

AMCS

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WILLIAM MIXON



Members of the Conchas Expedition sit around the entrance pit on the last day.

1. Marion Smith
2. Bill Steele
3. Ron Ralph
4. Robert Hemperly
5. Pam Lynn
6. Roy Jameson
7. Thomas Moore
8. Gill Ediger
9. Steve Ward

10. Bill Stone
11. Mark Stock
12. Steve Zeman
13. Logan McNatt
14. Mike McKee
15. Jim Smith
16. Paul Fambro
17. Blake Harrison
18. Jill Dorman

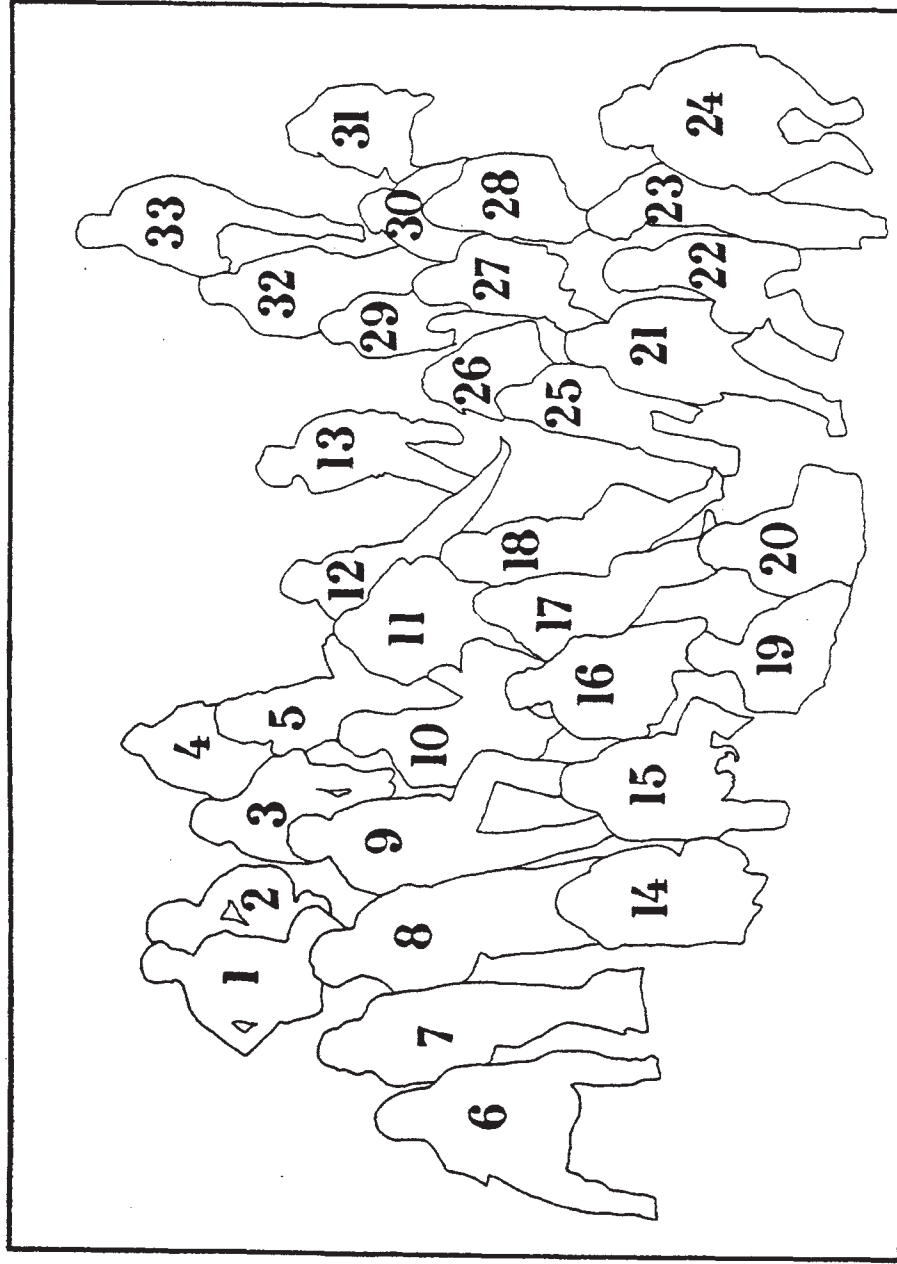
19. Andy Eavis
20. Pete Strickland
21. Henry Schneiker
22. Don Broussard
23. Shari Larason
24. Robert West
25. Alexia Cochran
26. Andy Grubbs
27. Peter Sprause

28. Maureen Cavanaugh
29. Terri Treacy
30. Terry Sayther
31. Tracy Johnson
32. John Strickland
33. Walt Peters

Arrived to late

for photo:

Kevin McGill
Barb Ransom
Eric Valanis
Donald Spear



Edited by Bill Russell

Pat Asnes

Letter No. 4, May 1976

[illegible]

It's dollar time again -- with this issue the AMCS Activities Letter completes its first year. When the Activities Letter was first started, it was felt it would be only a few pages, mostly news of current events, but it has become longer and more expensive. However, we will hold the subscription to one dollar although at this rate we cannot guarantee a full year. When the money runs out we will ask everyone to resubscribe. This will keep membership lists current and if people have to send in money they can also send in articles and information with their money. So send your dollar -- it will be well spent -- and when it is gone we will ask for more. Due to high postal rates we cannot continue to send Activities Letters unless you resubscribe. If you have resubscribed prior to this notice, please let us know, as record keeping is sometimes informal.

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Autopsy of the Gibbs Ascender by A. Grignard
 Casually translated by the staff of the AMCS Activities Letter from
Speleologia Belgica, No. 3, 1975.

At the present time the speleological world of Belgium is infatuated by the Gibbs ascender. This is due in my opinion to several factors: in the mind of the public, that which is made in the U.S.A. is necessarily better, more carefully constructed; a clever publicity blow has done the rest. Among 99% of Belgian cavers the choice of these ascenders has not depended on practical observations on the ground but has been influenced in a totally subjective manner.

In fact, what is the Gibbs all about? Is it the solution to our problems? I answer no and I will give my reasons:

This ascender is light and more sturdy than other existing types and apparently well conceived. It is true it will permit extraordinarily fast performances on long lengths of rope rigged away from all walls. Thus in the deep pits of Central America (200, 300, 400 meters even) this equipment is absolutely without equivalent. These grand pits are nothing but holes in the ground in which the entrance is in most cases in the open air and is not followed by any cave system. I admit that this kind of pit is far from abundant on our old continent. Will all the Belgian cavers who bought Gibbs go to Central America?

Let us first look at the classic aspect of big European systems: these are successions of pits separated by horizontal passages, sometimes long, difficult, and/or narrow. In other words caves are complex and acrobatics are sometimes required. These circumstances are often aggravated by the presence of water and always mud which handicaps the equipment.

Having set the scene, let us turn to the ascender itself and to its inconveniences.

1. The method of using the Gibbs to ascend implies bearing them on the legs. Those who climb with jumars will see immediately that the maneuvers of unhooking and of re-hooking with Gibbs involve more yoga than speleology.
2. Moreover, the manipulation of Gibbs (rigging and derigging of the ropes) is rendered still more laborious by the fact that it is composed of several independent parts. The builder having thought about it and having solidified them by charming little pieces of twine (or flexible metal), I invite you to consider the unhappy user: don't-lose-the-pieces, don't-make-knots with the twine, don't-twist-them-around-the-rope, etc.
3. We will add further the presence of mud, already mentioned as very important in the question of the functioning of these new inventions. One of my friends had a bad experience in the chasm Jean Nouveau (more than 10 pits, -573m). It is a question of G. Badino of Turin who, interested in the method, quickly passed into the camp of the enemy. I myself made many attempts (pit Vincent, -480m, in the Loubens-Henne system). I almost joined the Prussiks!
4. Also, if one uses as usual for ascending a Dressler and a jumar, they can during the trip be used for a multitude of other purposes.

Construction of hoisting-gear: in this area I don't want to do injury to my readers, all experienced cavers, to bring to mind the many and well-tried possibilities of the Dressler. However, in spite of the words of the sellers, the possibilities of the Gibbs are practically nothing (the morphology of the instrument will teach you that).

And safety? Everyone knows the safety of the Dressler. Many use it, some owe it even the pleasure of practicing caving elsewhere than in the local cemetery; in brief, it works! But the Gibbs? These fanatics say: it slides better on the rope than the Dressler. It's true but I find that what isn't said is that it slides in two directions.

5. I personally had the following experience in the R.A.C.: on one ladder I had several falls (voluntary!) depending on the Gibbs: these attempts seemed more like free falls than like any other sport. I was never successful in stopping a fall (not arranged of course). These attempts were displayed before reliable witnesses who were there to care for my multiple contusions.

Conclusions: The Gibbs is incomparable in all great verticals. In Europe one can conceive their use in certain systems: pits of Aphanice (328m), first drops of certain abysses: Pretta (130, 110m), Juhue (302m), Rabannel (130m), etc. The Gibbs is inconvenient and dangerous for all other uses.

Comment

Gibbs ascenders are apparently being used in Europe for purposes for which they were not designed. Europeans frequently use Jumars as a self-belay on ladder climbs, and assume that Gibbs ascenders can be used in a similar manner. The manufacturers failed to advise users that Gibbs ascenders were not suitable for a self-belay, as few American cavers use ladders for long drops and it apparently did not occur to anyone that a Gibbs would be relied upon to catch an unexpected fall from a ladder. The tests by A. Grignard should inform both American and European cavers that Gibbs are not suitable for use as a self-belay.

* * * * *

Social Notes From All Over

Austin is the crossroads of speleology. Yesterday at the Kirkwood Caver House Michel Siffre was talking to Barbara McCloud. Michel was on his way from France to cave in Guatemala and Barbara was on her way from Belice to a summer job in Alaska. Barbara told Michel that he should pick up the books he left at her house. Michel said that he would try to come through Belice on his way home. Michel's new book Dans les Abimes de la Terre is worth having just for the pictures even if you can't read French.

Wanted

A house in late August near the University to be filled with cavers or a space in some caver house near the university. I figure I'll try Austin living for a while (like 2 years), beginning September 1.

Bill Stone

Each map of Hoya de las Conchas has a personally handcrafted north arrow. The north arrow was omitted from the original copy that was sent to the printer so Peter Sprouse drafted an original north arrow on each of 200 copies.

Spring in Chiapas

Persons: Blake Harrison, Jill Dorman, Bill Steel, Cindy Coeburn, Mike Boon, Irv Grahm, Bob West, Gary Napper, and Charlie.

This group left Austin April 5 and arrived at San Cristobal, Chiapas, on April 10. From San Cristobal they headed for the village of Chenalo but took the wrong road in the dark so had to spend an extra night on the road. The next morning they finally arrived and talked to the priest who informed the cavers that the village dumped its sewage into the river that flows into the cave. Despite this information the cavers decided to go ahead with exploration and went down to the cave to watch the sewage-foam flaked water enter the 40 by 80 foot entrance. At the end of the dry season the stream was very low, about 15 feet wide and 2 feet deep. They missed meeting Norm Pace and a car from Canada as the priest told them the others had left. Pete Thompson with Linda Thompson, Christopher Smart, and Ian Drummond drove out to see the cave despite the tales of the priest and met the other group. After a reconnaissance on the first day, the combined group pushed the Chenalo Sumadero to where it sumped in a debris filled lake about 3500 feet into the cave and perhaps 200 feet below the entrance. They had expected Peter Lord to join them, but later learned that while they were in Chenalo Peter was having appendicitis in Oaxaca.

After a day of R&R in San Cristobal the group drove out the new 16Km road over the mountain to Sumadero Yochab. This new road saved them a four hour walk and everyone arrived at the 60 X 80 foot entrance refreshed and ready. They had found Norm Pace in San Cristobal so the group now 13 strong started rigging Sumadero Yochab. The first day 9 people moved 8 duffel bags of equipment and rigged the first 2000 feet to the base camp 450 feet below the entrance. To reach base camp 8 drops had to be rigged including a 60 foot drop into a large lake, and four short ladder drops. Rigging was difficult as ropes and ladders must be carefully arranged to keep the climber away from the force of the falling water. The next five days were spent in exploration -- the push crew of Boon, Thompson, and Smart spent the entire five days underground, resupplied by two surface to camp trips. They were able to push the cave only 300 feet further horizontally and 100 feet deeper as for almost the entire distance it was necessary to place expansion bolts in order to avoid climbing in waterfalls. The rigging was left in the cave after the push trip and the group returned to San Cristobal for a day of rest. At dark they drove back to derig the cave, but next morning Bill Steel and Mike Boon decided to make a final push and spent 21 hours in a last attempt, but they were only able to explore a short distance further. The morning after Bill and Mike returned, Norm Pace, Gary Napper, Blake Harrison, Bob West, Jill Dorman, and Irv Grahm spent 14 hours derigging and carrying out the six duffel bags of equipment. There was a total of eight bags, but two had been removed by the push crew. However, the next day when they started packing they could find only seven duffel bags -- one was missing. The bag contained more equipment than the group could afford to lose -- so they agreed to pay ten dollars per person for three volunteers to return into the cave and retrieve the duffel bag. Bill Steel, Gary Napper, and Jill Dorman

volunteered to rescue the bag. They did not know where the missing bag had been left, so they had to carry enough equipment to reach the base camp. After an easy trip in, the bag was found at the 200 foot level and the three volunteers began the return trip. When they reached the large lake at the bottom of the 60 foot drop the water was muddy and extremely rough. Water had covered the log the belay line was tied to and was apparently rising rapidly. Bill grabbed Jill and told her to get out quick. She jumped into the swift water with her side pack still on her shoulder. The water was deeper than she thought, her light went out, and the pack slipped down over her arms and tangled in the belay line. She gave a cry, but managed to make it across the lake. Bill then came across and tried to rerig the belay line above the lake level and dropped the rope. Jill climbed up and went for help. She reached the entrance to find the surface crew had just weathered a severe storm. Hail stones still covered the mountain but the storm was over and the river was beginning to subside under clearing skies. Boon and Harrison gathered their equipment and went in to assist with the last section. They met Bill and Gary about 400 feet into the cave and stopped on a rock to discuss the situation. As the surface crew was reassuring the recovery crew that the worst was over, the cold water closed over their rock. They were surprised as there was no sign of further rain when they left the entrance a few minutes before. But the water was undoubtedly rising rapidly. The cavers and their three duffel bags were suddenly in a precarious position. The two minute walk to the entrance became an hour's effort against the current. Finally they could not pull the duffel bags against the force of the water even with the rescue pulley, so they tied the bags off and ran for the entrance. The stream had risen almost against the vertical wall, leaving only a narrow path -- until they came to a boulder wedged against the wall. The swift current prevented passage on the stream side, but fortunately, the cavers were able to squeeze through a small hole between the boulder and the wall just before water washed through their escape hole. Upon reaching the entrance they discovered the reason for the sudden rush of cold water -- the hail left by storm had melted producing a flash flood. The next day they returned and retrieved the equipment. The volunteers had earned their ten dollars -- though Jill agreed to take five dollars and a subscription to the Canadian Caver.

Jill Dorman as told
to Bill Russell

P.S. On the first day of rest in San Cristobal they had received a post card from Austin with the news that the landlord was going to evict cavers from the Kirkwood Caver House at the end of the month. So after Yochab they felt it was time to start back to Austin. Bill Stone and Irv Grahm stayed in Chiapas to look for new caves with the aid of advance copies of the new Chiapas topographic maps. The return trip took 49 hours from San Cristobal to Austin where they found the landlord had relented and they could stay. P.P.S. While Yochab was flooding Mark Shawcross and crew camped at the entrance to Sumadero Chicja were hit by the same storm. Water rose rapidly into the camp and all the equipment could not be gathered in time and a sunto and altimeter were lost. The group also met Eian Finn and crew at Rancho Nuevo where they found that camping was no longer permitted at the cave.

Random Notes on Mexico

Cast of Characters: Bill Stone, Tracey Johnson, Sheila Johnson, Henry Snicker, Julia James, Neal Montgomery, Mark Stock, Jim Smith, Marion Smith, Pat Wiedeman, and Martyn Farr.

On 1000' Pit Leads

Following our Thanksgiving trip stop at the Santa Eulalia Mine, and being convinced that the 1000' pit was actually there, I wrote a letter to the supervisor in Spanish, asking for permission to descend the shaft. No reply arrived and we drove to the mine on Dec. 18. This time we were greeted by all the chief honchos of the mine. They showed us the reply letter, stating that, in essence there were many deep shafts in the mine, but unlike H.A. Walker suggested in the article, there were no tremendously deep natural fissures. After some discussion and scrutiny of the mine's maps, we located what apparently used to be the pit which Walker mentioned. According to Sr. Kirshner, the Gerente de Minas, there previously existed a natural shaft from the 600' level of the mine extending to perhaps the 1000' level where it pinched off. Another similar fissure ran upwards from the 1600' level, but apparently made no connection. At any rate both fissures are now part of the immense Potosi Chimney -- all man made, with approximately 600m of vertical extent and dimensions of something like 150m X 50m wide. According to the mine blue print, if you were to enter the chimney at level 6, a drop of approximately 1150' free can be rigged. Too bad it wasn't natural.

Flying

Of general interest to all, I suppose each of us has always wanted a bird's eye view after crashing through the El Abra for years on end. Well, anyways, Bob Stucklen from Montrose, Colorado, flew in with a Cessina 172 like a dream come true. So on Dec. 23 we flew up the El Abra -- the Monos cornfield is more than 3 times as big as it previously was -- somebody was ambitious! We then flew up the west crest towards Tanchipa looking for holes on Neal Morris' map. Everything checked except for one very conspicuous flaw: we saw a very large black hole, 150' diameter, with undercut walls about 4 miles south of Tanchipa. We have triangulated its location and the closest chop route appears to begin at the end of the Ponciano Arriaga Airstrip. Anyone psyched for another Tanchipa chop? We then flew over Hoya de Zimapan and up to the Estrella Sink. Six passes over Estrella assured an end to the black hole myth. Yes, Bill, Cuesta is right where it is supposed to be! From the first sink south of Estrella we located two pits approximately one mile to the east. We then bombed a straight line of five rolls of toilet paper from the north most pit back to the sink. Continuing north, we located Sotano de Hojas Guandes -- a big pit, but only 200' deep, east of the first big sink south of the Otate mine. Finishing up, we cruised over the mine and then back for more fuel.

The second trip of the day was to be the long one -- scout the El Socavon ridge and the Xilitla plateau. We first flew to Aquismon and then over to Golondrinas. Sotano de la Huasteca was very impressive near La Laja, as was Golondrinas. Flying down the ridge above Drinas to Tamapatz, we saw

one large black hole near the top of the ridge on the side facing Tamapatz. We estimated it to be 100'+ in diameter and a trail passed reasonably close by. Mike Shulte assured me this one is new to him, so there's one good lead. We then hopped the ridge over to the La Parada valley. The El Socavon dolina leaped out as we crested the west side of the valley. This was the ridge we wanted to scout, the first two passes revealed little, the third pass found what we were looking for: a 150' diameter black hole, directly above La Parada. We took bearings on the lake at La Parada and marked this one for a return. Going west we noted nothing large, with the exception of a huge, hear walled dolina north of Tancoyol and at the bottom was a cornfield! We buzzed El Sotano as Marion Smith's crew hiked up from El Tarro and headed for Xilitla. The high plateau is higher than most would believe; we read 12,500' off the altimeter as we flew by Cerro San Juan. Nothing large appeared for a while -- although there is a large closed valley above Xilitla with alpine type karst -- should be worth a hike up. Then as we rounded the east side of the range, we almost fell out of the plane as everyone leaped to get their cameras out the same window -- a tremendous pit -- at least 300' in diameter with shear walls, faces Cerro La Cieta. We thought we might be able to see the bottom of the low side, but the high side disappeared into blackness. This then is the big pit we've been hearing about from Valle de Guadalupe, San Juan, and Tampaxac. We have nearings, but the pit is well isolated at about 9500' elevation. Finally we buzzed our own crew at Guaguas just as the clouds closed in.

On Black Holes

Upon returning to Los Sabinos with all this good news, it took little convincing (one good party) to round up 11 suckers to do the long hike into La Parada. Two days later Marion's overloaded 4 X 4 headed for Tancoyol. I left Los Sabinos one day later with Pat and Alex Cochrane. The hike in was grim to say the least. We carried all 1640' of rope we planned to use (funny how the number always was pushed higher anticipating a deep hole!). By the time my crew arrived in La Parada Tracey, Marion, and Henry were bouncing down the mountainside trying to beat the fog after a hard day of karstwhacking on the plateau. The good news...they had found the hole -- roughly 100' X 150' and a free drop from my side! The bad news...it was only 130-150' deep! Apparently the deception of depth was aided by a very dark green forest which covered the pit floor.

The next day almost everyone did Sotano de San Isidro to finish the survey. This immediately turned into an underground swimming party when Jim Smith found that the lake siphoned. Later that afternoon Tracey and Julia were led to two pits near Saucito (formerly Rancho Clavo). Sotano de Saucito was 160' deep and Sotano del Puerco Muerto was 220'. The following day Tracey and Marion returned to Saucito and the rest of the crew crashed up the mountainside to enter the big hole--Sotano de la Hoya Verde. The drop, as anticipated, was 150' free from the higher of two rig points. Very impressive hole -- for Tennessee -- well, you can't win 'em all!

Almost everyone except Pat, Tracey, Sheila, and I did El Socavon the next day. We diddled around La Parada, finding one pit: a 150' free drop into a large chamber with 3 skylights; this led down another 100' vertical to a lake. The locals called it "Hoya Hondo."

Well, everybody packed out the next day, all the way from La Parada to Tancoyol in one day! We briefly celebrated Mark's birthday and they split for the States.

Joya de Las Conchas

After dropping Pat off in Valles, we hiked up to the El Quirino plateau above La Purisima. The objective was to finish off Joya de Las Conchas, which Tracey and I had previously entered over Thanksgiving with Eric Means and Jim Jacobs. The first day of exploration was to be a light push trip, so Neal, Tracey, and I carried 1200' of rope up to the entrance. Things went well until Neal noticed a timber rattlesnake on a ledge 1 1/2' above our heads in the entrance crawl. Rather than molest the monster, we gingerly dropped past him and into the first pit. We quickly rigged to the point of previous exploration, 5 drops down. After this the drops got bigger. Four more drops and we landed in a waist deep lake. The passage continued as a sewer and apparently ended in a sump 100' further on. Then Neal found a tight hole in the ceiling which bypassed the sump. This led to a 25' semi-hairy climb down to a far more terminal looking sump. It had 2" air space, but Neal was convinced the passage went, so under he went -- back into wading passage! This went 100' to a 4 second drop! Far out. We ran out of rope at that point and returned to camp.

The next day all eight of us planned to finish Conchas. We nabbed the rattlesnake with a pole and slip noose, thus removing that danger. All went according to plan, for a while. Just as Neal was preparing to rappel the big drop, Roy Jameson came crashing through the sump saying that there had been an accident. Sheila had fallen most of the way down the 25' climb above the sump when a handhold broke and had to be hauled out at once. Damage was uncertain, but we suspected a concussion and fractured ribs to start. We were 9 drops down from the entrance and the picture looked grim indeed. Sheila would obviously have to be hoisted out all 9 drops. After negotiating the sump back to the base of the 140' drop we got down to business: 3 ropes were rigged on the drop, one static line for Julia to guide Sheila up the drop, one belay line and one haul line which we rigged from the top of the drop, one to one pulleys with a double jumar safety. Tracey and I did the auling; Neal belayed. The system worked so well that Julia had a difficult time keeping up with Sheila. This system worked excellently for the big drops. The narrowness of the rig points on the small pitches demanded a different system. We rigged a 2:1 pulley system with auto locking jumar safety directly on Sheila's harness and hoisted from above using one man. By this time Sheila was cold due to inactivity and had to be placed in a wet suit. All went smoothly from there on. The entire operation took only 5 hours. Sheila was taken to camp and it was decided to wait till morning before attempting a trip down the mountain. The following morning we drove to the hospital in Valles, 20 hours had elapsed from the time of the accident. The X-rays revealed no breaks, just a badly bruised head and body. It is evident that had there been any serious internal damage our rescue effort would have been fruitless.

Two days later we picked up Martyn Farr on the recommendation of Neal and Julia (who had to leave) to try once again to bottom Conchas. Sheila was well enough to hike back up without gear. We took the afternoon off in preparation for what we knew was going to be a bear of a trip for 3 people.

The next day we left camp at dawn and Tracey, Martyn, and I arrived at the four second pit by 10 a.m. Tracey descended and reported a mud sump -- the end. Not believing this possible, Martyn and I took down some rope. Sure'nuff a tight squeeze through the breakdown immediately lead to another drop. I continued down this drop to another. Using all the rope we had, Martyn came down and assured me he could free climb the drop, so Tracey dropped the rope and went back for the other 4 sections. Martyn dropped the next pit and disappeared for 30 minutes. When he returned he said he was down another 200'+ to a big drop. Far out. Tracey dropped 4 ropes down the big pit and went back for a 5th while Martyn and I blasted on down. A 109' drop led to a 33' and 130' drop. God, this mother was going! We ran out of rope again and started free climbing pitches -- 4 of them. The passage was now dipping steeply -- quite a change from the "drop-level stretch" character of the upper cave. This went on to a 30' free pitch. We couldn't climb this one, so we tied all our slings together and Martyn descended. He followed this another 250', free climbing a 20' and 70' drop to a solution boulder choice. Upon moving a few boulders it opened to a 40' drop, the terminus of present exploration. All the drops here have waterfalls, apparently the cave is collecting tributaries the farther down we get. This necessitated two carbides running at once to assure both didn't go out. Nicad packs are a definite advantage down there. On the way out we stopped every 50' to sketch the passage, measure rope drops, and estimate climbs done.

By Bill Stone

1976 Conchas Expedition -Return to Conchas

On Friday, March 12, 19 cavers from Texas, Illinois, and England left Austin. In Mexico they rendezvoused with 18 other cavers from Texas, Tennessee, Arizona, New York, and Indiana. Much advance planning had been made; two group meetings had been held and various aspects of the expedition had been discussed. The planning was to prepare the group for any eventuality and bivouacking in caves had been one of the main topics of the discussions. An advance team of Don Broussard, Shari Larason, Peter Sprouse, Bill Steele, Bill Stone, Terri Treacy, Steve Ward, and Steve Zeman left Austin Thursday evening and drove to Falls City in South Texas where they spent the night at Gill Ediger's. The next day they left Texas, drove through Mexico, and camped that night at the Rio Santa Maria. Paul Fambro, Pam Lynn, and Mike McKee left Austin in Paul's truck and picked up Ron Ralph at the San Antonio airport. Maureen Cavanaugh, Alexia Cochrane, Andy Grubbs, Robert Hemperly, Logan McNatt, and Terry Sayther left in Terry's truck and Jill Dorman, Andy Eavis, Blake Harrison, Roy Jameson, Thomas Moore, Walt Peters, Peter and John Strickland, and Bob Whst left in Blake's "Hog of Steel." The various parties spent the night at different camping places in northern Mexico. Saturday, March 13: The Austin trucks continued driving and camped just past the town of La Purisima where the road toward Conchas takes off from the highway. Early in the morning the advance team arrived at the end of this road. They hired a mule for rope and caving gear, hiked in and set up camp. Sunday, March 14: While the Austin 19 hiked in, the advance team started to rig the cave.

Ediger, Sprouse, and Zeman returned after rigging to the "sump." Steele, Stone, and Ward continued till they bottomed the cave at a siphon 2 drops past the end of previous exploration. They returned at 8 a.m. After setting up camp, Broussard, Jameson, Larason, J. Strickland, and Treacy started a surface survey to connect all the known caves of the area. Monday, March 15; Tracy Johnson and Henry Schneiker arrived from Arizona by way of train, bus, and foot. They reached the general area Sunday night but couldn't find the camp in the dark. Jim Smith, Marion Smith, and Mark Stock arrived from Tennessee in Marion's car. Two teams started mapping in Conchas. Ediger, McKee, Sayther, and Schneiker started at the surface and mapped down to where the second team started. The second team of Cavanaugh, Eavis, Johnson, and Sprouse started mapping at the start of the "sump" and mapped down to -348m. They bypassed the "big room." Hemperly, McNatt, and Ralph started mapping in the "Sotanito," previously explored cave in the area. They mapped about 75 meters. Cochrane and Grubbs returned to the trucks with a burro for another load of rope and gear. The surface survey crew finished the connection of all the caves. Tuesday, March 16: In Conchas surveying continued with Smith, Smith, and Stock surveying from the bottom of previous survey to the siphon. They dove the siphon to a depth of 4m. but found no leads. On the way out they derigged the last 200m of the cave. Dorman, Hwrrison, Hemperly, and Steele took a 100m rope and checked out and mapped the "Big Room." Cochrane, Grubbs, and Jameson made a biology, geology, and photographic trip down to about 300m and on the way out they hauled up the 100m rope used in the "Big Room." McNatt, Ralph, West, and Zeman finished the survey of the Sotanito, 213m deep. An attempt to find the Rendijas "fissure" failed because of heavy fog. Wednesday, March 17: Broussard, Eavis, McKee, and P. Strickland went into Conchas; they photographed on the way down and derigged the cave on the way out. They derigged to the top of the "twin drops." A hiking team located the Rendijas "fissure" but found it to be a surface feature 30' deep. Cochrane, Smith, Stone, Stock, and others checked out a 50m pit near Mojonera. On the way back they stopped at Sotano de Canoas and dug the log jam out of entrance. They went down as far as their ropes would go. Jameson hiked to San Jose and mapped a small cave, Cueva de la Mesa. He also found several 20-40m pits and was shown Sotaro de Nogal, with an entrance drop of about 80m. Thursday, March 18: Kevin McGill, Barb Ransom, and Eric Valainis arrived from Indiana in Eric's behicle. Donald Spear arrived from Texas on the bus. The rest of Conchas was derigged. Smith, Smith, Stock, and others returned to Sotano de Canoas, mapped, and pushed till it ended in a siphon 100-120m down. Broussard, Cochrane, Grubbs, and Jameson hiked to Nogal. They checked the entrance drop and found a going passage, but further exploration was prevented by lack of more rope. Biological collections were made and air flow was noticed. Several people went on recon hikes but no caves were found. Friday, March 20: Cochrane, Jameson, Stone, Ward, and Zeman returned to Nogal and mapped down to 247m where they ran out of rope at the top of a 50m drop. Air flow was noticed at several places. Except for Broussard, Ediger, and Larason all the others left and hiked out. A burro load of rope and equipment also left. Once the vehicles were reached the first stop was a tienda with cold refrescos in La Purisima. The next stop was the Rio Santa Maria. From here the expedition split up with persons going in several different directions. Some people went directly back north, some went on south to Mexico City, and other points of interest. Several of the vehicles went through Xilitla. The "HOG of STEEL" then went to Golondrinas. On their way back they met the Nogal crew several times near Gruta del Palmito. The final depth of Hoya de las Conchas is 508m. This makes it the 5th deepest in the Western Hemisphere.

Andy Grubbs

[see the loose map of Hoya de las Conchas]

First Exploration of Nogal

Thursday afternoon Alex Cochrane, Don Broussard, Roy Jamison, and Andy Grubbs returned from a scout trip to San Jose two miles north of Conchas. The locals showed them a rather deep hole named Sotano de Nogal near town. One entrance is a 260' free drop in very large passage. A 5X5 foot hole led off the bottom to a 30 foot climbdown and a 30 foot drop where they ran out of rope. (They had to tie a knot 60 feet off the floor just to do the entrance drop!) They reported air blowing strong enough to put out a carbide light!

So the next day, with great difficulty, we managed to rouse 5 people from the 37 at camp to hike out again with roughly 750 feet of rope. We arrived around noon at the double entrance (60 feet from the 250 foot drop is another 200+ foot drop which surely connects but has yet to be descended.) Steve Zeeman did most of the rigging while Steve Ward and I shot the survey in behind him. Roy kept book and Alex did a bio collection. The passage was so pleasant, dry, and spacious that Ward and I had no problem keeping the survey right on Zeeman's heels as he rigged each virgin drop. Beyond the 30 foot drop was a 60 foot pitch, followed by a 140 foot drop with a knot 30 feet off the floor. The room above this drop was the most striking example of bedding exposure in a cave I've ever seen. Dipping almost vertical, huge scabs just stuck out of the walls and floor. Slickensides and an obvious fault wall were quite impressive. Beyond the 140 foot drop was a steep climbdown for 50-60 feet then another 100 foot drop into the "Greccian Column Room." A 60 foot drop off here led across a crystal lake, through more sinuous passage and finally another 50 foot drop where we ran out of rope. This was unfortunate as just 50 feet away was another 150-foot-plus drop. Que Lastima! The cave was still pushing a lot of air, even at that depth. The survey showed that the top of the 150'+ drop was 800 feet below the entrance. The most significant differences in Sotano de Nogal are what will undoubtedly make it deeper than Conchas. One, Nogal is a "Paleo-Floodwater" cave, apparently taking huge amounts of drainage long before San Jose was established. This circumvents the main cork in just about all of the San Juan plateau caves. The advent of farming allowed tons of silt to be sloughed off by arroyos everytime it rained. Since all drainage on the central plateau is internal, that silt only had one place to go -- right down the tubes. Jamison reports a usable limestone depth of about 2700 feet from the plateau to the Rio Jalpan (altimeter readings). Almost all the San Juan systems consequently silt up at constriction points far above the usable limit of limestone. Hence, since Nogal has none of the silt problems the other caves do, it is quite expectedly a clean, dry cave as far as we pushed. Secondly, the evidence of a strong air flow as deep as -800 feet indicates considerably more passage -- or a lower entrance -- something none of the other caves show -- almost all the others have bad air and organic debris near the bottom.

Without stepping too far beyond reason, I would say that some May when we return, San Juan will have its second 500m+ system!

Bill Stone

The Sierra de El Abra at Quintero
 November 24-27, 1975
 Neil Montgomery, John Parker

John and I caught a bus down from the border ~~and~~ arrived at Quintero early on the 24th. We shifted loads of over 100 pounds each up the mountain preparing for a seige on this little visited but promising part of the Sierra de El Abra. Leaving our gear at a radio relay station on top of the range, we began to explore the area to the west. Here we found many undistinct tracks, some of them made by wood cutters from the village. Two leads were located during the day -- a pit about 30m deep dropping into a large passage and nearby the 40X70mX30m deep collapse entrance to Cueva de las Colemanas, a cave visited several years ago by Bill Russell, but not fully explored.

A major problem appeared during the day -- the area was crawling with ticks. We each received several hundred bites and for night-time security slept on the flat concrete roof of the radio relay station.

On the 25th we relocated the 30m pit and descended it. To our dismay the large passage below quickly brought us to the Colemanas entrance. Cueva de las Colemanas consists of one large chamber entered by several pits. Only the 40 X 70m collapse pit permits entry without rope. There is only one significant passage leading from the chamber. This goes north 100m to where a crawl leads to a deep, 3m diameter pit. The cave is well known to the local people, who have exploited it for phosphate rich earth. In their diggings they opened up the northern end of the 100m long passage, revealing the top of the deep shaft. We descended the shaft, a drop of 100m done in two pitches. At the bottom was the signature "German" which was a little mystifying. There are no records of cavers having bottomed it.

Next day we surveyed the cave (see map) and walked down to Quintero for water. We were becoming dispirited from the tick bites, receiving many new ones each day.

New territory for the 27th: We followed a track north one kilometer until it faded and cut for another 600m to an "intermittent lake" shown on the Quintero topo map. These lakes are often pits. Colmenas is marked as one. The "lake" was not a pit (or a lake for that matter) but we did pick up a good track there. This was followed one kilometer north to a small settlement in a valley in the range top. The track continued north beyond the settlement past numerous small pits and dolinas as it climbed out of the valley. Two of the pits required rope (30m) and we weren't carrying any. They did not look promising however being narrow and vadose. Nearly all of the important caves of the Sierra de El Abra are remnants of large phreatic systems. Still, a search of this immediate area may produce something.

The track faded one kilometer from the settlement and we followed small disconnected clearings for another km to an area containing four "lakes," directly above El Nacimiento (the Rio Mante source). We found nothing here and attempted to drop down to the spring whose clear blue water was driving us mad, for it was a very hot day. We were stopped by cliffs 200m above it and headed back to the settlement and down hill from there to have that long awaited swim.

That night we decided we were tired of being tick meat and left next morning. We had not covered much of the area.

[note that the presence in this issue of the following two pages that were not assigned page numbers causes the subsequent pages to be numbered differently in the PDF reader than in the original]



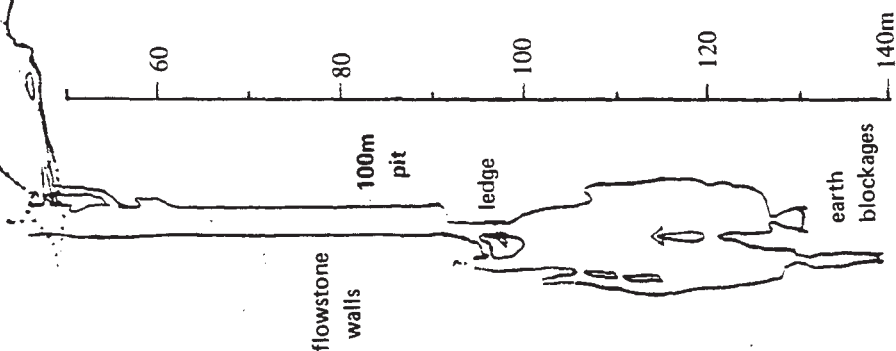
CUEVA DE LAS COLEMENAS
QUINTERO, MÁNTE, S. L. P.

map reference Quintero F-14 -A-69
coordinates 4945-25060

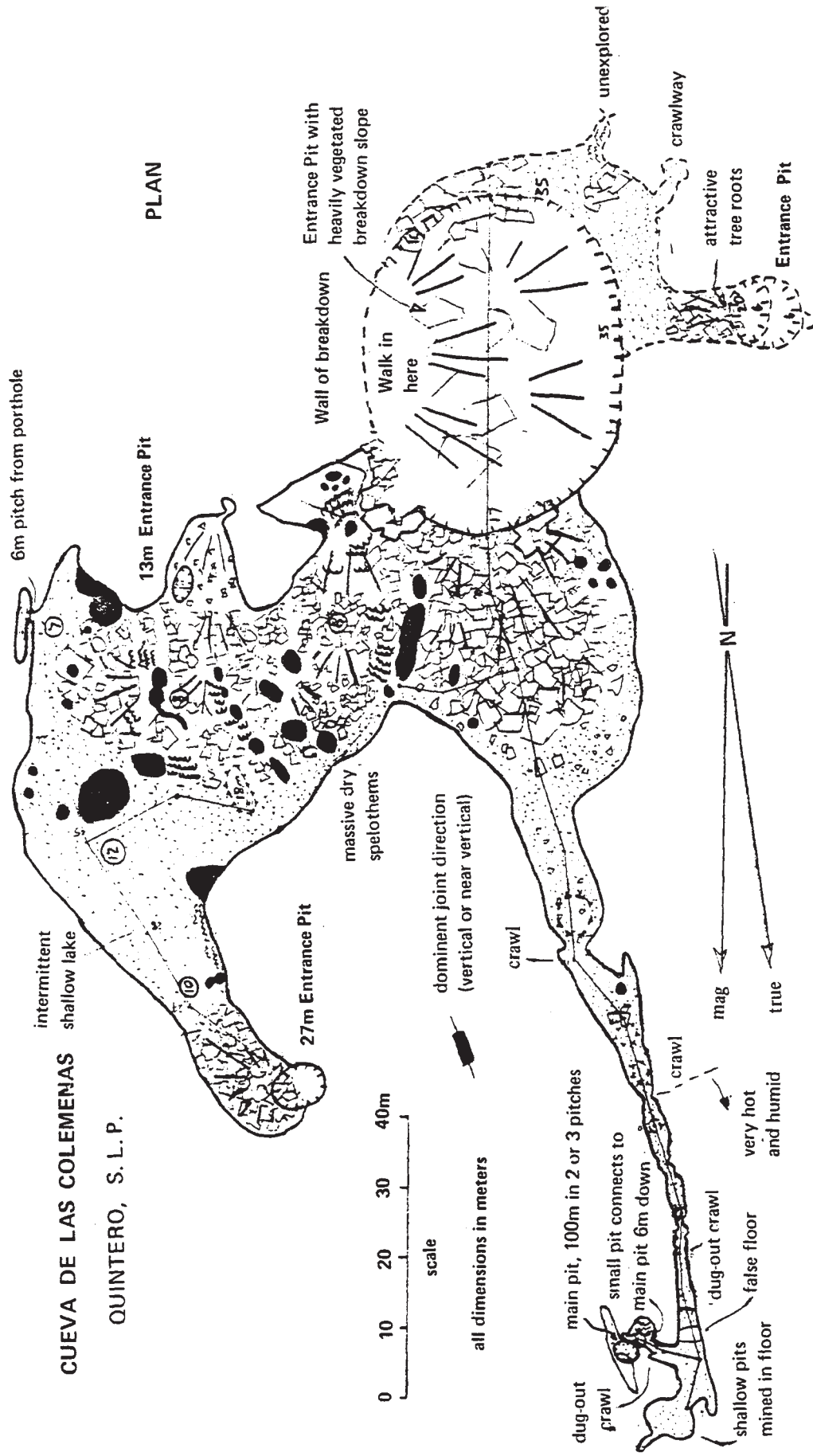
Survey By N. Montgomery, J. Parker
26 Nov. 75
Suunto KB14 compass & PM5 clinometer
Drawn by N. Montgomery Dec. 75

entire passage has
solutional roof

DEVELOPED LONGITUDINAL SECTION



CUEVA DE LAS COLEMENAS QUINTERO, S.L.P.



Date: January, 1975

Destination: Acahuizotla and Gruta Cacahuamilpa, Guerrero

People: Diana Daunt, Ilya Abolins, Don Coons, Skip and Kathy Roy, and Carl

Diana, Ilya, and I were spending a month in Mexico. We had made tentative plans to meet Carl and the Roys at Acahuizotla, a small puebla about 20 miles south of Chilpancingo on the main road between Mexico and Acapulco. Skip and Kathy had been there a couple of years before. They had been shown the entrance of a large river cave and so were anxious to return.

As such plans go south of the border, I had only the slightest hope of actually meeting them at the time and place agreed upon. As we pulled in we were more than delighted to see three mangie looking gringos sipping their sangrias on the steps of the only tienda in town. Greetings and war-shoops and we soon found a place to camp just outside town under an overhanging roadcut in the old Acapulco road just outside town.

Strategies of attack were the next event. Skip knew of two entrances to the cave. The upper sumidero where the stream disappeared and the lower boca where it emerged nearly 3 kilometers away. They had tried to enter the boca that day, but were turned back by waterfalls and Skip's cold allergy. It had been a near thing and the Roys were opting to go on to Acapulco the following day, but Carl had hiked to the sumidero after the earlier abortion, and so knew the way to both entrances. He was willing. We agreed to meet the Roys in Acapulco two days hence and began sorting through gear. Diana was suffering from Montezumas Revenge and would not be able to go.

The two of us set out for the sumidero the next morning. We carried two ropes since we knew there was at least one drop at the entrance and probably more inside. I would have liked more, but it was all that was available. A 30' handline drop ate our first line getting into the entrance sink. A 70' drop out the bottom of the sink put us into the cave dry, but out of rope already. We managed about 1000' of passage in wetsuits and inner tubes. It was mostly wading with an occasional short swim. A roar ahead told us something was happening. Another 70' drop, this one in a waterfall. We soon found an overflow route that could be rigged dry, but with no rope there was nothing to do but throw rocks. They hit in deep water, but we could not see bottom for the mist.

We were soon out and enjoying another sangria. The day was yet young so we decided to have another go at the lower entrance. Diana and Ilya wanted to take a swim, so we all trooped off together. It's about 2 km to the entrance, but nearly level going. We were surprised to meet two men and their children from Cuernavaca at the entrance. They were butterfly collectors, but had ventured into the cave as well. One of them wanted to return with us, so we all started together.

We made about 700' without much difficulty. The water is deeper here and swimming is a must for much of the way. Several 3-4 foot falls had been little trouble, but a 6 footer was a little more of a challenge. I tried to lasso an overhead projection, but with little luck. Our Mexican friend tried it next and was able to go straight up the chute to the top. This was too much for Carl. The noise and foam had begun to take its toll on his nerves and he decided to return. I was able to follow up the falls, which turned out not to be the tiger we had feared. Another 100' and we were faced with a fall of the same height as the last, but overhanging this time. Try and try again could get neither one of us up. After half an hour we were nearly ready to leave, but there's always that one last try. A

struggle and the key hold we had missed before put me at the top. I tried to haul my companion up behind me, but the force of the water was too much. There seems to be much more water here than at the upper entrance.

I managed another 100' over yet another falls, but was then faced with a 12-footer that was too much. Bolts would be the only way. I am convinced that the best way through this cave is from the top, with a lot of rope. Downstream was a cinch! The falls on the way in were chutes, like a sliding board, on the way out.

Back out in the sunlight I soon found out my new friend's name was Marc Antonio Narro and that he could speak a fair amount of English, although he was somewhat hesitant about it. He is a butterfly collector, mainly, and caves only on occasion. He knew of the Mexico City caving clubs, but was not a member. He did not think they knew of this cave.

A week or so of basking in the sun at Acapulco was next in order. The sun and waves seemed to put caving a long way from anybody's mind. I soon lost all support for a return trip to the river cave. Diana and I burned out (literally) before the others and decided to head for Gruta Cacahuamilpa and the mountains. We did a side trip to Grutas de Juxtla-huaca and met the others a couple of days later.

I had been hearing persistent rumors for some time about an extension through a hole in the flowstone wall at the end of the commercial route. One of the guides assured me that it was there, pointed out the way and said there would be no problem in going any time we wanted. The Revenge and a bright sunny day took their toll on the others, but Skip and I decided to go.

We were soon at the end of the trail, took our leave of the tourists, and climbed up into the formations. I had looked for this hole the year before and so was somewhat embarrassed at what we found. There were three holes, including one large enough to walk through. Ahem, how well did you check that lead? The way opened into a breakdown jumble just behind the flowstone. A little poking got us up and into a room about 75' in diameter and nearly as high, but from there every hole seemed to choke within 50'. Finally the only way left was up. The wall was guano covered breakdown, but looked like it might be just climbable. Besides there was a note written in carbide on the wall of the room that read "Mas nombres quince metros mas arriba" with an arrow pointed up. We had been following arrows and names most of the way so this seemed to be the place.

I started the climb, but was a little hesitant. We had not brought a rope so there was no belay. It turned out not to be as bad as I thought. There was one exposed move near the top with 50' of fall below, but it was soon over. From a ledge I could see Skip below and what was more interesting, on the wall beside me were the "nombres mas arriba". There was a cast iron piton rusting in the wall with a loop of manilla line through it. I had no rope to belay with even if I had trusted the protection point. The only way on was up a guano slippery overhanging chimney. It is climbable with a little more security and above I could see only blackness. (It wouldn't be a good caving story without that now would it.)

I guess there's always next year. Both these areas seem to have good potential. If anyone is interested in trying them I would be glad to help with more information. I might even be convinced to act as a personal guide with a little arm twisting. Drop me a line.

Don Coons

Trip Report, Christmas-New Years 1975-76

Harold Goldstein, Cady Soukup, John Ferguson, Ron Tilkins, Neal Morris, Barb Vinson, Richard Minton, Mark Minton, Lew Fischer, and Linda

By Mark Minton

Our diverse group met in Austin on Dec. 21 and proceeded to the border, where for the first time in several years we had hassles with long hair. A little waiting and a tip or two and we were on our way, unshorn. After the usual car trouble (a fire), we arrived in Valles where we took on supplies, and then headed for Mina Otate. The permission we had obtained at the collective was not checked (nor was anyone else's this time), contrary to reports from earlier in the year. Our main goal was to map and finish exploring Cueva de Diamante, first entered the previous Christmas and subsequently shown to be a major cave. Trips went into the cave almost every day for a week. The route down from the Crystal Room as followed by A. Grubbs et al. last March could not be pushed further without blasting -- all leads down pinched out too tight, although definitely not at the "bottom" of the cave. The lead just above the Crystal Room noted by Minton turned out to be an alternate route down, intersecting the Grubbs route two or three hundred feet below. This route now carries all of the water entering this side of the cave, leaving the Crystal Room dry. This area of the cave is extremely sharp and jagged -- gloves are mandatory.

The tight canyon, the other major passages in the cave, turned out to be more exciting. The pit which halted last year's exploration was an 87 foot drop which led in about a hundred feet to a 70 foot pit (which is difficult to reach due to the necessity of changing levels in the canyon). Contrary to anything else in the cave, this drop was covered with a layer of mud. Scarcely fifty feet further a four second pit again halted exploration. On the way out of the canyon several Pleistocene remains were discovered in an eroding gravel fill. Bone fragments, horse-like teeth, and a mammoth molar were found, and samples were taken back to the University of Texas in Austin.

All known passage in the cave was mapped. The Crystal Room route bottomed out at about -900 feet; several hundred feet short of potential. The Canyonlands route remains to be explored: the top of the four second drop is about -500 feet, blows air, and takes water. In all we spent 289 man-hours in the cave, and had 1450 feet of rope rigged in the cave at one time.

Although trips went into Diamante nearly every day (and night!), most people layed out every other day to rest. During these rests Barb and Neal did a surface survey tying in the mine, Sotano de Otate, Cueva de los Indios, Cueva de Diamante, and Casi Mil. We also chopped around the Diamante sink near the crest, but found only one small, blind 60 foot pit. Most significantly, we visited Sotano de los Bozos (alias Casi Mil) and decided a resurvey was in order. Total depth is actually less than 500 feet (Casi Medio Mil?). During the time this cave was rigged, our total amount of rope under the sink came to 2250 feet! (out of about 3500 we had along). Some photography was also done in Indios. Although we had intended to chop around the

three large sinks on the way to Cuesta, it never got done. Nor did we check Sotano de Otate again. A careful, thorough exploration of the large bottom drop is warranted, but if it doesn't come soon it may be too late: the miners are dumping their tailings into the entrance!

After eight days in the jungle we returned to Walles for much needed baths, food, and rest. After a refreshing day at Micos, Barb and Neal returned to the United States and the rest of us went to Los Sabinos to decide on further plans. Here we met Roy Jamison and Patti Mothes who had just completed several days of flying over the El Abra and had some good sounding chopping leads. The next three days were spent hiking and chopping, but nothing new was discovered. One lead turned out to be Monos, unrecognizable from the air due to recent expansion of a nearby corn field. From there we also visited Higueron. (The "road" to Cueva Pinta is now in horrible repair, making it virtually impossible to drive all the way in.)

We then headed south to Mexico City for some touring and to climb nearby Iztaccihuatl. We didn't reach the summit due to lack of ice climbing equipment (and enthusiasm), but did make it to the lower hut at 16,000 feet. That pretty well did us in, due to lack of acclimation: we went from Valles near sea level to the hut at 16,000 feet in less than thirty hours! After a stop at the famous anthropology museum, we returned northward.

The next two days were spent at Huichihuayan trying to make some sense of the Cueva del Aire-Cueva del Brujo system (a couple of years earlier Tom Ramsey and I had found a connection between the two). After several hours, we determined that the two caves are merely lower and upper entrances to what is essentially one very large room divided by breakdown and formations, and set on a steep angle. In an effort to reach the level of the large spring which resurges just below the caves, only a very muddy siphon was found. The caves are still very actively used for religious purposes by the local Indians, although we encountered no problems.

A brief visit to the Nacimiento del Rio Huichihuayan, a rather unusual Saturday night playing pool in a local tavern, and a drive to Xilitla and Sotano de Huitzmolotitla ended our trip. After stopping for a final swim at Nacimiento del Rio Mante, we returned to the United States after 22 days in Mexico -- already making plans for next year.

* * * * *

A Hot Caving Area Surpasses Expectations

A recent trip to Sotano de Sauz just south of Big Bend by Gill Ediger, Dino Lowery, John Ommas, Ron Ralph, Terry Sayther, Peter Sprause, Beth Everett, and Steve Zeeman found the cave to be larger and deeper than expected. The cave is 4000 feet long and 722 feet deep ending in a large room 100 feet in diameter, 2500 feet long, with an air temperature of 106°F. Blocks of ice were packed in to help combat the heat.

During the exploration of Sumadero Yochab, Irv Grahm and Ian Drummond walked to the rumored resurgence of the river 4 hours down the canyon. They found a large bat cave called Cruz Palal with water flowing from the entrance.

THE OTATES MINE AREA

SIERRA DE EL ABRA, TAMAULIPAS, MEXICO

By Neal Morris

Location

The Otates phosphate mine is located on the eastern crest of the El Abra just north of the San Luis Potosi-Tamaulipas state line. Within a short distance of the mine are four large, important caves: Sotano de Otates, Cueva de los Indios, Sotano de Casi Media Mil, and Cueva de Diamante. Access to the area is by the mine road which begins near El Salvador, Tamps. (Km 49.2), on the Inter-American Highway. To enter the area, written permission is required from the authorities at the Ejido Colectivo "Laguna del Mante" (formerly the Ponciano Arriaga Ranch, Km 25.3).

Exploration History

Mexican prospectors first began working the Otates deposits in early 1974. Originally they reached the mine from the Ejido Olimpico by following a small valley or arroyo up the El Abra's east face, however, the phosphate deposits proved extensive enough to justify building a road in from the Pan-Am Highway. This amazing road had nearly been completed by December 1974 when cavers first became aware of its existence.

Our group was trying to reach a pit known from air photos (Hojas Grandes) by chopping up the east face of the range. Efforts to find a Mexican guide on the Ejido Olimpico were futile. The local people said that it was too dangerous to climb right now -- dynamite blasts from the mine were unpredictable and could send large rocks crashing down the mountainside. They suggested that we drive around to the other side of the range and use the new mining road! It did not take us long to take their advice. The miners and road crew were extremely friendly and showed us two caves near the mine, Otates and Indios, which they had already explored in search of phosphate deposits (to explore a pit, the Mexicans would tie some brave individual to the end of a rope and lower him to the bottom). We quickly surveyed the two caves, except for the last drop in Otates which had to be estimated by rope lengths (see Trip Report, AMCS Act. News. 1:1).

Later in December, two subsequent groups combined their efforts to chop a 5-Km trail south from the mine to the star-shaped depression where it intersected the Tanchipa Trail to Sotano de la Cuesta. Two deep shafts were discovered along this trail Sotano de Sendero and Sotano de Arbol. Sendero was bottomed at 712 feet. On this trip the search was started for a legendary black hole near Cuesta. Diamond Cave was also discovered, and its upper section was surveyed (Trip Reports in AMCS Act. News. 1:3,5 and D.C. Speleograph, Mar. 75:12-15).

Another group arrived in January 1975. They explored Arbol to a depth of 540 feet and conducted another futile search for the black hole near Cuesta. They also chopped to three new pits south of the mine: Hoya de Hojas Grandes (-220'), Sotano de Arbol Sangre (-709'), and Sotano del Techo Crystal (-150'). This trip is written up in AMCS Act. News. 1:6 and in The Roc Cairn, Spring 1975.

The Otates phosphate mine is located in a small valley which cuts back into the Sierra for several hundred feet. Mining operations have intersected a small cave passage which was filled by phosphate deposits. Just below the mine and the cave, a small arroyo leads down the mountain-side. The arroyo, the cave, and the mine valley are in alignment and seem to be structurally related.

Cueva de los Indios and Sotano de Casi Media Mil

These two caves were once joined on an intermediate level, but the connection is now sealed by massive flowstone deposits. It does not appear that this system was ever integrated with either Otates or Diamante. Indios and Casi Media Mil are both large phreatic passages which formed along E-W, N-S joints. There are no distinct bedding planes visible in Indios, and bed-rock observations are nearly impossible in Casi Media Mil because the entire cave is draped in flowstone.

The Indios Sink is right on the crest of the El Abra, and the mining road borders it on the south side. The collapse opening is 40 feet wide and 235 feet long, and its walls are vertical, dropping approximately 40 feet on the low side and 60 feet on the high side. However, the south wall offers an easy climbdown along a joint. At the east end of the entrance sink is a low, wide room containing the remains of several stone walls which were probably built by Huastecan Indians. At the west end of the sink, a talus slope leads down to a flat, silt-floored passage where there are more archaeological remains. This passage is 20 feet wide, 40 feet high, and extends west for 375 feet before it is intersected by an upper level crawlway. This crawl leads north to a 60-foot drop (80' rope) into more large passage. This passage heads west and becomes plugged with flowstone only 350 feet from Casi Media Mil. The joint along which this passage is formed appears on the surface in the large dolina west of the mine, and this is the location of the 3x10-foot entrance slot to Casi Media Mil.

The Casi Media Mil entrance pit bells out quickly and drops 111 feet to a rock-strewn floor. To the east is a short passage which matches up with the lower level in Indios. A few feet to the west is a 43-foot drop (a single 180' rope can rig the entrance drop and this one). At the bottom is a flowstone squeeze, followed by a climbdown which leads to the top of the last drop. The total depth of this drop is 305 feet (350' rope), but after descending 50 feet against one wall, a large natural bridge is encountered on which several people can work comfortably. Once below the bridge, there is a 217-foot free rappel. This section of the pit bells out into a large, impressive chamber which is 120x70 feet near the bottom. The mud and gravel floor of this chamber is perfectly flat. There is a small pool in the center of the room, and a drainage channel leads to a sump against one wall. Casi Media Mil is well-decorated and has one highly unusual formation at the top of the long drop -- the remnants of a large, hollow sphere. It appears that flowstone was deposited over a mound of sediment, and later the sediment eroded, leaving only the flowstone shell. A smaller sphere is currently being formed by this process at the bottom of the cave.

Cueva de Diamante

Cueva de Diamante is located at the southeast end of the large dolina to the west of the mine. The cave has two small entrances. The most obvious one is in a sump at the end of the arroyo which drains the dolina. During

large storms, this arroyo sends floodwaters into the cave. A tight, devious crawl (unmapped) leads away from the sump and eventually breaks into larger passage. The second entrance is an obscure 2x2-foot hole in the karst about 30 feet south of the sump. This hole leads directly into the upper section of the cave, a 300-foot-long, steeply-dropping phreatic tube which averages 6 feet in diameter. Several climbdowns, crawls, and pools must be negotiated before reaching a series of wet, flowstone cascades known as Frog Falls (named for the numerous green tree frogs inhabiting the passage). These climbs are difficult, and a 100-foot handline is very useful. Just past Frog Falls, a domepit is encountered (100' rope). Thirty feet down this drop is a partition which divides the cave into two distinct sections: the Canyonlands and the Shatter Zone (Crystal Room or Grubb's Route).

Canyonland Section (basically a high, narrow crevice which requires changing levels frequently to find passage, often with no floor or ceiling visible and too tight to turn one's feet or head around in) includes, to the right of the partition, a domepit parallel to the one in which the rope hangs. A 25-foot climbdown leads to the bottom of this parallel pit. From here a walking passage quickly reaches the beginning of the joint-controlled canyons where the chimneying begins. After going 75 feet horizontally and losing 40 feet vertically, Size 28 Pit is reached -- a 22-foot drop which can be climbed by slipping down through a vadose trench if your waist is size 32 or less. It is an exposed climb, however, and should be rigged. At the top of this pit, a small fault is visible in beds dipping at 25° (see diagram). From here the tight canyon continues northwest for 125 feet. Then it changes joints and heads northeast, first as walking passage and then as narrow Z-canyon again. This trend continues for 325 feet until it is intersected by a vertical joint with a dip of 60° (see diagram). Here the canyon turns due east and starts dropping quickly. A 16-foot chimney leads down to an 83-foot drop (100' rope). From the bottom, another 75 feet of canyon goes to a 66-foot drop (100' rope), followed by another 50 feet of canyon to an unexplored 4-second drop which is 788 feet above the estimated base level. Although the canyon walls in this section are mud-coated, the last drop is scoured clean and blows air. Plans have been made to continue exploration in December.

Shatter Zone Section (basically vertical fissures and near-vertical, walking-size passage averaging 10 feet in diameter) continues, to the left of the partition, another 35 feet to the floor of the first drop. From here a passage slopes 30 feet to a series of offset drops which descend 142 feet (partially climbable, but best rigged with a single 175' rope). At this point the passage divides, and two parallel routes drop 260 feet before rejoining (on the diagram, the line labeled "fracture" points at this split). The Floodwater Route is a small, wet passage northwest of the divide which goes 50 feet to a plunge pool above a 15-foot drop (35' rope). A small, jagged passage then continues 20 feet to the top of a 66-foot drop (100' rope) down the wall of a fissure (20 feet below the lip of this drop, it is possible to get off the rope and explore a short side room which is encrusted with large crystals similar to the Crystal Room). The bottom of this drop is actually a bedrock "bridge" with the fissure continuing beneath it. On the west side a narrow slot drops into the fissure. On the east side a climbdown goes to a window which provides a 125-foot drop down the fissure (150' rope). At the bottom of this fissure is where the parallel route enters. The Crystal Room Route is a 40-foot drop (50' rope) into the Crystal Room which is named for the six-inch calcite crystals encrusting its walls. This drop is located 25 feet southeast of the divide. In the southeast corner of the Crystal Room, a climbable fissure drops 60 feet,

but the handholds are unstable requiring that the drop should be rigged (75' rope) for safety. This is followed by a 35-foot chimney, a 10-foot climbdowndown, a 40-foot, offsetting drop (50' rope), and a 20-foot drop (30' rope). More climbdowndowns and a short, narrow passage soon encounter a tight slot which opens into a 14-foot climbdowndown where the Floodwater Route is joined. The Crystal Room Route is the one normally rigged. Although the Floodwater Route is more direct, it requires rigging longer drops through razor-sharp passages. From the junction of the two routes, a climbdowndown and a short passage lead to the top of a 30-foot drop. This drop can be rigged, but it is usually bypassed by doing an exposed traverse along the left wall to a 25-foot chimney. Below this drop, the passage splits where the water takes two parallel routes. On the left a climbdowndown, small-diameter tube drops 40 feet before it becomes too tight and jagged for comfort (it could be pushed, however). On the right side, a tube 10 feet in diameter drops 100 feet vertically, via a series of climbdowndowns, to a 25-foot-long crawlway. This crawl leads to a hole which opens into the top of a fissure. It is possible to slip through the hole down to a ledge which provides a rigging point. Below is an 80-foot drop to a partition, and although it is "climbable," it is better to rig it with a 150-foot rope which will reach past the partition to the bottom of the fissure. On the left side of the partition (unmapped), the fissure drops about 20 feet to a lake where exploration was stopped by a constricted, razor-edged crawl. On the right side of the partition, the 3-foot-wide fissure drops 15 feet to a window. Through the window, the fissure drops 25 feet to a ledge and then 15 feet to the present deep point in Diamante, 907 feet below the entrance and 373 feet above the estimated base level. Here the fissure is 1.5 feet wide and 5 feet long. It continues 4 inches wide at one end and drops through an 8-inch-wide hole at the other end. Rocks dropped through this hole can be heard to rattle downward for a short distance. This hole could only be enlarged by explosives, and even this would be a difficult task.

Observations on Cueva de Diamante and the Mine Area

Diamante is a complex cave with an interesting history. The entrance passage appears to be an old phreatic tube which intersected a zone of intensely shattered bedrock in the Frog Falls area. The Shatter Zone passages exhibit angular limestone blocks of great size range which have been recemented together. Resolution of the zone has produced razor-sharp passages which demand that explorers wear gloves and carry rope pads. The Shatter Zone passages lie directly beneath the dolina, which supports the theory that faults and shattered bedrock have localized the formation of the large sinkholes found along the crest of the Sierra de El Abra. In contrast, the Canyonland Section is formed along joints and is basically horizontal, extending completely under the Dolina to the north before dipping 60° eastward along a vertical joint. Such a dip in this location would support the theory that the El Abra's eastern scarp is an anticlinal feature.

Canyonland appears to be the oldest section of the cave. The floor is deeply entrenched in places. Pleistocene mammal remains (horse, bison, and mammoth) were discovered in an eroding gravel bank in one area, however, most of the Canyonland is scoured clean. Canyonland still takes some floodwater, but most of the water is now pirated by the Fracture Zone passages, all of which are actively developing except for the abandoned Crystal Room Route. In the lower level of the Fracture Zone (once referred to as Handburger Hill), the water becomes divided among three passages which all pinch down to razor-sharp crawls, ending exploration.

In March 1975, a trip was made to continue exploration in Diamante. An approximate depth of 900 feet was reached via Crystal Room route. There was a minor accident below the Crystal Room when a handhold broke loose causing a caver to fall 15 feet. The miners also showed this group a new pit (Casi Mil) between the Diamond entrance and the mining camp (See AMCS Act. News. 2:7).

In June, a two-man team returned to the mine and explored the new pit. They estimated the depth at 735 feet and thus named it Casi Mil (almost 1000 feet), reported in AMCS Act. News. 3:5.

Mid-July saw a special trip to the area with the purpose of locating the elusive black hole. This group rediscovered Cuesta by using a "Parrot Bearing" as recorded in AMCS Act. News. 3:8,9 (Air-recon. has finally determined the non-existence of any black holes near Cuesta).

The most recent trip to the area was during Christmas 1975. Diamond was extensively explored and surveyed to a depth of 907 feet. Casi Mil was re-surveyed to a depth of 495 feet and re-named Casi Media Mil. Finally, a surface survey was made which connected the four caves near the mine. The block diagram with this article combines all of the survey work which has been done in this area to date (See Trip Reports in this issue and in D.C. Speleograph, April 76:3-5).

Geologic Setting

The east face of the El Abra drops steeply down to the coastal plain providing a spectacular view from above the Otates Mine. John Fish has postulated that the east face is a fault scarp, while William Russell has argued that it is a steeply dipping anticline. The block diagram depicts it as an anticline which sinks beneath the shale formations of the coastal plain. Also shown on the diagram are the two facies of El Abra limestone which have been described from other locations in the Sierra. The massive, unbedded reef facies forms a narrow band along the eastern margin of the range, while the back-reef facies is thick-bedded and dips gently to the west forming the plateau surface. Many caves (most with phreatic origins) have developed in areas of faulting and intense fracturing which resulted when the range was folded. All drainage on the El Abra is internal. Base level for the mine area is the Nacimiento de Rio Tantoan, a large spring at the base of the range. This gives caves on the plateau a maximum vertical potential of about 1500 feet. Cave elevations on the diagram are elevations above this projected base level.

Sotano de Otates and the Mine Valley

The 125 foot entrance pit (150' rope) to Sotano de Otates is located on the El Abra's east face just below the Otates Mine. In fact, the mine is currently dumping its tailings into the Otates entrance, and the cave may eventually be plugged. At the bottom of the entrance drop is a large room, from which a water channel follows a steeply sloping passage east several hundred feet to a handline drop (40' rope). This is immediately followed by a narrow 600-foot shaft (625' rope) which divides several hundred feet from the bottom. Exploration of this drop has been difficult, and both routes currently end in sumps. The lower sump is 800 feet below the entrance.

John Fish (1975) has typed many of the caves on the El Abra's east face as "paleo-phreatic resurgences" -- caves which were springs when base level for the area was at a much higher level than today. Otates would fit this category quite well. It is of phreatic origin, and the deep vertical tubes or shafts would have served to circulate water up from great depths.

Diamante received its name from the numerous quartz crystals (Herkimer Diamonds) which are found in the arroyo draining the dolina and throughout the cave itself. These crystals are probably residual from shale formations which previously covered the El Abra but now have been eroded to the present level of the coastal plain.

The El Abra facies change depicted on the diagram is supported by observations in the field. Bedding planes are absent in Otates and Indios but become traceable in the Diamante dolina and in the Canyonland section of Diamante. Further exploration and study in the Otates Mine Area should be very rewarding.

Geology References

Fish, John. 1975, Karst Geomorphology and Hydrology of the Sierra de El Abra, S.L.P. and Tamps., Mexico. (tentative title), PhD dissertation, Dept. of Geology, McMaster University, Ontario.

Russell, William H. and Raines, Terry W. 1967, Caves of the Inter-American Highway. Bulletin I of the Association for Mexican Cave Studies, Austin, Texas.

Note from Preston

Anyone planning on doing Cueva de El Chorreadero in Chiapas should have the following equipment: a selection of pitons, piton hammer, bolt kit, and at least 30 feet of one inch webbing. Reason: When our group went through the cave in January, 1976, we did not have most of the equipment as we knew the cave was rigged. However, a safety factor is involved since many of the piton placements are marginal and additional backup pitons and in some cases bolts are needed, especially in the lower part of the cave.

Preston Forsythe

Biology Notes

Preliminary study of pseudoscorpions collected this summer in Yucatan by Grubbs, McKenzie, Reddell, and Wiley has revealed a new genus from a cave in Quintana Roo.

A new Troglibitic Homopteran (plant hopper) was found this Christmas at Acatlan, Oaxaca, by Mike McEachern of the "School Bus." This is the 6th Troglibitic Homopteran in the world. Two are known from Mexico, two from Hawaii, and one from Australia.

A new species and possibly genus of Scolopendramorph centipede was found in Conchas. It is probably one of the deepest animals collected from Mexico; it came from the bottom of the 200' drop.

A.C. Grubbs

Christmas in Acatlan

Over Christmas, Terry Sayther, Shari Larason, Dennis Barnes, Marcia Cossey, Andy Grubbs, and Tom Byrd made a spur-of-the-moment all night drive to Acatlan, Oaxaca, in hopes of heading off the school-bus crowd en route to Guatemala. We never ran into them though, but we had plenty of caving to do while we were down there.

We paid a guide to show us as many cave entrances as we could see in one afternoon. We saw five caves that afternoon, all of them close to the roads and with a spread out distribution from ten miles north of the town to ten miles south of town. They were La Cueva de Juan Sanchez, La Cueva de la Junta, La Cueva de Buenos Aires, La Cueva de Piedra Fria, and La Cueva de Rio San Antonio. In addition to these caves, we also saw and checked out a 3-D maze cave at our campsite. It was exposed by the excavation of limestone at a Mogote in the middle of a sugar cane field. The cave is slowly succumbing to quarrying operations, so we named it "Disappearing Cave."

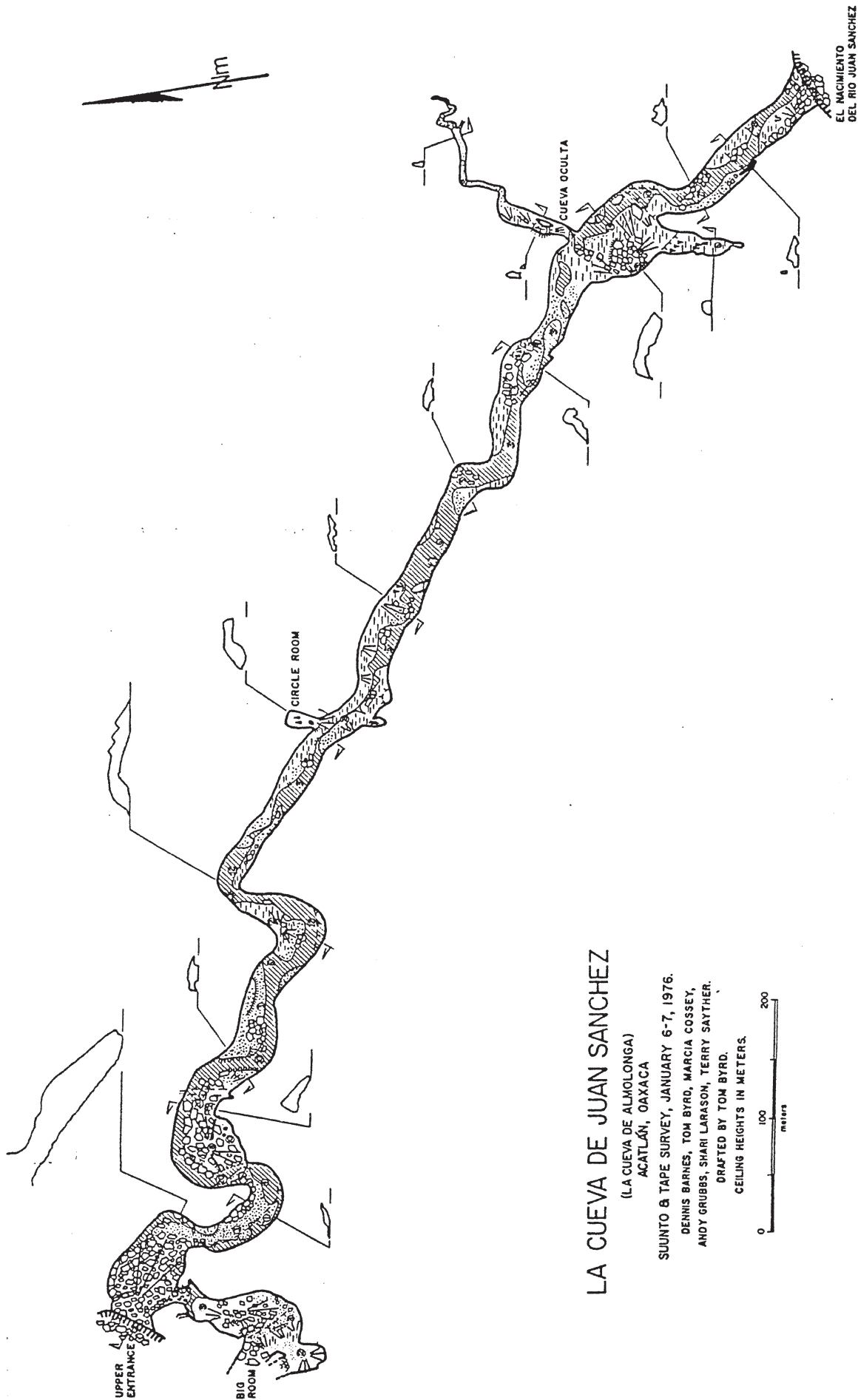
Our main activity was concentrated on the surveying of La Cueva de Juan Sanchez. The cave is located at the Nacimiento de el Rio Juan Sanchez and has a large, impressive entrance at the base of a 40m cliff. Immediately inside the cave, there is a large pile of broken pottery and many obsidian blades scattered about on the clay slope. From here there is a gently meandering stream passage which is 20-30m wide and 8-10m high. Soon after leaving the last traces of daylight behind, there is a large breakdown room with a high wide passage leading off to the left for a short distance, with pottery and formations. Opposite this passage is a narrow side passage leading off the main passage to the right. This passage was called "Cueva Oculta" taking its name from the writings of earlier explorers who wrote the words on a boulder at the entrance. It ended in breakdown where tree roots grew in from above. Throughout the main passage, there are terraces of conglomerated round cobbles of igneous rock ranging in size from pea size to grapefruit size, and on the walls in many places are scallops of varied sizes. There are several large breakdown rooms with high ceilings throughout the cave, and only in the high places are there any formations.

It took us two days to survey the cave and we did not finish. Late on the second day of the survey, we came to a large, steep breakdown slope extending upward to an upper entrance. From this large breakdown slope room is a side passage leading down to several large rooms. After some 13 hours of surveying that day, we decided to call it quits for a while after peering into the darkness of a huge bat room with giant breakdown blocks. We have indicated this as the "Big Room" on the map. We don't know how far the cave extends beyond this and we didn't have time to continue.

The cave, according to the local residents, is known by two names: La Cueva de Juan Sanchez (after the river) and La Cueva de Almolonga (after a nearby community). The people say that toda la cueva es seca en abril, but that in agosto, great quantities of water come out carrying logs and other debris.

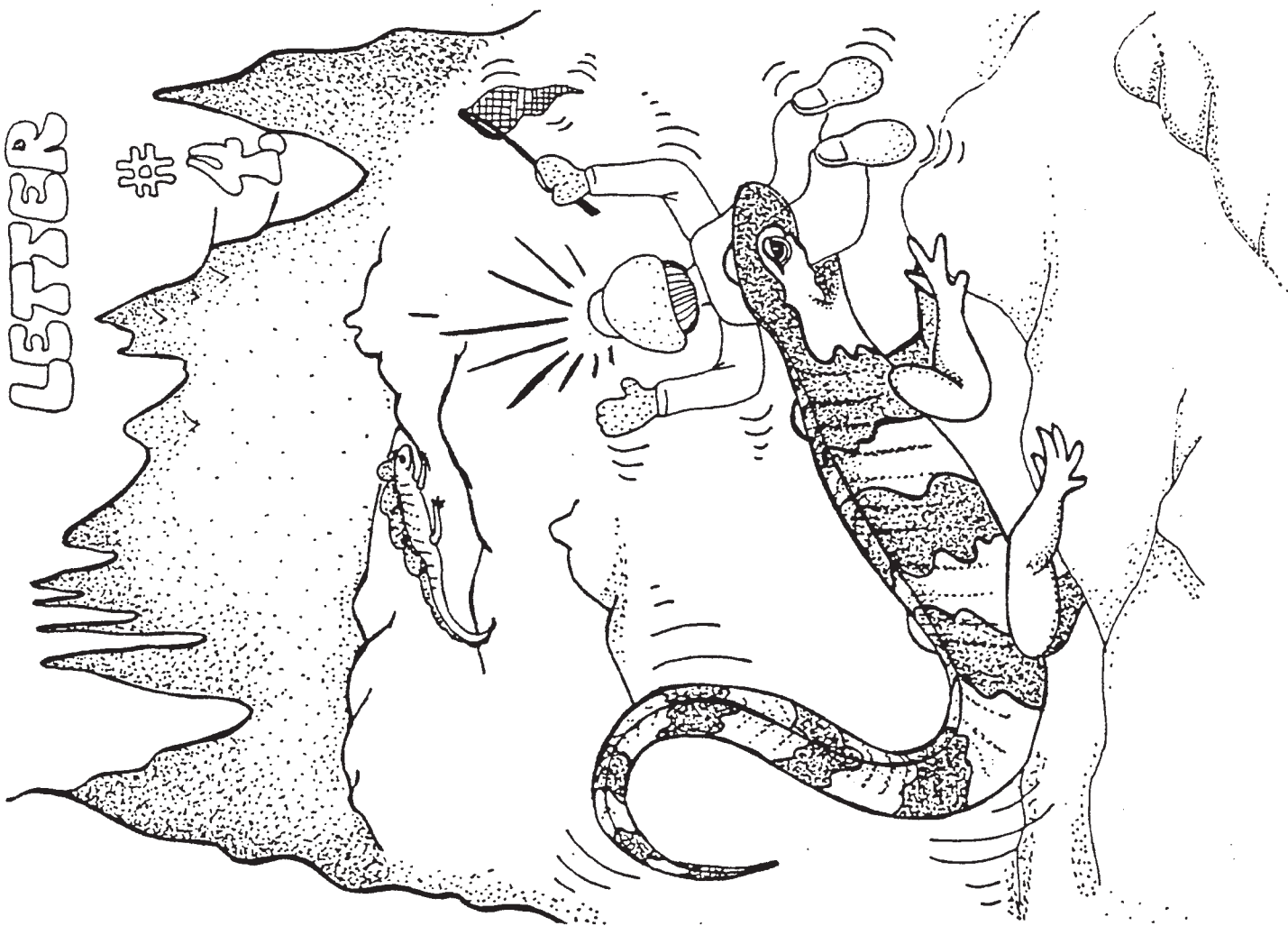
This area around Acatlan is very promising. There are numerous roads among the low rolling hills of sugar cane fields and small anticlinal ridges and areas of haystack hills. Numerous dolinas can be seen from the roads. The locals speak of many sotos in the hills. There is not much depth potential here, but the deepest caves are not far away on the Huatla Plateau. There are going to be some long horizontal systems and sotos entering them from above in this area. We hope to return next dry season to finish Juan Sanchez and check out other caves in the vicinity.

by Tom Byrd



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