Dos Aguas Expedition 1996-97

Over New years 1997 a “fast and efficient team”, gathered from four different Mexican caving clubs, converged on the Dos Aguas area of SW Michoacan to confirm the existence of a reportedly big river cave. This report will document what we found.

The area was first identified by Peter Sprouse who passed on this tip to Mike Fishesser who organized a cave scooping expedition in 1984. Just before the end of this trip they were led to a cave that looked like it would finally be the “key to the underground hydrology of this vast area”. In their last three days they scooped some 3km of big passage and vowed to return. Another large group returned in 1985 specifically to explore this cave (named Cueva Dos Aguas by them; AMCS # 14). After three more trips into the cave they pronounced it “fully explored” and estimated a length of 5km. It reportedly contained a “fair sized mountain stream” which proved “very demanding, sporting and challenging” to explore and caused the scoopers to suffer from the cold after only five hours even though they were all wetsuit equipped. Presumably this is the reason they didn’t survey what they scooped even though it was presented as “a worthy survey project”, but one “that would require a fast and efficient crew”.

At least the cave did have a stream and they did explore amazingly close to 5 km of passages. It is hardly finished though and proved to be a fun, thoroughly enjoyable cave to survey, and definitely a “worthy project”. In a written reply to my request for information on what they did in the area M.F. expressed his disappointment on what they found and said “they didn’t think that the area had potential to host a big cave”. I wasn’t aware that N. Carolina was so well endowed with caves over 5km long and with virtually every passage being big, easy stomping passage to generate such an attitude. No info on any of the reportedly 30 plus caves they found was passed on, not even a vague sketch of where they were generally located. With a preliminary survey length of 4.66 km it is the longest cave in Michoacan and even places well up on the list of long caves in Mexico. That a group would come all the way down from the States for a second expedition specifically to explore that cave and NOT survey a thing boggles my mind (and that is being polite).

Chris Lloyd sitting in entrance to Cueva Grande de Puerto Hondo (later re-named Cueva Vinata after local input). Photo by: Vicente Loreto.

Our group of nine cavers culled from the ranks of SMES, UNAM, UdeG and Zotz arrived on Dec. 27 and easily located a beautiful campsite complete with a running stream that sank 150m past the camp. With local directions we located the entrance to Cueva Grande de Puerto Hondo which was a lovely black hole 12 by 15m across (less than half the previous description) with roof pendants just visible from the nearby road. The same afternoon Vicente stumbled across the vertical cave the Americans estimated to be 120m deep.

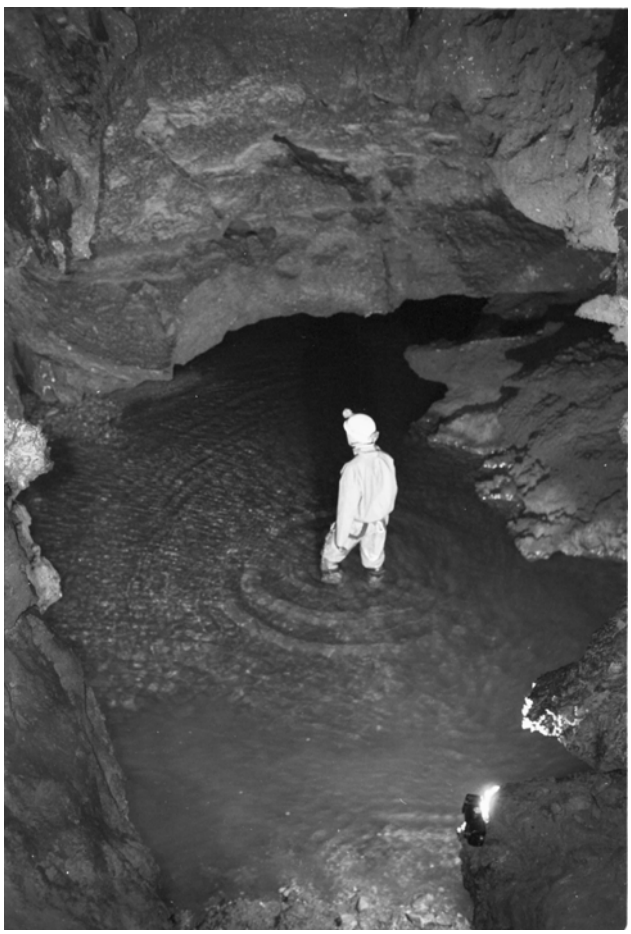
The first day underground had a team rigging down to the river while another began surveying in from the entrance. Meanwhile Vicente and Curro were dropping pits in their cave. The large sloping entrance of C. Grande de Puerto Hondo opened up into a large entrance chamber 60m by 40m across sloping down to the left (south). A small inlet comes in high on the right, exiting out down on the left which were both surveyed about 50m to their ends (the upper one could possibly be pushed further through a squeeze). The main way on is straight across the chamber to the top of a 7m pit which offers a surreal view back out to the fern covered entrance slope past spectacular roof pendants.

Claudia rapelling the 3rd drop of the entrance series. Photo by: Vicente Loreto.

Curro rapelling the 5th drop of the entrance series. Photo by: Vicente Loreto.

A tall, fossil canyon passage leads down to the second drop which lands on a large sandpile accumulating from a semi-active inlet high up on the left. Three ways on presented themselves at this point and we chose the low crawl on the right to avoid disturbing hibernating bats in the stooping passages on the left. This route also seemed to be carrying the most air flow. At the end of the crawl another three ways are possible all leading to drops. We choose the middle route rigging off natural anchors down past a 4m flowstone pitch. A little stooping brings you to the final pitch or climb-down. We choose to rig it from a bolt in the roof as we figured a fair bit of traffic over the loose rocks on the climb could led to a potential accident. This drops you into a tall, key-hole shaped canyon, which is an overflow bypass loop to the main streamway. From here teams pushed upstream and down the next day.

I led the first upstream foray in quite a literal sense as my lead tape person (Nancy) had never surveyed before and didn't know how to swim! While I wouldn't exactly call it a "good sized mountain stream" (well perhaps I would if I lived in the small hills of N. Carolina that they call mountains), it probably had about 0.5 cumecs of flow which definitely did pond in places requiring swimming. The first actual swim comes about 15m after entering the upstream route but only lasts about 20m. There follows nice wading in knee to waist deep water through torturously, twisted and sculpted passages averaging about 4m wide and at least 8m high.

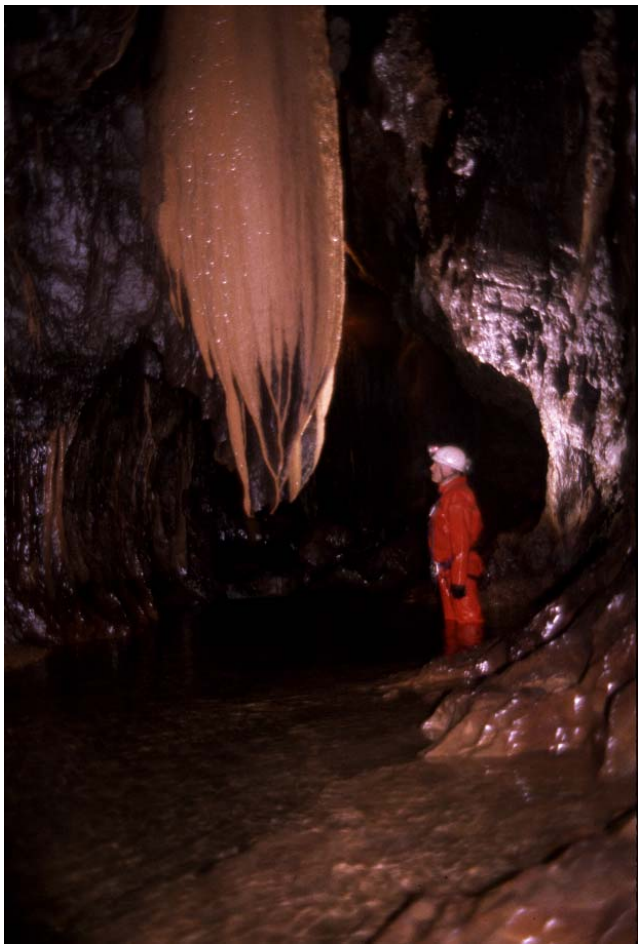


Chris Lloyd downstream just below the put-in. Photo by: Vicente Loreto.

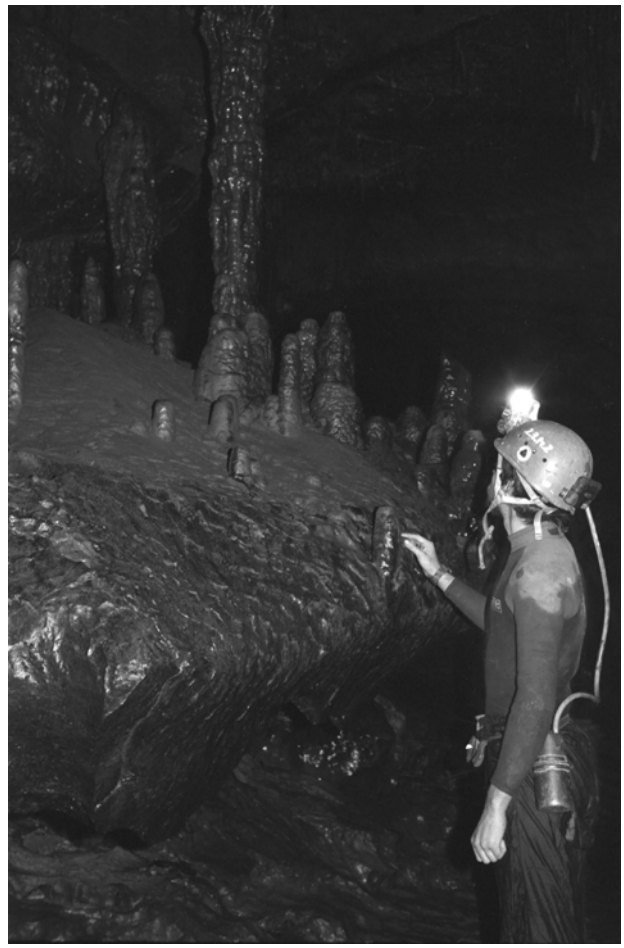
Chris Lloyd climbing cascade in loop between the downstream and upstream put-in. Photo by: Vicente Loreto.

Generally the roof was not visible as a fossil phreatic section could be glimpsed above the tall canyon we were in. Even there the current presented no problem though it certainly sounded like you were in a raging torrent which would reveal itself as only a 0.5 meter high cascade that echoed magnificently in the tall passages. Nancy gamely followed in my wake wearing her borrowed divers life vest while the only challenge the cave presented to surveying was that Soriano had to remember the compass and inclinometer readings because the noise of the cascades made shouting virtually impossible. From the put-in we surveyed 780m up to the first inlet and called it a day. No more real swims barred the way as you could push yourself across or pull yourself along the wall of the various plunge pools. The three “tricky” cascade climbs were somewhat tricky though easily passed on the right side, the tallest one being about 4m tall. A piece of extra webbing could be tied off to aid those following and did come in handy as the hardest part was finding a good enough handhold so that you could drain the water out of your wellies and be able then to lift up your leg.

Meanwhile Ramon and the young lads (Jesus and Tachi) were pushing and surveying the route downstream. They encountered more in the way of small cascades and plunge pools though also noted that no actual swimming was necessary. The first and second sump bypasses were passed and they stopped at the third sump which was closed (as it was on the Americans first trip). They did manage to locate a likely bypass to this which the Americans didn’t describe. They netted 773m bringing the cave up to 1997m in two days.



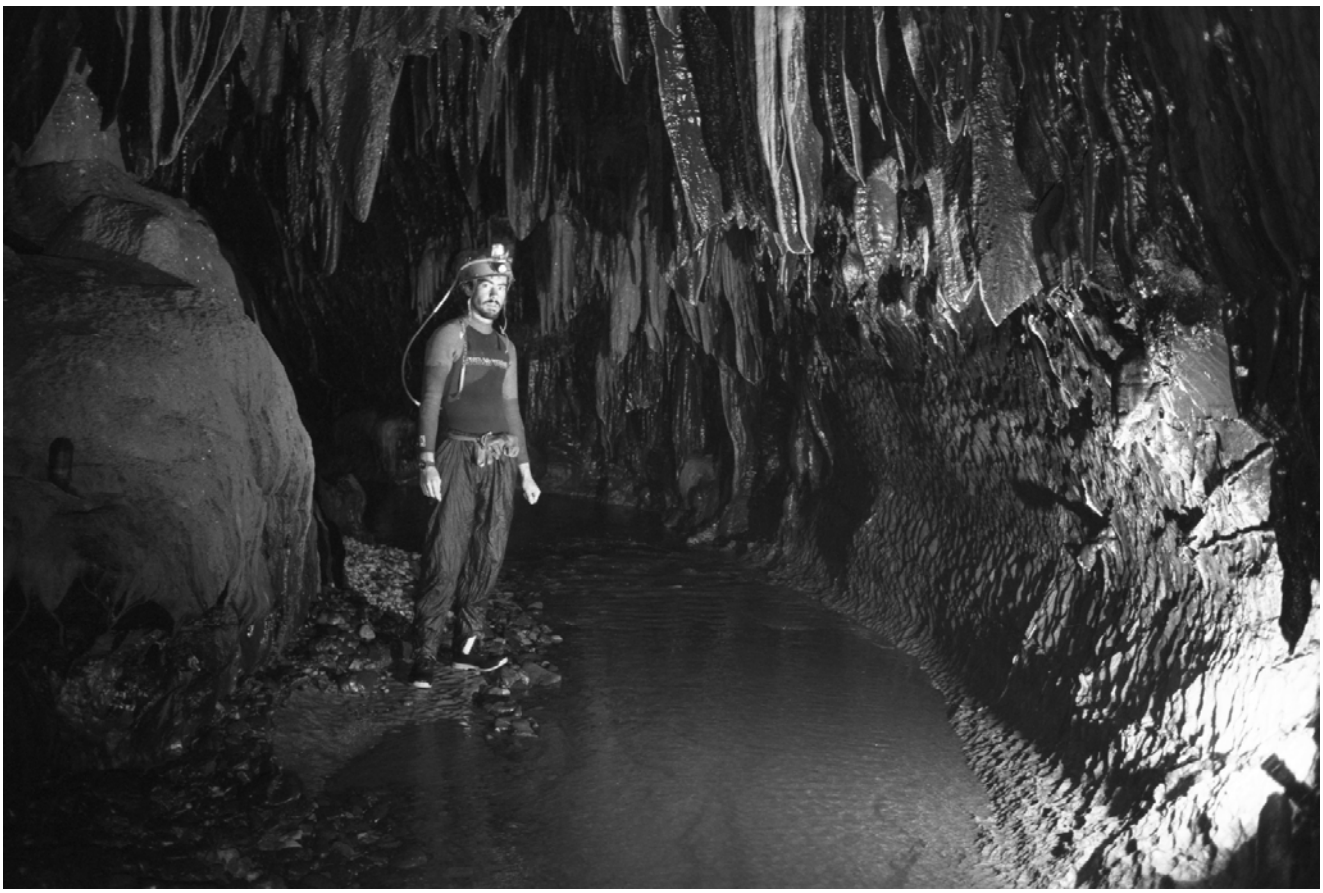
Chris Lloyd in typical upstream passage. Photo by: Vicente Loreto.



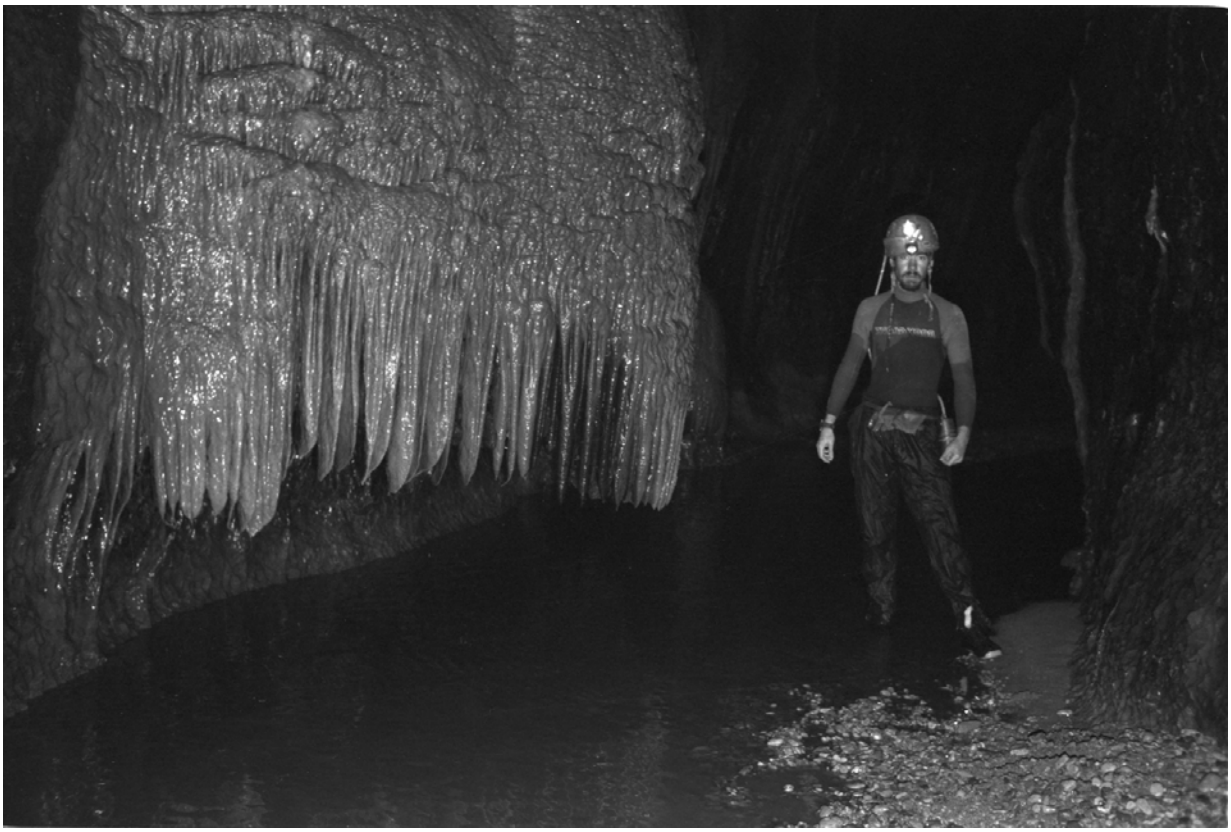
Curro in typical upstream passage just before Gour Inlet. Photo by: Chris Lloyd.

In this same time Vicente and Curro had bottomed Cueva de Vicente in seven drops for a total of 95m and a length of 203m. Part way through a large chamber was passed with plentiful decorations and the bottom left at a small, muddy hole with no airflow.

The last day of the year saw two more teams continuing in the streamway and I was impressed that we actually got underground well before noon - quite a rarity for a caving expedition. I went upstream again, this time with Vicente and Claudia, also novice surveyors in their first wet cave. An hour of sublime splashing got us to the first inlet and then on into the stomping passage. This upper section was slightly larger and lacked the pools of the previous section. Four to six meter wide passage cruised by in generally ankle deep water. We occasionally became annoyed when the survey legs dropped below 20m. The further we went the better decorated it became with beautiful flowstones and/or draperies coating the walls. Occasional stal bosses would almost block the passage but we could either sneak by or duck underneath them. Just before the second inlet (actually the third, though the second has no enterable passage), a nice gallery was loaded with stal of all descriptions. After 1222m we called a halt at a rimstone dam and gour pools that marked the main second inlet. Not because we were cold or tired, (it was only 4.5 hours of surveying) it just seemed like a good place to leave it (and I knew we had gotten our 1 km minimum). Not a bad way to finish the year with what is possibly my best day of surveying ever, both for total length and pleasant, enjoyable and well decorated passage.



Curro in typical upstream passage. Photo by: Chris Lloyd.



Curro in typical upstream passage. Photo by: Chris Lloyd.

Vicente in somewhat typical upstream passage. Photo by: Chris Lloyd.

Ramon and the young lads did manage to by-pass the 3 separate sumps that make up the 3rd sump and dropped back into the active river from 20m up in the phreatic fossil by-pass. Continuing downstream past a 20m tall, down-climbable cascade they came to the same low gravel crawlway that halted the Americans. Disappointed, they finished off by surveying all the side passages in the downstream section including 100m up the Blackwater Inlet which passes right beneath the entrance chamber likely on its way to meet up with an active entrance about 200m further up the main doline. Upon further questioning after various fluid refreshments it was established that there was indeed airflow in their by-pass route (while passing the antlion traps) and that the fossil passage did continue across the other side of their 20m drop. By bolting around the wall it looks hopeful that a way on can be followed. The amount of air pouring down the entrance series and the size of the upper phreatic passages above the active streamway bodes well for there being passable by-passes to further downstream sumps. We will definitely being going back to confirm that hope.

The final mapping trips concentrated on finishing the upstream section and the inlet passages. I commandeered the Gour Inlet with Vicente and Curro as our previous look-see suggested that this would be the more photogenic of the two. And it was. The slightly warmer water was actively depositing copious quantities of $CaCO_3$ forming a staircase of gour dams that we followed up for about 300m. In places the passage was over 10m wide and still plenty tall.

Vicente in somewhat typical upstream passage. Photo by: Chris Lloyd.

Curro in upper streamway, before Gour Inlet. Photo by: Chris Lloyd.

Claudia in upper part of Gour Passage, just before squeeze. Photo by: Vicente Loreto.

At one point we had to scale a 4m high vertical dam which fortunately had a calcite cemented slab projecting over its rim that I was able to tie off with webbing to assist the shorter members of our team. Eventually the ceiling came down and we had to squeeze through breakdown blocks before it opened up again into one of the best decorated galleries in the cave (we of coarse had left our cameras back on the other side of the squeeze). Beyond that the inlet split and we could only follow the right branch in stooping passage to a breakdown blockage. About 20m before the end a small opening on the right afforded access to a muddy climb over big blocks that would appear to be accessing the space above where the breakdown blocks at the end of the main passage had come from. That gives us a good objective to come back for. Presumably we went past the Manana Dome that the Americans describe as their farthest point, surveying a total of 422m.

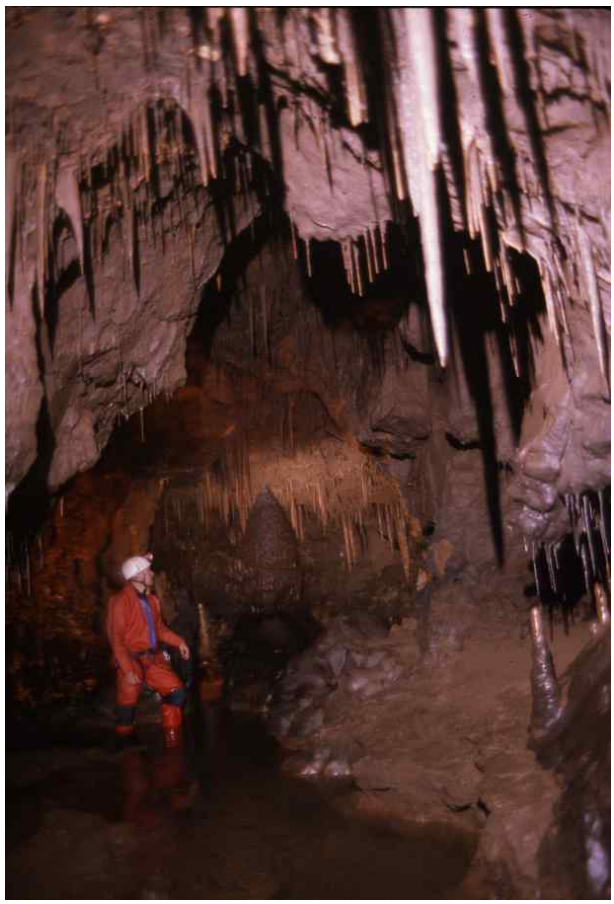
We photographed our way out, though mostly wasted our time, for as it turned out our combined flash power was not enough to light up the large passages, even with 400 asa film. It was also apparent that putting flashes in the center of the passages pointing out at the wall is much more efficient then the reverse. If we had taken the time to use a tripod and the bulb setting then we could have gotten fine results with what we had but that would have taken time that we didn't have. Back in the main streamway the passage widths co-operated in generating some decent photos and Curro, out photo model and slave person, was incredibly patient in being asked to "hold still" for "just one more" by the trigger happy photographers.

Chris Lloyd looking up at 4m climb in the Gour Inlet. Photo by: Vicente Loreto.

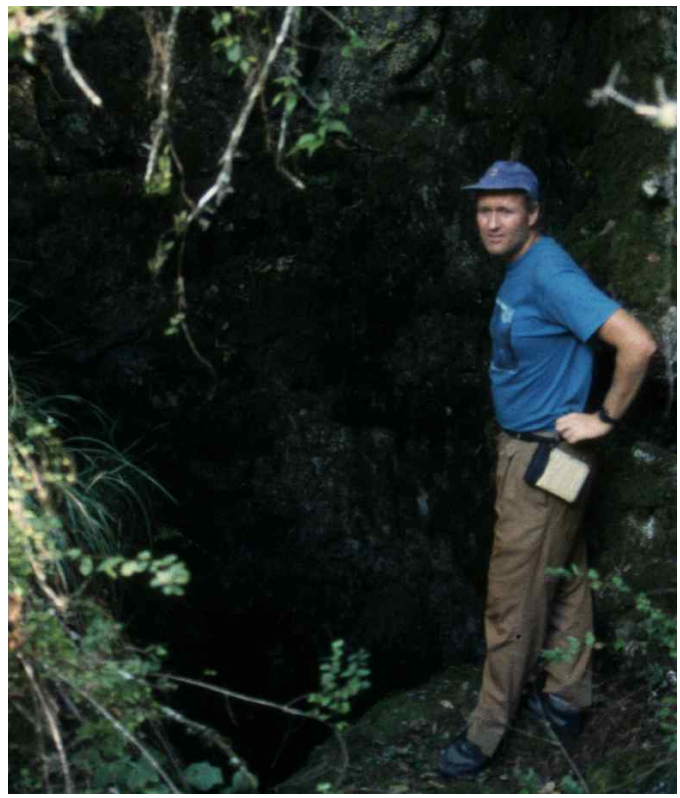
Chris Lloyd in wide passage below the 4m climb in the Gour Inlet. Photo by: Vicente Loreto.

Ramon meanwhile had finished off the first inlet as far as a wet crawl (about 100m up) and then headed up to finish off the main streamway (which is probably the actual inlet, with the gour dams having raised the level of the floor so much to make it appear that it is the inlet). I had told him to look for a flagged station next to a flowstone inlet as his starting place so he dutifully began surveying at the second inlet (the false one) and thus re-surveyed about 600m of main passageway before getting to his real starting point where I had left him a note. They still managed to finish another 450m to the first upstream sump before calling it a day, leaving the by-pass for next years expedition.

The survey length of the cave so far is 4666m with more to be done at both the up and downstream extremities. Travel time from the entrance to the downstream end is about one hour while 2 hours or so will get you to the top end. Nowhere are there any serious difficulties or strenuous situations as attested to by the novices who participated in the expedition. We all used wetsuits in anticipation of the cold water described by the previous explorers but many of us will forgo those next year in favour of fury suits with a PVC oversuit as it just isn't that cold. Wellies with neoprene socks is the footwear of choice as it should be in any wet and/or cool cave. In fact in this cave the coldest place was found to be in the lower part of the entrance series before you even got wet. If you were sitting where our third pitch was located you very quickly got chilled, whereas if you moved over 5m to the top of one of the alternatives you could feel the warm air coming up from the stream section below.



Chris Lloyd near the end of the Gour Inlet.
Photo by: Vicente Loreto.



Chris Lloyd at the entrance to Cueva de Vicente. Photo by: Vicente Loreto.

Cueva Vinata

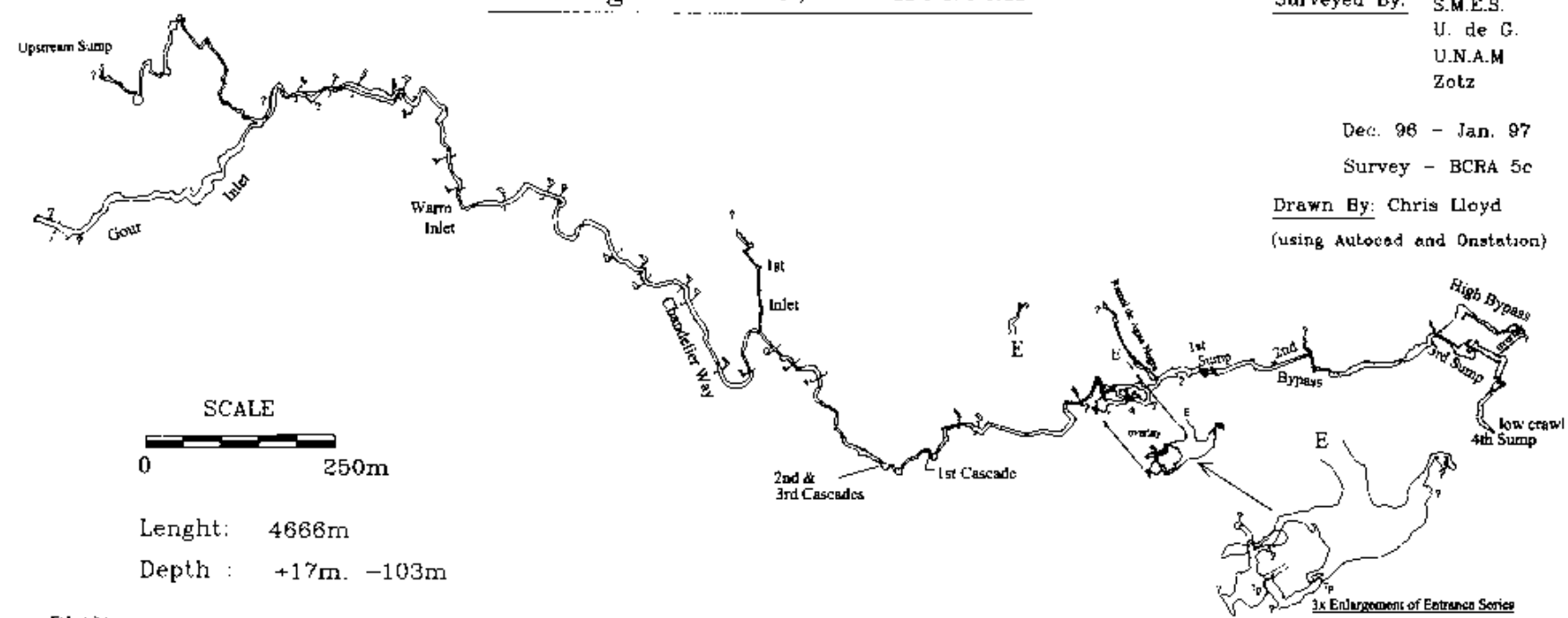
Dos Aguas Area, Michoacan

Surveyed By: S.M.E.S.
U. de G.
U.N.A.M
Zotz

Dec. 96 - Jan. 97

Survey - BCRA 5c

Drawn By: Chris Lloyd
(using Autocad and Onstation)



SCALE

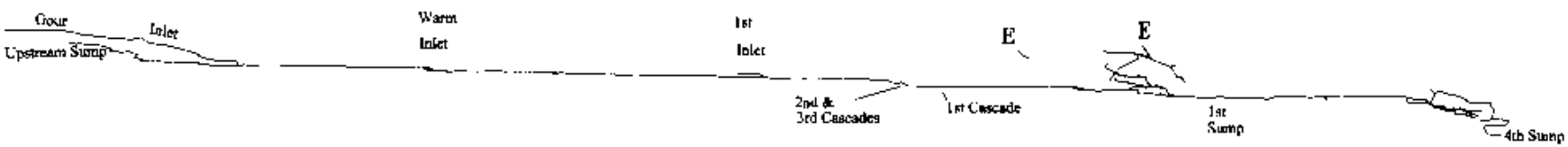
0 250m

Lenght: 4666m

Depth : +17m. -103m

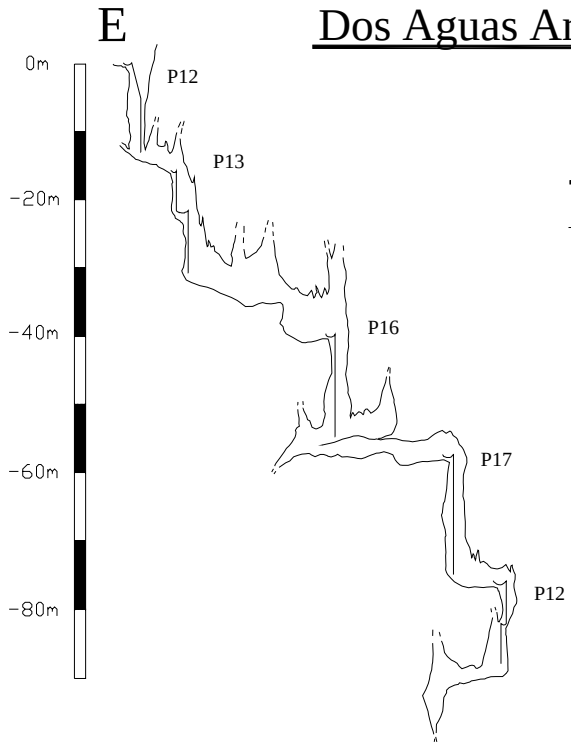
PLAN

SECTION



Cueva de Vicente

Dos Aguas Area, Mich.



Extended N-S Section Looking West

Surveyed By: Vicente Loreto
Francisco Ruiz

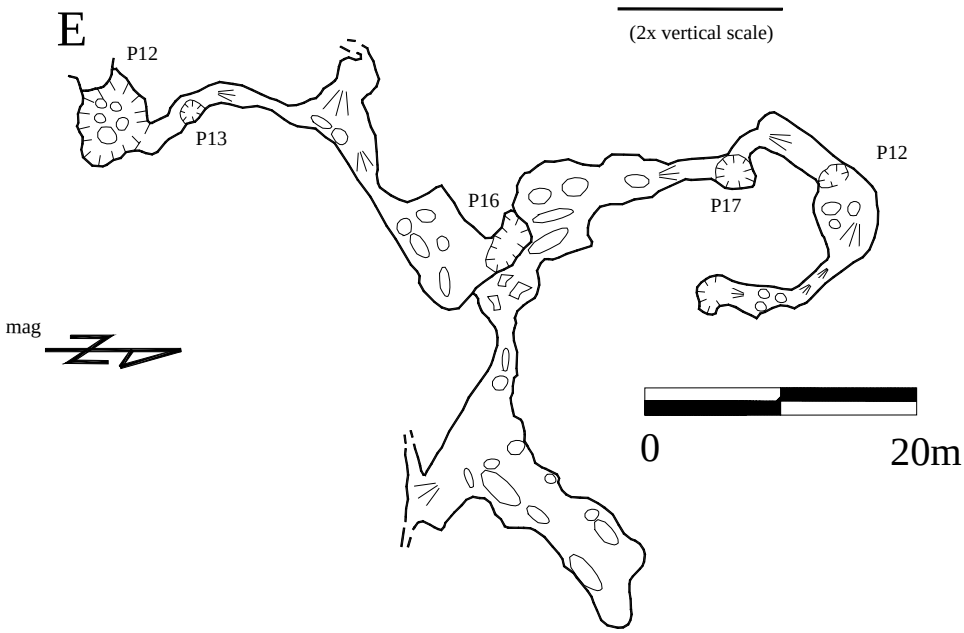
Drawn By: VL & CL

BCRA Grade 5

Length: 203 m
Depth: 94.7 m

Plan View

(2x vertical scale)



Vicente and I finished off our film while de-rigging on the final day and then surveyed 35m into the nearby active entrance that is likely the source for the Blackwater Inlet surveyed up by Ramon and company. On our way back to camp we poked into a tight entrance that I had spotted blowing cold, wet air. It immediately opened into a 5m pit below which could be heard running water. We left it along with two other much bigger entrances that were checked into where running water could be heard as well. All these are well situated to drop into the lower downstream section well past our limit of exploration. So even if our 4th sump bypass doesn't go we still have a few back ups with excellent potential as well.

Geologically, the limestone in the Dos Aguas area is part of the Morelos Formation which spans the whole part of southern Mexico from Chiapas to Jalisco. This section though is one of the few that has rudist fossils indicating its status as an actual reef limestone that appears to have been built directly on top of basalt and other volcanic flows. The floor of the furthest reaches of the main streamway was actually on exposed basalt and other exposures of altered intrusive? rocks (they were too altered to positively identify) were seen in the main doline we were working. These altered intrusives are likely responsible for the uplift of the limestones to their present 2000m plus elevation. Unfortunately because of the strong alteration a mining company has staked a large mineral exploration claim over the whole area. So in the not too distant future we may be racing a drilling crew in the search for where the caves are (this is the reason no north arrow is plotted on the maps).

Chris Lloyd

Jan. 1997

Note: This article was first published in the AMCS Newsletter No. 23, May 1999 (without photos).

Trip Participants (as shown in photo below): Chris Lloyd, Claudia Galicia de Curro, Francisco ("Curro") Ruiz, Humberto ("Tachi") Tachiquin, Jesus ("Bruce") Reyes, Jose Antonio Soriano, Nancy Trego, Ramón Espinasa, Ruth Diamant, Vicente Loreto