amcs ACTIVITIES LETTER

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AMCS MEMBERSHIP ACTIVITIES LETTER

Edited by Bill Russell

Spring Report Letter No. 2, May 1975

The AMCS Activities Letter is published by the AMCS Membership Committee as often as necessary to keep the AMCS members informed of speleological activity in Mexico. This is a newspaper of the Mexican underground and we welcome brief accounts of current trips. Longer accounts will be edited to our brief format. The activities letter does not replace the AMCS Newsletter and Bulletin as a permanent repository for information. At this time it seems likely that the AMCS Bulletin and Newsletter will be combined into a publication tentatively called the Journal of Tropical American Speleology. This change is not planned until the completion of the present volume of the AMCS Newsletter. The new format will broaden the scope of the publication and make it a professional journal for all of Tropical America.

The second issue of the AMCS Activities Letter covers the period from the end of January to the beginning of May, a relatively quiet time between the New Year trips and the summer expeditions. Though not a time of peak activity, trips were made to the Valles Area in San Luis Potosi and the Chiapas Highlands. This issue also presents timely information on the various systems of cave map symbols, since the NSS is soon to consider the adoption of a standard system of cave map symbols. To avoid confusion, it would be beneficial for all cavers to use a common set of symbols. But the list submitted to the NSS by James Hedges is not acceptable to most active Mexican cavers and is not compatible with past mapping. The NSS should adopt the AMCS list, calling it for convenience the NSS standard list. This is a list that would be used by all cavers.

The cover drawing on this issue of the AMCS Activities Letter, as well as the cover drawing on the first issue, is by Dino Lowery. The cover bird is Pedro, the mascot of the Kirkwood Caver House. His kin are a familiar sight in the Mexican forest, where the calls of the colorful flocks wake the tired caver to an early dawn.

Bill Stone writes from the cold northlands of New York that he plans a trip to the El Socovon area this summer. He plans to reconnoiter the area from the air --- starting with the El Abra and flying west to concentrate on the area west of Golondrinas where he thinks there is "something huge." He also speculates that he might go to Yosemite and rappel off El Capitan (3200 feet), "in order to dispel any myth about present systems not working for drops of over 2,000 feet." If he can find enough rope and sherpas. We wish him luck. He is soon to move to the Tuscon area and wants to know if anyone is checking out the Sierra Madre Occidental.

The latest issue of the ROC Cairn, the newsletter of the Rensselaer Outing Club, contains a 15 page account of the Christmas trip to El Socovon by Bill Stone complete with area maps and sketch maps of El Socovon and Sotano de Ojo de Agua (283 foot entrance drop, total depth 746 feet). Several other pits were located and explored in the El Socovon area, and numerous leads were gathered for the next trip. After returning to the road at Tancoyol, the group split up, some of the group following the new road to the top of the El Abra and chopping out to pits. The thrill of discovery is evident in Bill's account of the exploration of Sotano de Arbol Sangre: "We arrived at Sotano de Arbol Sangre around noon and rigged to a sinuously rooted tree which literally "bled" white sap when cut, hence the name Arbol Sangre. Bryan rappeled in the 100' entrance drop to a breakdown mountain sloping steeply down. He walked down out of hearing range and returned 10 minutes later reporting he had found a 20' diameter pit of unknown depth. Art and I descended and Don went over to the other nearby pit to begin chopping down.

We climbed down the breakdown and took a look at Bryan's pit. It looked deep. We examined the rest of the passage which had a deep fissure running down the middle. It ended 200' further on in a 3 second pit. We returned to Bryan's pit again. This time we dislodged an immense boulder, perhaps a meter cubical, and rolled it in. 1...2...3...4.CRASH..5...6...7...8..CRASH..RUMBLE..12..13..14..CRASH..18..19..20..BOOOOOM! At this point (no kidding) the floor we were standing on shook! GEEZUUZ! Well, our first thought was to forget it and come back tomorrow with a BIG rope. However, as in the case of many other deep pits, rock times can be deceptive, especially if the walls are close together and permit a lot of bouncing. So we decided to at least give it a try with the ropes we had. We climbed out and hiked over to where Don was chopping and had lunch. From the "lunch ledge" Don's pit looked like it might be deep so I stayed to help chop while Bryan and Art went to try the pit with a 300' rope. Don and I managed to get to the bottom in about 1/2 hour. It was only 200-250' deep, shear on 3 sides. No passages except for a small tube leading to a skylight entrance. Don decided to return to camp. Bryan and Art were still in Sotano de Arbol Sangre so I dropped in and climbed down to the second pit again. Bryan was in the process of Jumaring out on the 300' rope. We arrived semi-exhausted and reported that the 300 feet wasn't nearly enough. We decided to try one more time and tie on the remaining 120' rope. Since neither Bryan nor Art wanted to rappel over the knot that left the dubious honor to me. We rerigged using a minimal amount of rope tied around a semi-solid looking column...shaky! The pit is smooth walled and roughly elliptical with a narrow fissure running off each end. At -300' I tied on the 120' rope and kept on rappelling. At the end of the second rope I was about 10' off the top of a talus pile. Totally forgetting in my excitement that I was at the end of 420' of GOLDLINE, I untied the knot and rappelled off the end. TWANG. ZIP. Up went the rope 25' off the floor! Well, what a bummer! After getting over a surge of blind panic I found that I could chimney (just barely) up enough to clip a Jumar on the end and pull it back down. After tying it off I followed the high canyon-like passage for 200' where it ended in silt fill. We surveyed out and started back to camp by dusk. Total depth was 709' with the second drop officially 433'."

Michael Schulte has been working on his Aquismon Area Project during January and February. On December 28 he met the El Socovon trip at El Socovon, then was back in the Aquismon area to yo-yo Golondrinas with the NY Rensselaer Outing Club Group. Then he searched unsuccessfully for the Bridge Pit, and met Roger Skages, Rich Stocker, Warren Netherton, Devi Ukrin, and Dave Witacre to do Hoya de Guaguas. On January 21 he helped carry Blanca Rubio Ramirez, a Tamapatz school teacher, over a muddy trail in a makeshift stretcher from Tamapatz to Aquismon and then drove her to a hospital in Valles. After checking caves north of Tansosob he returned to Tamapatz and finally found the elusive Bridge Pit, Joya Jawecito, on February 15. It is an impressive pit but not the deep shaft we had hoped. It can be climbed without rope. He concluded "there are still significant leads and much mapping left in this beautiful area."

Discovery of Diamond Cave

Diamond Cave promises to be a major cave, a deep complex three dimensional maze beneath the dolina just to the northwest of the Otate Mine. Just west of the mine the new road circles the south edge of the dolina, so when our group arrived at the Otate campground an obvious first thing to do was to check this nearby dolina. So soon after we set up camp I walked back down the road and crashed down through the jungle. On reaching the flat densely overgrown floor of the dolina, it was apparent there were no large overhangs, but there was a small drainage channel crossing the bottom. I followed this shallow channel to where it sank under a low ledge in the southeast corner of the dolina. After clearing some debri it looked possible to squeeze into the opening and follow the water - and there seemed to be a small air flow, rare in the El Abra. The entrance looked small but promising, but air flow in the El Abra indicates a connection to big cave. Encouraged by this thought I decided to chop a trail directly south back to the car as it would be much shorter than the roundabout way I had come. After chopping 20 feet south I stepped across a small hole in the karst that looked like it should be checked. Trail chopping became increasingly difficult and after a hundred feet a series of jungle covered six foot ledges convinced me that was not the best way to return to the car, so I circled back the way I had come.

That afternoon Andy Grubbs and I returned to check out the small sink, and after much squeezing managed to explore about 100 feet of small tube to where the tube divided into several smaller tubes too small to follow. We squeezed back out and while Andy looked for quartz crystals in the arroyo, I went back to check the hole in the karst. This hole is only about 2 x 2 feet and is like thousands of cracks in the karst but seemed deeper. But once I slid into the opening it was obviously not just another hole in the karst. A six foot in diameter tube sloped downward and was scoured clean by water entering from the dolina bottom through cracks in the karst. I quickly explored for about 100 feet to a climbable ten foot drop where I returned for Andy. We returned to the drop, Andy climbed down and indicated the cave continued, but due to light trouble we had to wait until that evening to explore further. That evening we pushed through the squeezes to the Frog Falls area and Andy climbed to the bottom of the flowstone only to be stopped by an unclimbable pit. We flagged the entrance, but as time was short and we wanted to finish chopping the trail south to Cuesta we left further exploration to others.

Bill Russell

Cueva de Diamante - Tamaulipas, Mexico

Cueva de Diamante (Diamond Cave, so named for the quartz crystals found around the entrance) was discovered at the base of a large sink just north of the new Mina Otate road in late December, 1974. The scouting party which discovered the cave explored only a short distance in the steeply dropping phreatic tube, being stopped by a short pit. At that time a group from Ohio, Colorado, and California began further exploration and mapping.

The upper section of the cave would be mostly walking/stooping passage were it not often nearly plugged by flowstone, requiring one to crawl over and under various deposits, dams, and bridges. 76 feet from the entrance is a small room containing two flowstone dams, behind which are 16 and 19 foot climbable drops. 83 feet beyond these drops the floor of the passage becomes completely blocked by a shallow pool 24 feet long, necessitating an awkward chimney in the 2-3 foot high tube to stay dry. Crawling over flowstone and pools an additional 59 feet brings one to the top of a series of steep, slippery, ten foot deep flowstone cascades, on the upper end of which were seen around two dozen green tree frogs. The cascades are difficultly climbable; a hand line being of considerable advantage for the last one. Another 28 feet brings one to the first pit, 296 feet from, and 131 feet below the entrance. Several small tubes were seen leading off near the ceiling of the small room at the top of the pit. Only one of these was checked, and led to the top of a dome associated with the pit complex (voice and light connection).

The pit drops 30 feet to a ledge, below which it is divided by a thin partition. To the left of the partition an additional 35 foot drop (climbable) reaches the floor of the pit, which contains a narrow crevice 8 feet deep leading to some wet crawls. A passage leading back under the upper passage drops steeply for 26 feet, bringing one to the top of a series of large, offset drops approximated at 125 feet deep. The top of these drops is 216 feet below the entrance, and is the end of current mapping.

This second pit is entirely different from the upper section of the cave. The walls, which contain numerous unchecked holes, are covered with large calcite crystals. Even the flowstone in the pit seems to have been crystallized. Most of the pit is probably climbable, although a rope is preferred. From the bottom of this pit, a passage to one side leads after about 25 feet to another drop estimated at 30-40 feet. This pit, which was not descended for lack of rope, also had large calcite crystals up to 6 inches long completely covering its walls and ceiling. The walls also contained many unchecked leads. Several Herkimer Diamonds, up to an inch long, were found near this drop.

A small crevice leading the opposite direction drops steeply and leads after about 50 feet to still another pit, estimated at 50 feet, also not descended. Immediately below the lip of this pit a large passage could be seen coming in, but could not be reached without a rope. Several white isopods, up to an inch in length, were seen in this area, which was quite damp. Air movement was considerable.

continued

To the right of the partition in the first pit, a climbable drop of 25-30 feet leads to an unmapped canyon passage. About 20 feet down the canyon is a climbable 10-15 foot drop containing a very tight, jagged canyon which leads to two more short climbable drops. The second of these leads one to the top of a short drop, "size 28 pit," so named because a person with a 28 inch waist could squeeze through a slot in the floor and climb down the pit without rope. About 30 minutes of hammering enlarged the slot to accommodate someone of about size 32. The bottom of this 20-25 foot pit contains another miserably tight canyon, which required changing levels frequently in order to get through. This canyon abruptly ends and is intersected by a similar canyon to the right. After crossing a 10 foot deep hole, the canyon widens out giving one about 50 feet of walking passage 3-4 feet wide. Several more quartz crystals were seen in the gravel at this point. The canyon soon narrows again and after some Z turns becomes extremely tight at ceiling level. At this point one can climb down 20-25 feet to the floor of the canyon, which abruptly drops down a slightly wider black hole. Rocks dropped free for 2 seconds, and bounced an additional 1-2 seconds. There was considerable air movement up out of this hole, which has some very unstable breakdown wedged in at the top. Exploration was stopped at this point, again for lack of rope. A bolt kit may be necessary for rigging this pit.

A total of 370 feet was mapped in Cueva de Diamante, and at least that much more explored. Exploration was stopped by pits at every turn, each one moving air. The potential for this cave seems tremendous - future explorers should be good climbers and bring plenty of rope. !Viva la El Abra!

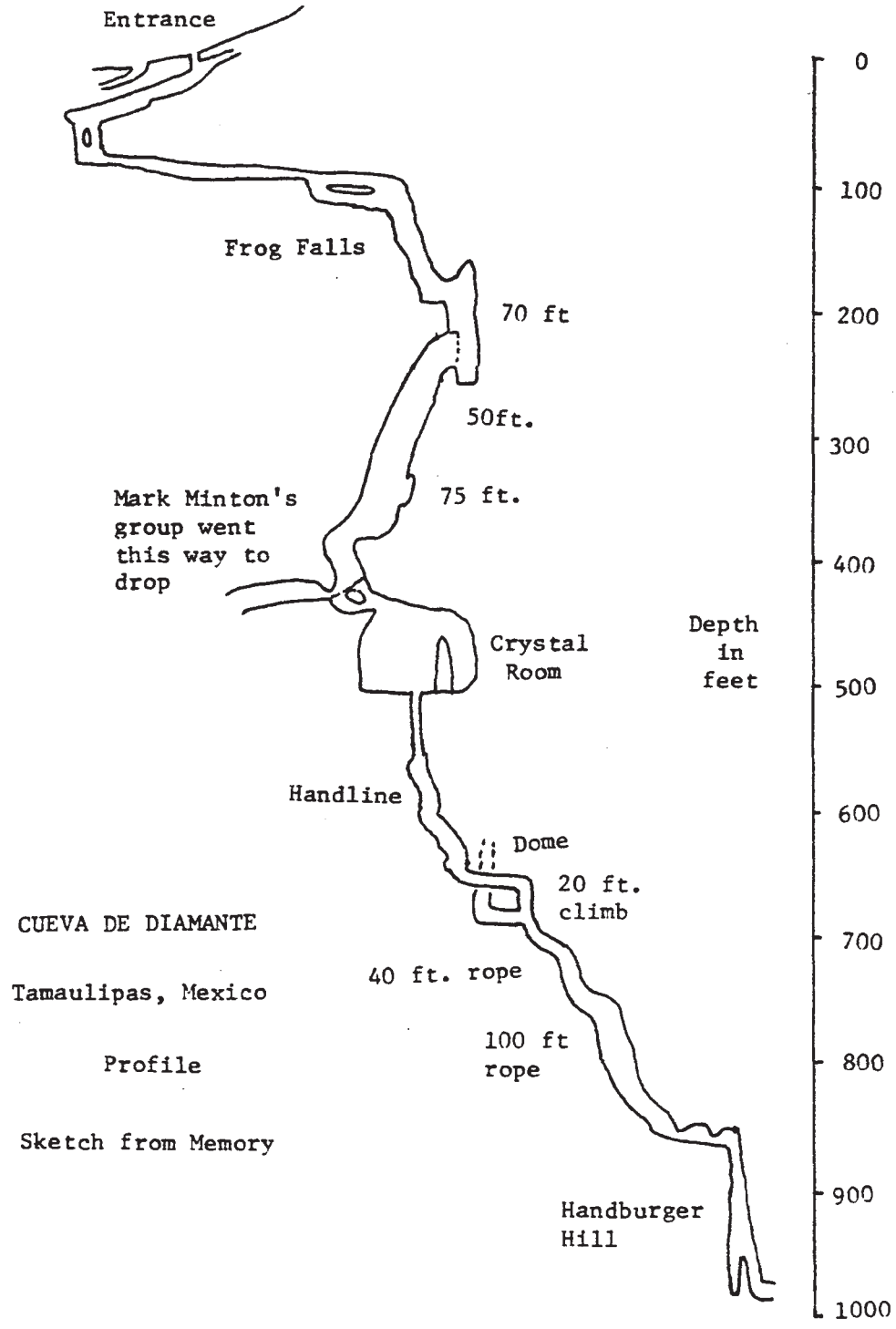
Mark Minton

El Salvador Tamp March 23, 1975

Don Broussard, Jim Moore, and Charlotte Rodgers arrived at Sotano de Venidito and rigged drops down to the 600 foot level. Here they explored past the downstream "syphon," now open by 3 feet as opposed to 6 inches on the last trip. With the increased opening the airflow is not noticeable. They took Steve Ryan's water passage, the one that Steve Ryan, lagging behind, followed on the last trip thinking it was the way out. This is a large, apparently downstream, passage with deep (over 6 feet) water, 3-15 feet of air space and 25-30 feet wide. After about 1000 feet, the passage pinched into a 3 foot wide 30 foot high crack. This narrow section of passage slowly dropped through pools of water for about 300 feet, then enlarged to 40 feet wide, 30 feet high with waist deep water. After 1500 feet the passage was 20 feet wide, with 10 feet of air space, and occasional bats. Here time forced a return to the surface. The next day they completed the map to the 600 foot level and derigged.

The AMCS now maintains a limited supply of topographic maps of the Valles area (between Cd. Valles and Cd. Victoria). These are intended primarily to supply those on their way to Mexico, but mail orders can be filled.

The AMCS welcomes comments and suggestions about this activities letter.



CUEVA DE DIAMANTE

Tamaulipas, Mexico

Profile

Sketch from Memory

Diamond Cave Revisited

Andy Grubbs, Steve Deathrige, Paul Fambro, Jim Feely, and Mike McKee arrived at Mina Otate on March 23. Also in the group were Terry Sayther, John Omnaas, Craig Smith, Mike McEachern, Nancy Boice, and Dennis Breining who planned to work on the trail to Cuesta, while the others made a reconnaissance trip into Diamante. They were equipped with many short ropes for the small drops, as on the Christmas trip the only ropes available were long ropes for the big pits that no one wanted to drag through the cave. Next morning the reconnaissance group climbed through the first part of the cave and started rigging at a series of flowstone cascades, named Frog Falls after the numerous frogs. At the bottom of Frog Falls, minus 131 feet by the Minton survey, a series of drops leads to an offset into the Crystal Room, 75 by 50 by 75 feet high - the walls covered by 6 by 6 inch calcite crystals, attractive though dry and dusty. This room also contains what looks like a crystal-covered Titan Missile, either a now mostly dissolved wall or an old stalagmite. Just before the Crystal Room a small hole leads to the passage followed by most of the water entering the cave, diverted away from the Crystal Room by a partition. This is the passage followed by Minton's group on the Christmas trip. On this trip it was decided to check a narrow crack leading down from one side of the Crystal Room. This fissure was chimneyed for 50 feet to a sloping passage that was followed to a handline drop, where Andy climbed down to the top of another drop. On the way back to the Crystal Room, Mike McKee fell 15 feet when a handhold broke, but suffered no serious injury.

The next day the group, now consisting of Andy, Steve, Dennis, and Craig returned and rigged several more drops to a squeeze leading through the Pebble Room to the top of a 130 foot fissure divided by a thin partition halfway down. This section was named Handburger Hill due to the sharp nature of the rocks. Andy climbed to the bottom of the fissure, but ended up on the wrong side of the partition. He could see the crack continuing, but from where he was, the continuation was not easily reached, and time was running short, so he climbed back out. The total depth of Diamante is estimated to be almost 1000 feet, still continuing, and several hundred feet short of the potential of the cave, located on the crest of the Sierra de El Abra.

Just before they left the Otate Mine area they checked a pit the miners had told them about between the Diamante Cave entrance and the Camp, about ten minutes from the car. They reached the pit and dropped a rock. Three seconds free fall and then it bounced out of hearing. But alas they had to meet a group in Taxco to tour the underground course of the Rio Chontalcoatlan, the warmest of the two Dos Bocas that emerge below Cacahuamilpa.

Notes from Tom Ramsey:

1. Second drop in Otate is not blind; there is a methane sump lead down there. We never did get anyone in our party on the bottom.
2. You said that when we came back from Mina Otate that we were happy but <u>tired</u>. I take offense at that cliche word: tired. We Crumpers and Hlocut cultists never tire!
3. George Tracy's group spent Xmas in the Chiapas. They never did manage to catch up with Mike Boon, but they did get some caving in.

San Cristobal Chiapas, March 28, 1975

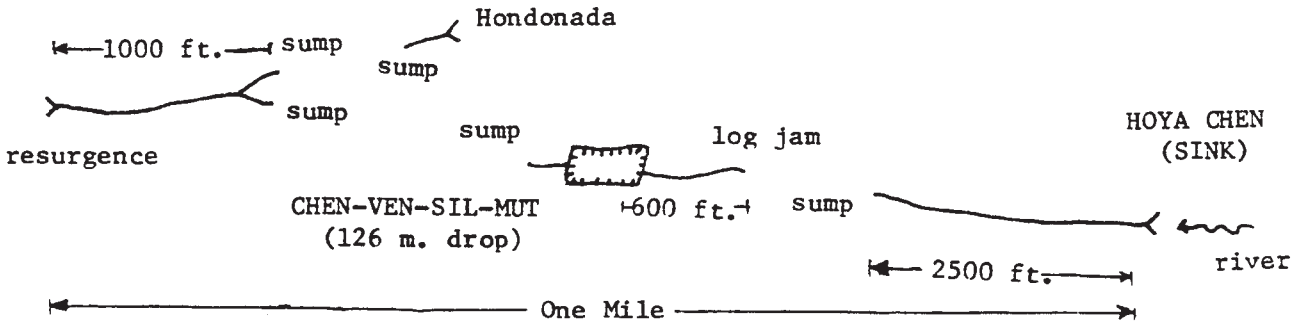
A continuing report on the exploration of Sumadero Yochib, a large river cave near Tenejapa. Since the Christmas trip Barb Larson, Mark Stock, and Bob Ranney had been back to Yochib and explored another 300 feet downstream to a 5 foot pitch that needed a bolt to pass. So in March these three, plus Mike Boon returned and descended the 5 foot pitch and the next two pitches of 6 feet and 8 feet. These lead to a 90 foot pit broken by a bridge halfway down. Here the stream makes a right angle, turns along a cross joint (see sketch). This drop temporarily halted exploration but a return trip descended this drop and progressed to where a 40 foot pitch bypassed another waterfall. A short swim lead to a 20 foot pitch beside the next waterfall where more swimming lead to a large chamber. Beyond this chamber the stream runs through boulders to a 20 foot chute. The chute can be bypassed by traversing to the right, dropping to a ledge, and then down to a relatively level area, named The Bad Dreams Section. Here the stream has to be crossed using the ladder as a belay while climbing across a sill above the rapids. Another short traverse leads to a 50 foot drop into a pool. At this point Pete Thompson flew in from Canada to join the group. The reinforced group then did the drop into the pool, crossed over the head of another waterfall, bypassed the tenth waterfall using a dry slab to reach a cable ladder drop into the race above the 11th waterfall. Here there was a distinct change in the character of the cave, and the stream funneled into a narrow gut leading to a waterfall that could not be bypassed with a single bolt. Instead a tricky climb is needed to avoid the force of the water. On this climb Pete Thompson managed to fall 15 feet into a shallow gravel floored pool, spraining his ankle.

Beyond the pool, the river flows over the 13th waterfall and into a narrow channel requiring a multi-bolt traverse. Somewhat discouraged, the group returned to camp set up in the Big Chamber where Thompson laid up for two days while Larson and Boon surveyed and detackled. The group felt that a big push was not in order as prior to the fall on the 12th waterfall, Mark Stock had dropped 20 feet on the 2nd waterfall pitch and bruised his knee. This fall was not serious as it occurred in sight of daylight, but the two injuries and the powerful current of cold water that could not always be avoided created a demotivating mental climate. It was decided to push the cave on a return trip with fresh bodies. It is fortunate that Yochib is being explored mostly by Canadians as ordinary cavers are not familiar with the cold and wet.

Mike Boon as told to Bill Russell

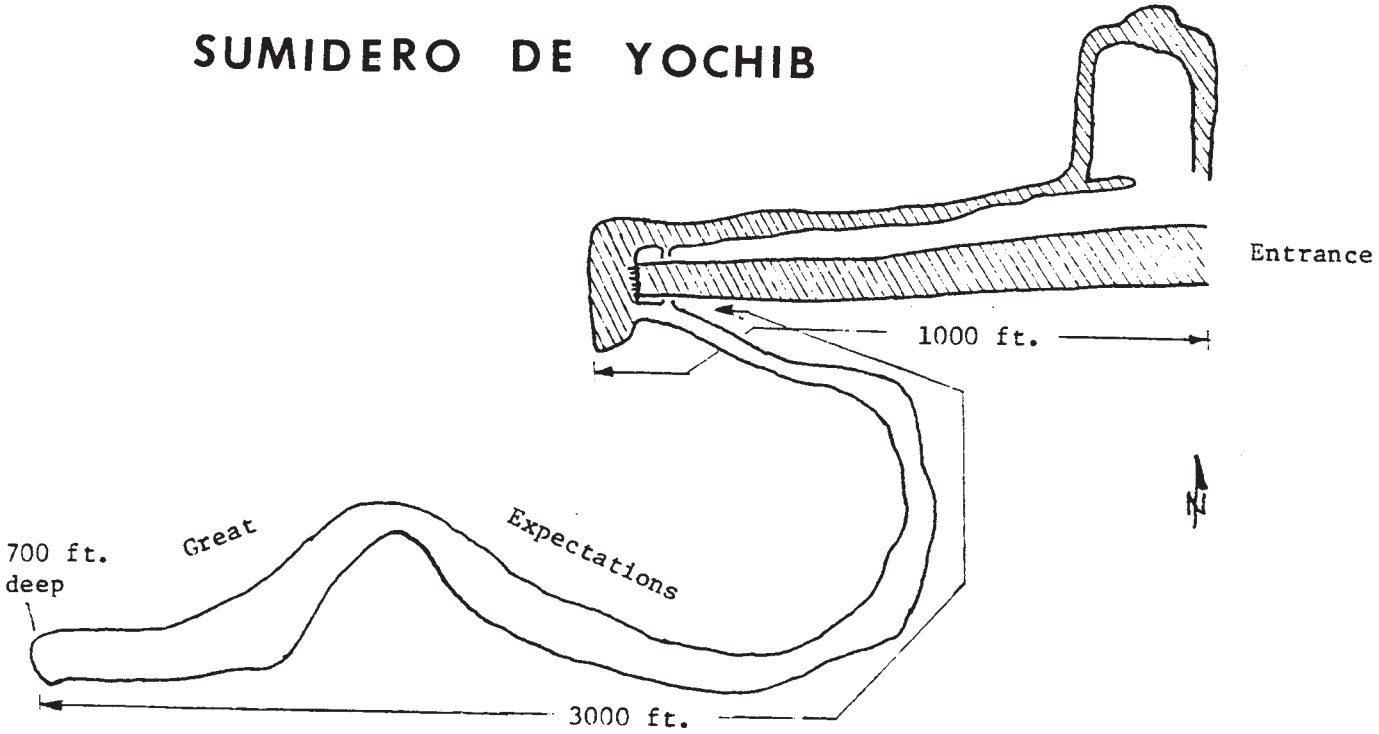
The February Cleve-O-Grotto News contains details of a trip to Chiapas by George Tracy, Angie Hodonsky, Mike Shawcross, and eight others, mostly Canadians, but reported on by Sasha Hafez, a Cleveland Grotto caver attending university in Canada. The group visited El Chorreadero in a park near Tuxtla Gutierrez, passed a group of cavers from McMaster University, and then visited the well-decorated, easily traversed Cueva de Rancho Nuevo in the pine forest near San Cristobal. They next went cave hunting near Tenejapa where they located a new cave, Sumidero Chicja, and mapped for about 1000 feet. They returned to Cueva de Rancho Nuevo for a New Year's party where they met a group of French Canadian cavers in identical caving uniforms. From here they drove south to Guatemala and back to Canada.

CHEN-VEN-SIL-MUT SYSTEM



More on Chen-Ven-Sil-Mut

Ranney and Stock explored the passage found by Larson and Donovan upstream in the river that flows across the bottom of one of Mexico's largest pits, Chen-Ven-Sil-Mut. This passage lead upstream for about 600 feet to a logjam. A party from the Alberta Speleological Society explored the sink end of the same system from the Hoya Chen entrance for about 2500 feet to a log-filled sump. One kilometer upstream from Joya Chen a -4600 foot cave was explored after diving through a sump later drained by digging.



1000 Foot Pit in Chihuahua

This report of a 1000 foot plus pit in Chihuahua was brought to the attention of Donald Davis by Jon Haman. Davis sent it to Frank Binney where it was found by Barbara Vinson who passed it on to the AMCS. It is part of an article in the American Institute of Mining and Metallurgical Engineers (Technical Publication # 154. Walker, R.T. "Deposition of Ore in Pre-Existing Limestone Caves," issued with Mining and Metallurgy, November, 1928). The article is discussing an ore chimney in the Potosi mine at Santa Eulalia, Chihuahua. As an afterthought, they mention "A few hundred feet distant from this orebody the limestone strata are penetrated by a large open chimney cave, over 100 ft. in diameter, which is reported to extend from the volcanic capping near the 600 ft. level to the 1600 ft. level, and for an unknown distance below. It is doubtless the conduit of an extinct hot spring, formed after the mineralization of the district took place, since it contains no ore minerals, except in a few places where there are small earthy deposits of monheimite, the brick-red zinc-iron carbonate, which have obviously been derived by migration from the oxidized portion of the near-by Potosi ore chimney. It is a suggestive circumstance that this postmineral chimney cave is of such shape that if it were completely filled with ore by ascending mineralizing solutions, which would also replace the walls to some extent, the resulting orebody would be structurally indistinguishable from the Potosi chimney. Further evidence as to the probable cave origin of the Potosi chimney is afforded by the fact that in the neighboring San Toy mine an orebody in the shape of a horizontal pipe, but doubtless formed during the same period of mineralization, exhibits cave breccia of apparently premineral character."

Dr. Robert Mitchell of Texas Tech University has received a grant from the National Geographic Society to continue his and James Reddell's biological study of the cave life of the Yucatan peninsula. They plan to work in Yucatan this summer and can be reached %James Reddell, Lista de Correos, Merida, Yucatan. Any cavers who plan to visit the area should write in advance of their trip.

Just received a letter from Frank Binney, Inside Earth editor and noted speleoadventurer, that he is going to far distant lands to film the British attempt to find the world's deepest cave. With a little effort, AMCS members should be able to find a deeper cave in Mexico. It is perhaps all right that so far the French have explored the deepest caves, as they live there, but the British? This summer all AMCS members can help restore the national honor, beat the British, and embarrass Frank Binney by finding a mile deep cave in Mexico.

Everyone should receive a membership card with this issue. Some were sent out with the first issue, but no records were kept, so everyone gets a card this time.

Cave Map Symbols

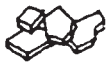
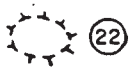
On the following pages are three sets of cave map symbols: the set by James Hedges now being distributed by the NSS office, followed by the AMCS set of symbols and the set of symbols used by Ernst Kastning, a caver active in New York, but with considerable experience elsewhere. Other commonly seen sets of symbols are those used by the Cave Research Group and the symbols used in Missouri Speleology. James Hedges has submitted a set of symbols to the NSS to be adopted as the NSS standard cave map symbols, but unfortunately this list is not available as it is so long he has not been able to prepare copies, but the main difference between the list given and Hedges' revised list are covered in the discussion.

Cave map symbols should enable the printed map to convey as much information as possible about the three dimensional cave in a limited space. The set of symbols should be complete, so that all common features have a unique symbol, and blank paper indicates only lack of data. The set should be versatile so a few symbols can be combined to indicate most of the features found in the cave, and they should be easily used by persons of little artistic ability.

The advantages of a standard set of symbols are so overwhelming that it would seem that a nationwide system would long ago have been established. There are several reasons why this has not been done. The first is that most mapping is primarily for local consumption. The local caver provides the vast majority of all persons actively interested in a cave map and they know the local set of symbols, so the map is useful to them. This localism is being weakened as cavers increasingly visit distant areas and feel more a part of national and international caving organizations. Inertia is another reason why a standard set of symbols has not been adopted. Once a region or a survey has used a set of symbols to draw numerous maps they do not want to learn a new set and make the old mapping obsolete. However, as most surveys and regions will admit that a common set of symbols will someday be adopted, the sooner the change is made the fewer maps will have been drafted using an eventually obsolete set of symbols. The need for a common set of symbols has not been obvious to many non-mapping cavers as most cave maps, especially those published in journals of wide circulation, are drawn to such a scale that only the general outlines of a cave can be given and no special symbols are necessary. However, the relative decline in the cost of printing in relation to the cost of living has made it possible to print more large cave maps that use special symbols extensively, and many of these maps are attaining wide circulation. As the student of speleology travels from Canada to Mexico and attends a conference in Yugoslavia he encounters a bewildering variety of special symbols and local notations. Standardization has been taking place slowly through communication and personal contact, but the adoption of a standard set of symbols by the NSS will set the trend for the entire North American continent and should be carefully considered.

Simbolos: 1.pared de la cueva. 2.dolina. 3.estalactitas etc. 4.gours. 5.derrumbes: 6.tierra. 7.diaclasa. 8.pendiente abrupta. 9.pendiente.

Cuban Cave Map Symbols

SYMBOL	MEANING
	CEILING HEIGHT IN FEET
	HEIGHT ABOVE AND BELOW WATER IN FEET
	LEDGE OR DROP IN FEET – HATCH SIDE DOWN
	SLOPE IN FLOOR
12	DEPTH OF FLOOR BELOW DATUM
25	ELEVATION OF FLOOR ABOVE DATUM
	PASSAGE WALLS – DASHED = UNSURVEYED
	CROSS-SECTION, SMALL LINE POINTS IN DIRECTION OF VIEW
	LARGE BLOCK BREAKDOWN
	SMALL SLAB BREAKDOWN
	PIT – DEPTH IN FEET
	DOME – HEIGHT IN FEET
	STALACTITE, STALAGMITE, COLUMN
	FLOWSTONE OR RIMSTONE POOLS
	POOL – PERENNIAL, INTERMITTENT
	STREAMFLOW DIRECTION
	STREAM WITH RAPIDS

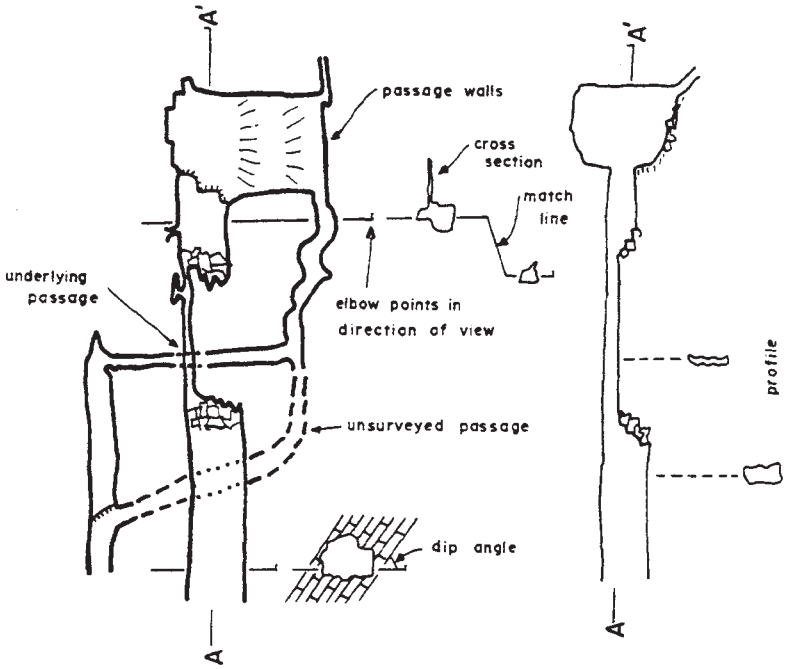
Cave Map Symbols from Cavern Development in the Helderberg Plateau, East-Central New York by Ernst H. Kastning (Bulletin 1, New York Cave Survey, 1975, p. 165)

NATIONAL SPELEOLOGICAL SOCIETY

PROPOSED STANDARD MAP SYMBOLS
1 June 1961

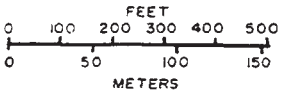
MOTION: That the cave map symbols listed below be officially adopted by the N.S.S. for use on all society maps and be designated "Map Symbols: N. S. S. 1961 Std."

Redrawn with emendations, 30 April 1968 JAMES HEDGES



TITLE BLOCK

1. name of cave, county and state in which it is located
2. precise coordinates
3. graphic scale



4. magnetic and geographic north
5. date of survey
6. principal surveyors
7. type of survey (instruments)

- all measurements given in feet except where otherwise noted

THE PASSAGES


surveyed passage


unsurveyed passage


underlying passage

unexplored passage


continues, narrow

continues, low

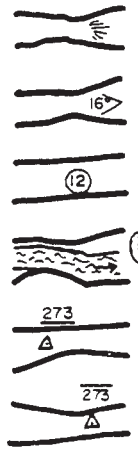

breakdown choke


(other detrital) fill choke


flowstone choke


sump (voûte mouillante)

vertical drop, distance stated (hachures on lower side)



slope (lines diverge down slope)

measured slope

ceiling height

air space
water depth

elevation, above entrance

elevation, below entrance

DETRITAL SEDIMENTS

clay or silt

sand

crystalline fill

cobble fill

guano

chip or slab breakdown

block breakdown

mud flow

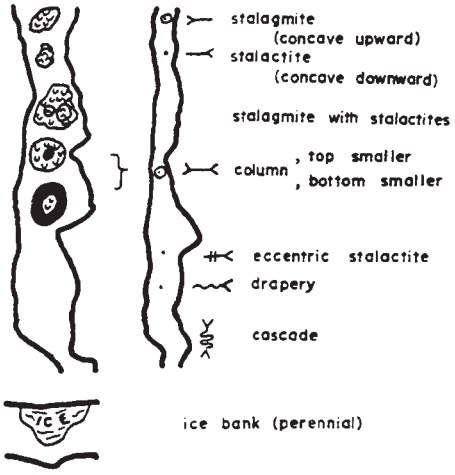
CHEMICAL SEDIMENTS (SPELEOTHEMS)

rimstone (convex downstream)

flowstone

flowstone covered wall

FOR SMALL SCALES / FOR LARGE SCALES



stalagmite (concave upward)

stalactite (concave downward)

stalagmite with stalactites

column, top smaller, bottom smaller

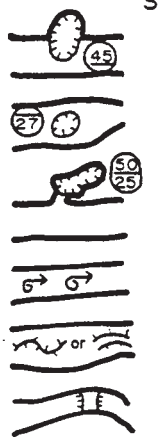
eccentric stalactite

drapery

cascade

ice bank (perennial)

SPELEOGENS



dome, height above floor

pit, depth below floor

vertical shaft (domepit), height above and depth below floor of intersecting passage

scallop (arrow points downstream)

ceiling channel

natural bridge

HYDROLOGY

large stream

small stream

intermittant stream

pool

waterfall

siphon (voûte mouillante)

ARTIFACTS

dam

survey station

stairs, dot indicates base

trail

ladder, dot indicates base

mine (guano, petre dirt, etc.)

bridge

FEATURES OF THE LAND SURFACE

shelter cave

karren

horizontal cave

100 pit, depth

pit with cave

pit with waterfall

cave with sinking stream (swallet)

cave with rising stream (resurgence)

spring, seep

swallow hole

doline

STRUCTURAL SYMBOLS. It is proposed to accept those of the American Geological Institute without modification.

LITHOLOGIC SYMBOLS: It is proposed to accept those of the U. S. Geological Survey without modification.

ASSOCIATION FOR MEXICAN CAVE STUDIES

STANDARD CAVE MAP LEGEND

PASSAGE SYMBOLS


Passage Outlines


Lower Level Passage


Upper Level Passage


Unsurveyed Passage

Survey Station

Ceiling Height

Depth below entrance

Height above entrance

Sharp drop in floor level in hachured direction (vertical distance)


Slope, down in splayed direction

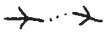
Pit, with depth-if so indicated, pit entrance


Cross section of passage viewed in the direction shown by half-barbed arrow (cross section rotated to the horizontal)

Profile trace

WATER SYMBOLS


Direction and flow of water course in permanent stream (air flow if so marked)


Direction and course of intermittent stream


Standing water; lakes or pools


Temporary or intermittent pool


Siphon (cross hatched)

Water depth, under ceiling to water height

NOTE: On all maps indicate if figures are in feet or meters.

STAL SYMBOLS


Rimstone dams


Flowstone on floor


Masses of flowstone on walls, or flowstone partitions


Flowstone Column


Stalactites


Stalagmites


Soda straws

CEILING SYMBOLS


Sharp drop in ceiling; hachures point toward low ceiling


Dome, with height

FLOOR SYMBOLS


Bedrock floor


Clay


Sand, mud, or dirt


Gravel


Talus


Large individual breakdown block


Masses of breakdown


Guano


Pottery or other archeological rdmains

GEOLOGY SYMBOLS

Strike and dip of strata (dip in degrees)


Vertical joint

Dipping joint, dips toward side with block

Fault, D side moved down relative to U side

NOTE: In all cave passages the composition of the floor should be indicated.

Discussion of Map Symbols
by Bill Russell

The purpose of a cave map is to give an accurate, easily understood, visual impression of the cave as a complex three-dimensional void extending through the earth. And to accomplish this, many special symbols are used to indicate features found in the cave. Many of these symbols, such as the breakdown symbol, are simply a diagramatic expression of the actual feature, while others like the number in a circle for ceiling height are purely artificial conceptions. And the more detailed a cave map, the more important the artificial symbols become. Many modern cave maps could not be understood without a list of symbols. The standardization of symbols is important so cavers of all areas and languages can easily communicate. An important step in this direction is the adoption of a set of standard symbols by the NSS.

Unfortunately, the only list so far presented to the NSS is the Hedges list, a very lengthy list that contains many unacceptable symbols. Cave mapping is generally not the type of activity that generates political discussion, but the time has come for all cave mappers to make some political noise or the NSS board of governors will take our silence for agreement. First, I would like to propose that the NSS adopt the AMCS set of map symbols, calling it for convenience the "NSS Standard." The AMCS symbols are better adapted to contemporary cave mapping, and the adoption of the same set by both organizations will unify cave mapping over a wide area. The discussion that follows is intended to point out the numerous advantages of the AMCS system, and to indicate some of the various choices available in choosing a set of map symbols.

Any list of symbols is a compromise between the large number of possible symbols and the number of symbols the map user can be expected to know. The AMCS list can be adequately presented on two pages and contains 41 symbols; the revised Hedges' list is 19 pages long and contains 163 symbols. The Hedges list includes a large number of specialized symbols, including symbols for both warm and cold air currents, polluted and potable water, mold, fungus, and even coprolites. To be useful the Hedges list will have to be severely revised, with the commonly used symbols printed as a short two page list that could be easily utilized. The rest of the symbols should then be collected and issued as a list of special symbols, to be annotated on maps where they are used. This supplemental list could include symbols for various types of archaeological material, special cave features such as mud cracks, ripple marks, high water marks, and numerous man-made features such as core holes and electric wires. The supplemental list will provide a suitable symbol to show these features, and insure that all cavers use the same symbol. The Hedges 19 page list is a valuable compilation of map symbols but is too long to be adopted as a standard list.

Símbolos: 1. pared de la cueva: 2. dolina: 3. estalactitas etc: 4. derrumbes: 5. tierra: 6. guano de murciélago: 7. pendiente: 8. gours.

Cuban Cave Map Symbols

Many of the symbols on the Hedges list could be improved, and others are in conflict with symbols widely used by cave mappers. One of the worst features of the Hedges list is its representation of domes. A dome should have a unique symbol and not depend upon the user to look around for a circled number. Numbers should be avoided whenever possible, but this system is especially cumbersome, particularly in view of the AMCS alternative, to use the broken hatchured line to indicate a dome, just as it is used for other ceiling features. Hedges revised list uses a number in a square to indicate pit depth, and a number in a circle with a line under it to indicate the height of a dome. These cumbersome symbols would not be necessary if the broken hatchured line were used to show a dome as the poorly chosen symbol used by Hedges also indicates a mesa, so additional notations are necessary. Hedges' natural bridge symbol is not needed and can only confuse, as it indicates a short section of passage between two drops, a common enough occurance in caves. If a natural bridge is not present Hedges symbol will imply one. Using the AMCS list one need only add a lower level symbol and a natural bridge is unambiguously indicated. Hedges' notations for streams and pools, retained in his revised list, are hard to draw, and his pools are easily mistaken for large masses of flowstone, not common in the caves where Hedges usually maps, but an NSS list should be useful over a wide area. His flowstone symbol could be improved, and a cave map draftsman should never break the wall line to show a flowstone covered wall as indicated on Hedges list. The crossed pick-ax and shovel should not be used to represent a mine on a cave map; the symbol is used on surface maps of large areas, and its use as shown on the Hedges list would be inappropriate. The actual diggings should be shown with conventional symbols.

The Hedges list also contains symbols that are confusing as they are used by others to show a different feature. Especially poor is Hedges use of diagonal lines to indicate a bed rock pillar as this symbol is widely used to indicate water. And the small solid triangles are used by many to indicate stalagmites and should not be used for chert.

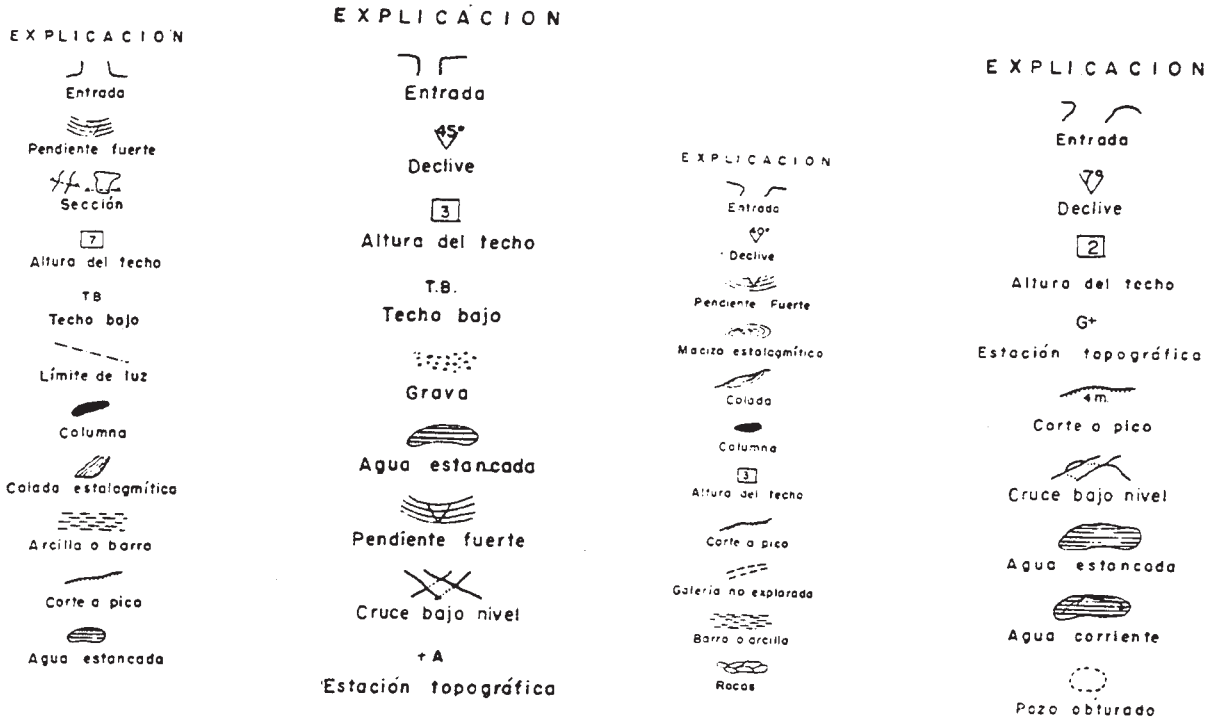
The notation on the 1961 list that feet are to be used unless otherwise noted will cause trouble in an increasingly metric world. I hope this feature is not retained in his revised list; my copy makes no mention of units. Considering Hedges' French equivalents on the 1961 list (a sump is also a voute movillante) he should realize that many people routinely use the metric system. So until the far distant future when inches and feet are as rare as leagues and varas, there will be an uncertainty about what units are being used on a map, unless they are explicitly stated. There are several approaches to this problem. One is to use as few numbers as possible and rely on the graphic scale. It should be possible to interpret a cave map without any reference to figures on the map other than the graphic scale. Passage heights and pit depths should be clear from cross sections and profiles. But while numbers should not be necessary, they are useful as they provide the user with exact dimensions. Every map should contain a clear expression of whether feet or meters are used. One cannot rely on the Hedges system of assuming measurements are in feet unless indicated. I doubt if a caver who rappelled off the end of his 150 foot rope

Símbolos: 1, pared de la cueva; 2 formaciones secundarias; 3, derrumbes; 4 borde del techo en la boca de la cueva; 5 pendiente; 6 tierra; 7 arrastres consolidados de origen fluvial.

Cuban Cave Map Symbols

in a 90 meter pit could collect damages either from the map maker or Mr. Hedges, but with foresight these problems can be minimized.

The revised Hedges list is an improvement over the 1961 list presented here as he now uses the broken hatchures for ceiling features, but he needs to expand its use and use it for all ceiling features including domes. Cross sections are the best way to show heights of domes and depths of pits when the shaft extends both above and below the passage. His revised list also includes a symbol lacking on the 1961 list, a symbol for a bed rock floor. He proposes a rectilinear crosshatch be used, but even he admits it is a poor symbol, and suggests that it be used only when absolutely necessary, that normally if floor sediments are mapped a blank space will represent a bed rock floor. This is a poor practice as cave mappers frequently do not have data for some of the cave, a good bed rock floor symbol would be much better. Hedges new list still has a cumbersome system for indicating pits and domes, as well as other symbols that are confusing or inappropriate. It should not be adopted as a standard list by the NSS as it would not meet with general acceptance, and would be a setback to the slow progress being made towards the adoption of a uniform system of map symbols. The set of symbols used by the AMCS should be adopted as it is a versatile and practical system in wide use and acceptable to a greater number of cavers.



Mexican Cave Map Symbols