

**THE DEATH CORAL CAVER**

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# THE DEATH CORAL CAVER

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## PHOTO CREDITS

Front Cover - *Troy Lanier rappels into "The Learning Curve", Las Chinas. 1993 photo by Peter Sprouse*

Inside Front - *Dawn Reed at the Snow Drop, Sótano de la Cuchilla. 1993 photo by Susie Lasko*

Back Cover - *Bob Anderson lassoes a lead in the Dark Forest, Infiernillo. 1994 photo by Peter Sprouse*

Inside Back Cover - *The Dragon River, Brinco 1990 photo by Susie Lasko*

## EDITORIAL

Three articles in this issue describe the significant threat of flash flooding in Sistema Purificación. These serve to illustrate not only the dynamic nature of this very alive cave system, but also make for rather exciting caving accounts. If nothing else, we should take all this as a reminder that floods can occur anytime, and that deeper trips into the system are most wisely done in the driest season. In the upper part of the cave system floods manifest themselves in the form of lively waterfalls and unexpected sumps. In the lowest portions near the Infiernillo entrance the flood pulse may be massive and sudden. We may never know what a flood at Camp I could do to us, and it's probably best kept that way.

One of the unique aspects of Sistema Purificación is the large number of seemingly independent streams which run parallel through the cave. That these may come from widely scattered parts of the sierra is suggested by a large flow increase at the Isopod River, yet no increase at the Nile River during the 1979 flood. During the late '80's flood, cavers emerged from the flooded Infiernillo section to find the lower valleys dry.

I'd like to extend a heartfelt thanks to my co-editor Mack Pitchford, who leaves us for the karsts of British Columbia. Mack has done a fine job on page layout for the **Death Coral Caver** since its inception. Good luck Mack, may your leads go well.

Peter Sprouse

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# INFIERNILLO EXPEDITION 1994

by Charley Savvas



Barbara Luke surveying in Charley's Nail Bed. 1994 photo by Peter Sprouse

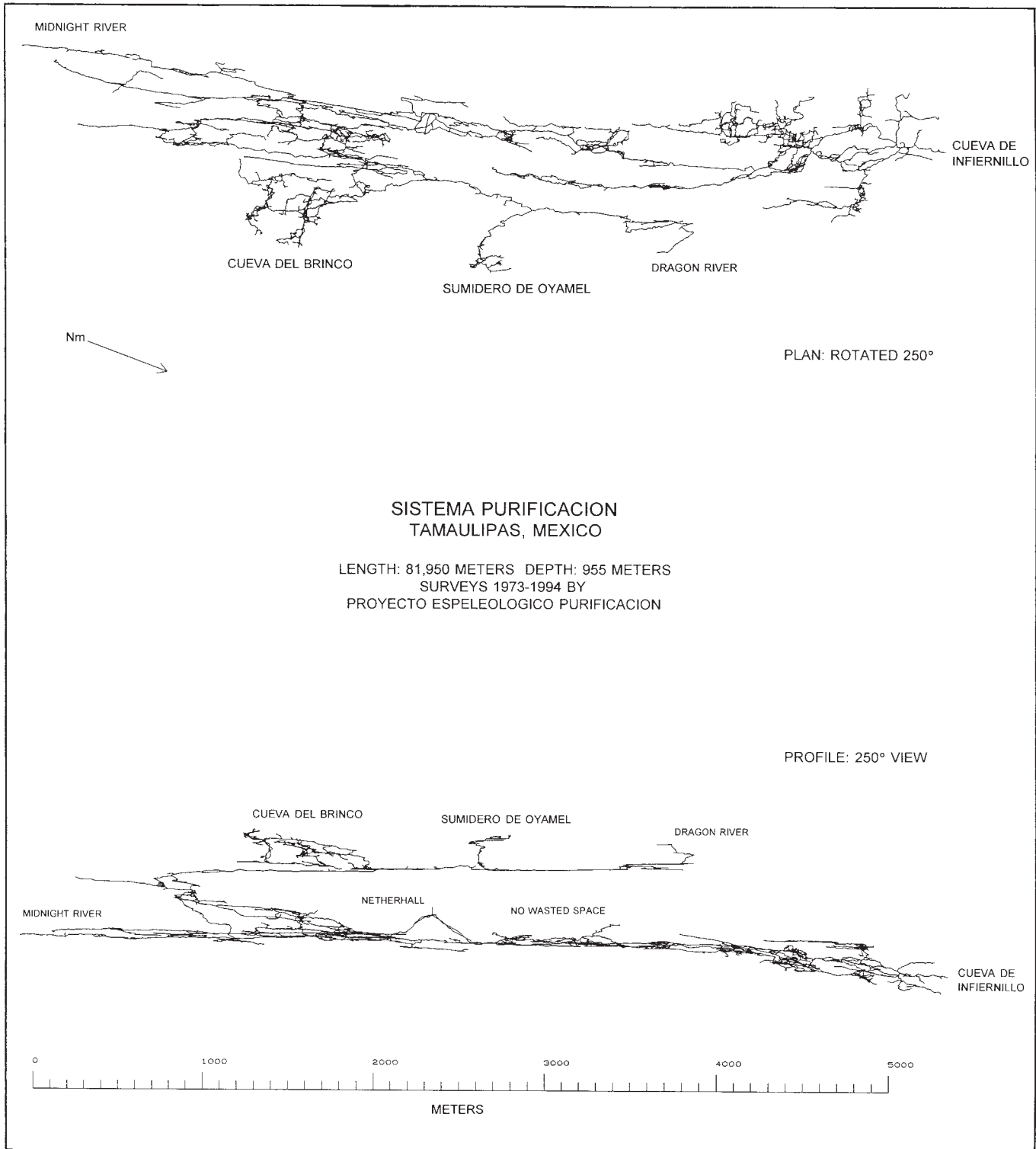
Our crew for the trip to Camp II was Bob Anderson, John Fogarty, Barbara Luke, Sue Pruitt, Peter Sprouse, Cathy Winfrey, and me. On arriving at Cathy's house on March 1st, I met Bob, who was the only crew member I had not caved with. We loaded up the vehicles and headed south. We drove straight to Victoria, arriving at daybreak. We headed up the mountain and set up camp at 4:00 in the afternoon.

The next day we went to rig the entrance, hoping to find a new way to climb in. The hike up the arroyo was excellent, huge boulders were strewn everywhere. I couldn't help myself, and started bouldering. At the entrance to Infiernillo we climbed halfway up the original route, then made an attempt to bolt our way horizontally into the entrance. This turned out to be difficult, so we decided to use the original route instead. Peter was leading and I followed John. This

was the climb of death (but we lived). When we got to the top we realized I had forgotten the bolt kit. I was bummed. We decided at this point to rig off the old bush anchor and send me down to the ledge, where I could lower a rope to the bottom crew to tie on the bolt kit. At this point we had a visit from Garfield, the parachuting stuffed cat, making his first base jump. He was awesome.

After the bolt kit was sent up, I waited on the ledge for thirty minutes while the others used the hammer drill to set two new bolts. Then I climbed into the cave entrance while the others came down. We rigged the entrance drop, and Barbara climbed up to have a look around. We then headed back to the trucks for a late lunch, and packed our gear for the camp trip.

The next morning we broke camp, and helped



Cathy and Sue drive their truck back up through a washed-out section of road. They were going to spend the week in Conrado Castillo. The trip up to the entrance was more challenging with 50 lb. packs on our backs. To lighten my gear I used a prusik knot for the first time, and enjoyed it very much. After climbing into the entrance, I launched Garfield on another successful base jump. What a guy!

The hike through the cave was awesome. Half-way through our trip Peter suggested I check out an unexplored belly crawl. Going through it I got soaking muddy, and found that it went 50 meters to a sump. We went through the Breakdown Maze and on through the Monkey Walk, where it got rough stoopwalking sideways. Finally, we could hear the Isopod River, and went on to Camp II (Camp Cozumel). We levelled the sand dune, arranged our gear, and fired up dinner.

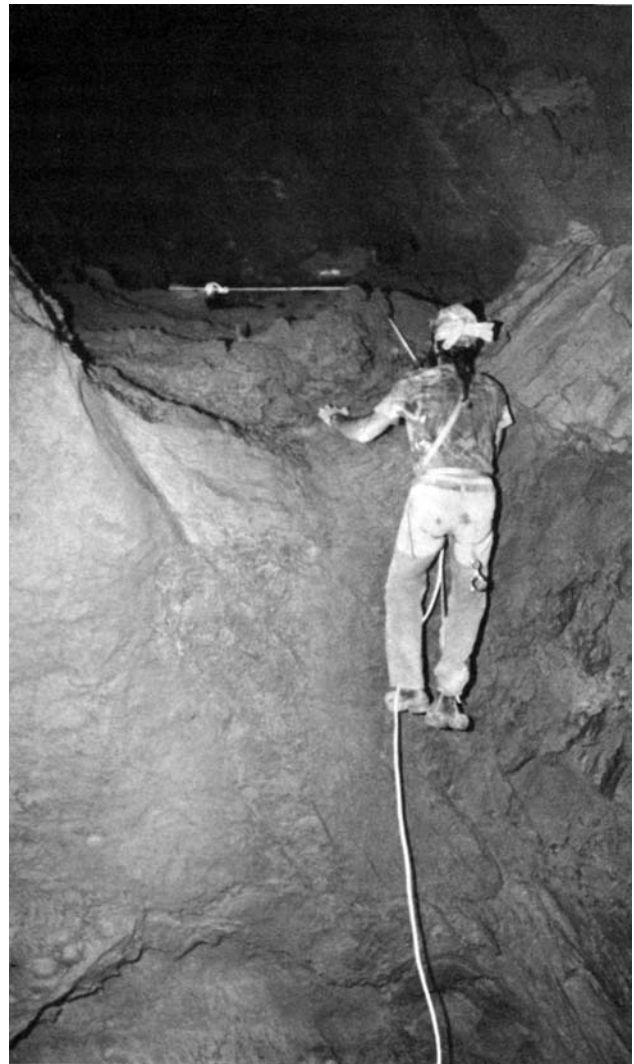
The first day we decided to check some leads near the camp latrine. Peter and I surveyed two pits into a room. The others surveyed the room and two leads which went out of it over to the river. Peter and I tied our survey back over to the latrine and then pushed a lead going above the two pits. It corkscrewed up to a pinch, which we enlarged, and finally Peter squeezed through. He found another pinch, so we turned around. We met up with John's team and all went up to the Gypsum Passage. John's team went to the back and mapped 195 meters, leaving no leads. Peter and I spotted a lead near the beginning up on the left wall.

It was overhung and looked like some aid would be required, but I managed to free climb it. Peter said to go check it for a bit while he went to camp for rope and vertical gear. It immediately went to a north-south T-junction. At the time, I thought the left lead just looped back, but later when Peter checked it we found out otherwise. It went into a room 8 meters across, with a lead in the wall and a pit that went down to known cave. Back to the right it went up into a hands and knees tube with various pits in the floor. Peter and I surveyed in this for 220 meters. We called this the Black Needle and it continues with airflow. Sistema Purificación was now 79,961 meters long.

Getting up the next day was hard, everyone was kind of lazy. We loaded up on food and had a lot of interesting conversation. John's boot blister was bothering him, so he decided to stay in camp while the rest of us went back through the Monkey Walk to check some leads. Our first lead was a lasso lead in the Dark Forest. Bob made fifteen lasso attempts before the rope finally caught on a chunk of flowstone. Bob and I both hung on the rope, and it held, so I

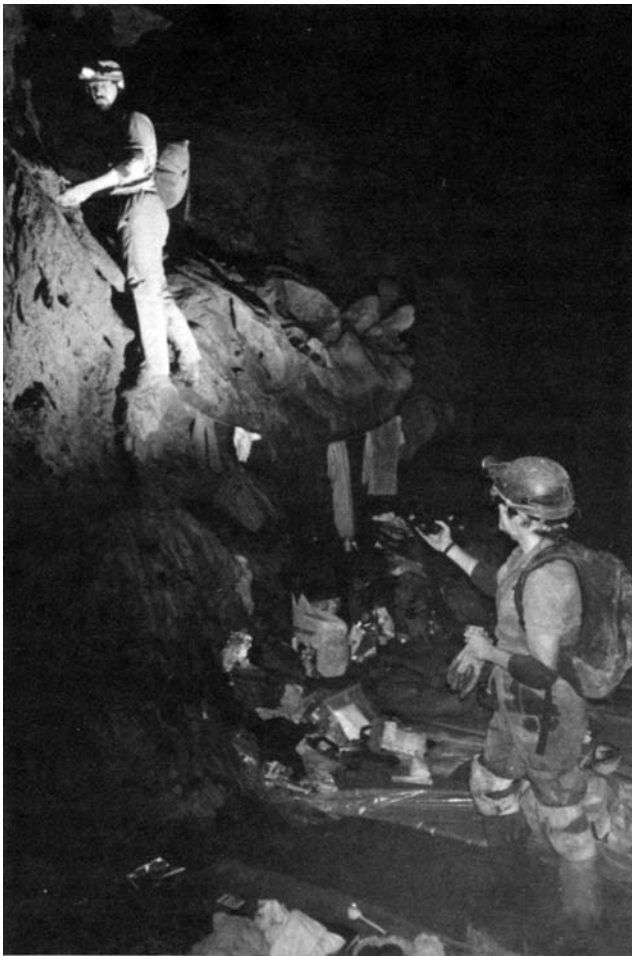
jumped into my vertical gear and climbed up. I tied off another rope and Bob climbed up. Then I checked the lead, only to find it plugged with clay. I was bummed out, it had looked so good. We did a pull-down and headed for the next lead. In the Eight Loops area we surveyed the 80 Kilometer Loop, then went on to a lead near Sheila's Lead.

This lead really took off. First we surveyed a



Charley Savvas climbing on a lassoed nubbin in the Dark Forest. 1994 photo by Peter Sprouse

side lead, the Idle Tube, then on ahead through the Castle Fortress. One lead I checked led to a vertical drop into borehole. While the others surveyed on I began setting some bolts for the drop. After the first bolt I heard Peter, and a minute later he was strolling down the borehole below me. We had connected into the Hoodoo Room, so we shot a station and met back



The route to the Wind Sump is a climb directly above Camp II. 1994 photo by Peter Sprouse

with the others.

While the others surveyed to a junction, I passed them and checked to the left. It went up and up, and after a long walking passage I finally hit a formation constriction and turned around. When the others climbed up to me, we surveyed south into what I had explored. Then we surveyed a lead to the north, which we named the Glendale Train. At the end I jumped down to check a lead that I had to back into feet first. It was body-size for 70 meters, and in areas I had to go sideways. It finally dropped into a tube 1.5 meters in diameter going in either direction as far as I could see. I figured this would be a good place to turn around, so I headed out. We all met up in the Glendale Train, and headed for Camp Cozumel. Our survey for that day was 569 meters.

For March 7th we decided to go out to push the Tex Echo in the back of the cave. Our route was up over camp to the Wind Sump, and through the Columbian Connection. This was a long walking passage full

of death coral that led to the Southbound Borehole. We turned right into Anticline Alley, which was walking and stooping for a good ways. This led to the Texas Tunnel, a large passage which consisted of re-cut flowstone with flowing water and large lakes. We bypassed a long swim by going up a tube into a 150-meter crawl, then down Flatrock Chimney. Then we emerged into Tex Echo, which was obviously named for the acoustics. Soon we got to a 5-meter swim. Wearing polypro bottoms under my nylon pants worked great. Past this it got crawly and wet, but the scalloped limestone and flowstone were beautiful.

Continuing on down the crawlway, we reached the downstream sump of the Midnight River. While Peter was pushing a high lead and the others were taking a break, I slipped up the flowstone to follow the river. It was a unique passage, totally covered with flowstone. I headed back to the others, and Bob returned from pushing a lead that had ended similarly to one John and I checked. That one was body-size and covered with death coral. Fifteen minutes in I handed the hammer to John, and it rained coralloids onto my head. He got through, and came to a bifurcation. One was too small to follow, and one was full of breakdown. In another lead I followed John up a 3-meter climb. We went up a roomy tube with breakdown and death coral. Then I pushed a horizontal tube for 25 meters, and had to get on my side into the water. I saw formations blocking my way and backed out.

On the way back to camp we decided to take a different route and go through the Netherhall via Shamrock Shores. We passed two wades, then Peter went into a swim with only one inch air space. Without flotation we had to abandon this. So now our short detour ended up costing us four hours. It was all worth



Peter Sprouse mapping in the Castle Fortress. 1994 photo by Barbara Luke



Infiernillo '94 Team: Charley, Barbara, John & Bob. 1994 photo by Peter Sprouse

it to me, but we were getting ragged out. We finally stumbled into Camp Cozumel at 4:15 a.m.

The next day we didn't get up til late, and I began to realize that I had not brought enough food. We ended up taking a day off, eating and stitching up torn boots.

The next morning Barbara gave me some oatmeal, then we headed off for the Glendale Train. We decided to name this new area of the cave No Wasted Space. Peter and Barbara surveyed in the side passages off the Castle Fortress passage. These passages were named the Polite Passage, the Clan Farquharson and the Clan Lamont passage. Then they mapped Charley's Nail Bed, a loop I have fond memories of. They surveyed 234 meters.

Meanwhile, John, Bob, and I returned to the end of the Glendale Train. We mapped down the tight Freakout Tube, which I had explored, to the junction with the Psycho Tube. This zigzagged back and forth as a hands-and-knees crawl, with crusty, leached-out walls. Eventually we ended up connecting into an old station 85 near the downstream sump of the Isopod

River. So we backtracked up through the Glendale Train to check our next lead. I pushed it up to a breakdown choke. When we surveyed up to it Bob started digging, and the next thing you know, I'm digging also. Twenty-five minutes later I slipped through the Serpent's Head Choke, and we kept on going. The Psycho Prophylaxis eventually reached a chalky dome going up 10 meters. Bob hammered on a lead at the bottom, but it pinched. The only thing left was to go up.

It was real quiet; nobody volunteered. So I seized the opportunity and went for it. It was an exciting climb. As I neared the top I could see that it went off. It started out as a bellycrawl, then went to hands and knees crawling. The tube meandered around, with a channel cut in the floor. I passed a couple of leads and finally turned around at a bifurcation. Our team had mapped 450 meters.

The next day we didn't get moving til about noon. We decided to all go to the Psycho Prophylaxis, split into two teams, and survey our asses off. John and I freeclimbed up the dome carrying a rope, then dropped the tape to Bob. John and Bob surveyed on, while I set two bolts for the others. I hammered away the chalky walls until I hit solid limestone. When I caught up with my team they had surveyed about half of what I had seen. We went left at the bifurcation, but it pinched in flowstoned boulders. Peter explored to the right through a tight 50-meter crawl to a dome. He climbed up it for 20 meters to where it pinched. The bottom of the dome also continued down, but needed to be enlarged.

On the way out we checked the remaining side leads I'd seen. I pushed one for 55 meters through a body-size keyway to a choke. John pushed another up 3 meters to a low pinch. Everyone rappelled the drop, then I derigged and free-climbed down. Peter and Barbara went off to check a lead going south out of No Wasted Space, while we worked on a lead near the start of the Glendale Train. I was pretty tired by now, hoping that it would end so we could go back to camp.

No such luck. It twisted around for about 15 meters, then dropped into a small room with a body-size tube going off. This had sharply-scalloped walls and shards in the floor: the Cheeze Grater. I backed into it and down a 3-meter drop. I continued for another painful 5 meters to a very interesting 4-meter climbdown. From here there were three leads that all looked pretty good. As I returned to get the others, I ran into them coming toward me. They thought I was away in walking passage, when actually I was moving so slowly I didn't make any noise. We eventually

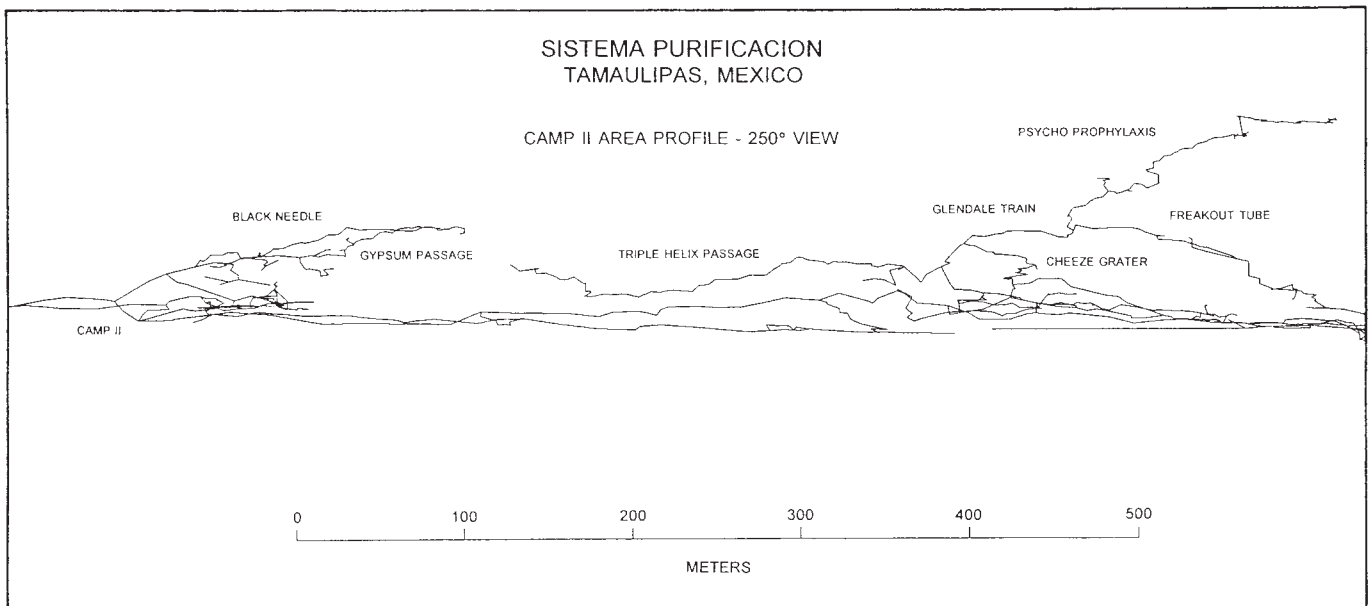


connected into station 27HE, but since we didn't know where that was, we had to backtrack through the Cheeze Grater. It turned out we had been only 50 meters away from the main passage, the Monkey Walk. We were pretty beat by the time we reached camp, but Peter and Barbara weren't back yet. They finally arrived 4 hours later, having surveyed 345 meters in the Triple Helix Passage. This headed south toward the Gypsum Passage through crawls, with some walking passage. They were hoping to connect for a short cut back to camp, but had to hike two hours back the way they'd come.

We spent the morning packing on our last day in camp. I wrote in my journal until John suggested a tour of the Netherhall, only 15 minutes away. This room is the eleventh largest in the world, and rises

200 meters from the base of the talus to the roof. The ceiling at the top is over 50 meters. Back at camp I accepted donations of Turkey Tetrazinni, since I had run out of food. We figured up the new length of Sistema Purificación at about 81.9 kilometers.

My alarm woke us for the trip out, and we were hiking out of camp by 9:15. The hike out of the cave was very pleasant, and Barbara was nice and shared some of her granola bars with me. We reached the entrance on a beautiful day, and smelled the fragrance of all the blooms. Garfield went for another jump, but his parachute hung up on a ledge. Once down, we coiled the rope and headed for the truck. Cathy and Sue greeted us with stories from Conrado Castillo, then we headed to the hacienda for some margaritas.



# SISTEMA PURIFICACION IN FLOOD

by Louise D. Hose

*KURR-CHUNK. KURR-CHUNK. KURR-CHUNK.*

*KURR-CHUNK.* The sound grew louder, resembling an off-center washing machine about to tip over. Joseph and I stared at one another, each hoping the other would explain what was happening. We were in the process of backpacking into Camp I in Cueva de Infiernillo when we were stopped by large sumped passages to the south and to the west. Not sure of our exact whereabouts, we had looked around for a few minutes when a low rumble started. It was easily ignored. But soon the whole passage, 12 m wide and 10 m high, was filled with the rhythmic sound. *KURR-CHUNK. KURR-CHUNK.* The floor seemed to vibrate. There was a pregnant pause in our activity as we stared at one another, hoping for a calming explanation. None came.

We said nothing, but both of us were experiencing the same fear. The noise seemed to come from the far wall of the west passage. Could a wall of water possibly be moving up from that passage? Would we soon see a flash flood surge through the cave? There had been 19 centimeters of rain during a recent 50 hour period. The rain had stopped two days before, but all the springs were flowing. Could the cave possibly be preparing for a delayed surge?

Rationally, it seemed we were safe, but still our minds prepared for such an event. We would abandon our backpacks and sprint for the entrance. If the flood was not too great, we might take refuge on high ground along the way.

The surge never came and the noise subsided. The cave was quiet again. Drops of water continued to splash in the pools. An occasional gurgling emanated from various places. A soft buzzing sound, like a telephone line on a damp morning, permeated the passage. Comforted by the relative quiet of the cave, we removed our backpacks and set about determining where we were.

*KURR-CHUNK. KURR-CHUNK.* Within a couple of minutes, the roar started again. We rushed over to the shore of the west-trending lake as the noise grew louder. Calmed by our previous safe experience with the roar, we tried to observe what was happening. There were no bubbles on the lake but the water seemed to vibrate slightly. The subterranean lake appeared to be dropping at a noticeable rate, so I placed a marker stone at water level to monitor its

regression.

The rumbling stopped after only two minutes, and we were left with the gentler sounds of dripping water, a buzz, and an occasional gurgling. The water level had dropped almost two centimeters during those two minutes. We watched the water level drop for another thirty minutes, but the roar did not return. During that time, we determined that we were at the 4-Way Junction, and that the Main Passage and the Main Sump passage were underwater. Since Camp I was under 24 meters of water, we took our backpacks up the now dry East Loop.

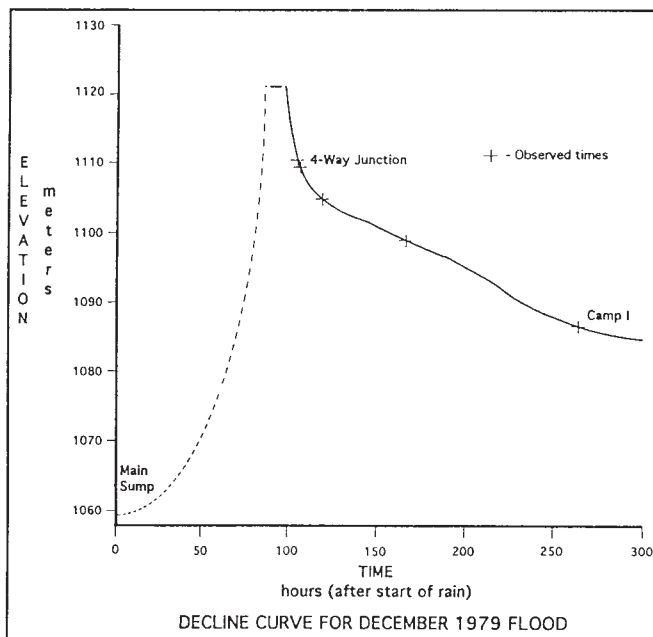
We found the high water line along the way. The flood had reached -830 m below the system's highest point, a rise of 64 m above the surveyed level of the sumps. The passage we camped in, which is also the main throughway into the system, had been closed before our arrival.

I returned to the lakes in the evening, and once again the passage roared. The sound was rhythmic, but different from what we had heard before. It was a low-pitched noise similar to water being drained from a sink. Nonetheless, the sound roared through the huge passage. I sat at the edge of the lake and watched the shoreline. Small waves with an amplitude of 5 mm were on the lake. They pulsed in the same rhythm as the sound. I was mesmerized by the sights and sounds around me. The cave was alive, yet gentle and hospitable. The water level was dropping so rapidly that I could observe the change. The water level had dropped 60 centimeters in the previous 80 minutes.

The roar, the buzzing, and the gurgling we heard were apparently the results of rooms and domes opening up to the cave's barometric system. Air was rushing into previously isolated irregularities in the ceiling.

## THE RAIN AND THE UPPER CAVE

The rain had started on 2 December 1979. Joseph Lieberz and I were the only cavers on the mountain, and our original plan was to enter the cave on the 1st. We were delayed and, by a one-to-one decision, chose to sit the rains out in the field house, making daily trips to check stream flows in the upper part of the system, Cueva del Brinco. The stream activity had been high. The normal trickle of First Stream had a



flow of 1.5 - 2 liters per second. Another stream of similar size flowed near the Bat Room where normally there is no stream. The streams in the cave had been very low before the rain, and the Chute had not been flowing. During the rains, we observed an 18 - 20 l/s flow.

We walked around the surface, noting the increased flow from surface springs. The night before entering Infiernillo, I spent several hours in the Tin Can Alley portion of the cave. Water was entering the passage from upper feeders in numerous places. The flowstone falls at the end of Tin Can Alley had a flow of ~ 15 l/s. The cave had a vitality I had never before experienced.

#### ROCKFALLS AND SURFACE RIVERS

Our hike to Infiernillo had been difficult. A large river flowed through the normally dry arroyo. We found a way to cross on boulders, passing our backpacks three times before reaching the other side. Two springs cascaded down the cliff walls downstream from the Infiernillo entrance. Each spring had a flow of approximately 10 - 12 l/s. At the base of the cliff below the entrance, two springs gushed about 40 l/s of water. A large pool below the cave necessitated carrying our backpacks across the ledge, 15 m above the pool. We shuddered each time we heard a rock fall. The rain had loosened the rocks in the canyon, and there was an almost constant barrage of rocks up

to 25 centimeters in diameter tumbling down the slopes and falling from the cliffs around us.

After climbing into the entrance, we each gave a sigh of relief, believing our difficulties were through. However, we soon found the normally dry boulders in the entrance passage to be wet and slippery. A pool of water just beyond daylight necessitated wading. In addition, our camp was cold due to a terrific wind into the cave.

In the morning after our arrival, Joseph was not feeling well, so I worked alone, checking water levels in the front part of the cave. The Camp I passage sump had dropped 6.6 meters in 18.5 hours. The Main Passage (a.k.a. West Loop - ed.) was then open with only occasional small pools of water remaining. The entrance passage had dried remarkably and the lake we had crossed was gone. The springs below the entrance were noticeably down.

#### OBSERVATIONS BETWEEN 4-WAY JUNCTION AND THE NILE RIVER

The following morning we headed farther into the cave. Below The Bucket was a 10 - 12 l/s stream. As we climbed into the large passage ahead, we often heard the stream tumbling through the breakdown on the west side. In the large passage north of the Breakdown Maze we saw no footprints in the sandy stretches, and one boulder had a distinctive, fresh high water mark 3 m above the floor.

On the southwest side of the Breakdown Maze, a stream flowed and a froth of bubbles locally covered the floor, walls, and ceiling. I had observed the same phenomena in the Main Passage, noting that it always takes place on one side of small faults (but not the other).

Continuing towards the south, the Isopod River was flowing at least 225 l/s, much higher than estimates from previous trips. Camp II was nearly completely covered by water. Foggy Mountain Breakdown had no fog. There were various pools in the Wind Tunnels. I checked on the Electronic Sump, which was about 10 m above its surveyed level. There was no electrical buzzing, as had been reported before, but it was making occasional gurgling sounds similar to the retreating Main Sump.

Our venture stopped at the Nile River. The flow in the Nile seemed to only be up a little. A small stream trickled into the Nile a short distance south of the Horseshoe Bend.

## GRIMALDO'S VELORIO

Our hike out during the next day went miserably, hampered by a dense fog. The stream crossing, however, was easier. When we arrived at the Grimaldo home for our usual check-out meal, we were surprised to find three trucks parked in front and what appeared to be a party. After accepting an invitation for dinner made by Señora Grimaldo, we learned that Señor Antonio Grimaldo, the man who first led cavers to Infiernillo, had died the night before, apparently from a heart attack. We had walked in on his velorio. We were invited to view the body and then stood around talking while three more truck loads of mourners arrived from Cd. Victoria.

## AFTERMATH

We found water flows in the area to be almost back to normal for December during the following two days. All springs were dry except the perennial ones used as water supplies. The Chute and Tin Can Alley were both down, but still flowing. Below the system, however, large rivers were flowing in the normally dry Cañones el Infiernillo and Hervores.

Joseph and I returned to the lower portion of the

system 11 days after the rain had stopped. We were once again startled while approaching the entrance by several unprovoked rockfalls. Inside the cave, the Main Sump had dropped 24 m since our first visit six days earlier. Camp I formed the shores of the Main Sump. The sounds of the cave were still present, but gentler, and most of the front portion of Infiernillo had dried out leaving no evidence of the very recent flood.

Two weeks later, I returned to the upper part of the system. The Chute was once again almost dry, and the water flow in the Río Verde was only slightly higher than prior to the flood. I stopped at The Canal. Although the water level was at its standard elevation, The Canal had flooded to the ceiling since my trip one month earlier.

The flood in Sistema Purificación was a fascinating experience in observing a small part of the life process of the cave. The rapid, dramatic rise and fall of the base-level sumps provided intriguing clues about the catchment basin and the phreatic system. The experience also gave us some clues to our vulnerability while exploring the system. Although December is considered to be within the dry season, and rainfall records back this notion up, Sistema Purificación had definitely been sumped off at both ends in December 1979.

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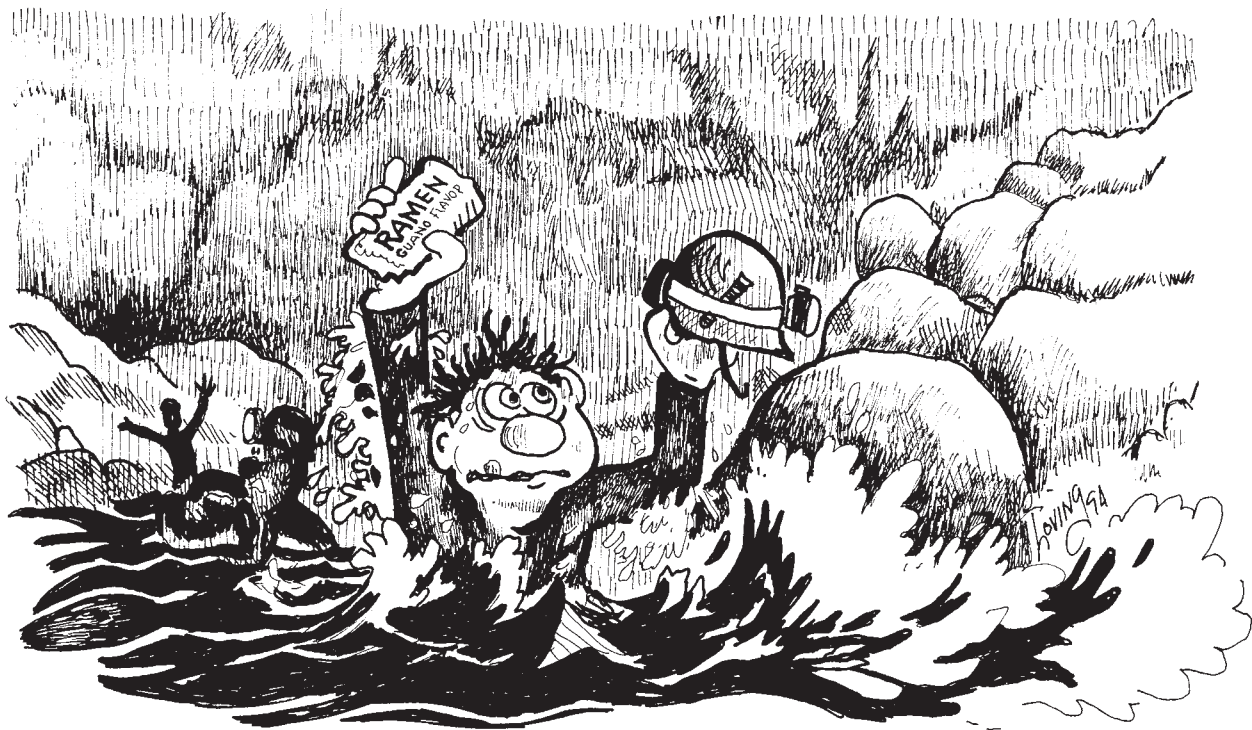
Dale Pate

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Terri Treacy

# FLASH FLOOD IN INFIERNILLO

by Ed Sevcik



About five or six years ago - the exact date doesn't really matter - I went with some friends to Cueva de Infiernillo, the lower entrance to Sistema Purificación. The purpose of our expedition was not scientific. Our guide, who was the only member of our group capable of finding his way through the cave, planned to do a camp trip later in the year, and he wanted to cache supplies near Camp II. He decided to take the opportunity to show some other people the cave.

Our trip occurred over Thanksgiving weekend, which is really too early to visit Infiernillo, even though the summer rains have largely ended by then. When we arrived at a suitable parking spot in the canyon, we saw that rain had fallen recently. Mud was splashed on the trees, and the canyon walls were flowing with a dozen waterfalls. The local people there told us that no lumbering had taken place there for some time, owing to the dangerous roads. The arroyo itself was full of crashing water, though we managed, with some trouble, to stay dry by climbing across boulders as we followed it upstream. We reached the splash pool below the huge entrance and found it quite

full. The spring that flows out of the landslide slope beside the cliff was also running high, but when we had climbed the cliff and reached the great hall beyond the entrance, we found only a few standing pools.

Our trip from the lower entrance to the camp at Isopod River took between eight and eleven hours. My gear, alas, was a shoddy mess of equipment I had accumulated over time, good enough for Texas grod-hole caving but not really for anything serious, and it gave me trouble practically the whole way there. My boots were loose and made me stumble, and my pack was... well, never mind. Anyone who says that caves where you don't need a rope are by definition easier than caves where you do, hasn't been to very many of either kind, in my opinion. Despite all hassles and insufficiencies, I found the cave very beautiful and fascinating. We arrived, somewhat weary, at Isopod River, and there made camp on a beach of stones and pebbles.

The stream flowed practically at our feet through a high vaulted passage with considerable breakdown, though just upstream from camp it opened into a larger room, about half filled by a slope of large blocks. At

the top was one way out, a dry passage leading towards the Netherhall. We were tired and quickly made camp on the beach. The others excavated a flat space for their bags, but I was content to lie on the natural rise of the sand. This chance saved me trouble later on, for my camp was a good two inches higher than the rest.

## FLOOD

I don't really have any idea at what time the water started to rise. We slept for a while, and I was in the midst of a dream that had something to do with hamburgers, when suddenly everything was in total crisis. The water started rising about an inch every ten seconds, making a ferocious noise. In a few moments our camp was completely awash, with us trying to save what we could from the roaring water. In a panic, we threw all our equipment up onto the boulders of the breakdown slope. I have to thank my companions for saving most of my gear, which, because I was tired, I had left in my duff and in a closed garbage bag. I don't wake up quickly, and I was really pretty useless during those first few minutes. I think I managed to save my helmet and one bag of instant ramen noodles, but by the time I came to my senses, everything else was safe on the rocks. As it turned out, the others were so quick to save my things that I was the only one of us who ended up with a dry sleeping bag. For some reason they didn't take it from me.

We retreated to the top of the breakdown pile and made another dismal camp on the surface of some relatively flat stones. Then we waited in darkness, pondering the roar of the river and our uncertain fate. I think what upset us most was the dark realization that, if this sudden flood had happened to come while we were exploring in the Netherhall or some such place, we would have returned, tired and with depleted lights, to find all our gear, carbide, and food completely washed away, and in that case our situation would have been very bad indeed. As it was, we were in fairly good shape, although a flash and some film had been lost, along with medical supplies and a few other things. I guess it's safe to say that we were rather curious to see when the water would go down, and if it didn't go down, whether we would be able to get out of the cave. Apparently there had been a little

rain up on the mountain above the cave, and this was the flood pulse. For the next dozen hours we amused ourselves by brooding, sleeping, or reading from several books which one of us had checked out from the University of Texas library before the trip.

The flood stayed high for about twelve hours, and then began slowly dropping. At this date I have no recollection of how high it actually rose, though I doubt it got much higher than half a meter above normal level. The sight of rocks reappearing relieved us considerably, and some of us went on a little tour of the Netherhall, which is certainly worth seeing, whether you are flooded in or not. We spent about half a day wandering here and there across that dark, oppressive, lunar desolation, and our guide took the opportunity to deposit the supply cache in the spot he desired.

## ESCAPE

After about 24 hours the water at Isopod River had returned to its usual level, but when we got back to the main passage near the entrance we found part of it still flooded to the ceiling. The southern part of the main passage was also flooded, as far back as we could see with our lights. Our guide pronounced himself relieved that we hadn't been in the lower regions when the flood came, and I guess we all agreed with him. The water continued to fall and an exit came open about six or seven hours later, with a sudden rush of cool wind which we felt at our bivouac back up the passage. When we traversed the tunnel going out we found it entirely dry, except for those innocent-looking standing pools. Our rope at the entrance was undisturbed; the water seemed to have all flowed out through cracks down below.

Evening was coming on and the sky was a pale blue, turning silver. Sunlight still touched the high crests of the canyon walls, but the stream channel below was already sinking into darkness. We made our way back down the arroyo as quickly as we could, and reached our car about nightfall. There had been no rain in the canyon during our trip inside. We packed our things in a hurry and headed out, and by eleven that night we were in Ciudad Victoria, drinking bad vampiros in a bar and listening to a fat woman in a tutu sing "I Did It My Way" in Spanish, backed up by a three piece combo.

# SISTEMA PURIFICACION IN FLOOD: UNA OTRA VEZ

by Louise D. Hose

Four Colorado cavers attempted to make a through trip from Cueva del Brinco to Cueva de Infiernillo during the week before the 1994 NSS Convention. Although they never completed the through trip, their experiences in the cave proved memorable. Once again, Sistema Purificación was in flood.

Several cavers in Denver asked me to lead a trip to Mexico before the NSS Convention in June 1994, so I organized one to Sistema Purificación. Ultimately, the group consisted of Dave Lester, Steve Lester, and Pete Squires. We all knew we were running some risk of being trapped in the cave between the upper and lower sumps during this time of year, but we each decided that the risk was acceptable.

On our trip up the mountain, we found the springs that sometimes emerge from high on the cliff downstream from the Infiernillo entrance, and the spring at the base of the cliff at the Infiernillo entrance were flowing, but the volume in the surface stream was less than during my visit in December 1979, so I trusted that lower sumps were not closing off the entrance passage.

As we travelled from the Brinco entrance, through the Crack of Doom, and down the Río Verde, I was pleased to note that the air flow was good and the water level was not as high as I had occasionally seen it in the springtime. I noted no differences in the World Beyond.

In the middle part of the cave, near the Titan Chamber, we had difficulty with route-finding. I was the only person in the group who had been in the cave before, and my only experience in that part of the cave was a camp thirteen years earlier. During our search, I noted that the air flow had been lost, but thought little of it. After spending many hours searching, we finally napped for several hours and then headed out of the cave.

When we reached the World Beyond, we were surprised and concerned to find the waterfall at the Hall of Angels was double or triple the size it had been 16 hours earlier. We immediately agreed to move as rapidly as possible for the Brinco entrance. Our earlier thoughts of picture-taking were unfortunately abandoned. The World Beyond was very different from when I had seen it before. Places where a drizzle of water dropped from the ceiling when we had

entered were significant waterfalls. Sheets of water flowed over most of the flowstone at the Throne of Oztotl. Volumes of water nearly fire-hydrant-size squirted out of the ceiling in several places that are usually dry. I felt a slight current in the 100-Meter Swim.

When we entered the smaller passage leading from the World Beyond to the Canal, my heart sank as I realized that there was absolutely no air flow. I was certain that the Canal was closed. I swam out alone and found the water and ceiling meeting. I was even uncertain of the depth of the subtle "bathtub" rim of calcite that marks the low water level. As we left the water, we hung a piece of flagging tape to the water's surface to monitor its fluctuation.

It was about 8 pm on Friday June 17th when we returned to the sandy area where the old route (Scallop Speedway) and bypass route to the World Beyond split. We stripped off our wetsuits and laid them out as ground pads. We had several trash bags and they were used to cover the wetsuits and protect us from their dampness.

We donned the dry clothes we had carried to leave through Infiernillo, but they were little more than tee shirts and jeans. We checked our rations and found food and especially carbide lower than desirable. We ate about one-third of the remaining food and conserved our light. We then settled down for a night of sleep under our only rescue blanket. The four of us cuddled tightly together, occasionally rotating the center person depending on who was the most chilled. I slept very little, but about 2 or 3am I noted with pleasure that there was once again a faint breeze in the passage.

Around 7am on Saturday June 18th, eleven hours after we had first reached the Canal, I checked the flagging tape and found that the Canal had dropped 46 centimeters and was then only 4 centimeters higher than the low water mark. We returned to our bivouac site, packed for the trip out, and put the wetsuits back on. I swam into the Canal first and, when I was certain that it was open, called to the others to follow.

The trip up the Río Verde was challenging and we didn't really relax until we were past Flowstone Falls. The water was still high and, lacking a belay, we were not able to climb up the usual route in the middle of Flowstone Falls. We stayed far to the left

and had to literally feel our way as it was impossible to look up into the cascading water. I deeply wanted to leave my duff to be retrieved at a later time, but we knew that we were already going to be overdue at Convention and would have to leave the mountain immediately.

We all continued to carry our packs. The water in the Crack of Doom was only slightly up, and the only change in the Historical Section was that First Stream could be heard from the usual route over it. We emerged from the cave in daylight, and learned from the local residents that there had been a heavy

rain from about 9am to 9pm on Friday. Thus the rain had stopped soon after we reached the Canal.

The Infiernillo entrance was clearly visible as we drove down the mountain near dusk that night. With my telescope, we saw a small cascade of water emerging from the entrance. Clearly, the lower sump was still closed, and we had been very lucky to have not found our way through the middle cave and into Infiernillo. Soon after we packed the telescope away, a heavy rain accompanied us down the mountain, and we had to wonder how long our window of escape from the flooded Sistema Purificación had remained open.



## PEP MEMBERSHIP LIST - AUGUST 1994

Bob Anderson  
 Jerry Atkinson  
 Sheila Balsdon  
 Wayne Bockelman  
 Don Broussard  
 Jim Coke  
 Don Coons  
 Michael Crawford  
 Bill Feely  
 Jim Feely  
 John Fogarty  
 Andrea Futrell  
 Nico Hauwert  
 Louise Hose

Susie Lasko  
 George Love  
 Barbara Luke  
 Jim McLane  
 Greg McNamara  
 Bill Mixon  
 Lyle Moss  
 Linda Palit  
 Dale Pate  
 Mack Pitchford  
 Carl Ponebshek  
 Dawn Reed  
 Charley Savvas

Terry Sayther  
 Steve Smith  
 Peter Sprouse  
 John Stembel  
 Bill Stephens  
 Tag Swann  
 Terri Treacy  
 George Veni  
 Carol Vesely  
 Harry Walker  
 Jack White  
 Terri Whitfield  
 Cathy Winfrey



# PURIFICACION AREA CAVE DESCRIPTIONS

Contributors: John Fogarty, Pat Kambesis,  
Scott Scheibner, and Peter Sprouse  
Faunal lists compiled by James R. Reddell



Río Corona stream passage. 1990 photo by Peter Sprouse

**CUEVA DEL RIO CORONA** PEP 85  
Yerbabuena, Tamaulipas  
Length: 1151 meters Depth: 38 meters  
UTM coordinates: E 456,810 N 2,644,945

Cueva del Río Corona resurges at the base of a large cliff 500 meters north of Yerbabuena, at about 1300 meters elevation. The waters of the Río Corona flow from a large sump pool dammed with travertine. This stream flows north a short ways to a long waterfall adjacent to Cueva Paraíso Difícil. A higher entrance accessed by a climb is just east of the sump entrance. This goes south as a stoopway to a Y intersection. To the right it pinches, while the left way is a low, awkward belly crawl with a breeze. This eventually opens into a flowstone gallery with an undercut 3 meter drop (Brian's Shelf) to the river. Downstream the water cascades over flowstone to a narrow sump. Upstream a dam holds back the waters of a 175-meter-long canal. To the left at this point is a parallel passage leading to a sump. Past the canal a climb above river level leads to a short handline back down to the flow, then up a flowstone cascade named Water Bison Falls. Then a borehole goes a short ways to the large upstream sump pool which forms the south end of the cave.

Above Water Bison Falls is an upper level maze section which heads north back toward the surface cliff face. A series of small loops, the Drillboy Tubes, lead to a 120-meter-long canal that ends in a sump. This sump likely connects to an adjacent sump in Cueva de Pie en Boca.

Reaching Cueva del Río Corona was the object of several aborted forays beginning in April 1980. It was finally reached on 23 November 1981 by Jerry Atkinson, Jon Cradit, Jocie Hooper, Jeff Horowitz, and Pete Strickland. They descended the steep coullour from the top of the Yerbabuena cliffs, then rappelled to the bottom. They looked at the sump pool, but did not climb up to the dry overflow entrance.

The spring was revisited in November 1988 and was dived by Jim Bowden. He reached airspace after about 60 meters at the bottom of a shallow pit, but was unable to climb out wearing his scuba gear. His description of this area does not match the downstream sump reached via the dry entrance, thus a connection of the two entrances has not been confirmed (or surveyed).

As Jim was diving, Brian Burton and Terry Raines gained access to the upper entrance and explored into the cave for several hundred meters. They explored the remainder of the cave over the next year along with Don Broussard, Mark Minton, and others. A survey was started in November 1990 by Liz Canning, Jon Cradit, Andrea Dakowski, Val Ellis, Mike Futrell, Pat Kambesis, Jack Kehoe, Susie Lasko, Peter Sprouse, Cyndie Walck, and Carol Vesely. It was completed a year later by Harvey DuChene, John Fogarty, Dawn Reed, and Bill Stephens. (PS)

A collection of cirolanid isopods, *Speocirolana ?pelaezi* Bolívar y Pieltain, was made on 20 November 1990 by Peter Sprouse. The specimens were infested with ostracods of the family Entocytheridae.

**CUEVA DE PIE EN BOCA** PEP 241  
Yerbabuena, Tamaulipas  
Length: 336 meters Depth: 12 meters  
UTM coordinates: E 456,820 N 2,644,970

Cueva de Pie en Boca is situated on a cliff face 500 meters north of Yerbabuena, at about 1330 meters elevation. It is 30 meters directly above the entrance to Cueva del Río Corona. The main passage of the cave goes back about 110 meters to a sump. This sump almost certainly connects to a corresponding sump in the upper level of Cueva del Río Corona.

This cave was first explored by Jon Cradit, Jack Ralph, and others, probably in December 1981. They

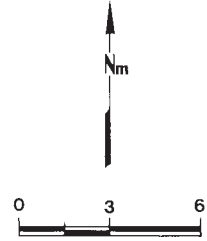
# CUEVA PEREZA

Yerbabuena, Municipio de Guemez  
Tamaulipas, Mexico

Suunto compass/inclinometer & tape survey:

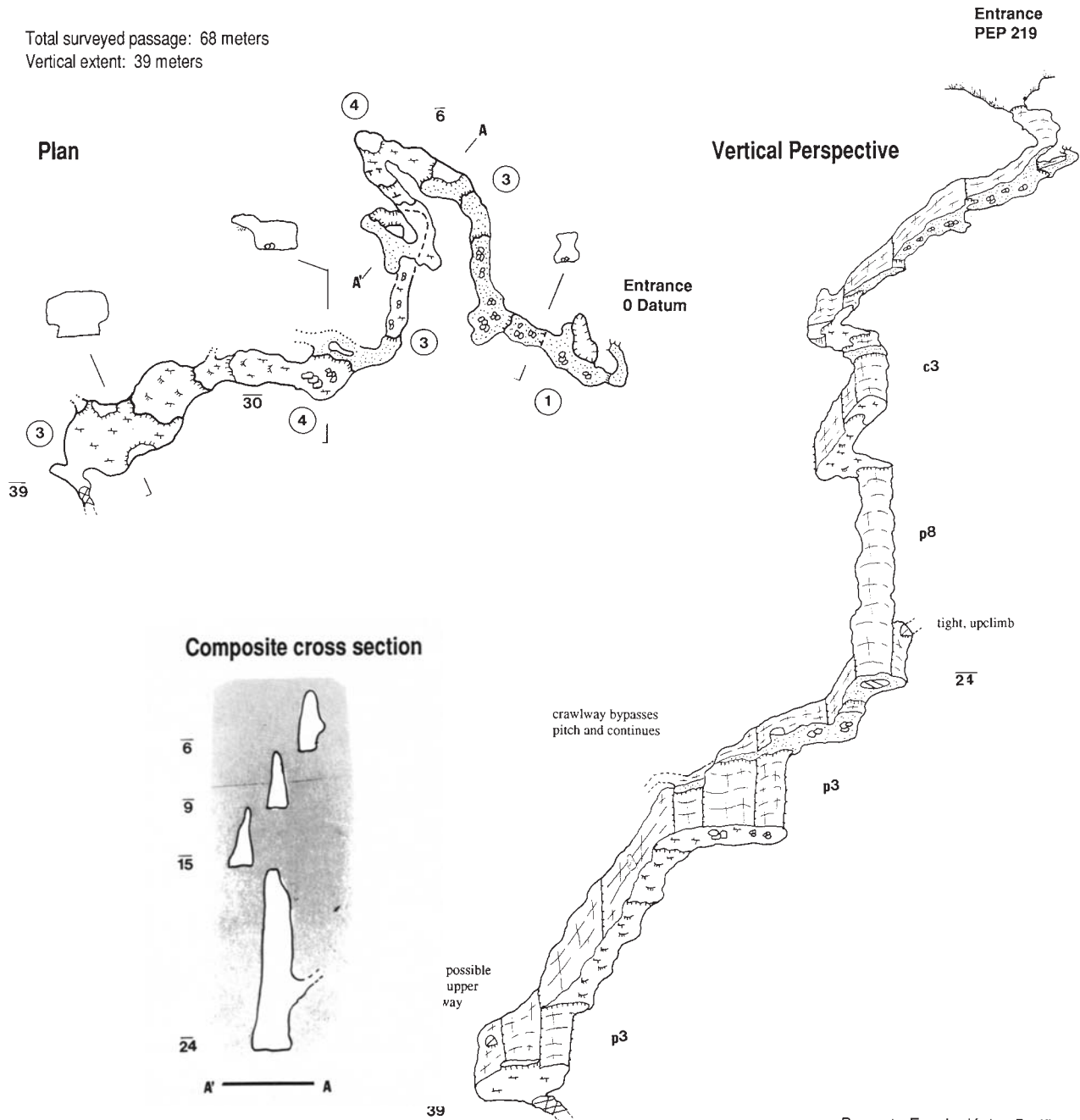
Kris Green  
Cyndie Walck  
Pat Kambesis

November 1990



Scale in Meters

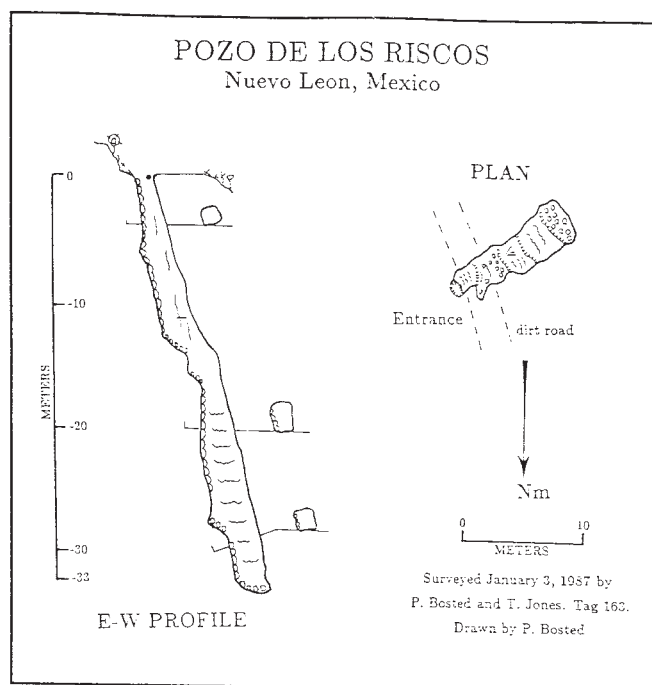
Total surveyed passage: 68 meters  
Vertical extent: 39 meters



Proyecto Espeleológico Purificación  
drafted by P. Kambesis, 1992

rappelled to it from the colour above and explored back to the sump. The cave was surveyed in November 1991 by Jon Cradit, John Fogarty, George Love, Steve Miller, and Peter Quick. They also connected in two adjacent cliffside entrances and explored a descending crawlway. The cave name was inspired by Jon's antics with a grappling hook accessing the entrance. (PS)

**POZO DE LOS RISCOS** PEP 163  
 Cuauhtemoc, Nuevo León  
 Length: 40 meters Depth: 33 meters  
 UTM coordinates: E 452,954 N 2,641,315



This cave is located along the east side of a spur road off of the main road that goes south from Cuauhtemoc, at an elevation of 2397 meters. The entrance shaft slopes steeply back underneath the road at a 70 degree angle. It ends in a rubble floor at -33 meters. This pit was explored and mapped by Peter Bosted and Tim Jones on 3 January 1987. (PS)

**POZO DE LA NAVIDAD** PEP 291  
 Conrado Castillo, Tamaulipas  
 Length: 7 meters Depth: 13 meters  
 UTM coordinates: E 456,820 N 2,641,590

This pit is located 1700 meters north-northwest of Conrado Castillo at 2120 meters elevation. It is about 100 meters south of and slightly uphill from Cueva del Pederal. The picturesque entrance is surrounded by

maguays. It is 13 meters to the floor of organic debris and dirt, with no leads. There is a sunken area in the floor that could be a possible dig site. Seen in the pit were three moss bird nests, numerous acorn shells, blue millipedes, gnats, and snail shells. Pozo de la Navidad was located and explored on 27 December 1993 by Jed Mosenfelder, Pam Oczkowski, and Scott Scheibner. (SS)

**CUEVA PEREZA** PEP 219  
 Yerbabuena, Tamaulipas  
 Length: 68 meters Depth: 39 meters  
 UTM coordinates: E 457,600 N 2,643,412

Cueva Pereza is located in a pasture 1000 meters southeast of Yerbabuena, at 1470 meters elevation. The entrance is in a small, heavily vegetated sink. A layer of sediment, washed in from the adjacent field, covers the bottom of the sink and the first 10 to 12 meters of passage. The entrance is a 1.5 meter down-climb into a stoopway-sized passage. Within a few meters of the entrance the ceiling rises to a height of 3 meters, and the passage continues as a sloping canyon. A 3-meter climbdown corkscrews to an 8-meter pit. A small, tight upper level lead is situated 1.5 meters from the bottom of the pit. A 3-meter drop is encountered just beyond the first pit, and leads to a steep, bedrock ramp. The ramp is broken by three climbable ledges. The 3-meter drop can be bypassed via a west-trending crawlway. The crawl parallels the ramp, joins it as a small overlook between the first and second ledge, and continues low and tight to the southwest. The bedrock ramp drops into a small room. A window on the north wall of the room probably connects to the parallel bypass crawl. The south end of the room ends in a narrow sump pool.

This cave was originally explored by Mark Minton and others, and was surveyed in November 1990 by Kris Green, Pat Kambesis, and Cyndie Walck. (PK)

**CUEVA ASA MESHI MAE** PEP 210  
 Las Chinas, Tamaulipas  
 Length: 70 meters Depth: 48 meters  
 UTM coordinates: E 454,891 N 2,637,523

This cave is located 1800 meters south-southeast of Rancho Nuevo. It is on the east edge of the Rancho Nuevo-Mesas Juárez road at an elevation of 2733 meters. The entrance is a narrow fissure bounded by a headwall with a small crawl at its base. This crawl immediately leads to the first pitch, a 3-meter nuisance

drop to a debris-covered false floor. This is apparently formed by large chockstones which are (hopefully) well cemented in place. The next drop is a relatively free 15 meters to the top of a flowstone divide. Dropping another 5 meters to the east is a mud-floored chamber with a smaller-than-body-sized drain. Five meters above the floor is an alcove that may prove to be another pit. It was not explored, although a vigorous pendulum of the rope might get one there. The cave continues to the west as a sharply sloping 30 meter pit which ends definitively in a mud plug. Exploration was done by PEP cavers Allan Cobb, Val Ellis, Susan Lasko, and John Fogarty on a Las Chinas recon trip on 19-20 October 1989. (JF)

### **POZO TETRICO**

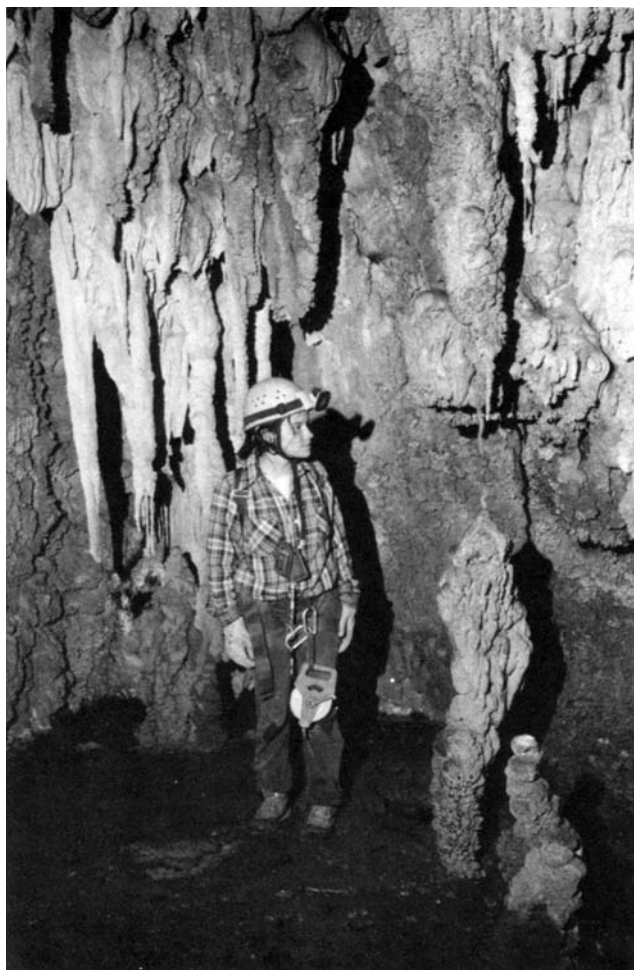
PEP 274

Las Chinas, Tamaulipas

Length: 308 meters Depth: 99.5 meters

UTM coordinates: E 454,228 N 2,641,550

Pozo Tetrico is located 2500 meters north of



Sandy Henson admires stals at base of entrance drop in Pozo Tetrico. 1992 photo by Peter Sprouse

Rancho Nuevo, at 2555 meters elevation. It is situated in the crotch of a logging road split along the route to Cueva de California. The pit entrance is about 3 meters across, and drops 10 meters to a steep dirt slope. This slope spills over a flowstone overhang to land in a spacious formation chamber.

There are three ways out of this chamber, one of which is up onto a high shelf to the southwest. This has not been surveyed or completely explored, but may lead to another entrance. The second way on is a low crawl, but this can be bypassed with a climb over and a short rope drop. The crawl is the quicker route. These two routes join in a rimstone-floored room with large pearls. Beyond a leftward bend the two main routes of the cave diverge. A flowstone drain in the floor leads to the deep part of the cave. Straight ahead the cave continues horizontally and through a squeeze into a large sloping gallery split by a number of partitions.

At the northwest corner of this gallery is an unsurveyed passage that was pushed to a pinch with daylight visible beyond; this could connect to the high shelf below the entrance drop. At the southwest corner of the large gallery is a passage that goes 10 meters to a vertical squeeze. Up this there is an unsurveyed chamber that does not appear to go.

The flowstone drain leading to the bottom of the cave funnels into a short climbdown. Below this is a low room which drains into the constricted top of the second pitch. This was observed to "breathe" at short intervals. This 17-meter pitch bells out into a flowstone canyon with three ways to go at the bottom. A passage to the west leads to a body of water named Lake Charles. This could be a useful source of water for cavers camping in the dry Las Chinas karst. Two stacked passages lead to the north. The upper one leads to a deep rift. This can be free-climbed down for about 25 meters to an unpromising dig with slight airflow.

The lower north passage winds down to the third pitch, 18 meters deep. This lands on a ledge, where a 7-meter flowstone drop continues down to the top of the final 24-meter pitch. A trickle of water showers down this drop to drain into a crawl at the bottom, which can be entered for about 10 meters to a hopeless pinch.

The entrance to Pozo Tetrico was originally noted in April 1982 by Peter Sprouse and others. It wasn't checked until 26 November 1992, when Sandy Henson rappelled the 20-meter entrance drop and reported that it went. Bev Shade and Peter Sprouse went down and they surveyed half of the upper level, and noted the

Cueva 朝飯前 (Asa Meshi Mae)

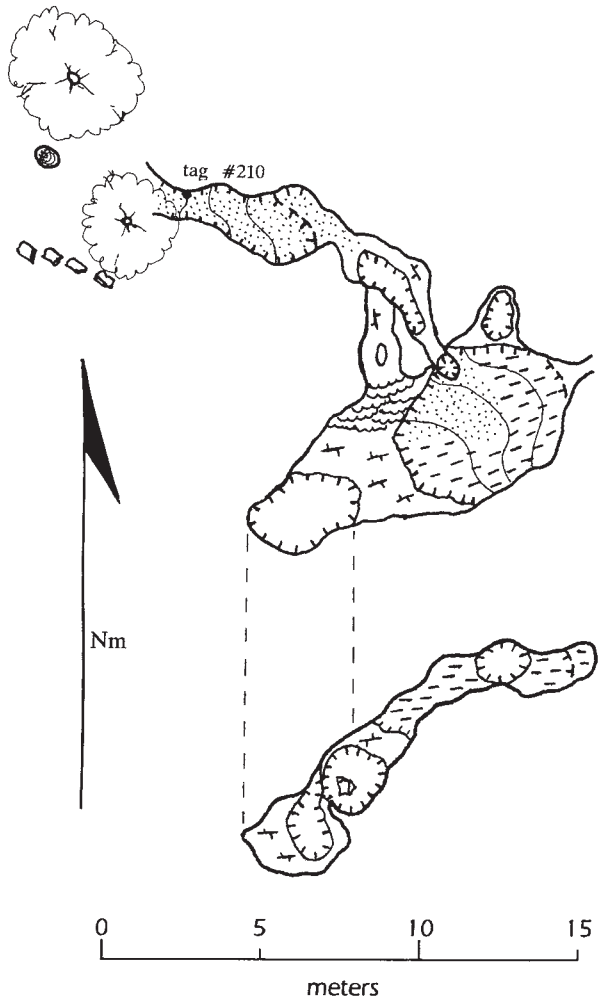
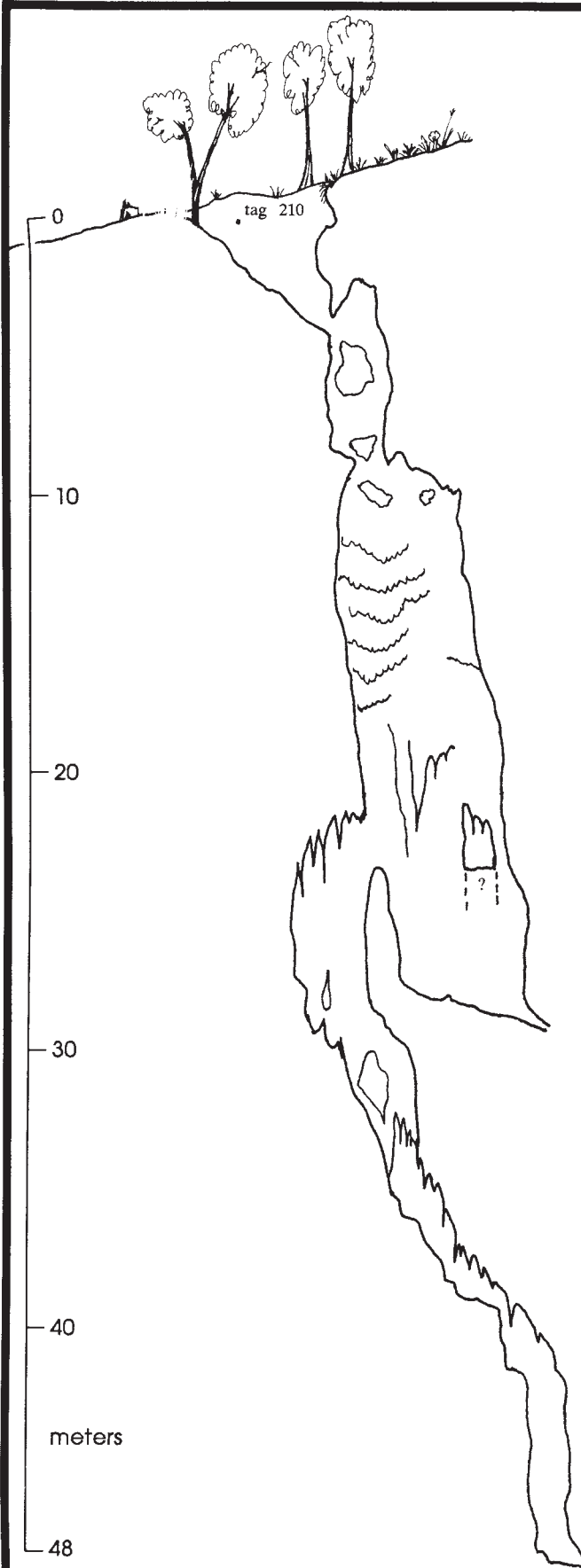
Las Chinas, Tamaulipas

( X=454891, Y=2637523, Z=2735 )

PEP 210

PROYECTO ESPELEOLOGICO PURIFICACION

Drafted by John Fogarty © 1990



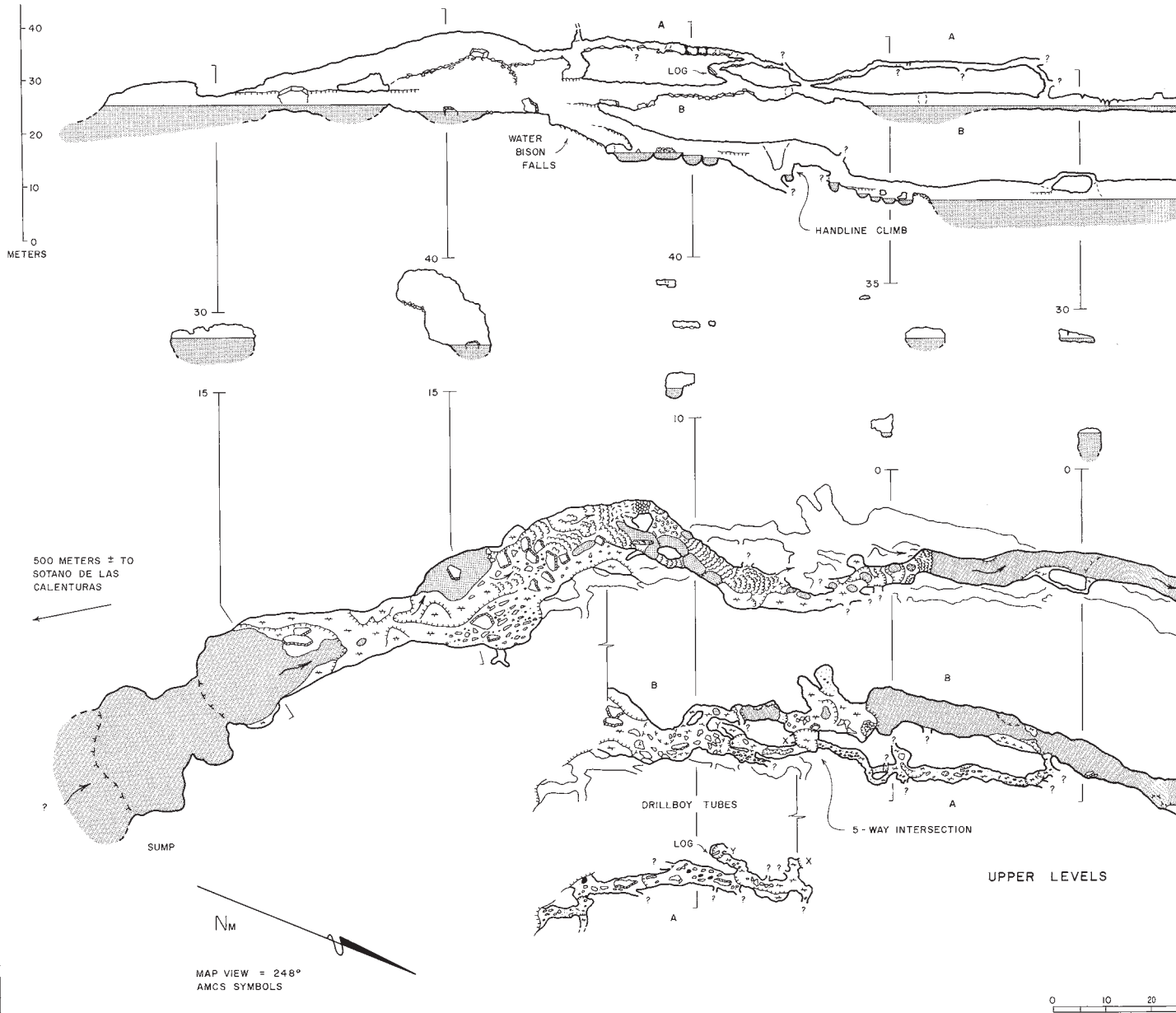
Suunto and tape Survey  
October 19-20, 1989  
Allan Cobb, Val Ellis,  
John Fogarty, Susan Lasko

# CUEVA DEL RIO CORONA

YERBABUENA, MUNICIPIO DE GUAYAMA

SUUNTOS AND TAPE SURVEY      LENGTH : 1151 M      DEPTH : 38 M      PEP 85  
 20 - 23 NOVEMBER 1990 : LIZ CANNING, JON CRADIT, ANDREA DAKOSKI, VAL ELLIS, MIKE FUTRELL,  
 PAT KAMBESIS, JACK KEHOE, SUSIE LASKO, PETER SPROUSE, CYNDIE WALCK, CAROL VESELY  
 24 NOVEMBER 1991 : HARVEY DUCHENE, JOHN FOGARTY, DAWN REED, BILL STEPHENS

PROYECTO ESPELEOLOGICO

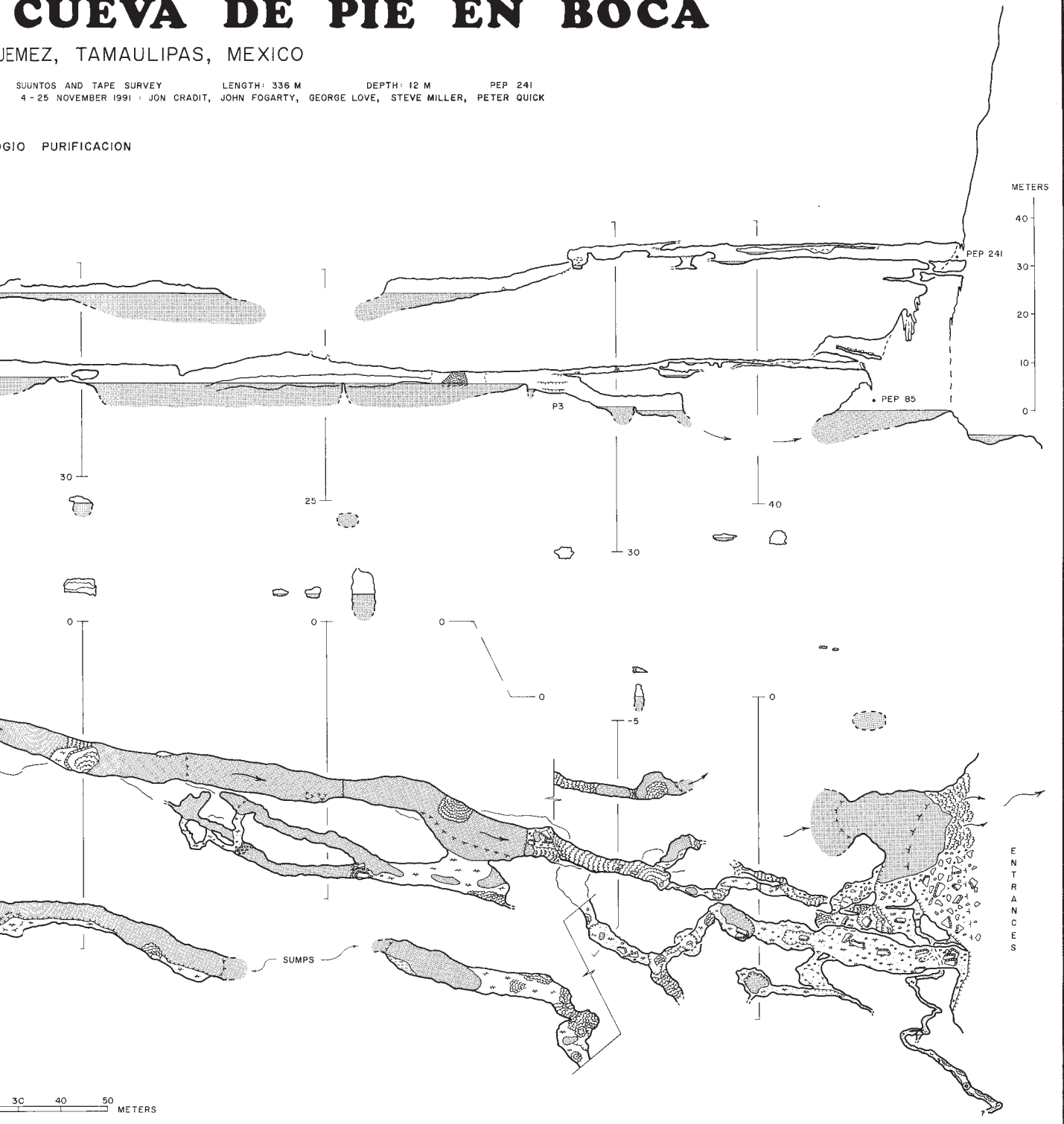


# CUEVA DE PIE EN BOCA

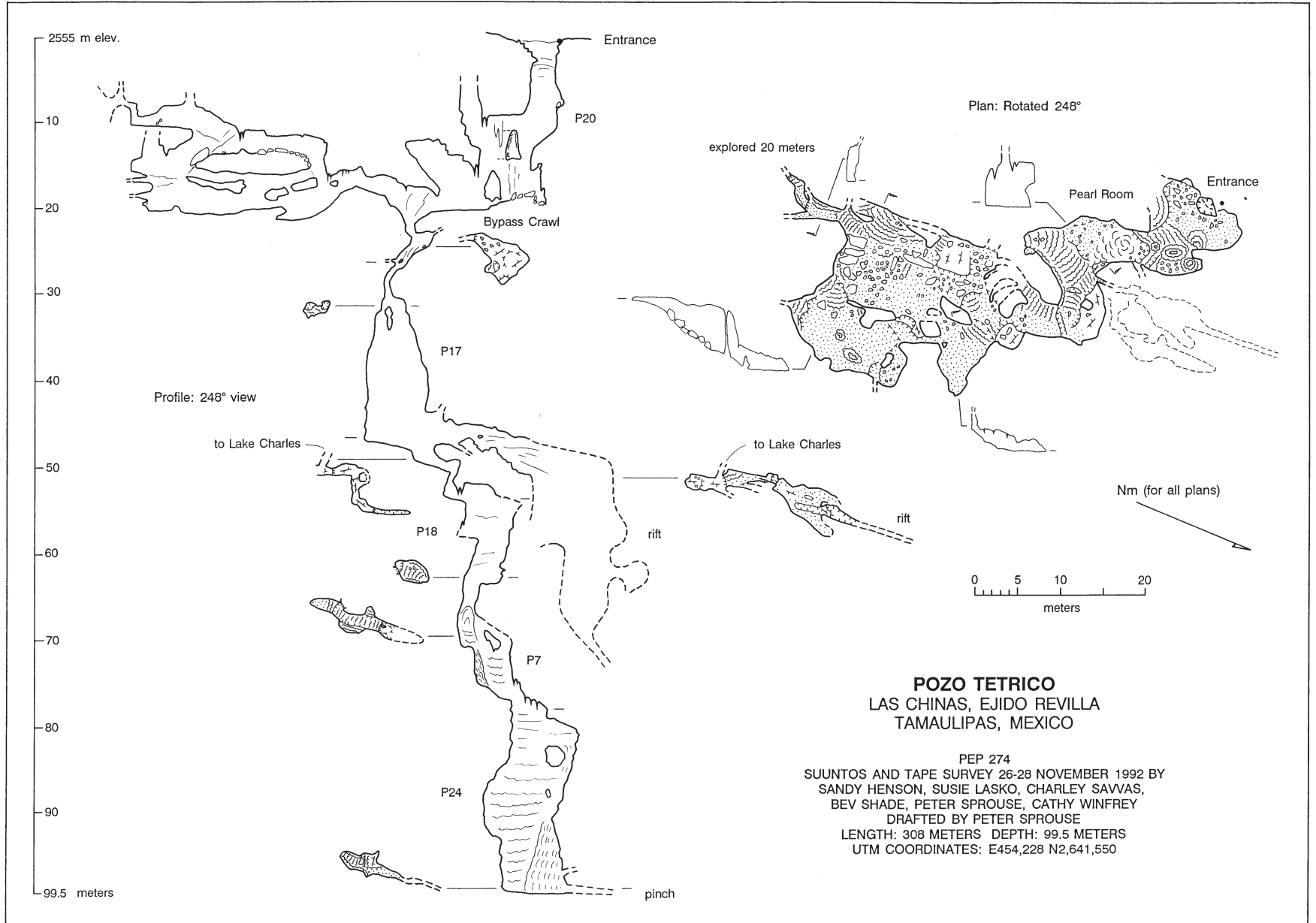
JEMEZ, TAMAULIPAS, MEXICO

SUUNTS AND TAPE SURVEY      LENGTH: 336 M      DEPTH: 12 M      PEP 241  
4 - 25 NOVEMBER 1991 : JON CRADIT, JOHN FOGARTY, GEORGE LOVE, STEVE MILLER, PETER QUICK

REGIO PURIFICACION



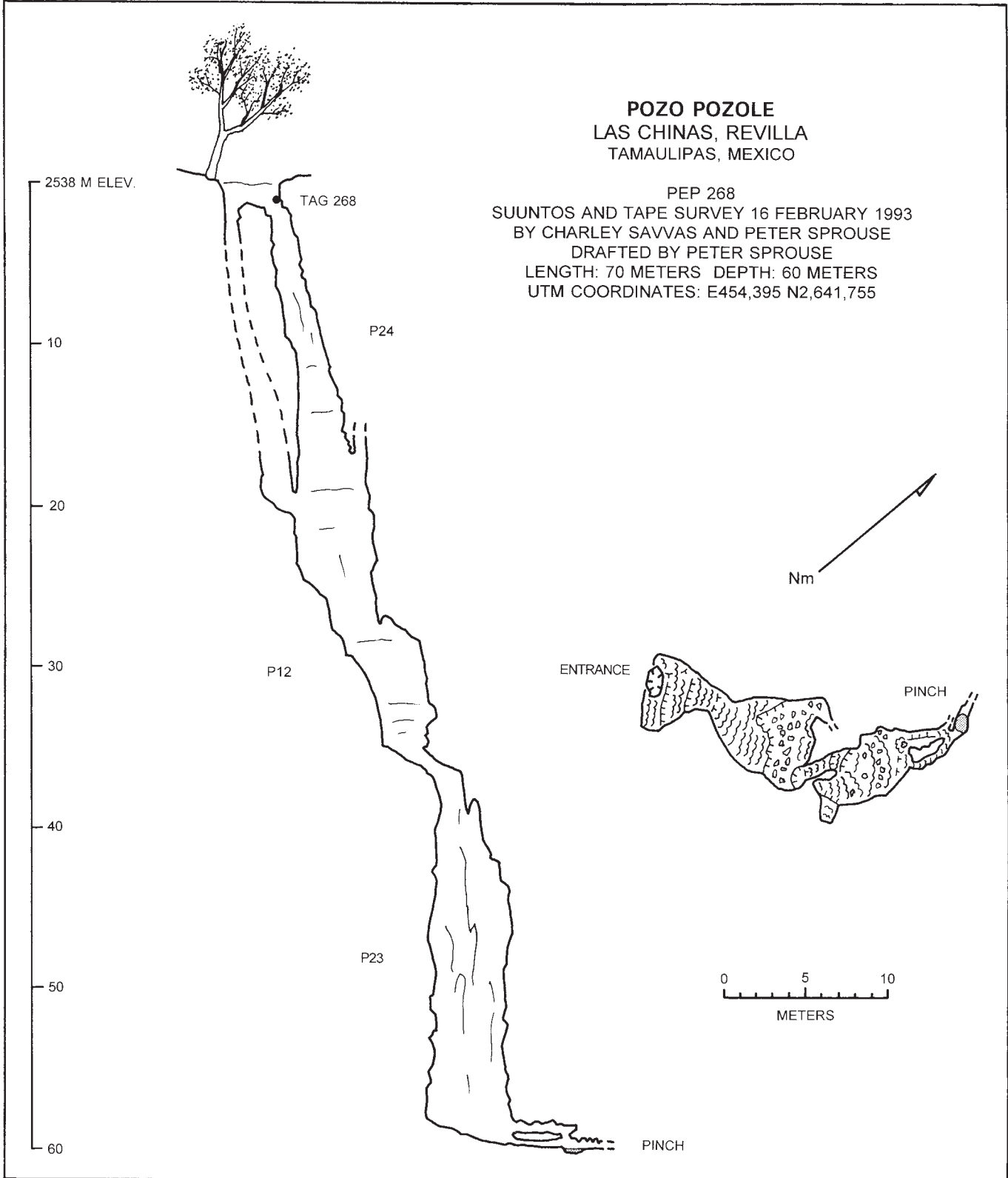
DRAWN BY MIKE FUTRELL 1994





**POZO POZOLE**  
LAS CHINAS, REVILLA  
TAMAULIPAS, MEXICO

PEP 268  
SUUNTOS AND TAPE SURVEY 16 FEBRUARY 1993  
BY CHARLEY SAVVAS AND PETER SPROUSE  
DRAFTED BY PETER SPROUSE  
LENGTH: 70 METERS DEPTH: 60 METERS  
UTM COORDINATES: E454,395 N2,641,755



second drop with airflow. The following day, Susie Lasko and Charley Savvas pushed down three more drops while Peter, Bev, Sandy, and Cathy Winfrey mapped more in the upper level. On 28 November Susie, Charley, Peter, and Bev explored the last drop to the pinch, and also pushed the Rift. Charley and Peter returned on 15 February 1993 and worked on enlarging the bottom pinch over the next several days. They gained another 10 meters before declaring it hopeless. (PS)

Collections were made in November 1992 by Charley Savvas and Peter Sprouse and in February 1993 by Peter Sprouse. None of the material has been studied.

Isopods: Trichoniscidae genus and species (troglomite)  
 Spiders: Araneae undetermined  
 Mites: Acarina undetermined  
 Harvestmen: Phalangodidae genus and species  
 Centipedes: Lithobiomorpha undetermined  
 Millipedes: Diplopoda undetermined  
 Pyrgodesmidae genus and species (troglophile)  
 Springtails: *Oncopodura* ?new species (troglomite)  
                   *Pseudosinella reddelli* Christiansen (troglophile)  
 Slender entotrophs: Campodeidae genus and species  
 Cave crickets: Rhaphidophoridae genus and species (troglonexe)  
 Plant hoppers: Homoptera undetermined  
 Ground beetles: Trechini genus and species (troglomite)

**POZO POZOLE** PEP 268

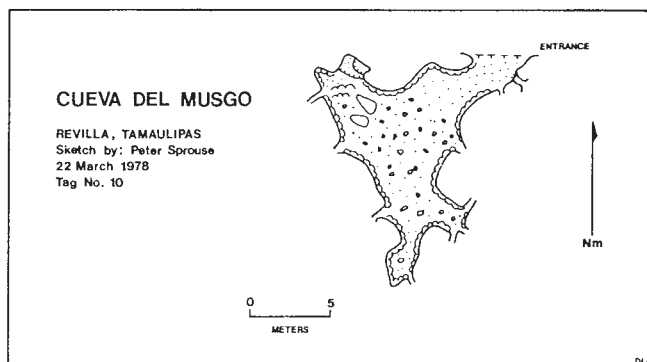
Las Chinas, Tamaulipas  
 Length: 70 meters Depth: 60 meters  
 UTM coordinates: E 454,395 N 2,641,755

Pozo Pozole is located 2700 meters north-north-east of Rancho Nuevo, at 2538 meters elevation. It is just east of Pozo del Toro (PEP 266), which lies at the end of a new logging spur on the trail to Cueva de California. The entrance is a small sink with dual shafts that join 20 meters down. The larger of these two shafts is a 24-meter pitch to a steeply sloping ledge, followed by a 12-meter drop. A very short crawl then opens into the final 23-meter drop. This drains into two tight flowstone bellycrawls that join and pinch. Airflow noticed at the entrance was not detected at the bottom.

This pit was located in November 1992 by Bill Gassiot. Charley Savvas and Peter Sprouse explored and surveyed it on 16 February 1993. (PS)

A collection was made on 16 February 1993 by Peter Sprouse and Charley Savvas. The material all remains unstudied.

Spiders: Araneae undetermined  
 Harvestmen: Phalangodidae genus and species  
 Cave crickets: Rhaphidophoridae genus and species (troglonexe)  
 Ground beetles: Trechini genus and species (troglomite)



**CUEVA DEL MUSGO** PEP 10

Revilla, Tamaulipas  
 Length: 30 meters Depth: 5 meters  
 UTM coordinates: E 452,450 N 2,647,500

This small cave is located about 1100 meters east of Revilla at around 2100 meters elevation, although the exact location is uncertain. It is on a wooded slope in a small mossy rock outcrop. The low entrance leads into a wide room with several branches that all pinch. This cave was found and explored on 22 March 1978 by Jerry Atkinson, Dale Pate, Mark Shumate, Peter Sprouse, Terri Treacy, and Leslie Turpin. (PS)

A collection made in the cave on 22 March 1979 by Dale Pate and Peter Sprouse included the following material:

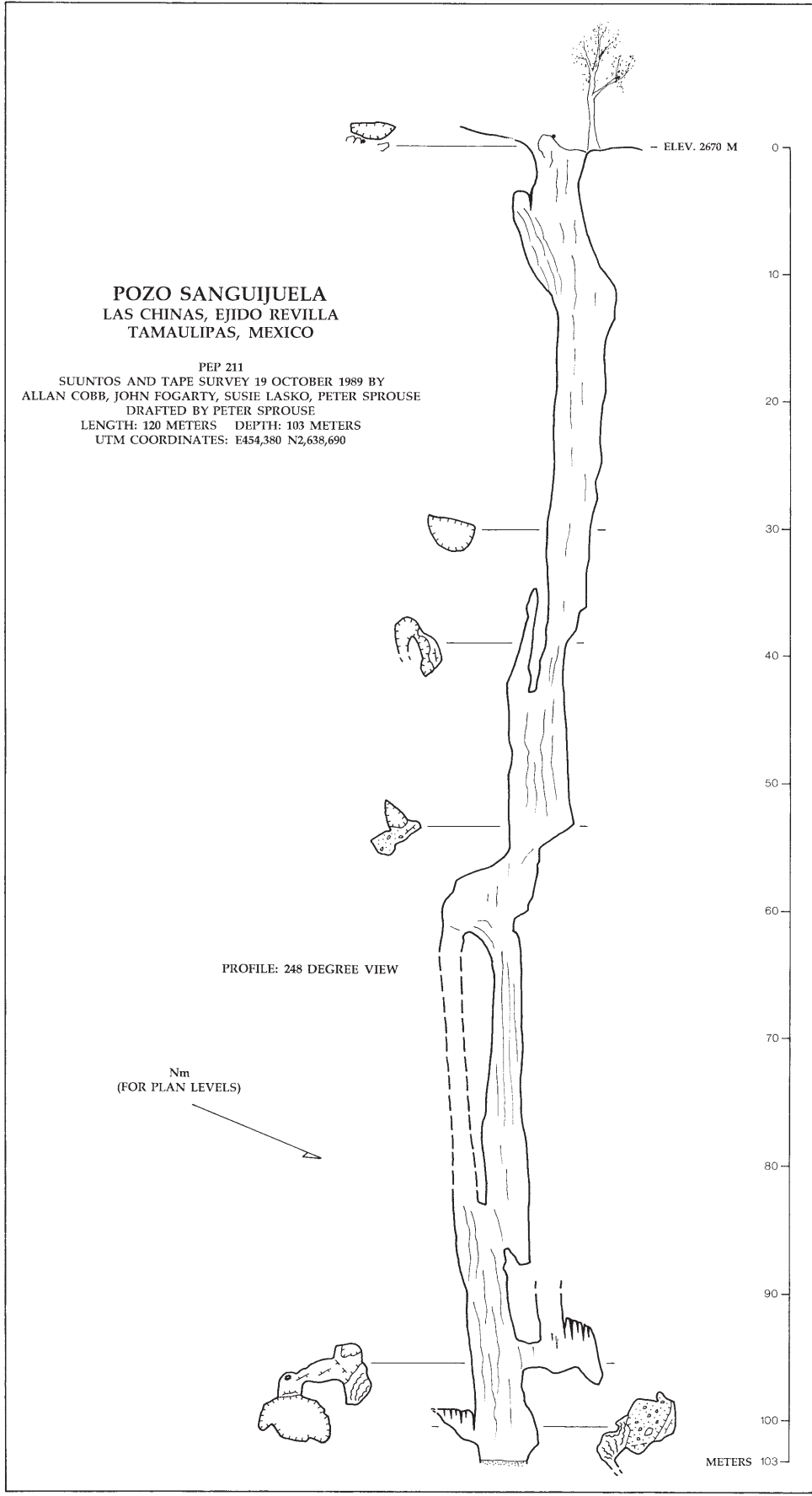
Snails: *Euglandina* sp. (accidental)  
 Spiders: *Cicurina* sp. nr. *iviei* Gertsch (troglophile)  
           *Coryssoenemis abemathyi* Gertsch (troglophile)  
           Salticidae genus and species (accidental)  
 Harvestmen: *Leiobunum* sp. (troglonexe)  
 Cave crickets: Rhaphidophoridae genus and species (troglonexe)  
 Flies: Diptera undetermined

**POZO SANGUIJUELA** PEP 211

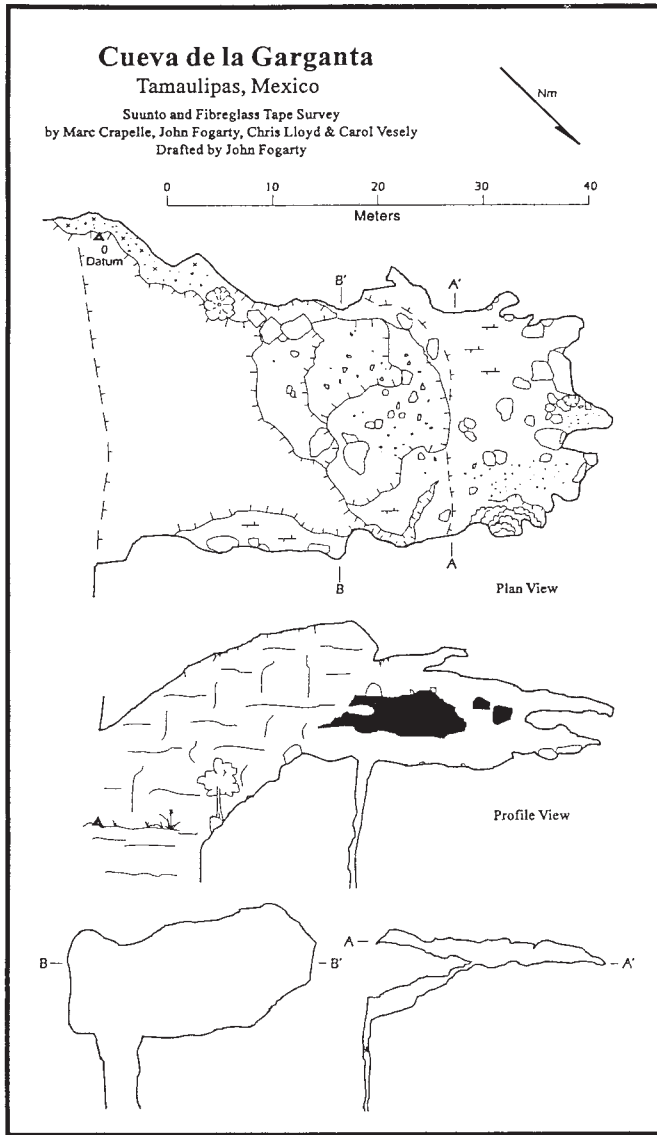
Las Chinas, Tamaulipas  
 Length: 120 meters Depth: 103 meters  
 UTM coordinates: E 454,380 N 2,638,690

Pozo Sanguijuela is located 600 meters southeast of Rancho Nuevo, at 2670 meters elevation. It is west of a footpath that leads from Rancho Nuevo toward Mesas Juárez. The entrance measures 1 by 3 meters. The 103-meter pitch is broken by ledges, and the lower part has a parallel shaft which rejoins not far off the floor. A flowstone shelf 8 meters off the floor loops down to the bottom via a squeeze.

This pit was located by Allan Cobb, David McKenzie, and Paul Reavely on 3 September 1989. Rocks tossed in rattled down for 15 seconds. It was explored on 19 October 1989 by Allan, John Fogarty,



Susie Lasko, and Peter Sprouse. (PS)



**CUEVA DE LA GARGANTA**

PEP 225

Yerbabuena, Tamaulipas

Length: 50 meters Depth: 26 meters

UTM coordinates: E455,840 N2,645,840

Cueva de la Garganta is located in a cliff-face 1500 meters northwest of Yerbabuena at about 1200 meters elevation. It is essentially a large flowstone-choked shelter cave. The cave was checked on 20 No-

vember 1990 by Chris Lloyd, John Fogarty, Mark Crapelle, and Carol Vesely after a nasty 300 meter hike down a 45 degree slope that leads to the upper part of the entrance. FM radios and a spotter from the other side of the canyon made finding the entrance much easier.

A 50 meter rappel gave access to the south wall of the entrance. Chris Lloyd led a bold traverse from the base of the rappel to the upward-trending slope of the cave. Since virtually every piece of protection popped out, the placements were more psychological than practical. While the survey of the remainder of the cave was in progress, Chris and John attempted to find a continuation under the flowstone choke at the back of the cave. The push was unsuccessful in locating going passage. (JF)



John Fogarty climbing out of Pozo Sanguijuela. 1989 photo by Susie Lasko



Charley Savvas checks out Cueva de San Juan as Jon Cradit rappels in. 1993 photo by Peter Sprouse

## CAVING IN THE WEST

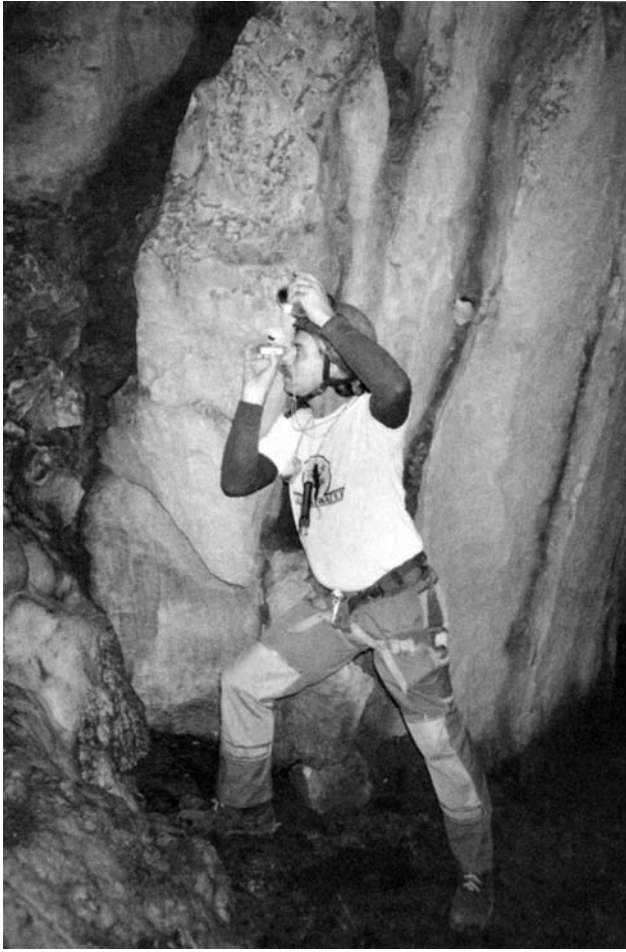
by Peter Sprouse

*November 1993:* It had been 18 months since we'd been out to El Viejo, the "western frontier" of the PEP area. That's about as long as I can stand to be away from that fine place, so Charley Savvas, Jon Cradit, Barbara Luke, and I headed south in Charley's Scout. We buzzed through Laredo to Mamulique Pass, where we did not find Paul Fambro and Terry Gregston awaiting us as planned. So we sacked out on the pavement for a few hours.

On the 20th we drove on through Monterrey to Linares Canyon, stopping to visit Cueva de El Ebanito and Pozo del Gavilán. As we gassed up near Galeana, Paul and Terry fortuitously found us, muttering about border permit hassles. United, we continued on south to Zaragoza for the final gas-up at a tienda just before town. As we climbed the steep grade up Cerro el Viejo at dusk, Charley's transfer case began to cause

trouble. It wouldn't stay in low range, and high range wouldn't pull us in the thin air. Oh, and the brakes were fading too. We rolled some boulders under the tires to keep from rolling off the mountain while Charley bled the brakes, providing a possible psychological boost if nothing else. This seemed like a good time to try his winch, which, lacking an actual switch, did work when shorted out with the appropriate sized screwdriver. So we painstakingly crawled up the hill to where Paul could pass us. He then hooked onto us with a tow strap until the road levelled out enough for the Scout to power itself. We made it to La Escondida with no more trouble. We set up a nice camp in a big sink near the village, and soon a fire and dinner had us content.

Our camp was in the grassy sink on the ridgetop south of the imposing Cerro el Viejo. The morning



Jon Cradit surveying in Pozo del Primero de Septiembre. 1993  
photo by Peter Sprouse

sun threw spectacular colors across the great limestone wall above us, peppered with distant flocks of squawking parrots. For our first order of business, we decided to survey and push Pozo del Primero de Septiembre, which Paul had explored solo about 10 years previously. It was a fine 109-meter free drop to a flat floor. Charley freeclimbed to a high lead Paul had reported, but it didn't go. Then he pushed on down a rift drain and called back for more rope. Both he and Paul descended the next pitch, a 21-meter drop. At the bottom was a meander pinch which blew a lot of air, but was hopeless. Barbara, Jon, and I surveyed down to them, then took turns climbing out the big drop. The total depth was around 139 meters.

### CRETACEOUS PARK

The next day we decided to drive east down some

logging roads to investigate some interesting stream sinks I'd seen on air photos. Additionally, we wanted to find a way into Infierno Canyon, in order to scout for a future canyon descent to the coastal plain. As we descended toward Agua del Toro, we stopped to check a blind valley visible on the air photos. It disappeared in a great-looking entrance in a headwall. Charley explored for 100 meters with his Mini-mag to a watercrawl. It seemed promising despite a lack of airflow, but, as we wanted to recon towards Infierno Canyon, we left it for another time. Then we descended past the village, checking a multitude of roads and sinks. We saw a number of pits, and had lunch by one that looked too good to pass up. We named it Pozo Velociraptor (PEP 278), a 12 meter drop to a sloping crawl. This pinched after 10 meters, and Charley dug on it to no avail. We then followed another road to the edge of Infierno Canyon, where I found a promising cave at the end of a blind valley. I climbed down scoured passage to a removable choke over a 15 meter drop into a large room. This whole area, which we dubbed "Cretaceous Park", seemed quite promising for caves. We walked over to the edge of the canyon looking for a good way in. This area seemed to be too brushy, however. Then we did the steep drive back up to Escondida at dusk.

### EL VIEJO

Our next goal was in the opposite direction: upwards. Our local guide offered to take us to a cave high on the cliffs of Cerro el Viejo that he said blew a lot of air. On foot we contoured along the south face, then climbed up a steep, cliff-walled couloir. After awhile, we took off east across a forested ledge along the face. Soon we were looking down a cliff at the large entrance. We rigged to a tree right above the entrance. Charley went over the lip and put in a bolt with the Hitachi hammer-drill to achieve a free-hang. From there it was a spectacular 30-meter drop into the 30-meter-diameter entrance. It was awesome watching cavers rappel with the view of the sierras in the background. Occasionally flocks of parrots would flash by. The cave (Cueva de San Juan, PEP 279) was basically a large shelter with stal column mazes looping around. A 6-meter drop led down to a dusty dung room, the end. Apparently the reported airflow was just swirling up the cliff-face. The climb back up the cliff was equally impressive.

### CANYONEERING

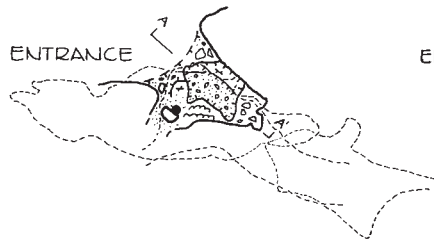
# POZO DE EL CHORREADERO

LA ESCONDIDA  
NUEVO LEON, MEXICO

LENGTH: 99 METERS

DEPTH: 55 METERS

PEP 290

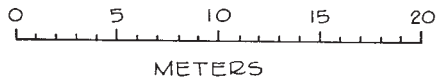


ENTRANCE

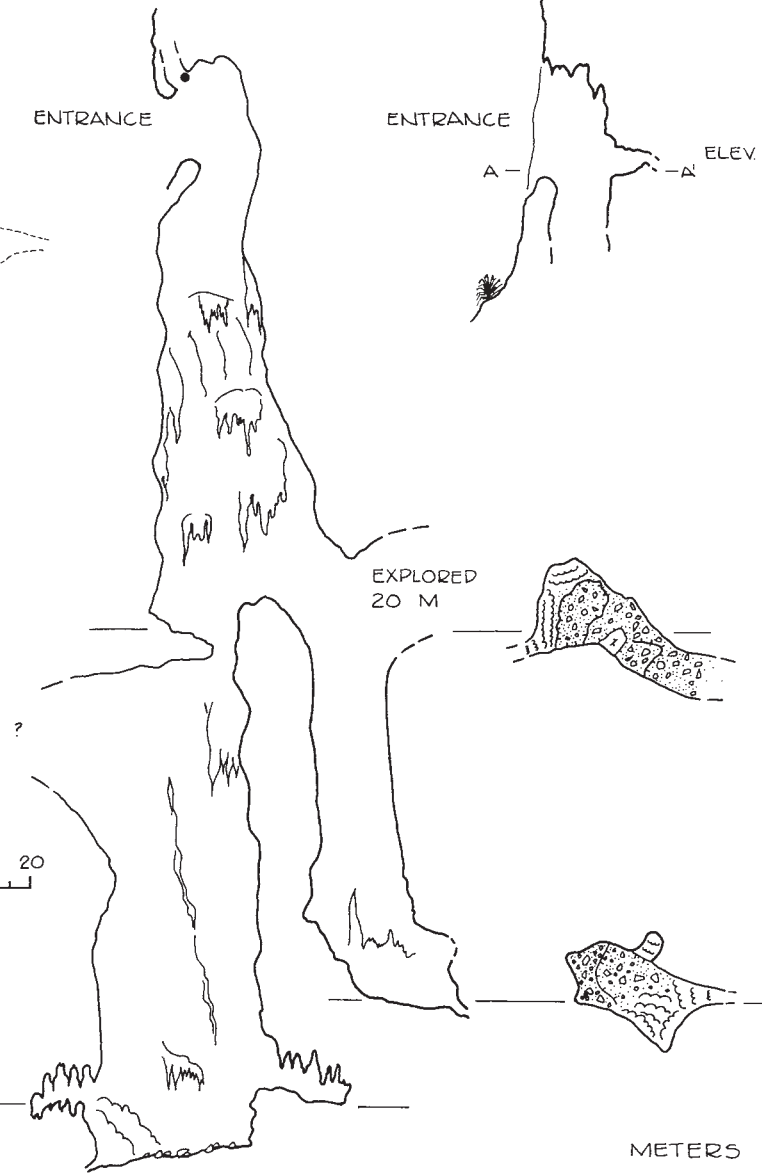
ENTRANCE



ELEV 2500 M



METERS



10

20

30

40

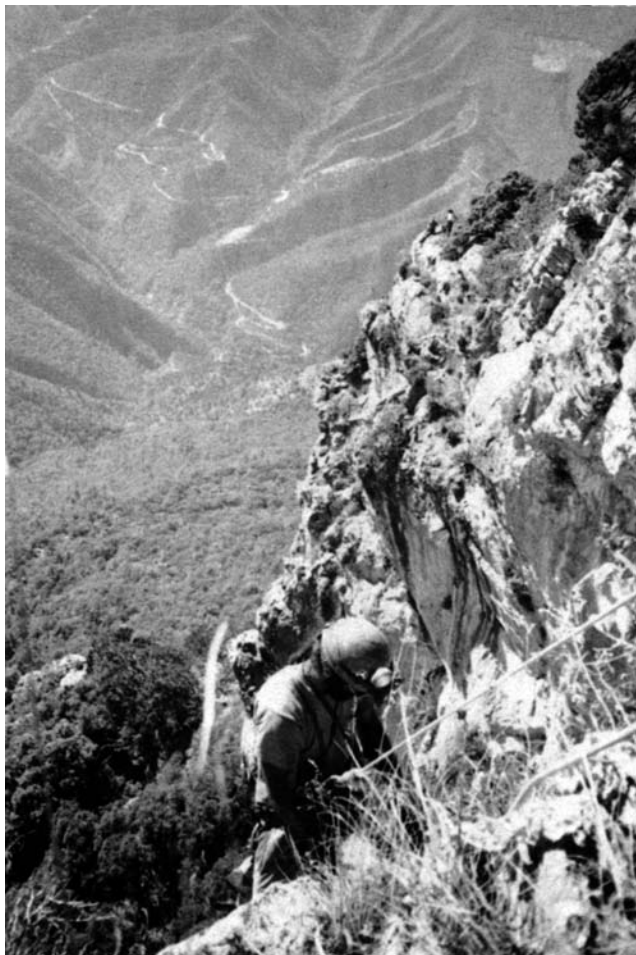
50

METERS

PROFILE 180° VIEW

SUUNTO AND TAPE SURVEY 27 NOVEMBER, 1993 BY BARBARA LUKE,  
CHARLEY SAVVAS AND PETER SPROUSE. DRAFTED BY BARBARA LUKE.

We decided the following day to drive north to Garza and try to access Infierno Canyon from there. We parked the Land Cruiser at El Paraíso and hiked over to La Tinaja, the beginning of a side canyon feeding into Infierno. We followed the scoured arroyo to a 5-meter drop, which we bypassed with a nasty veg scramble. A bit later we reached a drop into a deep plunge pool with narrow vertical walls. We bolted it for a traverse and Charley rappelled in naked (he did wear a seat harness). He placed another bolt and stretched the rope for us. We slid across dry and hiked on to the next drop. It was large and impressive, with great folds in the walls. We rigged a 50 meter 3/8" KMIII, and Charley rappelled to a ledge where he installed a bolt. The lower rappel went through vegetation to a steep bedrock slope. When I got down, Charley was rigging an 8-meter drop to a pool. As it was getting late, he went on to scout ahead while the rest of us descended. We noticed 4 or 5 entrances formed in chevron collapses. Charley came back, having gone about 500 meters to a narrow gorge with



Charley Savvas rappels into the entrance of Cueva de San Juan while Jon and Barbara look on. 1993 photo by Peter Sprouse

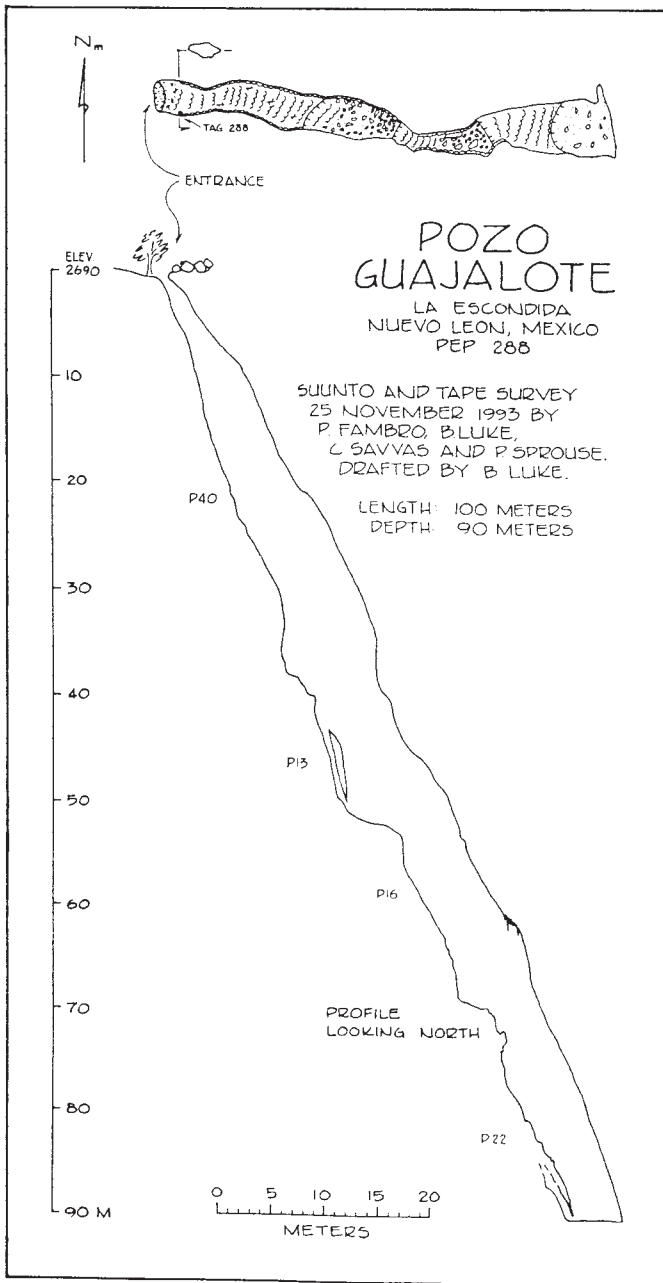
a drop into a plunge pool. Judging from the air photos, he must have been close to a big drop into Infierno Canyon. Before climbing back up, Jon, Barbara, and I mapped one chevron cave, Cueva del Tenedor (PEP 280). It went 40 meters. We climbed and derigged in the dark, and hiked back to Paraíso.

## VERTICAL CAVING

On the sunny morning of the 25th, we lazed around camp awhile waiting for our guide to show us a reported 90-meter pit off to the south. But he was busy with the goats, so we decided to hike up south to look for a pit visible on the air photos. We scouted up a high valley to a pass, but it wasn't the right one. Then we dropped into a wide solution valley called Hoya del Muerto at 2700 meters, intending to climb back up to an eastern pass to find the pit. But we halted when Jon found a pit in the valley floor, his first virgin entrance. Jon, Charley, and Barbara went in to explore and map it. Pozo Piso Falso (PEP 281) was a 16-meter drop, then a dig to open up a second drop of 9 meters. They stopped at terminal breakdown with air. Meanwhile, I had found another steeply dipping pit into which rocks fell a long way. Paul and I began to rig and survey in. About 15 meters down I set a deviation and we shot to it. A bit farther down I got off at a small pocket, and Paul surveyed down to join me. My next rappel got me to a deviation, where we set up a station for a minus 90 to the bottom of the drop. There we were on a ledge, where we rigged the second pitch to a larger ledge. We hollered up for more rope and the others came down. The third drop was 15 meters to another ledge. Just below that I rigged a rebelay that got me to the bottom 20 meters down. It was a terminal flat clay floor. Charley came down with the survey, then we started out derigging. Being Thanksgiving holiday, we named this fine pit Pozo Guajalote (PEP 288).

The following day our guide was still not available to take us to his pit, so we decided to try to find it on our own. In order to hit my air photo lead we headed up the proper eastern trail through a nice high llano. We found my pit with no problem. Pozo Aereo (PEP 289) was 12 meters across and 8 meters deep, with an alcove at one side. Then we dropped down into Hoya del Muerto and located the trail which led up to a southwestern pass where the 90 meter pit was described. Soon we reached a burned mesa where the trail was difficult to follow. I recognized the white crystalline limestone as a previously unreported outcrop of the El Abra reef, likely the northernmost





Charley rigged the 50-meter rope and rappelled in. He set a deviation along the way, but didn't quite reach the bottom. He tied on another rope for the last 2 meters. Although the pit was blind, halfway back up was a bridge where Charley got off and found a separate, parallel shaft. It was 16 meters to another dead bottom. After that I pointed Charley toward another lead across the top of the 16-meter shaft. It led to yet another drop which he was able to freeclimb to a pinch. After climbing out we derigged and hiked



Pozo de El Chorreadero. 1993 photo by Peter Sprouse

exposure of it. We flagged our way through the eerie, featureless burn, bound for a joint intersection visible on the air photos. Only a few small pits were found, so we hiked the 5 kilometers back to camp and arrived at dusk. As a consolation our guide told us that his brother knew of a pit at the base of El Viejo that we could check on our way down the mountain the next day.

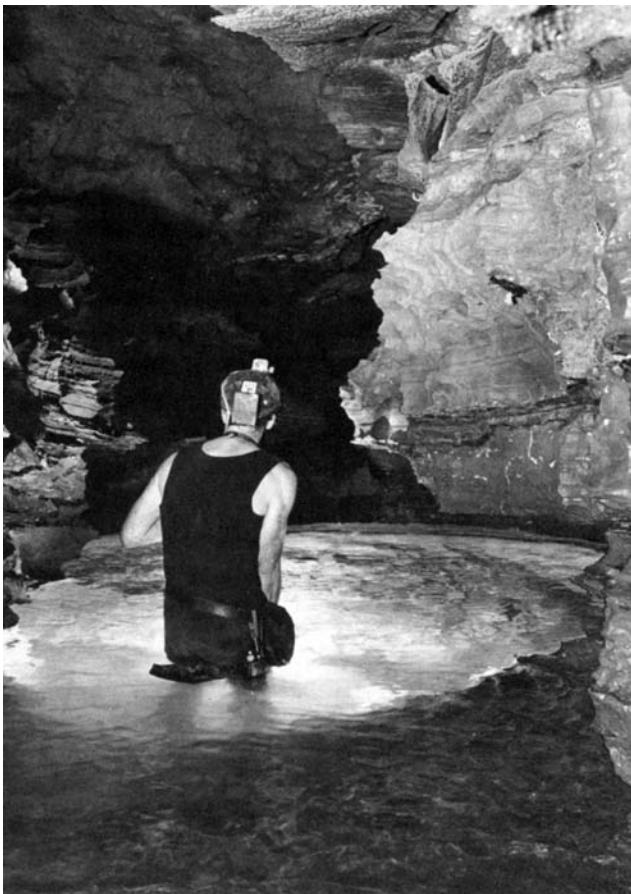
We packed up the trucks and drove a few kilometers back down the road toward Zaragoza to meet our guide, then followed a similar route as to Cueva de San Juan. At the base of the cliff was an entrance that dropped immediately into a pit. We named it Pozo de El Chorreadero (PEP 290), after a local place name.

back to Charley's truck. Charley's successful repair meant we had no more mechanical problems going down the mountain. We went on to bathe at El Salto, then ate at a little cafe in Zaragoza. Past Aramberri after dark we almost hit two scurrying burros, and in San Roberto we suffered a ripped tire caused by a broken shock absorber. Then we continued to Austin without further incident.

# BRINCO - DECEMBER 1993

by Peter Sprouse

During the December holidays of 1993 a large group of cavers gathered at the PEP fieldhouse in Conrado Castillo to pursue various caving activities around the upper part of Sistema Purificación, Cueva del Brinco. Participating cavers for all or part of this expedition included Paul Fambro, Susan Herpin, Joe Ivy, Troy Lanier, Susie Lasko, Jed Mosenfelder, Pam Oczkowsky, Libby Overholt, Linda Palit, Dawn Reed, Scott Schiebner, Javier Treviño, Cyndie Walck, Terri Whitfield, Cathy Winfrey, and Spencer Woods. A major focus of the trip was to continue a long-running effort to connect Sótano de la Cuchilla with Sistema Purificación, which would put the system over 1000 meters deep. This would involve both a major excavation at the bottom of Cuchilla and lead-climbing up waterfalls deep within the sistema.



Spencer Woods wading upstream in the Dragon River. 1993 photo by Peter Sprouse

## CUCHILLA

Sótano de la Cuchilla (PEP 59) consists of a series of passages and seven drops formed along a linear trend directly above the Dragon River in Sistema Purificación. On the 23rd Troy, Spencer, Susie, Dawn, and I set about rigging Cuchilla, placing many new anchors to achieve free-hangs. The third battery pack on the Hitachi hammer-drill faded just as we set the bolt on the Last Drop, at the bottom of which was the low belly-crawl that comprised Cuchilla's best hope. Spencer belayed his way to the back and looked at the low flowstone pinch I had described to him, but decided instead to work on a possible formation bypass to the left. This bypass was the object of several days work until Spencer decided that it wasn't going to go. Then work commenced on the flowstone pinch in the straight ahead direction, but by the end of the expedition this had not been passed.

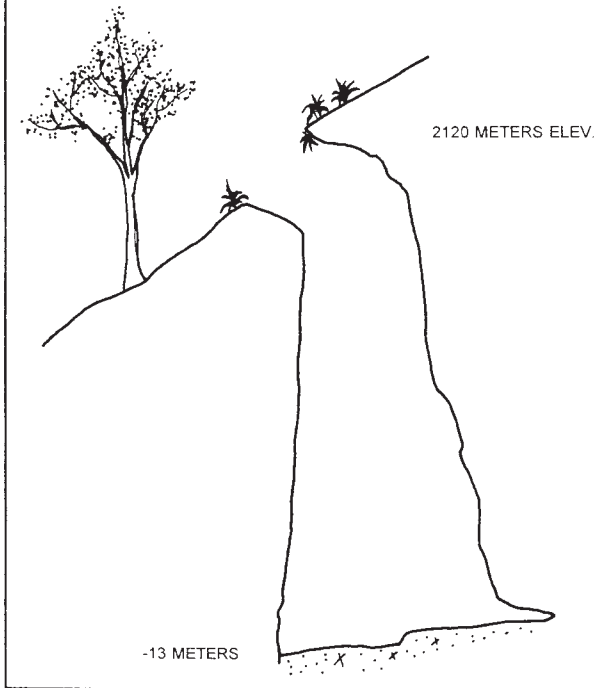
However, various other new passages were surveyed in upper levels of Cuchilla. Cyndie, Scott, Pam, and Susie checked a lead off of the middle of the Rock Drop, the second pitch in the cave. Fifty meters of passage was mapped initially, with a trip returning to check a pit in the floor. This proved to loop down to the main level of the cave. A bit lower in the cave near the Moonmilk Traverse, Paul, Jed, and I did a direct aid climb to gain access to an upper level passage with multiple levels and loops. But since I had forgotten the instruments, we just explored that day. Paul and Jed returned later and mapped some of it, but more remains in that area. Finally, Susie and Troy derigged Cuchilla just before our great New Year's Eve party. In all we'd added 288 meters to the survey, making Cuchilla 1594 meters long. The dig will continue at some future time.

## NEW PITS

A number of new pits were explored during the expedition. Several of these were done during a trip up the mountain above Conrado Castillo to purchase lumber at the Cuauhtemoc sawmill. We had previously noted several pits around a spot we called the Video Pinnacle. The first one we dropped, originally found by Dave Bunnell, was explored by Susie, Dawn, Spencer, and Scott. It was about 65 meters deep and named Pozo Mamogramo (PEP 273). Cyndie took

**POZO DE LA NAVIDAD**  
CONRADO CASTILLO, TAMAULIPAS

PEP 291  
SKETCH MAP MADE 27 DECEMBER 1993 BY  
J. MOSENFELDER, P. OZKOWSKI, S. SCHEIBNER  
LENGTH: 16 METERS DEPTH: 13 METERS  
UTM COORDINATES: E 451,105 N 2,651,590



Pam and Jed into a shallower pit by the pinnacle which became known as Pozo Todas Cosas Nuevas (PEP 282). Troy and I went down the road to a pit near a lower pinnacle, joined later by Jed and Cyndie. It went down to a sloping ledge where I set a bolt for a rebelay. The bottom was filled with organic debris. Troy named it "The Learning Curve" (PEP 283), having passed his first rebelay. Jed and Cyndie came down to help survey. Susie also sketched a shallow pit up the road above it (Pozo de los Stink Bugs, PEP 287). Back in Conrado Castillo, Scott did two more pits. He and Cyndie mapped Pozo de Puerco (PEP 292), a previously explored 7-meter pit along the road below the fieldhouse. Pam and Jed helped explore a new pit north of Cerro Zapatero not far south of Cuchilla called Pozo de la Navidad (PEP 291). It was 13 meters deep and blind.

### SILVERTIP BOULEVARD

In a cave as big as Sistema Purificación it's a good idea not leave portions of the cave unvisited for too long, eventually no one will know them. I had

some leads in the area below the Historic Section in Brinco that dated back as long as seventeen years. Jeez, have I been exploring this cave that long?!

First we took two teams down the First Stream and the Guano Groad to Silvertip Boulevard. Susie, Spencer, Dawn, and Troy worked on enlarging a pinch at the end of the Boulevard named the Belly Borehole. Spencer made it through on a later trip and made further progress, although it remains to be mapped. Cyndie, Scott, Jed, and I went down Escalator Chute and first worked an up-lead off to the right. This seemed familiar to me, it soon led to a blowing pinch which we named Scott's Slot. Then we went on down to Eternity Junction, where the left way had continued as a good upstream lead. It went south as a low streamway, then up-dip to the east. At a lake I scouted ahead through more wades for 125 meters to a short overhung climb. We had surveyed about 115 meters.

Cyndie, Scott, Javier, and Spencer went back to this area and mapped up to the climb I'd stopped at. Spencer freeclimbed it and placed a bolt for a line for the others. They mapped a bit farther, and explored ahead east up-dip to a 3-way junction. This area could be heading for the downstream portion of the First Stream.



Troy Lanier in Silvertip Boulevard, Brinco. 1993 photo by Susie Lasko

### DRAGON RIVER

If Cuchilla wasn't going to open up for us, then we would have to pursue that connection from the inside: the Dragon River climbs. Previous lead climbing work had gotten us up three waterfall drops, tantalizingly close to the bottom of Cuchilla. Spencer, Troy, and I made the first trip in to the Mud Funnels, where we found the intermittent sump open, allowing

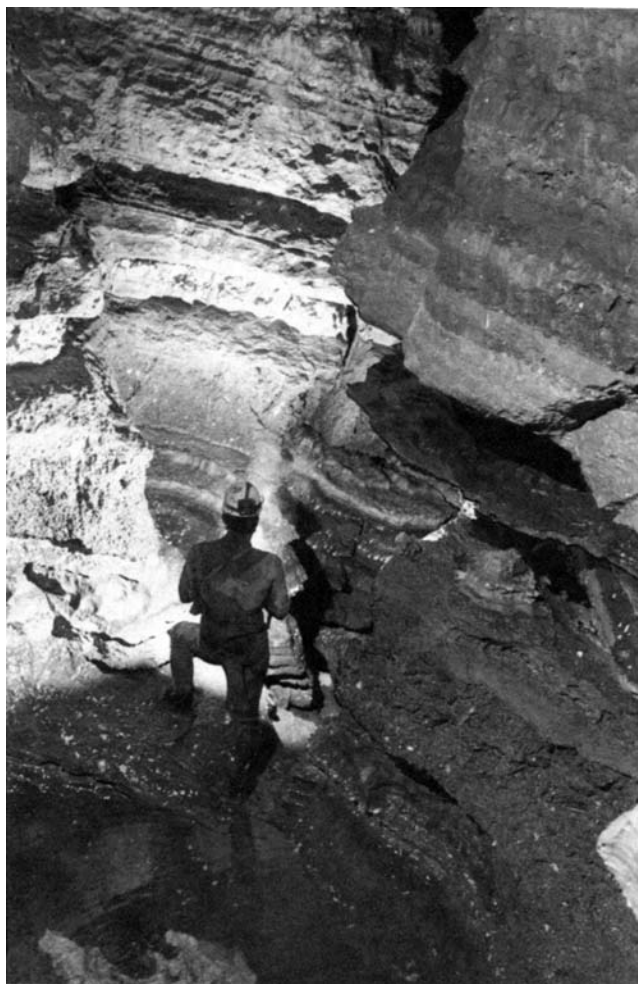
us to carry on gear stashed at Camp VI in November 1988. We left our pile of rope partway up the Dragon River, worked on enlarging a lead in the Rhino Run, and noticed a promising side lead near the beginning of the Dragon River.

For some reason I hadn't settled one question in my mind: was Oyamel a better way than Brinco to get to the Dragon River? So on the next trip in, I led Dawn, Susie, Cyndie, Joe, Javier, Troy, and Jed into the Sumidero de Oyamel entrance. Joe (lucky for him) couldn't fit through the squeeze before the Comida Corrida, so he turned back. The rest of us struggled down the awkward climbs of Gondwanaland to the start of the Dragon River, the Locomotive Breath, which was sucking tremendously. After that, Cyndie, Dawn, and Javier split off to pursue the new inlet lead. Unfortunately they couldn't get up a climb a short ways in.

The rest of us went on up to the end of the Dragon River. We climbed the three rigged ropes, two

of which had been badly frayed by several years of floodwaters. At the fourth climb Jed belayed me up a short pitch into a stream squeeze. I got off belay and crawled ahead to an overhead bypass, where I was able to rig easier access for the others. Ahead I explored a small watercrawl for 25 meters, miraculously leading to a large chamber. I returned to the others and we brought the gear through. A high lead could be seen at the top of the chamber, so I prepared to climb this fifth pitch with Jed on belay. I set several pro's in a route along the right wall, finishing at an adequate natural anchor. Although only halfway up the pitch, I'd run out of rope and enthusiasm for the day. Jed came up to clean and bring me a figure 8, then we descended, leaving our Maxim dynamic rigged. We mapped back, bashing open a bypass to the watercrawl in the process. On the way back we didn't find Cyndie's team at the arranged rendezvous, but caught up with them in lower Oyamel. We made the long tortuous climb out of Godwanaland and emerged in the Allarines Valley after a 22 hour trip.

Dawn, Joe, and I mustered for a final Dragon push, this time reverting to the Brinco route. At Climb 5 I ascended to the anchor, then Dawn came up to belay me up the rest of the pitch. The first move was all arms and quite strenuous. I frictioned up the crumbly flowstone way above my last pro to the top. I found a good anchor and Dawn ascended my line, cleaning pro as she came. I rappelled partway back down and rigged an old line for Joe to climb the lower part. Once he was up I climbed the next pitch, and a short one after that. At that point, it was a choice between a wet crawl and another climb with a squeeze at the top. I chose the climb, number 8. At the top I moved quite a few rocks to get through. I rigged it for the others, then explored ahead. Soon I reached a pit, which seemed to loop back down to the watercrawl, but I stretched across this into continuing horizontal passage. Then I was in a low, gravel-floored streamway with organic debris, an exciting suggestion of a possible entrance ahead. I went back for the others and we pushed on, hoping for a through-trip. But the streamway quickly dropped to low airspace, then a virtual sump with no breeze. Disappointed, we surveyed back toward our starting point. While waiting on rappel at a station midway down Drop 5, Dawn fell asleep on rope! The trip out was routine and we surfaced after 23.5 hours. We had narrowed the gap between the Dragon River and Sótano de la Cuchilla, but a connection remains elusive.



Troy in the breccia series of the Dragon River. 1993 photo by Peter Sprouse

# THE EARLY DAYS: Cueva del Brinco, May 1976

by Peter Sprouse



Cd. Victoria May 1976 - Terry Sayther photo

The truck lurched around a corner, and stretching as far as the eye could see was an incredible vista of limestone mountains. Far below gaped a deep box canyon, with large holes perched in the upstream headwall. Beyond, green peaks climbed ever higher to the south, beckoning us to find the way into their dark interiors. This was it, I thought to myself- the place for which we had been searching so long. Here we would find the cave that would go deep.

Certainly things looked good on that fine May day in 1976; our team had already had considerable successes so far that spring. Both Gill Ediger and Steve Zeman had been along with me on the Hoya de las Conchas (508 meters deep) and Sótano de Sauz

(220 meters deep) expeditions. Bill Steele had also been in on Conchas, and had come up from southern México to join us on this trip. Our main objective was Sótano de los Novios, which had been descended by Mike Warton to an estimated depth of 130 meters, where a four second pit stopped further exploration. We had persuaded David McKenzie into going along, as he had made two trips into the area previously, including the trip to Novios, and he knew the roads and villages. He had mapped several caves and found dozens of pits, including Novios. Also along on the trip were Denis Breining, Neal Morris, Linda Elliott, Joan Fitzgerald, Bill Mayne, Dino Lowrey, Glenda "Gandalf" Dawson, Thomas Moore, and Terry Sayther.

## NOVIOS AREA

Our two speleotrucks took us on the long journey westward across the mountains to Peñuelas, a valley of terra rosa sinks in which lay Sótano de los Novios. We pulled the vehicles up under a large oak tree near the pit, and Neal and Steve rigged up for descent. The entrance drop was not as deep as reported, and by the time I followed them down, they had checked the lead at the bottom. Apparently the four-second pit was only a shallow blind well, and a search down a parallel drop with a tight opening led to a dead-end formation room. So the specific lead which brought us to the area was no-go, but there certainly was a lot of area to be checked for caves.

For several days we spread out on a reconnaissance of the area. We had fortunately just obtained copies of the new topographic map of the region. It showed many promising high karst ridges. Starting right next to Novios, David, Linda, and others mapped a pit (Sótano de Gandalf) which didn't go either. Ediger, Neal, and some of the others hiked south to the small village of El Melón, where they checked six pits, all of which were blind. At Ediger's prompting, they arranged to purchase a meal in the village, and later all the males in the group became ill.

Several of us hiked west to Chupaderos, where David had heard a large cave was located. The route to Chupaderos runs south towards El Melón, then turns west at a place called La Cueva. This is merely a spring in a small blind entrance, but nearby is an interesting feature. Just up the hill to the west is a wet weather resurgence that emerges from a shelter cave, forming large mudbanks. And just a short way down the Melón trail another cave was found, which went



David, Joan, Bill and Linda set out for Chupaderos, May 1976.  
Photo by Peter Sprouse

down a short drop to a second entrance. After hiking over a pass to the west, we reached Chupaderos, but there were no caves. We then realized that the rumored cave must lie at another Chupaderos that was marked on the map just to the north a few kilometers. David, Bill Steele, and Bill Mayne hiked over to that location the next day, but found only a short formation cave. They found themselves forced to spend the night out without shelter, and on the way back the day after, Bill Mayne was sick and lagged several hours behind the others, prompting a search. We later found out that the word "chupadero" means "sucker"!

Neal Morris took a scouting trip up into some high karst in the western part of the area above Leñadero at 2700 meters elevation. He didn't find any caves, but he got ill from the El Melón meal, and we found him prostrate by the road when we returned to pick him up. Terry Sayther discovered several pits to the east in the vicinity of Cañada Verde (two of which were later mapped in 1981). He and others also looked at a cliff pictograph site and two old mines. One of the mines up a road west of town was found to intersect natural cave passage. Stories abound of a lost treasure in a mine or pit in the area. Activities began to go downhill when attention turned to some mine shafts at El Real, above Dulces Nombres. Bill Mayne rappelled a 100 meter shaft, and when he reached the bottom he realized he'd forgotten his Jumars. Ediger demonstrat-

ed the technique of shaft lighting via Molotov cocktail (in another shaft, of course).

## CONRADO CASTILLO

We were beginning to run out of time, and had not found anything of much significance. This western part of the Purificación mountain range seemed too dry, and I felt that we had to move east toward the front ranges above the coastal plain where there was more rainfall. So I suggested that we go to Cueva del Brinco at the village of Conrado Castillo, where David had mapped a kilometer or so of complex passage with several streams. There were some leads left in it, so it seemed like a good idea; at least we would get underground.

Conrado Castillo lies on the eastern flank of the first high ridge that climbs up to over 2000 meters elevation. We entered the vale in which the town is sheltered from the west, down a steep switchbacked logging road. It is a pleasant little village of scattered houses, a school, and a small store. We drove through town and down into a grove of trees on the far side. We set up camp in a small clearing that had been David's campsite on his first trip there in 1973. The entrance to Brinco was only 100 meters away. We walked over to the entrance and sat just inside, soaking in the feeling of the cave. The entrance passage was lined with old flowstone curtains and floored with breakdown, which sloped into blackness. It seemed to me to be a friendly cave, one that extended a warm invitation to the explorer.

The following day, we split into two teams for exploration in different parts of the cave. We all entered together, descending a steep flowstone climb immediately past the entrance room, then bellying through a low crawl floored with pine cones and needles washed in from the surface. Beyond was another room and then a short crawl. The passage then made a left turn to an interesting traverse over a small pit. Across this traverse was a large breakdown room with guano and bats. Down the slope on the far side we came upon a pit which led to a lower stream level. A traverse on the right side led to the rest of the cave, where David was taking the larger part of the crew. I was to survey down the pit with Bill Steele and Gandalf. Terry Sayther tagged along with us to learn how to sketch cave passage. David showed us a station above the traverse to take off of, then continued on with his team.

## FIRST STREAM

We rappelled down the crumbly 12 meter pit and found ourselves in a stream canyon going two ways. Upstream headed back toward the entrance, and had been partially explored by Roy Jameson in 1973. We chose the downstream lead. The canyon opened up into a wide room with the stream downcutting and disappearing into a fissure on the right side. Bill looked into a lead high on the right wall which led to a short handline drop overlooking a guano-flavored pool. We opted for pushing the stream, and squeezed down a tight fissure to get down to it. The stream passage then trended steadily down, while we chimneyed over meter-deep pools. We passed a side passage on the right, and a bit farther on the stream poured into a small hole which didn't look too inviting without wetsuits. But Bill volunteered to check ahead, and returned half an hour later soaking wet. He had gone 100 meters to a tight pinch.

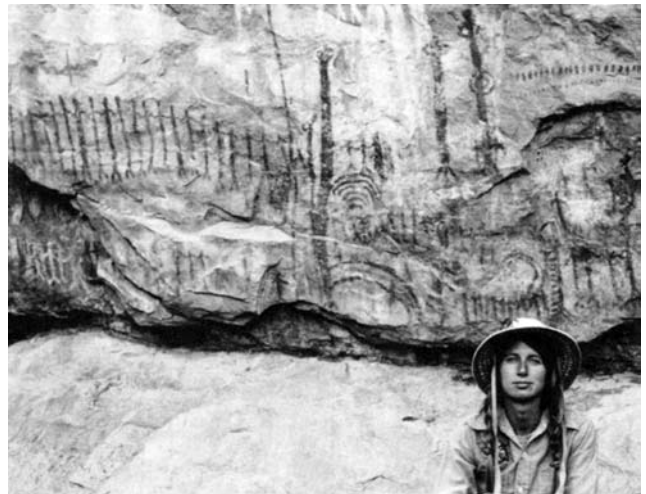
We retreated back up to the side passage we had passed and surveyed into it. This proved to be a dry overflow route in a spongework of crumbly rock. We had to check the route several times, so Terry decided to wait while we went ahead. At one point there were two tight holes in the floor which led to the continuation of the passage three meters below. Gandalf had considerable trouble getting down this, despite plenty of verbal encouragement from Bill and I. But she did make it through eventually, and earned it the name Gandalf's Twin Holes. As we surveyed steadily downward, the passage got increasingly narrow and twisty, with occasional leads going off. We finally stopped where several very small holes dropped down to a lower level. This was then the deepest point in the cave at 111 meters below the entrance.

## CONFUSION

Returning to the junction with the First Stream, as we came to call it, we discovered that Terry had left by himself. We headed out, and I soon outdistanced Bill and Gandalf. When I got to the bottom of the rope I discovered that I had left my seat harness behind somewhere in the lower levels, and was forced to pioneer a free climb up the west side of the pit...or so I thought. When I reached the top I encountered Terry, who had been unable to locate the route back to the entrance. It also turned out that he too had lost his seat harness, and had been forced to free climb the Traverse Pit! Truly this cave consumed gear. At least

we had determined that the pit did not need to be rigged in the future.

So Terry and I set off to look for the right way out, but in the Bat Room I had no luck finding the route either. We checked many holes that didn't look familiar at all. Everyone's footprints seemed to end up in a passage that dead-ended. We later found out that several people in the other party had also been lost there - we were merely following their lost footsteps. Finally I noticed a hole leading upwards that was hidden by a ceiling overhang. When I climbed up into it I realized that it was the traverse over the shallow pit. I called to Terry to follow, and soon we smelled entrance air. We exited the cave into a rainy night. Hurrying along the short path to the trucks, we found everyone crowded into Ediger's camper.



Dino Lowrey at the Cañada Verde pictographs. 1976 photo by Terry Sayther

The other group of cavers had done a little surveying toward the back of the cave, in the area just north of where a major lower level takes off. They also looked at a small stream at the end of the Main Passage. Neal Morris checked the downstream way, squeezing down a tight hole and reporting a sump below. The upstream route had previously been explored for a short distance by Bill Calvert, on the first mapping trip into the cave in 1973. He had squeezed up a 45° flowstone chute to a pool with a windy crack on the far side. This time Bill Mayne pushed through this (the Crack of Doom), and reported that it went. Several of the others went through, and they pushed upstream through more tight fissures to where a major side passage took off on the left.

They followed this down to a complex area where things became confusing. Neal reported that where he stopped, the passage was of walking size and heading down. All in all, their breakthrough seemed significant: the cave was going, for sure.

As we huddled in the truck, the rain began to pour down in earnest, and the road we were parked on became a river. We wondered a bit about Bill and Gandalf, who had not yet returned from the cave. No one seemed inclined to go looking for them just yet, though. Steve Zeman playfully prepared a surprise for Bill by putting a tarantula and a scorpion into a can. They finally returned from the cave, and after they had

changed clothes Steve offered Bill something from the can. Bill reached in and pulled out the tarantula, and he was not at all amused! And he didn't even see the scorpion.

We debated entering the cave again the next day, but since the discoveries in Brinco had come at the end of a week's cave hunting, we decided to call it a trip. The new leads would have to wait for another time. We drove down the mountain along a shorter route, through a village below Conrado Castillo called Galindo. Towards the bottom of the mountain we went for a delightful swim in the arroyo filled by the recent rain.

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## *PURIFICACION SPELEOMETRY*

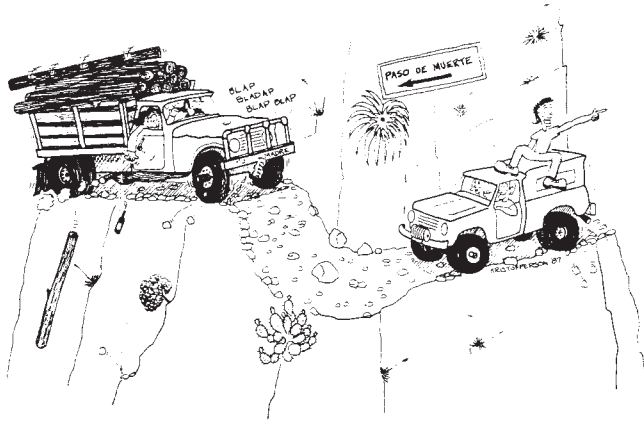
(Version August 1994)

		Length	Depth (in meters)
1.	Sistema Purificación	81,950	955
2.	Cueva del Tecolote	32,031	424
3.	Sótano del Las Calenturas	7,730	122
4.	Cueva de La Llorona	3,540	412
5.	Sótano de la Cuchilla	1,594	177
6.	Cueva del Borrego	1,354	58
7.	Cueva Paraíso Dificil	1,326	100
8.	Sótano de Trejo	1,160	80
9.	Cueva del Río Corona	1,151	36
10.	Sótano de San Marcos	1,019	126

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# TRIP REPORTS



**Destination:** Sótano de Las Calenturas

**Date:** 20 - 27 November 1981

**Personnel:** Jerry Atkinson, Jon Cradit, Jocie Hooper, Jeff Horowitz, Susie Lasko, Terry Raines, Mark Shumate, Peter Sprouse, Pete Strickland, Terri Treacy.

**Reported by:** Peter Sprouse

20 Nov.- We left Austin around 8:00 p.m. in my Toyota and Pete's Power Wagon. Our truck crossed easily at Matamoros, and we got a little sleep at the Río Corona.

21 Nov.- We had finished shopping in Victoria when Pete's truck arrived. They had run out of gas in Texas, and even a gallon of Coleman fuel wouldn't quite get them to a station. On the way up the mountain we had a chat with some passing Houston cavers while I was changing a flat. It was dark before we reached Conrado Castillo.

22 Nov.- We got off after noon on the road to Yerba Buena. Many rocks and trees had to be removed from the apparently abandoned road. At Cañada Revilla de Abajo we hiked upstream to look for an entrance seen from afar, but found only one small cave on the north side. Near Yerba the road had a gully 150 centimeters wide and deep cut into it. This took us two hours to fill. Beyond we pulled a big oak tree off the road with the Toy. We filled jugs after dark and made camp.

23 Nov.- Jerry, Pete, Jocie, Jeff, and Jon went to rappel the cliff to the resurgence of the **Río Corona** (PEP 85). They dropped the low drop and found a lake which sumped after 30 meters. They didn't return until well after dark. Terry and Susie hiked around the cliffs and watched them. Mark, Terri, and I mapped and photographed in *Cueva de la Esperanza* (PEP

39). It had two small leads continuing. We also mapped *Cueva del Encino* (PEP 40) to a squeeze needing bang. Both of these have a slight breeze. Just up the hill I found a hole covered with logs. Once uncovered, we dropped 2 meters to a junction. To the right it went 2 meters to a squeeze. To the left I didn't check. I named it *Cueva de las Arañas* for all the harvestmen and tagged it PEP 88.

24 Nov.- Everyone went into **Sótano de Las Calenturas** this day. Terri, Jon, and I photographed Lake Louise and the Cobble Factory. Then Jon, Louise, and Jerry went to survey below Stoned Salamander Pit. Meanwhile Pete, Jeff, Terry, Susie, and Mark were busy digging at the Sand Sump with shoring and buckets. Terri and I shot some photos and were about to leave when word came that Terry was through. Everyone else soon followed. Susie, Terry, and Jeff explored left at a junction, then went out. Pete, Mark, Terri, and I explored to the right to another junction. Mark crawled ahead while Terri and I climbed up a chimney. At the top we intersected a passage. To the right it ended in a rotunda, and left went up a wet crawl to a big balcony overlooking a borehole which Mark's crawl had also led into. We didn't care to do the climbdown, so we returned to Pete at Fish Snake Junction and followed Mark. The borehole went up some massive old gours (Onza Falls), then diminished to a smaller size. Beyond we found a stoopway with knee-deep water. I waded ahead to find sharp crawls with wind. We took pictures on the way back and met Jerry's team near the Sand Sump. They had balked at the chest deep water in Floating Board Lake, and had instead "reoriented" themselves in the tubes.

25 Nov.- A tube day. All of us (except Terry and Susie, who hiked to **Nacimiento San Antonio**) went into the northern tubes. Terri and Mark photographed while I mapped with Jeff and Pete, and Jerry mapped with Jon and Jocie. Scimitar Falls, Tube Snake Lake, and the Photo Tube were all mapped that day. We all ended up near Champagne Pit, where Terri dropped a flashgun down a narrow crack. We still managed to take quite few photos on the way out.

26 Nov.- Jeff, Terri, and I surveyed through the Sand Sump and into Susie's passage (The Breakaway). We mapped the Fajita Flats crawl from Fish Snake Junction, and up Onza Falls in the larger passage. We stopped at the lake, then rechecked the Rotunda,

mapping the overloop on the way back. Our day's survey total was 417 meters. At the Sand Sump we pulled Pete's board and hauled it back from the entrance. We took a 7-bulb photo of the entrance before climbing out.

Meanwhile, Jerry and Jon had tried to retrieve Terri's flash, but had failed. Then they returned to the entrance to pick up Jocie to help map a tube they had located off of Kingdom Kong. They mapped a few hundred meters of spongework in the Hong Kong Tube Maze. Terri, Pete, and Susie shot photos in the entrance area, and Mark went hiking near the cliffs.

27 Nov.- Mark, Terri, and I packed up and took off for a planned meeting with Bill Mixon, Paul Fambro, Randy Nutt, and Allen Valliant at the firetower at Las Chinas. The others were to stay another day for a Thanksgiving Thruway trip, then head down the mountain the next day. We did some recon at El Chihue, and had lunch at the Castle Karst. We set up camp near the tower and enjoyed the fine view, then huddled around the campfire that night.

**Destination:** Pino Solo

**Date:** 13 - 16 September 1990

**Personnel:** Corey Zeigler, Susie Lasko, Raul Puente, Peter Sprouse.

**Reported by:** Peter Sprouse

13 Sept.- We crossed at Reynosa without even dropping the tailgate.

14 Sept.- We had breakfast in Cd. Victoria and drove up Highway 101 to the Pino Solo turn. We talked with Sr. Mata, who works for the forestales, and he unlocked the gate and took us up to the firetower where he said we could camp. We hiked north along the ridge after a brief rain. One kilometer to the north we came across a grassy sink where the trail to Pino Solo angles off the east side of the ridge. There was a tight fissure cave (**Cueva de los Treboles**, PEP 215) in the sink which Susie pushed for 15 meters. Raul looked for a rumored cave on the north slope, finally locating a small hole that got too tight after 5 meters, probably the wrong one. Then we descended a few benches to Pino Solo and met 30-year resident José López, who showed us another small hole near his house.

Then we backtracked toward the ridgetop to look at a covered pit by the trail which was reputed to be "hondo". The sink in which it lies had been bermed on one side to form a pond, with overflow draining into the plug. Raul and I pulled quite a few rocks from it

and felt air coming out. José caught up with us on his mule and took Corey and Raul off to show them another pit nearby. Soon my digging was interrupted by a downpour. Susie and I took cover under our ponchos, and quickly fell asleep (having driven all through the night).

After the sun returned I went off to find the others at a cave with two entrances that sloped steeply down. Raul reported a fissure with no wind that got small. We took another look on the north side of the ridgetop sink for a reported 1-meter-high cave entrance, but could not find it in the thick scrub brush.

15 Sept.- We returned to the sink north of the radio towers. Susie and Raul had another look at Cueva de los Treboles, but it didn't go. Corey and I did some scouting, and after a bit we all decided to hike north along the ridge. But in less than a kilometer our trail faded into a sea of thick scrub, too tortuous to traverse without a trail. So we retreated to the truck and packed up to go back down the highway a bit. We hadn't driven 100 meters when we spotted a line of pits, and we broke out the gear to have a look. No less than six entrances gave access to **Cueva de la Caseta Forestal** (PEP 216), a nifty fissure cave lit up by the numerous skylights.

We continued on east along the highway to investigate the source of the airflow in **Sótano de Altas Cumbres No. 1** (PEP 218), which had been mapped by French cavers in 1972. It took Raul and me an hour to clear loose rock and logs from the top of the 15-meter drop which lay just inside the entrance. At the bottom we checked the uphill fissure, but it got quite tight, although with some airflow. The downhill canyon was roomier and well-decorated. Raul checked the bottom and reported that it was not promising. Corey thoroughly enjoyed this, his first real cave.

Once out, we set up camp where we had stayed the year before, several hundred meters down the road. Susie and Corey went to have a look at **Cueva de la Nieve** in the cliff after dark.

16 Sept.- We set out a short way down the road to try to locate **Cueva de la Mula**, a bat cave reported by cavers of the Pan American Speleological Society in 1973. We followed their directions into an arroyo, but could not locate the entrance. Returning to Victoria, we dropped Raul off at the bus station for his return to SLP. We did shopping and tire repair before hitting the road for Austin.



