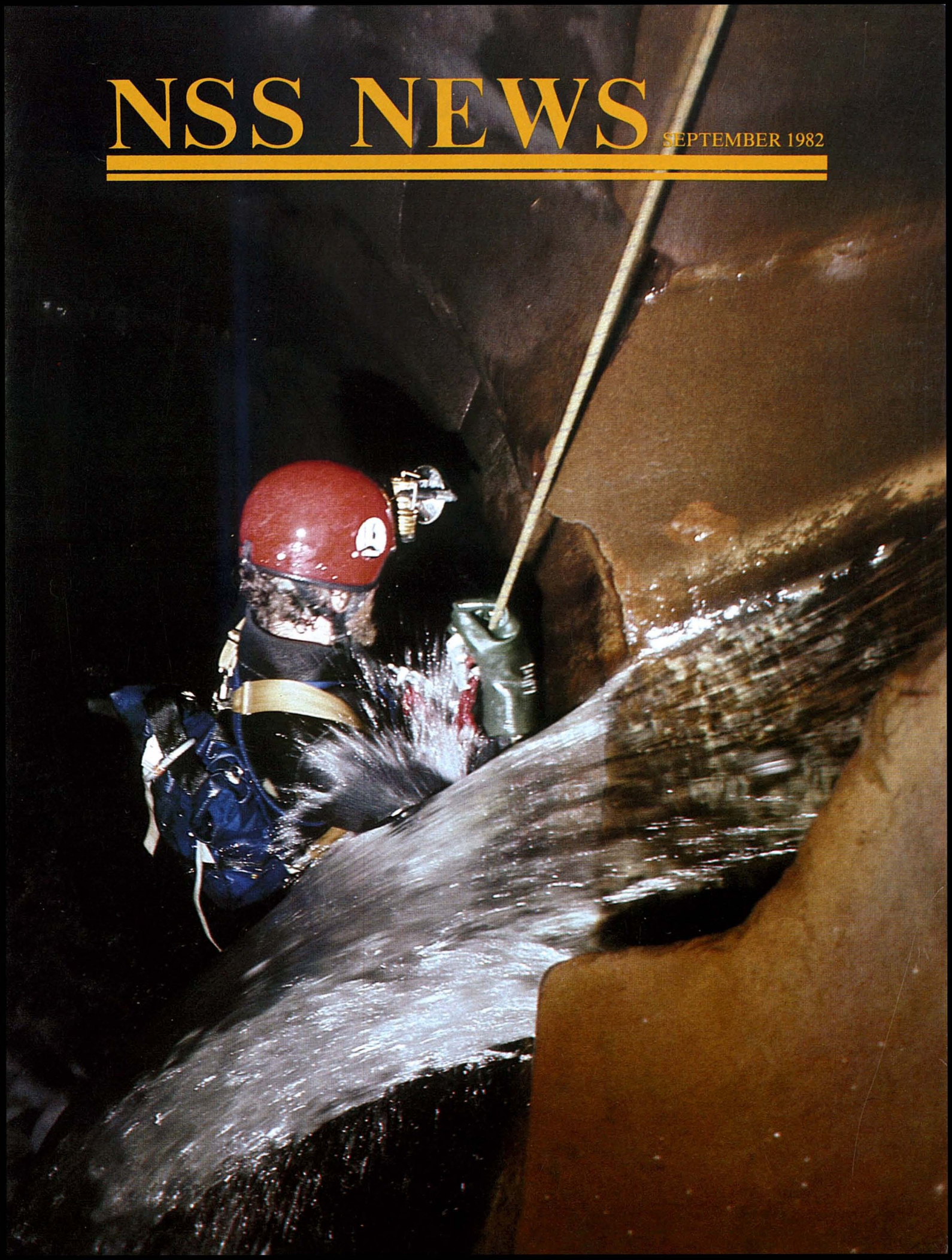
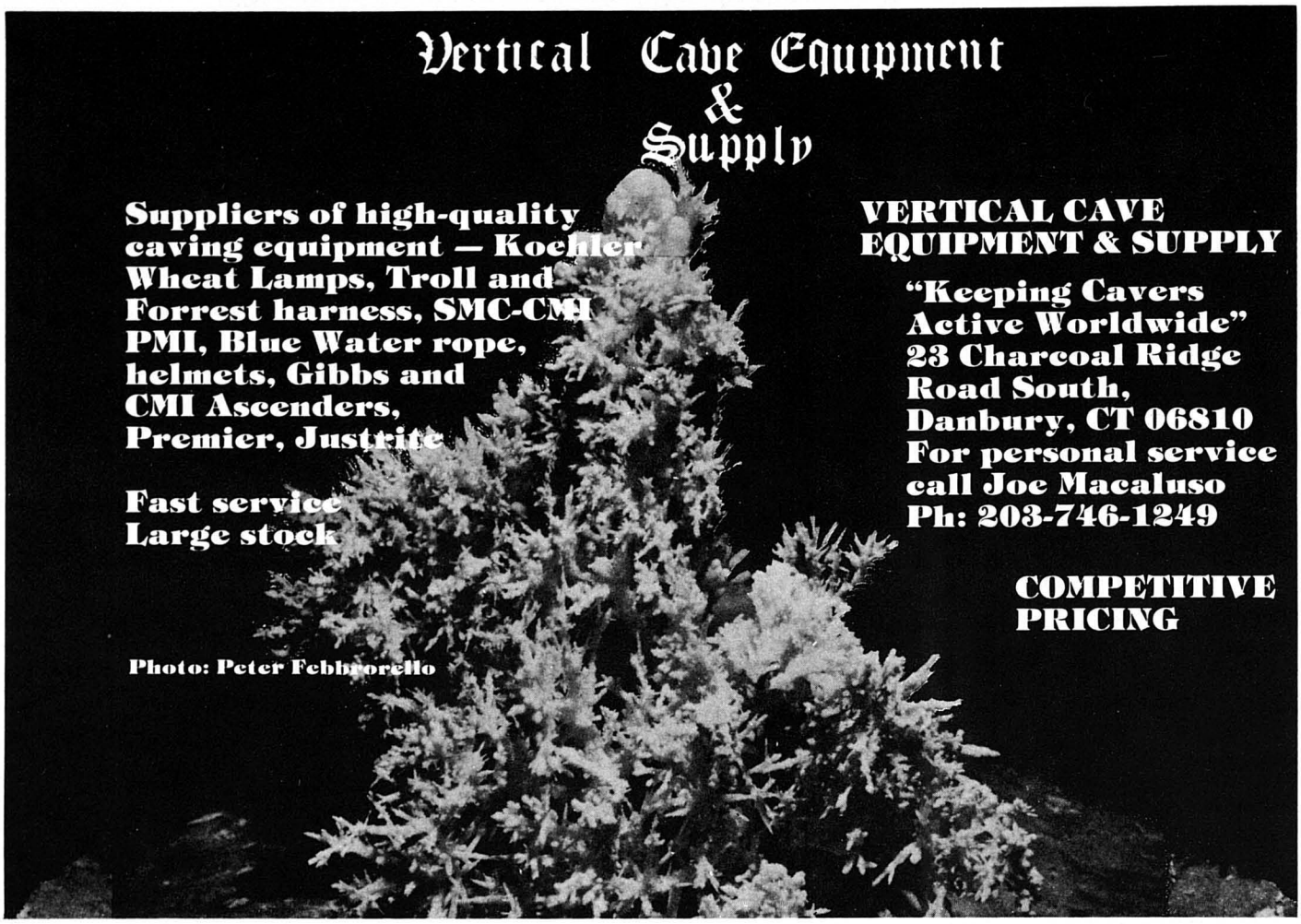
NSS NEWS

SEPTEMBER 1982





PREMIER BRASS CARBIDE LAMPS
With Justrite 4″ Reflector 19.25
With Premier 2½″ Reflector 18.95
Tip Cleaner ... 1.85 Thick Gasket (3-16″) ... .20
Repair Kit (Tip, Tip Cleaner, Felt, Gasket, Reamer) 3.10
Complete Supply of Repair Parts Available

JUSTRITE ELECTRIC HEADLAMP
With Battery Pack (Less Batteries) 1904-0 ..... 14.00
Without Battery Pack 1904-2 ..... 10.00
Complete Supply of Repair Parts Available
Complete Line of Miniature Light Bulbs Available

VERTICAL EQUIPMENT
Carabiners Liberty Brand
Oval 4.50
Locking D 5.75
Continuous Oval Rings For Linking Carabiners, ea. 1.00
Sling Materials
1″ tubular sling (white) ..... .17/ft
2″ seat belt webbing ..... .18
9-16″ tubular sling ..... .13
5-16 Tenstron ..... .08 ft.
Buckles For 2″ Webbing ..... 2.25 ea.
Harnesses
Adjustable Swiss Seat ..... 7.00 ea.
Adjustable Texas Seat ..... 11.50 ea.
Whillans Slit Harness, Sizes S, M or L .. 44.50 ea.
Ascenders
Gibbs Quick Release 20.75
Gibbs Spring Loaded 21.75
Jumars ..... 59.95 Pair
Complete Supply of Repair Parts Available
ROPES
PMI 7-16 ..... .44
Bluewater II 7-16 ..... .44
Bluewater Super III 7-16 ..... .46
Goldline II 7-16 ..... .50

Racks
PMI Rack (Uses SMC Brakebars) 11.50
Bluewater Stainless Steel Rack 11.95
Bluewater Brake Bars ..... 2.40 ea.
(work only with Bluewater Racks)
SMC Brakebars 2.00
Chest Boxes
Gossett ..... 27.50 Bluewater 15.95
Repair Parts Available

HELMETS & PARTS
Fibre-metal helmet with L-1 bracket (chin strap not included)
Color: Yellow 10.95
Chin Strap 2.20
Complete Supply of Repair Parts Available
EVERREADY FLASHLIGHTS
Skipper Model: Waterproof, Shockproof, Floating "C" or "D" Cell Size 3.25

MISCELLANEOUS STUFF
Knee Pads
Judsen ..... 5.75 pr.
Rockmaster ..... 15.50 pr.
Canvas Grip
8 Oz. 2.00
16 Oz. 3.00
32 Oz. 5.50
Gloves
Leather Palm, Men's Large, Men's Medium & Women's Sizes 2.95
Cyalume Light Sticks
10 Hour ..... 1.50 each

Petzl Equipment Now Available
Many Books Available

Wheat Lamp & Charger 147.00
Wheat Lamp Only (Model 5200) 84.50
Charger for Model 5200 ..... 64.50
Suunto Compass 49.50
Suunto Clinometer 49.50


Tom Hay

Prices subject to change without notice.

BOB & BOB
"CAVERS SERVING CAVERS"

PO Box 441
Lewisburg,
West Virginia 24901
(304) 772-5049

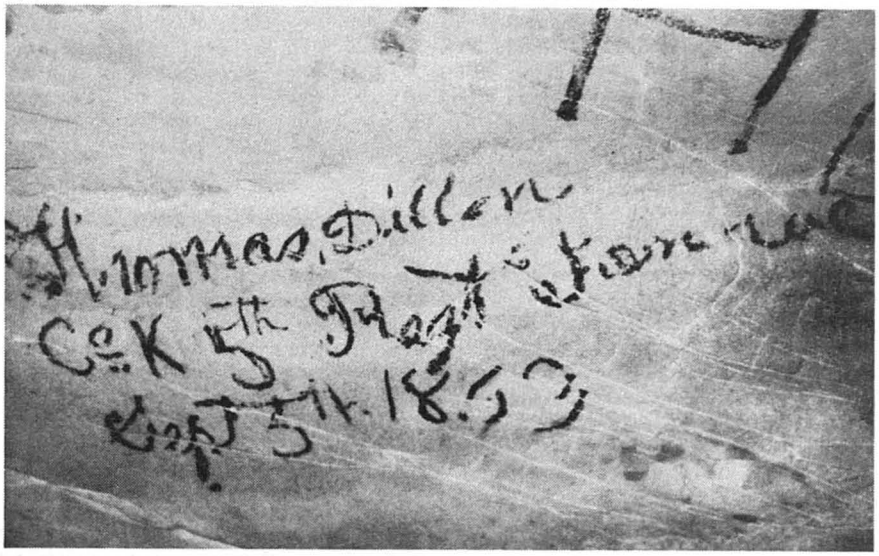
Write for complete price list.
Add 10% for shipping, minimum $1.00.
Excess is refunded.

Research in Lookout Mountain Caverns, Tenn.

By Larry O. Blair, NSS 13921
and Joel M. Sneed, NS 10137

Introduction

In September 1981 20 members of the Clayton County Cavers Grotto made a trip to Ruby Falls, Tenn. Now, this doesn't seem exciting to most cavers, except that this trip was not to be to the commercial cave, but to the uncommercialized lower levels of the cave which had been closed for many years. The trip had been arranged with the management of Ruby Falls as a pilot for a possible program of periodic trips into the wild cave by spelunkers.



Charcoal signature of Thomas Dillon in Lookout Mountain Caverns. This partially hidden signature is extremely well preserved. (Larry O. Blair)

The History of Commercialization

Located on the north end of Lookout Mountain at the western edge of Chattanooga, Tenn., the original entrance to what was historically known as the Lookout Mountain Caverns overlooked Moccasin Bend, a large meander in the Tennessee River. In 1908 the Southern Railway completed a railroad tunnel through the mountain that intersected the cave about 100 feet from the cave's entrance. The cave was then blocked off on both sides of the tunnel, shutting off access to the cave. Twenty years later, work was begun on a shaft from the mountain above the cave for the purpose of commercialization. This ambitious venture was financed largely by persons from Gary, Ind., under the leadership of Leo Lambert and his Lookout Mountain Cave Co.

In the process of drilling, another cave, at the −260 foot level, was intersected. This cave previously had been unknown, and exploration by Lambert and others resulted in the discovery of Ruby Falls. It was named for Lambert's wife, who accompanied him on his second trip through the cave. Upon completion of the shaft to the Lookout Mountain Cave level at −420 feet work was begun to prepare both levels — or, more accurately, both *caves,* as no natural connection between the two is known — for opening to the public. Between 1930 and 1935 tours were conducted in both caves until finally the lower cave was closed and thereafter visited only infrequently by workers at the caverns.

Both caves are located in the St. Genevieve-Gaspar limestone formation. They are largely joint-controlled, the Ruby Falls Cave following a NE-SW course, and the Lookout Cave trending more westerly. The accompanying map shows cross-sectional views of the Lookout Mountain Cave, which is composed mainly of walking passage some 50 feet above a stream level of larger dimensions. Several short crawlways lead off of the main passage. The Ruby Falls Cave has generally narrower and taller passages that crisscross one another while continuing in the general southwesterly direction from the elevator shaft.

The Writing on the Wall

During the Civil War Lookout Mountain was so strategically important that early in 1862 the Confederate army moved into Chattanooga. Besides its strategic value, the area also was important because of the newly discovered and developed deposits of saltpeter in Lookout Mountain Cave. The operation there, however, was short-lived, and it was greatly downgraded in scope after shelling by Union artillery in June 1862.

During the war years the Confederate army began to use the cave as a hospital for wounded. Some of the soldiers even explored the cave quite some distance from the entrance, often writing their names, dates and unit designations on the walls. After the invading Union troops took Chattanooga on Nov. 25, 1683, the Union also used the cave as a hospital, and names of soldiers from both sides still can be seen on the walls throughout the first several hundred feet of the cave.

Many of the names recorded were extremely well preserved and easily read. All of the signatures and associated writings were fashioned by using charcoal or by scratching. We would like to believe that in some instances this "etching" may have been accomplished by the skillful use of the tip of a bayonet.

It was for the purpose of viewing these signatures that the Clayton County Cavers Grotto arranged to visit the cave last year. As a result of this trip, research into many of the names recorded there has given quite an insight into the more human aspects of the Civil War.

The cave's lower passageways virtually are covered with signatures. In fact, in some areas these writings are several layers deep. This is quite evident in the area of the historic Masonic ballot boxes, for example. In this location are several signatures of troops from the Civil War; however, the bulk of the Civil War-era writings are in the canyon passage beyond the "spiral staircase." This brief description is concerned with just a few of the signatures from both the Rebel and Yankee forces who visited the cave during these violent days of the first half of the 1860s. In some instances a great deal of information was obtained on several individuals, while on others research was conducted only far enough to prove that specific soldiers did in fact exist and did belong to stated specific military units.

Unfortunately, in many cases modern day "Kilroys" have defaced these historic writings so that perhaps only a name or unit could be deciphered, thus rendering the entire information almost useless.

During trips into this section of the cave to record this data, the impression was received that the soldiers from one side would try to "out do" the troops from the opposing side with their unit's prestige, all to the good of the historian. In one specific instance an attempt to mark out the letters CSA was discovered. Evidently this place of safety, refuge and pastime changed hands more than once during the pre-battles, battles and later occupation of the city of Chattanooga by Union troops. We became almost overwhelmed with a sense of the presence of these young men, some who would live and some who would shortly die.

During two data recording trips, two points came to mind that Larry Blair would try to substantiate with historical research. The first point was that this lower level was used as a military field hospital during the battles in and around Chattanooga: e.g., Missionary Ridge, The Battle Above the Clouds, etc. Secondly, during these recordings an area Blair named the Signal Flag Room was explored. Here, drawings on both walls depicted Signal Corps flags, or semaphores, and in one case a U.S. flag with signal flags. Verification of signatures found in association with the signal flags would be attempted.

Research Begun

That the Union Army knew of the cave can be established easily. The cave, referred to as Saltpeter Cave, was marked on military maps of the day. The cave's location along the shore of the Tennessee River appears to have been marked with two entrances.[1] As further proof of Union knowledge of the cave, the personal diary of William Wrenshall Smith, personal friend of Major General Ulysses S. Grant, referred to it. While pass-

ing away the time on a visit to his friend, Smith wrote, "I spend the morning on the knob or promentory overhaging (sic) the river and about the ruined iron works — reading and throwing stones into the river. The mouth of a great cave is said to be just under me."[2]

The cave's existence to the Confederate forces is evident by the fact that the cave was mined for saltpeter used in the manufacture of black powder.[3] Also, it is felt that a visit to such a strange natural wonder would have been a pleasant diversion for soldiers from both sides, and it may have been a convenient retreat during extremes of weather or during military engagements.

In two instances signatures and information were recorded that may have been left on the cave walls by persons revisiting the cave after the war's end. This assumption was not proven but would appear to be true. The first evidence was found in the following: *A J Rattimer W + AR Nov 7th 1873 my home Atlanta Ga. 1th Infantry.* This person may have been an employee of the W & A (Western & Atlantic Railroad), which passed within just a few feet of the cave's original entrances both during and after the war.

The next possible evidence of a revisit by veterans of the war is a list of seven names followed by: *Members of U.S. Engineers Cor.* (This last phrase may be *CO F*) and then the date, *June 12th 1891.* Perhaps they were veterans of a reunion or perhaps this was a unit of that era.

Verification of the Two Points of Greatest Interest

Regarding the two points of greatest interest — the verification of a U.S. field hospital and the signal corps units — the signature, *M.E. Webb 33 Mass Vol,* was researched. This was discovered to be Melville E. Webb, 33rd Regiment, Massachusetts Volunteers. He was an assistant surgeon in the infantry falling under the field and staff commands. He was from Saco, Maine, and was 21 years old on Aug. 7, 1863, when he was commissioned into the U.S. service. He actually mustered in on Aug. 13, 1863, and was discharged June 11, 1865. He survived the War.[5]

In the Signal Flag Room several names were recorded, including: *J H Paton U.S. Sig Corpe; Capt. Tom Conely; Sam Kirkpatrick Hickman Ky; J B Ware* and *CRW.* Paton's name was followed by a signal flag. It was found that "By general orders issued from the War Department, Jan. 14, 1864, the following men were transferred to the Signal Corps on the recommendation of the officers who had acted as an examining board of the department" . . . "John H. Paton."

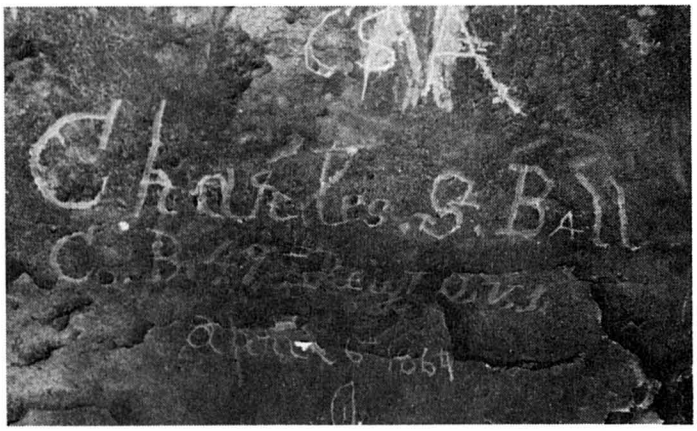
On the opposite wall from these signatures and flags are two more flags, one of which simply states: *We are still going.* A message, perhaps, to rescuers in the event these early explorers did not return for roll call.

The fact that a surgeon visited the cave, as did a signalman, lends credence to the stories of the field hospital usage in the cave and to the authentication of the drawings of the flags on the walls of the Signal Flag Room.

Historical Findings of Two Signatures: One Wore Blue and One Wore Gray

Information found on the following signatures is presented to give insight into the scope of data that can be found by researching a seemingly casual writing of one's name some 120 years ago.

On the left wall of the narrow canyon passage, under a sharp undercut area, the name of *Thomas Dillon* was discovered written with a charcoal pencil. He wrote *Thomas Dillon, CoK 5th Regt Tenn Vol, Sept 5th 1863* (see photo). Tom Dillon was discovered to be from the Tennessee Volunteer Infantry Company K, 5th Regiment. He was mustered in as a 1st Corporal and later was promoted to 4th, then 3rd Sergeant. Dillon enlisted Sept. 6, 1861, at Union City, Tenn. He was elected sergeant on May 6, 1862. The last



Scratched signature of Charles S. Ball. Note the letters CSA, which have been partially scratched out above the signature. (Joel M. Sneed)

Larry Blair and Carole Sneed digging for paleo remains in Lookout Mountain Caverns. (Joel M. Sneed)

military document discovered concerning Dillon was dated March to April 1864; he was present in the (2d) Company K, 5 Regiment T.V.I. This company held various names, as did most Confederate States of America units.[7]

In the once-commercialized passageway of this lower area near the famed Andrew Jackson signature, *Charles S. Ball, Co B, 49th Regt O.V.I. April 6, 1864,* was found (see photo). Ball was a private in Company B 49th Regiment, Ohio Volunteer Infantry (probably a reorganized unit, also). He was 24 and entered the service on Jan. 30, 1864, for a period of three years. He mustered out with his company on Nov. 30, 1865.[9]

Early Humans and Other Animals

In addition to recording and photographing many of the names written on the cave's walls, Joel Sneed removed several bone fragments from a crawlway for identification. These, along with others offered by the manager of Ruby Falls, were identified by Ron Wilson at the Louisville Museum of Natural History and Science. The latter assemblage was composed of animals that inhabit the area today, except for the long-nosed peccary *(Mylohus nasutus)* extinct since the late Pleistocene. Sneed's collection included several other animal species, but more importantly, contained four human bones or bone fragments.

After several weeks' delay due to the elevator being replaced in the shaft, Larry, Joel, and Joel's wife, Carole, returned to the cave on March 27, 1982, to search for more paleontological remains and to continue work on the signatures. Many more finds were made, including human teeth and bones, many of which were charred; a projectile point, probably from the Mississippian period Indians known to have occupied the area of Moccasin Bend; an Indian bead; a shell button, probably dating from the early 20th century, and scores of different animal remains, most notably the giant armadillo *(Dasypus bellus)* of Pleistocene age. The large number of "food animals" whose bones were found indicates that at least one area of the cave could have been a cooksite, although it is rather far back into the cave for such a use.

Future Study

Further excavation and study is continuing, although it is hampered somewhat by the fact that the only access is by way of the elevator through the Ruby Fall's gift shop. The lower cave also is covered in a greasy soot that seeps in from the rail tunnel. The management of the commercial cave is being most cooperative and even enthusiastic about the authors' work there, and it is anticipated that, once fully studied and documented, a new body of worthwhile information will be available to future historians on the history of the Lookout Mountain area.

Bibliography and Notes

1. *The Official Military Atlas of the Civil War,* series 1, Vol. XXXI, Part 2, p. 27, "Map of the Battle-Field of Chattanooga."
2. *Civil War Times,* Oct. 1979, p. 32, article titled, "The Journal of a Strange Vacation to the War-torn South and a Visit with U.S. Grant," by William Wrenshall Smith.
3. Clear evidence of saltpeter mining activities may be seen in a grotto just off the right hand wall in an area just before the spiral staircase, in the lower level of the cave.
4. All stated and quoted signatures and other recorded information is taken from the authors' personal fieldnotes and transcribed from 35mm color slides and black/white prints.
5. *Massachusetts Soldiers, Sailors, and Marines in the Civil War,* Vol. III, compiled and published by The Adjutant General, published; Norwood, Mass. 1932, p. 538.
6. *The Signal Corps, U.S.A. in the War of the Rebellion,* by J. Willard Brown, A.M. Boston 1896, pp. 487-488.
7. U.S. National Archives, Military Service Records, (NNCC) division, Washington, D.C. 20408.
8. *Index to Tennessee Confederate Pension Application,* by Tennessee State Library and Archives, Nashville, Tenn.
9. *Roster of Ohio Soldiers 1861-66 War of the Rebellion,* Vol. IV. 37-53d Reg'ts Infantry, compiled 1887, p. 519.

NSS NEWS

SEPTEMBER 1982 VOLUME 40, NUMBER 9

EDITORS: Jay Arnold, Karen Stuck Arnold
1058 Irving Avenue, Glendale, California 91201, Tele: 213-247-7302

ASSOC. EDITOR: Mike Dyas

ADVERTISING MGR: Gerry Forney, 911 Cook St., Denver, CO 80206

INSIDE

COVER: Dave Walker on Drop 18, Sumidero Santa Elena, Puebla, Mexico. This photo was taken during low flow, just before Walker and two companions were trapped by flooding. See story beginning on page 236. Warren Anderson photo.

NEW DUES STRUCTURE

The dues increase approved by the BOG at Bend, Ore., is as follows:

	1 year	2 years	3 years
Regular	**$20.00**	**$38.00**	**$54.00**
Associate:	**15.00**	**29.00**	**40.00**
Family:	**4.00**	**7.50**	**11.00**
Institutional:	**50.00**		
Regular Life:	**350.00**		
Family Life:	**175.00**		

Family members in the immediate family of a member accepting the prepayment option must prepay at the same time for the same number of years.

NSS NEWS (ISSN 0027-7010) is a magazine devoted to speleology. It is published monthly by the National Speleological Society, Inc., Cave Avenue, Huntsville, Ala. 35810. Subscription rate is $10 per year. When changing an address, give old address as well as new. Second-class postage paid at Huntsville, Ala., and additional mailing offices.
POSTMASTER: Send address changes to The National Speleological Society, Inc., Cave Avenue, Huntsville, Ala. 35810.

Deadlines: All ads, articles and announcements must be submitted to the editors by the first day of the month preceding the month of publication (i.e., June 1 for July issue).
Advertising: Display ads must conform to certain sizes based upon multiples of the minimum-sized ad, 1 column (2-3/8 in.) wide by 2½ in. high. A 1x2½ black & white ad costs $12.50 for camera-ready copy. There will be a slight additional charge if typesetting or layout is required. A 2 (4¾ in.) by 2½ ad costs $25, as does a 1x5 ad. A 3 (7-5/8 in.) by 2½ is $37.50, etc. Half-price rates for NSS internal organizations and activities. Others receive discounts for prepayment. Complete sizes and rates — including color surcharge — furnished upon request. See Classified Ad section for Classified rates.

Final Word on the Dues Increase

By Rob Stitt

This column originally was written for the July NEWS, on the assumption that the vote to raise the dues (for Regular members) to $24 per year would be repeated at the summer meeting. I had cast the tie-breaking vote at the spring meeting in favor of $24 dues, and so explained why I had done that and why the dues were increased to $24 instead of the $20 I had advocated earlier. But of course the Board behaved unpredictably. Although I myself had received only four letters opposing the dues increase, apparently many members who were concerned had talked to board members, and the result was that the board first passed a bylaw allowing a decrease in the amount of a previously moved dues increase, and then voted for a $20 dues increase.

I find myself with mixed feelings about this. On the one hand, I would like to keep the dues as low as possible so that our members can afford to remain members and so that we are able to attract new members from among the caving public to expose them to our conservation and safety messages. On the other hand, I would like us to be able to have enough money on hand to produce good publications and to offer enough services to the membership so that they will stay on as members. I seriously wonder if a $20 dues rate will provide enough money to do that.

The budget passed at the spring meeting for the 1982-83 fiscal year had been based on dues of $22.50, an amount that had been recommended by the executive committee after a careful study of our financial situation. I had assumed that if the dues were raised to $24 we would have a little extra money this year to either put away for a rainy day or to provide a little more money for some of the programs that we had cut in order to come up with the $22.50 budget. With $20 dues, however, the board was faced with the problem of having to cut an already bare-bones budget even further. For unknown reasons, recent income has been a little higher than it had been earlier, so the situation was not quite as bad as the executive committee had projected in February — but it is still tight. We had to cut about $4,000 from the budget. This ended up being taken mostly from the *Bulletin* budget, so the *Bulletin* will be a bit smaller this year. There also will be one less issue of the NEWS, since the *Members Manual* now will be one of the regular 12 instead of an extra issue.

If you read my column in the February NEWS, you will remember that I calculated the cost of various dues amounts in 1940 constant dollars, so that we could get an idea what the actual purchasing power of the dues is. Twenty-four dollar dues would have been only $3.34 in 1940 dollars, and $20 dues are going to be about $2.60 by the time they take effect this month. When the Society was founded in 1941 the dues were $3.00 per year — so they are still cheaper than they were then.

The implication of this is, however, that we will have to raise the dues again within a couple of years. One board member, after the vote on the increase was finally over, was heard to say emphatically, "I'm glad that's over! I don't want to hear about the dues again for a long time!" Unfortunately, he will probably be forced to go through this again within two years, unless some drastic changes occur in the nation or in the NSS.

I have believed for years that there really are only three realistic courses of action that can be followed to deal with inflation: we can increase our membership at a rate faster than the inflation rate; we can decrease our expenses (at first by economies, but eventually by cutting services), or we can periodically raise the dues. History has shown that we usually follow the third course. But we don't have to. If we were able to retain even 5% more members each year, or if we were able to maintain a sustained growth rate only twice as high as the current 5% per year we easily could gain enough additional income each year to overcome the inflation rate and keep ahead of the game.

I believe that it is the challenge for the years to come. Can we keep ahead of the inflation rate by membership growth? Or must we continually raise the dues? I think that we can solve it by membership growth, and the board therefore has appointed Elaine Hackerman to head a task force to study the problem and recommend to the board ways it can be done. If you have any ideas, why don't you let her know. Her address is in the *Members Manual.*

In the meantime, I hope you will continue as members. And get your friends to join. Then we will have enough money to keep the Society healthy, and we might be able to do it without raising the dues again. Let's hope so.

CONSERVATION NOTES

Wilderness — HR6542, the Lujan-Seiberling Wilderness Protection Act of 1982, passed in the House of Representatives. The bill would protect existing wilderness from adverse impacts of some mineral leasing and development. The bill does not affect hard-rock mining of strategic minerals such as cobalt, chromium, manganese, molybdenum, copper, nickel and tungsten. It does prohibit soft-rock mineral and energy leasing in designated wilderness areas. The soft-rock minerals include oil, gas, oil shale, coal, phosphate, potassium, sulfur, gilsonite and geothermal development. The bill prohibits soft-rock mining in RARE II wilderness proposals until Congress determines otherwise, or for one generation of forest planning. Congressionally designated U.S. Forest Service wilderness study areas are closed to soft-rock leasing for the duration of their protection in the law that created them. RARE II further planning areas are closed to leasing until a wilderness or nonwilderness decision is made by the Forest Service. BLM wilderness study areas receive no protection, and Alaska lands are not affected. The bill provides that the president could open wilderness areas to mineral development in a "national emergency" if both houses of Congress approved. The energy industry attempted to insert "release" language in the bill to restrict or prohibit future wilderness additions. These attempts were ruled out of order since this bill is concerned with mineral leasing law, while "release" provisions would amend forest management law. Attempts were made to add amendments to weaken the Clean Air Act's protection over wilderness areas and to maintain roads in wilderness for handicapped access. An amendment to permit seismic blasting for energy exploration in wilderness areas failed. The bill provides for on-going mineral surveys in all withdrawn lands. It allows slant drilling into wilderness areas. Opponents of this bill still are attempting to offer additional weakening amendments. Urge your congressmen to support the bill and to oppose further weakening provisions.

Bats and Pesticides — Bats have a poor public image. While many myths exist regarding bats, I shall address here only the myths that most bats are rabid and that the best way to get rid of bats living in buildings is to poison them. Only 10 people in the United States and Canada during a 30-year period have been infected with rabies through exposure to bats. Most exposure to rabid bats results from handling a grounded bat. Any animal that appears sick or behaves abnormally should not be handled. The problem of bats in attics or living quarters has not been addressed adequately. The first, and generally only, thought is to kill them. Usually no one is concerned whether they might belong to one of the species on the endangered and threatened list. It is important to examine how much of a nuisance the bats really are. They do feed on thousands of insects in a single night. A gray bat can eat 500 insects in an hour. Dr. Merlin Tuttle states that bats entering living quarters can be excluded with 1/4-inch hardware cloth placed on top of fireplace chimneys. He also suggests weatherstripping around the attic door. Additionally, he mentions that ventilation systems may also need hardware cloth covers.

Wilderness Subcommittee

By Sharon Kautto

If bat colonies become a nuisance, he suggests that entrance holes to the bats' roosting places be sealed after their fall migration flight or after they have left for their night's feeding. June or July is a poor time to do this as flightless young could be trapped inside. Poisoning of bats seems to be the popular approach to bat problems by the pest control industry and all levels of government. It is a very poor solution and poses a significant public health hazard. DDT or Rozol can sicken the bats, causing them to fall to the ground where they die slowly and where they may be picked up by inquisitive passersby. The use of DDT is limited by law because of harmful environment effects. Rozol tracking powder is an anticoagulant poison. The bats apparently get it on their wings and ingest it during grooming. The pesticide was developed to kill rats and mice. It is registered for household bat control in 20 states. The Environmental Protection Agency concluded Rozol should not be used at all against bats because of hazards presented to the public. Europeans have built bat houses in their backyards and national forests to take advantage of the bat's role as a natural insecticide. Plans for bat boxes can be obtained from Bat Conservation International, c/o Milwaukee Public Museum, Milwaukee, WI 53233. This organization is supported by tax deductible contributions used for public education, conservation and protection of threatened and endangered bats. Additionally, information on building bat boxes and reporting forms can be obtained from the Center for Action on Endangered Species, Dept. TMEN, 175 W. Main St., Ayer, MA 01432, 617-772-0445. The majority of the above bat information was extracted from the August-September issue of *National Wildlife.*

Endangered Species Act — S2309 and HR6133 were passed in the respective houses of Congress to extend the Endangered Species Act for three years. The bills ensure that decisions to list species are made only on biological information (leaving to the exemption process the balancing of economics and biology) and speeds up the process by which species are added or deleted from the endangered and threatened lists. Both bills encourage the establishment of new (experimental) populations of endangered and threatened species. The Senate bill prohibits removing endangered and threatened plants from federal lands for purposes of possession. Even though a strong ESA passed, its effectiveness will depend to a large degree on the funding made available by congressional appropriations committees. The Reagan Administration proposes to spend no more on the endangered species program in FY1983 than it would cost to buy 12 bulldozers for the army. The Administration has proposed budget cuts far below levels authorized by the current ESA and the House and Senate reauthorization bills. A major reduction has been proposed in efforts to protect endangered and threatened species from illegal harvest and trade. No federal matching funds would be provided for state endangered species programs. In the report accompanying S2309, the Senate Committee on Environment and Public Works emphasized that success in conserving endangered and threatened species would depend on close cooperation between the federal and state governments. A large majority of the states with cooperative agreements will have to significantly reduce their endangered species programs if no federal matching funds are available. Several states have taken steps to eliminate their programs entirely. It would be appropriate to write your senators and congressmen thanking them for the passage of the Endangered Species Act Reauthorization, and to urge them to support adequate funding levels. The reauthorization of the ESA passed unanimously. Write your senators at the U.S. Senate, Washington, DC 20510, and your representatives at the U.S. House of Representatives, Washington, DC 20515. If you do not know who your congress-

continued on page 246

CAVE CONSERVATION IN THE 80's

THE 1982 NATIONAL CAVE CONSERVATION & MANAGEMENT SYMPOSIUM

5-7 November 1982

Sheraton Inn, Harrisonburg, Virginia

SPONSORED BY: NATIONAL SPELEOLOGICAL SOCIETY -- NATIONAL CAVES ASSOCIATION -- MAMMOTH CAVE NATIONAL PARK -- AND OVER 30 OTHER ORGANIZATIONS, GOVERNMENT AGENCIES AND COMMERCIAL CAVES.

Topics deal with all aspects of Cave Conservation; Cave Management; Commercial Cave Management; and the Management and Conservation of Government-owned Caves. Papers on Cave Conservation, Cave Management, Cave Gates, Biology, Geology, Archaeology, Cave Diving and What's Happening in the World of Cave Conservation and Management Now.
There will also be nightly entertainment and cave slide shows.

As part of the symposium, a basic course for anyone interested in cave conservation and management will be offered in many fields of speleology. The following will coordinate the basic course as well as papers in their field:
Cave Biology (John Holsinger), Cave Bats (Virginia Tipton), Cave Archaeology/ Paleontology (Fred Grady), Cave Geology (James Quinlan), Cave Diving (Terry Leitheuser), Cave Rescue (Tom Vine), Basic Caving Techniques (Tony McGee), and Government-Managed Caves (James Wiggins).

REGISTRATION FORM

To advance register, send this form to ACCA, P.O. Box 7017, Richmond, Va. 23221.
For additional information call (804) 353-6776

_____ $ 5.00 General Registration Fee.
_____ less $1.00 if advance registration is mailed by 15 October 1982.

Optional Fees:

_____ $ 7.00 Friday Hot Buffet Lunch
_____ $ 7.00 Saturday Hot Buffet Lunch
_____ $ 7.00 Friday Night Banquet Slide Show
_____ $ 7.00 Saturday Night Banquet Field Trip Grand Caverns Fountain Cave
Mixed media presentation
_____ $ 5.00 Sunday Butler Cave Field Trip

_____Total

NAME _____

ADDRESS _____

_____

PHONE: _____

Proceedings will be published but they are not part of the registration fee.
Motel reservations should be made directly with the Sheraton Inn, I-81 - U.S.33 Harrisonburg, Va. 22801, Telephone (703) 433-2521.
For camping information, write to ACCA, P.O.Box 7017, Richmond, Va. 23221.

CAVES & CAVING

MIKE DYAS

Greater Cincinnati Grotto's search for a dry back entrance to PRECINCT ELEVEN CAVE (Rockcastle Co., Ky.) has continued to be frustrating. Since portions of the cave are known to run close under the slopes of an overlying ridge, it would seem practical to dig open a new way in. Parties working both in the cave and on the surface last Thanksgiving probed several likely spots but without luck. On a subsequent trip during January's severe cold wave, known caves in Rockcastle were spouting conspicuous steam plumes — but nothing of the sort was visible above P-11. Gary Bush reports in the February *Electric Caver.*

Tucson's Escabrosa Grotto had an upbeat 1981, not in the least for the fact that the whole year passed without the necessity to re-gate ONYX CAVE — a real first. Onyx access policies have been modified, specifically as concerns large groups. Parties of more than eight will be divided and enter the cave at staggered times, while youth groups may total no more than eight plus two adult leaders. Escabrosa requests at least two weeks advance notice and expects all Onyx visitors to complete release forms. Information from Judy and Marion Vittetoe in the March *Desert Caver* . . . Same issue contains observations by Norm Frater based on several days spent last summer in CHIRICAHUA CRYSTAL CAVE. A comparison of the existing map with passages revealed several puzzles. The double-gated cave is a three-dimensional complex with a variety of features, probably well over 1.5 kilometers in extent (and some 80 meters deep?)

Progress of the ORGAN CAVE SYSTEM (W. Va.) project in 1981 is recapped by Paul Stevens in the April *D.C.* (Grotto) *Speleograph.* Survey of another section — North Upper Level Organ — was wrapped up, and there also were trips to more remote areas such as Jones Canyon and North Humphrey's, with significant virgin cave uncovered. Davd West's ambitious "little red wagon" dig at the Bowen Canyon sump was worked fitfully. Back in town, lots of progress was made on computer processing Organ data. Plans for 1982, in addition to remaining surveying and field-checks, include more stream tracing, use of Ray Cole's cave radio to correlate passage and surface features, and a start on the "final" map intended for a future West Virginia Speleological Survey bulletin. As of the end of 1981, Organ stood at about 61.2 kilometers (or almost 7,300 survey stations worth!) . . . Included in the Western Kentucky Speleological Survey update by Mike Dyas are items that the region's first and third largest known caves are believed almost completely mapped: Caldwell Co.'s LISANBY CAVE with 9.7 kilometers and BIG SULPHUR CAVE (Trigg Co.) at 4.7 kilometers.

April's *Texas* (Speleological Association) *Caver* is another special issue, the theme this time being cave surveying. A featured contribution is by Orion Knox, concerning what he terms "Real Time Survey," in which the usual in-cave data collection is combined with a map draft of considerable detail. Besides the normal instruments, requirements are a compact drafting kit, a drawing board (such as a piece of Masonite) and two 1.5 meter poles. The latter (which Orion fashions from segments of PVC pipe) serve several functions, including instrument support and a standard for estimating widths and heights. "RTS" is best applied in spacious, complex caverns, where a map of superior detail and accuracy can result. But it's not recommended for cramped, vertical or otherwise difficult conditions — nor where the mapper's assistants lack patience! . . . Jimmy Schroeder and James Jasek have taken this style of mapping further, mounting a Brunton transit and small plane table together on a surplus tripod. They're using it to make a highly precise rendition of INNER SPACE CAVERNS, at least the commercial route . . . Other offerings include Mike Warton and George Veni on the use of Suunto instruments; Bill Steele, surveying deep drops; data mathematics by Roger Bartholomew and Peter Yannone, and miscellaneous ideas (e.g., tripods, a protractor in mils) by Jasek . . . Added is update on west Texas' WIZARD WELL, courtesy of Mike Melot. A recent effort by Mike Warton to dive the cave's terminal(?) sump failed to reach bottom of the vertical obstacle.

Dave Bunnell and Carol Vesely's latest way to scratch their caving itch in the Los Angeles area is a survey of southern California sea caves. Granted that the caves' extent won't be impressive, there's still the thrill of not knowing what'll be found around the next cliff; and sea caves do have their special beauties (e.g., unusual plants, animals and coloration). Plus there's considerable physical challenge in skirting slick headlands, dodging crashing surf and perhaps racing the tide. Recent investigations in the vicinities of Montana de Oro State Park and the Palos Verdes nude beach are contained in Southern California Grotto's May *Explorer.* . . . A quite different locale where SCG parties have set out to locate caves is the remote Sierra Blanca limestone outcrop in Santa Barbara County. So far, attempts to reach it have been defeated by the country's exceptional ruggedness and isolation, compounded by poison oak and tick infestation. A good sign noted by Bob Richards' party during a February probe: travertine formations in a canyon draining the limestone escarpment . . . The May *Explorer* was Ray Hardcastle's finale as editor. After five years of meeting the monthly deadline, he turned the newsletter over to Debbie Gogatz and dusted off his caving gear for New Guinea.

After two recent digging trips that produced a modest extension of TRIPLE "H" CAVE, Southern Mississippi Grotto members had an unforseen run-in with the new lease-holders of the surrounding land. Unfortunately, the neighbors don't seem to be very friendly. So, until some arrangement can be worked out, Jim Nanninga and Mike Bograd request cavers to avoid Triple "H," as well as PITTS CAVE (the latter's on other property but is normally approached via Triple "H"). A more positive footnote in the Spring 1982 *MUD* is that the quarry posing another threat to Triple "H" has been closed.

Signs noted by Joe Saunders and others in central Kentucky's FISHER RIDGE CAVE SYSTEM are pretty convincing that, like the nearby MAMMOTH CAVE SYSTEM, aboriginals explored the cave to a surprising extent. Evidence includes charcoal smudges, curious "tic-tac-toe" type scratchings on walls and what appear to be footprints in dry passageways. Unexplained is how Indians found their way into remote parts of the recently "rediscovered" (?) cave, since the two known entrances involve either vertical capability or discouraging water crawling. Other theorized access points to Fisher Ridge are now debris-choked or too tight. Joe's comments are featured in the May *Spelean Spotlight* (Michigan Interlakes Grotto).

Little-frequented SUMMITVILLE MTN. CAVE, Coffee County, Tenn., is the water source supporting the only known population of the Barrens Top minnow. When the cave went dry last fall and many of the fish in the pond and creek below the cave died, Nashville Grotto's Larry E. Matthews was called in by Nature Conservancy and state wildlife officials. No reason for the cave stream failure was evident other than typical autumn drought conditions, and to save the remaining minnows would require trucking in water from a nearby hatchery. But Larry did observe that Summitville Mtn. Cave is fairly complex and extensive (around one kilometer?) and ought to be mapped. En route home, the group visited HUBBARD'S CAVE in neighboring Warren County. The Nature Conservancy is interested in this well-known saltpeter cave because upwards of a half-million bats of several species hibernate there. Information from the October 1981 *Speleonews.*

In Flittermous (N.C.) Grotto's May *Der Fledermaus,* Bob Underwood passes on an interesting tidbit from the Feb. 14 issue of *Science News.* It concerns experiments with "organic" batteries, i.e., those not utilizing the customary metallic elements such as lead, zinc and nickle. Prototypes involve electrodes fashioned from the simple polyacetylene plastic, immersed in a solution containing the salt tetrabutylammonium perchlorate. Theoretically, at least, such a battery would be cheap, lightweight, highly efficient and rechargeable via solar or wind power. While conceived with electric automobiles in mind, organic batteries obviously would have caving applications when they become commercially available (probably five or more years in the future?). In fact, since the plastic components would be moldable, it's conceivable that eventually one's hardhat and battery could be

one and the same unit!

When Doug and Hazel Medville produced their 1971 Randolph County report for the West Virginia Speleological Survey, about 200 caves were included. Progress in subsequent years has been fitful, due to distractions elsewhere in the Mountain State (particularly the FRIAR'S HOLE SYSTEM), as well as the sprawling county's rugged terrain and unpredictable weather. Nonetheless, Randolph now has around 350 known caves, and some of the "older" ones have seen further exploration and mapping. Most recent activity has been in the SINKS OF GANDY vicinity, the generally remote western slopes of Cheat Mountain and the Elk River corner of southern Randolph (also see the December 1981 NEWS). The Medvilles' overview of Randolph County progress is featured in the May *D.C.* (Grotto) *Speleograph*. They envision a WVSS update on the county in the near future, the question being whether it should be a total revision or include only supplementary information . . . Bill Storage adds further word on doings in the Elk River neighborhood as the 1982 "season" began. A spring flood — apparently aggravated by logging and stripmining on surrounding mountainsides — thoroughly clogged the unstable Fortune Radish entrance to ELK RIVER CAVE, and also changed nearby FALLING SPRING CAVERN for the worse.

Glacier Grotto's January-February 1982 *Alaskan Caver* includes a translation of a Japanese magazine article titled, "The Glitter of Underground Castles of Glass." It's an account by Takamine Fujiki of a Japanese university group's glacier caving expedition to Alaska last summer. When they arrived at the toe of Byron Glacier (Chugach National Forest), the ice cave previously known there was found — as such caves may — to have melted. A semi-vertical opening further up the glacier was probed but a sudden icefall prompted the party's hasty exit. Finally, they studied an ice cave on Crow Glacier, some 160 meters in extent, which they considered a "bright object d'art of ice" . . . In so vast an expanse as Alaska, caver proliferation might seem a moot issue, but Doug Buchanan thinks otherwise in a letter to the Alaskan Caver. He pleads that cave locations be divulged only word-of-mouth, on the belief that conservation ethics are better passed along thusly. As for club newsletters, he's wary of the perceived tendency of "publishing for the sake of publishing" and wants no more than essential announcements or discussions of issues. Doug would be perfectly happy to let caves be "reciscovered" over and over, and reasons that, "a good thing divided among 10 people is no longer a good thing divided among 100."

Miami Valley (Ohio) Grotto's *Cave Cricket Gazette* for June provides further information on the March flash-flood in central Kentucky's FISHER RIDGE CAVE SYSTEM that nearly was the undoing of several Ohio and Michigan cavers. Participant Joe Saunders feels that other accounts created the impression that use of the low-lying Splash entrance on this occasion was reckless. He points out that there'd been no water problems on 15-odd trips the preceding year, and the weather forecast for the day in question called for clearing. Joe concludes the flood that occurred couldn't have been reasonably foreseen.

With its 37-meter entrance drop and massive formations, West Virginia's GRAPEVINE CAVE (Greenbrier County) was a classic caving attraction prior to commercial development — as LOST WORLD CAVERNS — in 1969. Somewhat surprising, the cave never had been properly mapped, something Bill Balfour and Greenbrier Grotto associates decided to take care of last year, in cooperation with the management. Although trips have been limited to the cavern's regular operating hours, it turns out that Grapevine/Lost World hadn't been well explored and is considerably larger than thought. Off the tourist route, Balfour and company encountered a canyon maze complex and climbed to a promising upper level lead. Well over 1.3 kilometers was surveyed as of report in the June *Carabiner Wrap-Up* . . . Bob Liebman mentions that the Monroe County fieldhouse near Union, W. Va., a cavers' rendezvous in the 1970s, is no more. The building actually was a historic log cabin beneath a recent exterior and has been disassembled, to be rebuilt on another site.

A note from Buzz Hummel in the May-June *Southwestern* (Region) *Cavers* describes experiments by New Mexico BLM authorities in relocating threatened bat colonies. Last year, a roost of pallid bats was moved successfully 100 kilometers to Carlsbad Caverns National Park from a ranch, the owner of which had shotgunned several dozen bats for dropping guano on his house.

The Society

LETTERS

The NEWS welcomes letters on any caving-related topic. To be acceptable for publication, the writer's name and full address must accompany the letter. Letters in excess of 350 words will be subject to editing.

AMERICAN CARBIDE LAMPS

Thank you for the copy of your June 1982 issue . . . which you have sent to my attention. However, I must challenge the copyright on page 166 by Mr. Gregg S. Clemmer for a listing of "American Underground Acetylene Lamps." Of course, you may have no way of knowing, but that very listing was first published over my copyright in the spring 1981 issue of my *Underground Lamp Post,* pages 3 and 4.

That listing is the result of over 20 years of painstaking research and correspondence on my part. The content, format and information communication intent are unmistakably mine. I am sorry that you were fooled into believing that this was an original listing which "could prove to be definitive." Conversely, it is blatant plagiarism.

All readers should know that I intend to use this listing and all other of my original information in the *Lamp Post* publication in my own book which is now in preparation.

I would expect a low-key explanation and warning in a future issue of the NEWS — no need to impugn your own integrity. Perhaps a caution from your editorial chair would dissuade others from falling to the same temptations and could encourage true scholarship.

Henry A. Pohs
Denver, Colo.

Re the article by Gregg S. Clemmer . . . I was at first disappointed to see some minor errors in the data presented, but outrage is the word for my feelings when I saw the list of "American Underground Acetylene Lamps." The major portion of that list is copyrighted by Henry Pohs. It is the result of efforts by Henry and many other lamp collectors. It cannot even be represented as a current revision of his work. There are known additions which include the Scoby lamp, the Shanklin lamp and the Steindropper lamp. Makers of the Arrow and Pocahontas lamps are also known. And more.

I feel you failed to have the article edited for technical/historical accuracy. What can I ever believe in other articles that I read in the NEWS?

Paul L. Kouts, NSS 17666
Staffordsville, Va.

Gregg Clemmer replies:

Mr. Pohs and Mr. Kouts' assertion of plagiarism on my part is without grounds. The short historical article and "brand name" listing at the end are the results of my extensive research and communication with other lamp collectors. A comparison of my lamp listing with Mr. Pohs' reveals numerous similarities . . . of course. If we were to research automobile brand names from 1900 to date, we would certainly both include Buick, Ford, Chevrolet, Reo, Maxwell, Pontiac, Cord and a host of other well-known and moderately known names.

If we had indeed done independent research, we would be expected to differ on some of the rarer brands. Likewise, Mr. Kouts points out that my listing does not include several of Mr. Pohs' brands and I point to several items not included in his list.

In my unpublished manuscript, I have credited Mr. Pohs as well as Mr. Kouts with valuable source material on several unique lamps.

If I have erred in this episode, it is in my neglect to include comprehensive footnotes and bibliography for the text of the short article.

What can I do to mollify Mr. Pohs and Mr. Kouts? I have mentioned them in my completed manuscript for their helpful comments. But then, I also owe thanks to Larry Matthews of Tennessee for his information of the rare Lunkenheimer and the Buddy lamps he found. And Larry Peterson, caver, who first directed my attention to the unknown Red Star carbide lamp and Schneider's Lamp. Rich Finch of Cookeville, Tenn., cheerfully loaned me much of his manuscript material, offering great encouragement for the progress of the book. Donald Davis loaned his files on lamps and his private correspondence with such notable collectors as the late George Bayles and Chuck Young. And I can go on.

Others deserving mention would include family members of the early manufacturers, and in several cases, interviews with surviving employees. I am particularly indebted to Mrs. Ben Williamson Jr. and Mr. Davis Geiger, associated with the Ashmead Co., manufacturers of the Elkhorn and Buddy lamps. Mr. Ted Simmons, son of Samuel E. Simmons, offered unique insights into his father's lamps as well as directing me to Mr. M.K. Phillips, who remembers making Guy's Droppers in 1913 while doing contracting work for Litchfield Lamp Company, Litchfield, Ill. And this list could go on to include members of the Shanklin family and others as well.

I had the able assistance of at least four newspapers and 20 local libraries and their staffs. Twelve community Chambers of Commerce deserve partial credit for their referral help, usually to a local historian, library or historical society.

Cited sources are too many to mention here, but include selected articles from the *Acetylene Journal, Keystone Mining Catalog* (Mine and Quarry) *The Colliery Guardian, The Engineering and Mining Journal, Mines and Minerals, Scientific American, Michigan Miner,* over 40 city directories, *Coal Age, Colorado Magazine, Guide Pratique de L'usager D'Acetylene, Journal of Spelean History,* various bulletins, *Mining Science, The Colliery Engineer, Transactions of the American Institute of Mining Engineers,* and dozens more. Yes, I include *Early Underground Mine Lamps* and the *Underground Lamp Post* by Mr. Pohs.

This may or may not be enough for Mr. Pohs or Mr. Kouts. I am sorry they feel the way they do. I stand by my research and state that I can document any particular point I wrote as mine and independent of any help in their part except as acknowledged in my text. I attribute to Mr. Pohs six separate brands [of which] I was not aware. Most of these were reported to him via other collectors. Taking his lead, I found that the so called Ott lamp from New Jersey was instead made by William J. Otto of that same state. To Mr. Kouts, I credit

showing me a picture of Wendell Wilson's rare Daylight cap lamp.

With regard to Mr. Kouts' comments on my historical accuracy, I state with no reservations that I can document what I write. Speculation, where present, is presented and identified as such. Errors, where present, are mine and mine alone. This is not the proper forum, but I invite Paul to direct his questions about my research to me at his leisure at which time I will cheerfully go over my points with him and hopefully learn something in exchange. I am sure Mr. Pohs and Paul are aware of the minor errors in their works and like responsible historians will strive to correct them and continue this interesting study we all enjoy.

POTENTIAL DANGER WITH SIMMONS ROLLER

Ron Simons has designed a neat device to be used as chest roller in a ropewalker system. Women may find it easier to use than a Blue Water or Gossett chest box. However, the two slots through which you thread one-inch webbing to attach the roller to your chest sling have razor-sharp edges. These could conceivably saw through the webbing, releasing your upper body from the line quite suddenly.

I filed all four edges smooth before sewing the device to my chest sling. Since then I've heard of one instance where the Simmons roller frayed the webbing after only 80 feet on the line.

I'm sure Ron will make an adjustment on his roller — but meanwhile check those raw edges. Upside down is no fun at all!

Janet McClurg
Mountain View, Calif.

Ron Simmons replies:

[Janet McClurg's] concern about the edges of the webbing slot is something that I have heard from others. The lower edges of the webbing slots have a fairly sharp angle but are not razor-sharp. I hand file each shell to take off the machined edges, which are razor-sharp. The edges are filed enough that there should not be a great problem with wear on the one-inch webbing. The upper edges of the slots do not come in contact with the webbing when in use and should present no problem with wear. Additional filing can be done on the lower edges if desired and will extend the webbing life.

Even without additional filing the webbing should last many miles of climbing. The harness attached to my chest roller now has over seven kilometers of climbing on it and is just starting to wear through the . . . one-inch webbing.

As for the instance of the webbing fraying after 80 feet of climbing, I have not heard anything of this and find it hard to believe. I would like to obtain more information on this from the person to whom it happened. You have a legitimate concern about the slot edges if the above instance is true. But in actual use, the slot edges have not proved to cause an excessive amount of wear on the one-inch webbing. But in deference to your comments and the comments of others, future Simmons Rollers will have more rounded webbing slots, if for no other reason than to put people's minds at rest.

NEWSLINE

By Jay Arnold

When a ski-masked man appeared overhead on a ledge in Indiana's **Marengo Cave** and fired a sawed-off shotgun into the ceiling, some of the 27 visitors on the cave tour thought it was just part of the show. But when the man jumped down, ordered everyone to "Freeze!" and then began taking purses and wallets, the tourists realized that robbery wasn't supposed to be part of the program.

"Folks, this is the real thing," guide **Peter Crecelius** (NSS 14503A) told his startled customers, according to news accounts quoting Marengo Cave owner **Gary Roberson** (NSS 9364R). Crecelius was the first to turn over his wallet.

Adding insult to injury, the bandit, after grabbing about $300 in cash, turned off the lights in the Music Hall, swiped Crecelius'

continued on page 246

REGIONS

TEXAS

Powell's Cave — Texas' longest at 11 miles — has been connected with nearby Neel's Cave through a series of sumps in upstream Neel's. The connection was made on the last weekend in July by George Veni and Randy M. Waters, who, entering Neel's with diving and survey gear, first had to traverse 2,000 feet of mostly crawling stream passage to reach the Neel's Sump. They dove and surveyed nearly 2,000 feet between the next four sumps. After 12 hours they decided to close the book and go for the physical connection. Four more sumps and nearly 3,500 feet of stream passage led them to a mud slope containing a footprint — the connection!

A few thousand feet further they exited Powell's entrance, tired and happy after 20 hours underground. Once a survey is done to link up the two caves, the Powell's/Neel's System should be about 13 miles long.

In June five cavers from Austin and San Antonio swam three miles upstream in Honeycreek Water Cave, Comal Co., Texas, to reach the Trification — an area where the main passage splits up three ways. Nearly a kilometer of passage was surveyed, with two more side leads discovered. The passages contained sticks and leaves, but a desperately needed back entrance was not found.

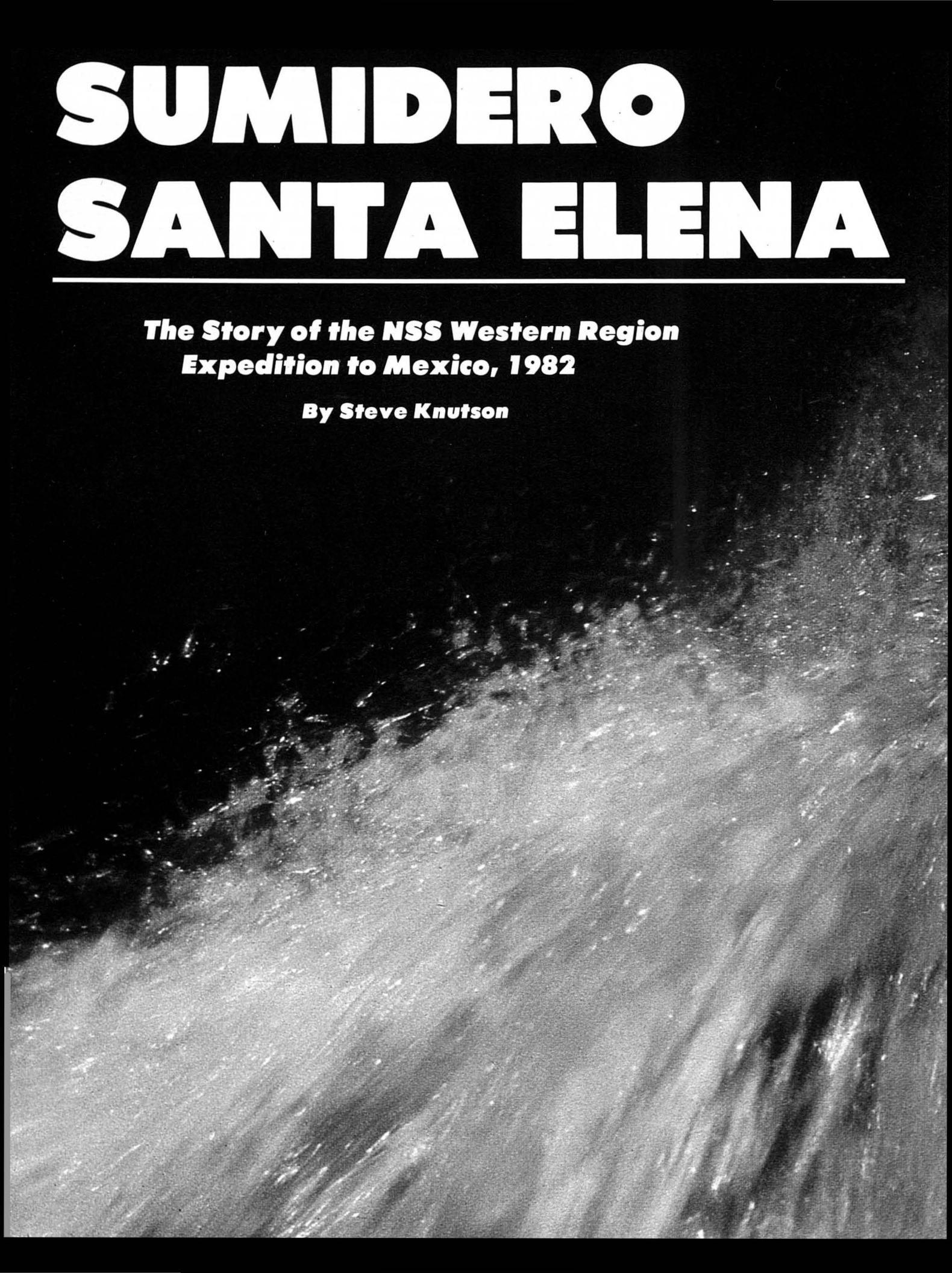
The following week three San Antonio cavers with diving gear pushed a short sump in

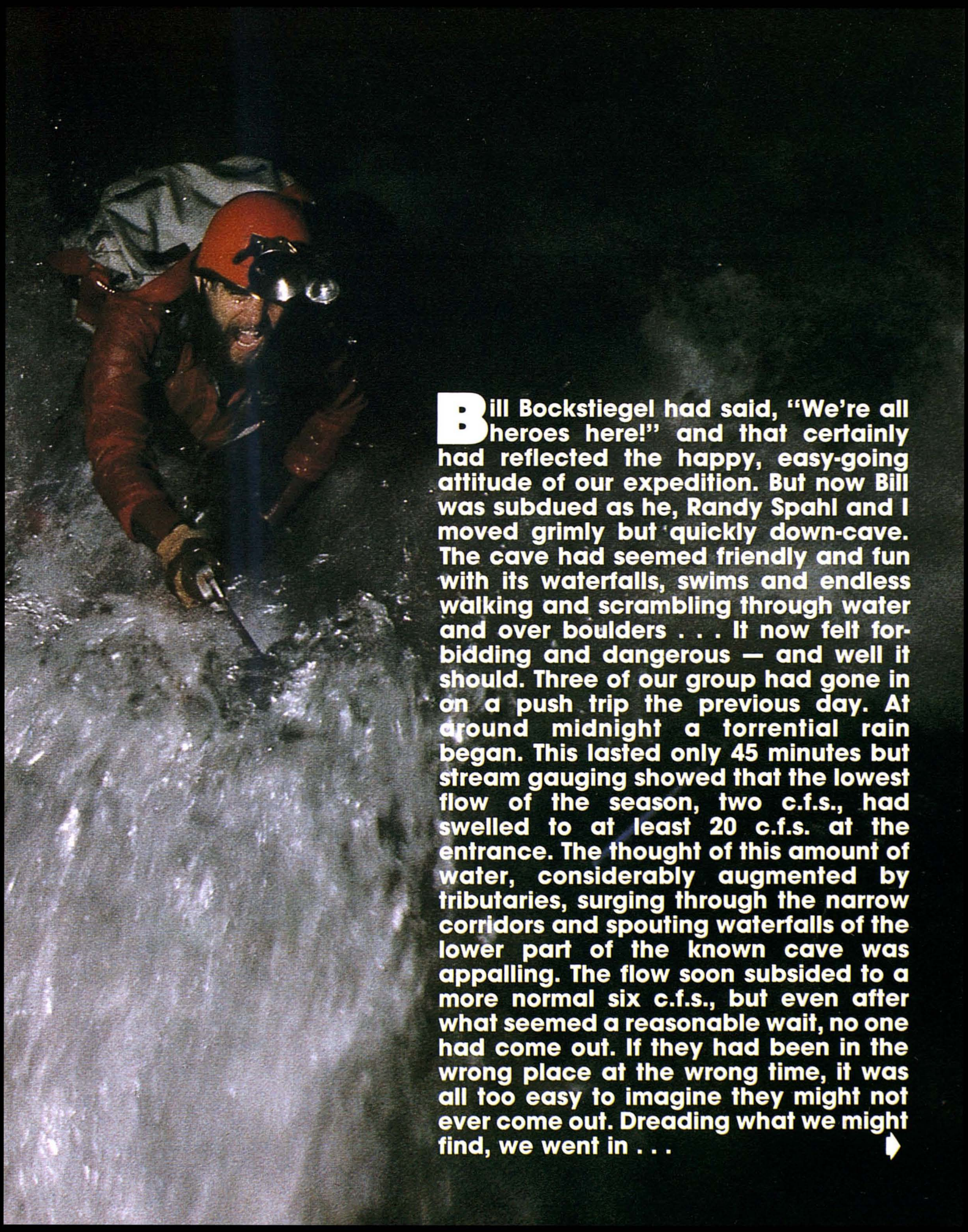
continued on page 246

SUMIDERO SANTA ELENA

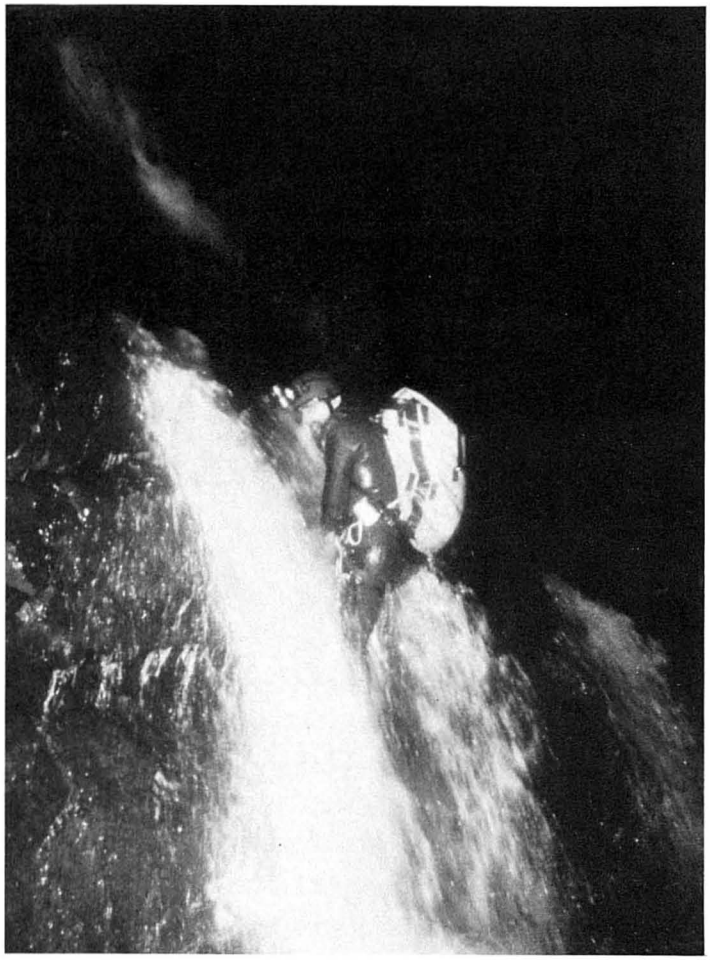
The Story of the NSS Western Region Expedition to Mexico, 1982

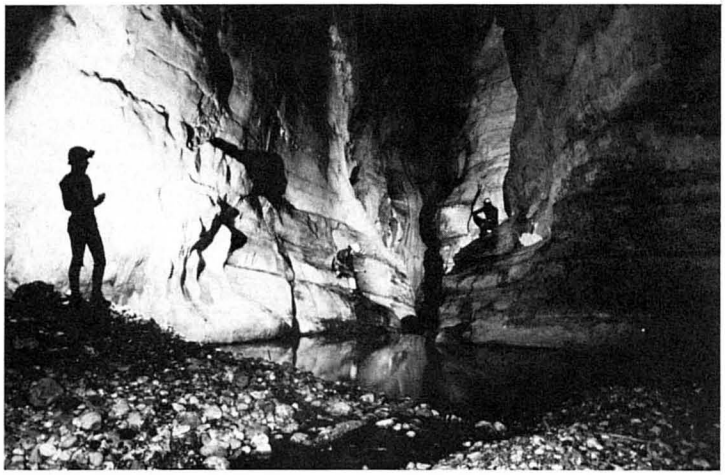
By Steve Knutson

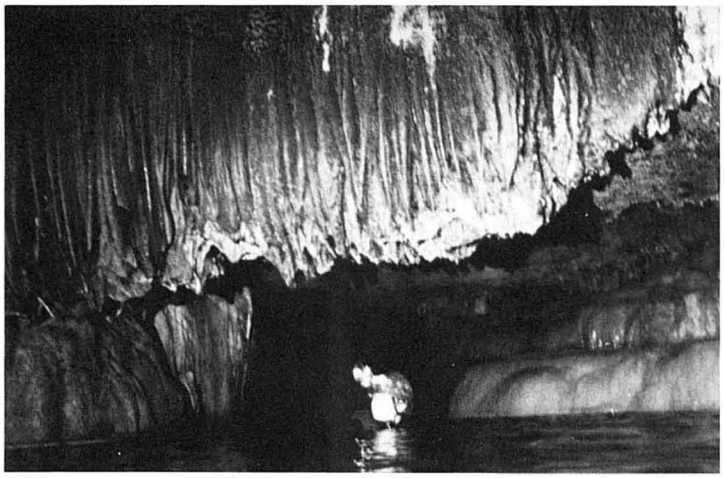


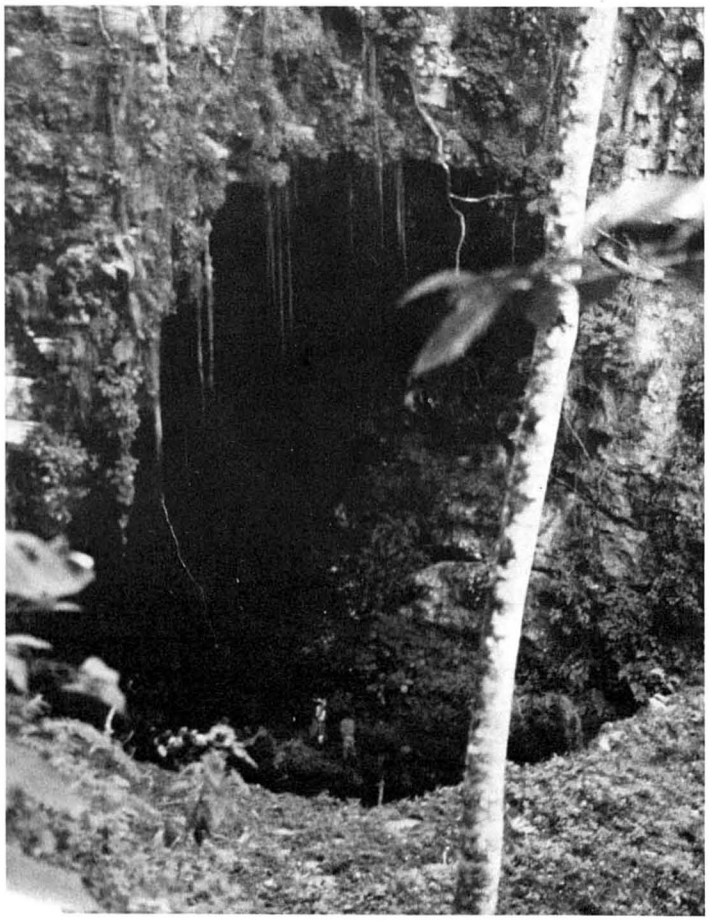


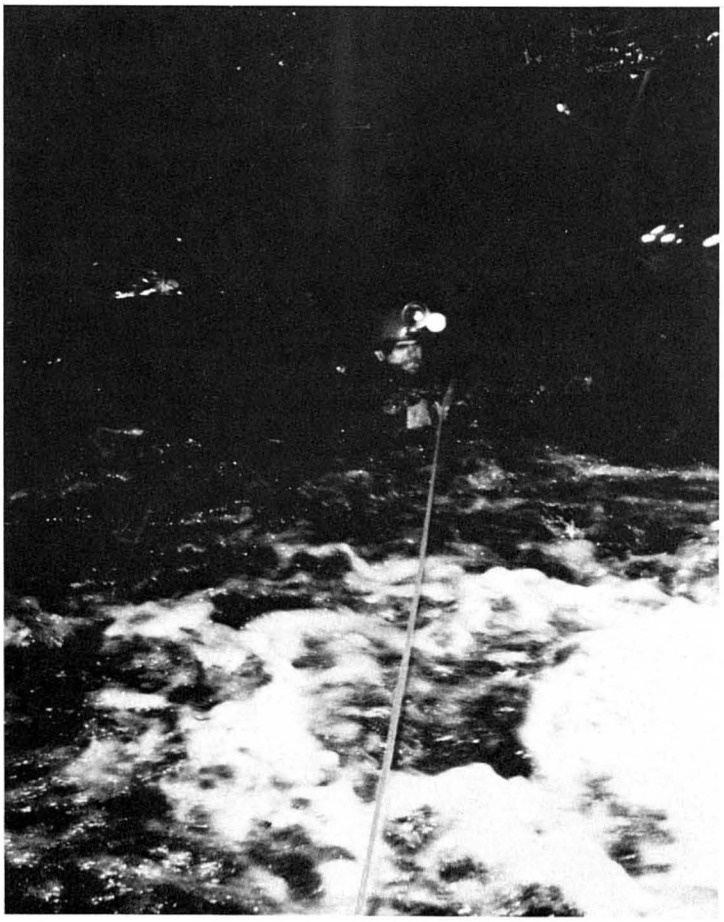
Bill Bockstiegel had said, "We're all heroes here!" and that certainly had reflected the happy, easy-going attitude of our expedition. But now Bill was subdued as he, Randy Spahl and I moved grimly but quickly down-cave. The cave had seemed friendly and fun with its waterfalls, swims and endless walking and scrambling through water and over boulders . . . It now felt forbidding and dangerous — and well it should. Three of our group had gone in on a push trip the previous day. At around midnight a torrential rain began. This lasted only 45 minutes but stream gauging showed that the lowest flow of the season, two c.f.s., had swelled to at least 20 c.f.s. at the entrance. The thought of this amount of water, considerably augmented by tributaries, surging through the narrow corridors and spouting waterfalls of the lower part of the known cave was appalling. The flow soon subsided to a more normal six c.f.s., but even after what seemed a reasonable wait, no one had come out. If they had been in the wrong place at the wrong time, it was all too easy to imagine they might not ever come out. Dreading what we might find, we went in . . .

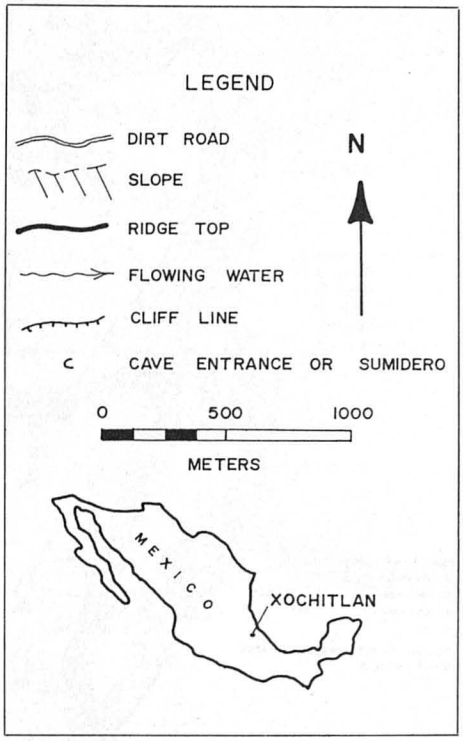


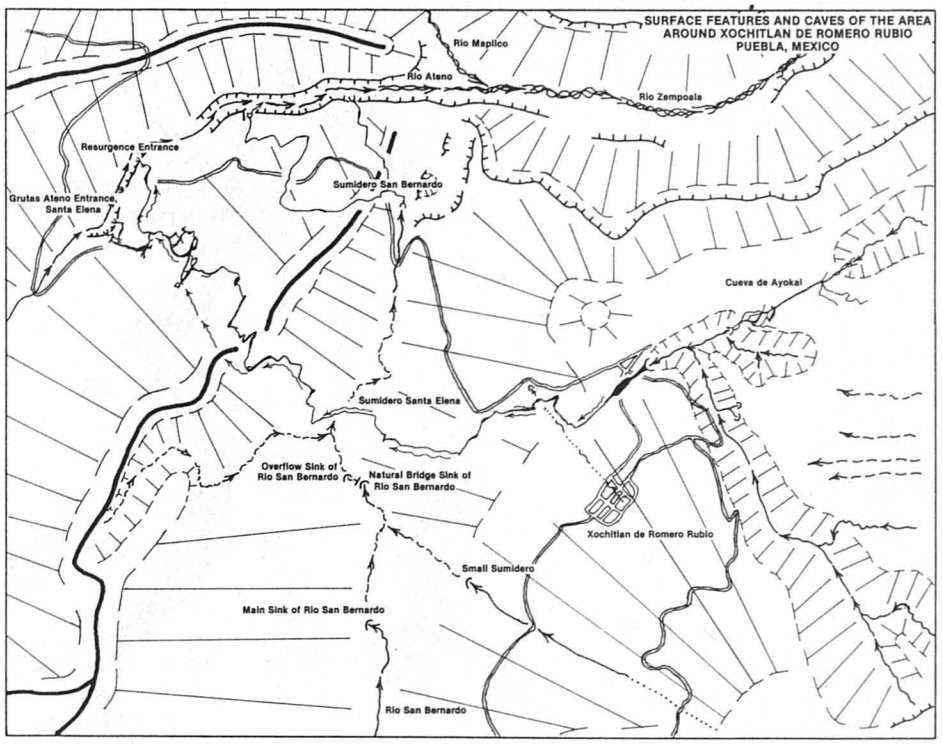












Background

January 1980 found Bill Liebman, Maureen Cavanaugh and I rambling down the San Bernardo Valley in the northeast corner of the state of Pueblo in Mexico. Below the town of Xochitlan we found Sumidero San Bernardo, which, along with a few other caves in the area, had been scouted by Nevin Davis, David McKenzie and others in the early 1970s. With Ernie Garza and Allejandro Villagomez we explored and mapped the sumidero, going 600 meters through seven swims and 10 short rope drops to a lower entrance. It became apparent the valley held other secrets. Sumidero San Bernardo is essentially dry though it obviously had been the first piracy of the surface stream that once had drained the valley. Where was this water now? The bedrock structure indicated piracy would trend toward the west toward the adjacent Ateno River Valley. When Maureen and I hiked that valley we found a large resurgence with a dry-season base flow of 15-20 c.f.s. about 500 meters downstream from Grutas Ateno, a dry cave known to McKenzie. This fine resurgence appeared to be what we were looking for — the main drain of the San Bernardo Valley.

The resurgence was sumped just inside, but a nearby entrance, Grutas Ateno, proved to be an overflow. The passage within soon led to the main stream of the resurgence. With outward airflow as well, this looked pretty exciting! We pushed it 300 meters or so but had to leave it, going strong.

In late January 1981 Jon Burkig, Todd Rasmussen and I returned to San Bernardo Valley to pursue the Resurgence Cave. We were joined in our camp near the Hacienda San Bernardo by Bill Bockstiegel, Chris Partridge and Mike Boon. While we pushed a side lead in Sumidero San Bernardo we thought was heading for the resurgence, Boon walked about and encountered, just below the main road at the edge of Xochitlan, a large sumidero entrance, taking about two c.f.s. and apparently heading west. We had been told about this by locals but had forgotten about it. Now Boon insisted it must be part of the resurgence and went back with Burkig and a rope for a drop just inside. They went 500 meters to a second drop and indeed found the trend to be southwest, diagonally *up* the San Bernardo Valley, toward the sink point of the surface stream.

Our San Bernardo lead had gone to another lower entrance, making a through-trip of 1,800 meters with 13 short roped drops. With this completed we turned our attention to the Resurgence Cave. Entering through Grutas Ateno, Bockstiegel, Rasmussen, Burkig and I pushed on another 500 meters to a sump. The heavy water flow was mostly fun, but in a couple places the ceiling was only a half-meter above the water. Not a good place to be in a flood.

This was disappointing but on a subsequent trip we climbed the walls near the sump into dry overflows, one of which led 500 meters further east, with outflowing air, to a large room. High on one flat, fault-faced wall was the only continuation, unreachable without an aid climb. The great San Bernardo Valley system we had envisioned seemed to be inaccessible from below.

After our second disappointment in the Resurgence Cave we turned to the sumidero below town, which the locals called Santa Elena. Mapping our way in, we got a little more than 500 meters to a fourth waterfall, the huge entrance room giving way to a 10-meter wide, very tall canyon passage. Even in this, airflow could be felt, and it seemed indeed that Santa Elena could be connected to the Resurgence Cave. This notion was reinforced when we searched the valley below and found no openings with airflow and when Bockstiegel's dye-trace from the stream sink in San Bernardo Valley turned up at the resurgence. An air photo provided by Joe Lieberz showed a 2.5 kilometer straight-line distance between Santa Elena and the Resurgence Cave. If they were connected the through-trip would be some five kilometers with an outrageous number of vertical drops! With our minds slightly boggled by this speculation we left for some high elevation scouting in Guatemala and Honduras. Santa Elena would have to wait.

Around April 1 Burkig and I returned and again established camp near the hacienda. We pushed on past the fourth drop and along 300 meters of boulder scramble and wading to a fifth falls, which we rigged with a handline. The swim below led to another drop, where we dulled two drills trying to set a bolt before realizing the cave stream had cut down into a thick bed of chert.

On the next trip we brought in pitons and used them on the sixth and adjacent seventh drops where the chert thankfully was faulted away. Beyond was several hundred meters of swim-walk-boulder-scramble to Drop 8 where the big passage changed to an extremely tall but quite narrow canyon. Drop 9 was not far and here we received a nasty surprise — a two-meter wall of foam, the product of a tributary reeking of sewage . . . We were now directly below the town. This inlet later became known as the Nauseamiento and the evil, dark waters beyond, the Rio Herpes.

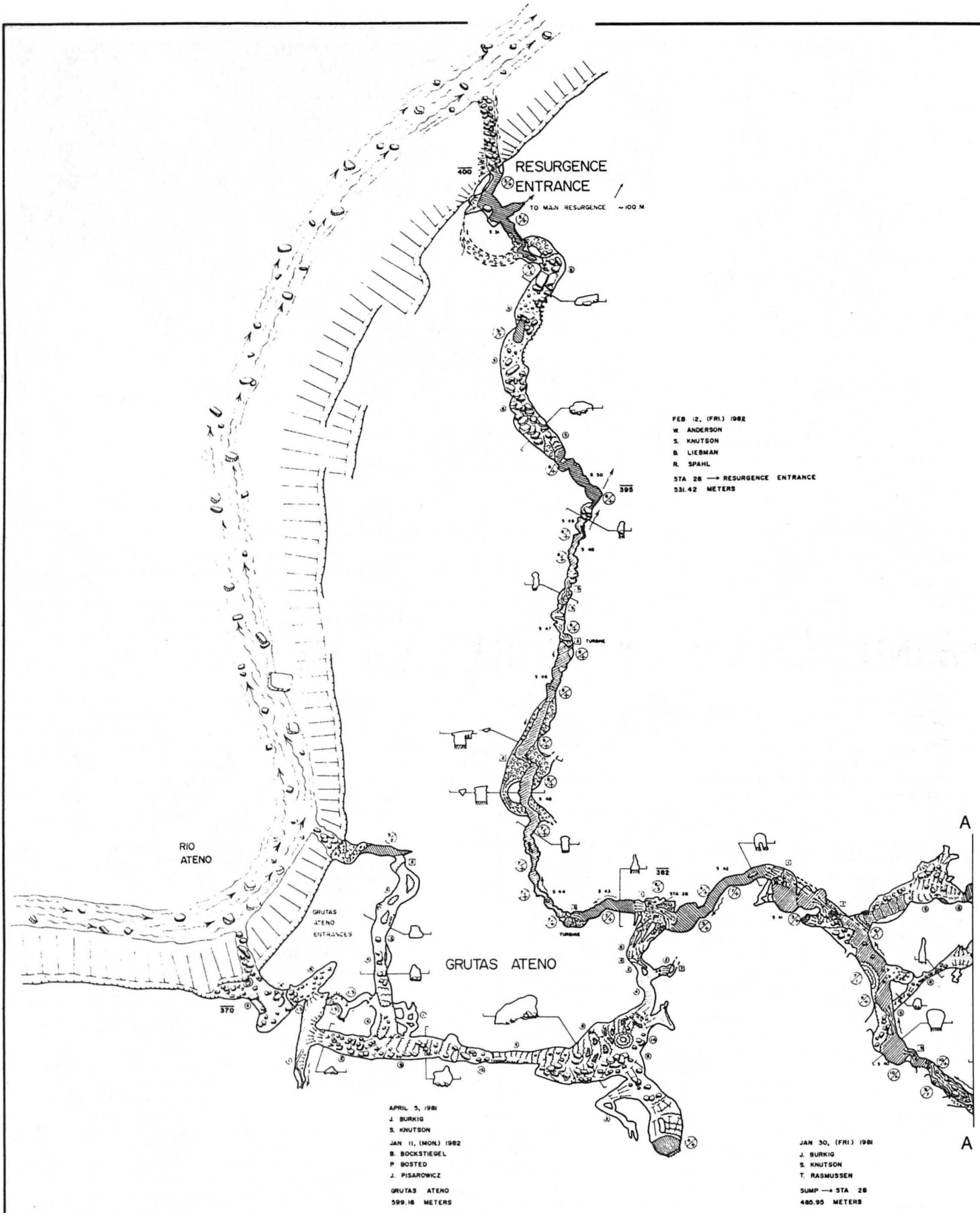
The wading became treacherous owing to the slime on the smoothly contoured rocks. And in the swims one made every effort to keep one's chin up and mouth shut! We continued a hundred meters to the top of a waterfall, Drop 10, where we turned back, out of rope, 1,500 meters from the entrance.

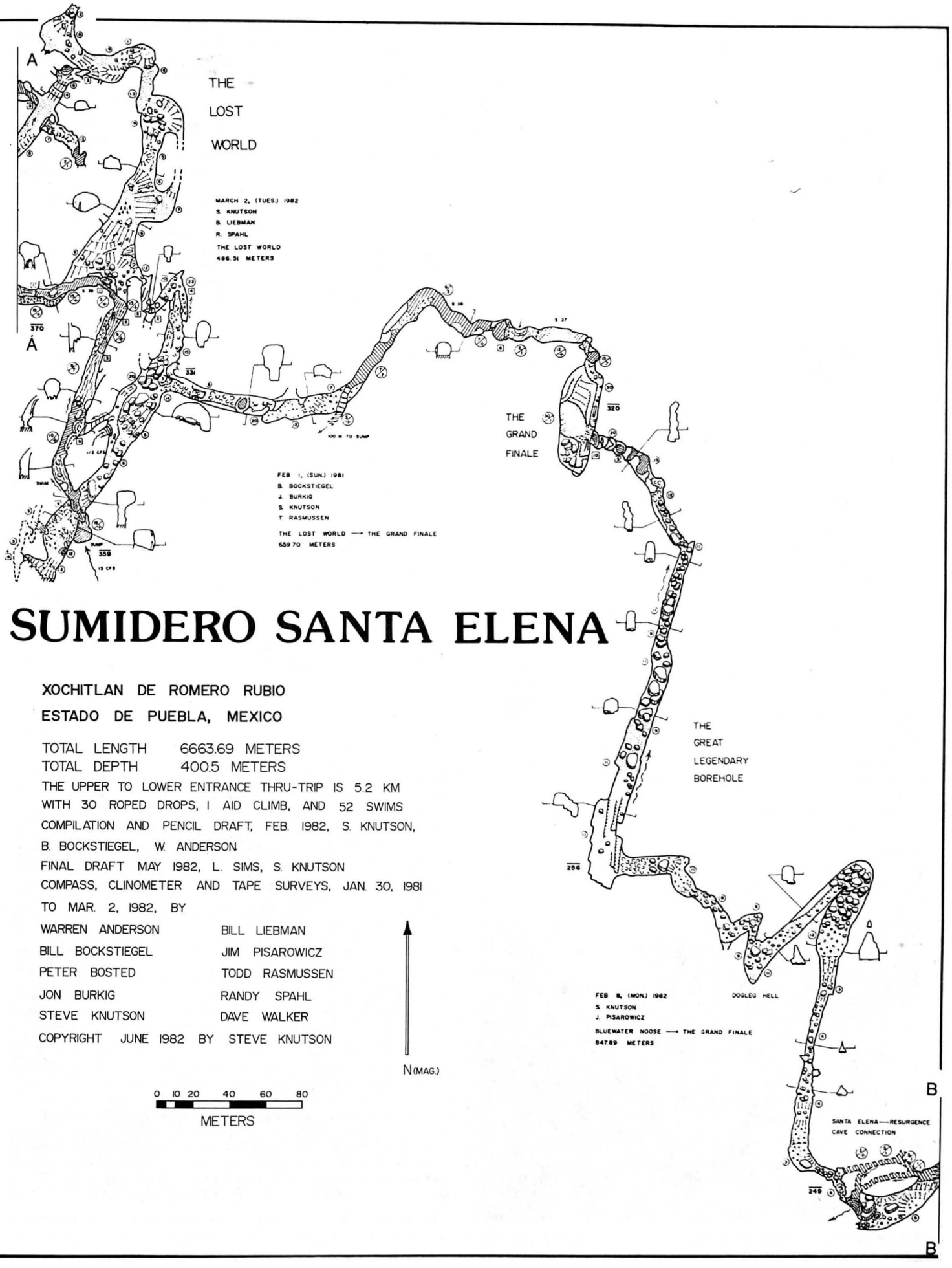
On our third trip Jon thought we should push on without mapping, to see if "conditions," i.e., the purity of the water, would get better. Thus we

continued on page 242

Clockwise from top left: Non-vertical Drop 7. Note chert bed. (Steve Knutson); **Canyon Passage.** (E. Garza); **Swim near the Grand Finale. The formations have been chopped off by occasional flooding.** (Steve Knutson); **Passing white water with canal line.** (Dave Walker); **Sumidero Santa Elena entrance.** (Steve Knutson)

Overleaf: Bill Liebman on Drop 7. (Steve Knutson).


RESURGENCE ENTRANCE
TO MAIN RESURGENCE ~100 M
400
395
382
370
RIO ATENO
GRUTAS ATENO ENTRANCES
GRUTAS ATENO
TURBINE
A
A
FEB 12, (FRI.) 1982
W. ANDERSON
S. KNUTSON
B. LIEBMAN
R. SPAHL
STA 28 → RESURGENCE ENTRANCE
531.42 METERS
APRIL 5, 1981
J. BURKIG
S. KNUTSON
JAN 11, (MON.) 1982
B. BOCKSTIEGEL
P. BOSTED
J. PISAROWICZ
GRUTAS ATENO
599.16 METERS
JAN 30, (FRI.) 1981
J. BURKIG
S. KNUTSON
T. RASMUSSEN
SUMP → STA 28
485.95 METERS



SUMIDERO SANTA ELENA

XOCHITLAN DE ROMERO RUBIO

ESTADO DE PUEBLA, MEXICO

TOTAL LENGTH 6663.69 METERS
TOTAL DEPTH 400.5 METERS

THE UPPER TO LOWER ENTRANCE THRU-TRIP IS 5.2 KM WITH 30 ROPED DROPS, 1 AID CLIMB, AND 52 SWIMS

COMPILATION AND PENCIL DRAFT, FEB. 1982, S. KNUTSON, B. BOCKSTIEGEL, W. ANDERSON

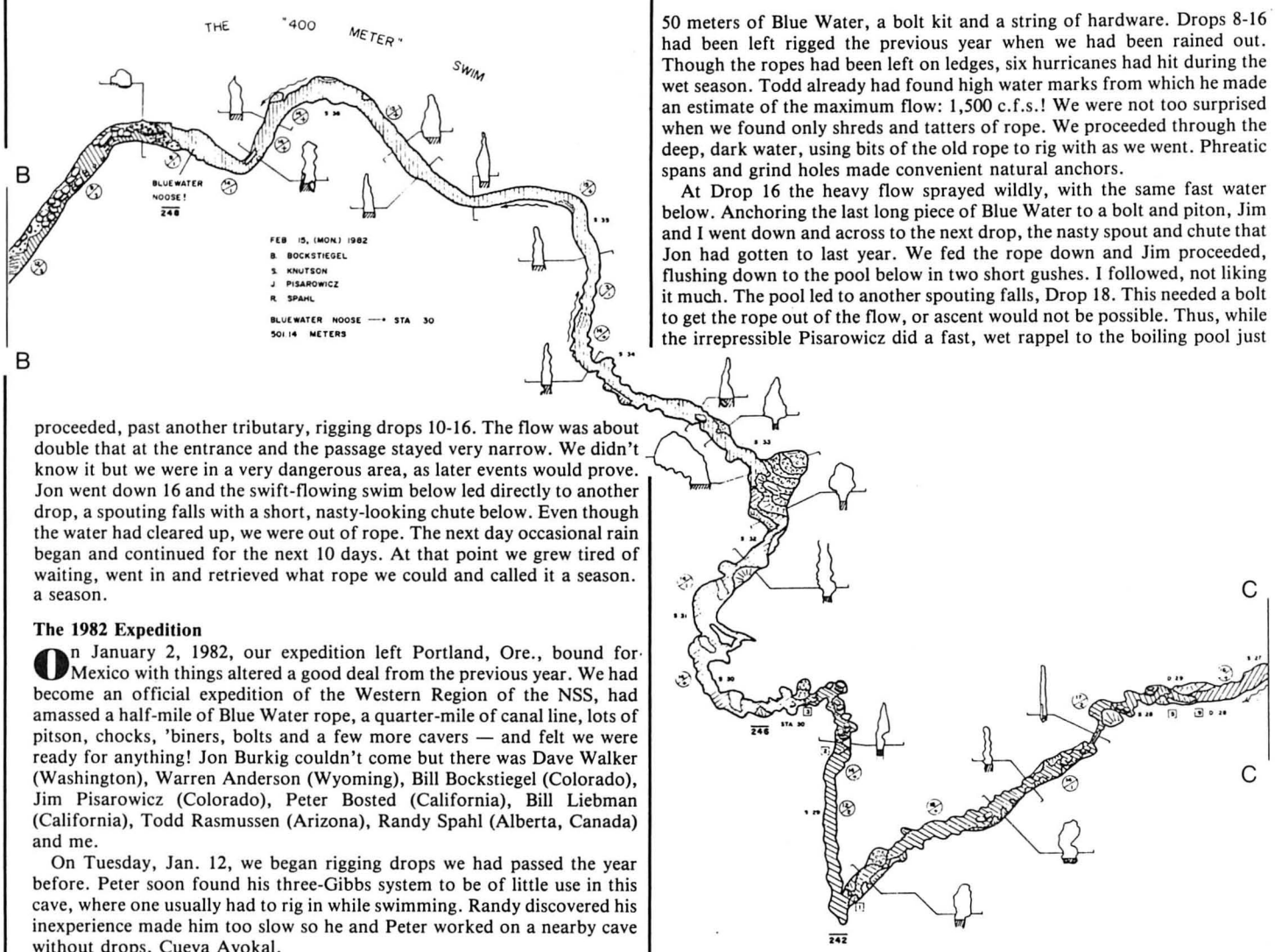
FINAL DRAFT MAY 1982, L. SIMS, S. KNUTSON

COMPASS, CLINOMETER AND TAPE SURVEYS, JAN. 30, 1981 TO MAR. 2, 1982, BY

WARREN ANDERSON	BILL LIEBMAN
BILL BOCKSTIEGEL	JIM PISAROWICZ
PETER BOSTED	TODD RASMUSSEN
JON BURKIG	RANDY SPAHL
STEVE KNUTSON	DAVE WALKER

N (MAG.)

0 10 20 40 60 80
METERS



proceeded, past another tributary, rigging drops 10-16. The flow was about double that at the entrance and the passage stayed very narrow. We didn't know it but we were in a very dangerous area, as later events would prove. Jon went down 16 and the swift-flowing swim below led directly to another drop, a spouting falls with a short, nasty-looking chute below. Even though the water had cleared up, we were out of rope. The next day occasional rain began and continued for the next 10 days. At that point we grew tired of waiting, went in and retrieved what rope we could and called it a season. a season.

The 1982 Expedition

On January 2, 1982, our expedition left Portland, Ore., bound for Mexico with things altered a good deal from the previous year. We had become an official expedition of the Western Region of the NSS, had amassed a half-mile of Blue Water rope, a quarter-mile of canal line, lots of pitson, chocks, 'biners, bolts and a few more cavers — and felt we were ready for anything! Jon Burkig couldn't come but there was Dave Walker (Washington), Warren Anderson (Wyoming), Bill Bockstiegel (Colorado), Jim Pisarowicz (Colorado), Peter Bosted (California), Bill Liebman (California), Todd Rasmussen (Arizona), Randy Spahl (Alberta, Canada) and me.

On Tuesday, Jan. 12, we began rigging drops we had passed the year before. Peter soon found his three-Gibbs system to be of little use in this cave, where one usually had to rig in while swimming. Randy discovered his inexperience made him too slow so he and Peter worked on a nearby cave without drops, Cueva Ayokal.

We proceeded slowly, rigging to doubled bolts or pitons. It had rained the week before we arrived and when Todd, a professional hydrologist, set up his gear at the entrance, he found the flow to be more than six c.f.s. This was a bit high for operations far down in the cave, but the weather was good and flow decreased daily. The threat of sudden rain was very real in this area so we planned for high flow retreat in the rigging of drops and canals.

Push 1

On Sunday we finally got off: Pisarowicz and I would push on while Walker, Rasmussen and Bockstiegel would start mapping from Drop 10 (station 66). Moving rapidly we made Drop 10 in less than three hours, recarbided, ate (trying to ignore the sewage and slime) and moved on with

Dave Walker at eddy with sewage foam. (Warren Anderson)

50 meters of Blue Water, a bolt kit and a string of hardware. Drops 8-16 had been left rigged the previous year when we had been rained out. Though the ropes had been left on ledges, six hurricanes had hit during the wet season. Todd already had found high water marks from which he made an estimate of the maximum flow: 1,500 c.f.s.! We were not too surprised when we found only shreds and tatters of rope. We proceeded through the deep, dark water, using bits of the old rope to rig with as we went. Phreatic spans and grind holes made convenient natural anchors.

At Drop 16 the heavy flow sprayed wildly, with the same fast water below. Anchoring the last long piece of Blue Water to a bolt and piton, Jim and I went down and across to the next drop, the nasty spout and chute that Jon had gotten to last year. We fed the rope down and Jim proceeded, flushing down to the pool below in two short gushes. I followed, not liking it much. The pool led to another spouting falls, Drop 18. This needed a bolt to get the rope out of the flow, or ascent would not be possible. Thus, while the irrepressible Pisarowicz did a fast, wet rappel to the boiling pool just below, I sat straddling the spout, clipped in with my seat Jumar to keep from washing away, and began pounding a bolt hole.

We had 2 1/4-inch drills. One of these broke, but I got a hole drilled and a bolt placed. I then passed the bolt gear down to Jim, who was perched on the sloping far edge of the pool, for there was yet another spouting falls just beyond. Jim tried to place a bolt there but in the process the second drill broke. Since we were out of rope it obviously was time to leave. The others had mapped up to Drop 14. We were out by midnight.

The previous year we had hoped to get lucky and break out of the cascading stream canyon into the Legendary Borehole, the dry passage that at some point must emerge to link Santa Elena with the large dry room, the Grand Finale, at the end of the Resurgence Cave. Certainly the stream passage was not passable; in the Resurgence Cave it ended in a sump. With the expedition's cavers now getting into the ominous black chasms beyond Drop 8 there arose a reluctance to go on a push. This surfaced the following Wednesday so we put off the next push for a day. Dave went to town to have a beer with the locals and broke a bottle while opening it, putting a gash in his hand requiring four stitches. This would put him out of action for at least a week — the pollution in the Rio Herpes would cause terrible infection.

Push 2

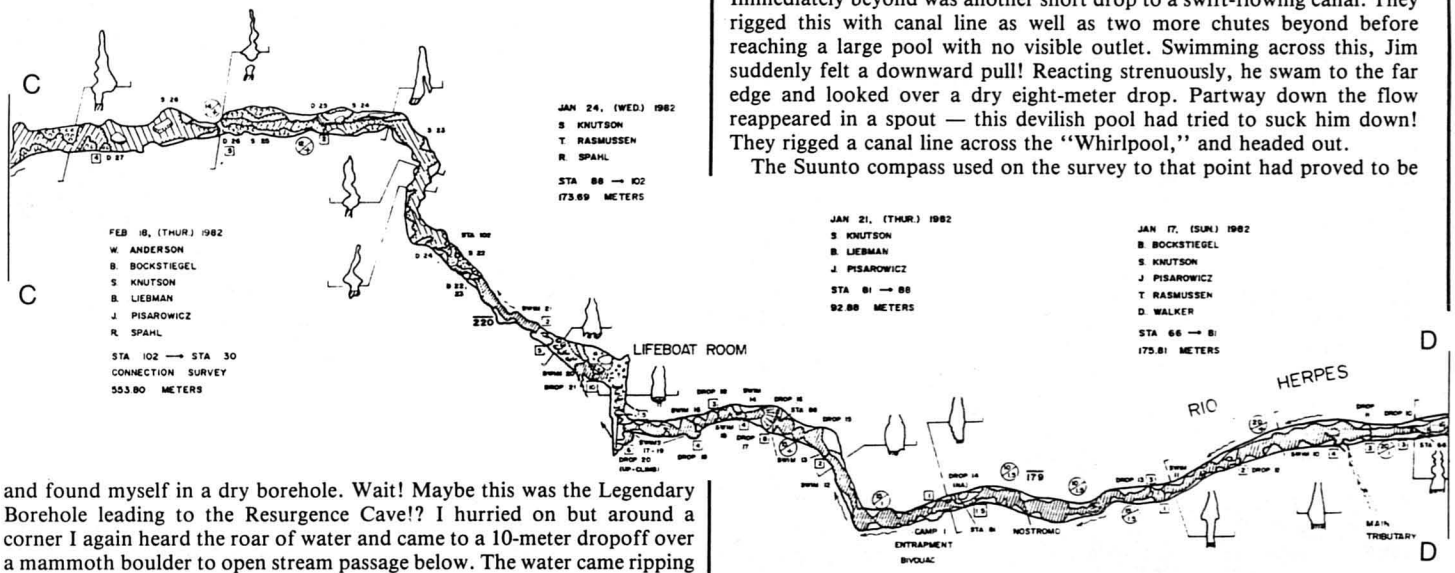
On Thursday the 21st we made our second push. Rasmussen and Bockstiegel were out with minor injuries, so Pisarowicz, Liebman and I headed past the ruined coffee mill at the entrance with 100 meters of canal line, 50 meters of Blue Water, a second hammer and two drills. The string of hardware was at the end of the first push, waiting for us. From station 66 (Drop 10) we checked bearings to Drop 14, then mapped on to 16, where we got down to business. Splitting the hardware, Jim placed a piton at 17 that I backed up with a bolt while Jim went on and put in a backup at 18. At 19 we anchored to a bolt that placed the rope an inch from the spouting five c.f.s.

Beyond the boiling plunge pool below 19 we were in new territory. A canal and swims led to still another spouting falls with a terrible slot-like

"At 7 p.m. we decided to go in. We gathered medical supplies, candy, food, coffee, rope, carbide, shelter, water-purification, etc., and by 8 p.m. Randy, Bockstiegel and I entered. I can't express how depressed we were — not only were we afraid of the cave, we were afraid of what we might find . . . Why hadn't they come out? It had to be some rigging gone. It had to be. We moved grimly on, trying not to think."

continuation below with white water raging into it. This slot didn't even look big enough to get into — a sure death trap. From Drop 15 on there had been no ledges, just a smooth-walled, narrow canyon with occasional circular "turbine" holes. Fortunately, there now was a ledge above — perhaps it would provide a way on. Unfortunately, it would require a five-meter aid climb!

While treading water we got out the hardware, set up a belay, cut up canal line to make etriers and soon I was on the wall, pounding pins into a narrow crack. Four pitons got me up to a bulge, and a mantle got me onto the ledge. There was no obvious continuation so I climbed a little higher and found myself in a dry borehole. Wait! Maybe this was the Legendary Borehole leading to the Resurgence Cave!? I hurried on but around a corner I again heard the roar of water and came to a 10-meter dropoff over a mammoth boulder to open stream passage below. The water came ripping out of a slot from the left. Bill and Jim came up and we rigged Drop 21. Jim and I went down and found a canal with swift water. Jim went on a short distance to a falls where the water slammed down through a double "S" bend. It was canyon again, but now there were ledges. It looked as if we could rig along those, over the "S." Whatever, we were out of rope. We got out of the cave at 3 a.m.



Push 3

By Monday the 25th we were ready for another go. Pisarowicz and Bockstiegel went on to the S-chute, after cleaning Drop 21. At Drop 22 they placed a bolt. Jim rappelled down partway, then swung over to a ledge. From the other ledge another bolt and piton anchored a piece of Blue Water that got them back into the stream at the end of the chute. Immediately beyond was another short drop to a swift-flowing canal. They rigged this with canal line as well as two more chutes beyond before reaching a large pool with no visible outlet. Swimming across this, Jim suddenly felt a downward pull! Reacting strenuously, he swam to the far edge and looked over a dry eight-meter drop. Partway down the flow reappeared in a spout — this devilish pool had tried to suck him down! They rigged a canal line across the "Whirlpool," and headed out.

The Suunto compass used on the survey to that point had proved to be *discompuesto*. On Wednesday the survey part of Push 3 went in, and with a good compass Todd, Randy and I surveyed from station 66 down the Rio Herpes, up the aid climb, through the dry borehole (the Lifeboat Room) and on to Drop 24. This yielded 440 meters of survey. We had surveyed about two kilometers into the cave plus another couple hundred meters explored, past 24 roped drops and 22 swims. We were progressing, but very slowly.

Entrance Room and Drop 1. (Dave Walker)

Push 4

To generate two consecutive-day push efforts I deliberately held back the team I was going in with and let a ready group of four go in. Thus on Saturday the 30th Warren Anderson, a recent arrival, Bill Liebman and Dave Walker, who had healed, headed in. The day was uneventful for the rest of us with a clear, blue sky overhead. We readied our gear for the next day's push and at 10 p.m. or so, hit the sack. I was sleeping in the back of my truck . . . suddenly I was awakened by a loud drumming sound. I realized it was raining, and very hard! It was 12:15. I tried to sleep . . . Fifteen minutes later it still was pouring, so I got dressed, put on a rain parka and stepped out. Christ! The sloping street was a roaring stream of brown water, inches deep. After getting a light I went down to the entrance to where we were gauging the flow. The mark on our gauge, from which we normally measured 10 inches down to the water's surface, was not visible in the brown, swirling flow. Back at the house Todd's chart showed this to be at least 20 c.f.s.! Damn! The rain subsided at 1 a.m., but in 45 minutes it had dumped four centimeters . . .

We were all awake by that time, and plenty worried. Twenty c.f.s. at the entrance could mean 40 c.f.s. or more below the two known tributaries. If those in the cave had seen some warning of the flood — drips from the ceiling or whatever — they might be safe on a ledge or in the Lifeboat

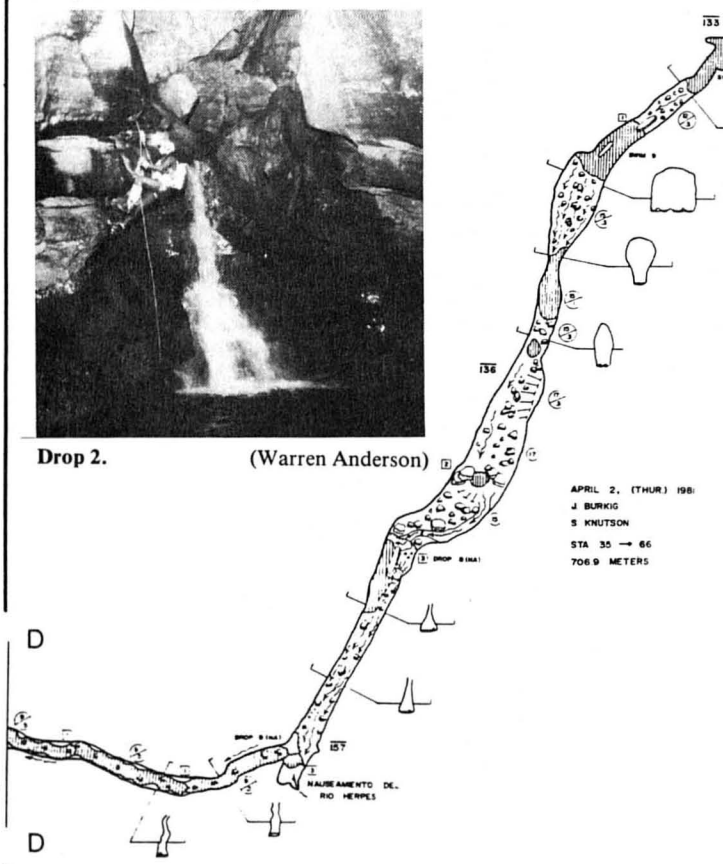
Room. But if they were caught in the spouting waterfalls below 16 they could be dead. And who could predict into what dangers their push might have taken them? If they were OK, they might still need help getting out — they had no water purification with them and so might drink cave water and get sick. Also, there was a good chance some rigging could have been carried away. We decided to let the flow subside and give them time to get out on their own. If they failed to appear, we would have to go in. Of our surface crew Jim was sick but the rest were OK.

At 2 a.m. the rain picked up a bit. We tried to sleep. It finally stopped completely at 5 a.m. Sunday dawned with high cloudiness. The flow was down to about seven c.f.s. We figured that if everything was OK they should start out this morning. Surely they should be out by evening. If only . . . At 7 p.m. we decided to go in. We gathered medical supplies, candy, food, coffee, rope, carbide, shelter, water-purification, etc., and by 8 p.m. Randy, Bockstiegel and I entered. I can't express how depressed we were — not only were we afraid of the cave, we were afraid of what we might find . . . Why hadn't they come out? It had to be some rigging gone. It had to be. We moved grimly on, trying not to think.

Below Drop 9 there was a pleasant surprise: the sleaze and slime had been washed away entirely. As I approached Drop 14, Bockstiegel, just behind, started yelling and screaming. What was wrong with him? I looked at him and he seemed to be yelling to himself! "He's gone wacko," I thought. Wonderful! Then I looked ahead and there on a ledge above us stood Walker. Without yelling, and as quickly as I could, I climbed up. They were all there, and all OK. Fantastic!

As we headed out, the story unfolded. They had done a short push, rigging Drop 25 and stopping a hundred meters beyond, at Drop 26. Turning back, they got through the spouting falls, 19 to 16, and were nearing Drop 14. Warren had gone up that and was recarbiding. Dave and Bill were approaching, wading through deep water. Suddenly Warren noticed the noise of the cave seemed to double. He first thought it to be a psychological quirk so he switched on his electric and looked at the falls — it was true, the cave was flooding. A surge of evil, stinking, brown water was upon them. At that moment Bill yelled, "The cave is flooding!" and the surge enveloped him and Dave. Dave gave it a survival effort, pushed off, thrashed mightily and caught the short rope at 14. In an instant he had clawed his way up. Then he and Warren jumped across to a ledge on the other side, lowered a long Jumar sling to Bill, who was holding on grimly, and pulled him to safety.

Drop 2. (Warren Anderson)



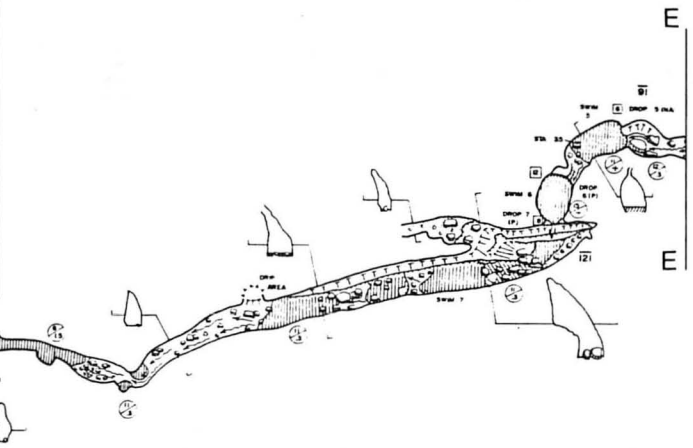
The ledge was spacious so they had settled in. The flow had continued to increase until the very walls were vibrating. In the storm that had occurred the whole town of Xochitlan had been cleansed of sewage and offal. Since they were below the sewage inlet, the Nauseamiento, they experienced a smell described variously as "pathological," "the worst thing I've ever smelled" and "like the Chicago stockyards, only worse!" as the town flushed its collective toilet past them. After 12 hours their wetsuits had dried out and some sleep was possible. They had been thinking about leaving when we arrived.

Changes in Plans

Over the next couple days we discussed the situation and reevaluated our commitment. The entrapment had shown everyone how dangerous the cave could be, and a couple of us wondered out loud if the cave was worth dying for. Walker and Rasmussen had to fly back to jobs; Bosted already had gone. At least two of the remaining six didn't want to push the cave anymore. Obviously we could continue, but it seemed we needed a psychological lift. I suggested we try the aid climb in the Resurgence Cave. If we got into the Legendary Borehole, it would lead to the Santa Elena stream passage. With that connection "assured," we could push from the top with more confidence. This was well received, so we scrounged the remaining hardware: nine pitons, a host of chocks, a bolt kit and one hammer. Good enough.

Push 5

On Friday, Feb. 5 we drove through the fog down the wretched old road to the Rio Ateno. At the Grand Finale a request for volunteers



for the climb produced only me. Pisarowicz belayed while Bockstiegel applied tension. Warren, Bill and Randy waited patiently and took an occasional photo. Using six chocks, four pitons, a sling through an eye and two bolts I got 10 meters up a mostly sealed crack. Then a bolt and a free move got me the five meters laterally to the lead. Disappointment! The "borehole" went back only five meters to more vertical work. I put in an anchor for a fixed line and brought Jim up. With the belay reestablished I led free, using occasional protection for another 15 meters. At that point a short smooth section above me seemed to break over into a passage. I put in a bolt, but it needed a couple more. I had been five hours on the wall and was tired. We blew it off and booked on out.

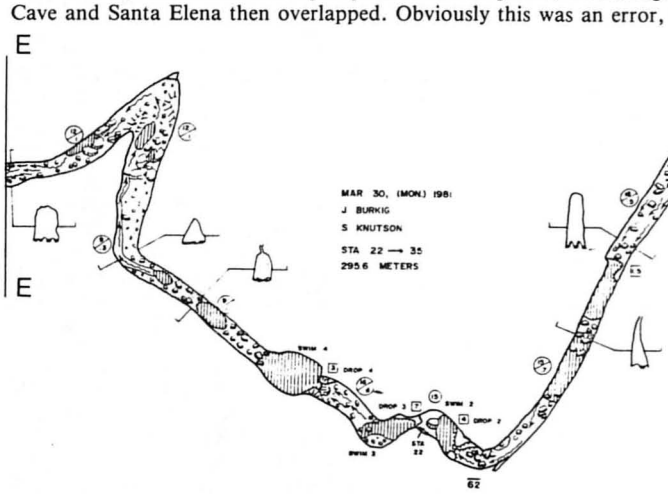
Push 6

The following Monday Jim and I went back to finish the climb. On tension I put in another bolt and moved up. A couple of handholds appeared, so I put on a free move and found myself over the lip. I looked up . . . passage! Borehole! Fixing the rope, I dashed off — yes, it went! Jim came up and we set off. The passage was fantastic — gloriously large with smooth walls and a floor of either beautiful potholes or great, water-carved boulders. After a couple hundred meters we were dripping with sweat, so we stopped and took off our wetsuit tops. Leaving these and the rope and hardware, we moved on. Finally we came to what appeared to be another up-climb. On closer examination it proved to be a break-up into levels. Down a slope, a low, muddy passage led on, with air flow. This obviously sumped regularly and it was not pleasant to think what might be happening on the surface, weather-wise. Since we had come into the cave the air flow had switched to up-cave, as if a pressure drop had occurred. In less than a hundred meters we began to hear the sound of running water — a low rumble. Hurrying on, we popped through a small hole fringed with flowstone and were looking down a short flowstone escarpment at a running stream. Was this Santa Elena, or some other tributary to the resurgence? It seemed to be coming from the wrong direction . . .

We climbed down and around a flowstone wall and saw the stream, of at least five c.f.s., was going into breakdown. Around a corner and across a big gravel bar we found big passage again. We walked up this a ways, through shallow water and over huge rock slabs. Suddenly Jim shouted, "There's a rope!" He was surely mistaken — we were much too far down-cave to see any of our ropes — and I started to tell him so. Not listening, he went splashing off toward something hanging down from the ceiling near one wall. By God, it *was* a rope! — a piece of Blue Water with a loop tied neatly in the bottom end, the free end jammed in a crack four meters up. It was, in fact, part of our rigging from last year that had been carried down by the 1,500 c.f.s. hurricane floods and jammed there in a passage 10 meters wide. What a flow that must have been! And what a "dye" trace this was. The Blue Water noose said we were in Santa Elena for sure! Hijolay! Maybe the cave liked us after all. This certainly was one of the fine moments of the trip. When we had recovered we began at the noose and surveyed out, getting 850 meters to the Grand Finale. You can bet the rest were pleased to hear the news!

Push 7

We decided to continue the push in the Resurgence Cave, and on Monday the 15th, Jim, Randy, Bockstiegel and I managed a trip. Beyond the noose we found a slackwater swim for nearly 400 meters before getting back into the narrow canyons and waterfalls so typical of Santa Elena. We passed three or four short falls and climbed, with great difficulty, three more three-to-four meters high before being stopped by a four-to-five-meter falls. Based upon plots on the air photo, the Resurgence Cave and Santa Elena then overlapped. Obviously this was an error, but certainly the time was right for a final push down Santa Elena.



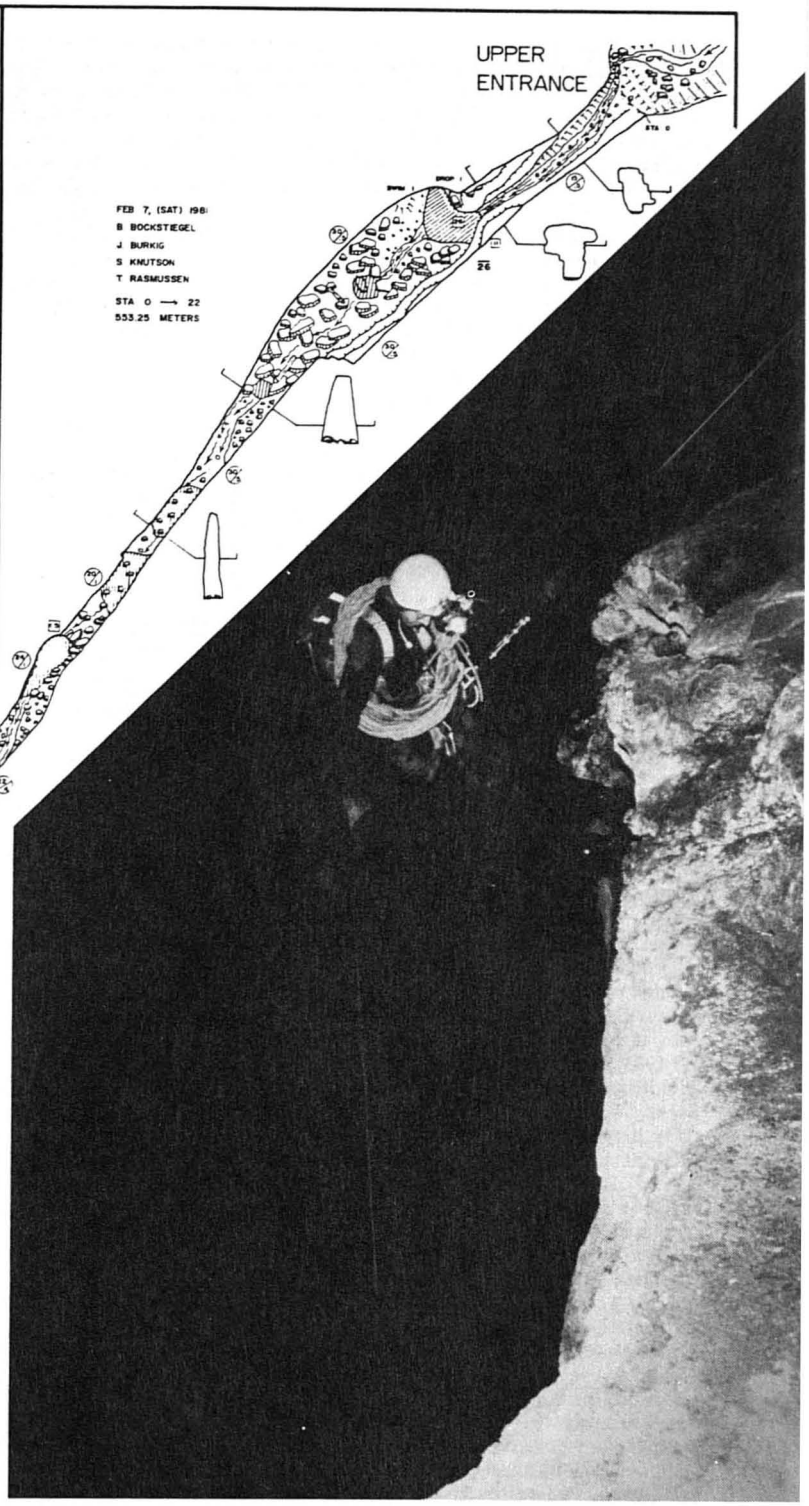
Push 8

On Thursday, Feb. 18 we got ourselves up for what figured to be the last push. There were three jobs that needed to be done: 1) Push ahead and rig what drops remained, 2) Map what remained, and 3) Rig the drops in the sleaze series and beyond with rings for a pull-down derigging trip. Jim and Warren undertook the first, Bockstiegel and Liebman the second and Randy and I the third. At around 10:30 a.m. we started in, determined to make it all happen, at last.

The job for Randy and me was easiest, but kept us in the most dangerous part of the cave the longest. Still, it didn't seem long before we had caught up with the two Bills. Randy split off to help them, and I went surging ahead to help the riggers. Picking up some excess hardware (about 20 pounds worth!) I proceeded down drops and through canals for what seemed like a long time. Suddenly I was looking at a drop rigged in an unusual fashion. There was a rope hung from a ledge, and a piece of bright yellow canal line hung right next to the falls. In a flash I knew what it was — the canal line I had rigged at the last waterfall climbed on the push from below. It was done! I sat down, overcome with emotion . . . The rest was, as we say, a piece of cake.

Epilogue

A few days later we made a pull-down through-trip, derigging all the drops below seven, with the last rappel on each using a doubled rope passed through an anchored ring. This rope then was pulled down and the procedure repeated on the next drop. An exciting way to derig a cave! A later trip derigged the entrance series. The through-trip totaled 5.2 kilometers, with 395 meters depth. The total surveyed traverse is 6.7 kilometers. About 500 meters of rope was used on 30 vertical drops. The 52 swims were rigged, where necessary, with about 300 meters of 1/4-inch Tenstron canal line.



Descending the 26-meter Drop 1. (Dave Walker)

Acknowledgements

The expedition very gratefully acknowledges the donation of equipment by the following: Blue Water, Ltd., Bob & Bob, Lost Creek Cave Packs and Liberty Carabiners. I also want to thank the Western Region of the National Speleological Society for its sanction of this expedition.

And a final word about the rope we used. In Santa Elena we rigged without pads on 30 waterfall drops where the lower end, and sometimes the entire rope, was in flowing water. The Blue Water Expedition rope used withstood this abuse just fine, though ordinarily I recommend using pads in vertical caving. I also had a chance to compare the smoothness of operation of Jumars on Blue Water Expedition rope with other rope. In my limited test, Jumars worked better on the Blue Water. In my opinion the Blue Water Expedition rope is a thoroughly fine rope in every respect. ■

CALL FOR *1984* CONVENTION PROPOSALS

The Board of Governors of the NSS will entertain proposals for the 1984 NSS Convention at its fall meeting. It is still hoped that conventions may be booked two years in advance.

Some members of the board at the meeting in Bend, Ore., expressed concern that some areas of the country have not submitted bids in the past 10 or 15 years, and, in fact, some areas have never submitted bids. The hope was expressed that we might soon see some proposals from these areas.

Anyone planning to bid for the 1984 NSS Convention should contact the chairman of the Program and Activities Committee immediately either by mail or phone; for that matter, it is not too early to start thinking about 1985 proposals. The proposals for 1985 probably will be heard at next summer's Convention.

Please feel free to contact me with any questions regarding placing a bid, running a convention, etc.

William G. Fritz, Chairman
NSS Program and Activities Committee
7685 Haley Rd.
Milford, MI 48042
313-698-2295

CONSERVATION NOTES

continued from page 230

men are, call the League of Women Voters.

Mammoth and the Job Corps — A U.S. District Court judge ordered that the Great Onyx Job Corps Center in Mammoth Cave National Park be removed. This action is the climax of a three-year-old lawsuit. If the Job Corps Center is relocated to the Childress farm site, the present Center must be closed by Oct. 1, 1983. If the Childress site does not receive funding, the present Center must be removed by Oct. 1, 1982. The present Job Corps Center area is scheduled to be returned to as near a natural state as possible four months after it is closed. Efforts have been made over a period of several years to remove the Center due to repeated break-ins at the caves and the field research station, destruction and sale of stalactites and sewage pollution of the aquifer and cave. Thanks to Lynn Weller for this information.

Wilderness Bills — HR6011 proposes to add some acreage from the Bankhead National Forest to the Sipsey Wilderness in Alabama. It was referred to the Interior Committee. HR6428 was introduced to designate certain lands in the Talledega National Forest as wilderness. It was referred to the Interior Committee. HR6728 has been introduced to establish the Charles C. Dean Wilderness Area in the Hoosier National Forest, southeast of Bloomington, Ind. It would be the first federal wilderness area in Indiana. S2458 was introduced to establish a 6,670-acre Aravaipa Wilderness Area near Tucson. It was referred to the Energy and Natural Resources Committee. Cavers from the states involved can provide details on caves that may be affected. S2246 was introduced to establish a Nongame Fish and Wildlife Trust Fund and provide for voluntary contributions through a tax check-off system. It was referred to the Finance Committee. Several states have established successful wildlife checkoff programs of this nature. These wildlife checkoff programs benefit all wildlife, including endangered bats and other threatened cave life.

Caves and Nuclear Waste — Those of you concerned about proposals to store nuclear waste in caves and the Waste Isolation Pilot Project site's proximity to New Mexico caves may be interested to know an amendment to HR3809 was approved. It ensures states the right to consult and cooperate in the siting of permanent repositories for nuclear waste, including appealing to Congress to declare that a proposed site is inadequate. A similar but weaker provision applying to military waste passed in the Senate. In a related matter, the Dept. of Energy is pushing ahead with plans to locate a nuclear waste repository in Davis Canyon, near Canyonlands National Park.

Thanks! — Thanks to all you kind editors and individuals who have been so good about sending me your grotto publications or conservation material.

NEWSLINE

continued from page 234

flashlight and split — literally leaving everyone in the dark as to his identity and means of getaway. Crecelius reportedly had to borrow a cigarette lighter in order to make his way to the nearest light switch. No injuries were reported in the July 23 incident.

(Thanks to Dave Black for sending us a clipping on this bizarre robbery.)

Elsewhere in the public news media, Colorado Grotto member **Dave Harrison** got a write-up in the May 17 Denver Post when he accidentally cut his own rope while on a grotto climbing session. Dave fell 50 feet, the report said, and sustained multiple fractures in the legs and pelvis.

Gerry Forney, who passed along the newspaper clipping to us, notes that Dave is the grotto's rescue and safety chairman! Get well quick, Dave.

Our sources tell us that indefatigable TAG veteran **Marion O. Smith** claims he is closing in on the magic number 1,000 in his quest to descend every pit he can throw a rope into. And there's little chance our friend MOS is stretching the truth because he keeps detailed notes on *every one* of his frequent caving trips. Get down, Marion.

REGIONS

continued from page 234

one lead and discovered more than 400 feet of passage containing three flowstone waterfalls and several rooms. The lead continued strong. The cave now is 5.6 kilometers in length, with 13 strong leads yet to explore.

Cascade Caverns was the scene for a vertical rescue training seminar July 9-11, sponsored by San Antonio College, the Boerne E.M.S. and Cascade Caverns owner John Bridges. Terry Jones, a member of the San Antonio Fire Dept., coordinated the course for about 60 would-be rescuers. *Randy M. Waters*

SOUTHWEST

The annual summer Sextathalon June 19-20 at the Grants lava flow featured three teams competing in a multi-task orienteering contest. Albuquerque's Sandia Grotto organized the event, which emphasized such caving skills as

CLASSIFIEDS

WANTED: Old electric trains — toy trains. Any age — any condition. Will trade caving gear or cash. Bob Liebman, P.O. Box 441, Lewisburg, WV 24901.

WHEN YOU ORDER FROM THE NSS Bookstore, you help the Society — and yourself! Income from the Bookstore offsets the operating expenses of the office. It's easy — just place your order with the NSS Bookstore, Cave Avenue, Huntsville, Alabama, or call 205-852-1300 and charge it to your VISA or Master Charge card.

LAMP COLLECTORS! Reference books on early miner's carbide lamps containing scale drawings, patent records and advertising copy to help identify and date lamps. Autolite, Guys-Dropper, Trademarks, Springfield, Zar, Maumee. $2.50 each ppd. Kouts, P.O. Box 813, Franklin, WV 26807.

AUCTION—GEORGE JACKSON COLLECTION. Send a SASE for a complete listing to Jack Speece, 711 E. Atlantic Ave., Altoona, PA 16602.

JUSTRITE/AUTOLITE. Excellent caving lamps. Will trade several for old collectible carbide lamps. Kouts, P.O. Box 813, Franklin, WV 26807.

LOST: Zippo slimline lighters, one w/ladybug design at Convention, the other silver-colored at SERA. Please return to Elaine Hackerman, Rt. 8, Box 86A, Clarksville, TN 37040.

600 FEET PMI. Used once. Will trade for any kind of Blue Water in comparable lengths and conditions, no less than 150-foot lengths. Bob Wells, 452 Herrontown Rd., Princeton, NJ 08540. 609-924-0983.

WANTED: CAVE FISHES for scientific studies. Contact Al Romero, Dept. Biology, Univ. Miami, P.O. Box 249118, Coral Gables, FL 33124.

Remittance must accompany the copy for classified ads. Make checks payable to the National Speleological Society.

Rate: Five words: one dollar (minimum fee). Additional words: ten cents each. Count your name and address as two words. A five percent discount applies if you run the ad three times, a ten percent discount for six times.

preparedness, compass reading, land feature awareness and rope work.

A work regional is planned for late October or early November. Exact dates and location will be announced.

Kathy Grossman

EVENTS

Oct. 1-3 — Fall NRO, Tranquility Campground, Tranquility, N.J. Mark Wilson, 68-70 Montgomery St., No. 4, Bloomfield, NJ 07003. Contact Russ Tyndall.
Oct. 8-10 — Fall MVOR, '76 Camp, Perry Co., Mo. Middle Mississippi Valley Grotto, P.O. Box 3733, Kirkwood, MO 63122.
Oct. 15-17 — Fall MAR, Coral Caverns near Mann's Choice, Pa., 7 mi. west of Bedford. Sponsored by York Grotto. Susan Biggers, 11051 Camfield Ct., No. 102, Manassas, VA 22110. 703-368-7556.
Oct 30 — Fall BOG Meeting in Pittsburg or West Virginia area to be announced. Hosted by Mountain State Grotto.
Nov. 4-7 — National Cave Conservation and Management Symposium, the Sheraton Inn, Harrisonburg, Va. John Wilson, 804-353-6776, or American Cave Conservation Assn., P.O. Box 7017, Richmond, VA 23221.
Dec. 11-12 — Cumberland Caverns Christmas Party, McMinnville, Tenn. By invitation only. Roy Davis, Cumberland Caverns, McMinnville, TN 37110.
July 1983 — NSS Convention, Lewisburg, W. Va.