners had with Maya elite was indirect, through public marketplace transactions in the Zapotitan Valley. There, Ceren farmers likely swapped surplus crops or crafts for coveted specialty items like jade axes, obsidian knives and colorful polychrome pots, all of which elites arranged to have brought to market from a distance. Virtually every Ceren household had a jade axe—which is harder than steel—using it for tree cutting, structure building and general woodworking. About a quarter of the hundreds of pots found in the village were polychrome, said Sheets.

"The Ceren people could have chosen to do business at about a dozen different marketplaces in the region," said Sheets. "If they thought the elites were charging too much at one marketplace, they were free to vote with their feet and go to another."

One of the excavated community buildings has two large benches in the front room, which Sheets believes were used by village elders when making decisions. One decision would have regarded organizing the annual crop harvest festival, a celebratory eating and drinking ritual that

appears to have been underway at Ceren when the Loma Caldera volcano abruptly blew just north of the village, said Sheets.

He believes the villagers would have fled south, perhaps along a white road leading away from the village discovered during the 2011 field season under about 15 feet of ash. The elevated road, known as a sacbe (SOCK-bay) is about 2 meters wide and made from white volcanic ash packed down tight with drainage ditches along each edge. The sacbe appears to split in the village and lead toward the plaza and two religious structures—the large ceremonial building and a second, smaller structure used by a female shaman.

"There are two aspects that make this project unique," said John Yellen, NSF program manager for the Ceren excavations. "The first is the incredible degree of preservation at Ceren, which captures in such detail a moment in time. The second is the perseverance and ingenuity of Dr. Sheets, who devised effective techniques to address a broad range of questions involving Ceren's agricultural practices and its social organization."

Prior to the discovery of Ceren's sacbe, such "white way" roads—which often connected temples, plazas and towns and had strong practical, political and spiritual connotations—were known only from the Yucatan Peninsula and all were lined on each side with paving stones, unlike the Ceren sacbe, said Sheets.

Measurements with an instrument known as a penetrometer indicated the sacbe was extraordinarily hard, in part because the villagers must have vigorously pounded sections of the sacbe with heavy objects like tree trunks over a period of days, he said. In addition, tiny, angular grains of the ash, or tephra used to build the sacbe lock together in a tight matrix when packed down under moist conditions. The center of the sacbe was slightly grooved, an indication people walked single file as they headed

to their crop fields or perhaps traveled to and from the town of San Andres three miles to the south.

"The western canal of the sacbe was crisp and well formed and had apparently been worked on just days before the eruption, " said Sheets. "But it looks like the workers hadn't gotten around to maintaining the eastern canal before the volcanic event."

The team, which has dug 10 test pits so far in an attempt to trace the path of the sacbe from Ceren south, found several dozen footprints on its outer, softer edges. "More than half of the footprints were headed south away from the village, away from the danger," Sheets said. "I think at least some of them were left by people fleeing the eruption."

Who built and maintained the sacbe—which is now known to stretch at least 150 meters from the village and may well go all the way to San Andres—is still a mystery. "We think the work was done on the household level with multiple families involved, perhaps supervised by village elders," said Sheets.

There also is evidence that residents of particular households at Ceren were responsible for the upkeep of certain community structures, said Sheets. One household, for example, contained an inordinate amount of pots and firewood that the researchers speculated were used during activities in the domed community sauna building. That sweat bath, which could comfortably seat about a dozen people, had a central firebox where water was poured to create the desired steam and heat, Sheets said.

In 2009 Sheets and his team discovered intensively cultivated manioc fields at Ceren that yielded at least 10 tons of manioc shortly before the eruption 1,400 years ago. It was the first and only evidence of intense manioc cultivation at any New World archaeology site. Sheets and others



believe such large manioc crops could have played a vital role in feeding indigenous societies living throughout tropical Latin America: Powder from dried manioc is used today in the region to make tortillas and tamales, and fermented manioc is used to make alcoholic beverages.

Co-authors on the new study included doctoral students Rachel Egan and Alexandria Halmbalcher of CU-Boulder, Former CU-Boulder doctoral student Christine Dixon, now a faculty member at Green River College in Auburn, Washington; Professor David Lentz and doctoral student Venecia Slotten from the University of Cincinnati; Rocio Herrera of National Museum of Anthropology in San Salvador; and doctoral student Celine Lamb of the University of Kentucky.

CU-Boulder undergraduates and graduate students have been involved in all aspects of the Ceren excavation, which likely will continue for decades. The first vestiges of the site were inadvertently uncovered in 1976 by a bulldozer leveling ground for a government agricultural project. Sheets began research on the site two years later after radiocarbon dates led him to conclude the buried village was ancient.

Provided by University of Colorado at Boulder

Citation: Ancient Salvadoran village buried by ash freezes daily life in time (2015, November 3) retrieved 25 April 2024 from <https://phys.org/news/2015-11-ancient-salvadoran-village-ash-daily.html>

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