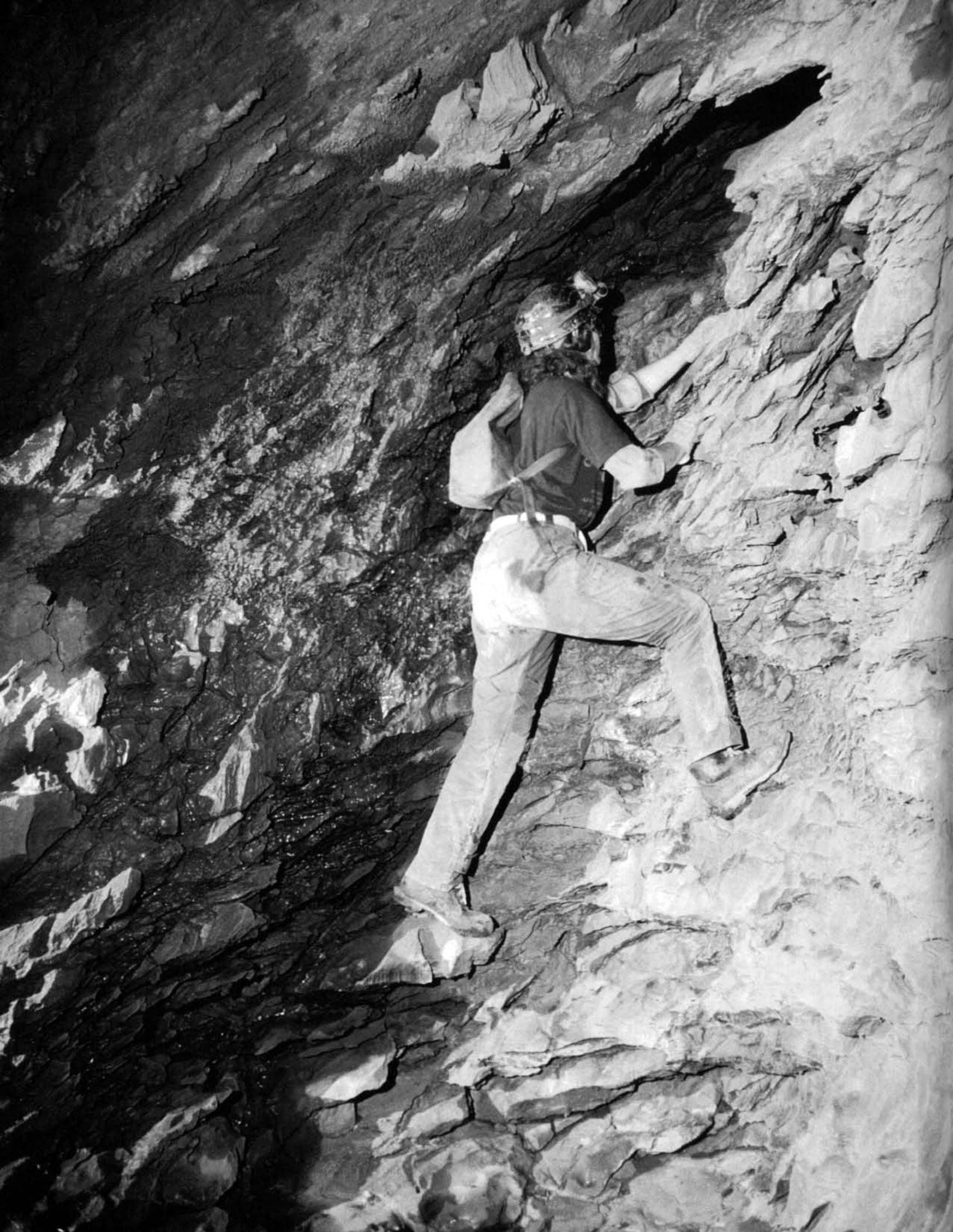


THE DEATH CORAL CAVER

NUMBER 7

OCTOBER 1997





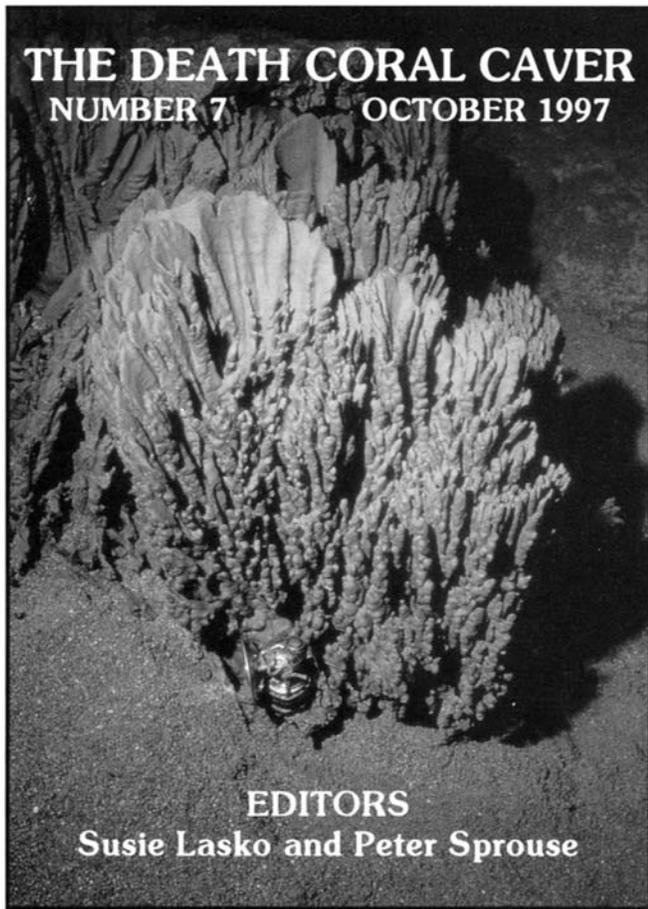


photo by Ron Simmons

ASSISTANT EDITOR
Miriam Murtuza

Additional Editing
Maggie Nadler

DESIGN AND PRODUCTION
Susie Lasko

OFFICERS

President: Peter Sprouse

Board of Directors: John Fogarty, Troy Lanier
David McKenzie, Dale Pate, Peter Sprouse

The *Death Coral Caver* is published by the Proyecto Espeleológico Purificación, a non-profit organization incorporated in the State of Texas. The PEP is dedicated to the study and exploration of the caves and karst of the Purificación Karst Region in the states of Nuevo León and Tamaulipas, México. Articles from the *Death Coral Caver* may be reprinted in other not-for-profit publications with proper attribution. Any material relating to the Purificación karst is welcomed for publication. Membership in the PEP is available to interested individuals who share the project's goals of careful caving. Annual dues are \$15. per year for individuals. Corporate or institutional memberships are \$100 for a five year term. Members will receive newsletters as they are published and may vote in elections of the Board of Directors.

Proyecto Espeleológico Purificación
P.O. Box 8424 Austin, Texas 78713 USA

EDITORIAL

Everyday I talk to people who find it difficult to spend time enjoying their lives. They seem to visualize a huge gap between what they "want" to do and what they "have" to do. I hear the words, "Someday I will..." or "If I just had...I could..." I hear myself telling these people that there is no more time to wait. It is time they do the things that are important to them and that will make them truly happy. The conversation usually shifts at that moment to, "So Susie, when are you leaving on your next trip. It seems like you are always on vacation." I explain that "vacation" is not an accurate description of what I do when I am gone or how I view the activity I am involved in. Of course I am having fun and I am away from the work-a-day stress, but is much more. As I go on to reveal more about caving and the PEP I realize how truly proud I am of what we accomplish. And the best part about is, I can put a publication right in their hands. The documentation of all of our findings is right there for everyone to see. Hard evidence of our work and good times that will be around long after we are gone. People are amazed that we don't receive any money for doing this. I explain, "It is our passion. Now, go and find yours." SUSIE

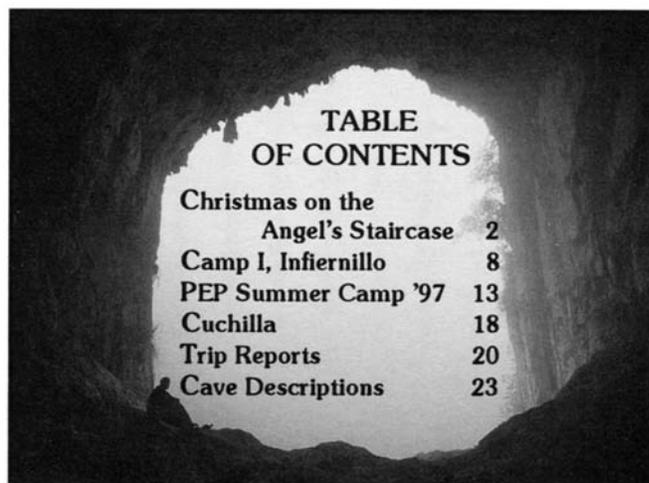
PHOTO CREDITS

FRONT COVER: Having climbed up the newly conquered Napoleon's Dome on the left, Troy Lanier descends another rope to the Weston Way. 1997 photo by Susie Lasko

INSIDE FRONT COVER: Susie Lasko climbs through the Año Nuevo entrance series in Cueva del Río Corona. 1997 photo by Peter Sprouse

INSIDE BACK COVER: Charley in The World Beyond. 1996 photo by Peter Sprouse

BACK COVER: At the base of Angel's Staircase in Brinco, a streamway flows north to the Angel's Sump. 1996 photo by Peter Sprouse



CAMP VII AND CHRISTMAS ON THE ANGEL'S STAIRCASE

by Kevin W. Stafford



It was the holiday season once again, and preparations were being made for the traditional Christmas expedition to the Sistema Purificación region. This year we had great expectations, with an underground camp planned in the World Beyond some 200 meters below the surface and two and a half kilometers into the system from the Brinco entrance. The formation of Camp VII was seen as a crucial move in the continuation of the surveys which were conducted in December 1995, when crews made 20 hour pushes from the surface into an area that had not been visited since 1980. This investigation revealed new leads off a series of steadily descending waterfalls below the World Beyond called "The Angel's Staircase." In order to make exploration of this region more feasible, Peter and Susie organized the six day camp, which was the primary focus of the 1996 expedition.

With all the preparations made and everyone arriving in Austin, the beginning of the Christmas season officially commenced on the evening of 20 December. That Friday, the first wave of cavers headed south for the mountains of the Sierra Madre Oriental. This initial wave included Marcus Barksdale, Pete Hollings, Susie Lasko, Bill Mixon, Bill "Carlos" Nasby, Scott Scheibner, Peter Sprouse, Cyndie Walck, and me.

By 6:00 a.m. the following day, we found ourselves at the Río Corona camping area where we caught a couple hours of sleep before heading down the road again. Soon we were on our way to Santa Engracia where we made a stop for breakfast and groceries before starting up the logging roads.

With Conrado Castillo less than six hours away, we proceeded up the mountain as various individuals took turns riding on the vehicle bumpers while everyone basked in the beauty of the mountains. Along the way, we made stops at traditional points to rest and admire the countryside. These included Paso de la Muerte and the overlook point for the Infernillo entrance. At the latter stop, we were greeted by Joe Ivy who along with Becky Jones, Jack "Solo" White, Charley Savvas, and Taco van Ieperen, had caught up to us.

As we increased in elevation and approached what would become home for the next two weeks, we found ourselves surrounded in karst. There were sinkholes all around and sculptured limestone cover-

ing the surface. It evoked a pleasant and warm feeling as I realized that we were in the heart of karst country, a caver's paradise. We finally reached Conrado Castillo less than 24 hours after leaving Austin.

Our first couple of days were spent working on various projects on the surface as more cavers filtered into camp: John Fogarty, Jubal Grubb, Barbara Luke, Libby Overholt, Linda Palit, Jason Richards, Bev Shade, Tim Stich, Kathleen Tehrany, Maria Tehrany, Javier Treviño, and Cathy Winfrey. These arrivals increased the total number of cavers on the mountain to 26, an impressive assemblage forming one large family.

On Sunday and Monday, we split into various groups to work on assorted projects around the area. Attempts were initially made to locate Cueva de El Violín, but to no avail. Efforts were switched to focus on a new pit near La Tijera. Here Peter, Susie, Carlos, Bill, Joe, and Becky surveyed 70 meters deep in Pozo Raspacielos, with John, Jubal, Taco and Tim returning the following day to find the cave ended at the bottom of the next drop. While John was finishing up this survey, Peter took another group to the Cuauhtémoc area where they worked on various pits.

Closer to camp, two groups were working on Sótano de la Cuchilla and nearby Cueva Nadolig. The Nadolig crew of Cyndie, Kathleen, Marcus, Pete, and Scott found themselves in a series of ugly crawlways with pits that had to be rigged on awkward points due to the poor quality of the rock. However, they surveyed 30 meters of passage the first day and continued down three pitches the next day with an obvious lead still going. The crew reported that they felt the cave was going well with good potential now that its depth was increasing.

Meanwhile, the Cuchilla team continued to work on the dig lead at the base of the final drop. Bev, Charley, Maria, Taco, and I were unable to get through after two days of digging efforts, so Cuchilla, one of the most beautiful caves in the area, will continue to entice more diggers; maybe someday it will finally reveal its secrets and provide another entrance into the main system via the Dragon River.

After two days of various projects around the mountain, 17 of the 26 cavers loaded their custom cave packs with large quantities of rope, bolting gear, survey gear, and personal gear to make a supply run to the World Beyond and establish Camp VII. With

our duffles weighing between 30 and 40 pounds, we headed for the Brinco entrance.



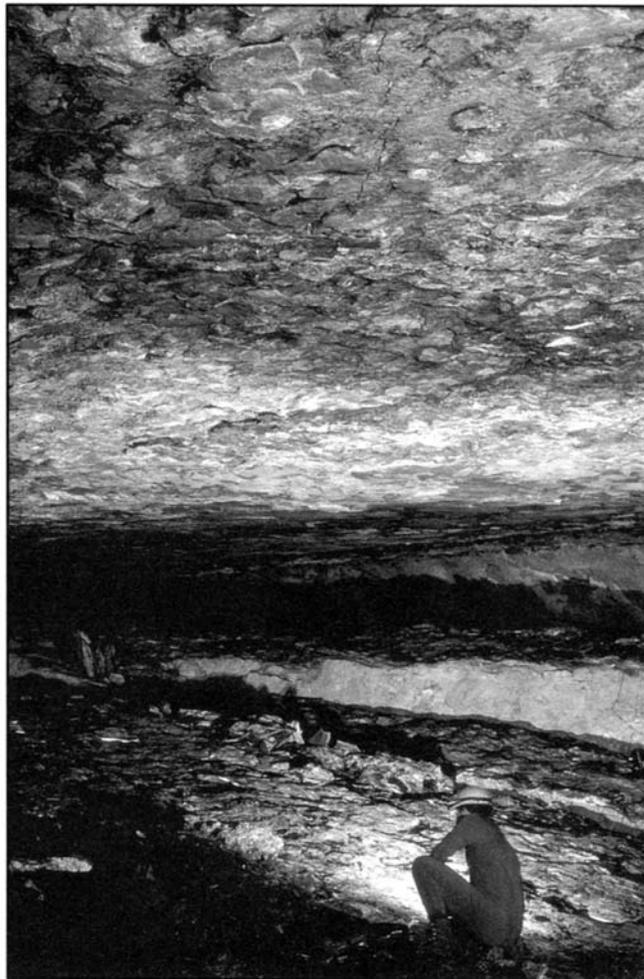
Camp VII crew prepares for the supply run.
1996 photo by Susie Lasko

Once we were inside the historical Brinco section, our six hour trek down to the World Beyond began. About 45 minutes later we found ourselves at the end of the Historic Section where we donned our wetsuits in the Dressing Room and entered the water. Immediately, we faced the 45 degree upward slope of the Chute and the squeeze of The Crack of Doom, which revealed why we were carrying custom-sized cave duffles. A duffel of normal diameter could not possibly have fit through these squeezes. From here, we passed through the Lunar Way and Mudball Crawl and into the Río Verde. There we continued down a series of flowstone waterfalls, notably the 30-meter-tall Flowstone Falls, which was rigged with a rope to speed movement down the drop and increase safety. At the end of this series, we dropped into the Canal, a long, water-filled passage which is easily navigated by floating your pack in front of you as you crawl and wade through the water. Eventually, the Canal led us to the Scallop Speedway via a short climb where we emerged into the World Beyond which is a 10-meter-tall, 20-meter-wide, and 2-kilometer long borehole that contains the River Beyond.

Once in the World Beyond, we were immediately confronted with the 100-Meter-Swim, a lake of indeterminate depth that covers the floor of the borehole. This obstacle seemed somewhat bizarre to me initially, as I marveled over the concept of swimming in underground lakes while carrying a 37 lb. duffel and wearing full vertical gear and boots. But because of the buoyancy of the duffles (created by the dry bags inside) and the wet suits we were wearing, the swims became almost leisurely and in a short time we had crossed the 100-Meter-Swim.

From that point, we soon found ourselves crossing several smaller swims, and then we were at the "Cube," which was the proposed location of Camp VII. There we unloaded our duffles, assembled the group gear, and staked our claims on various bedding spots around the huge point bar we were to

camp on for five nights. This included the leveling of sleeping areas, which gave the entire area a terraced appearance. Everyone soon had their gear settled in and headed for the surface. Thus Camp VII was founded. The gear run had been completed and as we emerged we greeted Paul Fambro and Terri Whitfield who had arrived while we were underground Christmas Eve.



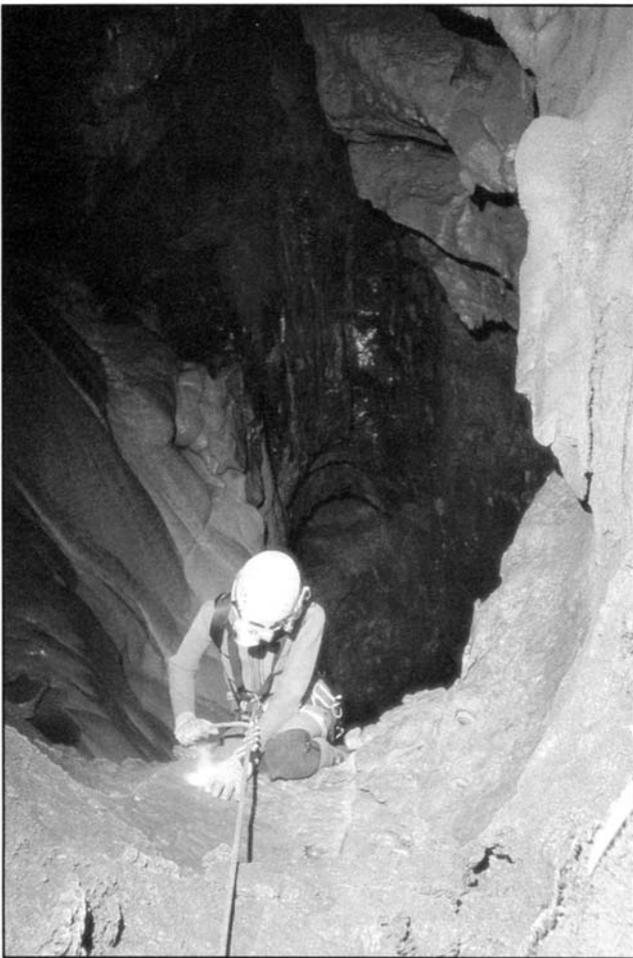
Pete Hollings illuminates breakdown along a stylolite surface in the World Beyond near Camp VII. 1996 photo by Susie Lasko

Christmas Day was filled with little activity other than the preparations for the big Christmas dinner, though Charley, Kathleen, Paul F. and Terri spent the day checking out entrances near Puerto Controbando. Meanwhile, Jubal and I spent a portion of the day checking out Cueva del Alacrán and mapping a small cave located near Cueva X before returning to the field house. That night we all feasted and celebrated the Christmas season.

The day after Christmas, 17 of us headed into the Brinco entrance for six days at Camp VII. The camp members included Becky, Bev, Carlos, Charley, Cyn-die, Jason, Joe, John, Linda, Maria, Pete, Peter, Solo, Susie, Taco, and me. Within six hours of the first wave of cavers entering the Brinco entrance we were all settled into camp.

The next day, we pushed hard down the staircase in five survey groups, three for the new dry route and two for the main staircase route. The dry route rigging was led by Charley and was pushed down a series of drops into a canal which headed off in two directions. From this canal Jason explored south for 30 meters through a three meter wide, one meter high passage that had good air flow.

The other teams headed down the main route of the Angel's Staircase. A crew led by Peter found their way down to the Canal of Ulysses where a maze network, the Chuckle Way, was discovered just before the final vertical series of the staircase. They mapped through a meandering passage heading north with numerous side leads for a total of 266 meters. Cyndie, Pete and I surveyed a loop off of the main route. We found ourselves immediately going vertically with a 10 meter pitch which led to a room with leads in two directions. The first lead we checked was another drop, which we rigged on a thin, poorly cemented piece of breccia backed up to a body belay by me. Unfortunately, the "Three-for-One Drop" was not bottomed because as Pete abseiled down, we found that our rope supplies would not be enough to take us on this route. Thus we



Maria Tehrani drops back into the Angel's Staircase from the Chuckle Way. 1996 photo by Peter Sprouse

abandoned this option and proceeded down the other route which led us through two more smaller drops and 200 meters of survey before connecting back in with the main survey where we ended the day.

Everyone returned to camp from successful trips averaging between 13 and 15 hours with a total survey of 641 meters. It was a good day and everyone was pleased with our accomplishments.

Day three in camp yielded very little activity as the majority of the people rested from the hard push down the staircase. However, Taco had spotted a side lead off of the World Beyond a mere 15 minutes from camp. Barbara, Joe and he pushed it to find that it yielded 200 meters of going passage with great air flow. Decorated with delicate, fin-shaped soda straws formed by wind passing through as the straws were developing, this passage was named Batwing Boulevard.

Meanwhile, John had to return to the surface to acquire a replacement pair of glasses. We also lost Linda because of a bad leg and Solo due to illness. With the blind leading the sick and injured out of the cave, our numbers dropped to 15. However, this loss was soon made up for by the arrival of Paul Burger, Jason Foster, Jean "Creature" Krejca, Steve Lester, and Pete Squires, bringing the camp to a record high of 20 cavers.

On day four, everyone awoke well rested and ready for a final hard push down the Angel's Staircase with five teams heading out of camp. The first team, led by Barbara, returned for continued work in Batwing Boulevard as Taco led them to another high route he had found. This lead looked promising and indeed, yielded another 80 meters of survey with air still blowing in the passage. The other four teams returned to the staircase, with two groups revisiting the dry section and two groups following the wet section. Charley's team returned to the area which Jason R. had checked on the previous trip in what was now known as the Ethiopian Sponge Tube. They found that after 84 meters of survey, their passage was sumped. However, an area above the sump that was constricted but had extremely good air flow looked promising.

Peter's team went all the way to the bottom of the staircase where they mapped a river passage coming in from the north, which is probably the southern extension of the River Savage. After this lead became too tight, they found a way through a marble sand sump which yielded a continuation of walking passage. This passage turned into a series of flowstone climbs which were scaled until a five meter climb confronted them with no easy way on. Fortunately at that point, Creature's team could be heard above and a connection was made between the two teams as they tied their surveys together.



Susie Lasko follows the Angel's Staircase water toward the Angel's Sump. 1996 photo by Peter Sprouse

This connection joined the bottom of the Angel's Staircase with the northern portion of the Ethiopian Sponge Tube where Creature's team had been working.

The final team out was led by John and included Carlos, Maria, and me. We returned to the Chuckle Way where we initially found that the pit where the previous survey stopped did not go on, so we decided we would simply try and clean up some of the area by mapping some of the smaller tubes. We found ourselves in a crawl-way that appeared to be decreasing in size until we turned a corner and looked ahead. We were back in walking passage. The area contained several leads which we initially shot sprays into before following the most prominent passage. This two to three meter diameter, clean washed tube had

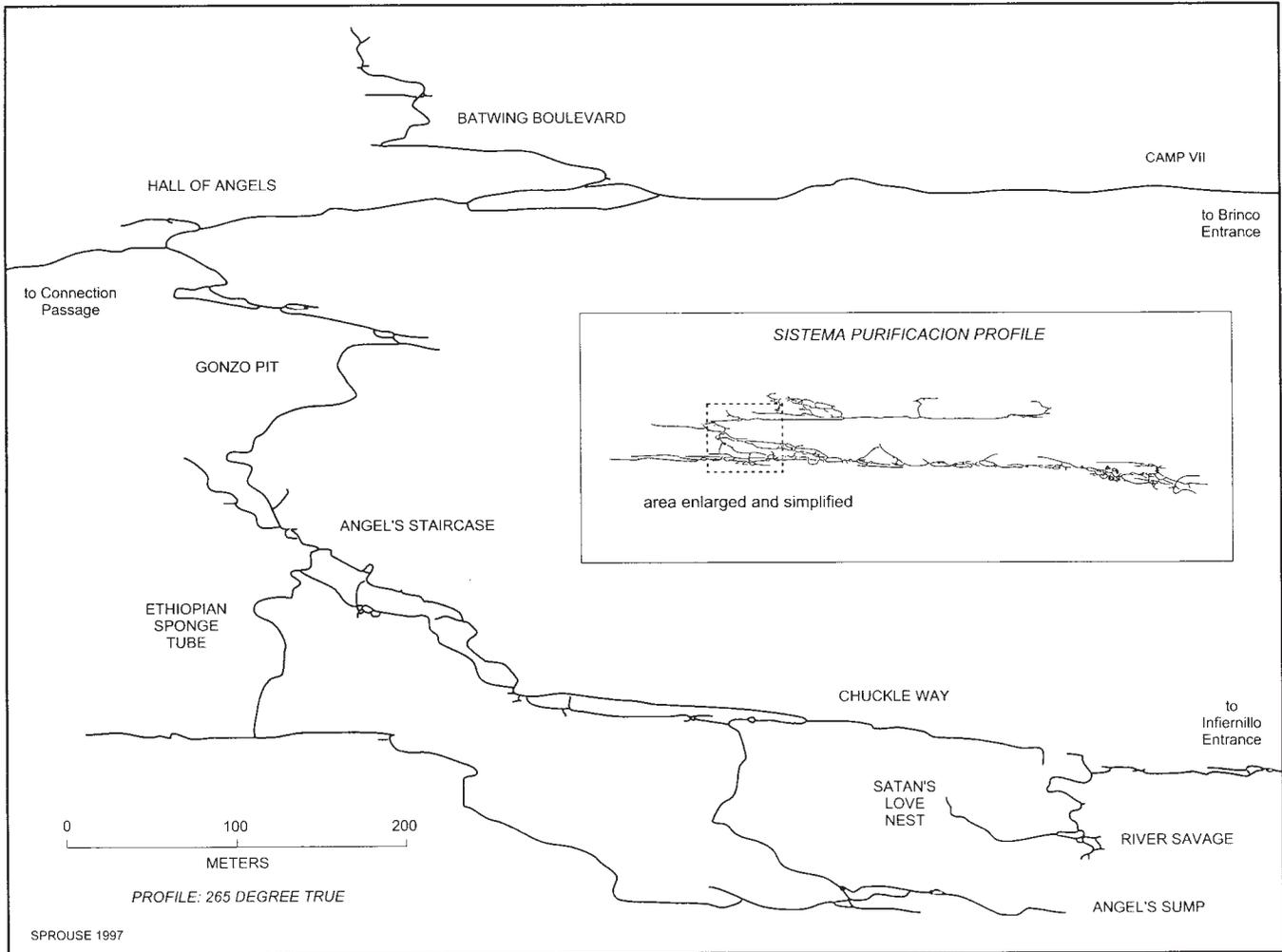
great airflow and simply seemed to snake along. Unfortunately, it went vertical after a ways, and we were unable to continue due to a lack of rope. At that point, we returned to the area where we shot the sprays and continued working on the smaller walking passages there. We then found a vertical shaft which ascended for ten meters and descended for five meters which should be checked in the future, but at this point we called it a successful day with over 400 meters of survey. Back at camp the big day's meters

were tallied, yielding 1319 meters of survey with the average trip lasting 16 hours out of camp. Ropes in the staircase were pulled, as Peter felt most of its major leads had been wrapped up. The most potential remains in the region off of the Chuckle Way which contains the three meter diameter tube that went vertical.



Cyndie Walck and Pete Hollings leave the Canal of Ulysses to descend the last of the Angel's Staircase. 1996 photo by Peter Sprouse

PROFILE LINE PLOT OF ANGEL'S STAIRCASE AREA



For now, the Angel's Staircase would be left alone. The survey crews fell asleep on the terraced slopes of what had now acquired the appearance of a refugee camp.

Day five was marked by the departure of 10 of the 20 cavers from camp as they headed for the surface, but the rest of us remained for one more day. Early that morning, Taco and Charley returned to Batwing Boulevard for one last push and located an upper route which led to the base of two dome climbs. With this new found booty, they returned to camp for survey teams which Peter and Barbara quickly organized. Soon the leads were mapped to the base of two separate dome climbs with good air and good potential, as the survey is heading into an area that is currently blank on the map.

With the end of Day five the camp trip was almost over and only a handful of cavers were left for the final night. We felt a sense of accomplishment because in four survey days we had added another 2298 meters of passage to the system, wrapped up the major survey leads in the Angel's Staircase, and discovered Batwing Boulevard. Thus we all slept well.

On day six the remaining members in camp awoke and packed their duffles for the trip out. I was somewhat saddened to leave the camp, my first cave camp ever, but I knew that the five nights I had spent underground had planted a seed which would drive me to participate in more cave camps in the future. We headed for the surface, and in less than five hours the last of us were coming out of the Brinco entrance, wailing as we all shaded our eyes from the bright mid-day sun. The skies were intensely blue and the trees bright green as our eyes tried to readjust to the plethora of light on the surface. On New Year's Eve, we were lying on the grass by the fieldhouse as our wet gear dried in the sun.

That night we welcomed in the New Year with celebration and music as Peter, Susie, and Carlos played various stringed instruments while the rest joined in song. We talked of Camp VII and discussed the plans for the next few days as bottles of champagne were passed around the fire.

New Year's Day brought about a change in plans as we packed up our camp and headed for Yerba Buena with seven vehicles. The goal was to try to

open a new entrance into Cueva del Río Corona amongst all of the sinkholes east of Yerbabuena. It was believed that one of the sinks would make an easy connection to the cave because during the previous year's survey trip a high lead was found that contained modern civilization trash in its ceiling and air flow.

Initially, Peter conducted a new surface survey with the Itronic laptop computer in hand so that the proposed entrance location could be narrowed down to within 50 meters. Immediately this survey had digging teams scattered in the nearby sinkholes while everyone hoped that their sink would be the one that would break through. Charley's choice proved to be the right one, as he broke through in less than two hours to find the previous year's survey station. The Año Nuevo entrance to Cueva del Río Corona was created, yielding quicker access to the back portions of the cave.



Cavers process survey data from Cueva del Rio Corona. 1997 photo by Susie Lasko

The next day, two teams went into the cave via the new entrance to work on projects. Barbara led a team with Maria, Stevie, and me to the northern part of the cave, where we surveyed 120 meters of side leads forming a loop off of the previous survey. Charley led the second team of John, Kathleen, Matt, and Taco to the southern portion of the Yippee-yi-yo Highway, where they worked on a bolt climb. On their return trip the next day, Charley ascended 40 meters to find that the dome climb did not go. However, they wrapped up one of the leads, decreasing the number of bolt climbs that remain in the cave as the search continues to find a path to connect Cueva del Río Corona to Sótano de las Calenturas.

Meanwhile, on the surface, other groups conducted searches for new caves. This proved productive for Paul F. and Terri as they located a blowing hole in the vicinity of Calenturas, which opened into a going, blowing passage descending rapidly. The following day, they returned with Cyndie and Scott to find that after 52 meters of survey it connected into

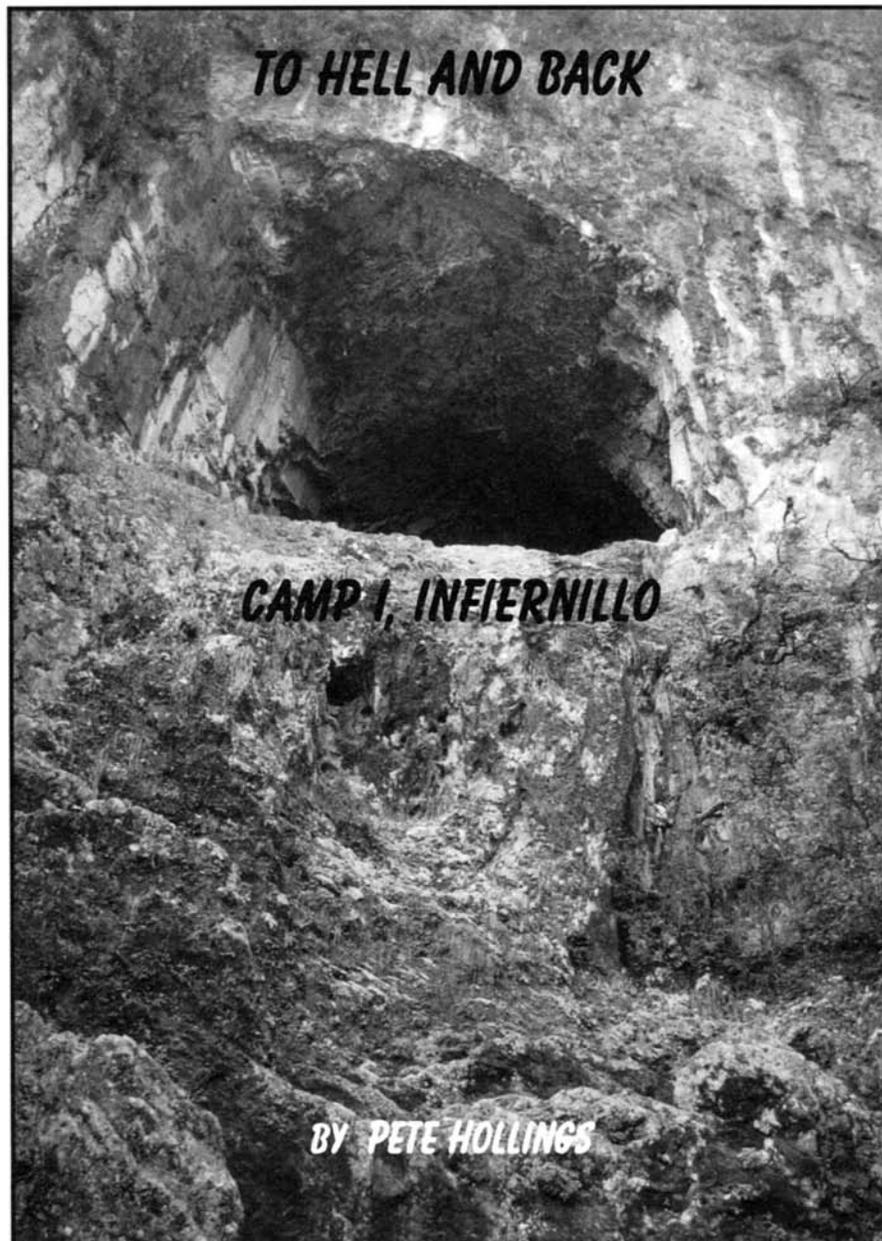


Susie Lasko squeezes through the Año Nuevo entrance series into Cueva del Río Corona. 1997 photo by Peter Sprouse

Calenturas, creating another entrance, Flor de Peña. The remaining individuals spent the day in a more leisurely manner on the surface, ridge walking or digging in surface sinks as the final day of caving for the Christmas '96 season came to an end.

The following day, we all packed up and headed down the mountain with a quick stop along the Río San Pedro for a swimming break to clean up from two weeks of camping. Within hours, we were off the mountain and the group was splitting up. Some individuals headed back to Austin while the rest of us proceeded to Ciudad Victoria and the Hotel Sierra Gorda for one last night of drinking and celebration. It was the culmination of an exhilarating two weeks of caving in the PEP area.

Sunday morning we awoke and headed back to a different reality and the rest of the world. We had made significant accomplishments by adding another 2.3 kilometers to the system, making numerous smaller surveys around the Conrado Castillo area, and opening the Año Nuevo entrance. We had had a truly great two weeks that none of the 33 cavers will ever forget.



Family /fæ'mili/n. (Pl. -ies) a set of parents and children, or of relations, living together or not

With March in Saskatoon typically bleak, I took advantage of surplus Airmiles and headed for Austin to join the latest PEP family outing. I was reunited with Mother and Father (Susie & Peter) in San Antonio, along with Cuzzin' Troy, Uncle Jack and Cuzzin' Maria. The rest of the family were already heading south, but by the morning of March 8, 1997 we were all reunited at the usual spot beside the Río Corona. A lack of foresight meant that we were unable to make our customary frisbee toss offering to Oztotl at the Pass of Death, so, full of trepidation, we headed ever upwards until we were finally able to see "Little Hell" itself.

Perhaps it was because of the forgotten offering, or perhaps it was due to summer storms, but the road down to Infiernillo was partially washed out and blocked by fallen trees. Fortunately, the lure of the cave was strong that day, and the able-bodied family members swiftly went to work, supervised by those on the far side of the generation gap. We were soon at the end of the road with everyone tucked up in bed by nine.

The following morning we packed our duffles and trekked up to the entrance where we sat around for an hour or so while Father and Cuzzin' Troy finished the bolt climb up to the entrance. The bolt climb had

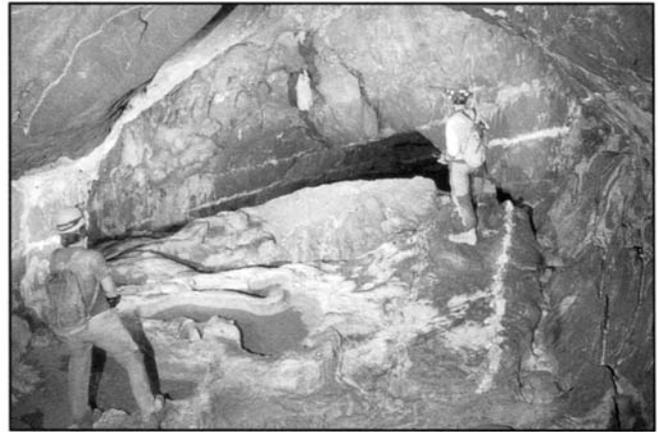
been declared necessary when even Charley started to balk at climbing the traditional route, due to the advanced caver-induced soil erosion. Before long we were all encamped in the relative luxury of Camp I-b. Father thought that perhaps all of us would not fit in the original Camp I. This proved to be the case so we established Camp I-b at the site of the old latrine. The only drawback was the short crawl required to get to the new latrine.

On Monday five teams headed out to map “tube.”



Carl Fromén on the climb into the Confusion Tubes.
1997 photo by Susie Lasko

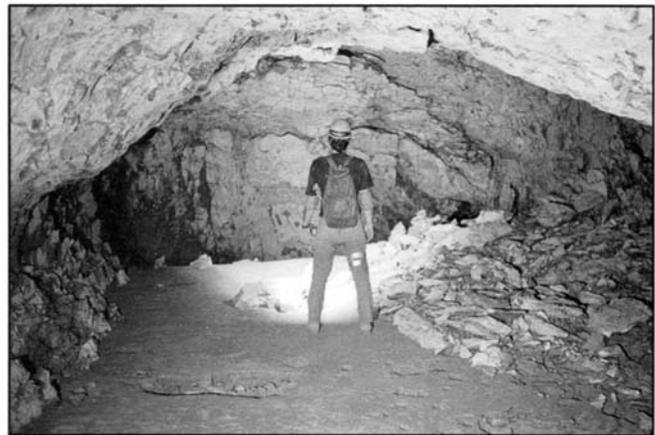
Those familiar with the area around Camp I will recall the incredibly complex set of passages that form a three dimensional maze varying from walking passage to belly crawl appropriately named the Confusion Tubes. I was on one of two teams surveying in the western portion of the tubes. Jack, Kevin and I made up one team while Dale Pate, Paula Bauer and Bill Stephens comprised the other. We followed the West Loop to the Tubes. After what seemed to me like an appallingly steep hike (Saskatchewan is very flat, you know!) followed by the customary rest stop, we headed into the Thru Tube, marking a couple of leads along the way. From the impressive Balcony Borehole, our route took us into the Shoe Tube where we started to



Troy and Jon light up the dip of the Lower Tamaulipas Formation in the West Loop. 1997 photo by Peter Sprouse

survey. Dale's crew took one high-level lead, while my team mapped a short section of walking passage before it connected into known passage. We then made our first mistake of the trip and allowed Kevin to persuade us to map a nasty little body-sized tube in the floor. I eventually rebelled at the point where I would have had to lie in a pool to set stations.

Next, we backtracked a little and started mapping our way up a steeply inclined body-sized tube which got steadily smaller before breaking out into walking passage at a T-junction. The upslope route soon broke out into big walking passage at yet another junction. Following the right-hand route allowed us to connect to the Eastern Tubes, in the vicinity of the Seventeen Hour Tube. As this was a new connection between the Eastern and Western tubes we named it the Detente Tube, with the crawling passage becoming the Berlin Tunnel. We then followed the route to the left until it came to a fork. At that point we stopped for the day, having mapped 185 meters in 50 stations. Dale's team had managed to map 110 meters. By midnight all the teams were back at camp with nearly 600 meters in the bag.



The “Hollywood Room” in the East Loop.
1997 photo by Peter Sprouse

Leaving camp around 2:00 p.m., my team headed back to the same area. We began by mapping a walking lead below the Seventeen Hour Tube. We were hoping that it would head towards one of the passages that we had mapped the day before. Our group managed to map 90 meters of nice walking passage before it degenerated into a low crawl. Abandoning this we decided instead to push a steeply ascending tube which eventually connected back to the western end of the Detente Tube. This made for a much faster route, hence the name Seventeen Minute Tube. We then headed back to the two way junction and mapped the left hand fork until it connected into the Río Shumate. As we mapped our way to this connection, we were haunted by the eerie sound of the Star Trek theme wafting through the passage to the accompaniment of frenzied hammering. We discovered the source of this when we bumped into Carl Fromén who was caving with Dale and Paula (the beguiling chanteuse). We encountered Carl when he stuck his hand through an otherwise impassable tube. We sent Kevin off to find them and were most amused when he managed to get lost for 10 minutes. Any rumors that he was refusing to return until I stopped singing are completely unfounded.

Back at camp we totaled up the survey and found that we had managed to map over 250 meters. Father's team of Jon Cradit and Cuzzin' Troy produced a similar amount, having completed a bolt climb in Napoleon's Dome at the western limit of the cave that led them into 270 meters of walking passage called the Weston Way. They left the survey at Mason Well, a 15 meter pit, having run out of rope. Mother's team of Robin Cope and Bill also had a good day in the Arakis area, mapping over 200 meters.

Almost by default, Wednesday became a rest day. Groups had straggled into camp between 1:00 and 4:00 in the morning. We spent most of the day eating, drinking, talking, and demonstrating to Mother and Father that family reunions are rarely stress free. With all the "feudin' and the fussin' " (see I can talk Texan too) amongst the younger relatives, both Jack and Susie were heard to remark that caving with the "young'uns" was nearly as bad as a long drive with little kids.

With a good night's sleep behind us, we were able to make an early start the next day. The plan was for three teams to head towards the lead above Napoleon's Dome, rig the drop, and then leapfrog survey down the borehole that was sure to be there (yeah, right!). We headed along the East Loop up to the Balcony Borehole. From there we worked our way through the Octopus Tube, into the Silly Rabbit Tube, then Mrs. Lubner's Tube and into the Misty Borehole. Then the Hose Tubes and the Banana Tube took us into Napoleon's Borehole, which we followed to the base of the climb.



Team members consult the map in the Silly Rabbit Tube in search of a shortcut through the Western Confusion Tubes. 1997 photo by Susie Lasko

While some people headed off to rig the drop, Susie, Maria, Jack and I took some photos, marveling at the incredible draft in the passage. By the time we caught up with the others the pit had been rigged, and, typically, there was no way on at the bottom.

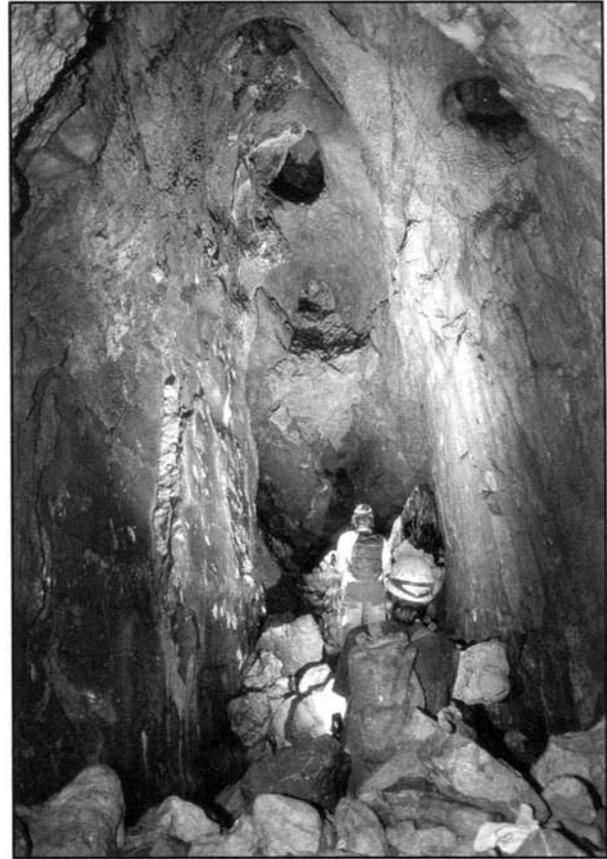
With the words "Ghar Parau" ringing in their ears, Troy and John had already started working on a dig at the bottom in an attempt to follow the air. Meanwhile, Father was tackling a nasty climb in order to examine a possible lead. Despite gashing his leg when a large death coral handhold pulled loose from the wall, he made it to the top and reported going cave. Consequently, we divided into three teams and set to work: Susie, Troy and Kevin were to map the pit; Jack, Maria and I surveyed up the climb and into the passage beyond while Father, Bill and John became the designated push team.

We surveyed 75 meters up the steeply ascending mud-covered passage before we heard the unmistakable sound of frenzied digging. The great air we had been following all along had disappeared into a maze of impenetrable tubes and rock-filled digs. By the time we got there, the push team was already on its fourth dig. Bill and Jon, finding themselves unable to fit, were forced to call on Maria, the smallest team member, for help. While she was trying to push their lead, Bill and John decided to wall her in the crawlway by stacking up rocks, refusing to let her out until she got through and reported going passageway beyond. When even she couldn't fit, they took pity on her and let her out.

While we continued poking away at various holes, Susie's crew returned to the top of Napoleon's Dome to check out another lead, but unfortunately this didn't go either. We got back to camp after a 14 hour trip to find that Wayne, Mary and Carl had mapped 100 meters of tube, while Dale, Paula and Robin had mapped nearly 200 meters.



Eroded Flowstone slope below Mason Well.
1997 photo by Susie Lasko



Tall canyon in the Weston Way beyond Napoleon's Dome.
1997 photo by Susie Lasko

Friday was to be our last day of surveying. A quick look at the results showed that we were only 500 meters short of making Sistema Purificación 90 kilometers long, so as each team headed out into the tubes, they knew that 100 meters each would be enough. I went out with Kevin and Jack to the Confusion Tubes off the East Loop. Father pointed out a couple of leads and then headed off with Troy to survey some other tube. Our first lead led off the Original Tube. This was a fairly short one that soon connected into known passage and was named the Plagiarist Tube, because it wasn't very original. The Tubes in this area are different from those in other areas, consisting of clean-washed rock with beautiful scallops. We backtracked a little to map a passage off the Seven Way Junction. It took us a little while to get started on this survey, as Jack struggled to sketch his way out of the Junction Room. Things didn't get any better as we progressed down the passage with nearly every station having two or more leads coming off it. We eventually mapped the Chimichanga Tube for 70 meters until it connected into the First Tube. As we were a little short of 100 meters, we decided to map a couple of side leads before we were eventually stopped by sketcher failure; Uncle Jack had finally been defeated by the complexity of the passage.

We headed home, stopping along the way to

watch Troy tackle a dome climb near camp. He and Father had stopped surveying some time before us. The presence of the power drill and a motorcycle battery meant that Troy was able to make good progress up the climb, much to the amusement of the peanut gallery below who offered "helpful" advice. He barely even flinched when Father took both hands off the belay rope to take some photos, but he did get a little anxious when Cuzzin' Kevin started climbing the other end of the rope, in order to de-rig some of the hangers. Unfortunately, Troy ran out of bolts before he got to the top.

Susie's team was the last group back, the lead in Arrakis having been mapped for over 150 meters and left still going. We totaled up the survey for the trip only to find that we were 73 meters short of the 90 kilometer mark for the System.

The next morning Father woke up unusually early and proceeded to sort through his entire collection of plastic bags, eventually forcing us all to get up far earlier than we had intended. Apparently, it was almost possible to hear the whole camp roll over in unison to avoid the glare of Peter's light. As a result, camp was packed up fairly quickly, and people started making their way back to the entrance. Carl was the first to descend. Since we talked him out of abseiling down with his frame pack on his back, he

decided to lower it down on the end of the rope. He enlisted Maria (Laurel to Carl's Hardy) to do the actual lowering, while he abseiled down the other end to prevent it from getting stuck. About half way down, he told Maria to let go, and the next thing we heard was the pack tumbling free. We later learned that the frame had fallen apart, but Maria assumed it was her fault, a view supported by the peanut gallery when they were finally able to stop laughing. The last we saw of Carl he was hiking down the arroyo hauling his mutilated pack behind him.

It was Maria's turn next, and she looked very organized as she clipped in her descender, grabbed hold of the tether to brace her pack, and then pushed the pack over the edge only to find that it was not clipped in. Once again the peanut gallery was vastly amused (it must have taken Kevin a good 10 minutes to stop laughing). Even Jon and Bill who had been bombarded by the rocks Maria had dislodged in Arakis were amused.

The rest of the descents were uneventful and we were all back at the trucks by noon, Kevin now having the dubious honor of being the youngest caver to

get his pack down without dropping it. We took advantage of the easily accessible water to wash up for the first time in a week and savor the breakfast of champions: cookies and beer. Apart from the pack itself, Carl had only broken the filter on his camera, although Maria's disposable camera was pretty mangled.

From there, it was all downhill, literally. The fact that it was raining made the roads a bit treacherous with the rebuilt section causing a few problems. We stopped briefly at the Pass of Death for the Third Annual Tortilla Toss. Perhaps because we were feeling guilty over our failure to make an offering on the way up, or maybe because Susie had a bag of stale tortillas, the toss evolved from the customary single throw into a mass launch. Some 15 tortillas were hurled into the mist. We made it down to the tarmac in good time and stopped for supper at the Hacienda, a beautiful hotel in the middle of nowhere that did not even flinch at catering to 15 slightly smelly cavers. We then drove through the night back to the States, getting into Austin at dawn. From there it's only 12 hours back to snowy Saskatoon !



PURIFICACION SPELEOMETRY
Version October 1997

	Length (meters)	Depth (meters)
1. Sistema Purificación	90,204	957
2. Cueva del Tecolote	32,031	424
3. Sótano de Las Calenturas	8,308	121
4. Cueva de La Llorona	3,540	412
5. Cueva del Río Corona	2,301	101
6. Sótano de la Cuchilla	2,109	207
7. Cueva Paraíso Difícil	1,799	178
8. Cueva del Borrego	1,354	58
9. Sótano de Trejo	1,160	80
10. Sótano de San Marcos	1,019	126

PEP SUMMER CAMP '97

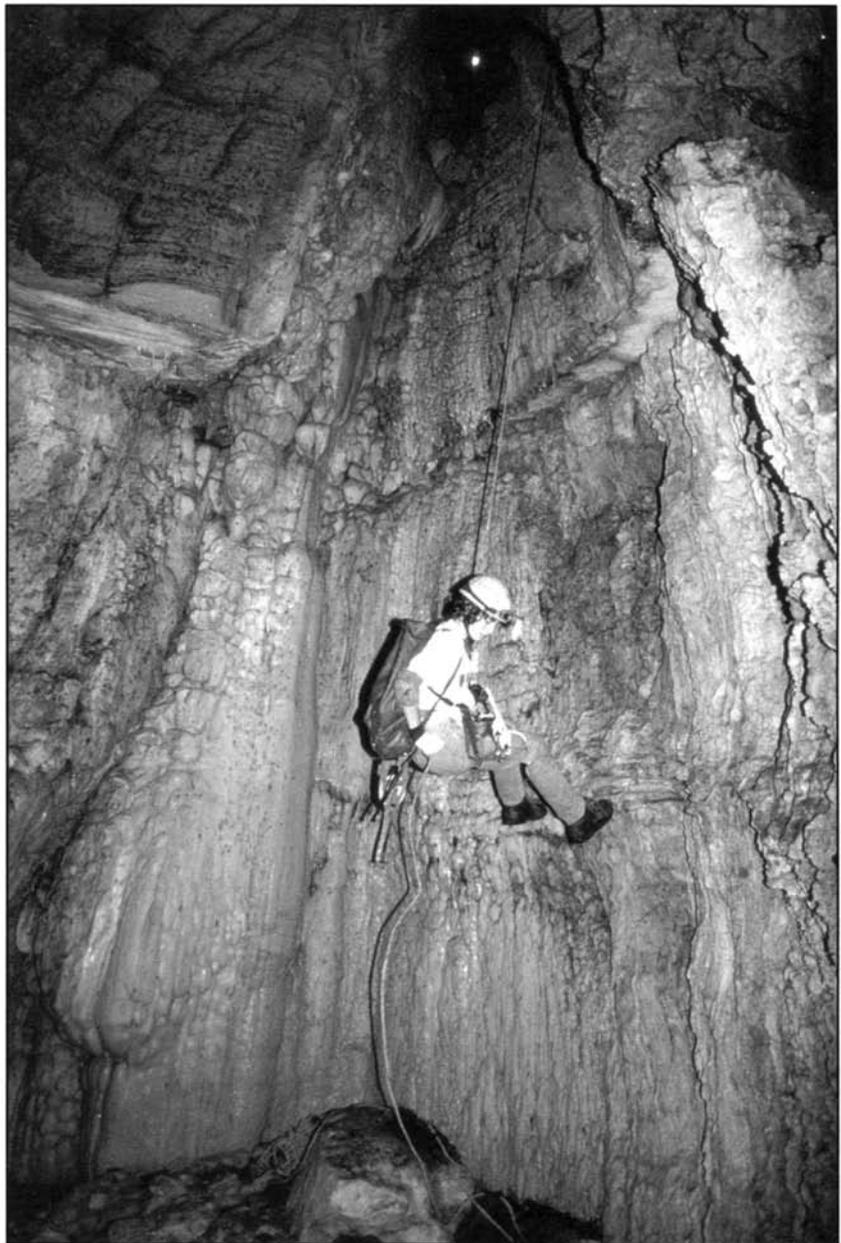
by Peter Sprouse

This trip was dubbed the “PEP Summer Camp” as it was aimed at students and newer cavers as well as project regulars. The nineteen cavers participating were Tony Akers, Scott Dean, Carmelite Duhon, Gill Ediger, John Fogarty, Pat Geery, Jody Horton, Troy Lanier, Susie Lasko, Alyssa Lowe, Miriam Murtuza, Charley Savvas, Rachel Savvas, Bev Shade, Maria Tehrany, Cathy Winfrey, Marion Ziemons, and me. We all headed south in five vehicles, one of which was Charleys’ renovated 1953 Power Wagon bus. Less than 24 hours after departing from Austin we were at the project fieldhouse in Conrado Castillo, ready for six days of caving in and around Sistema Purificación.

SISTEMA PASSES 90K

Two trips were done into Sistema Purificación during the week. The first of these was a trip into the Brinco entrance on Day 4. Scott, Pat, Barbara, and I set off for the Eternity Streamway, with Troy and Carmelite accompanying us as far as the Guano Groad. The turn to this area is not far into the Historic Section of Brinco, involving a climbdown into Traverse Pit to what is known as First Stream. After following this stream a short way, we turned right down into the Guano Groad, where numerous climbdowns brought us to the horizontal Silvertip Boulevard. We continued our descent through the Escalator Chute, a long stretch of canyon, to reach Eternity Junction. Several years ago we had begun the exploration of an upstream lead coming in from the left at this point. We waded through a number of pools for a few hundred more meters to station S101, the limit of the previous survey. After one shot in walking passage we understood why the previous team had stopped; it got small, convoluted, and mazy. There seemed to be two ways to go, upstream and downstream.

Upstream was small and contained plenty of flood debris, indicating a possible link to the First Stream, about 100 meters away, straight-line distance. We opted for downstream, where a small hole dropped us back into walking passage. This went several



Carmelite Duhon reaches the bottom of the Grieta de Luis entrance drop.
1997 photo by Susie Lasko

ways, all getting smaller, but we managed to follow a small stream down a tight canyon for awhile. When it pinched it was at a low, wide room that was big enough for us all to lay in for lunch. The result was that it became known as the 90 Kilometer Pizza Room. After that, we returned to the upstream route. This got us back into some more walking passage for a time before it ended as well. A final lead was heading back toward the entrance, which required some hammering to pursue. Our progress ended abruptly when I dropped the hammer down into a tiny pothole, clearly visible but irretrievable. We had

an eleven and a half hour trip and mapped over 160 meters, pushing the cave over 90 kilometers.

The next trip into the system was via the Franceses entrance on Day six. Maria, Scott, and I went into the Valhalla section with the intention of pushing the Valkyrie River. Troy, Rachel, Carmelite, and Alyssa went along as far as the Grimbley Thrutch, a squeeze most of the way down toward the river. Past the first cascade, the river widens out and we did a number of wades, staying dry above our waist. We had one side



The Valkyrie River, Cueva del Brinco.
1990 photo by Susie Lasko

lead in the area which we hoped would bypass the upstream sump or otherwise continue to the south, thereby extending the cave up the mountain. It began as a belly crawl, then led up a fissure to a large upper level. We could hear the river again down a mud funnel, presumably upstream from the sump. But we had no rope to rig down this pit, so we continued on the upper level. We mapped on to a T junction, leaving three crawl leads. We named this the Foghorn Passage due to its nice harmonics. This is certainly a promising area to come back to and could connect to Batwing Boulevard, providing a shortcut to that part of the cave. After a nine hour trip, 277 meters of passage were added to the system making it 90,204 meters long.

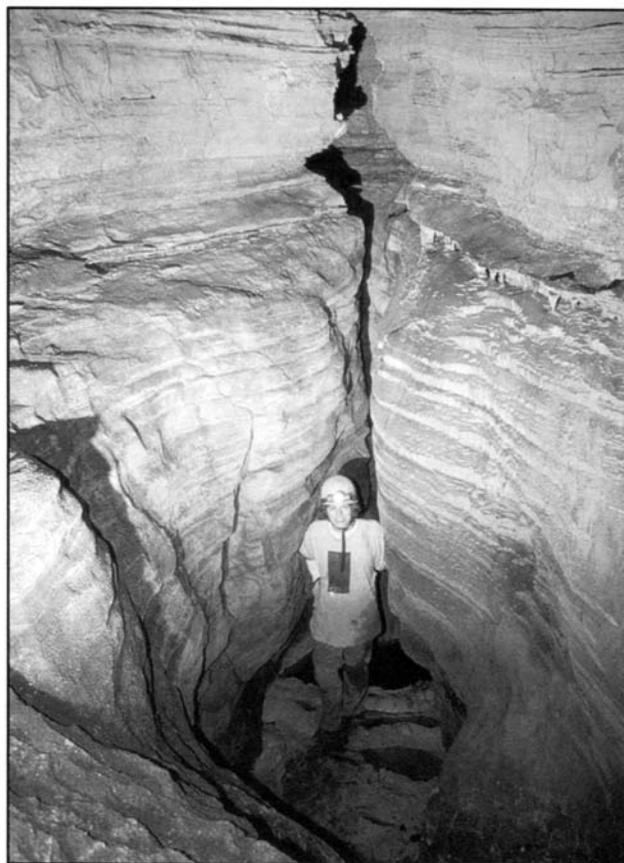
GRIETA DE LUIS

We did almost daily trips higher up the mountain, buying lumber from local sawmills for the construction of an addition to our fieldhouse. Naturally we



Raising of the PEP fieldhouse addition.
1997 photo by Susie Lasko

took the opportunity to explore some more of the innumerable virgin pits in the area. Of the six new pits surveyed during the week, the most significant was Grieta de Luis, named after the local guide who showed it to us on our first day out. Susie, Scott, Carmelite, and Marion explored down a 30 meter drop to a tight meander, which they had to enlarge with a hammer. They were able to squeeze through to another pitch, which they plumbed at 11 meters, with another drop visible beyond. Susie, Tony, and Marion returned the next day and mapped down the 11 meter pitch (Fly Hammer Falls), and set bolts for drops 4 and 5. On the third day Barbara and I joined them, prepared for a concerted effort. Tony and I rigged down Drop 5, which was a very spectacular 22 meter drop. But below two more climbdowns we reached a pinch. It would be difficult to enlarge, and had only moderate air. Thus Grieta de Luis bottomed out at 96 meters depth.



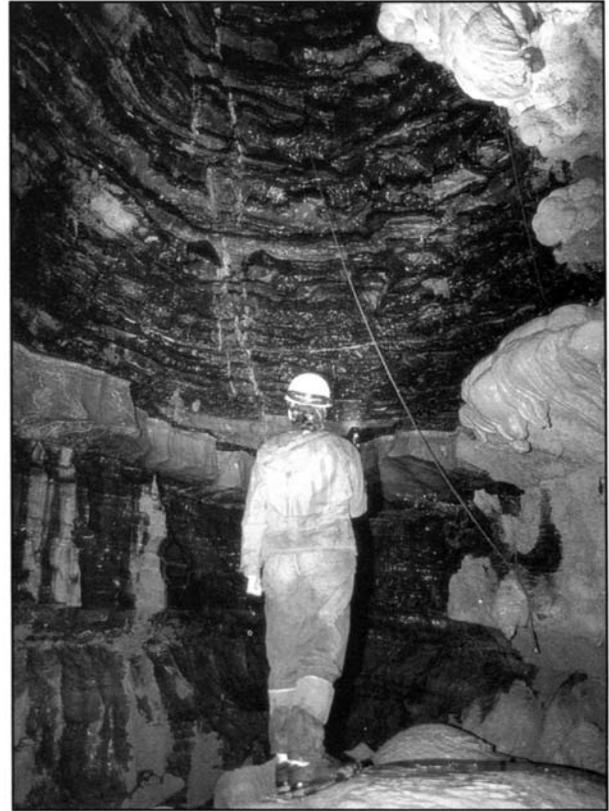
Carmelite emerges from the tight canyons in Grieta de Luis.
1997 photo by Susie Lasko

To the north, two more pits were mapped that we discovered back in April 1982. They are located in a small valley known as Flor de Mayo, just south of Revilla's radio tower. The lower of the two, Pozo de Flor de Mayo, turned out to be 70 meters deep. It was rigged and mapped over two days by Troy, Miriam, Alyssa, and Barbara. Just uphill from it was a shallower pit that John, Pat, and Scott mapped. Pozo del Otro Cienpie was a 16 meter pit that sloped down to

dirt fill. This same crew also mapped a new pit near Revilla, and Scott led the way for his first virgin descent. He reported that it went, but Pozo de la Cereza de Scott ended at the bottom of the second drop. They also checked a third pit south of Revilla, Pozo Después de la Lluvia, which ended quickly. On Day five Tony and Marion mapped a pit that I'd been shown the previous winter near the Cuauhtémoc sawmill. The entrance drop to Pozo Huesos Volandos was 41 meters into a large room. Tony did a climb at the bottom into a formation area that led to another 12 meter drop, for which they lacked rope. That would have to wait for another trip, as we were getting low on fuel for more trips up the mountain.

CONRADO CASTILLO

Meanwhile back in Conrado Castillo, Charley, Bev, and various others were busy all week digging and finally breaking through at the bottom of Sótano de la Cuchilla, which Bev describes elsewhere in this issue. An equally promising lead in nearby Cueva Nadolig didn't turn out so well. Tony, John, and Jody pushed down Drop four on the first day to find that it got too tight in a narrow bedding plane. Nadolig finished out at 217 meters long and 74 meters deep. John, Susie, and Pat returned on the last day to finish mapping and de-rig. Another CC cave that was entered was Entrada del Viento Alta, a cave just above the system but as yet unconnected. Susie, Miriam, Alyssa, Rachel, and Jody went to check out the dome lead, at the back, left by Peter Keys and Bob Anderson in 1978. Their rope was still hanging from the drop. The best lead appeared to be at the top of a flowstone waterfall across from the dome. However, bolting would be required to get there.

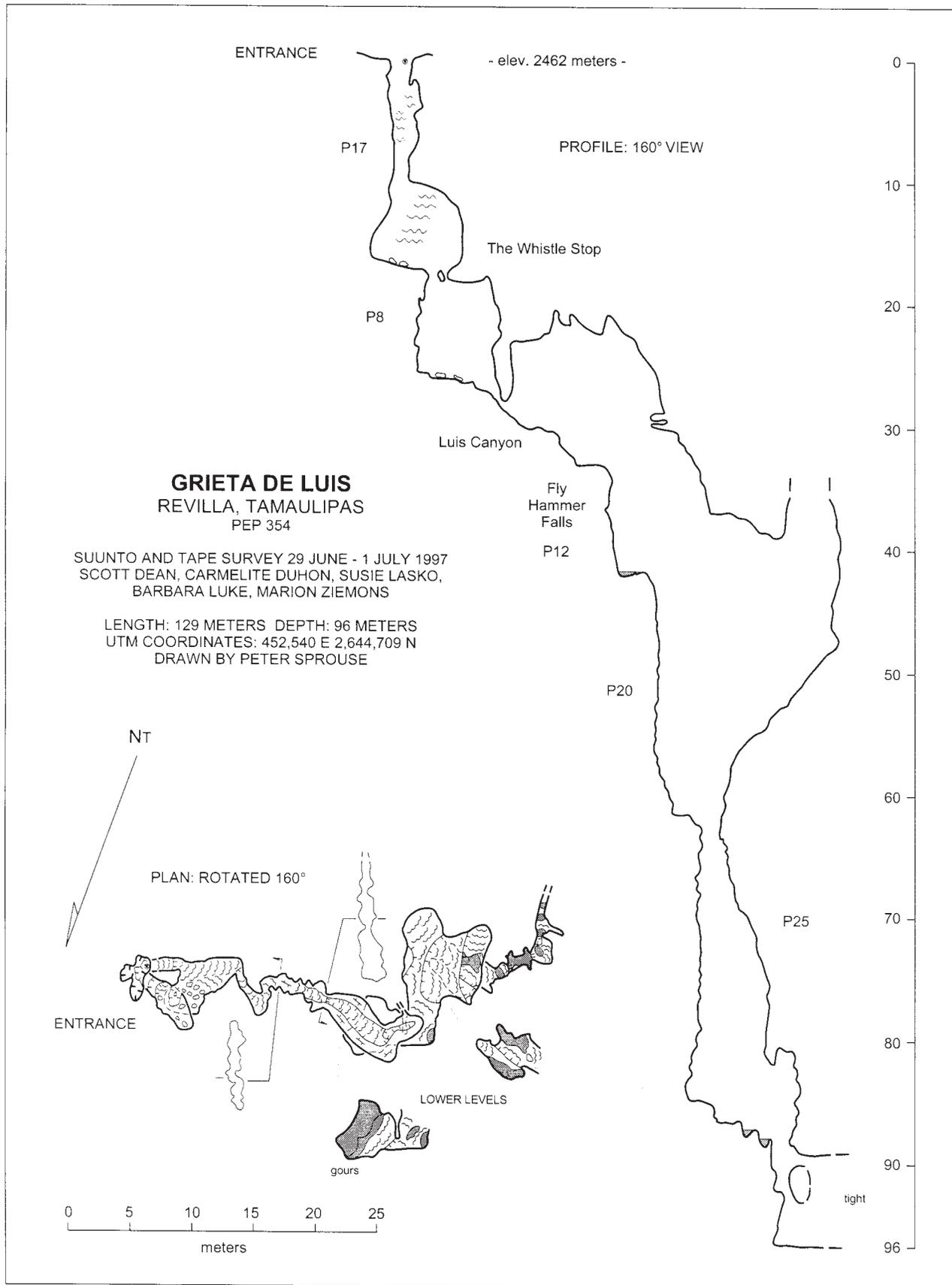


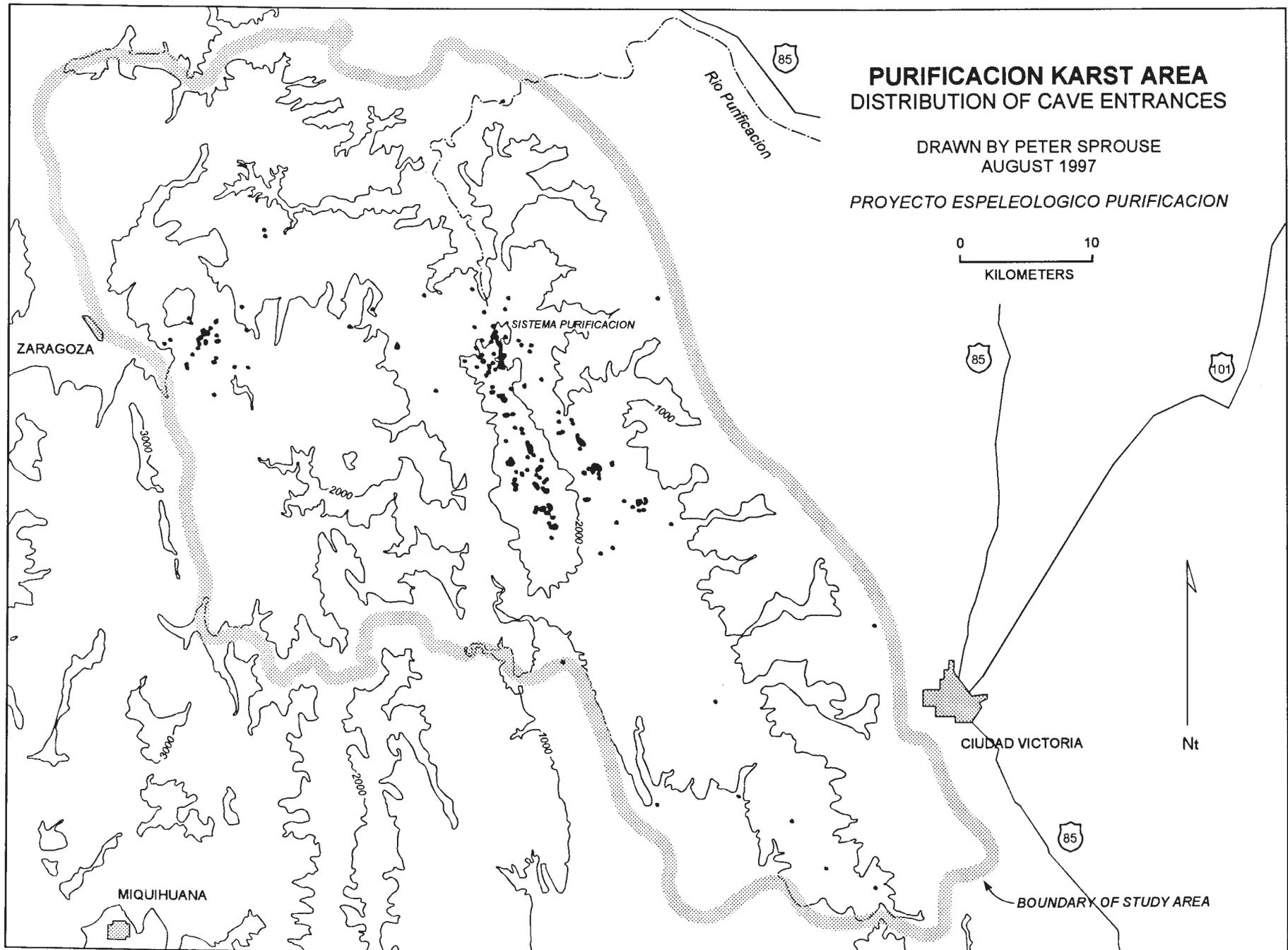
Alyssa Lowe at the dome climb in Entrada del Viento Alta.
1997 photo by Susie Lasko

We wrapped up the week in Conrado Castillo by finishing off the new building, masterminded by Gill, the project carpenter. As we were loading the trucks we were asked to assist in getting one of the children from Conrado Castillo down the mountain. She had been bitten by a rattlesnake. We rushed her down to the Santa Engracia clinic in just 3.5 hours. After a feast at the hacienda we headed north.



The new fieldhouse nears completion.
1997 photo by Susie Lasko





CUCHILLA

by Bev Shade

After a seventeen year hiatus, Sótano de la Cuchilla, located a few kilometers uphill of Conrado Castillo, has returned to the spotlight as a contender in the search for an ever higher entrance to Sistema Purificación.

The cave was first explored in 1980, when it was mapped all the way down to the "Last Drop". It was over 170 meters deep and about 1300 meters long. The find generated some initial excitement because it is formed on a linear trend directly above the Dragon River in Brinco (Death Coral Caver, Oct. 94). Furthermore, the bottom of Cuchilla was poised a mere 150 meters above this section of Brinco, and a connection would make Sistema Purificación more than a kilometer deep.

During the next decade and a half, there were several periods of activity in the cave, raising the surveyed length of Cuchilla to 1594 meters, but these meters were all gained in side passages in the upper and mid levels of the cave. The bottom of Cuchilla remained at the base of the "Last Drop". Despite continued exploration, nothing went in the right direction (down!). As those leads diminished in number and appeal, the only real option left was the blowing lead at the bottom of the cave. Originally described as "a hopeless pinch" (AMCS Activities Newsletter, Dec. 80), the Hurricane Crawl denied progress to several digging attempts.

The Christmas expedition of 1995 saw a concerted effort to wrap up loose ends in Cuchilla and, at the same time, kick off a new phase of activity to push for the connection into Sistema Purificación. Four teams entered the cave to check leads in the upper levels, push a technical climb and take another look at the bottom. Despite 300 meters of new survey, no promising leads were found.

Charley Savvas, Susie Lasko and Pete Hollings went to the last drop and looked briefly at the unwelcoming Hurricane Crawl. Despite the airflow coming out of the main pinch, Charley found a *new* dig spot, hoping to bypass a whole lot of nastiness. However, the new dig was not really very good, and we finally gave in to the lure of the air and resigned ourselves to digging there. This began a one and a half year period of digging trips.



Charley Savvas negotiates the Hurricane Crawl.
photo by Bev Shade

To give the proper impression of these lovely ventures, the Crawl itself deserves some description. At the base of the sixth drop there is a small, horizontal tube, a few meters

of which are a reasonable (sort of) hands and knees crawl in gravel. This takes you to the first switchback in the passage, at which point it evolves into a lower crawl over flowstone. Some distance more leads you to a small pothole of standing height, which promptly switches back again and plunges into a bedrock bathtub. The ceiling drops sharply here, so that it is even lower than the floor of the preceding crawl. This bathtub fills the entire width of the passage to about half a meter in depth, which is awfully close to the ceiling.

Typically the air howls through this passage, so in order to avoid getting totally soaked (and cold), we slid down headfirst into the bathtub, then before smacking face-first into the water, attempted to spider over this pool to the next few meters of even smaller crawlway. This maneuver met with limited success, especially on the way out, since there was no place to turn around, and the feat was considerably trickier backwards, feet first and uphill. Later we bailed this pocket of water, but it took over a year to figure that out. Of course, the only place to bail the water is all the way back around the first switchback, into the crawlway which doubles as the way *out*. Fortunately, this section drains quite well, so that by the time we finished digging, there was never any standing water.

The dig trips consisted of removing the layered mud and flowstone floor and clearing out debris. On some trips we made a meter or so of progress, but on others, mere centimeters. We got around yet another switchback, only to see a mere ten centimeter-high tube. It was beginning to look a little grim. Nonetheless, we kept digging.

During the past July expedition, on the *seventh* trip in this phase of activity, our efforts were rewarded when Maria Tehrany slipped through three more nasty little constrictions into virgin passage! Trying to follow her, I found myself wedged in the second restriction as she excitedly hollered from somewhere far ahead for me to hurry up. With a little bit of magic

and lost skin, I got through the squeeze into five meters of nice gravel-bottomed crawlway, which shortly opened out into a six meter high room, the beginning of the Easy Cheezeway. Since no other members of our dig party could fit through, we made more modifications to the restrictions and returned the next day to survey our find.



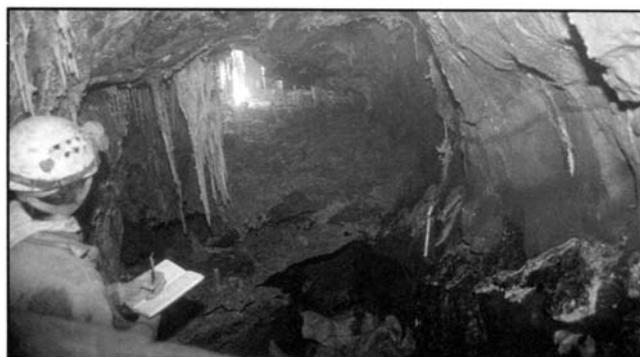
Barbara Luke relieved to be standing in the Easy Cheezeway. photo by Bev Shade

Over the course of two survey trips, the week ended with 214 meters surveyed and the cave 32 vertical meters closer to the Dragon River - Brinco connection. Our explorations led us through a whole series of new areas: the three dimensional Cheezeway maze; a series of three parallel pits, about ten meters in depth, dropping down to the Orca Battleground; A

muddy but highly decorated room with water emerging occasionally from the floor. The forty meter long Zurich Squishies mud crawl; a lake, and the short Smokey the Bear water passage which finally led us to another impassable restriction. This was opened during the second survey trip and led to more crawls. The crawls soon opened up into walking passage again, in a beautiful helictite room. With visions of miles of such passage floating before us, we pressed on with the survey, only to find that the airflow promptly dived into yet another restriction (the unBearable Squeeze) in the floor of this room. We were out of time and energy, and several flowstone mounds kept us from the darkness beyond. We squeezed and hammered and cussed, but to no avail.

Thus, while finding the bottom of Cuchilla will be far from easy, the cave's possibilities have expanded radically since the Hurricane Crawl breakthrough: the Easy Cheezeway has *plenty* of leads which we were forced to ignore simply due to time constraints; there are horizontal leads above the Orca Battleground; we skirted a small but deep lake and never saw the far side of it; and of course, the unBearable Squeeze, only 135 meters above Purificación's Dragon River, is taking a good draft of airflow.

Furthermore, while many of the leads we saw this past July weren't taking air, the cave as a whole had a generally lower level of air circulation than usual. The air in historically windy spots, like the Hurricane Crawl, was completely still on some days. The rains of spring and summer could have sumped the Dragon River, which would alter airflow patterns. Thus, leads without noticeable airflow might simply be a reflection of water conditions farther downstream rather than the indication of a dead end.



The unBearable Squeeze in the lower part of the photo ended the July trip. photo by Bev Shade

August 1997

With such tantalizing leads waiting, a small group returned to Cuchilla a mere month after the July 4 trip. John Fogarty, Charley Savvas, Kevin Stafford and I tore ourselves away from Austin for a whopping four days in Conrado Castillo in which we accomplished three long trips into the cave. In between trips we mostly slept and sat around in a dazed stupor. Overwhelmed by the monstrous new boreholes of Cuchilla? Not a chance.

Our earlier prediction that the Sistema connection would be a challenge is proving a little too accurate. Our last series of trips did make both vertical and horizontal progress, but it involved a lot of digging and not much standing room. The cave continues to follow its previous trend but over a distance of just a few meters varies in character from old flowstone to clean-washed bedrock to flat-out mudcrawls. We turned back at just such a mudcrawl, which will require several meters of trenching.

While it was a somewhat disappointing that our Herculean efforts were not immediately rewarded, all hope is not yet dead. We still have enough leads to get good and lost! Furthermore, we noted that while the overall airflow in the cave remained low, our lead was still blowing strongly which surely speaks of better things to come!

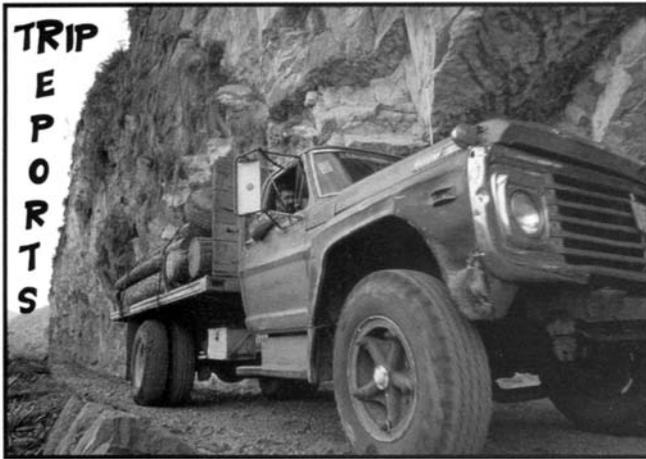


photo by Chris Caselli

TINAJAS VALLEY

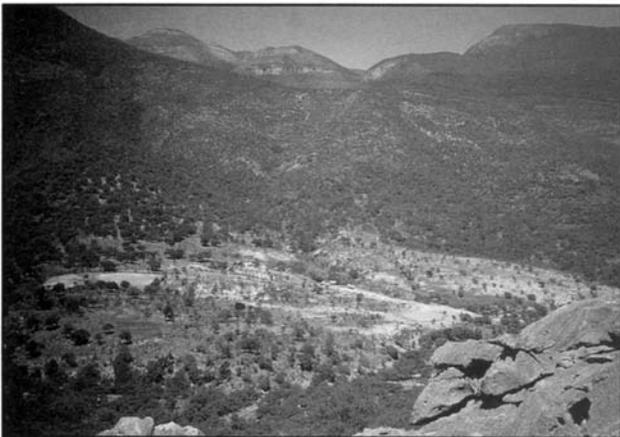
DATE: 28 March - 5 April and 24 May - 31 May 1997

PERSONNEL: Julie Jenkins, Percie Dog Jenkins, Bill Russell, Charley Savvas

REPORTED BY: Bill Russell

Both Julie's and my work had been hectic for weeks, and Charley had broken his leg. Now that his cast was off, he needed some light-duty caving - it was time for a recon to México. The Tinajas Valley lies across the Revilla ridge about five kilometers west of the Brinco entrance near Conrado Castillo. It is in the rain shadow of the higher mountains to the west. It is thought that the flat valley floor, developed on the outcrop of the massive reef limestone, concentrates the rainfall to form sinkholes and caves.

The Tinajas Valley is about ten kilometers long and a kilometer wide. It drains to the north into the Arroyo Luna, which enters Hervores Canyon and eventually helps form the Río Purificación. The north end of the valley is just above 1500 meters elevation, while the town of Tinajas is slightly higher on a shale outcrop that allows for some cultivation. The valley slopes gently up to a pass at an elevation of 1720 meters at the south end, where it drops abruptly into the Arroyo Chihue.



The Tinajas Valley
1997 photo by Julie Jenkins

We had made several trips to the Tinajas Valley in the past, mostly investigating the higher area near the south end. On this trip we decided to check the lower karst in the north end of the valley. We left Austin, camped by the Rio Grande, crossed the border in the morning, and arrived in the Tinajas Valley as the sun set and dark clouds gathered in the mountains. As soon as we reached the flats at the north end, we veered off the road across a sinkhole-pitted clearing and into the woods as pelting rain set upon us. Charley said it would soon be over. After five minutes we laughed, and after 45 minutes we began to worry, so at the first sign of a let-up we hastily set up camp amid lightning, rain and hail. The next morning was clear and calm, and we set off, on foot, to check the karst. At first we had trouble keeping together. One of us would check a pit, and the others would keep on going. But by the time we reached our first objective, a large sinkhole shown on the topo map, we had our system perfected.

The sinkhole was only a complex of small sinks with no leads, but just before the sink we found a nice pit, Sótano del Paistle (Spanish Moss Pit). We continued surface checking, following a large, solution trench to the north, finding numerous small pits that were blocked with dirt ten to twenty meters down and several constricted fissure systems with no airflow. Charley had a large protective boot on his almost-mended leg, making him look like some semi-mechanical cyborg as he climbed, but it didn't slow him down.

The next day we checked Paistle. It dropped 17 meters to a breakdown plug that opened into another drop of 17 meters to a mud-floored room. At night we entertained ourselves with lightning storms, "barking" frogs, and caving stories. We spent another day criss-crossing the karst, checking pits, holes, and fissures, but found nothing that "went" or even had airflow.

On Wednesday afternoon, after checking what seemed like the hundredth pit, we decided to move west to a somewhat smoother area that appeared to have more sinks and fewer pits. As we readied our search formation, Julie looked down at a small hole about three inches in diameter and thought she could see a pine needle wiggling vigorously. There was no surface wind, but we had been checking every crack for airflow for so long she called for reassurance. I walked over and put my hand in the hole. Yes, there was airflow! It was sucking air strongly. Charley came over to see what the excitement was about. We all fell to our knees, threw down our packs, and started digging. The more we dug, the more air entered the hole, and the more rocks tried to slide into the sink. We used a piece of webbing in Charley's pack to pull the larger rocks out of the rapidly enlarging entrance.



Bill Russell points out the entrance to Chupacabra.
1997 photo by Julie Jenkins

Hours later we had the entrance open and stabilized, and I climbed in. A flowstone bridge crossed the pit three meters down. One side dropped into a shallow crack and the other into a deeper pit. Charley rappelled past the bridge through a narrow slot into a nice formation-lined pit about twenty meters deep. From the bottom of this pit Charley went through another squeezed to a short climbdown and reported a "major pit."

The climbdown at the bottom of this twenty-meter pit led to a small alcove that ended in a narrow vertical slot just too small to squeeze through. The slot immediately opened up into something dark and spacious. Rocks fell free for three seconds then bounced with long bounces until finally there was silence. After some discussion, we decided to name the cave Sima de la Chupacabra, after the mythical Goat Sucker much in the Mexican news at the time.

After thinking about the rock fall and the airflow, we realized this could be a significant cave. Most of the major cave passages in Sistema Purificación trend north-south, but this cave is well west of the system, so Chupacabra could be a whole new system. We had to return.



Bill Russell on the first drop in Chupacabra.
1997 photo by Charley Sawas

The next month the three of us had time off, so we zipped back to the Tinajas Valley. We liked our hastily-located camp from the first trip, so we set up camp there again and walked into town to talk to the locals. They reported many pits in the area, pointing up the hill to a rock outcrop behind which they said was a very deep pit. The next morning our guide Oscar led us to this. The entrance was not impressive, but tossed rocks produced bouncing sounds that echoed for several seconds. We rigged a rope in the narrow entrance, and Charley descended until he ran out of rope. Thus we'll have to return to this nice pit, though there was no airflow. Then we walked over to a larger pit, finding two small pits along the way. This larger pit was deep, and we ran out of rope again.

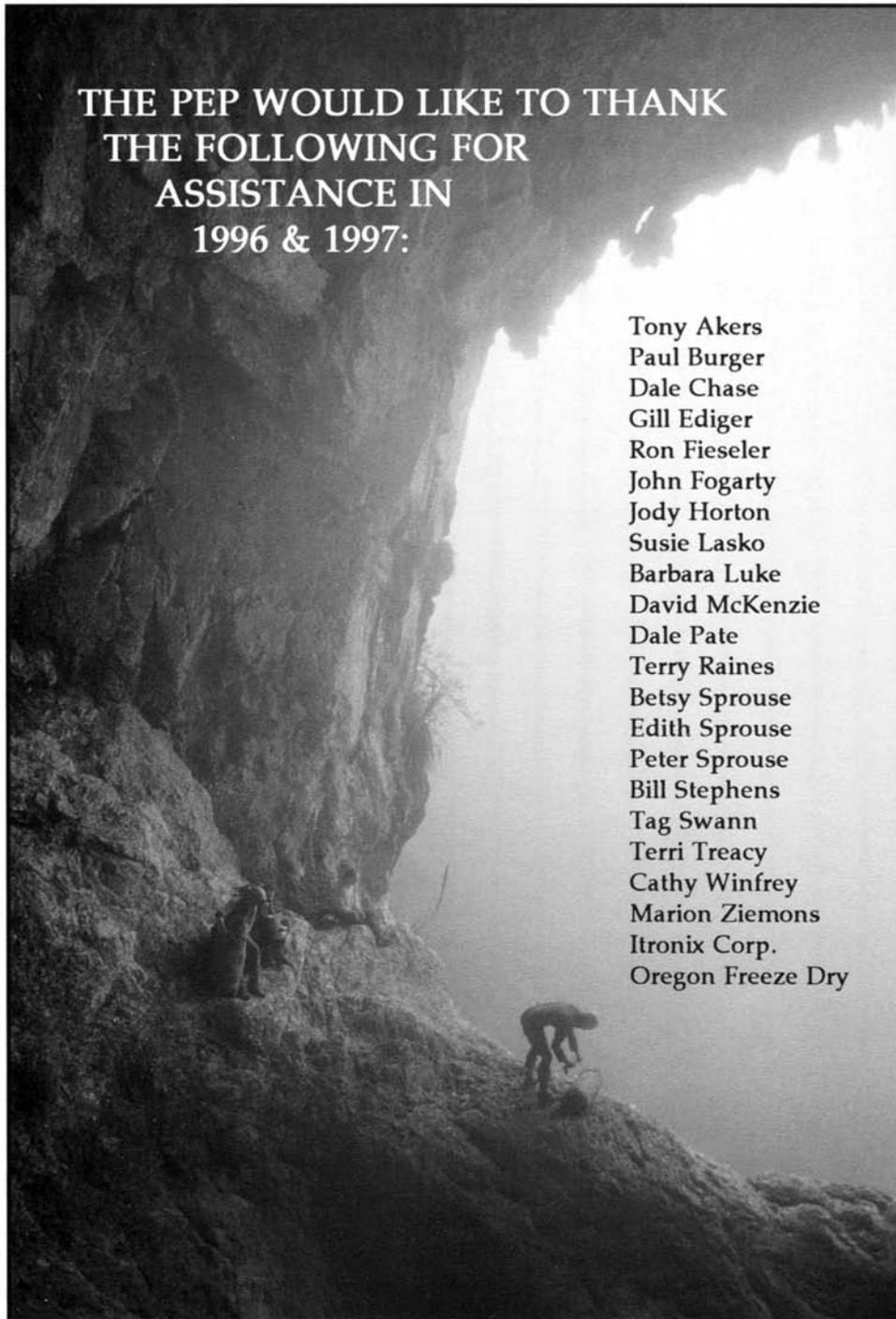
The next day we missed Oscar, so we decided to look for pits above town. Soon we found many small holes. We mapped the most promising of these and visited a mine but the shafts were too crumbly to enter. We found Oscar the next day and were taken to pits north of town. After three days around Tinajas, we realized we had a mission, and it was time to get serious and return to Sima de la Chupacabra. A local came by to tell us about more pits, but we were running out of time and needed to check the big one.

We returned to the pit festooned with rope. The first item of business was to enlarge the narrow slot at the entrance to the pit. Enlargement went well, producing a feeling of awe as the crash of rocks falling into the pit reverberated for many seconds. Finally, the way was clear, so Charley gathered his gear and disappeared down the rope. After what seemed like a long time, he returned with the news that the pit was deeper than the two ropes we had tied together. We still had one short rope though, so the next day Charley went back down. He noticed that there were two potential rub points so he took the drill and two battery packs to set rebelay. This time he reached a "bottom" about 165 meters below the surface. The bottom was actually a short horizontal section that went for ten meters then dropped again. He threw some rocks down the next pit and again they bounced for a long time.

The elevation of the entrance is 1510 meters, and the rocks dropped into the second deep pit bounced to probably 250 meters below the entrance. The cave is developed in the massive reef limestone and it is not clear what limits its downward development. The most likely resurgence for water from the Tinajas Valley is the Nacimiento de Hervores that flows into the Arroyo Luna at an elevation of 1050 meters, about seven kilometers to the north of Sima de la Chupacabra. This difficult-to-reach nacimiento flows from an underwater passage and plunges over a waterfall into the Arroyo Luna. It could be the resurgence for much of the water from the Purificación area.

Assuming a 50 meter rise in the water table over seven kilometers, suggests a water surface at a elevation of 1100 meters; 410 meters below the entrance. It is likely that there is horizontal development above this level, though the geology is not known well enough to even estimate the thickness of the massive reef limestone. One and a half kilometers north of Sima de la Chupacabra, at the junction of the Arroyo Luna and the Arroyo Ramírez, the un-bedded reef limestone has changed into a limestone with beds

tens of meters thick. A kilometer farther to the north, the beds are less than a meter thick. However, there is considerable large-scale folding in the area, so these surface exposures may not be stratigraphically equivalent. But the bedding does appear to be thinning rapidly to the north, indicating that Sima de la Chupacabra is very near the edge of the reef; increasing the possibility that the base of the reef limestone is accessible and could localize an extensive horizontal system.



PURIFICACION AREA CAVE DESCRIPTIONS

written by

John Fogarty, Pete Hollings, Barbara Luke, William Russell, Peter Sprouse

Faunal lists compiled by James R. Reddell



POZO DEL LODO ESTRATIFICADO

PEP 25

Las Chinas, Tamaulipas

Length: 25 meters Depth: 21 meters

UTM coordinates: 454,978 E 2,638,762 N

This pit is situated 1100 meters east-southeast of Rancho Nuevo and just south of Cueva del Vandalismo, at an elevation of 2648 meters. It is on the west edge of a road and takes some muddy runoff. It is a 20 meter drop to the bottom, where stratified mud layers contained bones. Mark Shumate explored this cave on 31 October 1979, and collected a new genus of cricket. (PS)

A collection from the cave on 31 October 1979 by Mark Shumate included the following material:

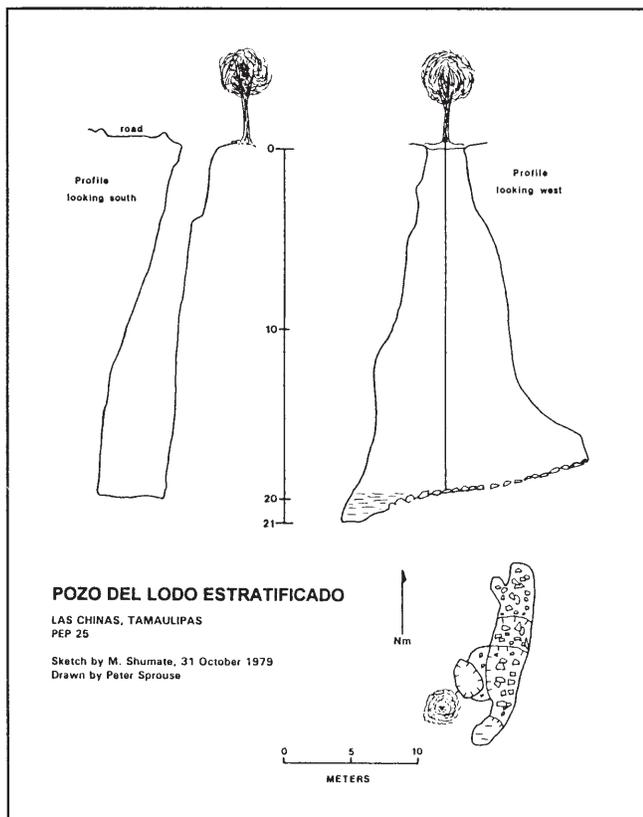
Spiders: *Nesticus rainesi* Gertsch (troglophile)

Modisimus reddelli Gertsch (troglophile)

Millipedes: Diplopoda undetermined

Cave crickets: Rhabdiphoridae, new genus and new species (trogloxene)

Lamellicorn beetles: Scarabaeidae genus and species



POZO DE ALMUERZO

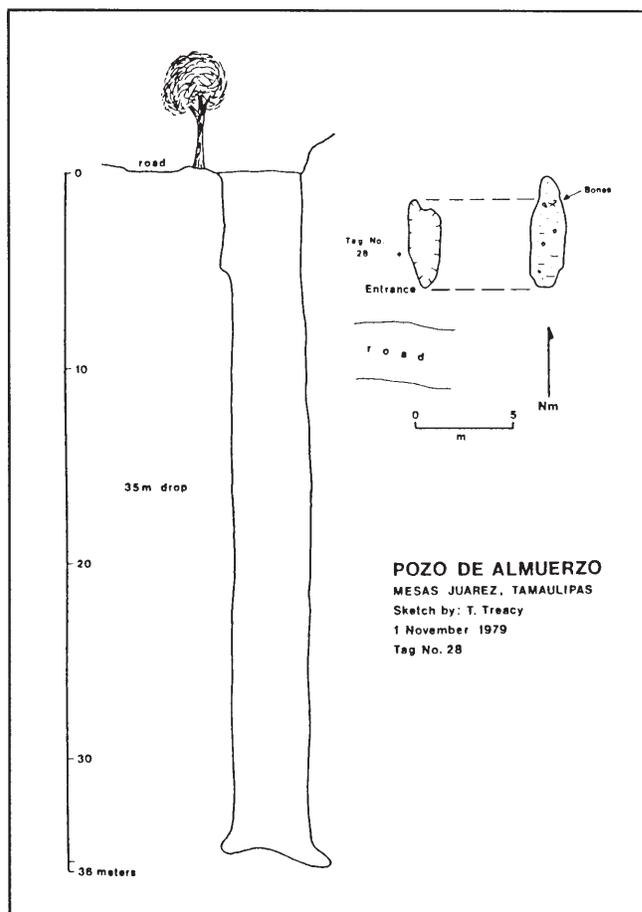
PEP 28

Mesas Juárez, Tamaulipas

Length: 36 meters Depth: 36 meters

UTM coordinates: 455,050 E 2,636,430 N

Pozo de Almuerzo is located 1200 meters south of the Mesas Juárez fire tower at 2690 meters elevation. It is on the north side of a clearing where the left fork of the Mesas Juárez road ended. This road has since been continued. It is a blind 36 meter pit that was checked by Terri Treacy on 1 November 1979, before lunch. (PS)



CUEVA DEL ESQUELETO

PEP 36

Conrado Castillo, Tamaulipas

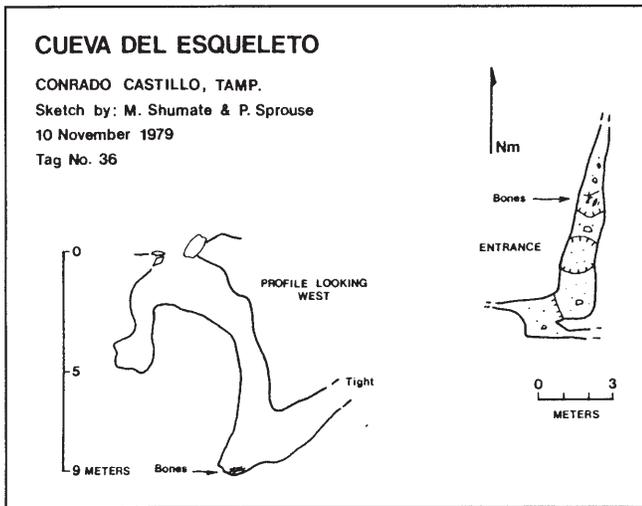
Length: 18 meters Depth: 9 meters

UTM coordinates: 451,695 E 2,648,890 N

Cueva del Esqueleto is situated 800 meters south-southeast of Conrado Castillo, at an elevation of 2276 meters. It is downhill from an old Spanish mine. The entrance climbdown leads to a rift containing animal bones. This cave was discovered on 23 October 1979 by Mark Shumate, Peter Sprouse, and Terri Treacy, and sketched on 10 November 1979. (PS)

A collection from the cave in October 1979 by Peter Sprouse included the following material:

- Spiders: *Modisimus reddelli* Gertsch (troglophile)
- Harvestmen: Gagrellinae or Leiobuninae genus and species
- Millipedes: *Cleidogona yerbabuena* Shear (troglophile)
- Cave crickets: *Exochodrilus* sp. (troglaxene)
- Mold beetles: *Euphalepsus* sp.



POZO DE TINAJAS PRIETAS PEP 55
 Los Caballos, Tamaulipas
 Length: 50 meters Depth: 36 meters
 UTM coordinates: 449,400 E 2,652,920 N

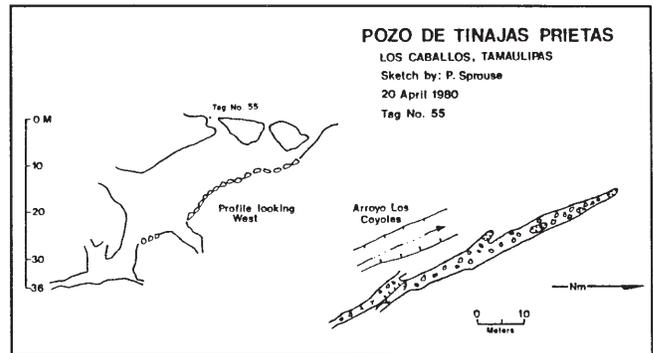
This pit is 1000 meters northwest of Los Caballos at 1600 meters elevation. It is next to Arroyo los Coyoles and probably takes floodwaters. The cave can be freeclimbed down to an unexplored crawlway that takes air. This cave was shown to Louise Hose, Peter Sprouse, and Terri Treacy on 20 April 1980 by Juan Puente. (PS)

A collection from the cave on 20 April 1980 by Peter Sprouse contained the following material:

- Spiders: *Nesticus rainesi* Gertsch (troglophile)
- Mites: Acarida undetermined
- Millipedes: Diplopoda undetermined
 - Rhachodesmidae genus and species
 - Xystodesmidae genus and species
- Cave crickets: *Exochodrilus* new species (troglaxene)
- Darkling beetles: *Eleodes (Caverneleodes) sprousei* Triplehorn and Reddell (troglophile)

CUEVA DEL REY NEGRO PEP 63
 Conrado Castillo, Tamaulipas
 Length: 8 meters Depth: 3 meters
 UTM coordinates: 451,223 E 2,650,670 N

This cave is located 900 meters north of Conrado Castillo on the east flank of Cerro Zapatero. It is a short horizontal cave at 2100 meters elevation. When it was explored on 25 May 1980 by Peter Sprouse and Terri Treacy it contained a large black spider. (PS)



CUEVA PLANA PEP 117
 Galindo, Tamaulipas
 Length: 58 meters Depth: 8 meters
 UTM coordinates: 452,975 E 2,651,230 N

Cueva Plana is located 500 meters west of the "village" of Galindo. It is situated at 1590 meters elevation in a small cliff face above the highest fields. As the name suggests, the cave is formed on a bedding plane and is quite flat. It is probably developed at the base of the Tamaulipas Formation. It was surveyed on 26 April 1982 by Peter Sprouse and Terri Treacy. (PS)

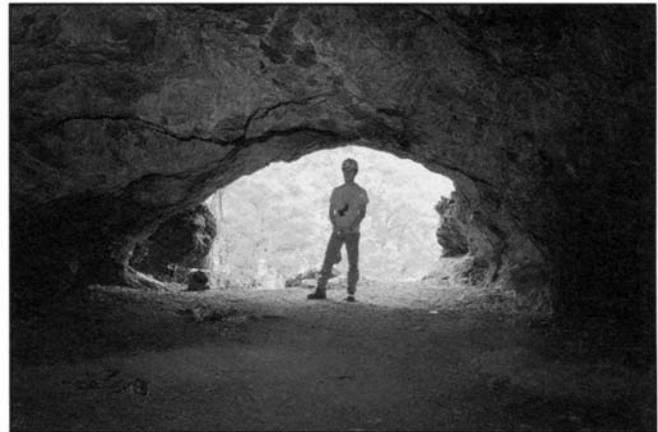
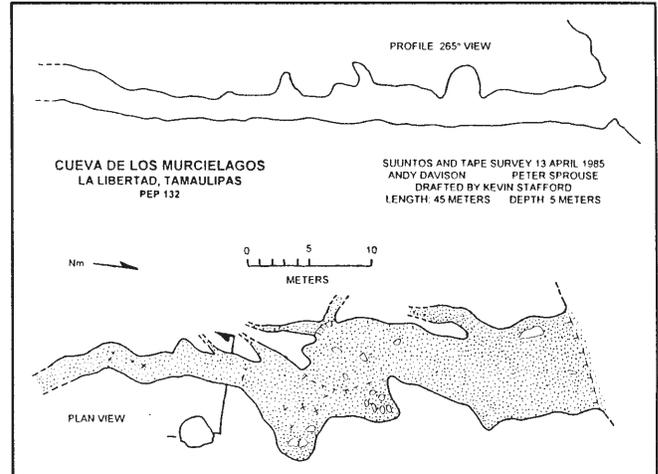
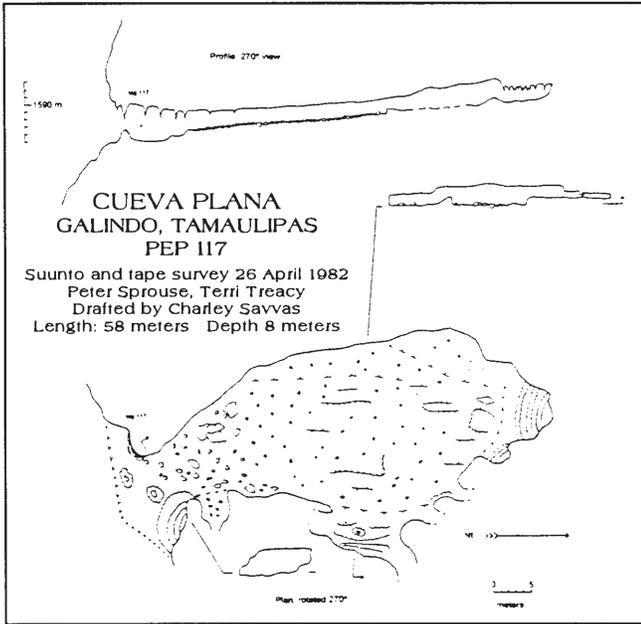
CUEVA DE LA SALA BONITA PEP 124
 Los San Pedros, Tamaulipas
 Length: 25 meters Depth: 9 meters
 UTM coordinates: 461,685 E 2,638,990 N

Cueva de la Sala Bonita is located 500 meters east of Los San Pedros at an elevation of 1453 meters. From the entrance a slope leads into a well-decorated room. This cave was explored on 18 November 1984 by Margaret Hart, Dale Pate, and Terri Treacy. (PS)

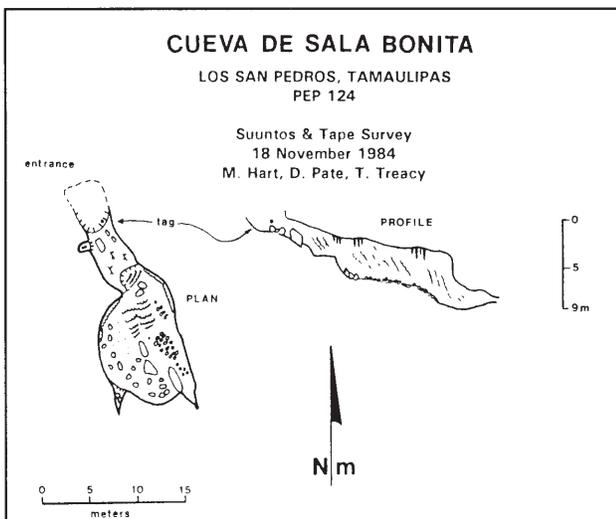
A collection from the cave on 18 November 1984 by Dale Pate and Terri Treacy included the following material:

- Isopods: Trichoniscidae genus and species (troglomite)
- Spiders: Araneidae genus and species
Ctenus sp. (troglophile)
- Harvestmen: *Hoplobunus* new species (troglomite)
- Millipedes: Pyrgodesmidae genus and species (troglophile)
Rhachodesmidae genus and species
- Slender springtails: *Pseudosinella reddelli* Christiansen (troglophile)
- Cave crickets: Rhabdophoridae genus and species (troglaxene)
- Ground beetles: *Mexispodrus purgatus* Barr (troglomite)
- Darkling beetles: *Eleodes (Cavermeleodes) sprousei* Triple horn and Reddell (troglophile)

Cueva de los Murciélagos is located 2 kilometers southwest of La Libertad, in Cañon de la Peregrina. It is about 10 meters above the canyon stream on the south side at an elevation of 360 meters. The cave is floored with dry, dusty guano. When it was explored on 13 April 1985 by Andy Davison and Peter Sprouse, they were compelled to stop in going passage due to the heavy dust in the air. (PS)



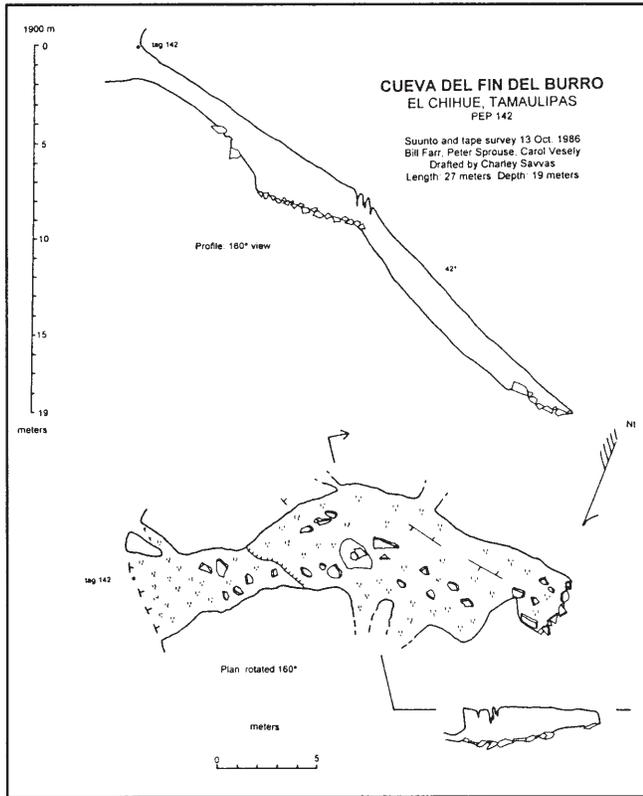
Andy Davison at the entrance of Cueva de Los Murciélagos. 1985 photo by Peter Sprouse



CUEVA DE LOS MURCIÉLAGOS PEP 132
La Libertad, Tamaulipas
Length: 45 meters Depth: 5 meters
UTM coordinates: 478,880 E 2,629,400 N

CUEVA DEL FIN DEL BURRO PEP 142
El Chihue, Tamaulipas
Length: 27 meters Depth: 19 meters
UTM coordinates: 457,655 E 2,641,196 N

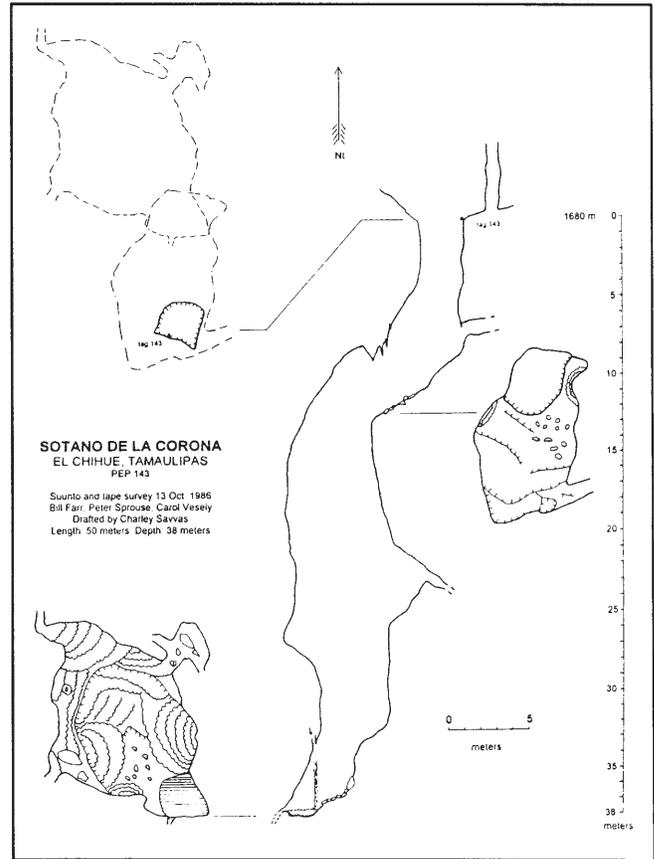
This cave is located 600 meters north of El Chihue, on a forested slope at 1700 meters elevation. From the entrance the passageway slopes westward down dip to end in a boulder fill with burro bones. It was located and mapped on 13 October 1986 by Dave Bunnell, Bill Farr, Peter Sprouse, Terri Treacy, Carol Vesely. (PS)



SOTANO DE LA CORONA PEP 143

El Chihue, Tamaulipas
Length: 50 meters Depth: 38 meters
UTM coordinates: 457,567 E 2,641,260 N

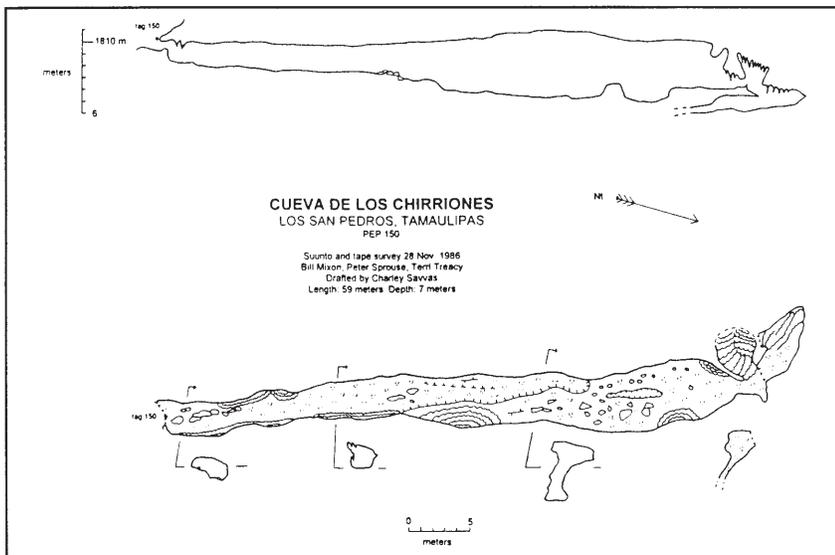
Sótano de la Corona is located 700 meters north-northwest of El Chihue, under a Corona (dogwood) tree. It is just downhill from Cueva del Fin del Burro, at 1680 meters elevation. At the bottom of the 35-meter entrance pit there is a waterfall that emerges from one wall and drops into a pool. The outflow from the pool is too tight to follow. This pit was located and mapped on 13 October 1986 by Dave Bunnell, Bill Farr, Peter Sprouse, Terri Treacy, Carol Vesely. (PS)



CUEVA DE LOS CHIRRIONES PEP 150

Los San Pedros, Tamaulipas
Length: 59 meters Depth: 7 meters
UTM coordinates: 458,715 E 2,640,800 N

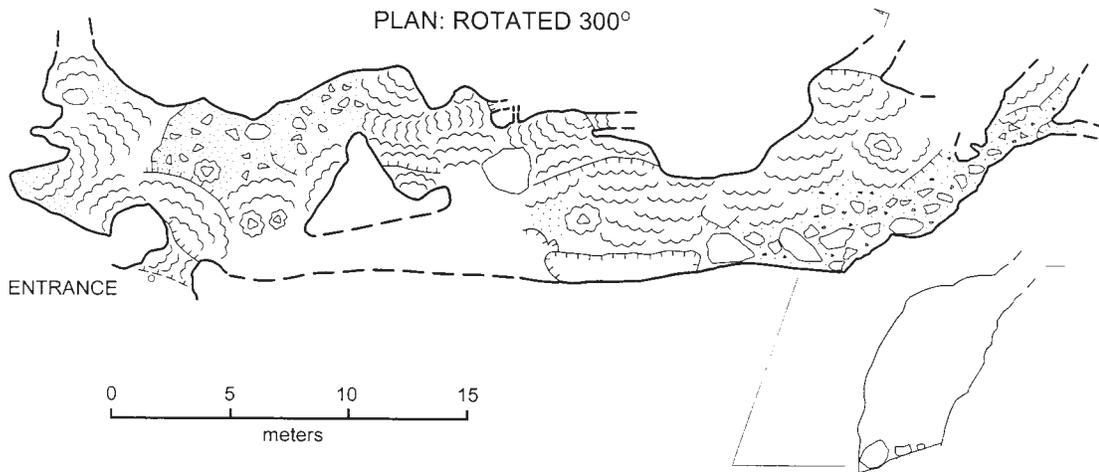
Cueva de los Chirrones is 1000 meters north-northeast of El Chihue, at 1810 meters elevation. It is uphill from the main road through the area. The meter-high entrance quickly opens up into nice walking passage. This ends in a formation choke area after 59 meters. This cave was shown to Erika Heinen, Bill Mixon, Dale Pate, Peter Sprouse, and Terri Treacy on 28 November 1986 by local guide Gabino Torres. (PS)



CUEVA RABONA PEP 240

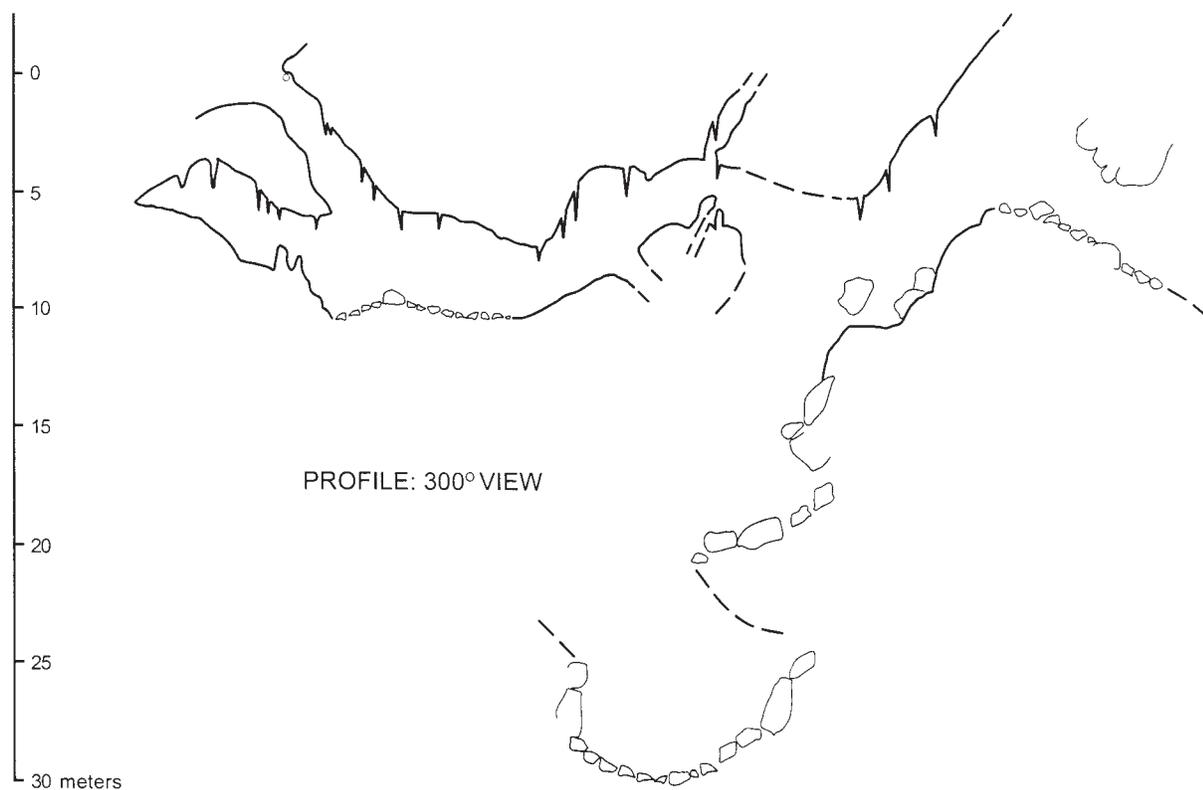
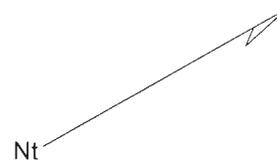
La Reforma, Tamaulipas
Length: 80 meters Depth: 32 meters
UTM coordinates: 472,777 E 2,615,325 N

This cave is located 4500 meters northeast of La Reforma, at an elevation of 1365 meters. It is on a ridge just east of the Arroyo el Tanque. A steep slope just inside the entrance leads down into a formation gallery. Toward the north end of the cave it is more vertical with a 20 meter drop in the floor down to a boulder choked rift. The far north has a steep flowstone climb which was not explored. Michael Crawford, Susie Lasko, and Peter Sprouse were shown this cave on 17 January 1992. (PS)



CUEVA RABONA
LA REFORMA, TAMAULIPAS
PEP 240

SUUNTO AND TAPE SURVEY 17 JANUARY 1992
MICHAEL CRAWFORD, SUSIE LASKO, PETER SPROUSE
DRAWN BY PETER SPROUSE
LENGTH: 80 METERS DEPTH: 32 METERS



PROYECTO ESPELEOLOGICO PURIFICACION

POZO DEL TORO

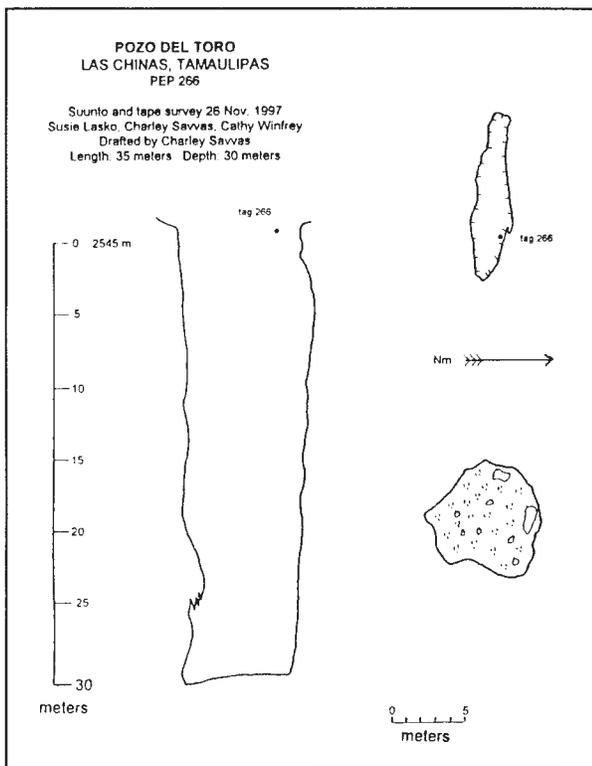
PEP 266

Las Chinas, Tamaulipas

Length: 35 meters Depth: 30 meters

UTM coordinates: 454,361 E 2,641,758 N

Pozo del Toro is located 2500 meters north of Rancho Nuevo, at an elevation of 2545 meters. It lies at the end of a road where the trail to Cueva de California begins. The entrance is a 10-meter-long fissure, and drops 30 meters to a dead end. This pit was mapped on 26 November 1992 by Susie Lasko, Charley Savvas, and Cathy Winfrey. (PS)



POZO SUEÑO MANDARINA

PEP 272

La Cueva, Tamaulipas

Length: 65 meters Depth: 58 meters

UTM coordinates:

454,809 E 2,640,009 N

This pit is located 1000 meters northeast of Rancho Nuevo, at an elevation of 2563 meters. Flowstone decorates the walls of this 58 meter shaft. It was located and mapped on 25 November 1992 by Charley Savvas and Peter Sprouse. (PS)

POZO DEL CAMPAMENTO

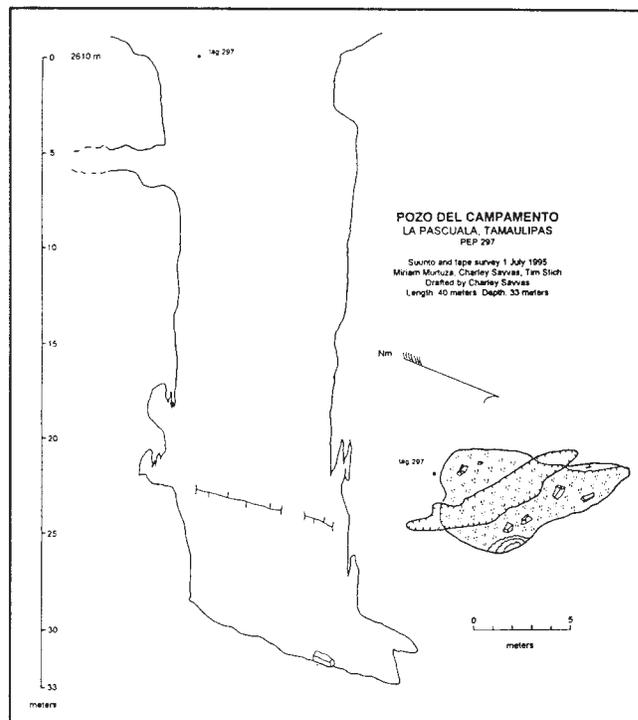
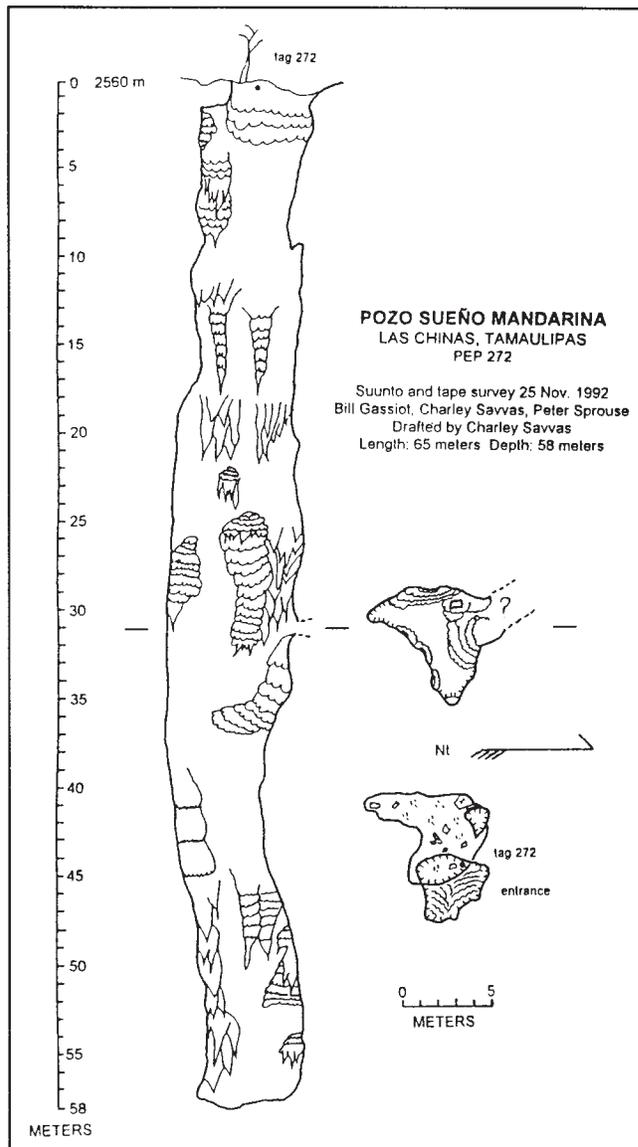
PEP 297

La Pascuala, Tamaulipas

Length: 40 meters Depth: 33 meters

UTM coordinates: 453,699 E 2,643,104 N

This pit is located 4800 meters southeast of Revilla, at 2610 meters elevation. Its entrance is 2 by 10 meters. This drops 30 meters to a dirt floor, where a new type of troglotic darkling beetle was found. Charley Savvas found this pit on 1 July 1995, and mapped it along with Miriam Murtuza and Tim Stich. (PS)



POZO DEL CANAL INGLES

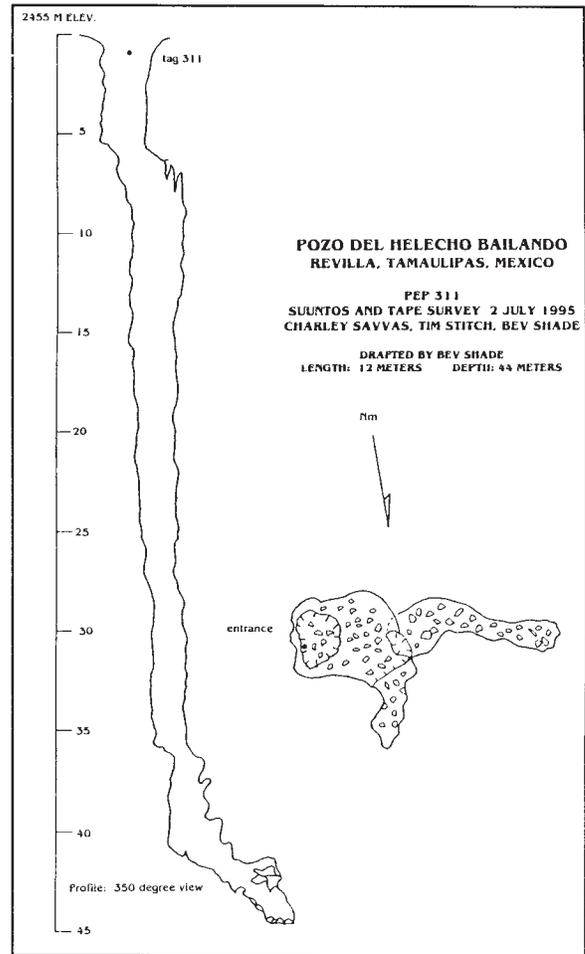
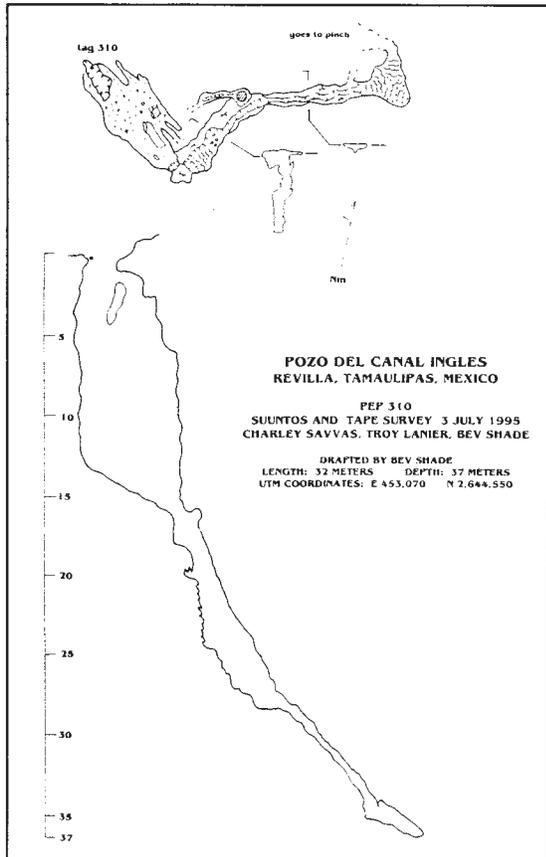
PEP 310

Revilla, Tamaulipas

Length: 32 meters Depth: 37 meters

UTM coordinates: 453,070 E 2,644,550 N

This pit is located 3200 meters southeast of Revilla, at 2425 meters elevation. It is in a cluster of sinks on the east side of an old logging road. The entrance pitch is 15 meters, below which the cave slopes steeply down to a terminus at 37 meters depth. Bev Shade, Peter Sprouse, and Cathy Winfrey found this pit on 1 July 1995, and Bev mapped it two days later with Troy Lanier and Charley Savvas. (PS)



Pozo del Meteor is located 3100 meters southeast of Revilla, at 2430 meters elevation. It is in a saddle adjacent to an old logging road. The two adjacent pit entrances join to land on a ledge 5 meters down, with the bottom another 14 meters below. This pit was located on 1 July 1995 by Bev Shade, Peter Sprouse, and Cathy Winfrey. Bev surveyed it two days later along with Troy Lanier and Charley Savvas. (PS)

POZO DEL HELECHO BAILANDO

PEP 311

Revilla, Tamaulipas

Length: 50 meters Depth: 44 meters

UTM coordinates: 453,100 E 2,644,305 N

This pit is situated 3400 meters southeast of Revilla, at 2455 meters elevation. It is in a small valley on the west side of an old logging road. The entrance is in a small funnel-shaped sink, and it drops 41 meters to a terminal slope. It was located on 1 July 1995 by Bev Shade, Peter Sprouse, and Cathy Winfrey. Bev returned to map it the next day with Charley Savvas and Tim Stich. (PS)

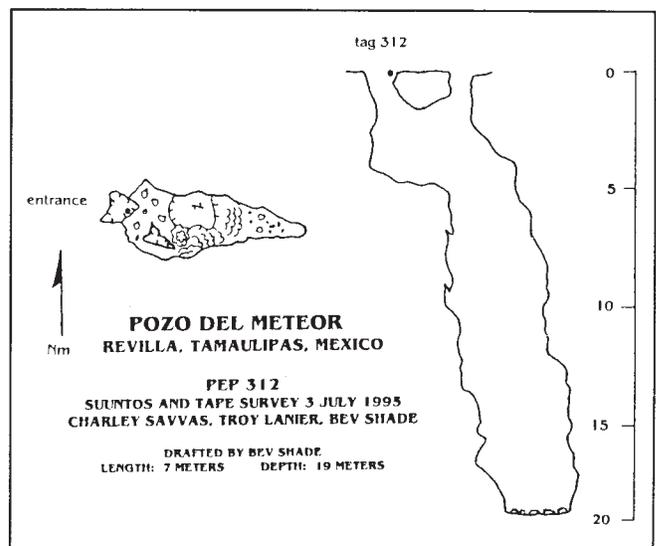
POZO DEL METEOR

PEP 312

Revilla, Tamaulipas

Length: 27 meters Depth: 19 meters

UTM coordinates: 453,038 E 2,644,655 N



POZO DE TWEEDLE DUM

Cuahtémoc, Nuevo León

Depth: 29 meters

UTM coordinates: 452,470 E 2,642,607 N

PEP 355

meters east of that rift. The name is from the local name for Spanish Moss, which is abundant around the pit. It is at an elevation of 1520 meters.

This pit is located 1200 meters south-southeast of Cuahtémoc just northwest of the road junction to La Calabasa, elevation 2305 meters. The entrance is very close to PEP 327, but is blind and does not connect. It is a 27 meter shaft that was explored on 25 December 1995 by Marcus Barksdale, Pete Hollings, Barbara Luke, and Bev Shade. (PH)(map is in DCC 6)

SOTANO DEL PAISTLE

Tinajas, Nuevo León

Length: 45 meters Depth: 38 meters

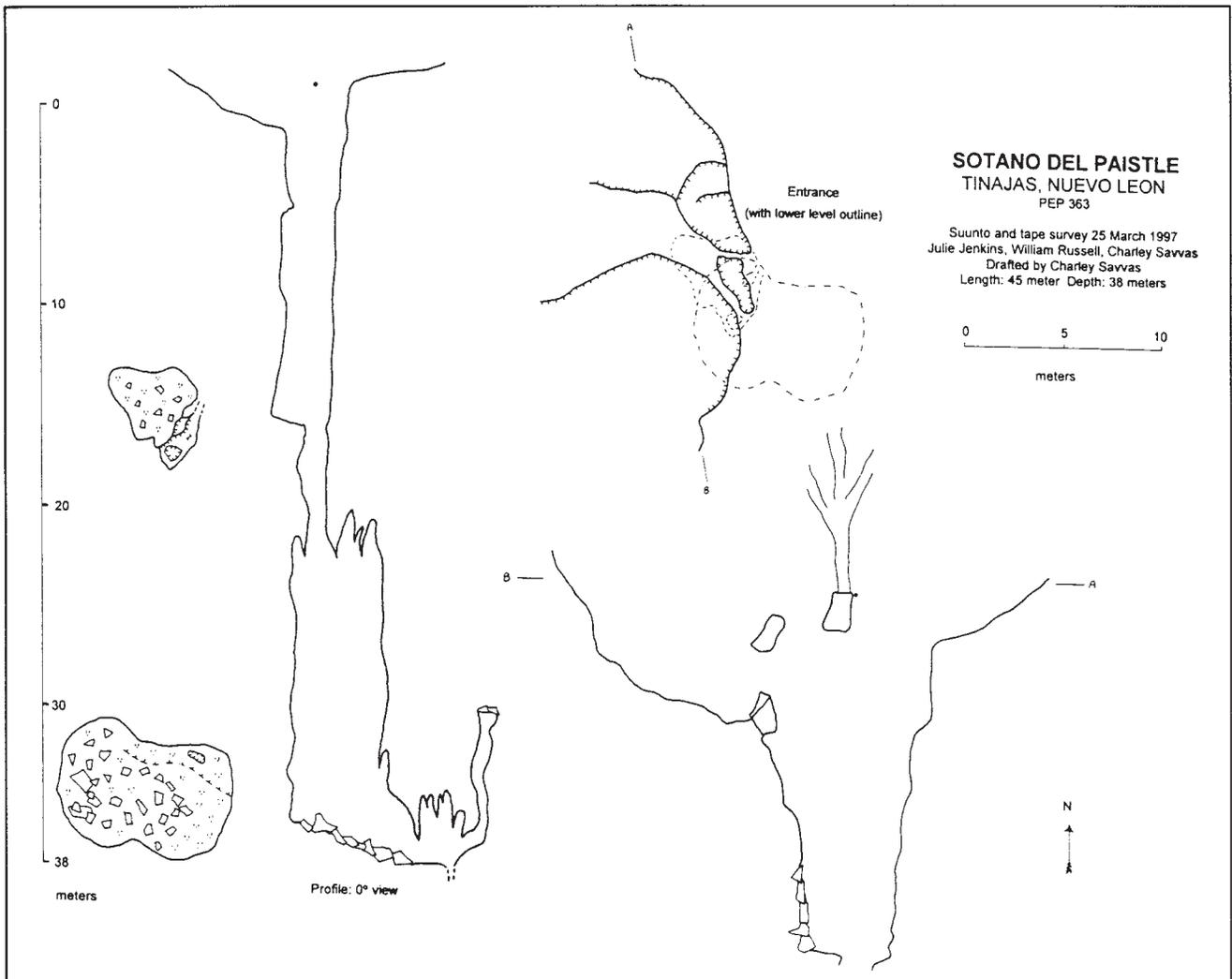
UTM coordinates: 443,250 E 2,647,600 N

PEP 363

The entrance to Sótano del Paistle is a vertical shaft about four meters in diameter spanned by a natural bridge. The pit actually has three entrances. The third entrance is an opening from the side of the entrance shaft into a sinkhole just to the west of the pit. This entrance shaft drops 15 meters to a dirt and breakdown floor. Looking up from the bottom of the entrance pit is an inspiring sight, with the light shining through the three entrances separated by narrow bridges of rock. The central bridge has a tree growing on the bridge almost as thick as the bridge itself.

This pit is located just west of the Arroyo Tinajas, between the arroyo and a shallow sinkhole shown on the topographic map, west of where the Arroyo el Aguacate joins the Arroyo Tinajas. Just east of the rock outcrop that forms the east edge of the shallow sinkhole is a solution rift over a hundred meters long, up to five meters wide and deep; the pit is about 50

At the bottom of the entrance pit an arched opening at floor level opens in the side of the pit beneath the sinkhole, but is immediately blocked by breakdown. Another opening to the south slopes steeply down to a 20-meter drop into a dirt-floored room. The walls are covered with flowstone and old formations. A channel in the dirt floor leads to a dirt-and-rock filled drain along one wall. Digging in the drain made good progress, but there was no air flow. (WR)



SIMA COLGADA

Tinajas, Nuevo Leon

Length: 60 meters Depth: 47 meters

UTM coordinates: 441,880 E 2,646,050 N

Sima Colgada is located about one kilometer south of Tinajas, just east of the road up the valley. To reach the cave from Tinajas, follow the road south past the water tank, and turn left at the first left branch. This branch road crosses a low ridge and descends into a small meadow about 100 meters from the main road. Sima Colgada is located about 100 meters northeast of the meadow, and about 45 meters west of the base of a large karst pinnacle. The entrance is an inconspicuous crack a little over one meter long. It is at an elevation of 1645 meters. The cave is named "hanging pit" for a narrow slot about 5 meters below the surface that catches helmets.

Sima Colgada is developed along fractures that parallel the Tinajas Valley, and control the alignment of most of the karst features. A short climbdown leads to a boulder blockage, but these boulders were removed, so that it became possible to climb down to a ledge about 5 meters below the surface. Here, the crack briefly narrows, and rope is required for a 10-meter descent down a flowstone-lined enlargement of the fissure to a major ledge. From the bottom of this drop, the fissure again drops vertically for 20 meters to a dirt- and flowstone-lined floor. A short

PEP 364

climb down over a flowstone bank leads to a water-scoured floor. Charley Savvas was able to remove some rocks and enlarge a hole in the floor to passable size. Below the hole were two small openings, one just barely passable that extended vertically downward to where it was almost blocked by a rock. Rocks tossed past that plug rock bounced on down for at least ten more meters, but the hole was vertical and just body sized, and there was no way to enter and move the rock. The other opening led to a climb-down into a small room, where a drain only a few centimeters in diameter appeared to connect to the other hole. There was no noticeable air flow. Located by Charley Savvas, Julie Jenkins, and Bill Russell in May of 1997. (WR)

POZO DEL BURRO MALO

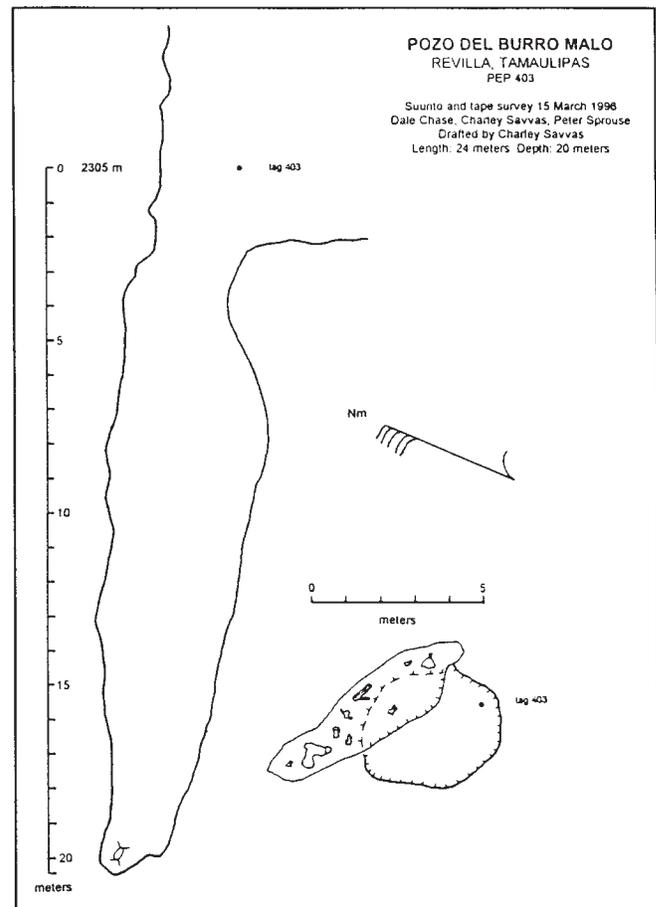
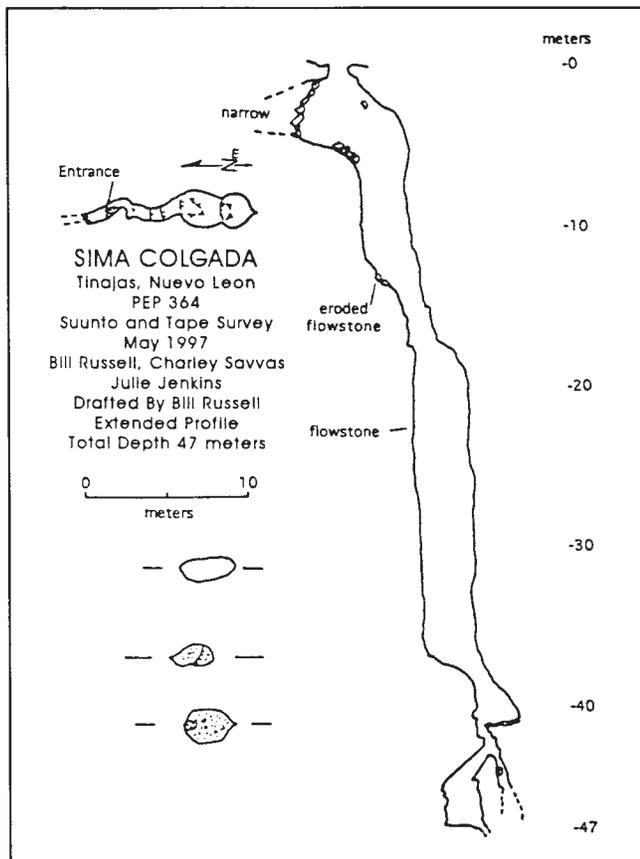
PEP 403

Revilla, Tamaulipas

Length: 24 meters Depth: 20 meters

UTM coordinates: 451,530 E 2,647,155 N

This pit is located just below the main road on the south side of Revilla, elevation 2305 meters. A trail passes right in front of the entrance. A dead burro was found at the bottom of the 20 meter blind drop. Charley Savvas descended this pit on 15 March 1996, with Dale Chase and Peter Sprouse helping on the survey up top. (PS)



1997 PEP MEMBERSHIP



While everyone else in Camp VII is asleep, Charley is busy checking another lead. →
1996 photo by Peter Sprouse.



