# AMCS ACTIVITIES NEWSLETTER No. 9

# AMCS ACTIVITIES

# NEWSLETTER

Publisher
William Russell

Editor
Bill Stone

Typing & Layout assistance
Terri Treacy

Production Staff
Sheila Balsdon, Denis Breining, Maureen Cavanaugh, Gill Ediger, Paul Fambro, Hal Lloyd III, Dale Pate, Jim Pisarowicz, Mark Shumate, Bill Steele

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AMCS
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Austin, TX 78712

The AMCS Activities Newsletter is published between major expeditions; usually twice a year or whenever we get our act together! Since we have no pre-determined time or price schedule for future issues we offer no subscriptions. However, AMCS members will be mailed a circular as publications become available and advertisements will appear in the NSS NEWS and the Canadian Caver. Back issues of Nos. 2-6 are out of print; however, xerox copies are available for $2.50. No. 7 is available in Austin for $2.00, or $2.50 pp. No. 8 is available for $5.00. Articles and trip reports (photos welcome) are solicited from all who cave in Mexico.



Front Cover: Descending Agua de Carrizo's 10th drop enroute to Camp I.

Back Cover: Backpacking through the Confusion Tubes, Cueva de Infiernillo.

Inside Back Cover: Camp I, Agua de Carrizo.

All Cover photography by Bill Stone.

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# International News

## Two More Kilometer Deep Caves

Expeditions in Europe this past summer scored two new kilometer deep systems, the first breakthrough since the Jean-Bernard was linked up a few years ago. Notably, neither of them is in France. The re-survey plagued Sima G.E.S.M. in Spain was bottomed by a French-Spanish team at -1070 meters where they were stopped at a terminal sump. The cave has been resurveyed since the fiasco two years ago in which its depth dropped from -940 meters to -673 meters when it became known that the cave had not been surveyed beyond -450 meters. Courbon assures us that this time the depth is accurate.

In Austria a Belgian team surveyed to -950 meters in a new system called Sneelock. They explored beyond the survey to a point which they estimated at -1034 meters. It has not been bottomed. The cave was first discovered in 1977 and was subsequently pushed to -330 meters where they stopped at a tight constriction. This year they returned with considerable success.

## France

The deepest sport trip. In 1976 a British and American team succeeded in connecting a high entrance (The SC3) into the PSM giving a total depth to the system of 1332 meters and regaining the record from the Jean-Bernard (-1298 meters). Since that time no one had done a complete traverse of the cave; until last summer that is. A four man French team (Paul Courbon and three companions) entered the SC3 and did the route to the bottom of the Puits Parments and out in 65 hours. It required two bivouacs.

Gouffre de la Consoloation (-580 meters) was the only new deep cave in France this year, and as the title indicates the pickings must be getting slim. However, two well known old systems, Gouffre de la Henne Morte and the Reseau Trombe were linked up to give a spectacular 54 km of passage and 919 meters of depth. The Henne Morte has a long history dating back to the 40's when Casteret and Chevalier were having it out for the depth record. Chevalier, of course, won out with the Trou du Glaz (Dent de Crolles) system reaching a depth of 658 meters in 1947. The Henne Morte at that time was 446 meters deep. Needless to say, Casteret was probably delighted to hear of the connection.

Source - P. Courbon

## Mexico

French and Mexican cavers working in the state of Guerrero have surveyed Sima del Borrego, Chipancingo to a length of 4006 meters. They have presently explored an estimated 5800 meters of passage with a considerable number of leads. It is Mexico's current 13th longest cave. Xocomanetlan, another Guerrero cave, has been surveyed to 2300 meters. This same group successfully completed the first French descent of El Sotano del Barro.

Source - C. Chabert

Jorge Ibarra Soto reports that a massive ceiling collapse has possibly been responsible for the destruction of the spectacular "Fountain" formation in the Rio San Geronimo system. The formation consisted of a set of massive gour pools stretching over 60 meters high and 250 meters across at its widest. Possibly the summer floods washed away the smashed debris. At any rate, the sad realization is that visitors to the Dos Bocas

# International News

systems will now miss what was truly a rare and awesome formation.

AME Bulletin No. 1

## Austria

In January of 1978 a Salzburg caving group (Landesuerein Fue Hohlenkunde) attained the phenomenal "positive" depth of plus 863 meters by working their way upwards in the Lamprechtsofen system. Three months later a Polish team (Krakowski Klub) scaled 200 meters of shafts in a different gallery to reach +952 meters. The total vertical extent of the system is 962 meters (+952, -10) and it is likely the world will soon see its first +1000 meter system, as a large expedition is planned for the upcoming winter season.

## Austral-asia

During June, July and August Australian cavers fielded a 60 man expedition to the Muller Plateau in New Guinea. Their objective was the awesome 400 cu-sec Atea Kanada River Cave which they had briefly checked out in 1976. Correspondent Neil Hickson writes of the expedition:

"The Atea turned out to be a vertical dissapointment at -275 meters, but made up for it lengthwise by becoming the longest in the Southern Hemisphere at 30.5 kilometers. The main riverway was the best trip in the cave, involving an initial one kilometer swim. About 500 meters down the passage was a section which sumped out after heavy rain. This made us very careful. At times it would sump out for up to seven days before opening. The cave finished in a terminal sump but we found by-passes which led into some large chambers. Unfortunately we couldn't get back to the riverway. The rest of the cave was largely mud!

"Al Warild and I found another cave about 4 kilometers from the Atea which we left at 8.5 kilometers long and about 250 meters deep with lots of leads. Unlike the Atea this one was sporting throughout, really great stuff.

"There were so many entrances not looked at, I think you could spend a lifetime out there and only scratch the surface. In one area, a stream cave that bombed down 200 meters, pitch after pitch, was left unfinished. In another area they found a promising entrance, but their 100 meter scouting rope left them 4 seconds rock fall from the bottom.

"We had a near drowning in the 8.5 kilometer cave when Julia James, Al and I were caught at the wrong time in the wrong place when a flood pulse came through after 64 mm of rain on the surface. We were between two pools which sumped shut and then the passage between them filled to the roof! We went through the first pool and found the second shut, then returned to the first and found it had closed too. Fortunately Al found a way out over the top and we got out with about two minutes to spare. We then proceeded to get swept down this overflow passage before managing to climb up the wall to safety. In the desperation to get pegs (pitons, ed.) etc. out of the pack (as the water rose around our chests) we threw Al's Pentax away. Spent the night in a grotty passage jammed together. It's as close as I want to come."

## New Zealand

A sump dive (free) at -287 meters in Greenlink Cave led explorers to a spectacular continuation. Beyond the first, 7 meter sump a 150 meter streamway led to a second sump. This one, however, opened into an 8 meter cascade followed immediately by a 150 meter pitch! They have since surveyed to -485 meters mak-

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ing this the deepest system in Australasia.

## Soviet Union

Following the 42nd "expedition" to Optimistitscheskaya during the 4th and 11th of February, 1978 the complex gypsum maze attained a length of 131, 467 meters making it the second longest cave in the world, edging out Switzerland's Hölloch by several kilometers. Additionally, the furthest reaches of the cave are within 800 meters of passage in Ozernaya Cave which is 102 kilomoters long. However, the Hölloch crew is not about to give up the fight. The latest rumor from credible European sources is that there is a high likelyhood of a connection between Hölloch and a system 800 meters higher on the range. If this connection occurs, not only will it boost Hölloch to the deepest cave in the world (1600 meters plus) but it will also open the upper section to easy entry. Presently the cave is accessable only from the one and only lowest entrance.

## French to Film U.S., Mexican, & Guatemalan Caves

Famous cave sitter and speleo adventurer Michel Siffre is back again, this time with a hefty grant from French National Television to produce films on the caves of the U.S., Mexico, and Guatemala. Along with Gerard Cappa, another noted French caver, he plans to spend November through January visiting the most impressive caves of Mexico to locate suitable filming sites. Then, in February, the camera team will arrive for the shooting. It is unfortunate that we don't pick up French TV, for it will be a long time before films like this will be viewed on NBC.

## Alpine Diving Team Plunges Sump IV

While cave divers in Florida have been making significant advances in speleology by surveying some of the world's longest underwater caves, there really have not been any serious sump diving projects in the U.S. on a level comparable with what is happening in Britain. This may soon change, and a focal point to watch is the Spring Cave project in Colorado. Spring Cave is an alpine resurgence cave located in northwest Colorado in the White Mountains. The diving gear must be hauled through roughly one mile of rugged cave before Sump I is reached. The water would be ice if it was much colder. Starting off with a 20 man crew will usually get 6 divers to Sump I. Beyond this 100 meter siphon three divers then become sherpas for the lead crew, hauling their gear 2/3 kilomter to Sump II. A large assault in August 1978 using this technique failed due to high water between the entrance and Sump I. However, they tried again in October. This time Norm Pace, Tom Taylor and Jim Pisarowicz made it to Sump IV. Following passage "big enough to drive an 18 wheeler through" they traversed 60 meters of passage to a depth of 23 meters before running low on air at a breakdown blockage. The next phase, Pace claims, will be to set Camp I beyond the first sump and stockpile extra tanks there. This will likely be a caving "first" if they succeed next summer.

# The Longest Caves in México &

| | | |
|---|---|---|
| 1. | Sistema Purificación, Tamaulipas | 22,820 |
| 2. | Sistema Cuetzalan, Puebla | 17,200 |
| 3. | La Grieta, Oaxaca | 8,895 |
| 4. | Sótano del Arroyo, San Luis Potosí | 7,200 |
| 5. | Cueva de Kaua, Yucatan | 6,700 |
| 6. | Sótano de San Agustín, Oaxaca | 5,905 |
| 7. | Gruta del Río Chontalcoatlan, Guerrero | 5,600 |
| 8. | Gruta del Río San Jeronimo, Guerrero | 5,600 |
| 9. | Grutas de Juxtlahuaca, Guerrero | 5,098 |
| 10. | Sumidero de Atepolehuit, Puebla | 5,000 |
| 11. | Cueva del Nacimiento del Río San Antonio, Oaxaca | 4,570 |
| 12. | Sótano de la Tinaja, San Luis Potosí | 4,502 |
| 13. | Sima del Borrego, Guerrero | 4,006 |
| 14. | Sótano del Río Iglesia, Oaxaca | 3,800 |
| 15. | Sotano de Agua de Carrizo | 3,748 |
| 16. | Cueva del Río Jalpan, Queretaro | 3,440 |
| 17. | Actun Xpukil, Yucatan | 3,353 |
| 18. | Cueva de la Laguna Verde, Oaxaca | 3,350 |
| 19. | Sumidero Yochib, Chiapas | 3,316 |
| 20. | Sótano de Huitzmolotitla, San Luis Potosí | 3,002 |
| 21. | Sótano del Tigre, San Luis Potosí | 3,000 |
| 22. | Actun Loltun, Yucatan | 2,682 |
| 23. | Sima Esteban, Puebla | 2,500 |
| 24. | La Joya, Puebla | 2,500 |
| 25. | Cueva de Juan Sanchez, Oaxaca-Veracruz | 2,493 |
| 26. | Xocomanetlán, Guerrero | 2,300 |
| 27. | Grutas de San Cristobal, Chiapas | 2,250 |
| 28. | Grutas de Estrella, Mexico | 2,100 |
| 29. | Sistema de Montecillos, San Luis Potosi | 2,000 |
| 30. | Sotano de Yerbaniz, San Luis Potosi | 1,980 |
| 31. | Grutas de Tenextepec, Puebla | 1,920 |
| 32. | Cueva de la Mantilla, Michoacán | 1,900 |
| 33. | Cueva de la Puente, San Luis Potosí | 1,830 |
| 34. | Cueva San Francisco, Chiapas | 1,750 |
| 35. | Sótano de Matapalma, San Luis Potosí | 1,722 |
| 36. | Grutas de Balankanche, Yucatan | 1,600 |
| 37. | Cueva de Tasalolpan, Puebla | 1,600 |
| 38. | Cueva de Los Sabinos, San Luis Potosí | 1,500 |
| 39. | Sacatecolotla, Puebla | 1,500 |
| 40. | Agua Carlota, Oaxaca | 1,400 |
| 41. | Sumidero de Tenejapa, Chiapas | 1,400 |
| 42. | Gruta Cacahuamilpa, Guerrero | 1,380 |
| 43. | K'ocho' Chiapas | 1,360 |
| 44. | Sumidero Chicja, Chiapas | 1,270 |
| 45. | Sótano de Sauz, Chihuahua | 1,230 |
| 46. | Sumidero de Coahuatichan, Puebla | 1,200 |
| 47. | Cueva de La Pena, San Luis Potosí | 1,200 |
| 48. | Gruta de Precipicio, Nuevo León | 1,090 |
| 49. | Sumidero de Oyamel, Tamaulipas | 1,040 |
| 50. | Cueva del Porvenír, Coahuila | 1,000 |

# The Deepest Caves in Mexico

**by Peter Sprouse**

| | | |
|---|---|---|
| 1. | Sistema Purificación, Tamaulipas | 884 |
| 2. | Sótano de San Agustín, Oaxaca | 859 |
| 3. | Sótano de Agua de Carrizo, Oaxaca | 848 |
| 4. | La Grieta, Oaxaca | 760 |
| 5. | Cueva de Diamante, Tamaulipas | 621 |
| 6. | Sótano de Trinidad, San Luis Potosí | 559 |
| 7. | Sótano del Rio Iglesia, Oaxaca | 535 |
| 8. | Sistema Cuetzalan, Puebla | 530 |
| 9. | Sótano de Nogal, Querétaro | 529 |
| 10. | Sótano de las Golondrinas, San Luis Potosí | 512 |
| 11. | Hoya de las Conchas, Querétaro | 508 |
| 12. | Sótano del Buque, Querétaro | 502 |
| 13. | Hoya de las Guaguas, San Luis Potosí | 478 |
| 14. | Cueva de San Agustín, Oaxaca | 458 |
| 15. | Sótano del Barro, Querétaro | 455 |
| 16. | Sótano Itamo, Veracruz | 454 |
| 17. | Sótano de Tlamaya, San Luis Potosí | 454 |
| 18. | Cueva de la Peña, San Luis Potosí | 448 |
| 19. | Sumidero de Atepolehuit, Puebla | 443 |
| 20. | Sótano de la Joya de Salas, Tamaulipas | 376 |
| 21. | Cueva del Chorreadero, Chiapas | 345 |
| 22. | Sotanito de Ahuacatlán, Querétaro | 320 |
| 23. | Hoya de Zimapan, San Luis Potosí | 320 |
| 24. | Cueva de Santa Cruz, Oaxaca | 314 |
| 25. | Sótano de Javelin, Querétaro | 308 |
| 26. | Sótano de los Monos, San Luis Potosí | 291 |
| 27. | Sótano de Soyate, San Luis Potosí | 287 |
| 28. | Cueva de Coyamilpa, Puebla | 283 |
| 29. | Cueva del Rancho de Agua Amarga, San Luis Potosí | 283 |
| 30. | Sótano de Vasquez, Tamaulipas | 275 |
| 31. | Sótano de Huitzmolotitla, San Luis Potosi | 245 |
| 32. | Sótano del Macho Rey, Queretaro | 244 |
| 33. | Sótano de Otates, Tamaulipas | 244 |
| 34. | Pozo Melendez, Guerrero | 229 |
| 35. | Sótano de Ojo de Agua, Querétaro | 228 |
| 36. | El Sotanito, Querétaro | 225 |
| 37. | Sótano de Sendero, Tamaulipas | 223 |
| 38. | Sótano de Sauz, Chihuahua | 220 |
| 39. | Sótano de Coatimundi, San Luis Potosí | 219 |
| 40. | Sótano de la Cuesta, San Luis Potosí | 217 |
| 41. | Sótano de San Francisco, San Luis Potosí | 217 |
| 42. | Sótano del Arbol Sangre, Tamaulipas | 216 |
| 43. | Sumidero Yochib, Chiapas | 213 |
| 44. | Sumidero de Tenejapa, Chiapas | 209 |

**All Units in Meters**

Note: A push on the highest point in Sistema Purificacion over the Christmas holidays resulted in a reported new depth figure of 914 meters. This is a field estimated value.

# Proyecto Espeleologico Purificacion

## A Statement of Hope and Intent

With publication of information presenting the extent of the Sistema Purificacion to the caving world, those who have identified themselves with the Project feel it necessary to present the perspective which guides them. It is our sincere hope that the precedents established will be carried forward by those to follow. Proyecto Espeleologico Purificacion is an ongoing project, all the more viable at the realization of the magnitude of the cave system and the work left to be done. Therefore, it is imperative that the cave and its locale be approached in the future with the same respect and delicacy with which it has been treated in the past.

Our goal has not been the setting of caving records, but rather the pursuit of excellence in speleology. To this end we have sought to maintain the highest standards in the collection of field data, the interpretation of this data and its transformation into an understanding of the entity we call Sistema Purificacion. It goes without saying that everyone entering the cave does so for a multiplicity of reasons. By tempering the thrill of discovery and sheer joy of caving with a sincere desire to understand the cave and our relation to it, then all the facets of caving come together in a harmonious balance.

Implicit in this approach is the understanding that the Project is a part of an organic whole comprised of the cave, the natural locale, the people inhabiting that locale, and lastly of all, ourselves. We have sought to integrate our presence into the existing balance of the area, knowing that it is our burden to not disrupt that balance. It cannot be stressed enough that the trust and hospitality with which we have been received is exceedingly fragile and any damage, once done, is virtually impossible to undo.

We of the PEP respectfully ask all those who choose to visit the Sistema Purificacion to bear foremost in mind that you will be entering a wilderness area both above and below ground, that your presence will be felt, and most importantly your actions will have strong effects. It is the responsibility of each individual to assure that his or her effect will be for the good of the area and for speleology.



Opposite: Climb into The Jersey Turnpike; typical of the many climbs throughout the system. (Dale Pate)

# Spring Activities in the Purificacion Area

**Compiled by Terri Treacy**

As the prime caving season in northern Mexico came around plans solidified for an extended stay in the area which had provided so much lucrative caving in the past year. High in the mountains, northwest of Ciudad Victoria, the Proyecto Espeleologico Purificacion established a fieldhouse in the village of Conrado Castillo. The primary objective of the Project was to make the probable connection between Cueva del Brinco and Cueva de Infiernillo. Once the connection was made, Project members began work on the numerous leads which would extend the system both vertically and horizontally. The following report describes activities from early March to the recent work done over the Thanksgiving holidays.

Conrado Castillo, a mile above the coastal plain. (Tomas Moore)

# Cueva del Brinco

## Downstream in the World Beyond

On March 13, Chris Albers, Warren Anderson, Hal Lloyd and Peter Sprouse entered Brinco to explore downstream in the World Beyond. The 3 kilometer trip to the bottom went fast; splashing down the plunge pools of the Rio Verde and through the easy World Beyond trunk. They mapped a large upper level gallery - The Overpass - in the World Beyond on the way. Further ahead, where the dry route takes off to the left, they followed the stream as it dropped down to the right over flowstone falls. Where they began the survey Warren snooped out the route where most of the water went. This soon became quite complex and everyone took off checking routes. Chris went straight in an overflow passage while Hal dove for the stream route which was very tight. On the way back out he didn't have the aid of gravity and got stuck. Several holes in the rock provided an entertaining view as he had to strip down to squeeze out, all the while being showered with the full flow of the stream.

They picked up the survey again and pushed forward into Chris' lead. This was a narrow fissure over pools which soon fed into a parallel walking passage. More wading brought them to a lightning bolt turn in the passage which dropped them down into a section of deep green lakes. After a bit of swimming survey the passage turned into a long hallway floored with intricate rimstone dams and occasional pools. A hole dropping down on the left was partly explored and continues. The stream way again made zig-zags to the left with passages cutting straight across the turns. They were still dropping down but it became difficult to tell which was the main route of the water and airflow. Following what seemed to be the main passage, they surveyed across two deep lakes to where a rimstone dam nearly blocked the passage. The far side of the dam sloped steeply down into blackness. Chris decided to attempt the descent, and with Warren and Hal acting as a human chain, he was slowly lowered down to the bottom. Chris reported back of a passage with more water and flowstone with two tight leads going off taking a slight breeze. He climbed out of the Geek Extention via Hal and Warren's human ladder.

They traversed back across the two pools and noticed another passage continuing on the other side; then surveyed across the lake ending at the brink of a very interesting shaft. Rocks dropped into the Gonzo Pit indicated a depth of 30+ meters. Since they did not have vertical gear it was left for another time. Returning upstream, Hal took everyone into a side passage he'd noticed that seemed to take most of the actual flow of the stream. After 30 meters the stream fell into a small hole in the floor never to be seen again...or will it? They then made their exit from the cave, having been in 14 hours.

## Upstream World Beyond

On March 22 all 12 cavers present - Jerry Atkinson, Marcia Cossey, Cecilia Green, Andy Grubbs, Robert Hemperly, Jocie Hooper, Dale Pate, Henry Schnieker, Kurt Schultz, Peter Sprouse, Pete Strickland and Terri Treacy

The Fieldhouse in Conrado Castillo. (Paul Fambro)

went on a survey/photo trip to the World Beyond. The sight of all those lights floating down the deep lakes of the Rio Verde and the World Beyond was something to be remembered indeed. Several hundred meters downstream in the World Beyond trunk all stopped for a break at the foot of the large flowstone mound called the Throne of Oztotl. Ready to resume, nine cavers headed south over sand bars and lakes to continue their photographic coverage of the World Beyond. Kurt, Peter and Terri backtracked through the 100 Meter Swim and over a long stretch of huge breakdown to survey upstream from the Scallop Speedway/World Beyond Junction. Near the beginning of the survey Peter noticed a smaller, ascending passage which they followed thinking it might be a dry by-pass. It led to a mud filled pinch. They returned to the main passage where it narrowed to a long, lofty canyon encasing a deep lake. Thanks to the conveniently placed rocks and ledges they avoided being completely submerged for any great length of time; that is until Kurt dropped his carbide lamp and had to dive in after it. He was especially enthusiastic about the small, dirt floored by-pass which looped over the next 50 meters of stream to the shores of a large lake. Once again dry and warm, all were ready to plunge into mapping the lake. This airy passage gradually diminished to the Ear-duct...a narrow, 15 meter long slot with a very low ceiling. At the end of the Ear-duct the ceiling rose long enough to reveal a high, dry lead before dropping again to near water level. Although the air went with the water, the shivering surveyors opted for the

dry route - a breakdown floored trunk gallery. They followed this 100 meters to its drastic transformation - the Helictite Paradise - a dreamworld of fragile, white sode straws up to 2 meters long radiating delicate, sprawling helictites. Beyond the Paradise occurred yet another metamorphosis - the Wierd Mountain Room where great mud funnels threaten to suck in the unwary. They traversed around the edge of the vast room to where the day's 600+ meter survey ended at the bottom of an intriguing flowstone slope.

Entrance of Cueva del Brinco. (William Elliot)

### Fool's Falls

April Fool's Day seemed like an appropriate occasion to make the next descent to the World Beyond. By late afternoon Ediger, Andy Grubbs, Sheila Balsdon, Peter Sprouse and Terri Treacy were packed and ready for a further push towards their major goal: the connection to Infiernillo. Within 4 hours they arrived at the end of the old survey at the top of a series of flowstone falls. A handline was rigged at the first major drop, Handline Falls, which descended 20 meters to a dry, cobble filled plunge pool. Beyond the plunge pool a series of falls dropped 45 meters. Peter, Sheila and Terri surveyed down the steep travertine slope as Andy and Ediger ran ahead to scout out the route. The surveyors traversed breakdown and gravel bars past greyish-white walls banded in black only to find two snoozing explorers who reported an unclimbable flowstone drop ahead. With no tackle at hand, mapping to the top of the drop seemed like a reasonable goal. Once there, Peter found a circuitous route to the bottom and explored ahead about 150 meters. Several hours later piercing beams of sunshine in the entrance room seemed a special greeting after the long ascent from the World Beyond.

### A Borehole to Nowhere

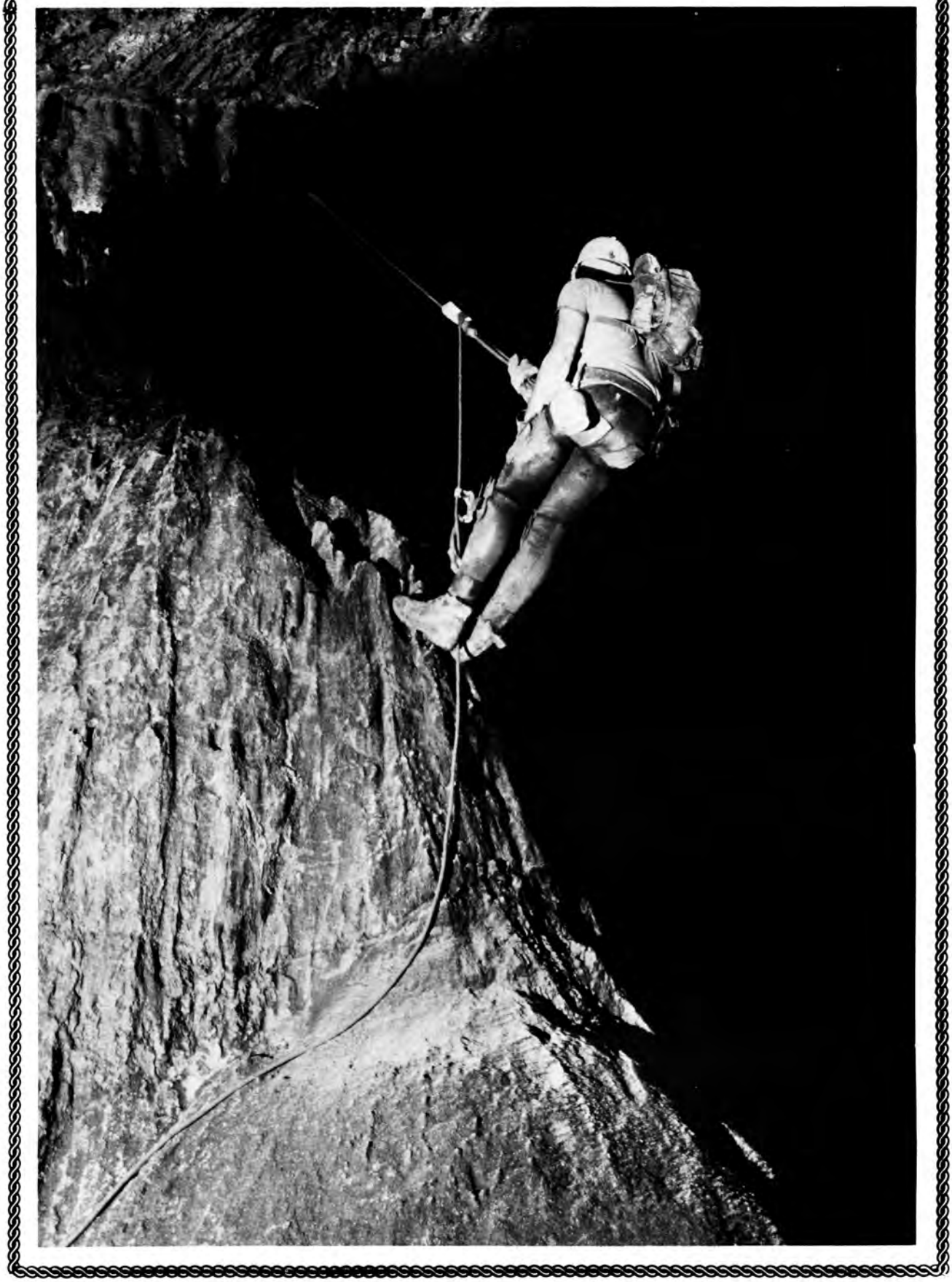
After a week long trip to Infiernillo in which that cave was extended a kilometer and a half closer to Fool's Falls, Sheila, Peter and Terri planned a trip to the bottom of Brinco to approach the connection from that end

The canal at the end of Rio Verde. (Bill Stone)

again. Just inside the cave at the first flowstone climbdown Peter made an exciting collection; a large pigmented scorpion...a first for Brinco. The traveling was slow as all were toting heavier than usual packs of extra rope, vertical gear and food. Handline Falls was rigged this time for SRT as well as the drop at the limit of survey. A decision was made to abandon standard procedure and follow a unanimous desire to explore ahead before beginning the mapping. Perhaps intuition had intervened because what they found was a total antithesis of their expectations. Instead of a clean, scoured, breezy passage dropping into the vast Infiernillo caverns below they found themselves headed directly into an enormous mud sump. Thick, slippery mud completely enveloped the floor, walls and ceiling of a long, large passage which finally ended in its inevitable conclusion, a hopeless pinch. The puzzled cavers disgustedly retreated to a congenial pond where they scrubbed the sump slime from their wetsuits and tried to analyze just where they had gone wrong. Rushing ahead into a windless passage was one mistake, so back they went determined to find the lost air. Alas, at the very point where they'd commenced the day's exploration was a drop to a lower level. Overcome by the temptation to settle in against a comfortable rock Shiela and Terri remained behind while Peter rigged and descended the drop. The passage below consisted of all the convincing signs of a promising route; large, dropping, scoured and taking air. The new discovery lessened the disappointment of the unproductive mud sump and all were ready for the ascent to the surface.



Opposite: Flowstone Falls, the first rope drop. (Bill Stone)



## Tracking the Air

On May 22 Peter returned with Bill Cobb, Paul Fambro, David Honea and Lisa Wilk to the passage which he had discovered. All had high hopes to follow the air to Infiernillo. As Lisa rapelled the 10 meter rope drop her carbide lamp fell, striking Paul who stood below, causing a deep gash in his cheek. Those two chose to wait while the others mapped. Having located the last station, they mapped 150 meters of gradually dropping, scoured grey and black limestone passage to a very complex area with no obvious booming lead to pursue out of it. They split up to do a bit of nosing about in hopes of finding some way out and into major passage again. With a little fresh breeze at their backs, David and Peter raced down a clean, scoured passage, crossing a near swim and then into a room. From this room a small passage dropped, turning quickly into a maze of tight tubes (The Westertubes) which bored into the limestone and took air. Thinking to find a bypass, they turned back to check the room. It continued to the north, taking air. They followed the air, coming to a traverse. This seemed to be a likely connection point so they built a large cairn and returned to regroup and exit.

## Valhalla

Small passages often lead to major discoveries. Such is the case of Valhalla, which lies beyond the Argonaut Squeeze at the upstream end of Tin Can Alley. Jerry Atkinson, Peter Sprouse and Terri Treacy in an ever ongoing attempt to tie up loose ends, took a survey trip to the upper level of Brinco. At the furthest point of previous exploration along Tin Can Alley was a squeeze taking air through popcorn and stalactites. Terri found a passable route through the luring constriction, popping out into Valhalla. She scrambled along the large passage over breakdown to an unclimbable drop into a large, echoing room, the Balcony Room.

Excited at the prospective potential of this new area Peter and Terri returned three days later with Sheila Balsdon and Andy Grubbs to begin the survey. Just beyond the squeeze Sheila noticed a small hole in the floor which Peter followed to a T-junction. A small stream passage to the right led back to the Balcony Room where he noticed several promising, descending passages. To the left at the junction he traversed around a pit and came to another junction. At this point he returned to the others to begin the survey. The surveyors wound their way through the passages around pillars of undissolved, chalky cave wall. With Andy checking ahead they surveyed an up-dipping trunk to an empty, dirt floored room. The air continued up a high flowstone climb.

On a subsequent trip Anne Della Rose, David McKenzie, Mike Poelma, William Russell and Terri Treacy returned to Valhalla to check out the high lead. They emerged into an even larger room with a sloping breakdown covered floor. Everyone scattered about searching for the path of the now not so apparent breeze. It went up through a high fissure to be left for another day. This room, The Attic, is presently the highest point in the system.

The next trip to Valhalla was to survey the descending passages off the

Balcony Room. As Peter, Sheila and Terri surveyed down the right fork at the T-junction to the Balcony Room, Ediger went ahead to investigate the unexplored leads. He discovered two parallel passages that joined in a room with three pits in the floor and a passage taking off to the west. All of these ended up leading to the same lower level in an east-west trend lineation. To the west was a large breakdown room with pits to the lower level. The survey went east down a rapidly descending stream passage to a junction. It was decided to end that portion of the survey and return to the Balcony Room via alternate routes in order to tie up some loops - five of which were surveyed that day.

It was nearly three months before a return trip was made to continue the downstream survey. Bob Anderson and Hal Lloyd explored ahead, followed by mappers Peter Keys, Peter Sprouse and Lisa Wilk. In general the passage was quite narrow and wet. Stoops, crawls, chimneys and climbdowns were common maneuvers throughout this part of the cave. After about ten hours Hal and Bob returned with a report of a 10 meter climbable pit and beyond that a north/south trending stream passage. The survey continued down the pit. The passage at the bottom of the pit went toward the west and the survey was ended at a T-junction. The survey team explored ahead 50 meters to the stream which had a ½ lt/sec flow over rimstone with deep, green pools in between. The walls were beautifully scalloped and white. Both upstream and downstream were wide and tall. Passages seemed to loop on top of one another. Peter Keys climbed down in one lead and found a large room approximately 50m long by 10m wide with deep pools and gravel bars. At this point they turned around and climbed out. The 15 hour trip yielded 138 meters as well as an important and exciting discovery.

## Projects near the Entrance

Within the Historic Section of Brinco lies a complex network of passages some of which are still unexplored. Easy and quick access to this area has always made it a perfect place to work on days off from the longer push trips. Below are accounts of trips to the area during the spring.

First Stream: The active stream was surveyed an additional 79 meters downstream to a pinch.

Lower Main Passage: A small lead off the large lower trunk was pushed to connect with Guano Groad.

Fernwood: Off the bottom of Groad Pit a fairly tortuous, fungus covered passage taking air led to Fernwood; a complex area with many small leads littered with stream debris - pine needles, ferns, etc. A small pit led down to the streamway. Upstream led to many small impenetrable holes blowing air. Downstream was mapped to a pool of water with virgin passage beyond taking air. An upper level passage was connected in to the First Stream providing another loop in the system as well as easier access to the area.

Helictite Passage: The crawl taking air at the end of the Helictite passage led to a nice walking passage ending in a high terminal pinch.

# Other Caves and Activities

## Oyamel

Several trips were taken into Sumidero de Oyamel, a going cave with air and water flow. On Sunday, March 19 Marcia Cossey, Cece Green, Andy Grubbs, and Dale Pate entered the cave for the purpose of collecting and photographing. Planaria that had been seen on an earlier trip were collected as well as many other types of insects. Many of those collected are new species. The group stopped at a small lake slightly over halfway through the known cave.

Monday, March 20 saw Robert Hemperly, Jocie Hooper, Dale Pate, Kurt Schultz, Henry Schneiker and Pete Strickland heading into Oyamel to a place dubbed Godwanaland on a Thanksgiving '77 trip. Henry, Pete and Kurt pushed ahead marking their way through the crawlway maze area. Robert, Jocie, and Dale picked up the survey and continued down following the lead party's flagging tape. The lead party explored down to a depth of about 150-200 meters, while the surveyors only got to the 125 meter level; mostly taking short shots through Godwanaland. The group stayed in the cave for 8 hours. The lead party stopped at passage getting bigger and with plenty of airflow.

On Tuesday, March 21, Peter Sprouse and Jerry Atkinson headed to Oyamel and did a surface survey between the entrances and resurveyed the Worm Tubes, tying them into the main passage. The two spent almost 6 hours underground and mapped 365 meters of cave.

As of March 22 Sumidero de Oyamel was 1040 meters long and mapped to approximately 125 meters in depth with more explored below that. It was at first thought that the cave would probably connect into the World Beyond passage in Brinco, but it appears to have missed that particular passage and is still heading downward with passages in Infiernillo 300-400 meters downdip from the current end of exploration.

## Cueva de los Allarines

Two mapping trips were made to Allarinas, a cave draining a small arroyo discovered during Thanksgiving '77. Hal Lloyd and Peter Sprouse cleared out a log jam in the entrance and entered a stoopway littered with debris. They located another arroyo entrance, mapped this in, and proceeded on to two crawls taking air. They followed the right hand one which seemed most promising. The passage made several turns, dropping down with occassional pools. They ended the 182 meter survey at a wet belly crawl taking air. Another small lead nearby was checked but no airflow was detected. Peter returned with Terri Treacy to map the left hand crawl. Following the wind led them first to a sump and then to a new entrance. This increased the cave's length to 225 meters.

## Cueva X

Cueva X is a small cave which forks into two parallel passages following the dip of the bedding. The left hand one is intersected by a small perpen-

dicular crawl blowing air. It was followed to a mud and cobble digging lead. Cave length is 183 meters. While Sheila Balsdon, Peter Sprouse and Terri Treacy surveyed, Andy Grubbs collected cave fauna and made a major discovery - an immature cave scorpion - a first for the area.

### Cueva de Palo Caido

Warren Anderson and Hal Lloyd began a survey of a pit which Hal had found. However, after shooting five stations they developed Bruton aversion and dropped the survey. Continuing on they explored a lead to a new entrance.

### Sotano del Picacho del Vaquerillo

A hike was made up nearby Picacho del Vaquerillo to investigate stories heard of a deep pit. Chris Albers located the 8 meter diameter entrance and descended it with Warren Anderson and Hal Lloyd. It turned out to be 77 meters deep and, curiously enough, not virgin; a smoked arrow was found on the bottom.

### Cueva de Vapor

By converting survey data David McKenzie was able to conduct an overland survey to above a known survey station in upper Tin Can Alley where a tight lead emitting fresh air had been unsuccessfully pushed. Within 5 meters the entrance to Cueva de Vapor was located - a garbage pit in a sinkhole which blows steam in the winter. Bob Anderson later explored the cave through some tight spots but didn't push it since he was alone.

### Entradas de Viento

The undescended dome in Entrada de Viento Alta was climbed and rigged by Bob Anderson. Two leads at the top were checked - both got tight but continued. A small tarantula was collected. Entrada de Viento Baja was pushed to a pinch - although several small side leads with airflow came in along the way.

### Sotano del Doma Doble

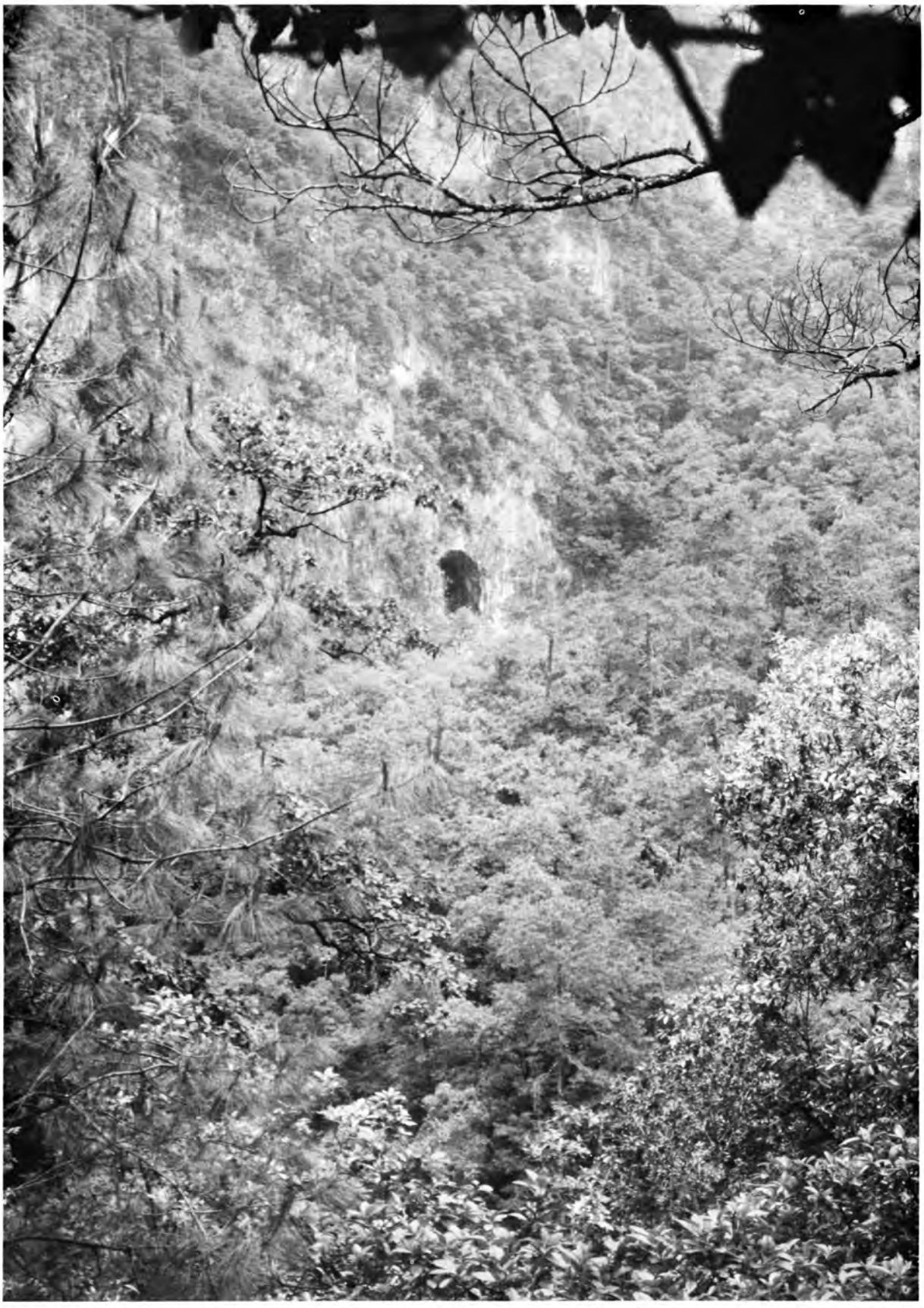
A pit along the trail to La Canoa was explored by Hal Lloyd and Robert Hemperly. It turned out to be 15 meters total depth in two drops.

### Hike to Cañon la Cueva

Peter Sprouse and Terri Treacy made a hike to the east down into Canon la Cueva to investigate an interesting karst feature shown on the aerial photographs. This proved to be a travertine alcove that seeps water, but not a cave.

### Surface Survey

A surface survey was made between datum points at Brinco camp and the fieldhouse, Cueva X, Allarinas and Oyamel.



# Cueva de Infiernillo

## A Week Underground

On Friday, April 21, Sheila Balsdon, Peter Sprouse and Terri Treacy, upon finding no water in the arroyo, entered Infiernillo with provisions for camping and surveying during the week. The passage from the entrance toward Camp I is essentially a tube 20 meters in diameter with a bedrock floor covered in places by breakdown. The passage rises in a series of dips and ridges to a high point about 30 meters above the entrance. Just beyond this high point, 300 meters from the entrance is a major intersection - the right branch leads to Camp I and the sumps; the West Loop continues south; and the East Loop branches to the left also going south. During flood, the water rises from the sumps and rushes toward the entrance. The passage from the intersection toward camp is somewhat smaller - about 15 meters wide by 10 meters high and slopes gently downward toward the west.

After reaching camp the sumps were visited. The left sump was down, exposing a 10 to 15 meter pit and the main sump was about 10 meters lower than in August of 1977. Airflow was noticed here for the first time. The air always blows across Camp I toward the sumps, disappearing into a high dome; but with the lower water level the air was also blowing across the sump lake. This uniform air flow across Camp I is mysterious as it flows west no matter what the outside air temperature is, even when the airflow through the rest of the cave reverses.

One of the primary objectives for the week was to resurvey the main passage from the entrance to the sumps. Several new passages were found off the main passage during the resurvey. One was a dropping flowstone tube, located 40 meters in from the entrance along the right wall. It was surveyed for 30 meters to a belly crawl through water taking air. The Echo Chamber, 130 meters further down the main passage, was mapped 25 meters to it's second pool. Further in, along the left wall of the main passage, the Twin Tubes were surveyed 25 meters to a tight climbup with blowing air. Also along the left wall another passage was mapped 14 meters to a breakdown choke that blew air. Surveying continued through Camp I and on to the Sand Room and the sumps. A total of 375 meters of passage (about 200 meters of resurvey) were mapped.

Another 500 meters of passage in the West Loop south of the Puente de Oztotl were re-surveyed during the week. Beyond the Puente the passage begins to slope upward as a scoured tube 10 meters in diameter. For the first hundred meters the floor is breakdown and rounded cobbles, but the slope gradually increases and the breakdown gives way to clean flowstone. The last 200 meters of passage is one of the finest in the system, with travertine dams and flowstone deposits in some cases filling half the tube. The West Loop ends at the bottom of the Balcony Room. From the balcony, a continuation of the West Loop can be seen about 30 meters above the floor.

Another primary objective was to resume surveying and exploration where David McKenzie's December 1977 survey had ended beyond the Breakdown Maze in the Main South Trunk. Before this trip, Mike Connolly, Charles Fromen and Mark Shumate unexpectedly showed up in camp. They joined Peter, Sheila and Terri on the new survey. It took them 2½ hours to reach David's last survey station. Mike, Charles and Mark went ahead to explore while the others began surveying.

They followed the south trending, 8 meter wide passage over jagged breakdown to a high lead and a traverse around a small pit. Exploration revealed that the high lead went to several small interlaced passages which connected to the passage beyond the pit. These were all mapped yielding 4 closure loops. Beyond this complex area they encountered a small lake followed by a sand and dirt floored passage. Parallel side passages which looped into the main trunk provided 3 additional closure loops. The 394 meter survey was ended at a junction where several side leads came in.

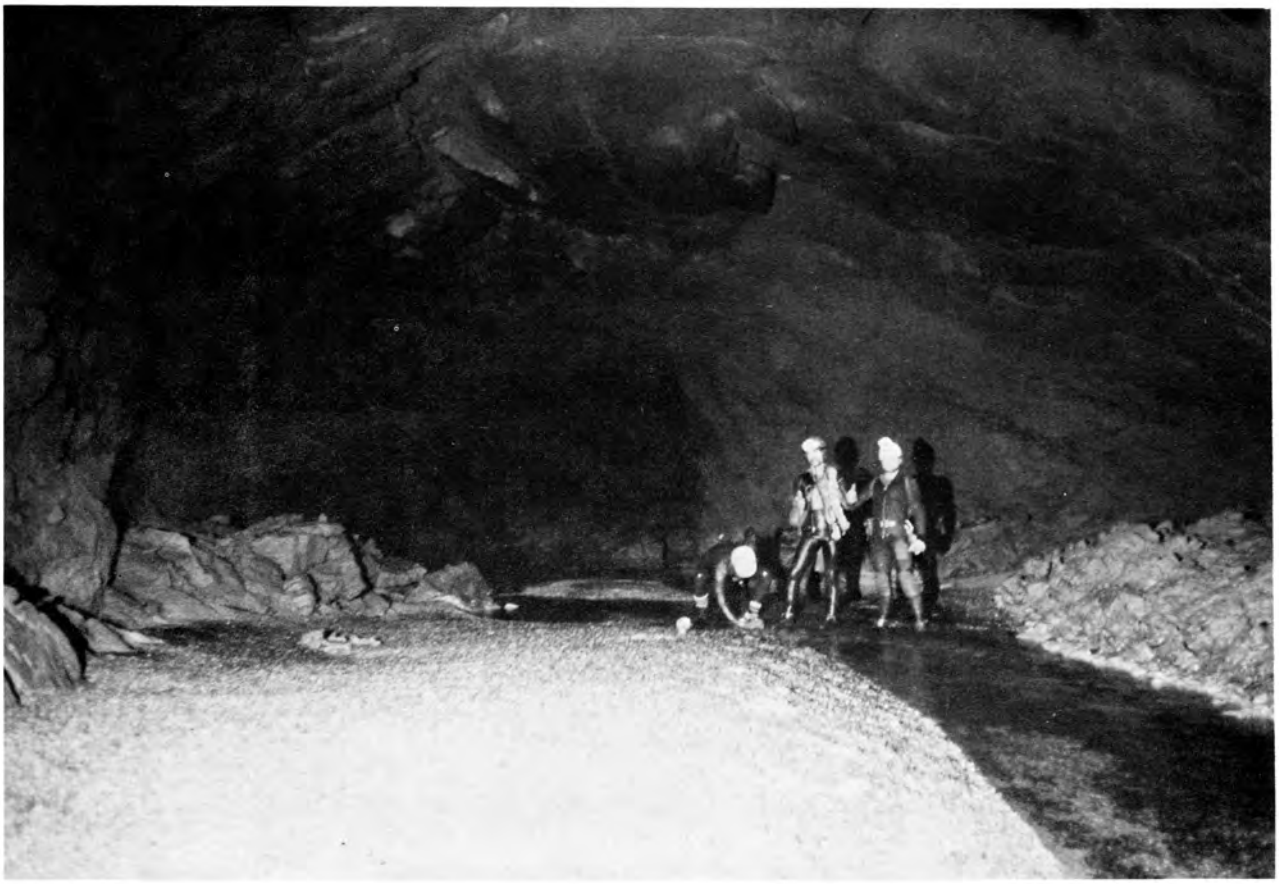
Mark returned saying he left Mike and Charles where wading ankle deep in a stream was necessary! With a strong breeze rushing forth, Peter and Terri ventured off for a look at the stream. The sand and dirt floored passage continued another 150 meters before its transition into the 400 meter long Monkey Walk - a veritable sea of breakdown averaging 8 meters in width under a fairly low ceiling.

Toward the end of the Monkey Walk rapids could be heard ahead. Soon the stream passage was in view. Upstream was a fine gravel floored trunk passage with the briskly flowing stream meandering across the floor. They followed the stream past the rapids and up over sharp, unstable breakdown to a lake and sandy beach; the future site of Camp II. At that point, the stream dissappeared below a breakdown passage. Peter and Terri, with no sign of Charles or Mike, decided to return. Several densely populated isopod colonies (hundred in each) were found along the stream in swiftly moving water - thus the name, Isopod River.

Back at the end of the survey Sheila and Mark waited. Sheila had explored a right hand passage at the junction. The passage split into two, the right one leading to a lake where a stream could be heard. After waiting about 45 minutes for Mike and Charles, the group headed for camp; arriving shortly after midnight from their 14 hour trip.

Mike and Charles had not returned by the following morning. At 9 AM Peter and Sheila set out to find them. They reached the stream in 2¼ hours and were soon exploring passage where only Mike and Charles had been. Beyond the lake, where Peter had stopped the day before, was more breakdown. The stream flowed through the breakdown along the right wall, but climbing up to the left led to a large passage trending north and south. Peter and Sheila continued heading south trying to follow footprints. Along the left wall another 30 meters of the stream could be seen before its last dissappearance into breakdown. Further south in the large trunk they climbed up a steep breakdown slope and passed through a crack along the right wall of a giant chamber; the left wall was 25 meters away. To the south all that could be seen was a huge 30 to 40 degree slope of breakdown and darkness. As they ascended the slope they noticed the chamber dimensions ever-increasing until

The Breakdown Maze, Infiernillo.(Bill Stone)



Isopod River, Infiernillo.(Bill Stone)

upon reaching the flattened out top, some 200+ meters above, the walls were over 150 meters apart and the arched ceiling around 50 meters above. The floor again plummeted on the south side to where the ceiling once again met the breakdown floor - the end of the Netherhall. They followed the footprints of Charles and Mike through part of the breezy breakdown maze - but soon found they dissappeared. The search South ended there and Peter and Sheila headed back, this time following footprints heading south in the trunk above the lake. This passage soon split; one direction containing fine gypsum formations and the other was followed to its end high above the lake. Downstream Isopod River was also checked. They found that it opened into a trunk passage taking a lot of air. No footprints were noticed so they turned around and began the trip back to camp; leaving food, carbide, an emergency blanket and a glowing cyalume at the last survey station.

The provisions were not to be found by Mike and Charles however. They had become confused in the appropriately named passage, the Confusion Tubes, and were lost for 16½ hours. Peter and Sheila reached camp after a 10½ hour trip. Mike and Charles eventually found the way out of the Tubes and had reached camp an hour earlier!

The next day, after much rest, Mike, Charles and Mark photographed part of the main passage; the following day they exited the cave. The food and fuel which they left enabled the others to extend their stay in the cave by another day.

Sheila, Peter and Terri surveyed 613 meters to Isopod River, noting several side passages along the way. Fifty meters were surveyed downstream and another 50 meters were explored to a lake with rapids ahead. Returning upstream 20 meters were surveyed in a parallel overflow passage. The following day the survey was resumed, taking it from Isopod River to the Netherhall 598 meters away. The survey of the giant chamber would take place on the next trip though, as supplies were too low to extend the present trip any longer.

On April 30 the three exited the cave with aquatic earthworms and two different isopods collected from the Main Sump and still a different isopod from Isopod River. The total survey in eight days time (including resurvey) was 3060 meters.

### The Netherhall

During late May two survey teams made a special trip to the area to map the Netherhall. David McKenzie and Peter Sprouse each led a team through the chamber: Peter with David Honea, Mike Poelma, Anne Della Rose and Terri Treacy followed the west wall and David with Sheila Balsdon, William Russell and Lisa Wilk followed the east wall - each sketching from their wall to the center of the room. Perception of distance in the Netherhall was deceptive to say the least. All that could be discerned of the other survey team was the flicker of their carbide lamps reduced to points of light and muffled echoes of a shouted compass reading or tape measurement. Twice a centerline was run across the room, leaving cyalumes for the meeting point in the center. Everyone felt dwarfed by the expanse of the void. This was only heightened

First station of the Netherhall survey. (Paul Fambro)

by returning to the sides and peering back at the cyalumes. Like distant stars the tiny green lights floated in a field of blackness.

With the survey complete all eleven people assembled at the crest of the mountain to rest briefly before returning to camp. While the surveying had been going on Paul Fambro and Bill Cobb had gone to pursue an exit from the room which might lead to Brinco. Following the air at the far end of the Netherhall, they found their way through a breakdown area and into a foggy passage blowing air. This would be pursued on a later trip. It was incredible to watch the people spill down the slope, their lamps tracing paths as each person picked their way around and over the breakdown. Several leads were looked into in the Isopod River area on the way back to camp.

Other activities on the Netherhall trip included sump swimming, surveying near Camp I and a memorable cyalumination celebration in the round Sand Room. Sheila and William swam 30+ meters to the far side of the main sump. There they found that the air floated up toward small holes high in the walls, but climbing up to them would have been difficult if not impossible. William and David McKenzie mapped in the tubes off the Puente de Oztotl while Peter and Lisa mapped to the sump (the lowest point in the system) at the end of the Echo Chamber.

The trip netted several hundred more meters of surveyed passage in Infiernillo as well as a good lead heading south toward Brinco. The gap between the two caves was closing in - separated horizontally by 1.3 kilometers and vertically by 125 meters!

## Post - Convention Connection Trip

Immediately following the 1978 NSS Convention 10 cavers headed for the Purification Area with high expectations of making the long sought after connection. After a few days of warm-up caving and preparation all were ready to spend a week underground in Infiernillo to explore beyond the Netherhall. A new camp - Camp II - was extablished nearly 3 kilometers from the entrance on a sandy bank of Isopod River.

Mapping proceeded on the far side of the Netherhall into a descending tunnel of breakdown. For the sake of ease and speed, explorers (Peter Keys and Bob Anderson) went ahead flagging the best route for the surveyors (Randy Rumor, Peter Sprouse and Terri Treacy) to follow through the breakdown. Eventually the breakdown maze opened up into the south trending Foggy Mountain Breakdown - a steeply sloping breakdown floored passage with an area of fairly dense fog midway down the slope. Two intersecting passages which blow air are here; it could be that the temperature of the air in each is different. Onward through the fog. The passage eventually leveled out into a horizontal, scoured tube with a strong wind. Left off this, a small passage dropped to the Electronic Sump - a small sump with weird gurgling noises. Continuing south the passage split into several paralleling and intersecting tunnels; although an excellent opportunity to map loops the surveyors declined to do so in order to save time. Peter and Bob returned reporting that they had lost the air in a complex area ahead. Randy went back with Bob to check more leads leaving lead chain to Peter, who led through the twisty passage to Goes I. That was the most promising south trending lead Peter had encountered. The survey of nearly 800 meters was ended for the day and the crew went back to check a nearby north trending lead which blew air.

It turned out to be a large trunk with several leads taking off. Peter Sprouse checked one that blew air but lost it when the passage split up. The main trunk of this lead was later named Arne Saknussem Borehole. Bob and Terri each checked going leads, but with no air. Randy and Peter Keys tore off down the main trunk, returning nearly an hour later with an exciting report that they had discovered a large stream passage. Everyone wanted to see it, so they led the way through the next 500 meters of borehole to the rapids at the horseshoe bend of The Nile. Going both upstream and downstream were large lakes between steep canyon walls. Water flow at the time was estimated to be about 7 liters per second - more flow it seemed than Isopod River.

Although it didn't appear likely that Goes I was going to be the route to Brinco, at the time, it was the most promising southward lead known. So the next day Peter Sprouse led the survey down Goes I. He, Lisa Wilk and Robert Hemperly mapped a few hundred meters of nice walking passage before it diminished into a nasty popcorn tube blowing air. If this was the way to Brinco, it wasn't going to be pleasant. At the same time Bob and Hal Lloyd

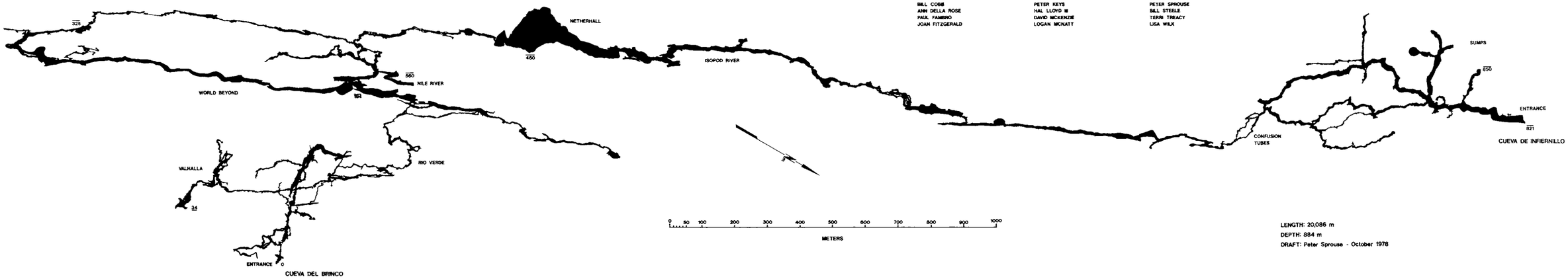
# SISTEMA PURIFICACION

## Municipio Villa Hidalgo, Tamaulipas, México

**Preliminary Plan**

**Based on a Suuntos, Brunton, and tape survey 1973-1978 by**

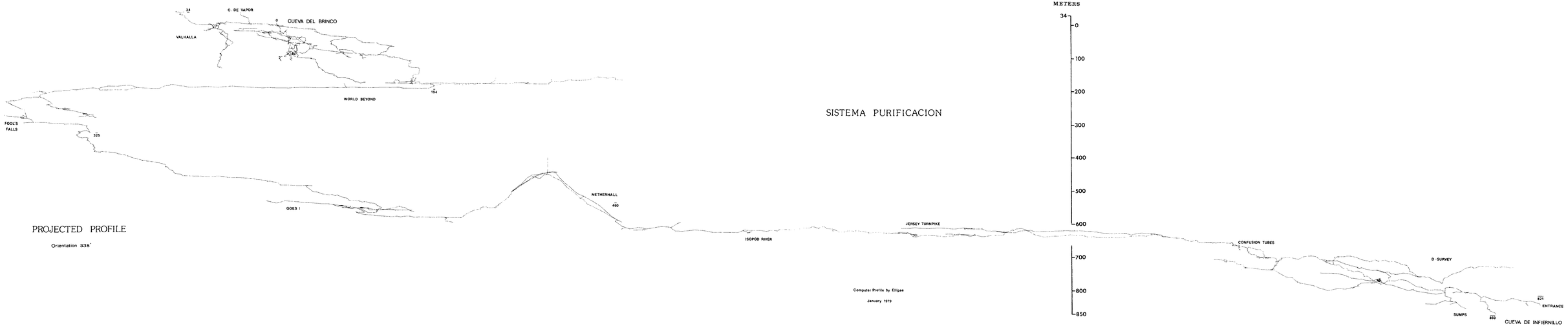
| | | |
|---|---|---|
| CHRIS ALBERS | JANET FITZSIMMONS | THOMAS MOORE |
| WARREN ANDERSON | GANDALF | DALE PATE |
| JERRY ATKINSON | ROBERT HEMPERLY | FIDENCIO PEREZ |
| SHEILA BALSDON | DAVID HOMEA | MIKE POELMA |
| DENIS BRENNING | JEFF HOROWITZ | RANDY RUMER |
| TOM BYRD | GILL EDIGER | WILLIAM RUSSELL |
| MAUREEN CAVANAUGH | LINDA ELLIOTT | TERRY SAYTHER |
| SARA CLOYD | ROY JAMESON | KURT SCHULTZ |
| BILL COBB | PETER KEYS | PETER SPROUSE |
| ANN DELLA ROSE | HAL LLOYD III | BILL STEELE |
| PAUL FAMIGHO | DAVID MCKENZIE | TERRI TREACY |
| JOAN FITZGERALD | LOGAN MCNATT | LISA WILK |




LENGTH: 20,086 m
DEPTH: 884 m
DRAFT: Peter Sprouse - October 1978

**PROYECTO ESPELEOLOGICO PURIFICACION**

**ASSOCIATION FOR MEXICAN CAVE STUDIES**




# SISTEMA PURIFICACION

## PROJECTED PROFILE

Orientation 338°

Computer Profile by Ellipse

January 1979

by Terri Treacy and Bill Stone

January 1979

took off the explore the new stream. Upstream they travered along high ledges above the lakes until they came to one with no dry by-pass. They turned back and headed downstream where the stream narrowed into sloping chutes. On their return from The Nile they decided to pop into the Arne Saknussem Borehole (ASB). They followed the windless main trunk past numerous, smaller side passages down to a sump lake.

The following day was the last day at Camp II. With definite leads to Brinco, Peter Sprouse decided to tie in the new stream to the survey. He, Peter Keys and Hal mapped the main route to the stream netting over 500 meters. Terri and Lisa Wilk surveyed a side passage to a lake with a low air space; Hal later went through and reported back that the lake joined The Nile. Bob and Randy explored a left-hand lead with airflow off the ASB. It looped south and started climbing. They estimated that they'd followed the passage around 1500 meters with a vertical extent of over 100 meters, at which point they built a cairn in the middle of the going passage and returned. Although they hadn't encountered the cairn built by David Honea at the furthest point of exploration in Brinco, it did seem likely that they had been at, or very close to known passages in Brinco. Everyone was incredibly excited that night back at camp and even tried to scheme ways to stretch the food supply and people's schedules so they could stay and map the new lead. But in the end it seemed most practical to exit Infiernillo as planned and approach the connection once again from the top. Once that decision was made it was time to celebrate and finish off the last ration of Camp II tequila!

By the next evening after a long day of toting camp gear everyone had re-assembled at Camp I. A totaling of the past three days of survey revealed that Infiernillo lacked only 13 meters to beat La Grieta as the 3rd longest cave in Mexico. Peter Sprouse and Hal grabbed some gear and trotted off to a nearby lead to make the historical Midnight Traverse survey which netted 224 meters plus a loop bringing the total length of Infiernillo to 8993 meters.

Sunshine, deep blue sky and hundreds of butterflies pleased everyone as they exited the cave the next morning. It took most of the day to get back up to Conrado Castillo and the following morning Robert's truck left with all but Peter Sprouse, Peter Keys, Hal Lloyd and Terri Treacy.

After a couple days of R&R the two Peters and Hal made the trip to the back of Brinco. They started the survey but discovered that the waterproofing on the Suuntos had failed. They were hopelessly fogged, so they decided to explore. They followed a beautiful canyon passage - black limestone laced with sparkling bands of white calcite. It jogged west and emerged from behind a resolutioned flowstone sheild to intersect a north/south trending passage. At this junction, Peter Sprouse spotted a piece of red flagging tied to a projection. He didn't recall anyone flagging in the area on the previous trip, so it seemed only likely that it had been set by Bob and Randy coming in from Infiernillo. Peter Keys compared the tape color with tape from the roll they had used and it matched. If that was the connection then their cairn must be nearby, so Peter Sprouse searched surrounding passages while Peter Keys headed uphill (south) at the junction. He returned saying that he'd followed several more flags up to where a tricky climb loomed, meaning that Bob and Randy had run right through Brinco on into virgin passage and that the connection was indeed a reality! They all charged off following Bob and

Randy's trail downhill toward Infiernillo; it led into the Westertubes - an area where Peter Sprouse and David Honea had been previously, but had ruled it out as the connection route in favor of a large borehole taking air. So where did that other passage - the one in which David had built a cairn - go to? Would it also lead to Infiernillo? They followed it to a grid like maze where they entered the Medusa's Lair - an incredible helictite area of wild medusa heads. Further on it got much smaller, although still taking air. By this time they were really cooking in their wetsuits so they decided to return to the end of the survey. They found the instruments still fogged so they kept on going, exiting the cave after a 13 hour trip.

Following a couple days of R&R everyone was eager to get back underground and survey the connection. So, at noon, on July 13, the long awaited trip began. After a fairly fast trip down to the beginning of the survey, Peter, Peter and Terri began mapping while Hal went ahead checking the route. They followed the passages toward the Westertubes to where the tracks of Bob and Randy led them up through an obscure hole in the ceiling into a narrow pool floored fissure. Peter Keys noticed a fine fossil in the wall, so the passage was named the Fossil Fissure. The cave continued to drop down where some interesting climbs and straddles over pools were required. Hal returned saying that it was still a ways ahead to the connection station. He took over the instruments and Terri moved ahead to speed up station locating. As they approached Infiernillo the passage continued as a descending canyon with deep pools. Eventually, the passage emerged into the Arne Saknussem Borehole. A few more shots to the west to the tie in station and the long sought connection was complete. After a celebration meal, Hal and Peter Keys decided to go for the through trip, despite not having clothes for the outside; they arrived at the Infiernillo entrance in the morning - 24 hours after they had entered the Brinco entrance. Peter Sprouse and Terri chose to return through the cave, exiting after 28 hours underground. The connection passage measured 1148 meters.

Finally, the two caves were now El Sistema Purificacion. It was now the longest cave in Mexico: 20,086 meters; and the deepest cave in the Western Hemisphere: -884 meters. The entrance to entrance depth: -816 meters. The Ellipse computer program used to process the data provided a statistical analysis of the data based on the closure errors found the 51 loops surveyed. (This indicated a 95% probability of the depth being within +/- 16 meters of 884 meters. --ed.)

## Thanksgiving '78 -- Infiernillo

Activity in the project area intensified over the Thanksgiving holidays with several different groups working in several area of Sistema Purification.

Avoiding the deep pool at the base of the cliff in which Infiernillo is located was accomplished via the use of a 65 meter tyrolean line. Different groups began arriving in Camp I on November 19. The water in the arroyo was flowing with the spring at the base of the cliff being quite active. This was an indication that water levels in the system would be high. The two

The connection passage. (Bill Stone)

sumps below Camp I had risen, joining to form one sump beginning at the cut-off to the Sand Room passage, meaning that they were up 22 meters since the last visit to the cave. No evidence of previous camps along with damp sand, fresh deposits of wood chips and pools of water indicated that Camp I had been under water in the not too distant past. Just as last year during the colder weather, the cave was drawing air instead of blowing it.

## D Survey

November 20 was Rick Blevins, Jeff Horowitz, Dino Lowerey, Dale Pate, William Russell, Terri Treacy, and Steve Zeman pushing the D-Survey. The 11 meter drop was rigged and Jeff was first down. He reported a breakdown clog with airflow. Dale rappelled in and within 30 minutes the passage was opened. A quick check found that it continued. Terri rappelled down to complete the survey team and the others decided to check leads back in the known part of the D-Survey. Jeff, Terri and Dale continued mapping. Within 30 meters the dipping breakdown passage narrowed to a very tight crawlway - a gross crawlway, fondly dubbed Horowitz Highway. After 8 meters the crawlway opened up into a large walking passage trending north/south. After exploring both ways, a few more survey stations were set including a perma-

nent station and the trio departed. A total of 121 meters were mapped.

Steve, Dino, William and Rick had checked many leads with airflow. They found that two went to pits, while the others got very small.

The next day, Blake Harrison, Dino Lowerey and Steve Zeman comprising one team and Rick Blevins, Jeff Horowitz, Dale Pate and Terri Treacy comprising the other, headed back to the same area. Dino's team mapped south in the large passage to an area where there were several small leads. Terri's team mapped northward for 100 meters to a large breakdown pile blocking the passage. Air was forcing out of the breakdown. Jeff climbed up through the treacherous boulders and popped out in a very spacious chamber; 12 meters wide and 30 meters long with a ceiling barely discernable 12 to 15 meters above. A passage on the north side of the room headed off, but a quick check proved they had indeed lost the air in the breakdown. The room was named the Airport and mapping continued up the northbound passage, which was wet with soda straws, white calcite formations and flowstone. While in the process of mapping this passage, the other team caught up and went ahead only to find a mud plug - the end of the passage. The survey ended here for the day with over 500 meters mapped. Computer plotting later showed the passage to be almost directly above the entrance passage and ending 100 meters or so from the edge of the cliff.

### West Loop Extension

On Tuesday, November 21, Maureen Cavanaugh, Alexia Cochrane, William Russell, Mark Shumate and Steve Robertson headed to the leads above the West Loop. Across from the balcony a large passage was climbed into that continued for over 100 meters. Off this passage was the beginning of the tunnels similar to those found in the Confusion Tubes a short distance away. Many of the holes had very strong airflow. The crew departed after mapping 109 meters.

The following day, Mark, Maureen, William and Date Pate returned to push several tubes and to continue mapping. Taking a passage to the left which angled up steeply, the group mapped 140 meters to a stream. The Rio Shumate was explored up and down for short distances. The stream had many deep pools held back by large rimstone dams and exploration upstream or downstream will require wetsuits for any extended period of exploration.

On Thursday, Charles Fromen and two companions from Houston went through the Confusion Tubes to check a passage that headed west. They followed it to the large corridor across from The Balcony that William's group had mapped two days before. This showed that the Confusion Tubes were definately part of the tubes that the Rio Shumate was found in.

### Jersey Turnpike

On Wednesday, November 22 Jeff, Steve and Terri headed to a large lead emptying into the Main South Trunk just north of Camp 1½. The lead, named Jersey Turnpike, was followed as a large passage averaging 4-6 meters wide and 2-3 meters high. The passage is paralleling the Main South Trunk that goes toward Brinco and it is quite evident that it carries large volumes of

The eleven meter drop in the D-Survey. (Steve Zeman)

water at times. The crew mapped approximately 300 meters and explored another 150 meters to a small stream which disappeared in the floor. No airflow was noticed.

Thursday, Steve, Dino, Rick, Jeff and Dale returned to the end of the survey. The area where the stream disappeared in the floor was another area of tubes. One tube that was crawled into had heavy airflow rushing up it. The Passage continued onward for another 500 meters to a large rimstone plug in which a small hole was emitting all the water that was found in the stream. Immediately beyond this, a large deep lake, Turkey Lake, was encountered. It stretched from wall to wall with no end in sight. It looked like a long swim so the crew stopped there for the day. The passage at this point did not have airflow.

**Isopod River**

Chris Kerr, Hal Lloyd, Jim Smith and Bill Stone arrived at the Isopod River lead on Tuesday in order to map and explore downstream. After several hundred meters of large river passage the team came to a sump and lost the air in a side passage. Jim free dove the sump for 8 meters and popped out

in the same size passage. On the return back to camp, the four mapped a large passage which parallels Isopod River to the south 300 meters to a sump with no air movement in the passage. To date the survey data has not been processed; it is estimated that another 800 meters of passage was added to the system that day.

### Diving the Main Sump

On Saturday after Bill returned from Isopod River he and Rick did a scuba dive into the Main Sump. Although the dive went nearly 120 meters into the sump (to a depth of 37 meters) high water conditions limited the extent of safe exploration. They were unable to locate the roof passage which appeared to take air during low water level.

### Cueva del Brinco

On Thanksgiving day Terri Treacy met Paul Fambro, Andy Grubbs, Mike McKee, Mike Mullen, Nye Nestman and Randy Nutt at the fieldhouse in Conrado Castillo for a weekend of caving. The following day all but Andy and Terri went to Pozo de Maguey Verde to the west of town. The entrance drop had previously been mapped by Nancy Boice, Mike McEachern and Ron Ralph. Paul and crew returned with more rope for the next undescended drop and high hopes for a going cave. The half surveyed cave is estimated to have bottomed at -90 meters.

Later that day the same crew headed for Cueva de Vapor in an attempt to make a breakthough into Tin Can Alley of Brinco. At the bottom of the 8 meter garbage pit they dug and chipped their way through a tight crawl which led to a small room. Continuing north along the stike of the bedding plane they encountered two more tight crawls with small rooms at the end of each. They stopped at the last room where a tortuous crack heading straight down dip took off. The next day Paul and Mike McKee returned with Terri, who had previously pushed a tortuous crack up dip from Tin Can Alley. Peering down the passage she felt sure that Tin Can Alley was near; but it would take some hammering and acrobatics to get there. Paul banged away at a few tight places and soon they were able to slip through to Tin Can Alley. Hurrah! A connection had been made as well as a third entrance added to the system. They returned later that day to survey the connection. It took nearly 4 hours to map the 80 meters of passage.

Since March 1978 El Sistema Purificacion has grown from two significant caves - Cueva del Brinco at 6.5 kilometers and Ceuva de Infiernillo at 4.6 kilometers - into a major system with a present depth of 884 meters and a length of over 22 kilometers. The relentless energy and optimism of Peter Sprouse combined with the efforts of Terri Treacy, Sheila Balsdon and the other Project members, produced the completion of the first major goal of the PEP. With the connection made, the Project goal is now focused on extending the system to its limit. With over 500 leads and several promising karst fields in the area the pursuit of this goal will no doubt lead to many more significant and exciting discoveries and connections.

In the future reports of the current activities in the area will be published in a PEP Project Report. Anyone with pertinent information or questions about the Purificacion area should write to: PEP, P.O. 8424, Austin, TX, 78712. Other articles about the area can be found in : AMCS Activities Newsletter, nos. 5,6 & 8; AMCS Newsletter, vol. V., nos. 2 & 3; NSS News, vol. 31, no. 11.

As the "compiler" of this report I would like to extend my appreciation to the people who helped me put it together. Muchas gracias Peter Sprouse, Sheila Balsdon, Dale Pate, William Russell, David Honea, Lisa Wilk and Bill Stone.

A list of cavers who have helped map in Brinco/Infiernillo through July 1978 is found on the map included in this issue of the Activities Newsletter. Others who have helped since then include Rick Blevins, Blake Harrison, Chris Kerr, Dino Lowerey, Steve Robertson, Mark Shumate, Jim Smith, Bill Stone and Steve Zeman. These lists do not include those people who have worked in other area caves or contributed to the Project in other important ways; nor all the good friends who live in Conrado Castillo: the PEP Project Reports will enable us to present all aspects of the Project - the caves, the karst, the geology, etc. and the people.

**Terri Treacy**

# The Lost Plateau

The lost plateau is a land of running water
drawn from invisible torrents in the sky,
crags, sinkholes, jumbled strata
and always the water pouring
from cavern to cavern, basin to basin cascading
deeper and ever deeper till no rope, no ladder,
not even the hardiest of the climbers there
could reach rock bottom for there is no bottom,
only the sheer plunge of the water falling
into abysms that upset the ear
till voices cry out where there are no voices,
till tumult shouts and has a voice to speak,
but in that chaos like the primal chaos
in a still pool where cold stalactites drip
their solvent crystals into shapes uncertain
swims slowly, slowly a prophetic fish.
Here as though uncreate or held in waiting,
here in a darkness where all time has ceased,
swims a blind fish with barbels faintly tracing
upon those growing crystals runes so intricate
that only he who thundered in the torrents
or climbed the lightening's tree before it split
could read those cipherings or resolve their secrets
or tell who rules below the final pit.

**Loren Eiseley**

# The Agua de Carrizo Expedition

## May '78

**by Bill Stone**

The engine groaned as we shifted into low range for the final climb out of Huautla. A good feeling for sure. We had been driving for 3-1/2 days now; had waited 5 months for this opportunity. From on top of the camper a voice called out, "There it is." Our three trucks rumbled to a halt amidst a swirling cloud of ochre dust. Somewhat apprehensively, we stepped out and approached a small shrine by the side of the road. Only moments before, brightly clad Indian women bearing earthen pots had knelt here. In the rainy season a healthy stream would bubble its way down the hillside and cross the road at this point. Now only a small gully of cracked clay remained. Our drinking water would have to be fetched on foot from the bottom of the Rio Iglesia doline two hundred meters below. So began a most unusual trip: the return expedition to Sotano de Agua de Carrizo.

There had been no rain for three months. The dust was 5cm thick on the road. Stunted fields of maize attested to the relentless drought. Good timing as far as we were concerned. Later that afternoon pendulous black thunderheads rolled in from the west seemingly cued to our arrival. Along with the rain came the first of our many troubles; a most unfriendly note sent to us by the new "agente" in San Agustin Zaragoza, where we had again set up expedition headquarters. Although written in broken Spanish the message was quite clear; they were not granting permission to rent the house and we were not to enter any caves in the vicinity. Later that evening, while the usual pandemonium of organizing the house went on, Steve Zeman and I walked over to the "oficina". Strangely at ease, Steve said, "I've never been to one of these kangaroo courts before!" Inside the dark office, lit by a solitary kerosene wick, a labored conversation followed centering on the expected topic: money. Their price for permission to stay in San Agustin was set at 2000 pesos. Not willing to accept this, and establish an unfortunate precedent for future expeditions, we retreated to the house to consider a course of action. The decision was made to take the problem to the authorities in Huautla.

An early sunrise beckoned the diplomacy envoy to its task of yet another round of Huautla shuttle diplomacy. Unbeknownst to us, our adversaries had taken the same course of action and had hiked off to Huautla at sunrise. As I was climbing down the ladder from the bunkhouse, someone shouted, "There's a vehicle here with some official looking people." Quite to our astonishment, it was two Mexico City cavers from the Escuela Mexicana de Alpinismo y Espeleogia, including its director, Gerardo Fernandez Ruiz. Following some animated caving story swapping at breakfast, and hearing of our plight, they volunteered to join the envoy to Huautla. One more chip on the table.

Opposite: Flood stage Carrizo at -180m. (Bill Stone)

The presidente was not in town when we arrived, but the secretario was. Gerardo did most all of the talking and the outcome was considerably more palatable than the previous night's demands. No payment was necessary, although if we wished, a voluntary "cooperacion" (donation) to the San Agustin Municipal Fund would be appreciated. They recommended a more equitable value of 200 pesos.

Later that afternoon, a small crew, including Gerardo and Gonzalo rigged down San Agustin for a light photo trip to the Sala Grande. It was a unique sign of times to come in Mexico: a bilingual caving team. Early in the evening we settled up with the agente and finally, after five days from Austin, got down to planning the first push on Carrizo. A sketch map with four leads labelled A,B,C and D was passed around to those who wanted in on the first trip. D Lead was the 778 lead from January. C Lead was toward the expected water route continuation at -400 meters. The others were side passages at higher elevations.

The following morning the advance teams arrived at the entrance. Jim Smith, Richard Schreiber, Hal Lloyd, Steve Zeman and I comprised D team while Tracy Johnson, Jeff Horowitz and Jill Dorman planned to attempt re-entry into the stream canyon at -400 meters. Later in the day Mike McEachern, Nancy Boice, Dino Lowrey, Ralph Kennedy and Andy Grubbs entered to check the upstream lead above the Rocky Horror. To aid those going deep we brought a small bivouac kit (some space blankets, a pot, stove and food) to the top of the Rocky Horror. At -400 meters the two lead teams went their separate ways; D team carried around 250 meters of rope and Tracy's group around 200 meters. Things had changed very little from January. The water level was still down. After rigging two pitches that had been freeclimbed in January, and re-rigging eight or ten Austrailian-specials we found ourselves at -778 meters on the brink of a ten meter drop. We had been on the go for 11 hours at that point. A narrow canyon led off the bottom. This dropped steeply for 30 meters and then plummetted down another shaft. Steve clipped in and commenced a 28 meter rappel into a mud floored passage. The rest of us quickly followed. Feet sinking into knee deep banks of soft silt I could not help but think that Steve would be sitting by the sump, just around the the next corner. But no, very faint at first, gradually increasing to a dull roar, we could hear the sound of running water. Thirty meters later we "T" junctioned with a large stream passage, and there was Zeman; grinning from ear to ear, leaning against the wall. Shortly, the rest arrived. We were 845 meters down with a solution scoured walking passage going both up and downstream! This was too good to be true. It was...in what surely was the rudest form of a joke, the passage sumped out only 20 meters further downstream. The upstream lead narrowed to an impassable crack in the polished black rock. Overhead, mud covered breakdown was wedged in the passage roof. With considerable effort Smith forced his way through a small triangular slot in the ceiling and gained access to a large breakdown complex. Upon excavation of the hole to more copious dimensions we proceeded on. La Grieta could not have been more than a few meters distant, we reckoned, but still we could not find a way through. Air currents disappeared into cracks in the floor. Schreiber did however, climb up into a ceiling level phreatic tube taking a good breeze. At that point we were all a bit fatigued and the thought of 800 meters of vertical work still ahead weighed heavy on our exploratory enthusiasm. We briefly picked up a stream again, only to have it sump out a few

meters distant. This was the limit of our exploration...848 meters to a dead end.

Following only 150 meters of survey we found ourselves back at the ropes and faced once again with the fundamental dilemma; how to motivate oneself up those 848 meters. Everyone soon set off at their own pace, counting drops as they went...39, 38 ...rest. Only 37 to go! And then there was the " bivouac " at Rocky Horror. There we enjoyed a most welcome dinner and hot tea break atop the windy breakdown. We left half a 4 quart pot for Richard and Hal who were hanging back taking a slower pace. Our trip lasted 26 hours. Richard (What? No seconds?) finished the remaining 2 quarts of glop with hardly a break in stride while Hal slept soundly. Both were clearly out to break the 37 hour Huautla Enduro record set during the March '77 rescue. But alas, 'twas not to be. After being underground a good portion of Thursday, Friday and Saturday (but only 36 hours) the disabled duo clattered in the front door, Richard explaining he had hung back to make it easy Hal; Hal insisting he had slowed up to let "The old man" go at his own pace. The first story somehow drew credence in the bunkhouse, and during the next few days the nickname "36 hour Lloyd" gained popularity.

The main entrance to Carrizo. (Bill Stone)

Meanwhile, a de-briefing session with Tracy, Jeff and Jill seemed to indicate that the water route had bottomed out. Well, maybe not. At any rate they had explored a superb set of six wet shafts down to a depth of -526 meters. There they encountered a complex maze of tight passages which had halted their progress. The Rocky Horror crew did not fare as well, having gotten lost somewhere between there and the Sweet Sue Chamber (-180 meters) in the multilevel canyon passage. Having no other specific task in mind for the day they exited; (14 hours).

At this point, besides the requisite recuperation period, there seemed little else to do in Carrizo but derig. DERIG! There is no other word in the deep vertical caver's vocabulary which can induce such mental anguish

and pronounced physical reaction. That reaction is procrastination. So we procrastinated all the way till Sunday and decided that the only way to honestly avoid rerigging was to go rigging.

A small party consisting of Bill, Jim, Jill Dorman, Ralph Kennedy, Hal, Maureen Cavanaugh and I gathered at the high entrance of Rio Iglesia early in the afternoon. Having read the accounts of its exploration in the late 60's we concluded that a sump dive might break through into the hypothesized water route below the 300 meter level. Following a delightful series of rappels down the Christmas shaft route we soon arrived in the immense Penthouse Chamber. The walls were barely discernable, even with a Wheat lamp. To summarize, we failed to find the sump, found a few unexpected drops for which we had no additional rope, and exited leaving the cave rigged, tanks and all.

This trip required a rest day and so it was not until Tuesday of the following week that two deep derigging teams were headed into Carrizo. Between Saturday and Tuesday a considerable amount of scouting had been done by various groups. The most notable discovery was Molino de Carne (Meatgrinder) by McEachern and Grubbs sixty-four meters higher than Carrizo. Tuesday morning found our party of ten once again descending swiftly through rigged cave. At the top of the second pitch, much to our surprise we saw Jill and Maureen... standing in an incoming passage on the opposite side of the pit. They had connected in the long assumed "second" entrance, adding 11 meters vertically to the system. The water level had picked up a bit due to the daily showers that seemed to roll in each evening. We regrouped at the top of Rocky Horror. Here we held a short meeting to try and work out the logistics of the operation. We decided to split up, for sending everyone down the 848 Route would have surely left us facing a dangerous bottleneck below Flip Pit. Also, the bottom ropes would be the easiest to retrieve with a small crew should the cave not go and derigging of this section be necessary. Since the load grows on the way out, a support team at the 400 meter level would provide the necessary boost. However, logical problems arise in this sort of endeavor: Implementation is always a human thing, sometimes an emotional thing.

This expedition was to remind us just how important the human side of exploration could become. Communication was lacking many times when clearly needed. Thus, Steele could find offense at Smith and Stone (who had been to the bottom on the previous trip) going on as the bottom exploratory team, while he reluctantly volunteered to join Steve and Hal on the survey. Steve and Hal had previously decided to form the support team and pick up the slack time by surveying the Rocky Horror stream source. Steele wanted to see the end before it was de-rigged. A minor altercation to be sure, and among friends, but it dragged on our togetherness.

Jeff and Ralph, although they asked for a third team member, were persuaded that a two man team could handle the de-rig in the wet route. This portion of the group split off at the -400 meter divide. Grubbs, Johnson, Smith, McEachern and I continued on to -810 meters, top of the last pitch. On the previous trip we had noted a lead across the top of the shaft. This had drawn considerable speculation in the interim, particularly since things sumped out in the lower passages. On rope, Jim swung across the shaft and scrambled up to the ledge. It continued as a small crawlway, he reported. I repeated Jim's act and the two of us slithered through this awkward tube for

The third drop in the entrance series. (Bill Stone)

quite a ways before we began descending to the sound of running water. Encouraged by this we popped through a tight squeeze which immediately fell out into a 3 meter drop. Beyond, we slid down a steep, slick phreatic tube and into the water. We deduced we had intersected the 848 meter stream some distance above the previous contact point. Downstream was too tight to push but the upstream lead went as a low crawl, half filled with the "wet stuff." We both took turns looking at it, weighing the possible gain versus climbing out 800 meters in soaked clothes. We were in our flannels, as the water above still had not merited full wetsuits; the drops with slight spray were negotiated with a plastic garbage bag for shelter. In hindsight, writing from my air-conditioned office, looking at how close that passage was to La Grieta, we should have gone for it.

Upon returning, the process of pulling our gear out behind us began. Andy moved out ahead taking a hundred meter rope with him. Things went smoothly at first. Around the bottom of Flip Pit Mike began showing serious signs of fatigue. Rather than drop everything, it was agreed that Mike should head on out and leave his load with those remaining. He proceeded ahead keeping within shouting distance. We had just about worked up a full head of steam when we found a note from Jeff at the 400 meter divide. It read:

> Dear Cavers. As usual we have found another overflow passage and decided not to de-rig. See you on the surface.

The sixth drop, bottom of the entrance series. (Bill Stone)

Andy, having seen this note dropped his rope at the junction. The de-rig was over. No sense in hauling things further when a lead was going below. Jim headed out at a good clip. Tracy and I began ascending to the Rocky Horror bivouac to mix up some hot food and drink. We had passed Mike up in the "Blast Zone" below the Horror and he assured us he would be able to make it.

On our way to the bivouac we found a note left by Bill, Hal and Steve. They had keyed out a campsite upon reading Jeff's note. Steele's message read:

> Deep Cavers: As the note from Jeff and Ralph has told you, there is a good enough lead in the water section to leave the cave rigged. We found a grand campsite across the way in the large room.

Meanwhile, Mike had made it to Rocky Horror where Tracy and I made some hot tea for him. We were rapidly getting cold, however, as we had been waiting some three hours. Mike again assured us that he was OK and just wanted to catch a wink or two before heading out. He had a stove, food and space blanket. We needed to get moving since there was only one space blanket and Mike was now using it.

Around ten on Wednesday morning, Tracy and I managed to make it back to the house...trashed. We were too tired to do much else than rest and explain the situation. I recall feeling confident that Mike would be along shortly. Concern for his situation had grown when he hadn't shown up by noon. Bill then set off on a one man rescue mission with food, stove and a sleeping bag.

Nancy and Janet accompanied him to the entrance. Steele was to later write of the incident:

> I met Mike at the Rocky Horror. His words were to the effect that he couldn't have made it out had someone not come to show him exactly the way to go so he could conserve energy. His packs had to be carried out for him up the last six pitches...

Mike had been in for 32 hours when they finally reached the doline that afternoon. Bill's help had obviously been needed. The rescue effort was low key enough that Richard and Jill, who had also driven up along with the others, did some scouting around the Carrizo sink. They turned up a deep shaft with some excavation on Richard's part. Jill descended the near cylindrical well for 78 meters to a gravel bottom. No leads there; however, air was noticed blowing into a fissure near the top of the shaft. It was 34 meters above Carrizo's main entrance and a good bet for a connection.

At this point there was considerable indecision as to the plan of exploration. A lack of togetherness in the group was also becoming painfully evident. Surface trips were now endurance runs during which we really were not sure of what we had seen. Enthusiasm and drive were usually subdued by the weight of 800 meters of vertical work when it came time for commitment maneuvers at the bottom.

Rocky Horror. The canyon drops 120m to the " Blast Zone " in two pitches. (Bill Stone)

This, however, was only the underlying problem. the secondary effects were numerous. The push teams, trashed from the long trips would typically arrive at the house, grab whatever food was quickly available, and head for the bunkhouse. At times this bore heavily on the surface cavers at the house. Intentionally or not, the assumption was that surface personnel should earn their keep by maintaining the house and providing food for the push teams. It would be a noble combination with the proper amount of cooperation and please and thank yous; a chaotic one without.

A unique aspect of the expedition which had shaped the exploration strategy during those first two weeks was the fact that Carrizo was pre-rigged to -778 meters. Our last push in January had been only 22 hours. It was a very direct 778 meters. Hence the plan which evolved keyed on these bits of data. Should the system continue beyond another 24 hour push, then camping would be a clear cut necessity. But what if it didn't? What if it crapped out? For many of those planning on being on the first push, the grueling pack out of Camp II in La Grieta was still too fresh a memory. Camping would be put off

until we were absolutely sure. This was almost our undoing.

## A Breakthrough at -526m

The next day Richard, Dino and Maureen set off to ascertain the situation at the bottom of the wet route. No other teams entered Carrizo that day, many opting for some long distance scouting trips down the Carrizo ridge. No exceptional leads were found.

The following morning we awoke to find Tracy gone. He had left in the predawn twilight, discontented with the expedition. Early in the morning Jeff left as well along with Martha who had to return to her job. Things had about come to a head. A meeting was held and the kitchen problem resolved. We all promised to cooperate...to save the expedition. Richard's crew settled the tactical caving problem: they had broken through in the wet route and stopped at the head of an immense shaft, at least 120 meters deep. That afternoon we laid plans for a camp in the Waterfall Room below Rocky Horror. Things were finally looking up.

Friday afternoon, May 26th: As the rains came in once again we all gathered in the upstairs bunkhouse for a strategy session. With only the wet lead to push we felt a 7 day stay would be sufficient. The traditional "call for campers" went out. In the corner, Steve was fiddling with a hammer anticipating his next whack at the house rat. "Count me in," he said. Richard nodded while Jim lifted up his head. Hal, in usual form, came out with, "Yeah, I'm ready to scoop the booty." Mike seemed a bit hesitant at first, pensive about the steadily increasing daily rains and his previous long trip out. He wanted in nonetheless. Bill and I made up the rest of the 7 man team. Later that week, depending on the exploration status, going or de-rigging, Dino, Maureen and Andy planned to come in as well. That would still leave Jill, Janet, Nancy and Ralph on the surface to keep an eye on the weather. With the meeting adjourned, we each went about the task of sorting gear and food, sewing up those tattered camp packs that hadn't been used for five months, and fixing dinner. Outside, fiery flashes erupted from the black mass of clouds hovering over San Andres. The afternoon shower had only been a prelude to the storm which soon engulfed us. A nice night for sleeping, anyway.

## High Water, Camp I

We arrived at the entrance the following afternoon to the sound of a muffled roar. The water had risen beyond our expectations. During the first few trips it had been possible to negotiate the wet drops "gladiator style" using a large plastic garbage bag with holes cut in for arms and head in lieu of a wetsuit. There would be no escaping it today though; we would be in the full force of the falls. The first six pitches went rapidly, almost mechanical: Put the rack on. Check the carabiners. Jumar safety on. Check the hauling tether. Toss the pack into the shaft. Click on the electric. All systems go...Splash! We were to repeat that ritual countless times in the next week.

It was an exciting trip in. Powerful electric light beams danced back

and forth across the water polished rock. For the first time in years it seemed we each had a dependable electric light. Double brackets on the helmet. Electric and carbide side by side. The water was up considerably, but certainly passable. " Sporting", the Brits would call it. Nonetheless, we found four of our "dry season" rig points totally underwater, and concern was raised as to a possible fray problem. Jim recounted a recent accident in France,where the rope had been cut in two by abrasive action under a heavy falls. A simple bolt rig out over the drop would have solved the problem then and there. But the bolt kit was with Steve, and he was out in front, highballing it for camp. It would have to wait. Only in three or four places did the narrowness of the canyon demand taking the camp packs off and dragging them along. Here an occasional bit of profanity and a lusty kick usually got the thing through. Then it was back to underground backpacking. A pleasant feeling knowing that we would not have to climb out this section for a good week.

The " Blast Zone " in high water. (Bill Stone)

Five hours and twenty pitches later we arrived at the Waterfall Room, an immense side chamber that Alan Warild, one of the Austrailians, had first ventured into briefly during the 1977 Christmas Expedition. As Bill and Steve had said, it was a superb site. Climbing up from the narrow stream canyon, it took us a while to adjust to this vast room. In front of us, a great block of bizarrely eroded limestone spanned the gorge. A sixty meter waterfall, dropping from an unseen passage high overhead, smashed into this block with a crisp cracking sound. Wind driven spray pounded us as we climbed over the boulder and into the room. We were now standing on the flat floor of an immense bowl shaped depression thirty meters across; an amphitheater carved in the breakdown floor by the incessant pounding of the waterfall. At the far end, a crescent shaped ridge of talus and silt shot up into the blackness. A 20 meter scramble up this slope brought us our first view of Camp I. Beneath a 20 meter high terraced stalagmite, later nicknamed "The Citadel", we could make out several figures busily working amongst the breakdown. We made a beeline for the dim amber glow of those lights.

Following a climb down the talus pile we soon arrived at our destination. The crescent ridge between us and the waterfall had conveniently cut the wind so that the camp was pleasantly quiet. As I surveyed the area, I found to my surprise that the only flat spots were already occupied by Steve and the kitchen. A clever devil he was. All the other "flat" spots were floored with razor sharp breakdown. None of us had brought hammocks since Steve and Bill assured us of a "grand campsite." "This is the campsite?" we questioned. "Sure," Steve replied, "Just fill in the holes with this sandy silt here. There's plenty to go around." He demonstrated by filling his helmet to the brim and dumped it where Mike had decided to lay out his gear. In short order we each had a likely flat spot picked out and went about filling in the holes.

Once things were settled down and everyone changed into their woolen camp clothes, we had some time to take in a more relaxed view of the area. How unlike any camp we had set before. The ceiling, a good 60 meters overhead, was barely lit by Bill's Wheat lamp. No cramped quarters this. Following dinner, Bill, Steve, Jim and I climbed to the top of the ridge and located a sandy area, facing the misty wind blast from the falls. There we took turns at digging the Bog Hole. We could not help but laugh at the situation. It was 3:00 AM. We were 390 meters below the surface in the middle of an immense chamber, stretching 50 meters in any direction...and digging a hole in the ground! Well, it had a magnificent view anyway. Later while Bill was filling the camp water jugs, Steve and I climbed up a large flowstone facade along the south wall of the room. Much to our surprise, a narrow slot in the pristine white flowstone opened into a well decorated grotto, "The After Dinner Chamber." Our progress was cut short by a ten meter drop off.

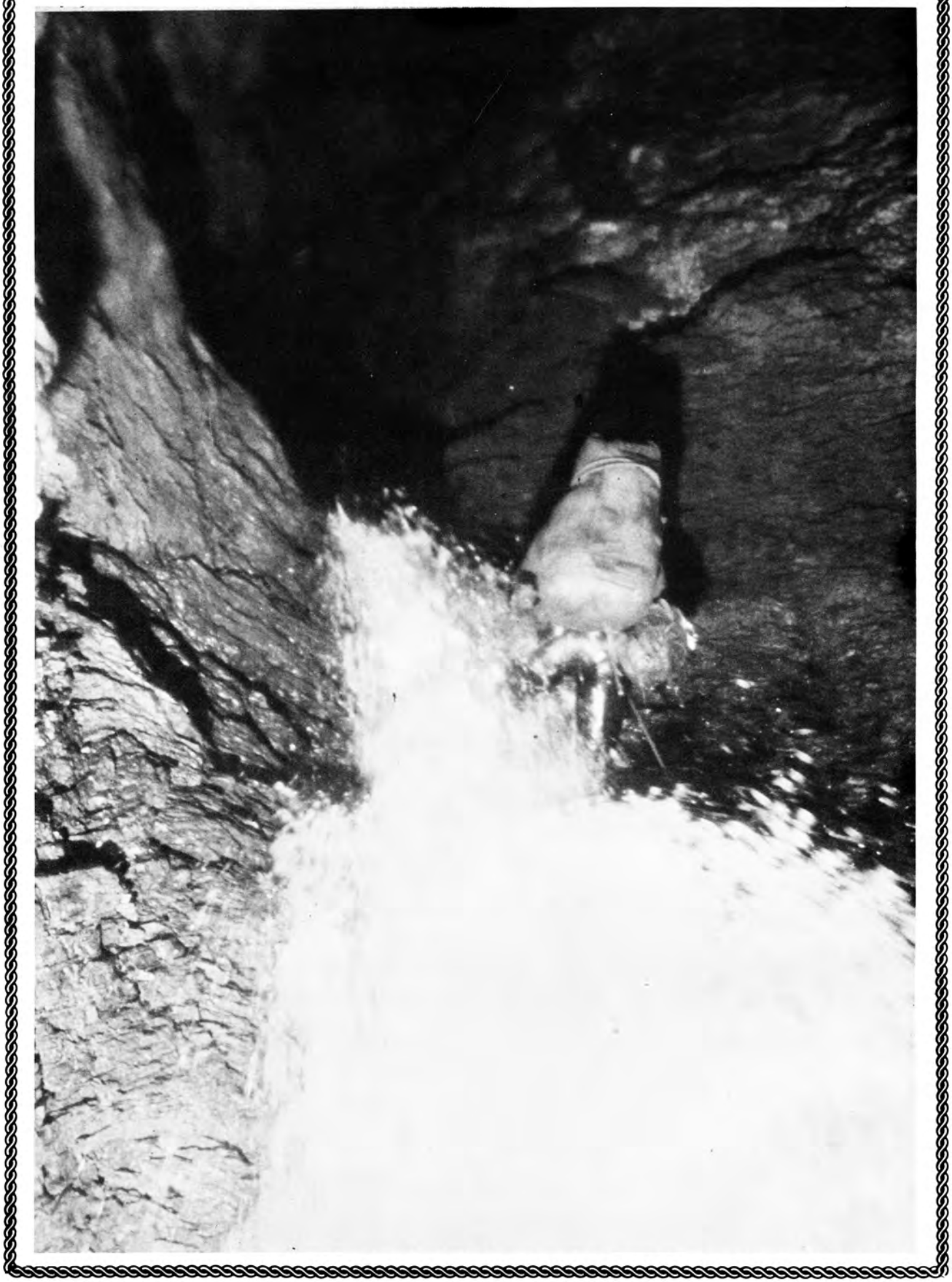
Around 1 PM on Sunday, I awoke to see Bill's electric beacon playing across the ceiling. He was fumbling with his boots in all apparent haste... nature call. One thing about underground camping that has always fascinated me is how distorted one's sense of time can become. Without the diurnal (Day-Night) cycle to guide your activities things can go liberally out of line. I have seen some 8 to 5er's try to retain their terrestrial habits. Like the three Austrailians at Camp II in La Grieta during the December 1977 Expedition: Following a 22 hour push we dragged into camp at 4 AM, exhausted. At 8 AM I groggily rolled over in my hammock, awakened by some lights at the kitchen, to see the most incredible sight; Julia James, Neil Hickson and Alan Warild up and kicking, firing up a pot of tea. It took half an hour to convince them that we weren't getting up just because it was daylight 700 meters above us. Of course that brings up another point about camps. Once one member of the team is up, invariably, all members of the team are up. And so, even though it hadn't been an 18 hour sleeping blitz, everyone felt rested enough to get up to Bill's light beam alarm clock.

At breakfast the conversation trended back to the water. Jim, usually the most indifferent when it came to negotiating wet drops, raised concern for the ropes which needed re-rigging. Bill fairly much agreed with Jim and the two decided to ascend that day to take care of the problem before it got worse. Mike, on the other hand, wanted out altogether. The water had already been too high for his liking. So after breakfast the three suited up and were off towards the entrance.

Dry canyon at -750m along the 848m route. (Bill Stone)

## A Push on Cascade Canyon

The rest of us, being in no hurry, procrastinated in getting out of our camp clothes until Steve had his full suit on. With Richard in the lead our four man team swiftly descended the "wet" route to the top of "Sima Larga", Richard's big pit. The route from camp to that point entailed rappelling through 12 classic wet pitches, with face stinging deluges the order of the day. The actual descent was just slightly under 200 meters vertically. The fissure where Jeff and Tracy stopped was truely a difficult, awkward spot, particularly with dragging 250 meters of rope through as well. It was a fine bit of pushing on Richard's part. Two short pitches beyond the crawl found us on the brink of the Sima Larga, a massive elliptical shaped shaft. Our pint-sized feeder passage had been fortunate indeed to have intersected this abyss. This was clearly the main route to the lower levels. At this point, we were all clinging to a slick, sloping ledge on the edge of the shaft with mandatory Jumar safetys. Amidst piles of rope we planned the days exploration. Richard having found the route, was to head on down and do the rigging. Steve produced a set of suuntos from somewhere deep in his pack and wiped the lens. He, Hal and I were to survey in behind Richard. About 30 meters into the drop Richard called back that he was on a natural bridge and could safely get off



rope if someone wanted to come down. We sent Hal down with the survey tape and an additional rope for Richard in case the 90 meter line he had carried with him didn't reach. This proved to be a wise precaution, as we discovered when rappelling past the knot which was 20 meters off the floor. The total drop was 134 meters. A magnificent pitch, rivalling San Agustin's "318" in impressiveness.

Off the bottom a tall stream canyon led on through that familiar polished black rock; a signature for deep caving in Huautla. A fine series of cascades and heavy water pitches followed. Throughout this time, Richard was barely seen by our survey party. He was off ahead, rigging, finding the route. Usually he returned every hour or so with a sheepish grin and asked for more rope. "Still goes," he would say, and then bound off with another 60 meters of line to rig the next drop where he had run out. After repeating this ritual two or three times he was gone for a long time. We kept on surveying. As long as it was going none of us really cared how long we surveyed. This passage was fantastic! A while later, we lost the water at about -800 meters. It funnelled off into a crawlway along the right wall. The main passage continued on though, big as ever. About three or four hours after we had last seen Richard, a light flashed ahead of us and our wayward rigger soon arrived, somewhat winded. "More rope?" we inquired. "Dead ended, breakdown," was the reply. Crap! "The canyon we are in gets cut off by a fault some 200 meters on," Richard continued. "I managed to climb up into a dry fissure which I followed along the fault. It went maybe another 200 meters to a breakdown complex. I pushed it pretty hard." While we digested this bit of bad news, he picked up the remaining rope and headed back to camp.

Within 3 hours, we had brought the survey in to the sump and poked around in the breakdown. We pushed through a few tight holes in the ceiling into what seemed to be going passage. A few meters away, things got very terminal, and there, in the mud, were two initials: R.S. 5/78. Everywhere we pushed there were footprints. Richard had done his work. This was the end of the road.

Reluctantly, we headed back to camp, taking an easy time of it, enjoying this fine passage that no one was going to come back to ever again. We left it rigged for Bill and Jim though. They would surely want to see it. Occasionally, Hal would get rowdy and lay across the top of a waterfall damming up a good head. Then, when Steve or I were at some point where we could not pendulum out of the way, he would let it rip. Splash! Along the way out, we pushed the water diversion crawl to its terminous at an impassible fissure.

The ropework beyond there was routine but exciting. Three out of our four man party had equipment failure. Richard broke his chest sling. I broke a knee Gibbs sling in the middle of Sima Larga. Hal wore through a Jumar line at the Midnight Special. A repair day was thus declared and we settled into camp to await the arrival of Jim and Bill.

As we began to eat dinner, we heard an unmistakeable yell from Smith, echoing something to the effects of, "I can smell you from here!" He and Bill soon walked into camp. They related that the weather looked better topside, but that most of those at the house did not plan on coming in for a few days until the water dropped. They had re-rigged four pitches on the

Descending the 16th drop enroute to CampI. (Bill Stone)

Tension traverse at -810m in Cascade Canyon. (Bill Stone)

way in, so even if the water rose to double its flow, we would probably make it out. At that point it was just high enough to make things exciting, though still quite safe.

Following a short snooze Jim and Bill loped off, harmonica playing, echoing as they climbed over the windbreak above camp. They were going to give the wet route a final push and de-rig what they could. We commenced our repair day in earnest. Damn 1" webbing just doesn't hack it sometimes.

We had barely fallen asleep that "evening" (I think it was 3 AM Tuesday), when the deep crew returned following a high powered 11-1/2 hour trip to the bottom. They had checked things out thoroughly and then de-rigged through the crawl above the Sima Larga...a noble feat. Additionally, they had followed the upstream lead above the Sima Larga 50 meters to a high dome; no continuation. Upon their arrival, we fixed up some dinner before sleeping yet another eight hours.

When everyone was up and fed that afternoon we began a survey of the Waterfall Room and the After Dinner Chamber. This was quite relaxed as it was dry enough to wear only our camp clothes. Richard packed his bags and headed for the surface, apparently discontented that Bill and Jim had not surveyed the 50 meters they had seen above the Sima Larga. He first rappelled down to the 400 meter divide and picked up the 150 meter "pig" line planning to carry both that and his camp pack to the surface. Our plan for the following day was to pull everything below us to the entrance, then return to Camp I.

**The Overflow Revisited**

Thursday noon found us back in our "zootsuits", scooting down the wet series. We got as far as the "Good To the Last Drop" with our original plans. There Jim climbed up into Jeff's original "As Usual Overflow" passage, coming to the brink of a 20 meter pit. Bill, Steve and he took three ropes to check this

out. It went. Hal and I then picked up eight more ropes and rigged on, the others shooting the survey in close on our heels. The passage started out dry but soon became a tight wet rift. Numerous live formations, a rarity for Huautla, draped the walls. Due to a lack of rig points most of the ropes ended up being tied together with around four knots to break the rappel. Our last line was one meter shy of reaching the floor... another dead end at -678 meters.

We dragged all tackle up to camp level. There we found visitors: Andy, Maureen and Dino had come in at Richard's suggestion to help de-rig. Unfortunately our timing was off and they had grown cold waiting. Thus we were not surprised to find strange faces dressed up in familiar clothes! Following dinner, Andy packed off. The others stayed for the night. Dino later related that Richard had made it to the entrance with the 150 meter line, then hiked with his camp gear all the way back to the house, still in his wetsuit. On the way he intercepted Dino, Maureen, Andy and Ralph who were planning a second push down B Lead. They had previously descended a deep shaft there, running out of rope after 40 meters. Rocks fell a long, long way beyond.

Typical dimensions in the 678m fissure. (Bill Stone)

Friday afternoon, we cleaned up camp and headed for daylight. The plan was to get everything up to the Rocky Horror and pack back to the house with camp gear.

Bill and I were the last to leave Camp I, intending on cleaning whatever equipment lay between us and Rocky Horror. When we arrived at the first pitch above camp, we found not so much as a coil left from the healthy stack of yesterday. The team ahead was certainly putting out. From there we pulled the tackle out for successive pitches as we ascended them. Upon reaching the Blast Zone we found ourselves trapped for close to an hour as projectiles rocketed down from the Rocky Horror. We were unable to signal the team above

of our plight. Bill finally sprinted for it minus camp pack, to talk to those up on the ropes. He caught Steve ascending the free section. While Zeman hung motionless, we shuffled the gear up to safety. By the time I reached the top of the Horror, Steve was gone. I waited while Bill cursed his way up the drop—too much gear--his Jumars were sliding down a muddy stretch of rope. Later on, traversing the far end of the room, Bill motioned to bring the camera. Confused, I wandered over to see him leaning against a two meter high pile of ropes. Mother! We added our seven to the stack and continued on.

## Flood !

While ascending the Sweet Sue pitch, I thought I heard a crash, a very sudden increase in the roar of the falls. Bill called back that my ears were probably popping with the altitude change. We rested awhile up top to cool down, then traversed the scattered slabs of Sweet Sue Chamber. When we reached the stream on the far end, we both stood frozen. In place of the bubbling stream we remembered, was a raging torrent of black foaming water, a good meter deep. We ditched our camp packs and went ahead to scope things out. A short distance further, we were stopped by a wall of water. A trickle stream coming out a side passage had increased to fire hydrant proportions filling the entire passage. We retreated and sat by the river for close to an hour watching the water level. It seemed to be dropping slowly. By this time we were getting cold and unpacked our camp gear back in a dry niche of Sweet Sue Chamber. Both of us were more concerned for those above than our own situation. If they had been on rope up in the entrance series when the surge hit...

By morning the water had dropped considerably and was now running clear. At the bottom of the sixth pitch, we found Steve camped out in a fairly dry side passage. He had been midway up the 25 meter 5th drop when the holocaust hit. He had made it to the top and had crawled off into a corner for two hours watching the water level. It rose 1-1/2 meters in that room, swirling and foaming enough to move his camp pack around which he had lashed to the floor. Considering the situation (he was rapidly getting cold), he chose the only alternative: rappelling down through the thundering cascades to find a bivouac site...

The three of us then ascended those last six pitches to daylight. We had been in Carrizo for six days and 19 hours.

Oh, Mama, can this really
be the end?
To be stuck in de Carrizo
when the summer rains begin.

On the surface, we found Dino, Maureen, Nancy, Janet and Mike waiting. Dino had ascended only an hour earlier. Her story was nearly as harrowing as Steve's. She had just reached the bottom of the second drop when things got rough. "The entire pit was solid water. I couldn't find the rope," she said. Hal was directly above and jerry-rigged a tyrolean down to her. Her duffel bag, which she had lashed to a projection, was then underwater in the whirlpool which closed the top of the third drop. Hal left his sleeping bag with Dino and headed for the house. She bivouacked down the still dry B Lead.

We worked our way up the doline, a soggy bunch. The rescue party had driven a truck up to San Andres, upon seeing how bad the storm

was. They had remained there the entire night, assuming we would be out sometime, possibly in need of help. Jim was at the wheel on the way home. We had practically the entire expedition in the truck, so he was driving slow. Around half way to San Agustin a drunken Indian latched both his hands on the right door handle and proceeded to drag along with the vehicle. Despite our verbal efforts indicating there was no room, he continued to hang on until one of the sober locals yanked him free. In the process, both fell down. The drunk's leg went under the rear wheel. There were mixed reactions from our crew, but the truck kept rolling for San Agustin. Around two hours later Bill drew our attention to an Indian who had passed the house twice making profane gestures. He then pronounced, "I think that's the guy we ran over, and he seems to be OK." "How can you tell?" someone asked. But then we all saw what Steele had seen... a 12 x 16.5 mudgrip track across the fellow's white pants. Sometimes good PR is elusive...

## Two more trips down Iglesia

Sunday, June 6th: Jim, Jill, Richard, Andy and I went into Rio Iglesia to make another attempt on the sump and de-rig. At the Penthouse we picked up all the Canadian garbage from the '67 expedition. Following a side trip to the Echo Chamber, where Richard unsuccessfully tried to gain entry into the booming high passage, Jim, Jill and I continued on toward the sumps. Andy and Richard headed for the Penthouse; Richard climbing on out with all the garbage.

Jim and Jill took photos while I traversed 150 meters ahead to a tight crawl. This led 30 meters to the "siphon": a one meter deep, stagnant pool. An eleven year old turd lay on the bottom, undisturbed. My sentiments too.

The derig went smoothly, all of us packing up through the mist filled doline late that evening.

The following morning Richard, Jill and I were up early, planning to have another go at B Lead in Carrizo. Ralph and Mike also made an early start for Molino de Carne. They had already pushed down to -32 meters through passage so tight that Mike had to hammer his way through. The reward for perserverance however, would be great. A connection to Carrizo would boost the system to -902 meters vertically. The B survey team however, never materialized. I had planned to take some photos on the trip but soon realized to my disbelief that I had somehow left my new strobe at the bottom of Iglesia. What a bummer! For awhile I tried, half heartedly, to roust up a second but blew it off. It was my foul up. Had I not of late contracted "Lowrey's Disease" (chest cold) my reticence of doing a solo trip would have given way to realizing that this was an ideal situation where a one man team was expeditious. It was an interesting trip, unquestionably. I found the wayward strobe precisely along the stream bench where I had changed carbide on the previous de-rig trip, 300 meters down. It was wrapped in a green sock and looked much like the rocks in the streambed. Hence, the blunder. The climb out was a stout one. We all rested up early that evening. Tuesday we planned to pull everything out of Carrizo.

" Son of a Pitch ", 95m shaft in B Lead. (Bill Steele)

## The Final De-Rig

Richard was up at 6 AM and rousted those of us going to the B lead... Bill, Jill and I. " Son of a pitch" dropped 95 meters down a great sloping shaft: Carrizo's 78th drop. When we arrived at the bottom Richard returned with news that we had connected in to the main passage just above the 7th shaft. This bypassed the wet, six drop entrance series. Hence, we immediately decided to de-rig through this new dry route. Richard volunteered to de-rig the wet series. During his endeavor he poked into the fissure behind where Zeman had bivouacked. Quite to his surprise he found an extensive set of stream passages, something on the order of 4-500 meters and going. He then continued with the de-rig. Bill, Jill and I headed down to Rocky Horror. By the time we had recoiled the loose ropes, 48 in the pile, Jim and Mike arrived. Precise timing! Soon we had ten people in a chain and passed hand to hand the ever growing pile of ropes, now 53 at the base of "Son of a Pitch." Here our efficient operation fell to pieces. With ten people to go up the 95 meter pitch someone was going to be waiting a long time. Jim went up solo with a 125 meter line, intending on rigging a second rope. Additionally he placed pads at the dubious points so we could climb tandem. From then on things picked up. Four people at a time climbing with tethers, swinging coils below

them. Quite a sight! Bill and I were the last two again. Steve and Hal were on top waiting to help pull up the big ropes.

At the entrance we found the carabiner holding the traverse line out into the pit missing. Strange. All the ropes from the wet series were there too. Richard later explained that this was due to a hassling he had received from six Mazatecs at the entrance. They had apparently stolen the Stubai off the piton as well. The entire de-rigging operation took 15 hours and involved twelve cavers.

The following day Janet, Bill, Richard and Andy drove off in Richard's van. The rest of us spent a light day putting in one last push for a high entrance to Carrizo. Mike and Jim broke through in Molino de Carne after a conserted hammering effort in the tight popcorn encrusted fissure. There they entered a canyon a meter in width and fifteen tall. A 20 meter shaft stopped progress short though, as they were out of tackle. Steve and I, meanwhile, had managed to swing across the top of Jill's 78 meter well and into a parallel rift. This one was a multipitch affair which took us to a depth of -95 meters. There we encountered an impassible crawl. Steve hammered his way another ten meters, lying in the stream in a T-shirt. Plenty of wind and water. The computer line plot shows it to be nearly in line with "Son of a Pitch", which does carry a small stream.

Thursday was our last work day in Huautla. Steve and Jim went to pull the ropes out of Agua de Pino, another small multidrop cave near Carrizo. The remainder of us rested. On Friday afternoon we loaded the trucks amid a strange atmosphere. All of those whom we had seen that first night in the agente's office were there, asking for this, that. We accomodated their requests for bottles and worn ropes but that was the limit. By then most everyone had said their goodbyes and climbed inside the vehicles. I started the engine. In the mirror I saw one of the youthful members of the agente delegation running toward the truck. He came to my window. "The agente wants to talk to you. His office is open," he said. "Why," I replied. "To pay the 2000 pesos cooperacion.....or next time you don't have permission to return." We drove off.

## Notes on the Expedition

This was an unusual endeavor in many respects. From a human standpoint we learned much. This was a large expedition. We do have personalities, and they are not perfect. To accomplish the goal yet retain a tight comradery is surely the essential combination that every successful expedition must achieve.

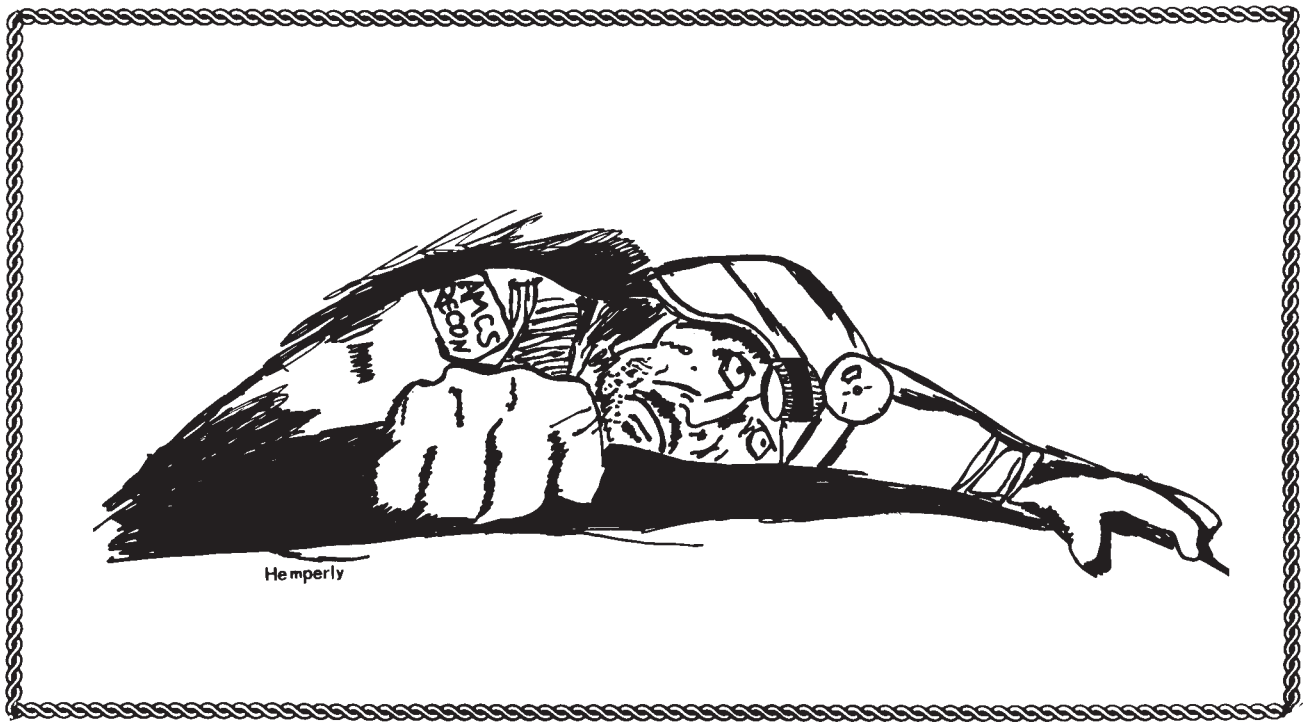
Speleologically speaking the exploration was somewhat disappointing. The most striking fact to hit us came in the form of a computer plot. Carrizo and La Grieta came within meters of connecting at the -848 meter level of Carrizo. The breakdown. The wind... A statistical analysis shows the two passages to come within six meters of joining with a 95% confidence interval. The wet route had gone to -844 meters and was the most challanging way to the bottom of Carrizo. Forty-three shafts, water pounding, led down through polished black rock canyons. And a side rift had gone to -678 meters with still a few unchecked portions, all directly above and close to passage in La Grieta. However, the expected connection had eluded us once again.

Something else which bears mentioning is the vast amount of tackle which was used in exploring this system. All in all there were 78 pitches in Carrizo, and to rig them all would require 1653 meters of rope. The amount of actual rope needed to do the most technical route is around 1200 meters.

Lastly thanks are due to those companies which helped to sponsor the expedition: Nikon Corporation, without whose underwater camera and equipment no underground photos would have been brought back. Speleoshoppe for rope and Wheat Lamps. Pidgeon Mountain Industries for rope.

Expedition Personnel

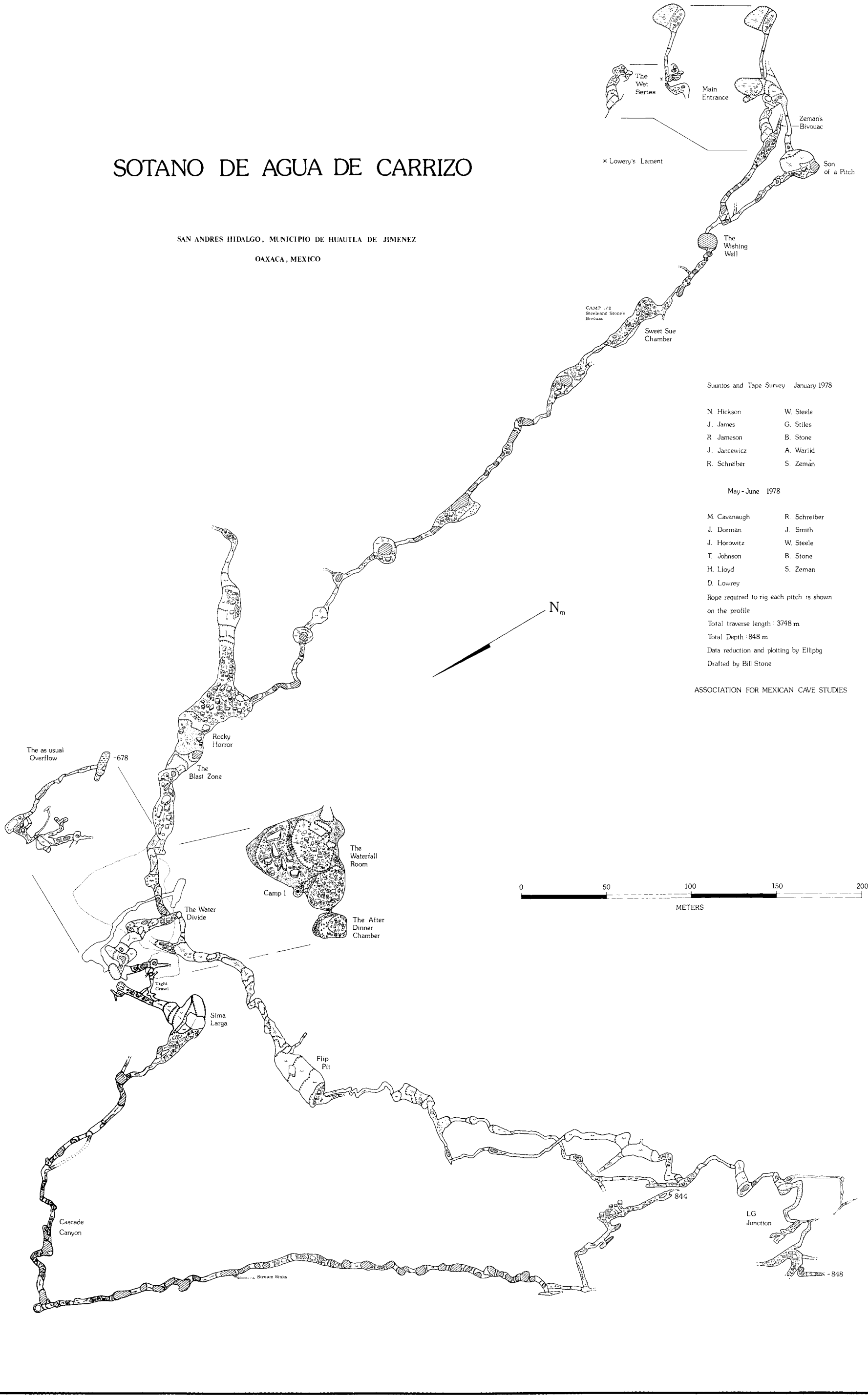
1. Nancy Boice
2. Maureen Cavanaugh
3. Jill Dorman
4. Janet Fitzsimmons
5. Andy Grubbs
6. Jeff Horowitz
7. Tracy Johnson
8. Ralph Kennedy
9. Hal Lloyd
10. Dino Lowrey
11. Mike McEachern
12. Martha Meacham
13. Richard Schreiber
14. Jim Smith
15. Bill Steele
16. Bill Stone
17. Steve Zeman



# SOTANO DE AGUA DE CARRIZO

SAN ANDRES HIDALGO, MUNICIPIO DE HUAUTLA DE JIMENEZ

OAXACA, MEXICO




Suuntos and Tape Survey - January 1978

| | |
|---|---|
| N. Hickson | W. Steele |
| J. James | G. Stiles |
| R. Jameson | B. Stone |
| J. Jancewicz | A. Warild |
| R. Schreiber | S. Zeman |

May - June 1978

| | |
|---|---|
| M. Cavanaugh | R. Schreiber |
| J. Dorman | J. Smith |
| J. Horowitz | W. Steele |
| T. Johnson | B. Stone |
| H. Lloyd | S. Zeman |
| D. Lowrey | |

Rope required to rig each pitch is shown on the profile

Total traverse length : 3748 m

Total Depth : 848 m

Data reduction and plotting by Ellipbg

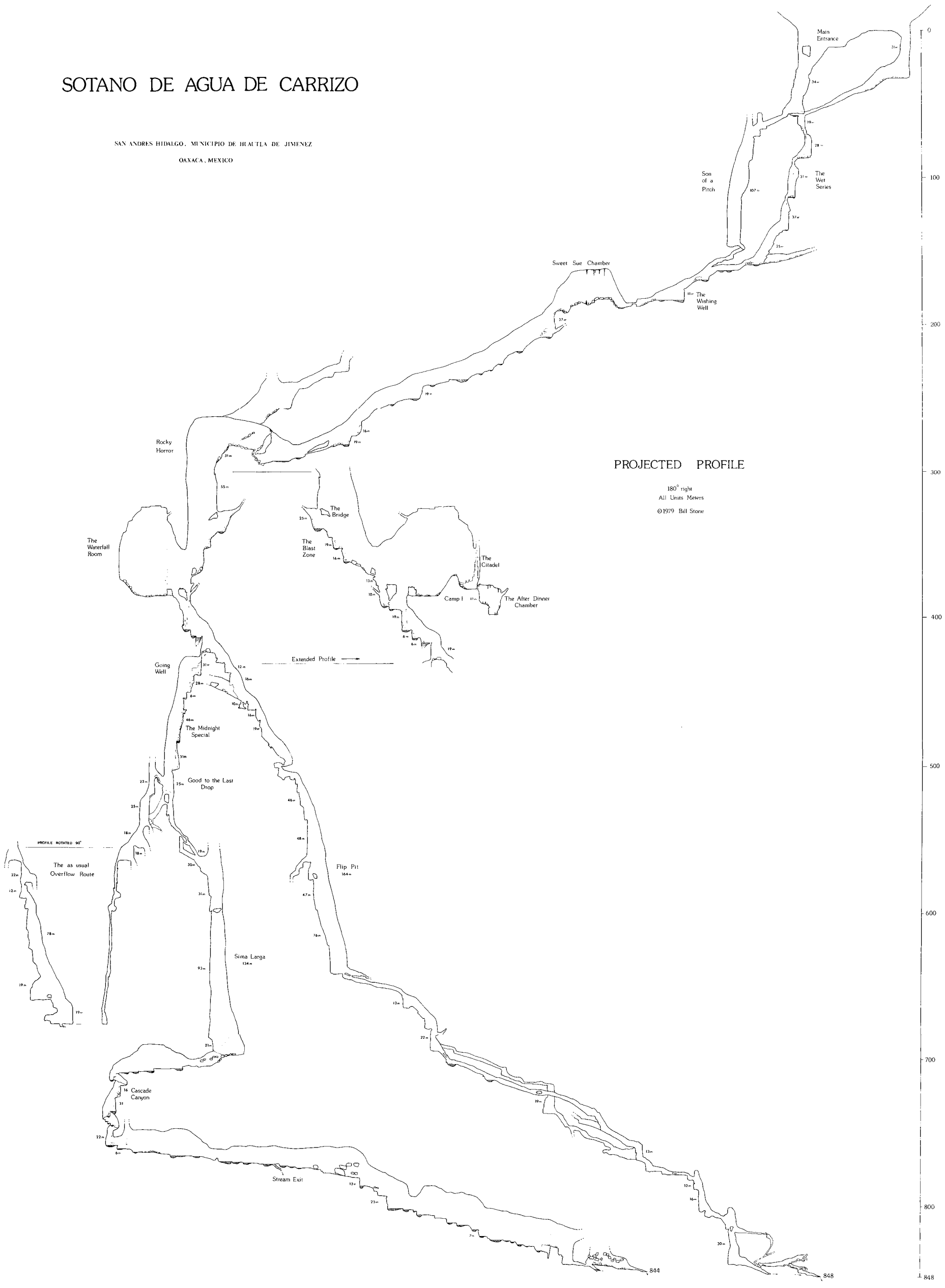
Drafted by Bill Stone

ASSOCIATION FOR MEXICAN CAVE STUDIES

# SOTANO DE AGUA DE CARRIZO

SAN ANDRES HIDALGO, MUNICIPIO DE HUAUTLA DE JIMENEZ

OAXACA, MEXICO




## PROJECTED PROFILE

180° right
All Units Meters

©1979 Bill Stone

# Brinco Rescue

**reported by Gill Ediger**

During the week prior to Thanksgiving 1978 several pickup loads of cavers arrived at one or the other entrances of the extensive Sistema Purficacion in the mountains northwest of Cd. Victoria. Most of the work was concentrated in Cueva de Infiernillo, the lower cave in the system. But a crew staying in the Proyecto Espeleologico Purificacion fieldhouse at Conrado Castillo enlarged a sinkhole discovered in May. This provided the system with its third known entrance and easy access to the Tin Can Alley and Valhalla sections. Valhalla is presently the highest mapped part of the system.

Following the departure of most of the personnel, a crew consisting of Chris Kerr(TN), Hal Lloyd(AZ), Jim Smith(GA) and Steve Zeman(TX) moved from the lower cave to Conrado Castillo with the basic intention of exploring the upper parts of Valhalla in an attempt to add depth by going up.

At 11 AM on Friday, December 1, 1978 the 4 cavers entered the Brinco entrance and traversed the 1/2 kilometer of the Historic Section, ascended the Chute, squeezed through the Slot and, bypassing the Laguna Verde Cutoff, climbed up into the Helictite Room. They then made their way up the wet and arduous Tin Can Alley; 300 meters of upper level passage that includes several crawlways, the last of which is Argonaut Squeeze--the beginning of Valhalla. Less than a hundred meters before Argonaut they unknowingly passed an unpretentous squeeze on the left which lead to the newly dug Entrada de Vapor.

Just past the Argonaut Squeeze, the floor of Valhalla is covered with breakdown. About 40 meters beyond, the floor drops sharply down an unclimbable slope covered with unstable and somewhat muddy breakdown. The first exploration and mapping crew encountered this obstacle and searched for an alternate route which they found in an unlikely looking breakdown fissure some 30 meters back toward Argonaut Squeeze. The four explorers passed by this crack and continued down the obvious main passage. At approximately 2 PM Kerr, who was in the lead and some distance ahead of the others, approached the drop off and, according to his statement after the rescue, "got to the edge of the pit and fell down (it)... I just lost my footing and fell." The others heard a scream, the kind of "last gasp scream" that any caver or climber who has ever taken a fall will recognize instinctively. Zeman said that he could 'feel what was happening.' "We could tell when he hit--the sound of the scream changed," to one of agony. He continued to scream periodically till the others got to him ten minutes later. "I was in pain, terrible pain," Kerr said.

The others rushed to the edge of the drop off and realized its instability. They talked to him and determined that he'd hurt his ankle. Realizing their lo-

cation, they began to look for the alternate route which Lloyd knew to exist. Finding it after much searching, they made their way to Kerr's side on the floor. His hardhat and battery pack lay crushed nearby.

Kerr's wounds were rather rapidly rediagnosed as a broken left femur, an ankle injury, and possibly broken ribs on his right side. The broken leg was by far the most serious. They made him as comfortable as possible at the bottom of the drop. At that time the only bivouac gear available was Lloyd's space blanket. Carbide lamps put beneath it kept him warm.

At 3 PM Lloyd and Smith left for the surface to prepare for a rescue. Passing through over a kilometer of cave by the route they had entered, they exited the cave via the Brinco entrance at 6 PM. Neither Smith nor Lloyd speak Spanish very well, but Smith was able to scratch out a basic rescue message in both Spanish and English and gave it to Antonio Ledezma, a resident of Conrado Castillo and good friend of cavers. He and his brother Lolo got into their logging truck and began to drive to Victoria to phone Austin with word of the accident. Lloyd and Smith gathered food, water, a stove, sleeping bags, warm clothes, a pack frame, material and sheets for binding the splint, and what mild pain relievers were on hand in the first aid kit. They left notes on the fieldhouse door, re-entered the cave and returned to the accident site.

Operations were immediately begun to haul Kerr up the pitch. By 3 AM they had only moved him to the top of the drop down which he'd fallen.

It was also about 3 AM that Antonio and Lolo pulled into Victoria only to find the telephone office closed for the night--not to open till 7 AM. Antonio tried various alternatives but finally settled upon waiting for the start of business next morning.

The ordeal of moving Kerr up the drop resulted in much pain to him and a net gain of only 12 or 15 meters. It required 7 hours and fairly exhausted the crew. It was decided to bivouac there on some flat breakdown slabs, to get some rest for another try, and to hope for help from the States.

Zeman and Lloyd made a 4 hour round trip to the Dressing Room to recover sleeping bags, stove, and other things they'd stashed there till it was known where they'd be needed. Kerr was made comfortable by insulating him from the cold rock with wet suits, putting him in the sleeping bag, and using the emergency blanket for supplemental heat. Zeman and Lloyd left the cave while Smith prepared food. He and Kerr then slept.

About that same time, Antonio was getting through to Bill Stone in Austin. The message Stone received roughly translated was: 'There has been an accident one kilometer inside the cave (Brinco). A man has fallen and the situation is very serious. It occured at 5 PM, Friday and help is needed. They need ten men and a doctor.' Bill asked who had fallen and Antonio evidently misunderstood the question and answered "Jaime," who was actually the person who'd given him the message. Jim "Jaime" Smith was thenceforth assumed to be the victim, though that assumption was always followed by "but we're not sure."

By 7:30 Saturday morning Stone had awakened his housemate, Jerry Atkinson, arranged his thoughts, and began calling people. It was realized that we had

Sayther's truck drives off the C-130 at Cd. Victoria. (Gill Ediger)

minimal information. From the outset we were fully aware that our only credible information was that the accident was well within Brinco and that there had been a fall. We determined that any attempt to speculate would only add to the confusion. We hoped for the best and assumed the worst. It was all we had to work with. It was also realized that we were, at best, 12 hours by truck from the rescue site.

Vehicle and personnel requirements were discussed. Paul Fambro and Terry Sayther had the only reliable trucks in town. Tracy Johnson was a nurse. Bill Steele knew a doctor. Terri Treacy and Gill Ediger knew the cave, as did Atkinson. People were awakened and phone calls made. Terry Jones and Chuck Stuehm were called in San Antonio to organize a medical kit, litters, and other gear which the crew would pick up on its way to the border. Terry Jones began a series of calls to the Air Force Rescue Coordination Center in Illinois to check on the availability of aircraft for a possible airlift to the site.

By 8:15 AM John Kreidler had been contacted in McAllen. He was 6 hours closer by road to Conrado Castillo than we were in Austin. Kreidler knew a doctor and would organize an advance team to precede the Austin crew.

Fambro could not be contacted, so Sayther was asked to take his truck. He began preparing it for the trip. By then the crew had been picked and packing was in progress. At 8:40 we were informed by the Air Force that we would have the airlift if permission from Mexico could be obtained. Congressmen and consular officials were being phoned. A more-or-less hold was put on plans to try to leave town by 9:00. With additional time, people continued rounding up various tools, gear, and explosives. Food was prepared.

By 9:45 the McAllen crew was essentially ready to go. They were put on hold to await word from the AF. A resuce team from Tucson was reported to be gearing up. We called in that it would not be necessary.

At 9:55 word was passed on that an Air Force C130 would fly our truck and crew to McAllen to pick up the other truck and crew; then fly us all to Ciudad Victoria (nearest landing strip to the site) if permission to enter Mexico could be obtained. Helicopter transport to Conrado Castillo, 1900 meters up the mountainside, was still being worked on.

At 11 AM Kreidler reported by phone that he had 2 trucks lined up to leave from the border. Sayther's truck left from South Austin to pick up crew members on its way to Stone's house on Kirkwood from which things were being coordinated. There the truck was repacked and an anxious crew milled around with equally anxious fellow cavers awaiting final word from the Air Force. Kreidler was still on hold.

At noon the word came. We were to meet a C130 at Bergstrom AFB near Austin and be flown to Brownsville to await clearance from Mexico to fly to Victoria. If that permission didn't come, we would drive from the border. Kreidler was instructed to leave immediately. A second call was made re-affirming that no additional help was needed. Jerry Atkinson, Gill Ediger, Tracy Johnson, Mark Minton, Terry Sayther, Bill Steele, Bill Stone and Terri Treacy climbed into Sayther's truck and drove to Bergstrom. At the gate it was curiously amusing that we had no leader: "Who's in charge here?" . . . "Well, no one really!" Decisions were made by whoever was on the spot. We were all there together, heading in the same direction, with a common goal.

Back at Brinco, Lloyd and Zeman were out of the cave by noon, making plans to rest and continue their efforts tomorrow. Morale was low. Sometime in the afternoon they went to sleep in the fieldhouse. Below ground, Smith and Kerr were awakening at midday from a much needed 4 hour sleep. And the McAllen crew, consisting of Art Centeno (a 4th year med student), Steve Copold, Bill Elliott, Jon Jinks, John Kreidler, Nick Morales, and Kyle Reidland were having minor problems crossing the border.

Back at Bergstrom a couple of hours had passed. The C130 arrived and loaded up. It took off and headed for the border. Receiving clearance to Cd. Victoria just before reaching Brownsville. We arrived at the Victoria airport about 4:30 and Sayther drove the truck off while others met with a representative of the Secretaria de Turismo from Victoria. He told us that we needed no tourist cards or car papers, asked if we needed further assistance, gave us his card, and wished us well. We had been on the ground only 2 or 3 minutes when we roared off for town to get gas for the long climb up the mountain. We carried 2 litters, a medical kit, IVs, and various other gear that had been put on the plane in San Antonio before it departed for

Bergstrom to pick us up. Spirits were high as we began our climb, Sayther driving much faster than usual. The crowded truck arrived at La Curva in record time. We talked briefly with Sr. Grimaldo, an old gentleman of the mountains whose great sorrow and forboding tone made us wonder if perhaps we were too late. We arrived at Conrado Castillo around 9 PM. Zeman and Lloyd were still sleeping. They joyfully welcomed us, then calmly related the situation: Kerr had broken his leg in a fall in Valhalla. He was in pain, but otherwise comfortable. Smith was with him and they had food, water, and sleeping bags.

On that note of encouragement we decided to wait for the McAllen crew and get some sleep for a concerted effort tomorrow. It was determined that the 4 cavers had been unfamiliar with the new entrance (though they were aware of its existance) and Terri Treacy, who had recently made the connection, went with Johnson, Atkinson, Minton and Stone to recon the new passage as a possible rescue route. They also were to check on the exact situation at the bivouac site.

At midnight the two McAllen trucks arrived. The Juez de Paz from Villa Hidalgo arrived simultaneously and asked if there was anything he or the Municipio could do to help. He was assured that we had things under control. Several local Mexicans were on hand as well. After a few minutes the McAllen people were apprized of the situtation and they decided to wait till morning with the rest of us.

Treacy and crew returned from the cave at 1:30 AM reporting that all was well at the camp in the cave and that, with some passage modification, we could use the new entrance for the rescue. Spirits continued to rise. All went to sleep.

Folks rose early and began going about their tasks. No one ever gave an order. People moved to where they were needed. A medical team consisting of Centeno (the 'doc'), Johnson, Treacy, and others went to the bivouac site to check Kerr. They carried splints, IVs, and various drugs to ease the pain during the rescue. Hammer crews went in to enlarge passage. Explosives were carried in and several charges set off during the day to remove obstinate constrictions. In midmorning two truckloads of Mexican Army troops under the command of Captain 2/o de Infanteria Manuel Martinez Olivares arrived amid much apprehension on our part. They put themselves at our disposal and kept track of rescue proceedings during the day, periodically reporting the situation by radio to some higher command in Victoria or Tampico. At first we were slightly doubtful of their intentions but soon were relieved when they set off on minor tasks such as rounding up sledge hammers. Why they carried automatic rifles never did become clear.

Passage enlargement continued into the afternoon, mostly unsupervised. Messengers passed in and out several times. Litters, ropes, and other supplies were brought in and left at appropriate points. But despite the rock-breaking effort, it was obvious the extraction would be tight and difficult. A pit crew controlled the movement of people and materials in and out of the vertical entrance.

About 7 PM the last charge was set and the camp crew informed that in an hour the move could begin. Little did we know that at that moment additional

The Mexican Army under the command of Capt. Martinez. (Jerry Atkinson)

rescue teams were mobilizing in Tucson and San Antonio. A thirty-six hour break in communications was apparently sufficient to arouse enough doubt back in the States to the point of initiating a second rescue party.

Doc Centeno gave Kerr some shots to relax him and relieve pain during the extraction. He retied the splint and Kerr was placed on the Robertson litter, a wood and canvas cocoon-like device with adjustable stainless steel runners. No rescue team should be without one. Its versatility proved itself in many ways.

The eminence of the rescue began to be felt by those around Kerr. They started to prepare themselves psychologically for the trip. Spirits were mixed.

At 8 PM the move was begun with 6 people carrying. Within a minute the crew arrived at the first major obstacle--the Argonaut Squeeze. With hardly a hitch the litter slid through the constricture and spirits raised tremendously. The litter was then moved along a low, wide popcorn floored passage. A very narrow entrenched meander with solutional remnants projecting from the random, uneven walls presented the next challenge. The litter had to be raised, lowered, twisted and turned to get it along, sometimes carried by only 2

Moving Kerr through the small passages of upper Brinco. (Gill Ediger)

bearers. The section is not 50 meters long, but required nearly an hour to traverse. Past that, the passage opens up to mud and gravel floored walking passage. Twenty meters further, on the right, was the upward trending crawlway which lead, eventually, to the new entrance. Kerr was placed on a bedrock shelf while a rope was layed out to allow the litter to be hauled up the low sloping chute. Halfway up that passage was a constriction. The final blast was to have removed it, but the charges misfired. Zeman was whanging away at it with a hammer. We knew by looking that the litter would not pass. Kerr would have to negotiate it himself.

Back down in Tin Can Alley, the end of the rope was tied to the litter. One person was stationed at the head and one at the foot to guide it while others stationed themselves along the way to haul on the line. Slowly, less than a quarter meter at a time, Kerr was moved along till he reached the constriction. At that point the doc gave him another injection and a drink of water. The litter was unstrapped and moved to the other side of the hole. We explained the necessary moves to Kerr a couple times and he moved to the starting point. Lying on his right side, he painfully negotiated the squeeze with only minor assistance. Seeing him do that raised spirits again. He crawled back onto the litter, was buckled in and hauled to the top of the slope, a junction room. There he was lifted up the S Turn into the multi-

leveled fissure that leads to a final crawlway before the Entrance Pit. He was hauled, pulled, and lifted (having to turn his head to protect his face from the low ceiling) to the next obstacle--a low and narrow uneven floored fissure which for some reason we had failed earlier to recognize as so much of a problem. It became obvious then that even if Kerr and the litter would fit, which they wouldn't in spots, it would be almost impossible to control the litter over the rugged floor. Again the buckles were loosened and Kerr, assisted by the doc and others, struggled up a slope and into the crawlway where he pulled himself along on his right side inch by painful inch for a very long and tiring 15 to 20 meter stretch. Most of the rescuers followed along waiting for something to do. A breeze was blowing through the constricted passage and some of the weary cavers began to get chilled. With fairly large amounts of both agony and determination Kerr finally made it to the end of the fissure. He was given another injection and lifted to the meter or so high ledge which is the beginning of the Entrance Pit Crawl. It is a very low crawlway with no more than 25 centimeters of clearance between the bedrock floor and ceiling. Five valuable centimeters of that 25 had been laboriously gained by a dedicated hammer crew that chipped away at it throughout the day.

Lying on his back, Kerr eased toward the tight spot where his helmet would only pass if he turned his head. Then a new problem arose--his feet were too long. His legs had been taped together to help immobilize the injured one and that prevented his feet from turning. We cussed and Kerr groaned as we forced his feet to the side while he forced his body through the hole.

Some time was spent getting him into the Stokes litter on the other side of the constriction. Rescuers huddled around in the chill breeze waiting for the crawlway to clear of bodies. When Kerr was strapped in he was carried to the talus mound beneath the pit while the others came through the crawl. A hardhat was place over his face to protect him from falling debris in the small pit. The haul line was lowered and attached to the Stokes while Kerr was further immobilized in the litter. Zeman put on his vertical gear and climbed below the litter on the main rope as Kerr was lifted on the haul line by personnel on the surface. The hauling, it should be noted, was done primarily by residents from Conrado Castillo. The doc rigged in and climbed out when the pit and ropes were clear. It was 2 AM Monday the 4th of December.

The others ascended in turn and Kerr was carried to the fieldhouse. There he was taken out of the stretcher and given a checkup by the doc who decided, as most of us already had, that he should sleep the remainder of the night and be carried down the mountain in the morning. People milled around eating, drinking, and discussing the rescue--basically unwinding. Kerr was put to bed as others wandered off to find their's.

Next morning Kerr was put back on the Robertson litter and placed on a stretcher rigged with innertube straps from the roof of Nick Morales' camper. At 10:30 AM the two South Texas trucks headed down the mountain enroute to the McAllen hospital. The suspended litter proved unworkable and Kerr was trasferred to the back of Kreidler's truck at La Curva for the remainder of the trip.

Meanwhile, some of the cavers still at Conrado Castillo re-entered, completely cleaned and derigged the cave. Sayther's truck departed in the late afternoon. Ediger, Lloyd, Smith and Zeman remained on the mountain to cave.

Carrying Kerr to the truck for the trip back to the U.S. (Jerry Atkinson)

The McAllen crew arrived at the flat lands about 5:30 and there encountered the San Antonio and Tucson people on their way up the mountain. After a brief exchange of formalities, which included a newspaper interview with Kerr, Kreidler's truck drove on, reaching pavement at 6:45. A phone was found and McAllen notified of their impending arrival. They arrived at the border just before midnight. U.S. Customs had been alerted and allowed the crew to pass with only a cursory inspection. Kerr was taken to the Emergency Room at McAllen General Hospital, checked out by the doctor on duty, admitted and taken to his room. The next day he was taken to surgery where his broken bone was pinned. He was released a week later.

## Rescue Analysis

Many factors contributed to the successful extraction of Chris Kerr from Cueva del Brinco. The most important, of course, was the caliber of the cavers participating. The second was the spirit of cooperation that took place by all persons and agencies concerned on both sides of the border. That Kerr could aid the effort helped immensly. The absence of ego trippers and persons with the 'rescue squad mentality' contributed to the most notable phenomenon of the rescue--nobody was in charge!

Nobody ever gave an order. There were no bosses. In the truest sense of the word, they were a team. People did what was necessary. They moved to the jobs automatically, without a leader. And the jobs were done smoothly and efficiently. Some people had specialities, others did general chores. Yet, had orders been necessary, nearly anyone would have been capable of giving one. The teamwork was unparalled considering the number of potential leaders on hand and the lack of any particular plan. They faked the whole thing--anticipating what problems they could ahead of time, meeting others with expertise as they arose. All are to be congratulated. The 3 cavers who were with Kerr did the right things--they kept him warm and comfortable, prevented shock, and took measures to effect a rescue on their own if necessary. They dispatched a messenger to call for help. The local Mexicans and military provided tremendous potential manpower. The Mexican consular and Turismo officials cooperated to an astonishing degree. The U.S. Airforce and their Rescue Coordination Center worked and impressed us. U.S. Customs provided a speedy border crossing. Certainly, we are getting to be known as cavers by them and their cooperation and friendliness of late are trusts we must protect. Terry Jones' rescue equipment stash was a valuable resource. All these people aided the success of the operation. They were part of the team.

But the cooperation of the cavers was the key. Cavers cooked food and hauled gear. They hammered rock for hours under tight conditions. They set charges and blasted passage. They manned the pit and its associated ropes. They gave medical assistance and consolation. They did public relations work on the surface. They gave of their time and energy and agony and expertise and did it as a team. They moved as a crew that practices daily, yet many had never seen each other before. It says something of the AMCS cavers that the rescue was conducted with such precision and ease. It was truely a team effort, including Kerr. Nineteen cavers, strangers, and friends, met on a mountainside with a common purpose. They became a team, did their job, and went away successful. Most never realized that on the 3rd and 4th of December they were the best team in the world.

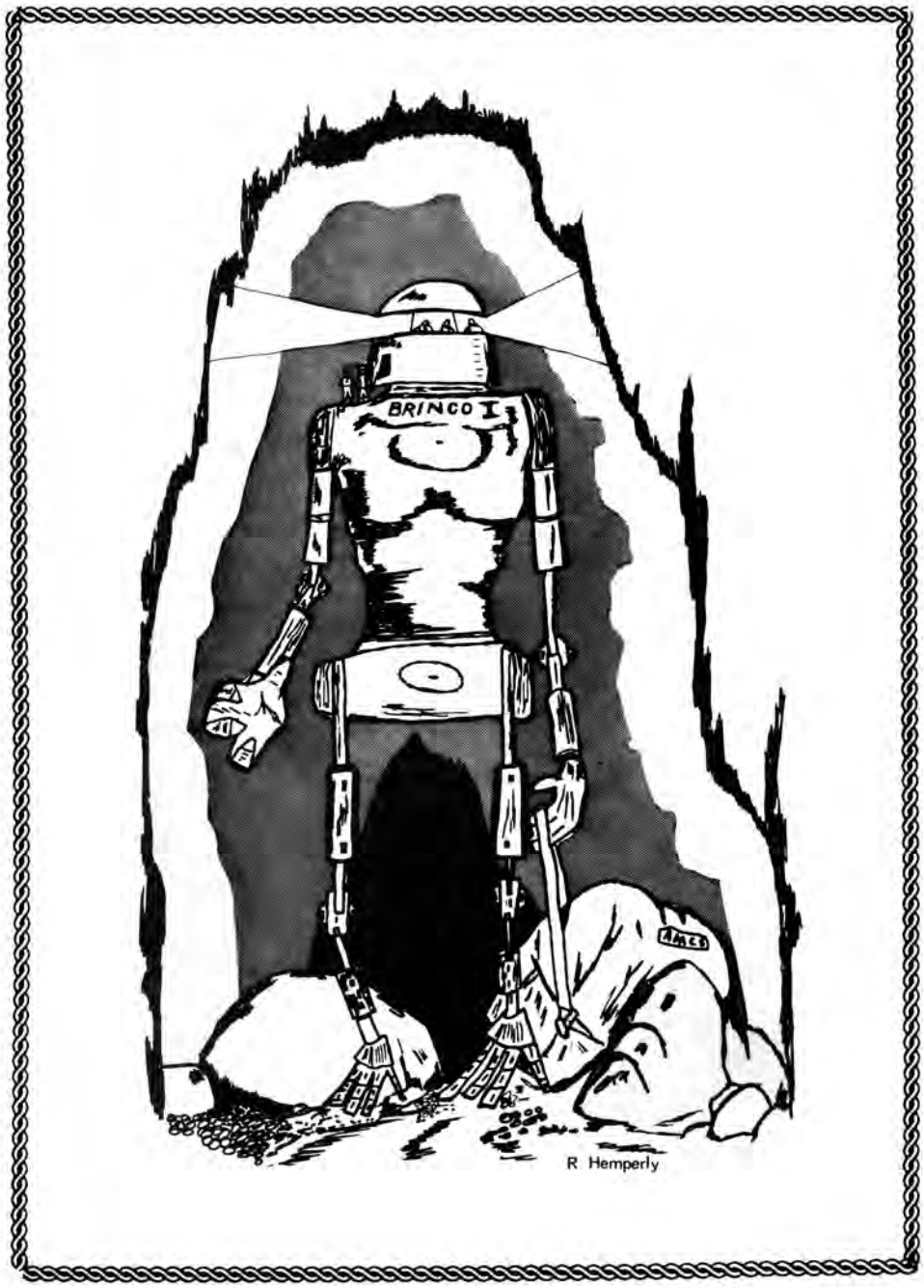
## Accident Analysis

Analysis of such an accident by 3rd parties is apt to be fraught with speculation; so what facts exist, as free from speculation as possible, are:

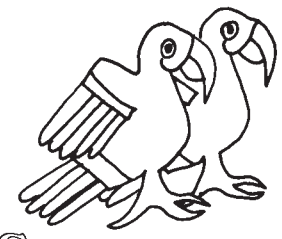
1. The crew consisted of very experienced cavers.
2. They were in passage essentially unknown to them.
3. They were in a very unstable portion of the cave--loose muddy breakdown, crumbly holds, slick slopes.
4. Brinco is a vertical cave, despite the fact that virtually no rope is needed to traverse the 884 meter depth of the system. Like any vertical cave, there are unclimbable drops.
5. They were moving at a fast pace. Both Zeman and Lloyd mentioned thinking before the accident that the pace was too fast.
6. Kerr was leading, some distance ahead of the others.
7. The crew was enthusastic about the potential of a new discovery.

8. Kerr stepped on a rock he assumed to be solid and it wasn't. Kerr fell and had to be rescued.

An analysis of what Kerr's thoughts and attitudes were may save lives and prevent accidents, but would be speculative and inappropriate. Only facts seem to be allowed. One's attitude and style of caving do affect the degree of hazard or safety present. Analysis of such here is deemed undesirable. Attitudes and styles cannot be discounted by anyone seeking to prevent accidents in the future. The facts seem to indicate that, in Kerr's own words, he "just lost (his) footing and fell."



# Stranded on the Bottom of Hoya de las Guaguas



by Ron Ralph

Although we had often lied at great length and breadth to interested parties through the years, this was the first time either Richard Smith or I had tried to really remember all the details of that ill fated trip to Mexico over 10 years ago. We would have gladly lied about it for another 10 years except that Stone asked if there was a map from our trip or anything published as he was about to finish a map of the cave himself sometime soon. Rather than write a trip report or anything else at this late date Richard and I decided to just record our memories and write them out verbatim. Our apologies to Fish and Davis for any inaccuracies.

Richard Smith, when did you say we went on that Guaguas trip?

About the morning of May the 21st, 1968 you and I and Jonathan Davis and John Fish left Austin, Texas in my blue and white 1965 Ford Fairlaine and drove to Cd. Valles via Reynosa. I had a case of touristas before we ever left the United States and ran all the way to Victoria where we found a farmacia that sold Intero-Viaforma.

No, you bought some other new drug on the market because they were out of everything that I knew. The lady wasn't too sure that this would do the trick but we were game to try anything at that point. Are you sure that was in Victoria?

That was in Victoria - and early in the morning. We continued south on Highway 85 but it was way late by the time we hit Cd. Valles and much too late to go into Aquismon. Now as I remember we went further south . . correct me if I'm wrong . . but it seems we camped near the Rio Huichihuayan

I believe we camped out on the new highway to Xilitla on sort of a roadside highway borrow pit at the bridge across the Rio Huichihuayan

And I woke up the next morning feeling like there was fifty tons hanging off of me . . but I didn't have the runs.

So then we drove to Aquismon to talk to the Presidente but he wasn't there. We talked to the Jefe de Policia and finally asked him for permission to go up in to the high country around Tamapatz and to visit the cave called Hoya de las Guaguas. He said, "The Presidente won't be in today to give you a written permiso; however, I'm the law in these parts and its OK with me so you all just

Opposite: Plant forest at the bottom of the 147m drop, Hoya de las Guaguas. (Paul Fambro)

go right on ahead and do what you want to do." Armed with that verbal permission we trucked off south to La Pimienta. There we parked the car right next to the Pan American highway along side the coffee export house and general store. And there was a local inside, remember, an Indio, a peon, .... I can't remember what his name was . . . but he was an older fellow from the village up on top near Guaguas.

That's right. We said we wanted to go look at Guaguas and he said that he would take us and carry the rope for something like 20 pesos.

Right Richard? And the other thing he said was "Tienen Uds. permiso?" and we said "Well . . . we have permission, but we don't have a piece of paper. You see the jefe says its all right with him if we visit the cave. So don't worry about permission." He gave us a fantastic shrug of the shoulders as if to say it doesn't matter to me and said "Pues", then grabbed that duffel bag with 25 or 30 kilos of ropes, put a tump line around the base and across his forehead and took off at a lope across that sugar cane flat to the base of the mountain . . . four gringos panting (with mere 10 to 15 kilo mountaineer backpacks) to keep up. When we hit the edge of the escarpment, we began climbing. And what a climb. It was a series of unending slippery limestone steps each new one at eyeball level. It was a class 4 hands on experience.

We estimated that from the auto to the camp by the cave was like seventeen miles.

You've got to be kidding . . . it could be that far?

Yea. It was 6 hours of mixed hiking and was easily seventeen, if not eighteen miles when we measured it out.

Well, it seems less to me but it could have been that much. What I distinctly remember was looking up the trail and seeing that old man sitting on a rock and smoking a home rolled cigarette. You were dragging real bad. He would look us over and after a half minute be up with a "Vamanos pues" and be off. You were too tired to curse. We finally got on top - it seems like it was late - and took a look at the pit from the east side. It reminded me of looking at a football stadium from a blimp.

Later we came back to the pit at say six or seven p.m. while dinner cooked, ate a bite and bagged it. I remember not sleeping well. Early the next morning we fixed breakfast which was probably oatmeal. I remember we were big on oatmeal in those days - right after that we began laying the rope out in the cornfield. We had it all braided in a duffel bag and it came out easily.

I believe it was a new cornfield with plants about one to two feet tall.

And a lot of small karst cairns scattered around. But it was a good size milpa - say around a third or half hectare - and about 200 meters from the cave. We were still laying out the rope when a mixed group of Mexicans and Indians showed up. There must have been about fifteen of them. One fellow stood out in my memory. He wore typical white cotton pants but with a green to semi-green khaki shirt. He was the one with the .22 rifle - the state jefe (the elected jefe of Tampaxal - Ed.) that gave us so much trouble later. As we were carrying the rope over toward the pit, he shot a parrot. All the Indios were real im-

pressed at this big macho trip.

You know, at some point there, was it the evening before? - we went to Tampaxal or there abouts and talked to the old Juez.

No, at the same time that morning the Federal jefe (Juez Auxiliar - Ed.) showed up - he was there. But it wasn't until we started rigging the rope that the state jefe wanted to see our papers. That's when he wanted the 200 pesos ($16.00 then) to go into the pit.

We construed this to be a mordida to be able to cave in his territory and that's when Johnathan offered him 20 pesos, which he finally took if I remember correctly.

I don't remember that at all Richard.

Well, I'm not sure if he took it, but Jonathan and Pescado (John Fish) were doing all the dealing while I sort of hung back. Also, we were rigging the ropes all the while. We weren't worrying about it. We rigged the rope down a little cleft.

Did they leave about this time?

I think he accepted the 20 pesos and left. I'm pretty sure that was how that worked.

Anyway, we went on about our business. We rigged the rope and if I'm not mistaken, John and I went down the drop 130+ meters to the bottom. It must have been about noon by this time.

Jonathan came down later because we had already left the main line and I remember distinctly him singing an old cavern dirge as he rappelled in, "Dark as a dungeon, dank as the dew" - you know! We got down to the top of the second drop by following a game trail along the left wall on the south side at the pit. We thought we had seen some movement on the trail when we first looked in that morning but there was nothing there and we didn't scare up any critters when we hit the bottom. (The skull of a tayra barbara, a member of the weasel family was collected by McEachern in 1976 from Guaguas). The verdant flora, at times over our head, thinned as we wound downslope and right until we were under the cave ceiling high overhead. Jonathan followed us down to where John and I were rigging the second drop. This drop was very interesting as it had a drip from the ceiling into a small pool adjacent to the rigging point. It wasn't a lot of water, but it was a steady supply.

We began the second drop and I remember going first and getting completely fouled in a knot at about 30 meters down. I don't remember how it happened, only that I needed another rope for a safety line to get out of the predicament and there was no other rope. At some point I was yelling, "Help! Help." Of course, no one could hear me, let alone help me, so I had to finally figure it out for myself. I got loose, repositioned and continued on to the bottom of the drop and called for a second person. John Fish came down and we began the survey as Jonathan Davis got to the bottom. We evidently tied in to an existing survey at that point.

Right! The initial survey had been down before. Who was on the previous trip?

That was done by some of Squire Lewis' and T.R. Evans' crew who had been up to the Golondrinas area. They had done the entrance drop to Guaguas some time before.

O.K. so we started mapping working counter-clockwise around the wall from the rope. Jonathan helped us for a little while on the upper section along the steep talus slope then he decided he wanted to get back to the surface. We had already been down for many hours at this point but it was still daytime. Jonathen left and John and I continued around the wall ending at the small vertical man-hole at the deepest part of the cave. This wasn't more than a meter across and was pretty nasty looking without a belay-line. So after a short discussion, we blew it off and started out. Jonathan was long gone and it was now getting dark judging from the dim light we were getting in this lower section.

John and I climbed to the top of the second drop, coiled the rope and made our way back to the bottom of the entrance drop. We stopped there and decided to eat a snack. After a can of tuna fish or whatever I started looking around. John was still cleaning up his crumbs and I kept looking and looking but I couldn't find the rope. Finally I worked up to a place where the rope had to be, but it wasn't, so I walked back down and said, "Say John, that rope doesn't seem to be here." John just said "Whaaat!" and ran up the last few feet to where the rope was supposed to be and sure enough, it wasn't there. We looked up and stared at this humongous gaping hole defined by bright stars and not a cloud in the sky. The middle of the night and NO ROPE. John started yelling "Hey! Hey, anybody up there?" But there was nothing; not a sound, not an echo - just this perfect sky.

We milled around a while and discussed what we would do, concluding that we were stuck on the bottom with no rope. We did a food inventory and came up with, I think, a can of tuna fish and two pop-tarts. As nothing was happening we thought we would take a break or siesta and so continued around keeping the wall on our left until we came to a small pocket or alcove that had about a meter of bat guano on the floor and a low ceiling, especially toward the back. We made a little nest and curled up for a nap. I remember being very tired and falling to sleep immediately. It seemed like the next instant John was yelling "Hey" in a loud, loud voice. I was so startled I jumped up and bashed my head into the ceiling thinking "Where am I, what have I done to my head and who is this maniac yelling in my ear."

The echo died out and far away on high came an answering "H-E-E-Y." We rushed out of the alcove and started yelling some more and by the time we calmed down we heard a voice saying "We'll be right there" or "We will have a rope down soon" or some such. We got our gear ready, packs on, carbide lamps lit and directly a rope came slithering down out of the darkness. Before it hit the top of the talus, John was on it and climbing and I was right under him throwing those Roloff Ascenders as far as I could. We were both using the Texas Prussic system at that time, even though this was 140 meter or so drop. I remember banging into John's feet a time or two and yelling through clenched teeth "faster - faster." At some point, probably 60 to 70 meters up, these birds, these ring-necked swifts, attacked our lights. What a strange sensation to have these fairly good sized birds diving at your lights and hitting your

helmet. We cut our lights and continued out. The next moment it seems we were up the last scramble and there were all these people including you and Jonathan and . . . what happened then?

O.K. let me fill in a little bit prior to that. You and John went down. Jonathan fuddled about the cornfield for a while and then decided that he was going down. I had decided that physically I was not capable of going down and as it worked out, that was probably a good deal on everyone's part. After Jonathan went down I went out into the cornfield, tidied-up around camp, wandered around the jungle and finally strolled around to the edge of the pit to watch what was going on on the bottom. It was probably just a few hours later when Jonathan started coming back up - - maybe four or five hours - I guess right at dusk. After he was out we fixed a meal, sat down and ate it and by that time it was 7:30 p.m. or so; definitly dark. We headed back over to the rope to see what you and John were doing, knowing that you all had been down over eight hours by that time and would be about ready to start coming out. We figured we would at least be able to see your lights on the bottom. There was a trail that ran from the cornfield through the 100 or so meters of jungle and along the north lip of the pit, which was where we were, when suddenly, all around us, there were Indians. The state jefe walked up with two men right behind him and pulled this official paper out of his pocket . . . some kind of declaration we thought. Actually, it was a warrant for our arrest. He started reading this paper and when he had finished Jonathan started to give him some static. The Indians began getting agitated at this point so I grabbed Jonathan's arm and told him, "Cool it. Let's hear him out and figure what's going on." He said, "You, Jonathan Davis and you, John Fish, are under arrest for trespassing", and I said something like "My name's not John Fish." He then said, "Your name is John Fish", and I said "Yes sir" . . . because by that time it didn't matter.

Then he said, "Go over there and pull up the rope." We told him, "Look, there's two people still down in the cave and if we pull the rope up they won't be able to get out. You will kill them." And that's just the way Jonathan told him. Neither he nor the other Indians liked that very much but he repeated, "go pull up the rope." I told Jonathan, "Let's not give him any more flak . . . let's just pull up the rope."

So we walked over there. The thing I kept seeing flashing through my mind was that when we pulled up that rope, those S.O.B.'s were going to toss us into the hole. I knew it . . . I could just feel it. The way we had rigged the rope was down through that little cleft in the limestone. You had to climb down on to the ledge overlooking the drop in order to pull. There were maybe 3-4 meters of rock above us and all the Indians and the state jefe were standing up there staring down. So we climbed down and started to haul the rope. After a while the coils we were laying began to pile up and rope got lighter and higher. As the end came up over the edge I put my back up against the wall, because boy I could just feel it coming. Then they said, "OK, come on out."

Ever so carefully we edged back up and onto the lip. The jefe said, "Now back to camp and pack-up your gear." We walked back to camp and packed

up our Keltys. They took my machete away from me and said, "Follow us."

A two hour hike back up in to the mountains commenced with my emotions alternating between incredible anger and severe cold chills, because I knew we were in trouble and didn't know if we could do anything about it. We walked and walked. The Indians used no lights at all, so it was a process of stumbling through the dark with these characters all around you. . . and the thing was, they were literally all around us. It wasn't like being on a trail with someone in front and behind - there were people on all sides.

We finally got about three-quarters of the way up to the village where we stopped at this one area where there was a small cistern. We had some water and while we were sitting there on the edge of that clearing I remember as distinctly as I'm sitting here thinking, well, I can try to make a run for it now. Jonathan looked at me and I could see we were both thinking the same thing. But finally he said, "Aw, lets just go ahead and see it through."

So we trudged on up to the village of Tampaxal and entered the one main structure . . . a long hall that would probably hold 30 to 40 people. We went up to the building and sat on some steps while the jefe opened it up and got some kerosene lamps going. He then marched us inside to the middle of the place where we were told to sit on the floor. All the Indians were around us on chairs as the state jefe began reading off the charges. They ranged from trespassing to violating God, apple pie and motherhood . . . I mean it got real bad. And we both knew that it was real bad.

Then the federal jefe walked in. He took the whole scene in with a glance, looked at us and said, "You two, get out." And we left - quickly!

Jonathan was in such a hurry to be gone that he took his pack off and gave it to an Indian, telling him to bring it down to camp in the morning. I wasn't about to separated from my pack but it didn't slow me down the first mile I'm sure. It took us about 45 minutes to get back down the mountain. About 3 or 4 of the locals went with us and at the time, they just seemed to be vacillating between the federal and state jefes. As soon as we got back down to the pit, I mean before I even had a chance to take my pack off, I jumped down to the edge and yelled, "Hey, here comes a rope down." We started feeding it in immediately.

Fantastic Richard! As I remember when we got back to the surface there was a big reception committee but I don't remember the federal jefe.

He wasn't there. He stayed up in the village but there were 4 or 5 Indians who were his deputies still with us. As soon as you got up, we pulled up the rope, untied it and got everything back over to the cornfield. After things had quieted down we went to bed, but I didn't sleep again that night. The next morning we packed and left after a quick breakfast.

There was a man out in the cornfield the next morning straightening those corn stalks we had broken while thrashing about the night before. I talked to either you or John Fish saying, "that guy looks like he owns the cornfield." So we went over to him and asked if it was not true that we had camped on his property and was it possible that we owed him some rent. He

# HOYA DE LAS GUAGUAS

TAMPAXAL, MUNICIPIO de AQUISMÓN, MÉXICO

Suuntos and tape survey July 1977 and September 1978

by

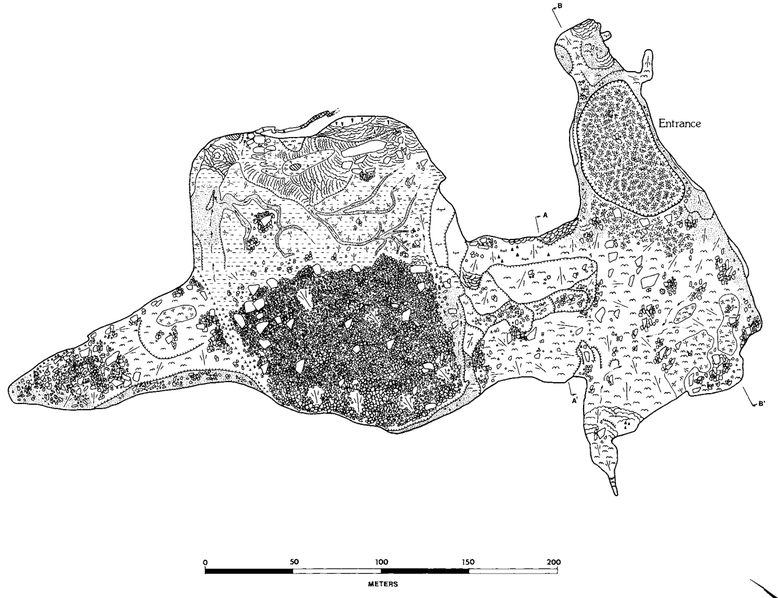
S. Balsdon
G. Ediger
A. Grubbs
K. Knighton
A. Larken
P. Sprouse
B. Steele
B. Stone
T. Treacy

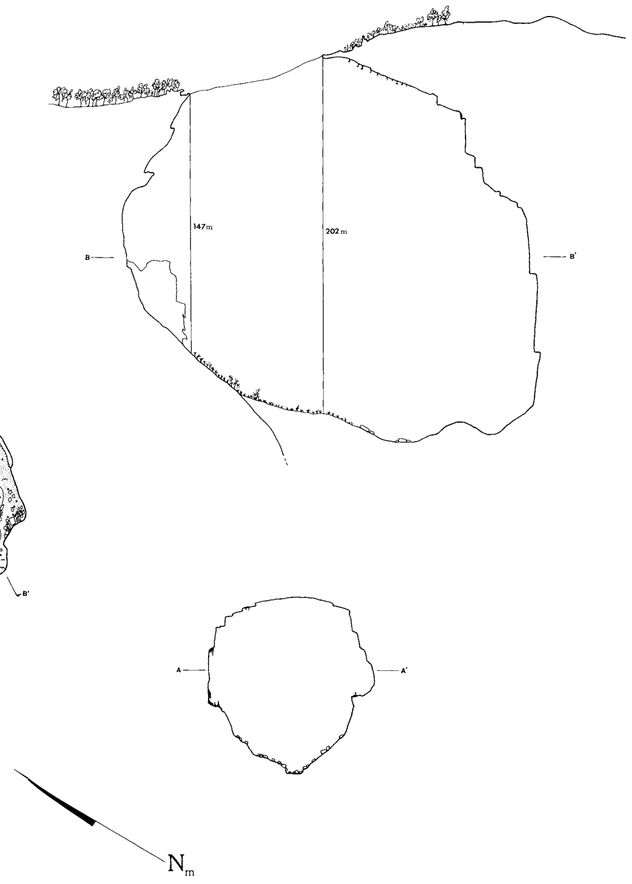
Total depth : 478m

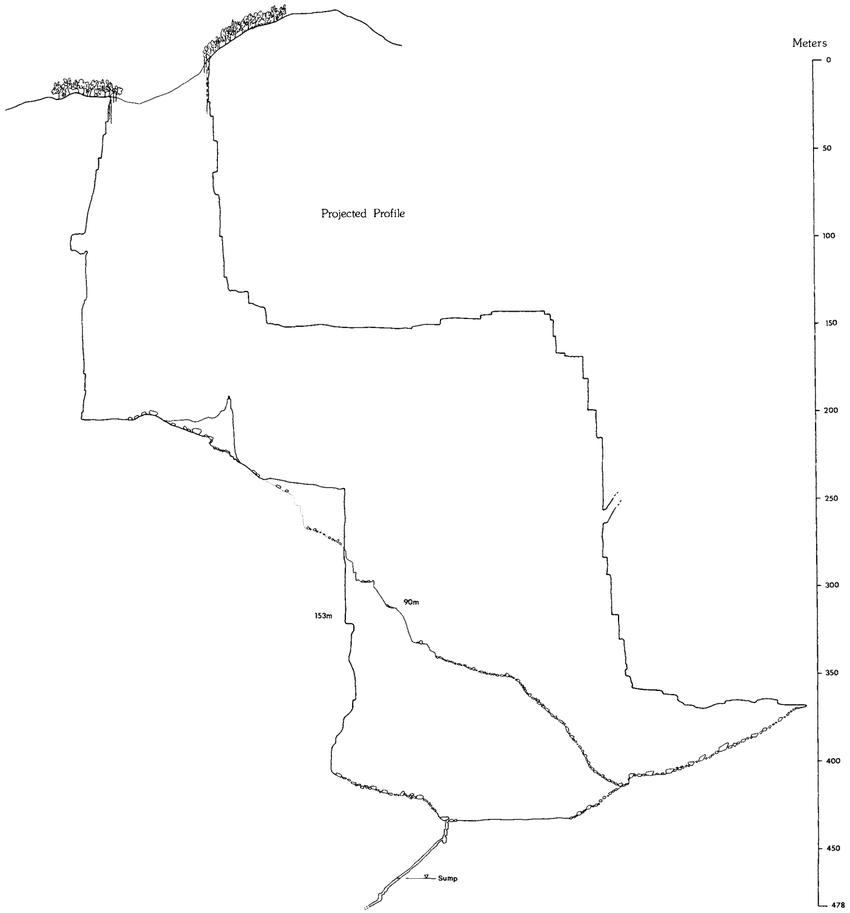
Data reduction and plotting by Ellipse

Drafted by Bill Stone December 1978

Association for Mexican Cave Studies

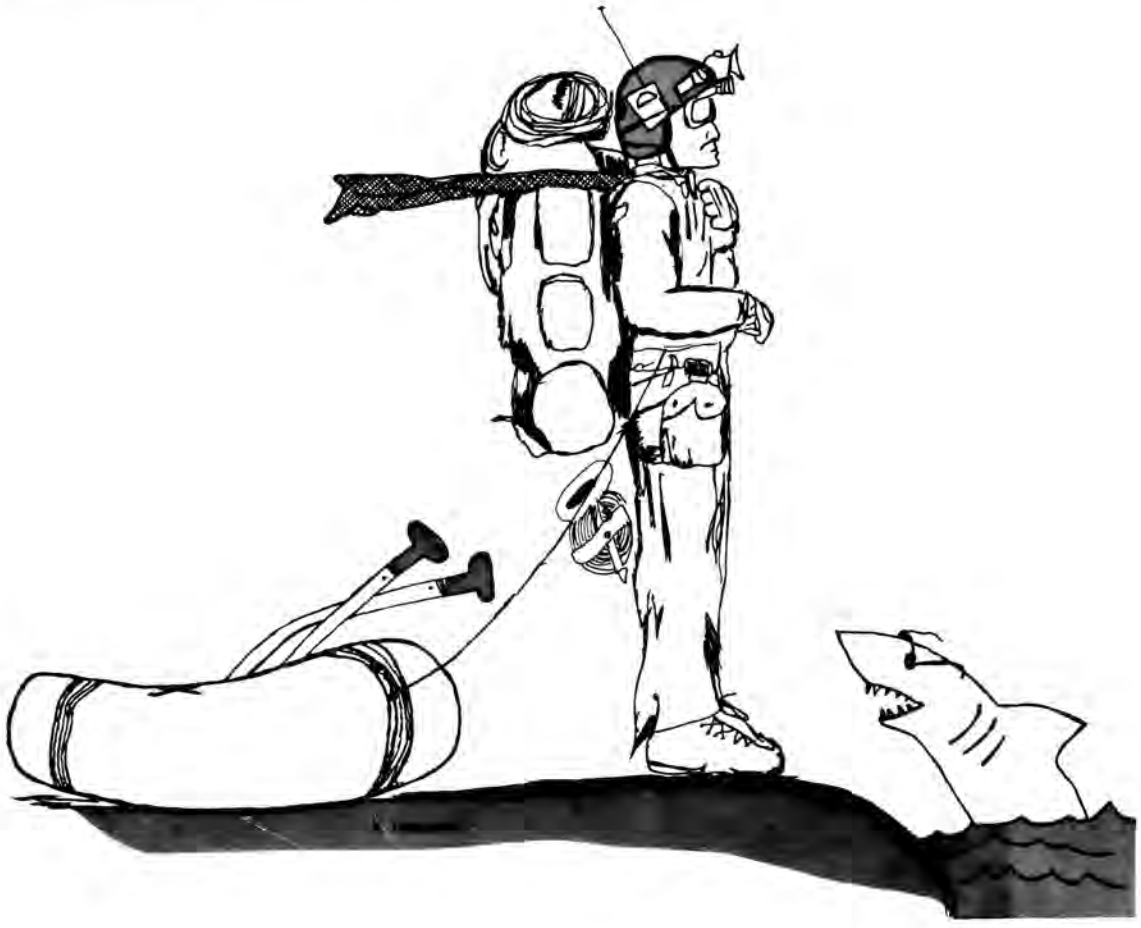


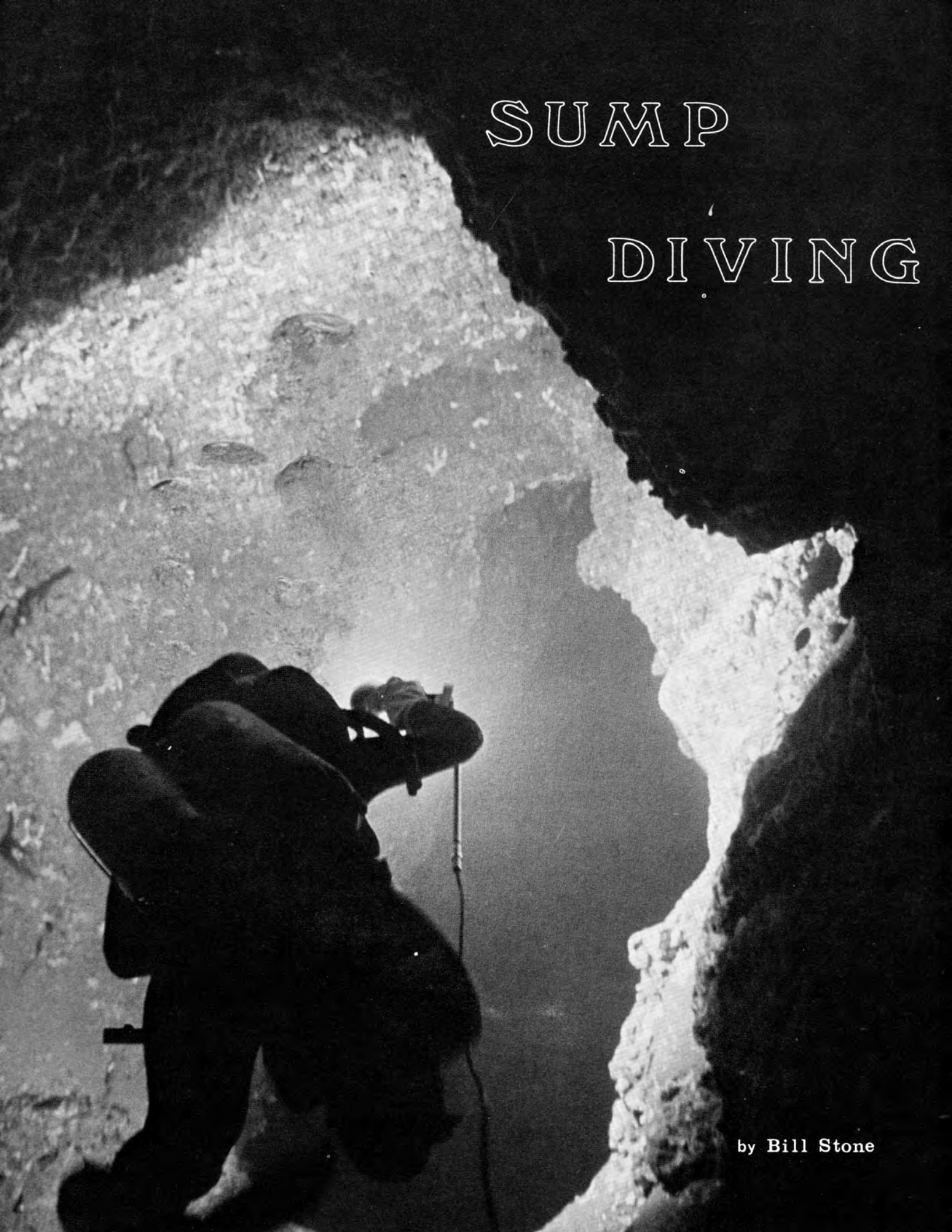



looked around at the flattened rows of corn. He said well, yes, the rent would be so much . . . I don't remember now exactly . . . probably around ten pesos . . . a days wage. We paid him as we put on our Keltys and left. Our guide was there and shouldered the duffel bag full of rope. We climbed down the "short" way over a series of slick limestone ledges and strolled across the cane flats to La Pimienta. We paid off the guide and left immediately for Aquismon to see the presidente. The federal jefe went with us. The presidente told us that if we wanted to file a complaint, we would have to go to another town. Now I can't remember the name of the town but it was on the west side of the highway back south toward La Pimienta on the north flank of that small cerro that stands alone on the piedmont edge. We had to find some official, a District Attorney counterpart or some such title.

He was playing pool in a pinstriped suit and had a pearl handled .45 automatic stuck in his waist. He came outside and talked to the federal jefe. Then all six of us went to the police station where we each gave a deposition and this guy typed it all out just like they do on the border, with two fingers and a lot of concentration. After the depositions, we filed a complaint for attempted murder, jumped back into the car, returned to Austin and never went back. I later heard through the grapevine that the state jefe was removed from power by the scandal but it was never confirmed and that was the tale of the second trip to Hoya de las Guaguas or "Pit of the Parrots."





# SUMP DIVING

by Bill Stone

The evening of September second found our two vehicles laboring up the dirt road from El Limoncito to the trail cutoff for Hoya de las Guaguas. Things were running smoothly. A letter of permission had been obtained in Aquismon in record time allowing for a cool dip in the Rio Huichihuayan before the sun faded behind the Xilitla Plateau. Though Guaguas was considered to be finished as far as conventional exploration was concerned there still remained an unpushed lead - the sump at -465 meters. Having sharpened our diving skills over the summer this became the focal point of the trip. Eleven of us were along for the adventure: Hal Lloyd, Mark Minton, Terri Treacy, Sheila Balsdon, Andy Grubbs, Lisa Wilk, Jerry Atkinson, Rick Blevins, Paul Boyer, Mike McKee and I.

The following morning we were up quite early and hastily packed up before things got hot. The hike up was reminiscent of caving in Mexico in my earlier days. The most notable difference, of course, was the presence of those long metal cylinders lashed to the tops of our packs. With dripping, perspiration saturated shirts we arrived at the brink of the abyss. Just as spectacular as ever - a hundred meter diameter void receding into the hillside. The signature high side roof looks like a thin plate compared to the massiveness of the chamber below. In fact, it is only a few meters thick yet overhangs the shaft for well over 100 meters. Although the drop from that side was an exceptional 202 meter freefall we would not be rigging it. Most of us planned to climb out with tethered duffels of equipment, so there seemed little sense in adding any undue climbing. Anyway, the low side drop was still a fine 147 meter freefall. In short order two lines were tied off and fed into the hole. Hal and Andy proceeded to clip in, wrestling with their duffels at the breakover. When they had descended perhaps 50 meters I heard a gasp behind me and bolted around. Quite to my surprise I found the old Mexican gentleman who lives near the pit leaning over the two ropes with a wingaro, making chopping motions. But...but...this was northern Mexico! Surely he was just kidding around?? Fortunately this proved to be the case and an animated conversation followed. He left shortly and a sigh of relief issued from those who had never met the fellow before.

On the bottom we regrouped, Mark taking the lead with a pair of hundred meter lines. At the far end of the entrance chamber the deep guano floor drops away into a massive tunnel, ninety meters across, which leads to the lower chamber. In the center of the tunnel is a rock strewn gully which provides for a sporting free descent to the second pitch. However, rather than attempt a tricky free climb down the gully with a 3000 psi "bomb" attached to our backside, we opted for an additional line being strung down the left hand guano bank. With both lines secured we dropped down to the top of the inner chamber. Rick arrived bearing an ear to ear grin. Guaguas was his first caving trip. While the rest of the team made their way down to the point Mark continued on, picking his way down the immense talus mountain to the base of the room. When almost 200 meters distant, his lamp but a pin point of light, he stopped. With nine of us watching on he ignited a powerfully bright aluminum powder flare. Though it lasted only eight seconds, the view was magnificent.

On to the task at hand. Forming a chain through the constricted passage which leads from the bottom of the chamber to the siphon, we passed duffel after duffel along. The final fifty meters of passage before the sump consists of a unique small diameter phreatic tube. Besides having a slick pol-

Opposite: Courtesy des merveilles Sous la Terre, Michel Siffre

ished floor it was also steeply inclined. In the process of shuffling one of the tank duffels down this tube we had a rather hair raising incident. As Rick lowered the duffel towards me the top sling slipped out of my hand allowing the bag to flip upside down. Given its momentum at that point the tank had no difficulty in breaking the retaining clip. Upon seeing this I clutched wildly for the valve before it rocketed down the slope. I missed, jamming my finger into the wall. Down went the tank. Fortunately Mike managed to stop it with a body block. Needless to say there was room for improvement in our carrying techniques. Alive and well we soon arrived at the siphon - a grim little pool that stretched off into the distance with roughly the same cramped dimensions as the passage we were in.

Somehow it had looked better the year before. Nonetheless we readied the gear. I would surely have been crucified by the sherpas had I not at least given it a try. Twin 96 cubic foot tanks, automatic back mounted buoyancy device, twin regulators, twin lights. Given the dimensions of the passage, in retrospect, a much smaller kit could have been used. By the time I had gotten the affair straightened out and on my back the pool had become quite murky and looked wonderfully uninviting. The first attempt at diving ended rather abruptly when the reel refused to pay out the line after I had gotten only a few meters in. Following a respooling operation I gave it another go. By this time the poor visibility had reduced to zero visibilty and progress had to be made by groping around to find the proper contortion. I proceeded on..ten meters..fifteen meters. Then, like someone turning on a light the water suddenly grew clear revealing an enticing, but tight, passage. The color was a deep aquamarine blue. Tanks scraping against the constriction I managed to pop through into an enlarged bell chamber. At the bottom of the chamber a low passage continued on. A brief two meter foray into this lead ended with my buoyancy compensator stuck on the ceiling, unable to move forward. Backing out was touch and go for by now the silt cloud had progressed down the passage. By deflating the BC I dropped down enough to free the pack and retreated to the bell chamber, groping along in the murk. In the process of the rout I had dropped the spool in the crawlway. It hung up and I was unable to retrieve it. I still had a hand on the line. For some reason getting back out through the squeeze proved more difficult than getting in. I kept telling myself, "keep cool, plenty of air, keep cool" as I failed on the first two tries at getting through. It was pitch black, except when I stuck the light right up to the mask. Then it was a dirty reddish haze. The third time was indeed the charm and I hustled back through the remaining fifteen meters to the warm glow of Mark and Andy's carbide lights. What a relief! We gave the dive line a strong tug but could not pull it loose. Mark cut it free after we had drawn out as much as could be salvaged.

The depth in the crawl at the bottom of the bell chamber was -13 meters, or a total depth of -478 meters for the system. My original hope had been that the phreatic tube would curve back up, perhaps into some additional big rooms. This now appears unlikely and another diving attempt would be foolhardy. The risk involved would far outweigh any possible gain.

We slowly packed up, a cheery group with an enjoyable climb out ahead. Coming out of the tight passage and into the lower chamber was like stepping into another world. An endless trek up the talus pile and two long climbs up the guano slope later we regrouped in a nice dry corner of the entrance

chamber to await our turns on the big line. I particularly remember watching the twin sets of lights tandeming out. Lenticular clouds of steam which shrouded the climbers were lit up by an occasional burst from Paul's high power flashlight at the lip. Overhead one could make out the hazy elliptical boundry of the entrance, stars showing through like some huge "eye in the sky." When Sheila and Rick had not appeared from the lower two pitches Hal and I walked down to investigate. We soon made out Sheila's light far below and sat there in utter fascination with the whole affair. It was like being on the side of a mountain on some dark summer night. The walls were much too distant for our lamps to reveal any trace of them. The slope in front of us, a smooth grainy brown carpet of guano, receded off into the blackness. Still, we could pick out Sheila's tiny figure ascending a nylon thread eighty meters below. That surreal vision was greatly amplified when we turned our heads 90 degrees to see four clustered pin points of light bobbing about up on the 147 meter drop.

By the time the last crew (Andy, Sheila, Hal and I) got on rope it was well into the early morning. The ascent was quite social. Hal and I talked about all sorts of things. From the bumble bee which incessantly dive bombed us for the first fifty meters to the new tatoo he was sporting on his right shoulder - "Infiernillo, Born to Win." Sooner than expected the breakover was upon us and we were greeted with friendly faces waiting to help pull the duffels over the lip. It was 4:30 AM when the last person stumbled down the trail into camp.

Following a brief five hours of sleep we were driven from our tents by a fiery morning sun. The retreat would have been flawless were it not for a dead battery in my truck. Fortunately we managed to turn it around, with ten people pushing, and coast-start it down the mountain. A ritual stop at the Condesa in Valles was then in order and by the time all the other odds and ends had been taken care of it was late afternoon when we reached the head of the Rio Sabinas. With a considerable amount of pre-trip planning, we intended to once again have a go at cracking the Nacimiento del Rio Sabinas. Eight tanks in all were carried down to the spring, this time allowing for a decompression stop should it be needed. Mike and Rick set up the shot line using an innertube anchored to a fallen tree at -13 meters. Two 72 cubic foot tanks were attached at -7 meters as well as a set of decompression tables. I was having trouble clearing my ears and sat out while this stage of the operation was happening.

By this time it was getting dark and most everyone had gone back to the trucks to begin working on dinner. Since I had lost our only dive spool in Guaguas the previous day we decided the only way to keep the line from fouling was to have it fed from the surface. In order to facilitate finding the shot line on the way back we fed the dive line through the same innertube. Additionally Mike tied an Ikelite underwater light, switched on, at -13 meters to act as a becon. Rick and I went through a final check out, then bid adieu to Hal who was feeding the line, and Mike who was floating at the shot line should his assistance be needed.

Slowly we dropped down the line. My ears were clearing finally. Rick flashed the OK signal at -13 meters and we proceeded down. Unlike the dive with Norm Pace in March, the visibility was quite poor, having dropped from a spectacular 25 to 30 meters to a scant 4 meters. For this reason it was

imperative not to lose contact for an instant. Rick and I both held the leader. At around -40 meters we again could make out the ceiling, as had Norm and I in March. This time though we seemed to be following the left hand wall. The right wall was left to the imagination, anywhere from 6 to 30 meters away in the murky distance. The descent proceeded smoothly 40 meters..60 meters.. 80 meters..100 meters. At 120 meters into the hole we ran out of line. This was fortunate for by then our depth guages were registering -55 meters (-180 feet). This was not at all a depth to be taken lightly in diving. We prudently turned around. The vista at that point was one I will remember for a long time. Up until this dive I still retained a thread of hope that we could break through, could get beyond this monster sump and into the trunk that feeds it. Where we had stopped the scalloped bedrock floor ceased its gentle slope and fell away into a pit. Although we could not see a tremendous distance down it was a definite change in the passage trend, with no uncertain portent. The Sabinas would be a highly dangerous nut to crack with scuba.

At this point things became somewhat hazy. An attempt to wind up the line as we ascended found us wrapped up in it at -45 meters. A frightfully uncoordinated (nitrogen narcosis?) disentanglement proceeded in which it seemed to take ages to unravel the cord from my regulator. Once free I noticed we had slowly been dropping back down. Depressing the auto inflate button on my buoyancy control pack I awaited the comforting neutral buoyant effect to take over. Apparently I was not keeping close track of my depth guage because I was soon rising up fast. Much too fast. Slam. Right into the ceiling! Rick, having seen me heading up grabbed my fin and held on for the ride. We regrouped and got our act together. From there the ascent went without a hitch until we hit the -15 meter level. The becon light was nowhere in sight. Where was the damn shotline?

Neutral buoyancy in diving is a difficult thing to master, even for the experienced. Although I had practiced it considerably in preparation for this dive, the present conditions were remotely different from the sunny waters of Lake Travis. It was night. The visibility was poor even with a light. As any diving text will say, the greatest change in a volume of compressed air occurs within the first 10 meters of depth. Hence any slight overfill on your buoyancy device in this depth range can send you upward at an increasingly fast rate as the gas expands. In searching for the shot line we had slowly begun to rise, unnoticed in our preoccupation in finding the line. Upon realizing what was happening I had reached the -3 meter level before managing to let out enough air to stop the mad ascent. Rick had similar problems but had gotten tangled in the line and in the process overshot.. all the way to the surface. Unable to find the shotline or Rick I surfaced briefly to scope things out. Mike's vigil had paid off for he was now helping Rick out of the line. I immediately dropped down the shot line, checked the decompression tables and began counting off at -7 meters. Thoughts were racing through my mind. "Damn, we've blown it now" was all I could think of. Fifteen minutes at -55 meters and we had somehow managed to go straight to the surface without decompression. Rick soon appeared and consulted his watch. I showed him the decompression times. We multiplied these by two to account for our screw up. Then the long wait. After five minutes at -7 meters and ten minutes at -3 meters I was shaking uncontrollably in my ratty wetsuit. Rick consulted the watch again. OK for me to go up. Upon surfacing I found Andy, Sheila, Hal and Jerry had thoughtfully built a fire. I was still shak-

ing a half hour later. At that point I firmly burned into my mind four words: No More Decompression Dives. Rick soon joined us and things seemed a lot better than they had twenty minutes past. Mike retrieved the spare tanks and line and we slowly made our way back to the trucks, some hot food and a well earned nights sleep.

None of us had any bad side effects from the dive other than a slight hangover from Mark's wicked rum and cokes at dinner. Although there had been a few tense moments we had had no truly close calls with either of the dives. And, we had learned a great deal about this new technological terror. We may indeed find it opening new vistas in Mexican speleology. However, one thing is certain. Unlike the Brits, where the diver is in the limelight and all the sherpas are unknown, diving in Mexico is a team endeavor. Without a highly competent support crew none of the above events would have come to fruition. Thanks Mark, Jerry, Sheila, Mike, Rick, Paul, Lisa, Terri, Hal and Andy.

# The Deepest Through Trip

**by Hal Lloyd**

During the bivouac in Cueva de Infiernillo the week of July first, 1978 Randy Rumer had a dream. He awoke, then related to the group his dream: reaching Cueva del Brinco from within Infiernillo that day, July fifth. The night before had been an in-cave celebration of the Fourth of July complete with Cuervo Especial, rowdy laughter, and hoo-hahing climax of Peter Sprouse displaying a full body flop in Isopod River.

Optimism was high when Bob Anderson and Randy said goodbye to the rest of us. They pushed into Infiernillo's innermost reaches beyond the Netherhall, up into the Arne Saknussem Borehole (ASB) and into virgin cave. The two explorers pushed on, crossing numerous pools and ascending further upward toward Brinco. They continued, edging across loose chert ledges and bridging high above the canyon floor, always ascending.

That night Anderson and Rumer returned long after the other teams. Their descriptions filled the air with an aura of connection. Canyons, water scoured stone, potholes...all features similar to those found in Brinco's further reaches. As they explored they left surveyor's flagging ribbon at various points along the route, marking their way back to the ASB.

Too soon, July seventh brought an exit from the huge entrance of Infiernillo. Bob Anderson, Sheila Balsdon, Robert Hemperly, Thomas Moore and Lisa Wilk left for Austin, leaving the mop up crew of Peter Keys, Peter Sprouse, Terri Treacy and I to find Anderson and Rumer's route from the Brinco side and survey the connection.

The next trip into Cueva del Brinco brought Keys, Sprouse and I to the last survey station beyond Fool's Falls. Ahead lay unknown passage. Sprouse led the way, when suddenly, his eyes froze on an object on the wall not more than ten meters from the last station...a piece of flagging ribbon! Anderson and Rumer had done it, had pushed into Brinco from Infiernillo and unknowingly accomplished the dream. A premonition of Oztotl perhaps?

On July thirteenth Keys, Sprouse, Treacy and I entered Brinco to survey the route down to a station in Infiernillo. We progressed, downclimbing through beautiful potholed passage. Where Anderson and Rumer had traversed around deep pools we splashed in, clad in full wetsuits. The wind blew, guiding us past the ribbon and down into the Arne Saknussem Borehole. One hundred sixteen stations and 1146 meters later we taped the last shot completing the connection survey of El Sistema Purificacion. We had been on the go for 18 hours.

Elated, the four of us ate a meal and rested in preparation for the long trip out. Sprouse and Treacy followed the connection route out the Brinco entrance, while Keys and I chose to exit via Infiernillo.

Looking down from the summit of the mountain within the Netherhall, we knew that the journey would be an epic one. Down the scree we slid, one hundred meters vertically and into the spacious borehole which junctions Isopod River from the Bridge passage and the Wind Sump. At Isopod River we cooled off with a dip in the water before resuming travel. We continued on through the backbreaking low tunnel called the Monkey Walk to the Breakdown Maze. Here the wind splits into different cracks but we finally found the route.

On past several downclimbs and a few pools we reached the "Y". One way leads down and out, the other into Horowitz's lead and virgin darkness.

Ahead lay the Confusion Tubes, where the 3d maze of passages would get Theseus lost. Keys and I took no wrong turn there, knowing that if we did the Minotaur would get us. Next the D-Survey and down into the Bicycle Run. This sloping passage is just the right size to ride a bike, and a lot of fun to run down.

Beyond, more downclimbs and then Camp I. We then went to a nearby sump and noted the water level had dropped several meters since the last visit. After much yelling for echoes we made our way to the entrance.

The sun was shining brightly in the late morning sky and was a real lift. After giving thanks to Oztotl I rappelled out first followed by Keys. Then it was down into the arroyo to relax. Peter and I had completed an eight kilometer long route and an 800 meter deep through trip, thus being the first to do the deepest through trip in the world!

However, the journey was not over, for after 24 hours underground we still had to hike back up to the Purificacion fieldhouse in our wetsuits. We peeled off our suits and began the return trip, toward Sr. Grimaldo's. A local girl caught sight of us, turned and ran. Sr. Grimaldo kindly gave us food and hospitality before we again hit the road.

Finally thirty six hours after entering Brinco we arrived at the fieldhouse. Sprouse and Treacy had spent 28 hours underground. We were all tired but very happy.

A few days later I soloed down past the World Beyond to de-rig the two ropes at Fool's Falls in the course of a seven hour trip.

Peter Sprouse, Terri Treacy and many other of the PEP had put forth a noble effort, resulting in the survey of Mexico's longest system, as well as the deepest vertical extent in the hemisphere, 884 meters.

AMCS

Seven years ago in late January of 1972 two AMCS cavers hiking in the mountains of Queretaro found the world's first 400 meter pit. It was spectacular in all respects. Its size, unparalleled. Its drop, awesome. Rocks dropped over the edge fall free for thirteen seconds before the reverberating crash echoes forth from the abyss. Since then no one has found a deeper shaft anywhere in the world.

During those seven years since its discovery the survey notes were passed on from hand to hand. Some wondered if they had been lost altogether. It was rumored that the French were considering resurveying it. Last October the ill fated notes miraculously fell into the hands of the Newsletter staff. Orion Knox agreed to finish the map. The product is a composite made from the survey notes, aerial photos and close up shots taken at the pit. We thought it appropriate to include the following article, reprinted from AMCS Newsletter Volume III, with the debut of Orion's map.

## The Discovery of

# EL SOTANO

**by Craig Bittinger**

On January 17, 1972, Logan McNatt and I caught a second class bus out of Ciudad Valles headed toward Ahuacatlan. We had just finished twenty days of Mexican caving in the Cuidad Valles area and we were looking forward to several more weeks of adventure. John Fish and the rest of our caving companions had just left for the U.S., so we felt that we were on our own. Logan had been in on the exploration of Sotanito de Ahuacatlan and knew of several unchecked pits in the Ahuacatlan area, along with rumors of a huge pit twelve hours away over the mountains, so we had decided to return to the area.

After a tiring bus ride we camped just above Ahuacatlan. The next morning two hours of steep climbing brought us to the vicinity of the Sotanito where we asked 2 Mexican kids to watch our packs in return for a few hand fulls of animal crackers. We hiked over to the Sotanito where we did the 70 foot entrance drop, threw rocks down the 946 foot drop, and then returned to our packs. Thirty minutes later we arrived at the Montoya's house where we were welcomed with open arms and a hearty "Mi casa es su casa." The Montoya family gave us a place to stay, food, and a guide to more virgin pits than we could possibly explore. The Southwest Texas Grotto had done such a good job of public relations on previous trips that their house was like a second home where we were to be honored guests. That afternoon we went to what we thought was a 120 foot pit. Unfortunately, after Logan descended to the end of our 150 foot rope he realized that the pit was closer to 300 feet deep, so we decided to wait until the next day to bottom it. While we

Opposite: El Sotano from the air, still two kilometers distant. (Bill Stone)

were coiling the rope, I asked our guide if he knew of any deep pits in the area. He proceeded to point at a white spot visible on the side of a mountain in the far distance. That night the Montoyas gave us more beans and tortillas than we could possibly eat; in return we gave them one of our dehydrated dinners, so it turned out to be an unusual meal for all.

In the morning we were awakened by the sounds of dogs, chickens, burros, and roosters all trying to drown out each other. The Montoyas pointed out the white spot on the side of the mountain again and through our binoculars we could see the curved side of the entrance of what we knew must be a huge pit. The entrance intrigued us, so we decided to hike over and have a look at the pit. The Montoyas had never been there, but they assured us that no one could possibly throw a rock across the entrance of the pit, and that it was fairly deep. About 10:00 AM we left their house carrying only our day packs and about 25 pesos between us. We assured them that we would be back late that night and asked them to watch our equipment. At six o'clock that evening we arrived at the base of the mountain containing the pit. We had been hiking at a steady 2½ to 3 miles an hour pace all day long and we were totally exhausted. The local people told us that we should go to Rancho El Barro to talk to the local judge, who could give us permission to go into the pit. Eventually we arrived at the judge's house, and after explaining who we were and that we would like to see the pit, we were once again welcomed with open arms. The judge, Gregorio Rodriquez, gave us a bed to sleep on, 2 serapes, and a meal of beans and tortillas. We went to bed almost immediately but couldn't fall asleep due to the judge playing his radio over the local loud-speaker system.

We woke up about 6:00 AM, shivering with cold and eager to get to the pit. After giving the judge one of our canteens to express our gratitude for everything he had done for us, we headed up toward the pit. Unfortunately, there was a dense forest in between us and the pit, and there were no obvious trails. Soon we heard shouts from below telling us that we were lost. Before long the judge's son, Ramon, appeared to guide us to the pit. After 2½ hours of hiking, we arrived at a grassy meadow and five minutes later we burst through the jungle and there in front of us was the largest pit either one of us had ever seen. We quickly picked up a rock and threw it into the pit. After what seemed like an interminable wait, we heard a tremendous noise from below. Neither of us had a watch, so we had to resort to timing the rocks by slowly counting, thousand-one, etc., until we reached thousand-eleven. Ramon was totally mystified as to why these two crazy gringos were jumping up and down, screaming and excitedly shaking hands. We proceeded to jungle crash approximately half of the way around the pit to a cave located on one wall of the pit. The cave was apparently inhabited by javelinas as their tracks and dung almost completely covered the floor of the entrance. Unfortunately, the cave was only a rock-shelter, so we decided to leave the pit and return with rope and a well-equipped group. As we hiked back down the mountain we started to consider our situation. The Montoyas were expecting us back any minute, we were virtually out of food and money, and were totally exhausted.

Luckily, Ramon knew of a closer way to get back to the highway where we could catch a bus back to Ahuacatlan and our equipment. We gave Ramon a pocket knife in payment for his services as a guide, said good-bye and then set

# EL SÓTANO

Rancho el Barro , Municipio de Jalpan
Queretaro , México

Suuntos and Tape Survey January 1972
by

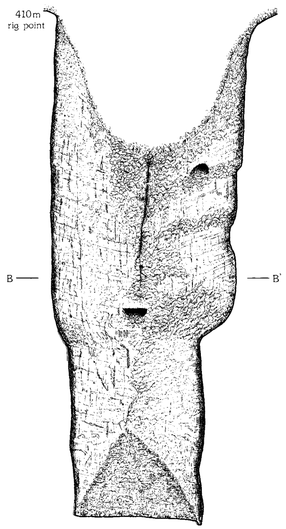
D. Atkins
F. Binney
C. Bittinger
S. Bittinger
J. Fish
B. Harrison
D. Honea
R. Jameson
J. Lewis
L. McNatt
T. Raines
C. Sainsott
P. Strickland
T. Wright

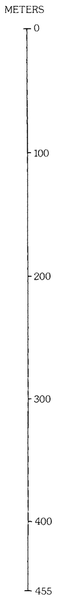
ASSOCIATION FOR MEXICAN CAVE STUDIES

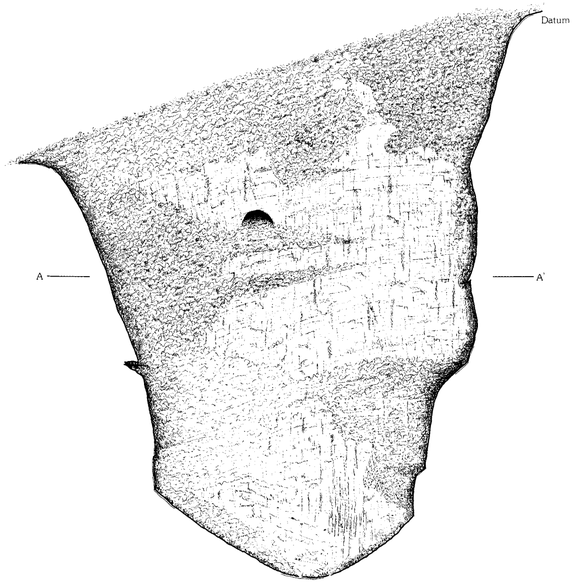
Sketch, Rendering and Inking by Orion Knox
November 1978 - January 1979

Compiled from survey notes, aerial and
on site photos

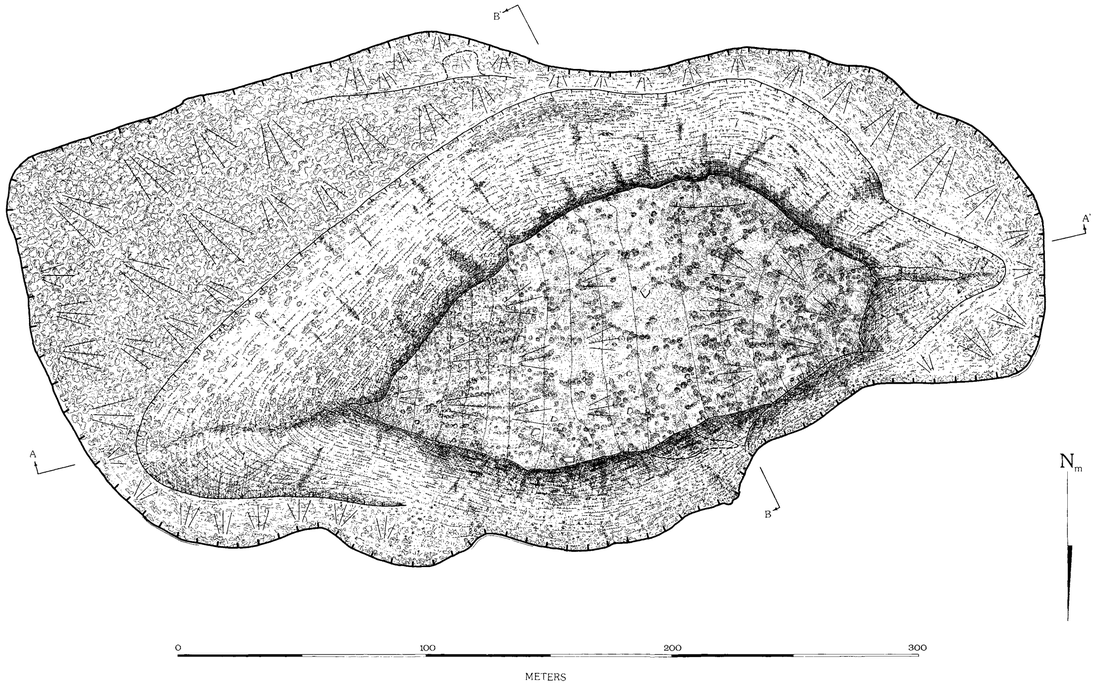
Display Graphics by Bill Stone




Plan



out toward the canyon which he assured us would take us directly to the paved highway. After an hour and a half of jungle crashing, we reached the canyon only to find Ramon sitting patiently at the edge of the stream waiting to guide us out through the canyon.

We followed the small stream for 4-1/2 hours as it wound its way between 1,000 foot tall cliffs. We finally emerged upon an ancient aqueduct which led us directly to the town of Ayutla. The local people informed us that the last bus of the day would be by in a half-hour, so we sat down to enjoy a refresco and rest our weary bodies. Suddenly someone yelled, "Here comes the bus," so we started moving straight uphill toward the road only to see the headlights flash by and vanish in the distance. Fortunately, it was only a car, but the bus appeared 2 minutes later and took us back to Jalpan. We were then informed that no more buses went to Ahuacatlan that night so we would have to spend the night in town. A hotel room would definitely cost more than the 5 pesos we had left; it appeared that we would have to sit in the town square unless we could find a ride to Ahuacatlan. We finally found a friendly truck driver who offered to take us there. Three hours later we climbed into the back of his truck and he accelerated up the mountainous road. The truck continued accelerating as we started down the far side. We both hung on for our lives and watched the truck stay on the wrong side of the road for nearly half the trip. Fifteen minutes later we were in Ahuacatlan marveling that we were still alive.

We lit up our carbide lights and started the 3 hour hike to the Montoya's house. Two and a half hours later we were totally lost in the pitch black night, virtually on top of a mountain and shivering cold. We decided to build a fire and wait for morning instead of wandering aimlessly through the night. Five hours, and a lot of wood gathering later, the sun came up and we discovered the main trail 20 yards away.

The Montoyas were surprised to see us and when we left two hours later there were twenty people waving goodbye and telling us to come back soon. From Ahuacatlan we caught a bus to Valles, and then straight on through to the U.S. Our conversations kept centering on the pit, and how we were going to break the news to the people back in Austin.

## SOTANOS AMBOS

Fishing awhile one week in El Abra
Juan was trying his Abra Cadabra
Lures in Soyate and Jos
Though well tied to their posts
Were lost to the lively agua palabra

Trey Seigh

# A Journey to Conrado Castillo

by Bill Stone

A rap sounded at the door in the pre dawn twilight. Still half asleep I strided deftly across the tangled piles of equipment, a near siphon of dirt encrusted technology, in an effort to reach the front door. The scene could easily have been taken as a midnight E-coli induced dash from the fieldhouse in San Agustin. However, the location was no more exotic than my living room and at the front door was not the visage of a white clad rope chopping Mazatec, but Chris Kerr, a TAG caver who had just driven into town.

Following a three month stretch without firing a carbide lamp I pondered whether or not everything would come together as the departure hour grew near. As always seems to be the case the equipment disappeared magically into four or five duffles which were in turn stuffed into the vehicle along with fifteen or so others. We were soon on our way. Chris, Jim Smith, Dino Lowrey, Steve Zeman, Rick Blevins, Dale Pate, Jeff Horowitz and I had somehow managed to find space amongst the equipment.

Twenty hours later we rumbled to a halt amidst the pine forested Sierra Madre Oriental above Ciudad Victoria, Tamaulipas. There, camped next to a rustic old house owned by Sr. Antonio Grimaldo we met Terri Treacy and William Russell. Now ten strong we proceeded down the final few kilometers of logging road to the pack off point to Cueva de Infiernillo. It was to be, for many of us, our first look at the newly connected Sistema Purificacion. Needless to say, the thought of a ropeless 800 meter deep system had greatly intrigued us.

Along with seven days worth of rations and underground camping gear we readied two double tank sets of scuba gear for a look see into the main sump below Camp I. Dragging those tanks was to be the most trying part of the trip although at the time we certainly had not envisaged it as being much more than a brief but stout hike from the truck.

William, Terri, Dale and Jeff had prepacked most of their gear and bounded off down the trail well before the rest of us had finished lashing up the tanks and camp duffels to our pack frames. About this time it became apparent that none of those remaining knew the way to the cave! Jim took the lead and soon located a red flagged trail leading down the hill towards the arroyo. This we faithfully followed, groaning under the overload, till we abruptly located the arroyo. . . at the bottom of a 30 meter cliff. "This looks sporting" was Jim's understatement. From there we thrashed around for the remaing hour of daylight, finally reaching the arroyo as darkness fell. Negotiating the slick truck size boulders in the dark would have been hopeless, so we located a homey little site and crashed for the night.

The following morning we shuffled the load up to the Infiernillo entrance in two shifts. Much to our surprise we found the others camped under a large overhanging rock just beneath the entrance. A 50 meter diagonal haul line was rigged so that the loads could be hoisted up free of the wall and above the 4 meter deep plunge pool. Jeff, Dale, Rick and Terri kindly did most of the hauling from the entrance lip.

With the duffels up we clipped on to the tyrolean and jogged up into the yawning gulf. The fog had slowly drifted in leaving a lasting impression of duffel toting explorers silhouetted against the spectral sky. It was the last daylight some of us would see until we hit the mountain top four days later. Two lights appeared from within the depths; Terri and Rick returning from Camp I for additional equipment. Terri brought news that due to the rains the sumps had risen over twenty meters. This was a blow. Our depth limit had already been dealt a setback due to the mountainous elevation, but the combination was a severe deterent to popping through if the loop went deep. We decided to leave the dive gear at the entrance and proceed with our other plans in hopes that the sump would drop during the week long sojourn.

Camp I: In great passage with sand floor ten cavers set about choosing sleeping spots without drips and cooking dinner. An altogether pleasant place with but a short hike down to those magnificent sumps. I had never before seen such a fine, clearwater diving prospect. But that had to wait, alas. Some strenuous caving lay ahead. That night's sleep was the most continuous bit we were to have during the week.

Dawn. Ah, er...well, noon by the watch anyway . Hal, Jim, Chris and I began readying our camp packs for travel to Camp II. Terri, William, Dale, Jeff, Rick, Steve and Dino would spend the week working on the plethora of open leads within range of Camp I. Dino helped us split up the food so as to have roughly four days worth, and we were off. Underground backpacking. Mobile Camping. Call it what you will, it was great. Big, big passage to hustle on down. Challenging climbs. An occasional bit of breakdown crawl to keep you honest. Even a little confusion. It all added up to a delightful nine hour trip further into Infiernillo. As it turned out the water level was up everywhere in the system, and a few unexpected pools shortly before Camp II caused us to reconsider that location for our campsite. We backtracked a hundred meters to a nice dry chamber with a sandy floor and christened it Camp 1-7/8.

Shortly following breakfast the next day we donned our wetsuits in preparation for a days work in the appointed lead: Downstream Isopod River. To us hydrophilics this sounded like an exciting bit of exploration and so off we went, survey book clutched tightly in teeth. We made a quick trip up to Camp II to catch our bearing, then slowly backtracked along the left wall. Jim found a deep looking lake and fearing the passage may have sumped due to the high water, prepared to do a free dive look see. About this time I managed to locate a hole in the breakdown further down the passage which proved to be the correct route. The dive was subsequently aborted and we set about moving the survey in. Beyond the breakdown, we passed our time bombing on down big rubble floored passage and swimming across fifty meter canals. Around a half kilometer into this we found the main passage sumped at the end of a hundred meter swim. We located a bypass that took air, but this only looped around connecting with the main river passage a couple hundred meters back. After tying in the survey Jim wanted another look at the sump. We all swam out to a shallow spot some thirty meters from the sump and unraveled our 30 meter PMI. With only 30 meters of line and the same distance to the sump it was necessary for someone to go out there and belay Jim while treading water. Hal volunteered. I swam along with my camera for grins. Near the point where the ceiling dropped to meet the water we found a stubby stalactite to hold onto while Jim readied his gear. We rehearsed signals once or twice and he was off. After what seemed an interminable amount of time his light reappeared with a blue green glow. "It goes," he gulped. Hastily he related that the dive had gone eight meters before popping back up into a fifteen meter wide river gallery. However, there was one problem. The walls and ceiling on the other side were perfectly smooth. There was nothing to tie the dive line to. "I have a bolt kit at the house in Conrado Castillo", was Hal's reply. Thus the plan for pushing Smith's new passage evolved . . . the following morning we would go on up to Conrado Castillo, retrieve the bolt kit, and attempt a downstream survey trip that evening. Little did we realize how difficult that plan would be to execute. Backtracking toward the main Infiernillo passage we found an overflow branch of upstream Isopod River to be quite large, and decided to go for a surveyed kilometer for the

Backpacking to Camp II. (Bill Stone)

day. Three hundred meters of breakdown hopping led us to the edge of another sump. This one, unfortunately, did not yield to Jim's underwater magic so we retreated to camp.

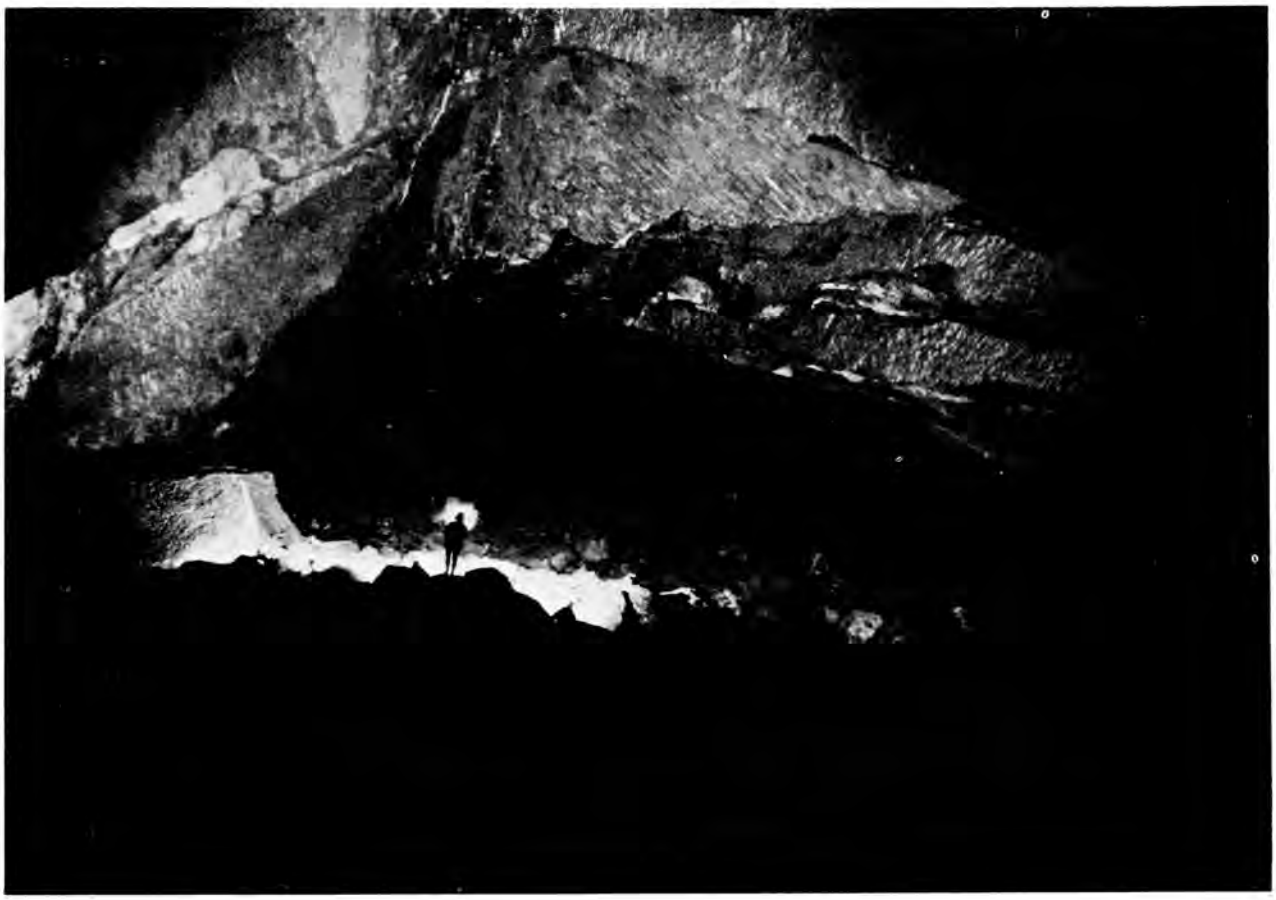
Sometime around noon Wednesday we choked down the last dregs of six quarts of carbo-glop and began the upward trek. As with the rest of what we had traversed so far in Infiernillo it was hot caving. Although we wore wetsuit bottoms for the swims in Brinco, tops were kept tightly rolled up in our day packs. As long as we were moving it was AMCS "no shirt" caving! Without the camp duffels things went swiftly. Passing Camp II and a few roller coaster breakdown rooms we came upon the most significant and striking feature in the system; the Netherhall. I had seen it on the map but that really could not convey the impression one has walking into this chamber. Its broad arched roof looms some thirty meters above the talus rubble floor, averaging ninety meters in width. This alone would be impressive. However, imagine the whole affair tilted up at a thirty degree angle and stretching 300 meters into the mountain. Magnificent. Following a few photos we arrived at the summit, almost two hundred meters vertically above the base, and took a short breather. From there a traverse down the other side and a kilometer or so of breakdown and mud floored passage followed. Nothing as exciting as the Netherhall. Hal then pronounced that we had entered the Arne Saknussem Borehole and were heading down the connection

passage to Brinco, still a good kilometer and a half distant. A striking change began to take place in the character of the cave. Replacing the grandiose breakdown trunks of Infiernillo came highly solutioned canyon passage. Had it taken a ten cusec stream it would have been a ringer for the lower parts of La Grieta. Bridging, Chimneying, Climbing. One right after the other.

Somewhere twixt the beginning of this passage and the rope drops in Brinco we managed to spend six or seven hours lost in various side passages. After disappearing for an hour or so on a recon trip Hal would return stating that we were indeed lost. At that point we would fan out, rechecking the way we had come for the few identifiable survey stations there were. We repeated this act at least a half dozen times. Not that Hal had forgotten his way mind you, it's just that there was one hell of a bit of unexplored passage intermingled with the correct route, all of which had the same appearance.

Perhaps the greatest stumbling block to finding the way through was that Hal was basing his reference tie-in to Brinco at the chamber which contained the second rope drop. Unable to find the rope, we searched for a good two hours before it finally dawned on us that Hal might have rigged the second rope down the wrong pitch. Thus the ropeless shaft in front of us indeed proved to be the way on to Brinco. We soon arrived in the World Beyond.

Following a quick scoot up the big passage we entered the connection route to the dry Historic Section. This area is unique in its own way. Uniquely tight. Beyond a few low crawls with sloppy mud came some fine low airspace canal swims. Then up steeply, climbing smooth flowstone cascades with twenty meters of exposure. It was hardly dangerous though as solid handholds abounded. To finish it off came the Chute, a tight sloping tube with a thick sheet of water cascading down it. Not bad going down, but going up the water would pond up to where it flowed cooly down your wetsuit collar. Compliments to the original team for a fine bit of exploration in this area. We soon found ourselves pacing swiftly through the large, well decorated Historic Section, still climbing as always. Around 4 AM Thursday the dank cave smell was replaced by a crisp new scent. Pine needles lay scattered about; the entrance was near. A new wave of energy swept over us. The seemingly endless journey was about to end. One by one we climbed out into the crystal night sky. Almost in a stupor we stood transfixed at the sight before us; a near full moon hanging amidst a great forest of pine trees. We could barely contain our elation. However, the brisk night air soon drove us up the mountain to the shelter of the fieldhouse. Fortunately there proved to be a cache of spare dry clothes available to replace our rapidly cooling wetsuits. Hal treated us to a can of cold canned pork 'n beans and other delicacies as we could not coerce any of the stoves to function. So we sat there musing over the events of the past day. It was the first trip to Conrado Castillo for three of us. We had arrived in a most unconventional manner. But soon the conversation centered on how cold it was and how we only had Hal's sleeping bag between four of us. What eventuated was three of us squashed rather snuggly on the bed with one sheet and Hal's sleeping bag over top. James, being the odd man out, took to the floor where we rather unceremoniously dumped all the spare wetsuits on him in a great heap. Needless to say it was not the finest night's sleep. We spent most of Thanksgiving day taking in the sights of Conrado Castillo and recouperating for the return trip



The Netherhall. (Bill Stone)

to Camp 1-7/8. Late in the afternoon Paul Fambro and crew arrived, followed shortly by Blake Harrison with the Hog of Steel. Terri Treacy and William Russell had also come up, having exited Camp I. So this was indeed a reunion. Much as we would have enjoyed staying, there remained a considerable cleanup task ahead of us, and so we packed on down the mountain--underground.

The down trip, in now familiar passage, was delightful and swift. Within eight hours we were again sitting around the camp stove, looking forward to a hot meal and some sleep. Late Friday afternoon we cleaned things up and headed for Camp I.

Saturday morning found most people ready to leave so there was some contention as to whether the sump dive was still feasible. Fortunately, we managed to roust a few sherpas to bring things in from the entrance. The Main Sump had indeed dropped during the week, a good three meters, but not the ten or so we had been hoping for. Rick and I suited up and checked over our gear. We were prepared for a long dive with twin 96 cubic foot tanks and close to two hundred meters of line on the spool. After floating out to the center of the lake we dropped down to a flat spot at minus twelve meters and proceeded on. The water was incredibly clear, azure tinted. The passage averaged ten

meters wide and twenty tall. Underwater borehole. We continued down, floating by climbs that would have been challenging had the passage been dry. We had reached a point almost one hundred twenty meters in when I checked the depth guage, watch and tables to find that we were rapidly approaching the no decompression time limit. This was at a depth of thirty-seven meters, and there appeared to be no quick end in sight. The retreat was relaxed and I carefully spooled up the line behind the flutter of Rick's fins. Soon hazy green lights reflected from above, still twenty meters distant. The surreal odyssey suddenly ended as we burst through the mirrored surface. Home again. Too bad it hadn't gone.

So we hastily stuffed everything into our camp duffels and packed off for daylight, the final five hundred meters of a fine trip.

## A Word about the Cave, the People and the Trip

A few months ago Peter Sprouse and I were talking about the system and some of its more unique leads. One of these was the Main Sump below Camp I where, somewhat mysteriously, a good draft was seen to enter at certain times of the year. Being in a position to investigate this phenomenon with dive gear and having a great desire to see what the cave was like I planned a trip there for the Thanksgiving holidays. What later came to pass was only possible through the kind cooperation of many of the PEP principals. The dive at the Main Sump required the hauling of over three hundred pounds of equipment up the mountain, much of which was over rough terrain, and into the cave by those who otherwise would have brought only their camp gear. Every person mentioned in the above article helped with this, and to those I express my sincere gratitude.

While one of our desires had been to do the through trip if time permitted, it was not the motivating force, nor the prime objective of the trip. Many of us that were on the trip are planning on returning to the Huautla area in early 1979 for an extended stay. As camping is required in all the systems there we were looking for a nearby place to test a new concept before the expedition began...a mobile camp...a camp which would permit the push team to mobilize its resources to the front of exploration and mapping and not have to deal with a limited endurance radius from a fixed camp. Thus, the lead given to us to survey in Infiernillo, Isopod River, was pushed as a practice run for the mobile camp. Had the lead continued big, we would have moved the camp from 1-7/8 into a suitable location down Isopod River. Given the need of a bolt kit to continue downstream, and the fact that I had a considerable amount of film along to document the system, the through trip came to pass. It was a challenging, memorable journey. However, it should be emphasized that the area is a fragile one and sport caving in the system for its own sake is justifiably frowned upon by those who have put so much time and effort into it.

In view of the events of the two weeks following Thanksgiving there has been bred the understandable concern for the undue strain placed upon the residents of Conrado Castillo as well as the unfortunate media exposure. Coming from the Huautla area where good relations never existed and the surface life is a constant drain on ones desire to keep returning, it is evident that a certain amount of restraint needs to be exercised at Brinco to check the current trend before it engulfs what is truly a unique and unreplaceable wilderness. Support the project and its goals.

# A Word from our Publisher

Mexican caving has entered a new era-- the systematic exploration of large systems. This concentration of international efforts on a few relatively small local areas presents new problems of organization and public relations. But the results of this activity have captured the imagination of the caving world. Large "expeditions" are not new to Mexican caving. Expeditions have made important contributions from the Los Sabinas Campground and early Huautla trips to the more recent surveys in La Florida, La Cienega and San Juan. The difference is that in the past an area was essentially finished after a few trips. The present projects involve caves approaching a kilometer in depth and tens of kilometers in length. The complexity, depth, and extent of these caves are such that the end of exploration is not in the forseeable future.

The roots of modern Mexican caving were established during the late thirties and early fourties by biologist turned geologist Fredrico Bonet and his colleagues. This period culminated in the World Congress of Speleology in Monterrey, and also produced a guide to Mexican caves that was published in the NSS News and attracted cavers from the north. Just following this first influx of cavers was the development of Single Rope Technique that made possible the exploration of the deep Mexican caves and pits. Vertical cavers were attracted by tales of ever deeper pits-- from Ventana Jabali to Golondrinas and El Sotano. This was the golden age of Mexican pit caving. These deep vertical shafts were the first to be investigated as a world class pit could be discovered, explored and mapped in a single trip.

Even before the supply of deep open air pits was exhausted the exploration of the deep caves began with the mapping of Sotano de Tlamaya and underground camps in Huitzmolotitla and continued trips to Huautla. These efforts required large numbers of people for longer periods and the Viet Nam war reduced the ability of many cavers to take long trips to Mexico, so these early efforts were not continued.

After the war more cavers were available and large trips again reached Mexico. Several intensive area surveys were conducted and groups were able to reach all areas of the country. In three major areas (Huautla, Cuetzalan and Brinco) caves were discovered that are world class systems in both depth and length. These areas will justify the attention of cavers for years to come. In these places cavers are not just visitors, but neighbors. The production of useful data from the mapping efforts of cavers from around the world requires a degree of coordination not previously needed. It appears that cavers are learning to meet these challenges, and this increased cooperation both between cavers and with the Mexican people will prove beneficial for all. As new cave systems are discovered and old ones explored the high standards and friendly relations established by the present explorers should enable Mexico to lead the world in speleological activity.

**William Russell**

# Sima Zoquiapan

## Sewer of Cuetzalen

by Norm Pace

The following article is reprinted from Caving International Magazine in an effort to include update material on Mexico's third large project area: The Cuetzalen System. Copies of the original report, maps and photos by Norm Pace can be obtained from Caving International, issue number 2, P.O. Box 4328, Edmonton, Alberta, T6E 4T3 Canada. Cost is $2.50 per issue.

The 1977-78 caving season in the Cuetzalan area in the state of Puebla, Mexico, was a remarkable one. Work in the area by several disjointed groups, loosely coordinated by the efforts of Pete Lord and Mike Boon, pushed its status from relative obscurity to recognition as containing one of the finest and most going cave systems in the world. The following is an account of the initial explorations and survey of one of the components of the Cuetzalan Cave System, the Sima Zoquiapan.

Actually, North American cavers had known for 20 years that the northeastern mountains of Puebla had to be riddled with major caves. Although not very many caves of note were known, the region straddles major ranges of the Sierra Madre Oriental; the contorted, 2000 mile-long limestone reef uplift that harbors most of Mexico's major caves. (See location map.) However, with so many other productive Mexican areas closer to the U.S., no one got around to having a serious look at the Cuetzalan area until a few years ago. After all, Cuetzalan isn't even on the Inter-American highway.

Nevin Davis was really the first to call attention to the great potential of the region surrounding Cuetzalan, the population focus of that portion of the Puebla highlands. During 1972-73, Davis visited the area several times and logged an impressive compendium of cave explorations, surveys (over seven km. of passages), and topographic data. His findings are recorded in an exemplary issue of the Association for Mexican Cave Studies "Newsletter" (Vol. IV, No. 5-6, 1974), with a supplemental cave description-road log by James Reddell, who spent a week in the region in 1973, collecting biological specimens.

Davis and his colleagues did not immediately pursue the finds in the Cuetzalan area, but the AMCS report certainly tuned interest among North American cavers. Then, during 1975-76, Peter Lord, an experienced British caver then

Opposite: Entrance to Sima Zoquiapan, Cuetzalen. (Warren Anderson)

living in Mexico City, began to take weekend jaunts to the area. It soon became evident that a vast, underground drainage network was at hand to integrate. Lord, with others including Mexican cavers, racked up several more kilometers of survey in various Cuetzalan caves, located numerous other entrances, and began to work out the basic drainage patterns of the system. Word was passed to the North that big finds were afoot, so recruiting interest has posed no problem. Lord has briefly described some of the recent finds in the first edition (Numero Uno, 1978) of the bilingual (Spanish/English-all articles) "Boletin" of the Asociacion Mexicana de Espeleologia, A.C. Some Mexican cavers have invested substantial work in the Cuetzalan area, and the project promises to be the first real mutual effort by Mexican and other North American cavers.

My own interest in the Cuetzalan System was sparked in the spring of 1977. While passing through Mexico City on return from a trip to Chiapas, I spent a few delightful hours chatting with Pete and Sue Lord, who at that time were opening up booming new cave around Cuetzalan and so had on tap fine tales and a few slides. The urge to have a look at the area crystallized upon a visit from Boon, with more stories of big doings, and a subsequent note from Mexico promising a reserved, 100 meter pit with a waterfall dropping into it.

With our anticipation well-fired, late March, 1978, found Chris Albers, Warren Anderson, Hal Lloyd and me muddling toward Cuetzalan, following a few weeks in northern Mexico. We had hoped to spend a few days washing out the slime of the Joya de Salas and basking on the ocean beach at Nautla, but a south-trending tropical storm drove us all night with a pounding rain torrent. Although Chris' truck leaks a lot, our sodden spirits rose with the ascent into the Puebla highlands. Truly beautiful country it is, verdant with long-needled pine in the higher elevations, and tropical jungle, where untended, in the lower. We clanked up to "Casa Carmen", the cavers' rented headquarters a few kilometers outside of Cuetzalan, in a drizzle-rain. This is the usual state of weather around there, it seems. Inside we found a motley collection of Canadians and Americans, and following greetings, immediately turned to discussion of the growing, charcoal-drawn map of the Cuetzalan System that Boon was keeping up to date on the wall of the main room of the casa. At one meter per kilometer of cave, the map occupied nearly the entire white-washed wall.

The pattern of the Cuetzalan System is apparent from the map. Water flows from the southeast, through the Atichayan-Resistol and Chichicazapan Caves and as yet unexplored feeders, toward the trunk drainage cave, the Sumidero de Atepolehuit. However, connection of the tributary network to Atepolehuit is so far blocked at all downstream passages by formidable boulder chokes. Passages presumably carrying the water from known sources enter Atepolehuit at reasonable points, but these have not yet been explored for logistic reasons, being several kilometers into the cave. The downstream goal of the Atepolehuit river also remains unknown. Sumidero de Atepolehuit has been pushed downstream for about five kilometers, but then the water slices violently into a constricted canyon and churns off into unknown reaches. This obstacle presents, to quote Lord, "serious problems for further exploration."

The surface resurgence of the Cuetzalan System also has not yet been explored, or even identified. It must be located somewhere in a broad and deep canyon cutting to the north of Cuetzalan, but the bed of that canyon is not

Chichicasapan Streamway. (Warren Anderson)

well-known, even to the significant number of locals so far approached about it. For about 20 kilometers of the canyon's length, ready access to the bottom is prevented by sheer limestone walls and atrocious jungle. No trail down from the Cuetzalan side has yet been located. However, a major river exits the lower end of the canyon, so there probably are several resurgences hidden in there. The canyon obviously collects major drainage other than the Cuetzalan Cave System, and there are no significant tributary canyons evident, so it all must come in underground.

The extent of the collection system for the Atepolehuit river remains undetermined; entrances continue to be discovered. One of these was the 100 meter waterfall shaft that Boon had written about earlier in the year. This was a particularly exciting prospect, as it obviously carried a lot of water during certain times of the year, and it was the most northerly entrance to the drainage so far located. Moreover, the shaft was only about 2.5 kilometers from known passage in Atepolehuit.

On March 31, 1978, Warren Anderson, Joseph Lieberz, Hal Lloyd, Pete Thompson and I first had a go at Boon's shaft. We hitched a ride into town, carrying only two 60 meter ropes and minimum gear, since we would be attempt-

ing a route to the cave different from that previously used and so anticipated a bit of stomping around on steep hillsides looking for the shaft entrance. In fact, the new route proved easier. A few local inquiries got us started on an ancient flagstone path that skirted a broad, brush-filled ravine descending from the town. That same ravine, it seemed, was one of the town's major dumps. Although not such an eyesore because of the heavy underbrush, the thing was littered with all sorts of refuse that, during the rainy season, must flush on down the ravine into the nearest swallet. About one kilometer down the trail, which by then had turned into an erosion course, we found that the expected swallet was our goal. According to one resident it is known locally as Sima Zoquiapan, the name of the political district. We have retained this name for the cave, but an investigation for the original, Indian name or names would be of interest.

The Sima Zoquiapan is quite an auspicious cave entrance. Three small streams spill into an 8 x 15 meter shaft opening, with sheer, wet walls dropping into blackness. In good daylight the bottom of the Sima, a lake, is dimly visible. It had been lightly raining intermittently for several days preceeding our initial visit to the cave. Consequently the streams were a bit swollen, but not seriously so. The largest of these flowed from a good-looking cave entrance only 15 meters from the shaft and the other two were surface streams, although their sources probably are caves yet to be discovered. Temporarily ignoring the upper entrance, we crashed about in the brush hanging to the edge of the shaft, seeking a suitable rigging point. This was initially problematic because we hoped to avoid all the waterfalls and no well-placed tie-offs were at hand. However, Pete came up with a rotten but goodly-sized root and was able to convince us that it really was alive at the core. We backed up the root with several wraps around a clump of bushes, then I started in, dangling the second rope from my seat harness tow line.

The breakover into the Sima was clean and reasonably dry, and the view was a fine one. The sun was still high, so as the waterfalls dropped free and burst into coarse spray, the droplets flashed brilliantly against the black of the shaft. I rappelled on in, getting slapped by considerable water about 20 meters down. The shaft narrowed somewhat here, and I was able to kick laterally into a prominent flute, which continued on down 5 meters or so to the ledge where Boon had previously halted. From this ledge it was clear that the entire bottom of the Sima was covered by the lake, looking deep and storm-tossed from the falling water. There were no tie-offs available on the wall of the shaft, so I joined the second rope to the first and continued the rappel. Unfortunately, the rim of the flute above did not protrude sufficiently to hold the rope, now pulled at a slight angle from the anchor above, so my weight on the line popped it out. I subsequently pendulumed 5 meters into another water bombardment. Further descent without rerigging was decidedly unreasonable, since I had only a carbide lamp along and the lake, still far below, looked as if it might require some attentive maneuvering. I changed over to Jumars and ran up the rope in the pelting water.

Lolling in the late afternoon sun, we decided that the shaft was best rigged as we had done to the ledge, but that a bolt should be placed there for the further descent. However, we had not brought any bolts down to the cave, so we kissed off any further attempt for the day. Before climbing back up the hill to Cuetzalan, Hal and I had a look at "Cueva Zoquipan", the cave which contributes one of the streams spilling into the Sima. It led a few hundred meters to a sinkhole in a farmer's back yard. Scared the Hell out

A descent of the entrance shaft. (Warren Anderson)

of a little girl when Hal and I, with black wetsuits and lamps flaming, emerged from the depression into the twilight. We leaped back into the cave to minimize the poor girl's fright, returned to the other entrance, and plodded up the muddy trail to town and on out to the flea-ridden Casa Carmen.

The following morning, Anderson, Lloyd and I were back at Sima Zoquiapan. We had debated the ethics of placing a bolt at the ledge of the shaft - there was only one other bolt in the system - but the ledge clearly offered the best approach. We rigged on top as the previous day and I dropped to the ledge, carrying the second rope and bolt kit. It was a heady day; the sun was hot and the abundant flowers on the trail down to the Sima had been exquisitely fragrant. At the ledge, the view to the surface was through myriad rainbows cast by the crashing spray. As I placed the 3/8" bolt the ringing of the drill resonated in the shaft, tuning anticipation for the coming exploration. After clipping the rope to the bolt hanger and tying it into the line to the surface, I rappelled on down, missing the worst of the waterfalls, but picking up a goodly shower near the bottom. By then it was clear that it was impossible to completely avoid the shower. The three waterfalls fairly richochet down the fluted shaft, shedding spray with each strike.

The lake at the bottom turned out to be only belly deep; the shaft measured 61 meters. Amazingly, a breakdown beach at the base of the Sima was heaped with green, 1 liter plastic "Clarasol" bottles, containers for a popular liquid detergent. Hundreds of the damned things. Presumably the bottles had been discarded into the garbage-collecting ravine up by Cuetzalan and then flushed in by a storm. Unclipping from the line, I whistled up for Hal to come down and then floundered through the lake and crashing downpour to the dim twilight of a broad, bedding plane corridor carrying the stream away. Leaving my light unfired, I watched Hal, then Warren drop through the spray and mist, glowingly backlit by the bright sun. Hurriedly, we stripped off our vertical gear and blasted down the fine, beckoning stream passage. Old, discarded tires and miscellaneous other junk littered the route, disturbing the virgin cave experience a bit.

A few hundred meters from the entrance shaft we encountered a major boulder choke, that unfortunately familiar feature of the "Sistema Cuetzlalan." Hal and I dove into the breakdown and jammed tires, and began ferreting around seeking a way past, while Warren peeked into a side crawlway. This proved to be the most convenient route; we dubbed it the "Piston Passage", for the dented piston, complete with wrist-pin, that resided in the midst of it. Through the Piston Passage we could duck into a breakdown chamber, which dropped directly into the lower stream channel.

We pushed on downstream, through a rather small passage, by Cuetzalan standards. The route was generally canyon-like, a few meters wide by several high, occasionally broadening, as near the entrance, to bedding-plane character. A few water inlets and a wide, upper level breakdown room were encountered, but these were not investigated in any detail. Atepolehuit was the goal. I did take special note of the breakdown room, since there were no tires or other debris up there. This suggested that the place might be a useful refuge in the event of flood. The stream passage below, like many others in the system, gave good evidence of violent, complete flooding. All sorts of things dangled from ceiling protruberences. Hal even found a plastic "Creature from the Black Lagoon" tucked high in a wall pocket. However, some of the debris was more malevolent. Perched on some mudbanks were occasional floodwater ponds, thick with rotting matter and shit. That ravine feeding into the Sima apparently is a major sewage outlet for the town, as well as being a convenient dump. The stream water was clear and well aerated, however, so probably consitituted relatively little microbiological threat. Nonetheless, I felt a bit queasy swimming the occasional canal that day.

We were able to suppress our guilt at not surveying for about a kilometer before pulling out. Since it was unlikely that we could make much headway on the survey at the late hour, we decided to blow it off for the moment. However, a few days later Hal and I were back with Irv Graham and Pete Thompson for a fine day's work; we rapped out 1.74 kilomoters of survey in 100 stations. No obstacle was encountered but we had agreed to halt at 2 kilometers or 100 stations, whichever came first. We again turned around in new cave, the most spacious we had so far seen in Sima Zoquiapan. To that point, the average passage cross-section had not been impressive. Although the cave carried considerable water at times, the goodly downward trend had resulted in narrow canyons or low, broad, bedding plane passages. At the point we withdrew on that second day of exploration, the cave expanded to dozens of

meters high and wide, floored here and there with huge breakdown slabs. And, of course, the occasional Clarasol bottle or tire that had not yet been filtered out.

We trudged out with high expectations, ascending the entrance shaft at midnight. A spot of rope abrasion to the core, at the breakover on the surface, generated a bit of excitement, and required that the rope be re-rigged and padded more thoroughly. Frightening, but I suppose that the occasional near-accident is instructive; the necessity for meticulous attention to rigging detail is again driven in.

After a preliminary work-up of the survey notes, rousting out sufficient inhabitants of the Casa Carmen for two survey parties proved no problem. The map had us headed directly toward Atepolehuit. Planning to really do the place, Albers, Anderson, Boon, Lloyd, Thompson and I slammed to our previous, furthest penetration. We intended, ideally, to push en masse as far as possible, then one group of three would start mapping out and second would return about half the distance before picking up the survey and tieing in to our previous shots. The cave was not cooperative however. The large gallery that we previously had only peered down soon constricted into a high canyon and progress was truncated by a massive, very terminal-looking boulder choke. Only a bit of poking around among the jackstraw blocks convinced us that a major breakdown-threading job was at hand. So we decided to start one survey party out while Boon, Hal Lloyd and I stayed to inspect the choke more carefully. Mike elected to probe into some of the dry, upper stuff, while Hal and I followed the stream. Boon's wetsuit wasn't quite up to crawling in water-filled breakdown crevices. A winter's caving at Cuetzalan plus some tailoring for warmer, mostly dry caving, topped off with the day's activities, had produced the most amazing shamble of neoprene that I have seen. Boon's butt hung out the bottom of a skirt - the often repaired crotch of the pants had completely given up - and the legs were worn as buccaneer's boots, to be folded down during long trudges with little exposure. I regret not getting some photos of the style. One of these days "Descent" mag undoubtedly will have a contest for the most trashed, yet usable wetsuit. The Brits are very big in funky wetsuits.

Hal was really high that day, and led us into a quite aggressive push. We left Boon about 10 meters above the water level and threaded our way through the breakdown maze, down toward the roar of the stream. Dropping first into waist-deep backwater, we were able to join the flow by worming 5 meters through a nearly water-filled slot between two blocks. The stream route was not much better. There, the passage flared into a low bedding plane stoop which soon pinched, forcing us back to the flank of the boulder choke. Things really got grim then. We were stooping in water to our chins, and the only way on was a cleft on one side, carrying good flow. Hal jammed himself into it feet first, emerging after a few meters into a more expansive opening in the blocks. Here we could climb up and make our way between wall and muddy boulders for a few dozen meters, but then the collapse again drove us back to the water. The only continuation was a stoop-squeeze between blocks, completely underwater except for a narrow, vertical slit above. The slit was not useful for breathing, unfortunately, so the only way on was a duck. Through the slit we could catch a glimpse of what seemed like more comfortable air space only about 2 meters further, but the aspect was not

particularly encouraging. I opted to kiss it off, since there was no significant air flow. Hal was insistent, however, and I certainly was not one to interrupt his fun.

I held Hal's lamp while he took a deep breath and went for it, then handed both of our lamps through the slit and followed him. Pretty hopeless for more cave, I knew, but the exploration of the watery maze certainly was an interesting exercise and the rushing water lent an air of excitement to it all. It took us probably an hour and another short sqeeze-duck to force through the next 40 meters or so, before progress definitely was halted as the water here seemed considerably more than outside the boulder choke, so presumably another tributary joins the Zoquiapan water somewhere in the maze. We did not locate the putative inlet. A search of the upper breakdown choke at the terminus of progress turned up nothing except a well-battered piece of tire. At least we didn't find any whole tires, so the cave beyond the boulder choke, if we ever get to see it, should be pretty clean of debris.

We retreated, collecting Boon in the upper rubble pile. The others had tied the survey from the choke into our previous effort and had left the cave many hours before. Heading out we again neglected several side leads; the trip had been a long one. Dawn found us stripping wetsuits and hauling sodden lines up the entrance shaft.

No further work was done in Sima Zoquiapan during those first explorations. Considerable remains to be probed, most importantly the upstream leads which empty into the Sima Zoquiapan drainage route at various places. One of these almost surely is the downstream component of Cueva Piloztoc, an entrance about a kilometer from Sima Zoquiapan, which was located by Pete Lord in late 1977. About a month after our visit to the area, Lord, Rick Rigg and colleagues surveyed this cave a bit over 300 meters to a 5 second free fall shaft. A parallel stream passage headed directly toward Sima Zoquiapan was not inspected, but the next season of caving in the Sistema Cuetzalan should reveal its destination.

# Edigertorial

Humans, and other animals, seldom do anything that is without impact. It is a temporal sense of esthetics and personal desires that determine whether those impacts are positive, negative, or inconsequential. A cave accident may have positive effects--it causes interaction between cavers who would possibly not meet otherwise, it gives rescue experience to those who've had none, it, hopefully, creates a safety awareness, and it provides adventure and campfire tales. But an accident almost always results in numerous negative impacts. Cave closings are one example. Kerr's fall in Brinco was the prelude to several of these impacts, some of which may not yet have manifested themselves.

Cavers' presence in Mexico has always been somewhat tenuous. In places we are welcomed with open arms, in others we are met with hostitlity, both toward our presence and our lives. In our pursuit of happiness we've found it useful and often necessary to deal with the locals, both personally and officially. We've had to be politicians and PR people. We've entertained the kids, realizing they'll be in charge in a few years. We've had to sneak around on occasions. But, basically we've tried to do our work openly, not showily, maintaining a comfortably low profile.

A rescue of the scale of the one at Brinco draws our otherwise innocuous presence to the attention of officials who, for whatever the reason, may desire to interfere with our activities. In Mexico, where the culture and thought processes differ from ours, we cannot even begin to imagine the resons they could find to hassle or extort us. It is still too early to determine if we will be affected by any of this at Brinco, but the possibility is enough to consider. In a poor country like Mexico it is hard to convince people that we only go caving for fun. They think every cave has gold, or worse, devils. Might they decide that we're into something?

Nobody likes the presence of authority--especially in their own house, yard, or even territory. The people of Conrado Castillo normally enjoy the quiet sanctity of their remote hillside, unannoyed by the presence of any authority save that of nature. A dozen or so armed soldiers, a Mexican secret police officer, and various officials of the municipal government roaming around in your town might make you leary of whatever brought them there. Their peaceful sleep was interrupted by groaning trucks, shouting cavers, barking dogs, extraneous lights, and undoubtedly other uncommon disturbances. One such event is probably tolerable, recurrences might make them reconsider their graciousness.

The Victoria office of the Secretaria de Turismo wants a map and pictures of the system. The obvious reasons are harmless--it's those not so obvious ones that scare us.

Publicity is hardly ever good for a cave. While there is little possibility of commercializing either cave, it could be decided that, like Bustamante, traffic was sufficient to realize that a profit could be made by charging a

fee. Official publicity about the accident will attract cavers to the system and further strain relations, above and below ground. The cave will suffer. The mapping project will be handicapped.

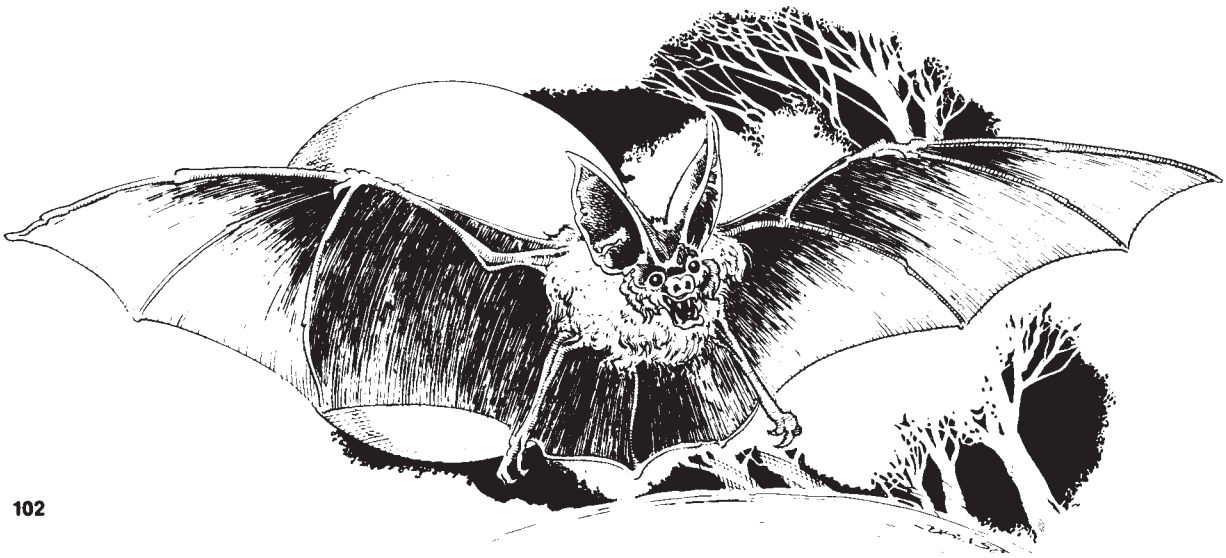
Carbide dumps should not need mentioning, but some slob still hasn't learned not to do it. We were saddened by its presence.

Without being unappreciative for the existence of official 'rescue teams' and the emergency resources and service they provide, I must take extreme umbrage with the egoistic, publicity seeking attitude which they often profess--the 'resuce team mentality.' It was noticibly absent on the mountain that day, but we were appalled by its unnecessary presence in the newspaper accounts. Some of it is attributible to sensationalism on the part of the media, but some of it was outright publicity seeking and resulted in unnecessary anxiety for family members around the country. Facts, only facts, should be given to reporters. Speculation should be kept a private matter within the team. Let's cut the hoo-haa and get on with the matter at hand.

But most importantly the rescue hurt the cave. Hammers and explosives are usually esthetically unpleasing additions to the cave environment. At times they may be justified. This rescue was an example. A large section of the cave was modified. It made the cave easier to traverse. I can't deny that there's some thrill to watching rock desintegrate under an explosive blast but, like a kid shooting birds with a BB gun, when you analyse it closely, it leaves an unpleasant result.

We don't need any more accidents in Mexico. We need no more publicity. We do need good, dedicated, consciencious cavers with a desire that leans toward production and teamwork, not heroics and reckless caving. We need people who are concerned with quality--quality caving, quality mapping, and quality publications. We need quality people--people who think and are concerned and who use good judgement. Many caver-years of exploring exist in Mexico--if we don't blow it!

**Gill Ediger**



BEFORE

AFTER

Pack
it in

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Pack
it out