

Cave Archaeology in Peru

Steve Knutson

While looking for caves in northern Peru in 2002, Steve Knutson and John Schwartz entered a cave on a mountain plateau and observed a number of what appeared to be human bones. Subsequent inquiries in the archaeological community turned up no prior knowledge of this and even the belief that no old culture in that area had utilized the dark zone of caves. Continued inquiry, combined with reports of finds by French and Spanish caving expeditions finally piqued interest and an expedition was mounted for 2007. This article is my report on that expedition. The various specialists have produced their own separate reports, but because of History Channel involvement, no report was allowed for twelve months following the expedition.

The Setting

The Andes are a huge mountain range that run north-south along the west coast of South America. The range reaches heights of over 20,000 feet in many places. In northern Peru the mountains are at nearly their lowest, with passes of only about 12,000 feet. The Andes are not very wide in this area, and the great Amazon Basin is not far away. Jungle cov-

ers low mountains, at least up to 11,000 feet, and adds to the difficulty of travel. The high humidity of the jungle lowlands is swept west by the prevailing winds creating a very rainy, cloudy, misty environment.

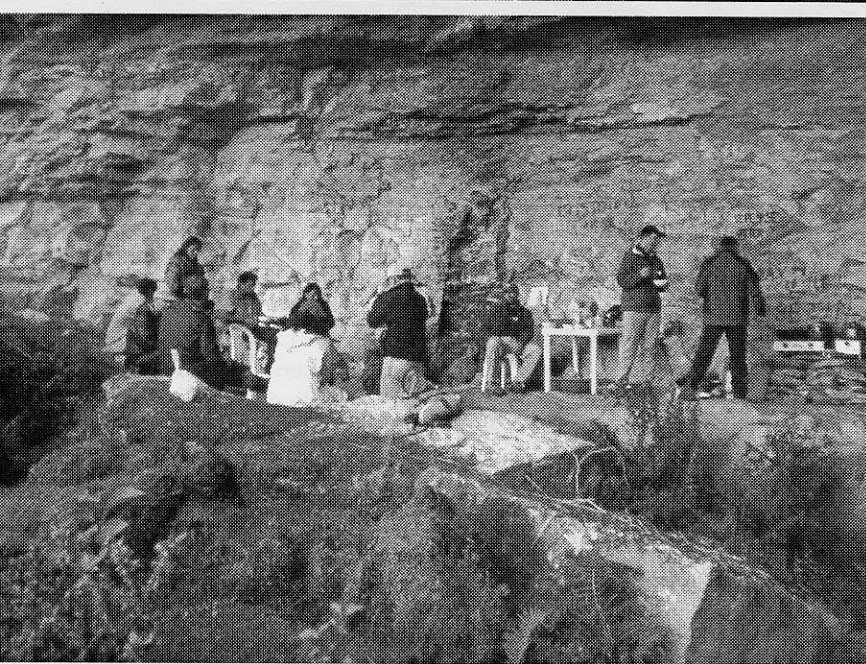
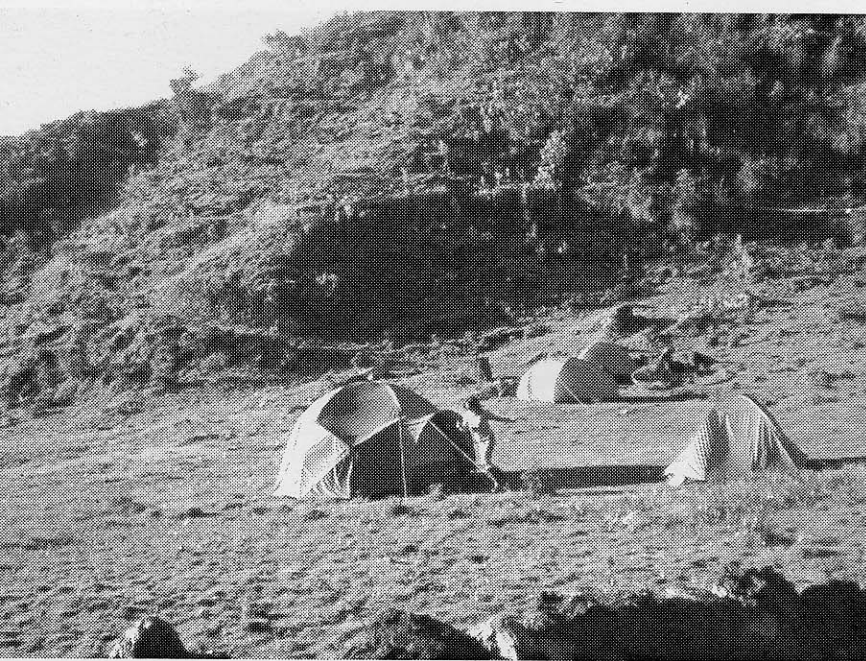
A culture, now called the Chachapoya, held sway in this area from around 900 AD until the 1400s when they were conquered by the Inca. The Spanish then conquered the Inca in the 1500s. The Chachapoya had no physical method of recording their history; even their oral tradition seems to be lost. In the interest of subjugating this culture, the Chachapoya were largely dispersed by both Inca and Spanish. Even their current name is what the Inca called them—warriors of the clouds.

Though little is known of them, the Chachapoya managed to build the largest structure in Peru, the huge fortress of Kuelap, at 10,000 feet on top of a ridge far above the Utcabamba River. Within this fortress they withstood the initial Inca attacks.

One of their traditions is known to some extent: mummification in funerary rites. Mummified remains have been found on cliff



Skull locked in calcite in the old streambed, Atumpampa Cave. Photos by Steve Knutson.



(top) Tents in the morning of a nice day. (bottom) Camp kitchen at the side of the passage just under the drip line.

ledges, under overhangs, and at cave entrances. The Spanish reported that mummies were sometimes brought to town for celebrations, but this practice may have been Inca-derived. A History Channel special called "Cliff Mummies of the Andes" featured experts declaring that this culture never went into caves and that mummies were always placed where they could "look out on the world." What then, were the remains we saw deep in the cave?

Cueva de Atumpampa

The cave Schwartz and I saw in 2002 is on a mountain plateau above the town of Pedro Ruiz Gallo (PRG), in the Department of Amazonas. This plateau is mixed jungle and grassland at around 9,000 feet elevation. The

mountains descend from here to the Amazon Basin, so mist and rain are common. The trails are either slick, bare rock or sometimes deep, sticky mud.

Our knowledge of the cave and the area increased with follow up trips in 2004 and 2005. The cavers included Evan Anderson of Colorado, Bonnie Crystal of California, Mark Harder of Oregon, Stephanie Juth of Colorado, and myself.

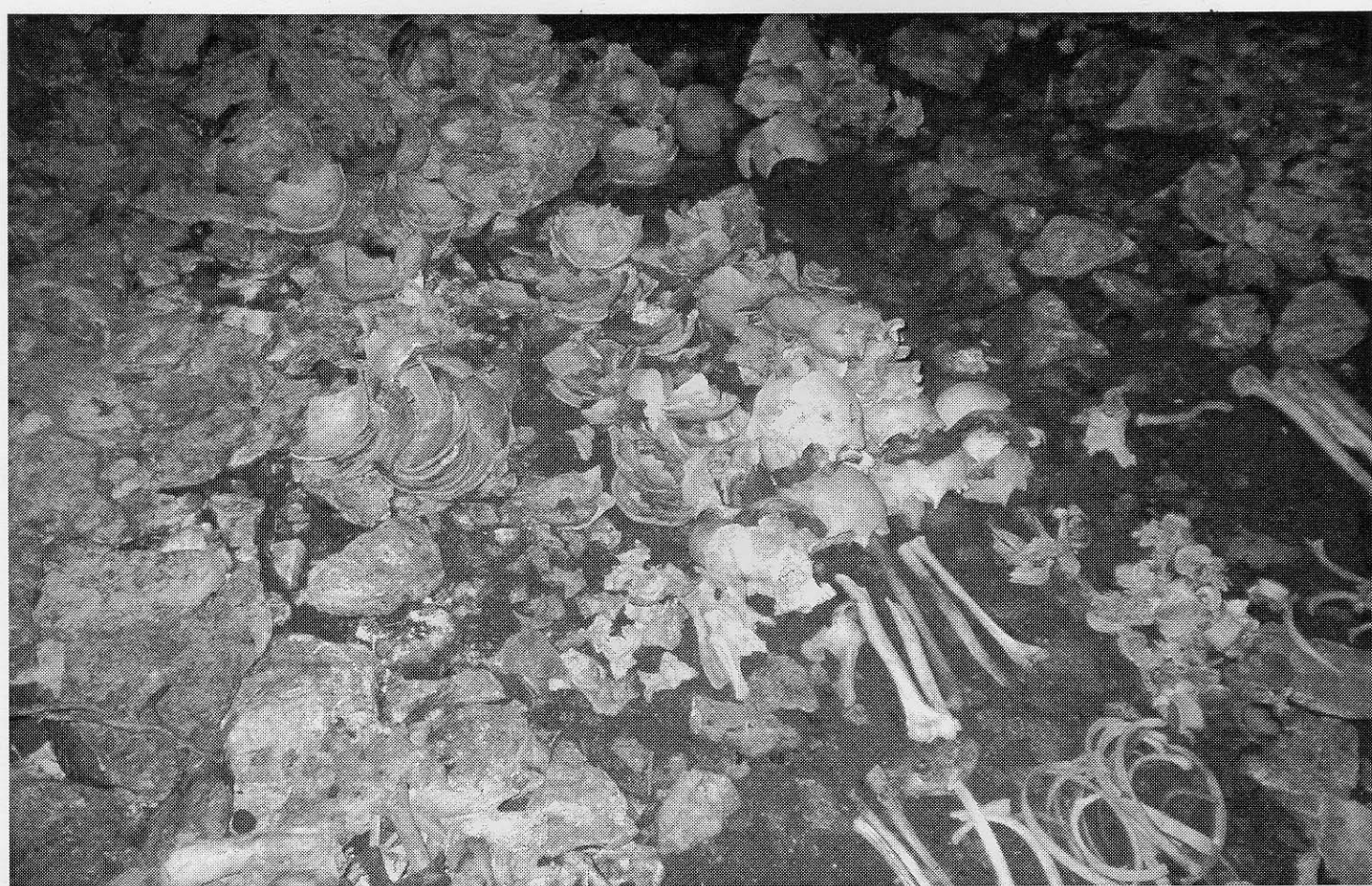
Relief is high in the Peruvian Andes. Where there is limestone, the rapid uplift seems to have provided few situations for stable water tables and the creation of extensive horizontal caves. However, in the mountains around the town of Chachapoyas, the geologic structure is favorable for this. Above PRG, for instance, most of the plateau is sandstone, and above that, covering most of the top, is limestone. Thus, water is trapped above the insoluble stratum and is forced to drain horizontally through the limestone. All the caves we visited were basically horizontal with large passages.

Atumpampa is Quechua for "Big Meadow," and the large, conspicuous cave entrance sits in one, so we refer to this main cave as Atumpampa Cave. The entrance is somewhat disguised by a big breakdown pile, but this leads to a very large, spacious passage several hundred meters long with a floor covered with rock slabs and shards. This gives way to a bedrock floor with a shallow streambed in the middle and shard slopes to either side. The stream no longer enters this cave, but is pirated a short distance up the meadow outside where it flows into a tragadero (swallet) cave that has not been fully explored. Thus, Atumpampa Cave has only a trickle of water, but it is sufficient to form pools of water in much of the streambed, which is lined with calcite and rimstone dams. We saw many bones in this streambed, cemented in the calcite.

The cave abruptly ends in breakdown about 1,400 meters from the entrance. The passage is large walking passage the whole distance. The development continues though; mapping shows the last chamber in nearby Stonehenge Cave to be a continuation of Atumpampa.

The Personnel

The expedition formed gradually as an article in the *NSS News* attracted interest from around the US. This included Roc Persley, an archaeology student from University of Ar-



kansas, Dr. Louisa Hooven, a biologist from Oregon State University, and Scott Linn, a caver from Corvallis, Oregon. A very important addition was Dr. P. Wiley, an osteologist from Chico State University, and two of his students, Karen Smith and Andreas Krumple. These three dealt in forensic pathology, the analysis of bones to give data on the health and life of the individual.

The Peruvian archeology team was Rocio Ruiz Diaz, the team leader, and Flor Cachay, both of the Centro Mallqui at the Museo de Leymebamba, and Rocio Paz Sotero representing the Instituto Nacional de Culture. We hired a resident of the nearby town of San Carlos to help out and guard our camp while we were working. We also hired horse and mule packers when necessary.

The Expedition

To accommodate the time constraints of all involved, we chose the month of June and spent two full weeks camped outside the entrance of Atumpampa Cave. The kitchen was in fact set up just inside the drip line. June is only the very beginning of dry season, and this gave us muddier conditions than were to be had in August, but that's life. The weather was pretty good, most of the time.

Those coming from the United States flew into Lima, then rode twenty hours in a bus to the town of Chachapoyas. There followed a few days hotel stay while food was purchased and gear was packed for horse travel. It was then several hours drive to San Carlos, the little town at road's end. The timing necessitated a night there in San Carlos on concrete-hard beds in a tiny hospedaje. The next day was the final journey of several hours on horseback up the steep trail onto the plateau and to the cave. Scott, Roc, and I went up a day early to set up most of the camp.

The agreement was that the cavers would support the archaeological work in any way we could. Thus, the folks from the US paid for the horse packing, the kitchen, and the food. The archeologists had only to get there with their camping and sleeping gear and to do their work. The archaeology was also partially funded by the History Channel, so toward the end of the two weeks, a video crew showed up to record footage for what turned out to be the lead episode of the series "Digging for the Truth." The episode was called "Mummies in the Mist."

I advised the History Channel on how to get to the site since they were not able to go up with us. They preferred to come at the end of the expedition when as much as possible had become known. I told them the best way to do it and knew that the folks in San Carlos would see that they made it up to the camp. However, when they arrived in town in the afternoon, they were seduced into believing that it was only two hours to camp! I am sure they also had a vision of a nice, well-maintained national park trail like they might have hiked in the US. So they hired a guide and horses for their gear and left San Carlos at 3 p.m., on foot. They staggered into camp at about 10 p.m. They were a bit upset, but to us it was just a lesson you learn about Peruvian trails.

"They hardly got past the drip line before the exclamations began. I couldn't understand much of it, but they were clearly impressed... and they hadn't seen anything yet."

The Field Work

Scott, Roc, and I also had an interesting time getting to the cave. Scott's horse went down in a mud hole, almost crushing Scott's leg. His knee was a bit hyper-extended, but he only limped around for a day or two. I led my horse through most of the mud on foot, but he tired of me getting on and off. So one time, as I tried to swing back into the saddle, he darted forward and deftly tossed me. I landed hard on my side, and things went crunch in my rib cage. The crunching continued for the rest of the trip, but I functioned normally for the most part. Eventually, we arrived in the rain and set up tents and the kitchen.

The rest of the crew arrived the next day in sunshine, but I was growing increasingly apprehensive. I had gotten this whole expedition up here on the pure supposition that there were interesting artifacts in this cave—I had sold them on it and gotten them here, but was there actually anything of interest? Was this going to be a huge bust? Were they going to take one look and then string me up?

The next day they went into the cave, and my anxiety soon evaporated. They hardly got past the drip line before the exclamations began. I couldn't understand much of it, but they were clearly impressed... and they hadn't seen anything yet.

It turned out that the twilight zone, which extended in huge, wide passage for a couple hundred meters, was rife with bones, most of

which we hadn't noticed on our initial trips. There were other artifacts as well; even a shard of a pot could yield information on the culture involved.

The National Institute of Culture had issued no dig permit, so all the work we did was done purely on surface material. Bone concentrations were mapped out and labeled as tomb areas. Counts were done of identifiable bones by type—left femurs, tibias, etc. The archeologists gradually worked their way into the cave, getting about two-thirds of the way to the final breakdown by the end of the expedition. This seemed to account for most of the remains.

Scott, Roc, and I mapped the whole cave, leaving marked cairns at each station, about 30 meters apart. The archeologists would refer to our stations in their detailed maps. We noticed obvious burials of wrappings and bones as we went. At the very end, tucked into the breakdown was a strange artifact, a loose cylinder of bark, about 7 inches long and 6 inches in diameter. The edges of the cylinder overlapped and there were holes to stitch them together. Later we saw a similar cylinder at the museum, but with a skin head on each end. It was a drum.

The forensic pathologists had a great time. P. Wiley said he saw as much pathology there, as he might see in a year's normal work. He reported that the people buried in that cave appeared to be regular, working people who



(right) Bark artifact found 1,400 meters from the entrance. Holes in the overlapping edges would allow it to be laced into a rigid cylinder. It may be a drum with the skin end coverings gone. (opposite page) Bones of a "tomb" in Atumpampa Cave.

LEGEND

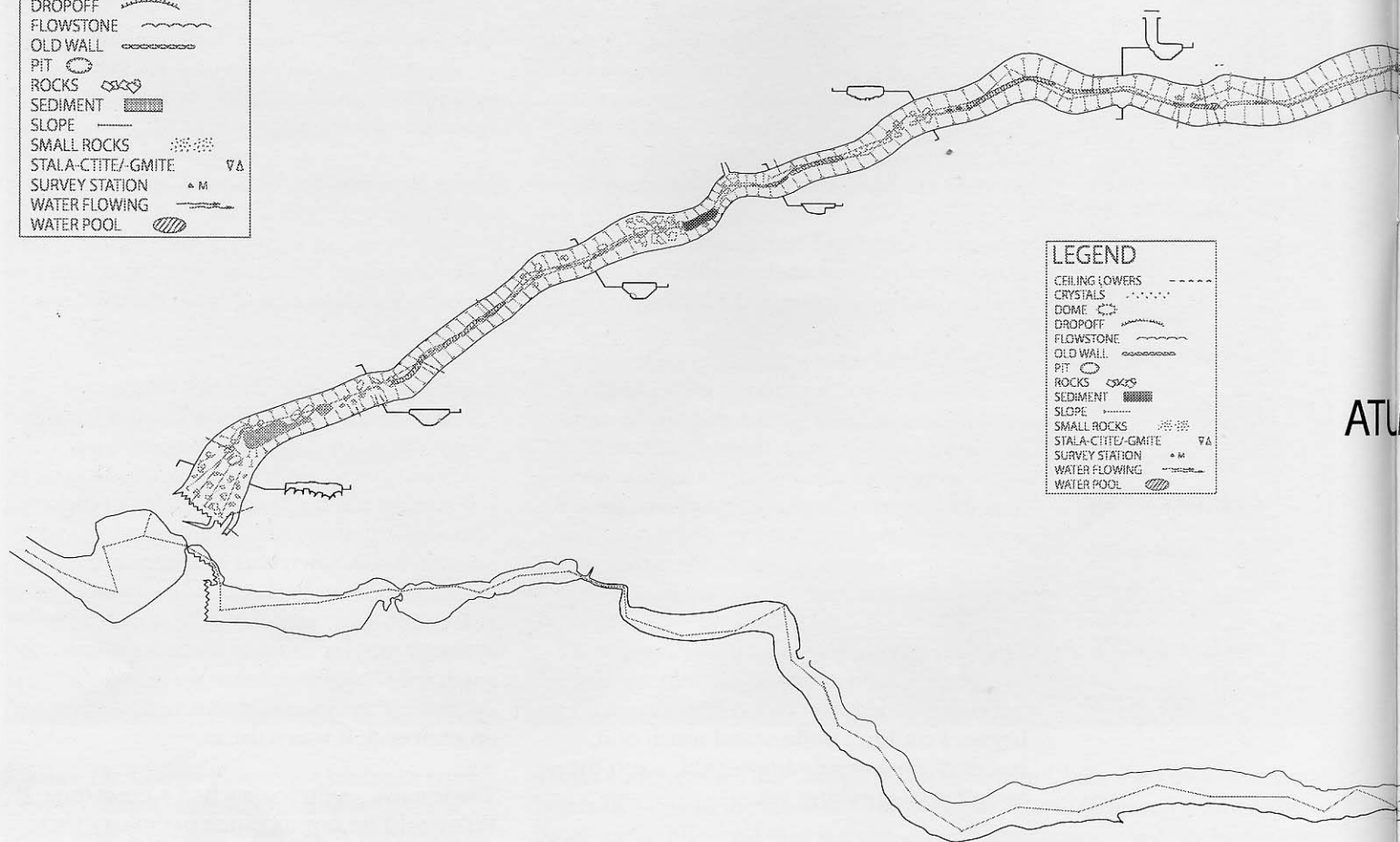
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- STALA-CITITE/GMITE
- SURVEY STATION
- WATER FLOWING
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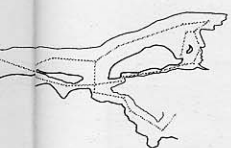
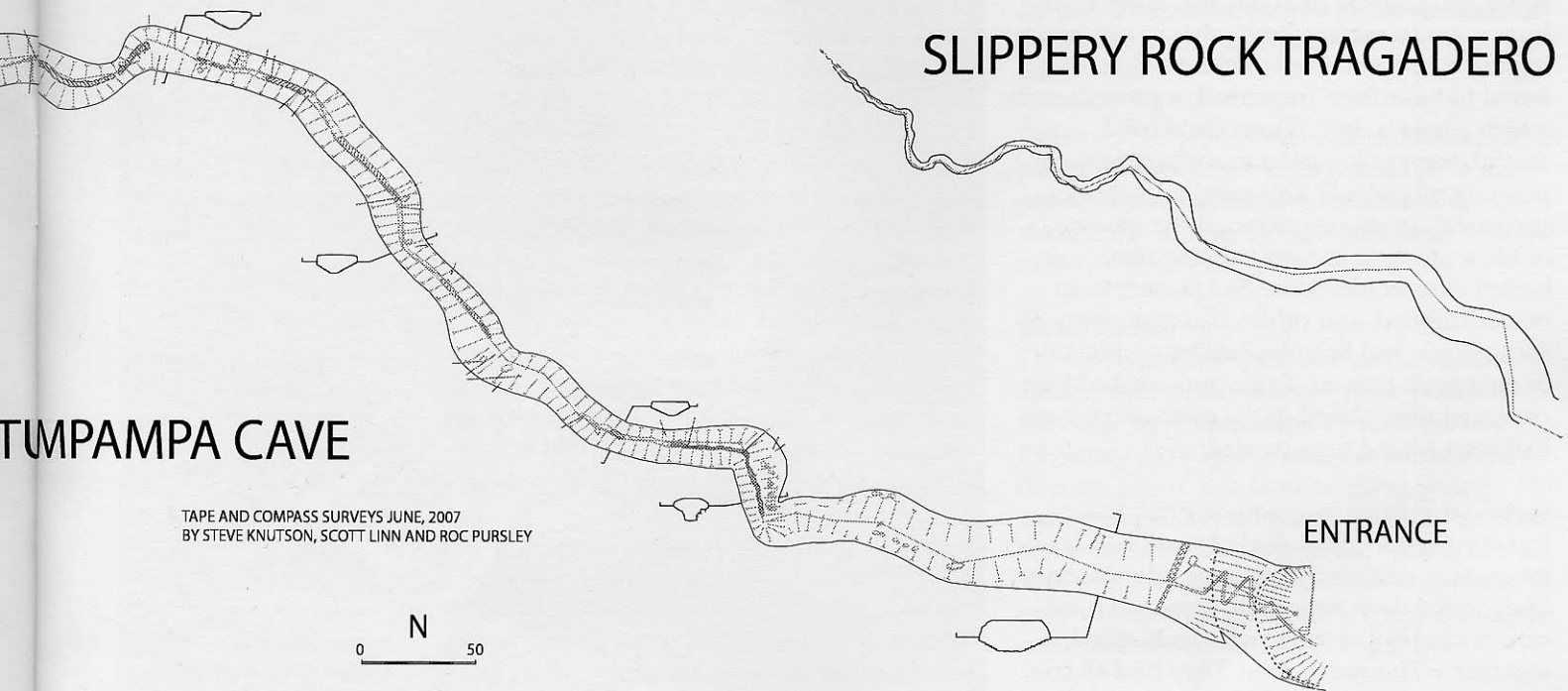
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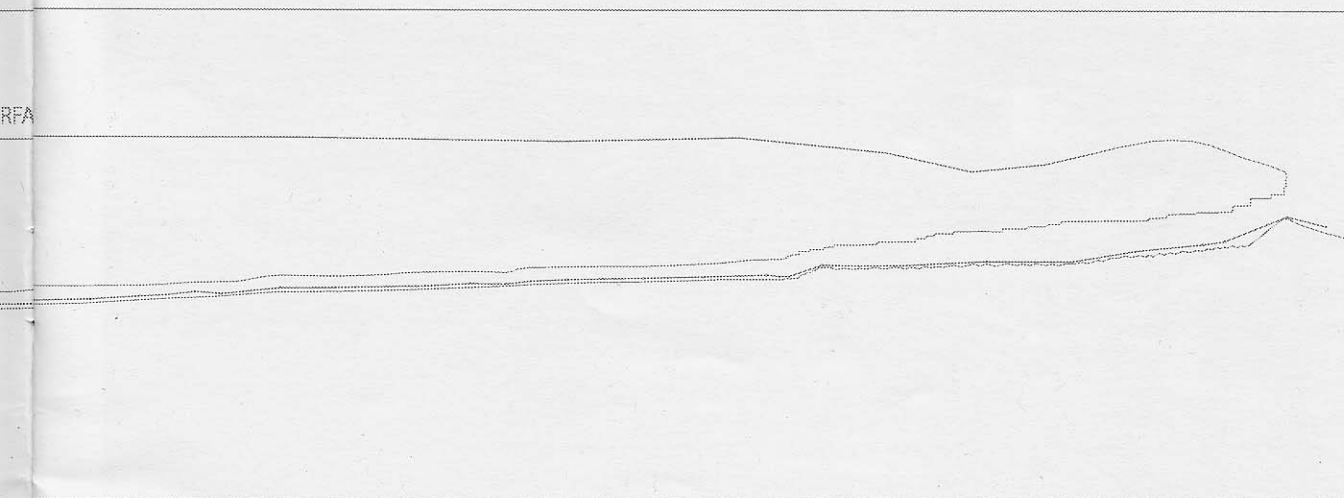
ATUMPAMPA CAVE WEST-EAST PROFILE

APPROXIMATE LAND SURFACE





STONEHENGE CAVE



had been exposed to all the hardship of life in their time. There were numerous diseases expressed in the bones and healed fractures. Healed leg fractures proved their ability to splint and care for such trauma. Some fractures were so extraordinary that it was amazing the victim survived. A child's skull was found to have been trepanned, a procedure in which a hole is drilled into the skull. If successful, trepanning relieves some symptom, possibly migraines? This one had not been successful. Jawbones reflected the quality of life with some sockets missing teeth, but healed over in life. Some had perfect teeth into adulthood, and others had lost nearly all. Some skulls had been bashed by accidental or deliberate trauma. Some remains had been cremated then placed in the cave, and others had been placed then burned.

Several things were apparent. First, the effort involved. A great deal of work had been invested in getting the remains into the cave. Deep in the dark zone, platforms had been constructed out of long poles and lashed together with rope or vine. They had all collapsed now, but mummies had apparently been placed on them. Wrapped mummies had also been buried deep in the dark zone. Remains were found at the farthest end of the cave; so much for looking out on the world. It

is clear that placing remains deep in the cave had considerable significance. Otherwise they wouldn't have undertaken the difficult and dangerous task.

Next, a few observations on the variety of interment. Either there were a number of sects using the same cave for burial or else this practice had gone on for a very long time. The burials were done in a number of different styles. Some had been treated to preserve the flesh. Some were bare bones. Some were cremated then interred. Some were interred then cremated. Some were placed on platforms. Some were buried. Most wrappings were woven of layered rope, but we saw one that was finely braided. One mummy was naked and buried in a box made of four sides of big, thin stone slabs. Thus, it may be that several different cultures used the cave for burial.

Further, the number of burials. There are many. The minimum individual count is determined by counting each bone. The type of bone with the highest count gives you the count of individuals, as there must be that many individuals represented. That count was 207 at the end of the two weeks, but it did not include the full area of the cave, nor did it involve digging for buried remains. In the huge floor area covered by rock frag-

Archaeologists at work in Atumpampa Cave. From left to right: Rocio Diaz, leader of the Museo Leymebamba archeologists, Roc Persley of Arkansas, Rocio Sotero of the Instituto Nacional de Cultura, Dr P Wiley of Chico State University, California.





Stalagmites at odd angles in Potshard Cave—ancient seismic activity?

ments, one could look down between rocks and see more remains. It appears that these fragments fell from the ceiling over time, and now they surely cover older material.

At first we thought that the disturbed surface material, including collapsed platforms, was the result of tomb robbing, but we found evidence to the contrary. Dr. Hooven found evidence that insects had eaten the pole platforms. Breakdown may also have caused platform collapse. There are many sizable boulders that were once part of the ceiling that may have been shaken down by earthquakes since the Andes region has significant seismic activity.

Another indication of ancient disturbance is the bones locked into calcite depositions in

the old streambed. I counted eleven skulls so embedded and numerous other bones including those of a llama. So some of the burials, it appears, were accompanied by burial of an animal. The various bones in the streambed are surely from burials disturbed long in the past.

One myth dispelled was that mummies were placed in sites of very low humidity to aid preservation. Dr. Hooven measured the humidity at points in the cave and found it very high.

Other Caves

The archeologists spent one day in Curibamba Cave, which is about three hours to the south of Atumpampa Cave. It too is a tragadero cave with a small, active stream flowing into it. It is large walking passage like Atumpampa, but uniformly smaller. You can't just walk into this cave. In the bottom of the sinkhole, just outside the entrance, is a slippery climb down. Just inside the entrance is a constructed wall like at Atumpampa.

The burials in Curibamba Cave were much more decomposed, perhaps due to the greater moisture. There was less floor area and only a fraction of the activity of Atumpampa Cave. More than 500 meters in, we found the remains of a large pot that would have been at least 3 feet in diameter. The pot was presumably left in the cave to catch spiritual drip water, as once it was full, it would be almost impossible to transport. We speculate that it may have been broken by a falling rock.

Stonehenge Cave parallels Atumpampa to the south, and mapping shows them to most likely have been a single cave originally. The archeologists had a brief look in the cave and found a number of artifacts and bones.

Stone Cave is a small cave near Stonehenge that has the upper part of the same stream that runs through Stonehenge. It had a pit entrance not far inside of horizontal entrance, and several cows apparently found that pit in the fog or at night and fell in. There were also some nice pot shards further in and some unidentified bones.

Potshard Cave is about a half hour from Atumpampa. A homesteader led us to the entrance, hidden in the jungle. There were some artifacts and burials near the entrance, and at the end of the cave, we saw an area of columns and long stalactites and stalagmites. Many of these decorations were jumbled at

odd angles as if disturbed seismically long before. Large, newer stalactites and stalagmites were straight.

One day Scott Linn and I made our way through the jungle northward to a place called Maray Cucho, a meadow clearing with a large sinkhole taking a stream, similar to the Atumpampa sink. We found only a small drain hole, so Scott suited up and climbed in. The hole didn't go far before pinching out, and it showed no evidence of having been used by humans.

Returning through the jungle, Scott and I stumbled upon a 40 foot cave, which we named 3-Skull, about an hour north of Atumpampa. There was a belly crawl entrance, but inside was a standup room. To one side were two human remains, just bones. One skull had a bash hole in it. At the back were other remains that had been burned in the cave.

Tragadero Cave, a little way up the valley near Atumpampa Cave, has pirated the stream that once flowed into Atumpampa. We did not enter it on this trip. Previous trips into the cave required wetsuits and had yielded no artifacts.

The Big Discovery

In addition to the revelation that Atumpampa Cave is a world-class burial cave, we discovered Muyucsha Cave. Muyucsha Cave, like Potshard Cave, was hidden in the jungle, and the same homesteader showed us the entrance. The cave only was about 200 meters

long with a walk-in entrance at both ends. But at one end was a platform burial, intact. The platform construction was typical. A long 5 inch diameter pole, supported at each end by the cave wall, spanned entrance to a small alcove about 10 feet off the floor. Rock slabs had been laid from the alcove floor across to the pole, making the floor of the platform. On the platform was an intact sarcophagus burial. Around it were the bones of several non-mummified remains.

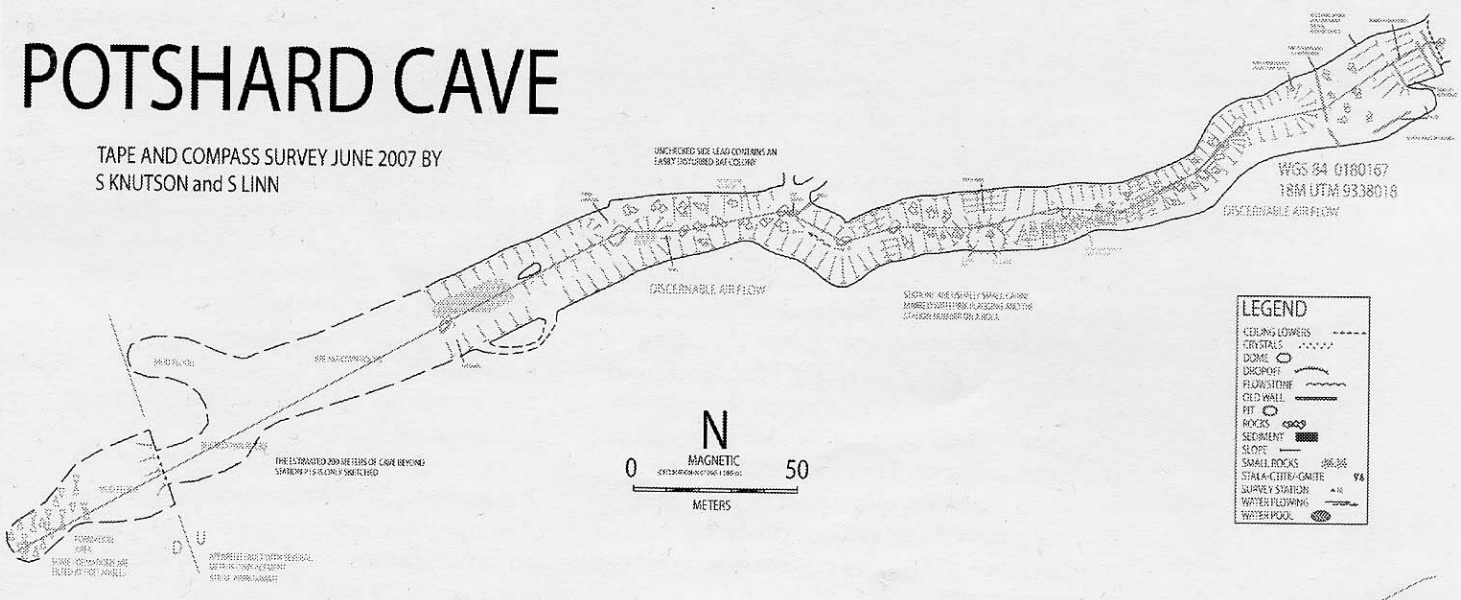
The archeologists considered this a great find, as this clay sarcophagus was pure Chachapoyan, and the only intact one they had ever seen. To recover it, they took an emergency proposal to the National Institute of Culture. They also paid an expert to oversee the removal to ensure that it arrived at the museum intact, a difficult operation. A replica was constructed to replace the one removed, so the San Carlos folks could take trekkers to see the site. This work was completed during a subsequent trip in November, and the effort was partly funded by the NSS, including grants from the Western Region, the Conservation Committee, the Expeditions Committee, and the Research Advisory Committee. The sarcophagus burial is now being studied by Dr. Sonia Guillen and associates at the Centro Mallqui at the museum in Leymebamba.

I should add that in Peru tomb robbery and the sale of illicit artifact are a big business that can mean big money for folks in the country. The discovery of an important artifact or burial means little for science, unless that discovery actually goes to the scientists. Often this does not happen, and the discovery goes to a private collector. The so-called "Gold Museum" in Lima is a prime example of the wealth of artifacts so bought and sold. It is not a museum at all, but a huge private collection that gullible tourists pay to see, thus promoting tomb robbery. Caves like Atumpampa and Muyucsha are a golden opportunity for archeologists.

Near the other entrance of Muyucsha Cave was a low platform of rock and sediment against the wall. On this platform was a 2 foot diameter cap of flowstone covering a human-sized hole that led into a walking-height side passage. The hole originally opened into the main passage but had been walled in, the wall had been disguised with sediment, and the connecting hole hidden. Why?

POTSHARD CAVE

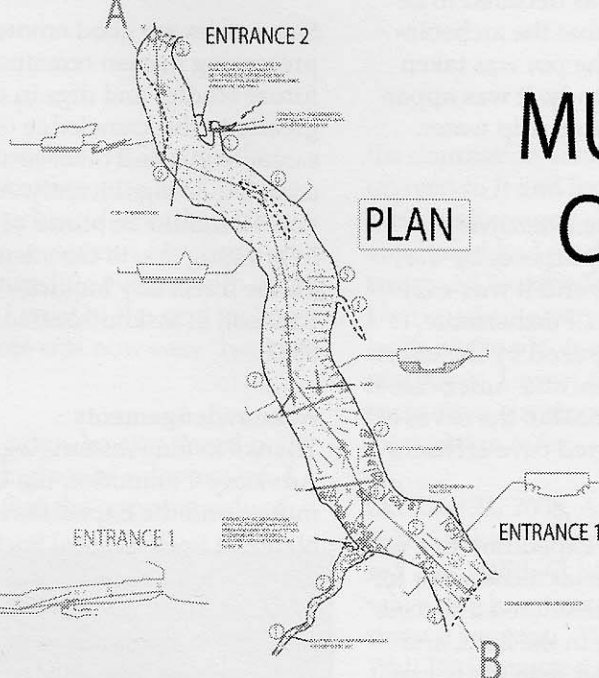
TAPE AND COMPASS SURVEY JUNE 2007 BY
S KNUTSON and S LINN



LEGEND

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FLOWSTONE	~~~~~
OLD WALL	-----
PIT	○
ROCKS	⊗
SEDIMENT	■
SLOPE	—
SMALL ROCKS	⊙
STALA-CTITE/-GMITE	∇
SURVEY STATION	▲ M
WATER FLOWING	→
WATER POOL	▨

PROFILE A-B



MUYUCSHA CAVE

TAPE AND COMPASS SURVEYS JUNE, 2007
BY STEVE KNUTSON, SCOTT LINN AND ROC PURSLEY



A platform on a high ledge with an intact sarcophagus in Muyucsha Cave. Note the skull of a non mummy burial.



A short way in it became a crawl, and there, under some soda straws was an intact Chachapoyan pot. This was declared to be one of the best examples that the archeologists had ever seen, and the pot was taken back to the museum for study. It was apparently there to collect spiritual drip water.

Conclusions

The notion that caves were extensively used for burial and other purposes by the Chachapoya is a new one, and it was well verified by this expedition. Furthermore, it has only come to be recognized by the efforts of cavers—French, Spanish, and American. It is their discoveries since 2002 in the caves of Amazonas that have spurred cave archaeology in this region.

It should be said that any expedition to a remote, roadless site in difficult terrain in a foreign country should be considered a success if you get there, are active in the field, and return in one piece. Beyond that, we began this expedition with “a cave with some bones in it” and came out with Atumpampa Cave as a world-class burial cave with hundreds of remains of different types and styles. The notion that caves held no spiritual place in the Chachapoyan culture is gone.

Expedition personnel visited eight caves, and naturally, everyone was keeping an eye out for human remains or artifacts. Only one

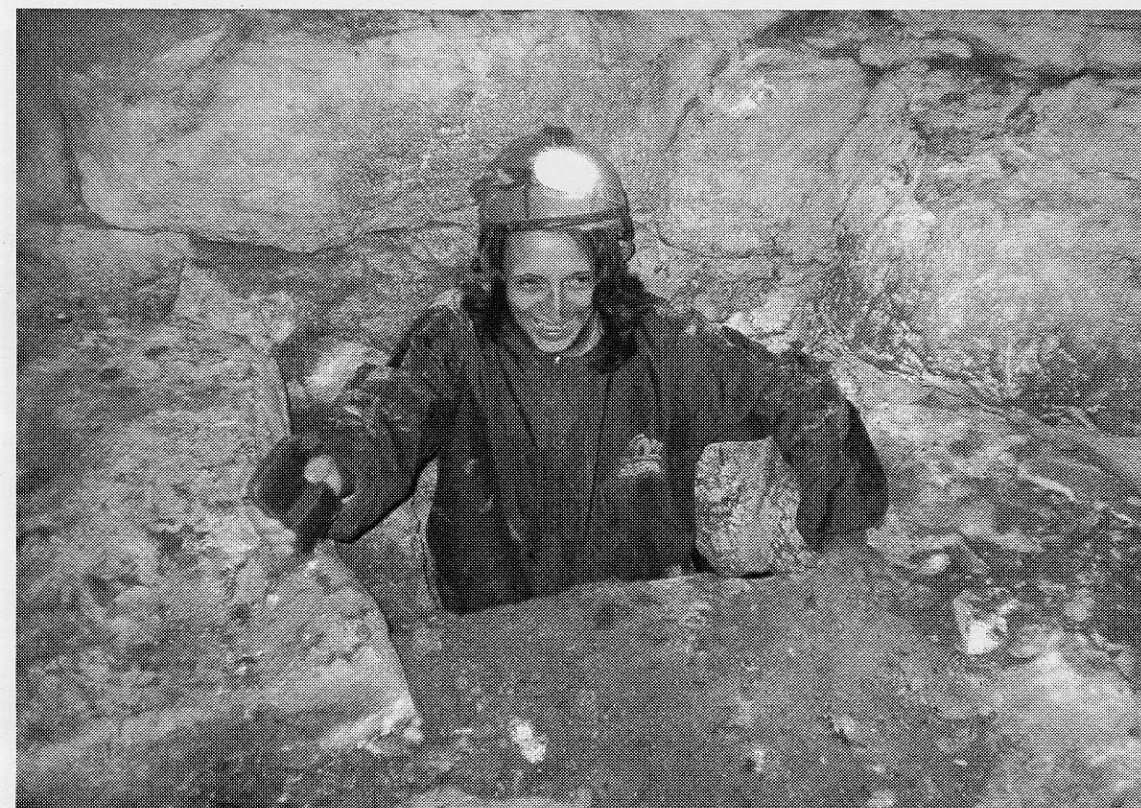
cave appeared to have none, the drain cave at Maray Cucho.

Since caves are good environments for preserving human remains, it is certain that future studies and digs in caves will add a greatly to the knowledge of this culture. The sarcophagus and other artifacts already have contributed significantly. All the cavers involved should be proud of the role we played in bringing this to the attention of science. Please direct any inquiries or interest to Steve Knutson at sssknutson@aol.com or (503) 695-6552.

Acknowledgements

Thanks to the Western Region, the Research Advisory Committee, the Conservation Committee, and the Expeditions Committee of the National Speleological Society for monetary grants. Thanks to Bob and Bob, Inner Mountain Outfitters, and PMI (Pigeon Mountain Industries) for previous donations and help with deals on rope. Huge thanks also to the archeologists of the Centro Mallqui, Museo Leymebamba for making this project happen. And many thanks to all who participated—this was an unusual expedition in that we were not one unified group under single leadership. There were the archeologists, the forensic pathologists, the History Channel film crew, and the cavers. All in all, I think it went well.

“We began this expedition with ‘a cave with some bones in it’ and came out with Atumpampa Cave as a world-class burial cave.”



Flor Cachay in Muyucsha Cave in the concealed hole leading to the pot collecting drip water.