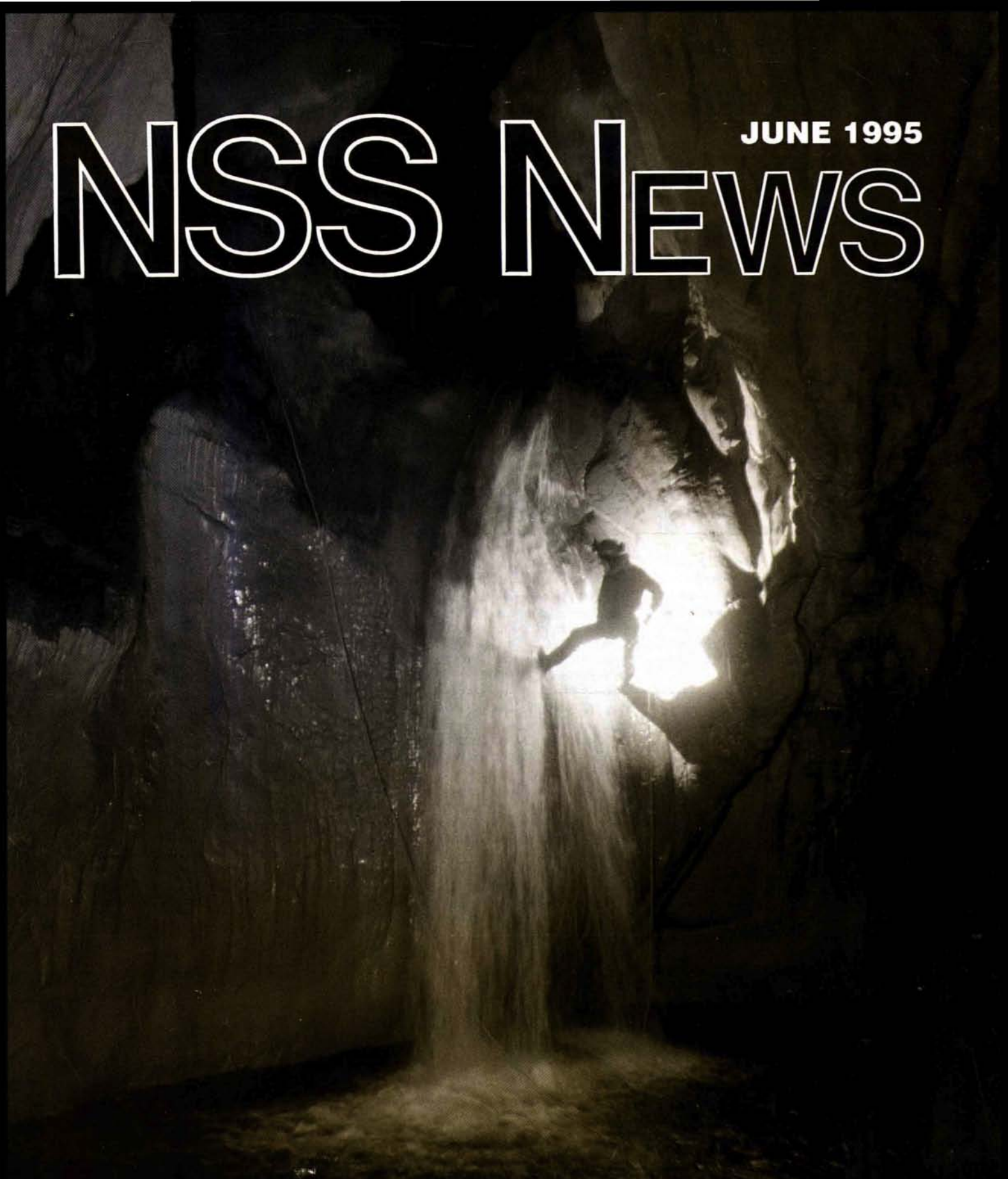
NSS NEWS

JUNE 1995



America's Caving Magazine

Calendar

June 17–25—ER–NCRC Annual Weeklong Class. Level One and Level Two NCRC classes plus Wilderness EMT is offered for caver medics. Contact John Hempel at (304)338-6920.

June 18–23—Conference of the International Assn. of Geomorphologists, Singapore. Contact: GOH Kim Chuan, Chairman, IAG-SEA Conference on Geomorphology, Division of Geography, NIE, Nanyang Technological University, 469 Bukit Timah Road, Singapore 1025. FAX: 65-469-8433. E-mail: GOHKC@ am.nie.ac.sg.

June 18–23—Tenth Annual Carlsbad Cavern Restoration Field Camp, Carlsbad Cavern National Park, Carlsbad, New Mexico. Contact: Susan and Dave Ecklund, 1910 Sunshine Circle, Aiken, SC 29803-9296, (803)648-7610.

June 30–July 28—Tongass Cave Project's Annual Southeast Alaskan Caving Expedition. Two 2-week segments. Contact Steve Lewis, PO Box 83715, Fairbanks, AK 99708, (907)479-7257.

July 7–9—Karst-O-Rama, Great Saltpetre Cave Preserve, Mt. Vernon, Kentucky. Hosted by the Greater Cincinnati Grotto. Contact: Doug Reverman, 5935 Leeside Trail, Cincinnati, OH 45248, (513)598-6093.

July 8–15—1995-National Cave Rescue Commission-Cave Rescue Operations and Management Seminar. To be held at Virginia Intermont College, Bristol, VA. Contact: Nancy Chrimes at (703)992-3665.

July 12–15—Pre-convention Field Camp, RASS Field Station, Bath County, Virginia, off Interstate 64. Contact: Mike Friedenberg, (804)282-5138, or Tom Spina, (804)420-6126.

July 14–16— Wild Dog Pre-camp. Pre-convention caving. Contact: Ollie McKagen, P.O. Box 10241, Blacksburg, VA 24062-0241, call (703)552-0722, or e-mail obycraky@bev.net

July 17–21—NSS Convention, Blacksburg, Virginia. Contact: Carol Tiderman, 7600 Pindell School Rd., Fulton, MD 20759, (410)792-0742.

July 17–21—Wild Dog camping and caving. Contact: Ollie McKagen, P.O. Box 10241, Blacksburg, VA 24062-0241, call (703)552-0722, or e-mail obycraky@bev.net

July 31–Aug. 5—Tropical Karstic Processes and Environmental Changes and Conservation Symposium, Havana, Cuba. Contact: Mrs. Zosima Lopez Ruiz, P.C.O. Intern. Conf. Center, Palacio de las Convenciones, Ap. 16046, La Habana, Cuba. FAX: 22-8382/33-1657.

Aug.—Association for Arkansas Cave Studies sump diving expedition to Old Mill Spring, Arkansas. Contact Jerry Fant, 2191 Pamela Ave., Memphis, TN 38127, (9010353-0482.

Aug. 18–20—42nd Annual Indiana Cave Capers, Camp Rivervale just North of Spring Mill State Park. Contact: CIG–CAPERS, PO box 153, Indianapolis, Indiana, 46206 or call CIG Chairman Bill Greenwald (317)783-1629.

Aug. 28–Sept. 2—XII Colloque International de Biospéologie of the "Société de Biospéologie". Laboratoire Souterrain du CNRS, Moulis 09200 France. Contact: Dr. Christian Juberthie, 09200 Moulis, France. Phone (33)61 66 31 26. Fax (33)61 96 08 51.

Sept. 6–8—Vadose Zone Hydrology: Cutting Across Disciplines, UC Davis Conference and Event Services Offices, University of California, Davis, CA 95616; (916)757-3330, FAX (916)757-7943.

Sept. 10–20—International Symposium and Field Seminar on Karst Waters and Environmental Impacts, Antalya, Turkey. Contact: Prof. Dr. Gültekin Günay, P. O. Box 357, Kizilay, 06420, Ankara, Turkey. Tel: +90 312 235 2543, FAX: +90 312 235 2862.

Sept. 11–14—International Conference on Karst-Fractured Aquifers-Vulnerability and Sustainability. Conference Office, Department of Hydrogeology, Silesian University, STr. Bedzinska 60, 41-200 Sosnowiec, Poland.Tel: +48 32 662941, FAX: +48 326 64351.

Sept. 11–15—1st Ibero-American Meeting of Speleology and 55th Anniversary of the Cuban Speleological Society Congress, Matanzas Province, Cuba. Contact: Dr. Antonio Nuñez Jimenez, Comite Organizador, Ave. 9na. #8402, esq. a 84, Playa, Ciudad de la Habana, CP 11600 CUBA, FAX: 537-33-8212. Tel: 22-5205.

Sept. 16–17—Karst Encounters 1995, Trigg County, Cadiz, Kentucky. Hosted by the Golden Pond Grotto. Contacts: Russell Kyler (502)522-3475 and Shari Mainstruck (502)527-9647.

Sept. 18–22—Lint Pickers Camp, Carlsbad Caverns National Park, Carlsbad, New Mexico. Contact Pat Jablonsky, 604 Southern Sky, Carlsbad, NM 88220, (505)887-6668.

Sept. 19–22—International Symposium on Karren Landforms, organized by Museu Balear de Ciènces, Spain. Contact: Angel Gines and J. J. Fornos, M.B.C.N./UIB, Departament de Ciènces de la Terra, Universitat de les Illes Balears, Ctra. de Valldemossa, km 7,5, 07071 Palma de Mallorca, Spain, FAX, 34 (9) 71 17 31 84.

Oct. 5–8—18th Annual TAG Fall Cave-In, Sequoyah Caverns, Alabama. Hosted by the Dogwood City Grotto. Contact: Patty Springer, (404)564-9774. Vendor's contact: Jeanne Hunter, (404)973-8233.

Oct. 5–8—The Karst Geomorphology of Jura. Sponsored by the French Association of Karstology and the Swiss Society of Geomorphology. Contact: L. Perritaz, Institute of Geography, Pèrolles - CH-1700 FRIBURG, FAX 037-299746.

Oct. 15–20—AMSAR Technical Rescue Seminars, Joshua Tree National Monument, California. Contact: American Search and Rescue Institute, Inc., P.O. Box 2399, Yucca Valley, CA 92286-2399, (619)365-3114.

Oct. 21—Fall NSS BOG Meeting, Richmond, Virginia. Hosted by the Richmond Area Speleological Society.

Oct. 25–28—XII National Cave Management Symposium, Spring Mill State Park, Mitchell, Indiana. Contact: Larry Mullins, (812)275-5987 (days) or Keith Dunlap, (317)882-5420 (evenings).

April 9–12, 1996—3rd Regional conference of the International Association of Geomorphologists, Budapest, Hungary. Motto is "Geomorphological problems of the changing environment." Contact: IAG Conference Organizing Committee, Dr Denes Loczy, Geographical Research Institute, Hungarian Academy of Sciences, PO Box 64, H-1388 Hungary, FAX (361)131-7991.

Aug. 1996—World Coastal Karst Environments Sumposium. During 28th IGC in The Hague, Holland. Details to be announced.

Aug. 3–9, 1996—NSS Convention, Salida, Colorado. Contact: 1996 NSS Convention Committee, c/o Skip Withrow, 5404 South Walden St., Aurora, CO 80015, (303)693-0997.

Aug. 4–14, 1996—International Geological Congress, includes field trips to karst areas of SE China. Contact: Secretariat Bureau, 30th International Congress, P.O. Box 823, Beijing 100037, China.

June 23–27, 1997—NSS Convention, Sullivan, Missouri. Contact: Pam Saberton, 3820 Juniata St., St. Louis, MO 63116, (314)772-6956.

Aug. 6–20, 1997—12th International Congress of Speleology (plus special symposia, not including pre- and post-camps), Switzerland. Contact: Urs Widmer, Therwilerstrasse 43, CH-4054 Basel, Switzerland. USA Contact: Martina Golden (Michigan), (810)666-1683.

Aug. 28–Sept. 3, 1997—International Conference of the International Association of Geomorphologists, Bologna, Italy. In connection with the conference a symposium and field trip on classical Karst will be organized in co-operation between Italy and Slovenia (Aug. 22 - 27).

Send information on coming events to *NSS News*, P.O. Box 12334, Albuquerque, NM 87195, FAX (505)873-9766, or e-mail: maggibat @aol.com.

"TAKE NOTHING BUT PICTURES, KILL NOTHING BUT TIME, LEAVE NOTHING BUT FOOTPRINTS..."

"FRED"
Drawing by
Edina Sparks

Deadline: The ***NSS News*** is distributed the last week of the month preceding date of publication. Ads, articles and announcements should be sent to the ***NSS News***, P.O. Box 12334, Albuquerque, NM 87195-0334 by the 20th of the previous month (e.g. July issue is mailed the last week in June; material should be submitted by May 20).

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Regular membership in the NSS is $25 per year. Subscriptions to the ***NSS News*** are $18 per year; individual copies are $1.50 each. Contact the Huntsville office for membership applications, subscriptions, orders, or for replacement of issues missing or damaged in the mail. Second Class Postage paid in Huntsville, Alabama, and additional offices.

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NSS NEWS
AMERICA'S CAVING MAGAZINE

JUNE 1995 VOLUME 53 NUMBER 6

FEATURES

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DEPARTMENTS

COVER

"Caver on Jive–Ass Falls," Rio Oqueba Cave, Altaverapaz, Guatemala by Steve Knutson. Accompanying article "A Tale of Two River Caves," also by Steve Knutson, begins on page 152. This photo was taken with a Nikonos III or IV using Magicubes™ or a Sunpak strobe.

Executive Committee Message

The Worlds Largest Cave Library Gets Even Better

The NSS library in Huntsville Alabama continues to get better. Don Cournoyer recently donated his cave library to the NSS. An endowment was established by Jeanne Gurnee in Russell Gurnee's name to support long-term improvements to the NSS library. They intend this endowment to expand through gifts from others. The Board of Governors has established policies to encourage others to make donations of entire personal libraries to the NSS library. These are a few highlights of some changes that the NSS intends to improve this member service.

Jon Smith, Ph.D., the chair of the newly created Library Committee, is charged with managing and maintaining the NSS Library. Jon is moving and will announce his new address soon so members wishing to make donations of time, books, or money may contact him directly. In the interm, correspondence concerning the library can be addressed to: Jon Smith, Department of English, Drawer E, Mississippi State University, MS 39762-5505, e-mail: jon@ra.msstate.edu. He will concen-trate on setting up electronic means to provide better access to the information in the library.

NSS Satellite (Backup) Cave Libraries

Grottoes and other internal organizations who are willing to serve and can meet the requirements should apply to become a satellite library. These libraries will: (1) Maintain duplicated material lent by the NSS Library; (2) Provide a source of material to reestablish the library if a catastrophic loss of the NSS library occurs; (3) Make more NSS library material available to more NSS members; (4) Allow the NSS to reduce the costs of book and publication acquisition by increasing donations of books and publications; (5) Allow the library to be more accommodating to donors by having a place for duplicate material.

The acceptance criteria for organizations to become satellite libraries are: (a) Show ability to maintain books and other material on a long-term basis; (b) Agree to return loaned material upon request; (c) Comply with NSS procedures for maintaining the collection, (d) Provide reasonable access of the collection to NSS members; (e) Represent a diverse location among all satellite libraries, since the satellite libraries may function as regional cave libraries.

Applicants for satellite libraries should contact John M Wilson, Administrative Vice President, 9504 Lakewater Court, Richmond, VA 23229-6010, or phone (804)740-0339.

Cavers' Forum

"Caving and Climbing"

I have been caving and climbing for eight years; I'm involved in Cave & Wilderness Search & Rescue as well as hiking, mountaineering, cross country skiing and mountain biking; I am a past Arizona grotto member, and now a member of a Colorado grotto. Because of my activities I have become aware of the impact all of us make on God's creation both above and below ground, and especially the impact caused by those who are not informed.

I was interested when I saw the three articles about climbing in caves in the February *NSS News*—I was really ticked off after reading the articles. The author advised cavers to avoid confrontation with climbers but to bring a camera and travel in groups. What's the message here? Although I don't live in the area, I know climbers who do. Read the article again and note that it was the climbers who offered the moratorium on bolting which everyone accepted. How can you avoid a confrontation when you are spying?

Climbers and cavers are not the only users of these cave entrances. The cave entrances in question are also being used for night parties. There are bullet holes in the walls; firepits are a dime a dozen and have blackened the walls and burned off the lichen growing on them. The broken beer bottles have reached a depth of one-and-a half inches in places and now the cave entrances are being used as a test range for Molitov cocktails!

Someone with a backhoe had gone out at one time and blocked the road leading to the caves but the "rednecks" went above the caves, took out a fence and made their own road! Where I'm from, ranchers would consider that an act of war and immediately put up "No Trespassing" signs and hire mercenaries! Something doesn't make sense to me. Cavers in Oregon write articles slamming the use of bolts and drills in a cave entrance but not one iota is written about the party goers. What are you trying to say?

The article in the *News* about *Rock & Ice* "promoting" cave climbing is valid. However, has anyone with a NSS number called or written to *Rock & Ice* and **explained** what happens when speleothems are touched? I read *Rock & Ice* regularly and I did write to them, not to slam them but to explain why cavers are going ballistic. The March/April '95 issue of *Rock & Ice* had an article called "What Price Glory." In it, Editor Majorie McCloy asks readers "What do you consider the role of *Rock & Ice* to be? Is it to report what exists in the climbing world without passing judgement, or to weed out the climbs, stories and actions that our two-person editorial department feels are not morally or ethically correct?" Her point is this—if the press were to turn down an article about a first ascent or a new lead, would one consider it censorship? They're just like Officer Friday, "Just the facts ma'am." We, the readers, are the ones who applaud or boo that event. We, the readers, need to check it out and think before we leap to conclusions.

What I'm trying to say is that I don't think the climbers are the only ones guilty of destroying the cave. True, 137 bolts in a space of 50 by 80 feet is too much. But a formal, emotional meeting can make more enemies rather than solving the problem. Have any cavers sat down with the climbers over a beer and pizza and just had a good conversation? What about inviting climbers to go caving so they can see why cavers believe the way we do about protecting a cave. Someone once said that in order to know someone, you've got to walk in their shoes for a while. A lot more can be accomplished through interaction than by sitting at a formal meeting.

James Bigelow (*NSS News*, March '95) has a great idea, a book by the NSS about

cave conservation for the beginner. We in the caving community know about conservation, we've been doing gating and trash pick up in caves for years and we are tired of it. Let's get the message out to others who use caves. Educate instead of quoting rules and regulations.

God made His creation for everyone to enjoy. As cavers we have become stewards of the caves, either by government designation or by appointing ourselves. A steward in the Bible is someone who takes care of *someone else's money or property*. The owner expects nothing but the best returns from the steward's work. The owner did not leave us in charge to gloat over our responsibility to others. We need to educate the public about the resource, rather than build an elitist attitude. All I ask is that we all use our heads, a little common sense (and some research), put it together and think of how we would like to be treated in a similar situation before we go off to change the world. Cavers and climbers share roots of discovery and danger. Techniques, tactics, and tools common to all are used above and below ground (admit it—Petzl™, Bluewater™ and Black Diamond™ make a small fortune off both communities). We need to get together and compare notes on what is cool and what is not before it becomes a World Wrestling Federation Main Event® with the Government acting as referee. My purpose in writing is not to open old wounds, but hopefully to influence cavers to think about another approach to the situation. Take care, God Bless you all and don't step on the rope! —*Walter Pickett, NSS 28180, Ft. Carson, Colorado*

The *NSS News*, (February '95) was disturbing to me. Before I began caving in 1962 I had received a certificate in Military Mountaineering and taught technical rock climbing in the Mountain and Cold Weather Training Command and Camp Carson, Colorado. Two of my instructors were Himalayan climbers Dee Molenaar and Bob Craig. In my spare time, in parties of from three to five, I can claim three first ascents: the northeast face of Koban in the Wyoming Wind River Range, Rock Creek Wall near Colorado Springs, and Gog Rock on the side of Pikes Peak; and alone the four sides of so-called graduation rock in North Cheyenne Canyon, Colorado Springs. Gog Rock is a massive spherical rock which overhangs a rock outcropping. It has no cracks. In 1953 environmental issues had not yet become major issues. Our solution was to bolt; it took twenty minutes to star drill each one.

To use bolts for climbing is like shooting deer that are fenced in a small enclosure. I always thought that climbing and caving were challenging sports but to use bolts reduces the challenge to almost absolute zero.

I am appalled that any respectable climber would let their use of bolts be known. Within one day of instruction to explain the equipment and how to use it, almost anyone (barring fear) can climb a vertical wall, an overhang, or cross a ceiling by using bolts. Actually you do not ever need to support your entire weight by your arms and can rest anytime. Wouldn't Carpentor Cave be a snap if bolts were used?

The list of world class climbers should be ashamed and I hope that such reputations were achieved by challenging accomplishments rather than by use of bolts.

Pitons are out of favor and are being replaced by chocks. Why not also get rid of bolts? Bolts should not be used by climbers or cavers. The eventual solution to reduce challenge is to blow up the mountain so that you can bring the top down to you and then brag that you reached the top, or use giant equipment to scour the earth to expose the high room that was inaccessible from the underground pit. Maybe some mysteries should be left for others to ponder. For that room above the pit, how about using extension poles from which one can hang ropes to access high places? This would provide a challenge just to sort out the logistics and effort.

I have caved in over twenty states including Oregon and do not want to see bolts all over the wall and ceilings of caves. —*Gilbert A. Jackson, NSS 6378, Weston, Connecticut*

"Rock & Ice"

In response to the article, "Rock and Ice Promotes Cave Climbing," (*NSS News*, February '95) two people, myself and Mr. Scott Davis from Flagstaff, Arizona, both had letters printed in the January/February issue of *Rock & Ice* protesting said photo of a large stalactite being climbed. A few of my words were changed, but nothing was taken out of context. Here is my letter in its entirety, as it appeared in the magazine. I encourage Mr. Davis to submit his letter as well.

"HANDS OFF"

On page 85 of issue #46 there is a photo of Heinz Zak climbing a stalactite in a cave in Phra-Nang Bay, Thailand. I am a National Speleological Society member, and our motto states: Take nothing but pictures, leave nothing but footprints, kill nothing but time. The entire world caving community operates by this credo of conservation. Climbing a stalactite violates the cavers' way.

A stalactite is very sensitive to human contact. The oils on human hands can completely impede its growth. A beautiful work of nature, one that took thousands of years to create and which will not regenerate, can be killed by one touch of someone's hand. Sometimes cave formations dry out naturally and are considered dead. Still they should not be touched. Muddy shoes and hands leave dirt, discolorations, and large scratches in what once was pristine flowstone. I have seen cave rock buffed down to glassy smoothness through years of human traffic.

I ask the climbing community to acknowledge the conservation creed of the National Speleological Society, and to play by caver's rules when inside caves. Discourage wanton marring of nature's most beautiful decorations, or the underground will be destroyed forever in the blink of an eye. —*Bruce White, NSS 39223, Bloomington, Indiana*

Rock & Ice replies:

As you know, *Rock & Ice* published an article on caving in the November/December issue; in that same issue, a guide to climbing in Phra-Nang Bay, Thailand, also appeared. We received numerous letters from cavers applauding our attempt at environmentally correct behavior in the caving article (we included a "Cave Care" sidebar [reproduced below] to alert climbers to the delicate nature of formations) yet decrying the photographs and written descriptions of climbng on stalactites that appeared in the Thailand guide.

It was obvious from the content of many of these letters that most correspondents had

Continued on page 163

CAVE CARE

Cave ecology is taken very seriously. All frequently traveled cave trails are marked with tape to define where you may walk. You are not allowed to step outside the survey tape unless you're on a scientific mission that requires it. To do so might damage formations found nowhere else on Earth—formations so delicate even your breath could injure them. Gloves are worn to protect formations from contamination by hand oils; cavers also wear special booties whenever it's necessary to walk across flowstone floors. Black-soled boots are banned from caves completely.

For short forays, all water is brought in; any water not consumed must be carried out. This eliminates contamination of ground water by tap water. On longer trips, certain pools are specified for drinking water. Two measuring cups are permanently stationed at these pools: You dip with one., then pour its contents into the other, making sure there is no physical contact between the two. The second cup is used for pouring into personal water bottles. Most pools must not be disturbed; sterile surgical gloves are used to collect samples for research purposes only.

Urine is bottled, defecation packages (called "burritos") are carried out. Litter is only a problem at the microscopic level. Lint surveys are performed in all large or special caves. A square foot of cave, chosen randomly, is marked off, and a research team inspects every square millimeter with a magnifying glass, counting every foreign object: lint from clothes, skin flakes and hair particles. Cave literature is addressing this pollution, with inquiries into fabrics that minimize lint. In Carlsbad Caverns a special vacuum cleaner is used to remove lint; during one routine clean-up, 50 pounds of lint were vacuumed from formations close to the tourist trail.

A TALE OF TWO RIVER

RIO CANLISH AND RIO OQUEBA

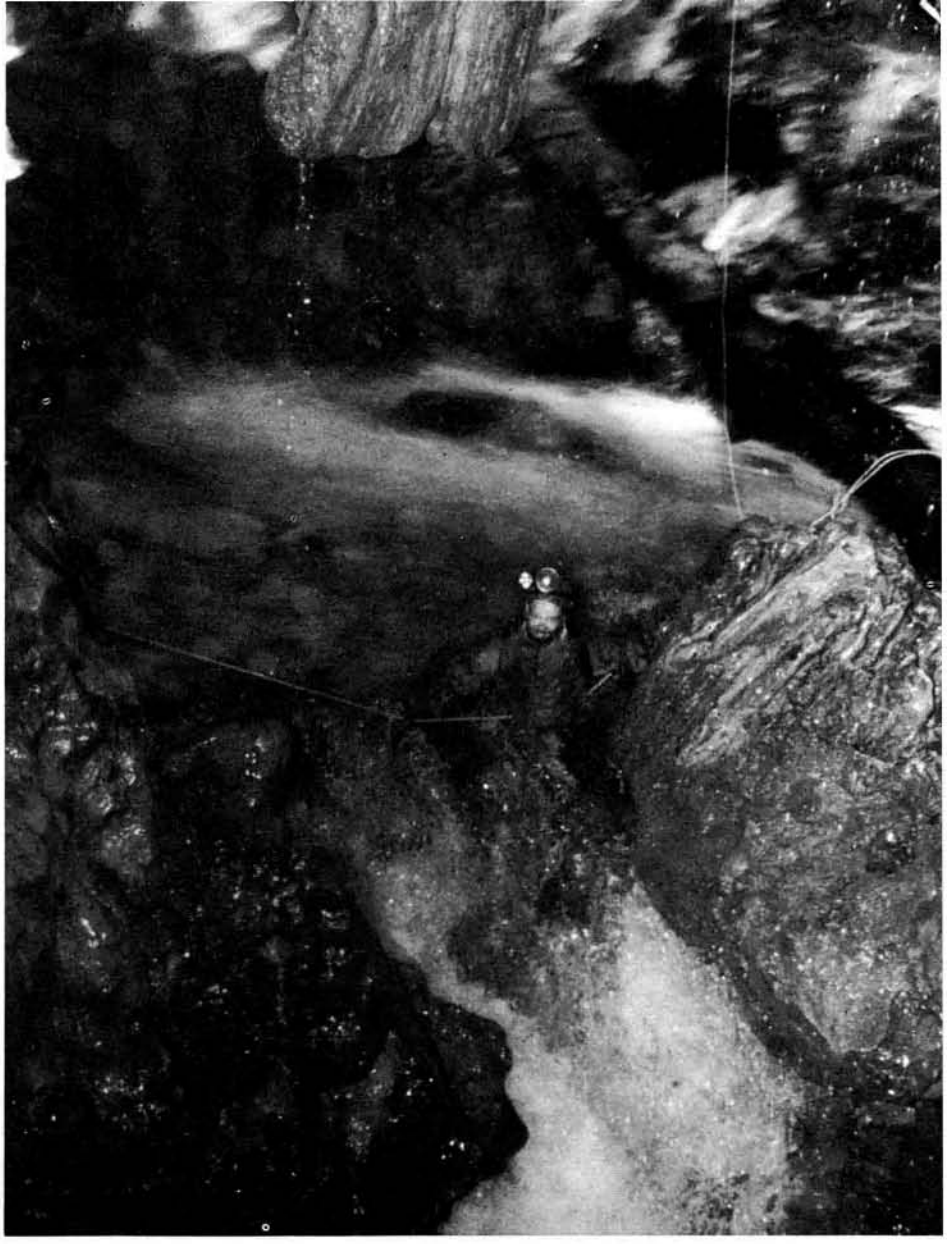
In the spring of 1993 an NSS Expedition explored the submergence of the Rio Cahabon under travertine at the Semuc Champey, Altaverapaz, Guatemala. This cave, formed by a set of springs depositing travertine across a narrow river canyon, I considered to be very unusual; I thought it might be the only cave like this in the Americas, perhaps even the world.

After our explorations were complete, we separated to travel around and scout caves for the 1994 expedition. Guatemala is a place where one can still find virgin caves simply by looking at topographic maps. From the maps I chose several objectives, including a cave that appeared on the Caquipec Quadrangle, where the Rio Canlish was shown to submerge for about 1 kilometer, some distance above its confluence with the Rio Cahabon, upstream of the Semuc Champey. The cave appeared to be ten kilometers or so from the nearest road, a Finca (farm) road coming from San Pedro Carcha and paralleling the Cahabon on the south side of the canyon. One has to be a bit skeptical of what is shown on these maps—the photogramitry was done decades ago and the work was poorly field-checked. Indeed, an earlier version of this map didn't show the Rio Canlish cave at all!

Crossing the cane bridge on the trail to the sumidero of the Rio Canlish.

CAVES

By Steve Knutson
Photos By Author



Jeb Blakely crossing above a fall just inside the Canlish Sumidero.

I got a room in Carcha and asked around for a ride to the Finca Xicacao (Shi-ca-cow') at road's end. Yes, a truck was going at 5 AM the next morning. I caught this truck and after four hours of rough riding, reached the Finca. On foot I made my way up the sloping karst-lands below the Montana Yalijux. The area is covered with subsistance farms and there were more trails than one would want. By 1 PM I had reached the cave to find that it is another version of the Semuc Champey! Springs, this time from both sides of the canyon, have deposited travertine and bridged the river. My "unique in all the world" Semuc Champey wasn't even unique in the Altaverapaz!

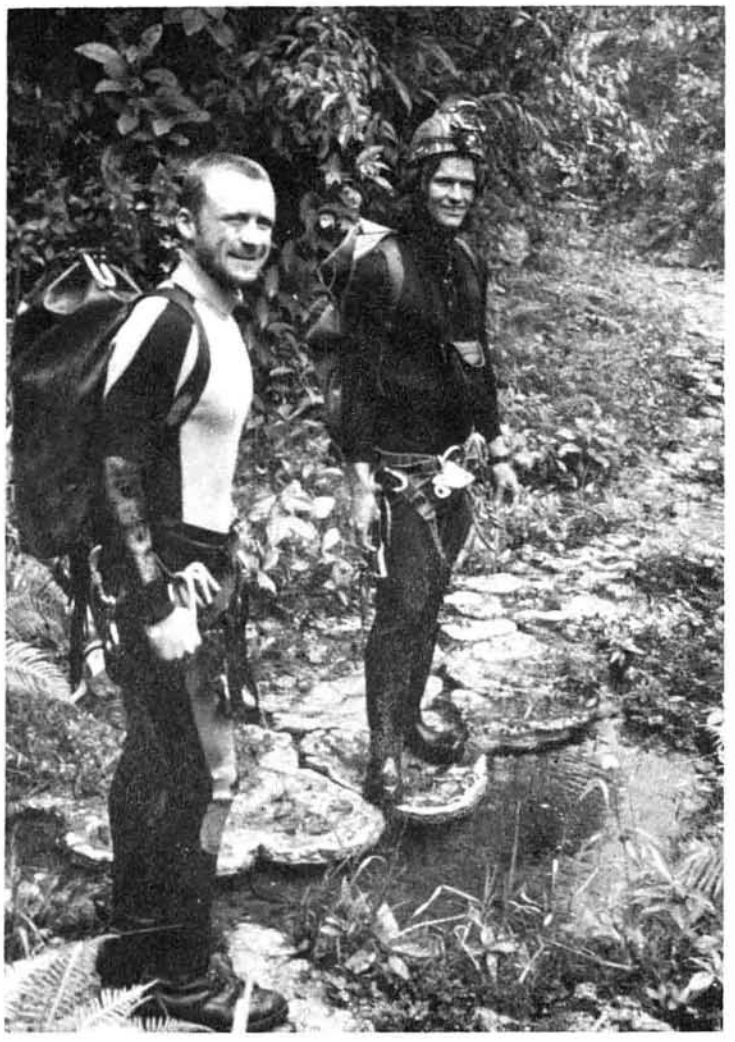
But what would this cave offer the explorer? I couldn't get down the sheer walls to the sumidero but was able to reach the resurgence. Here the river rushed out of an opening some 5 meters high and 7 meters wide with a flow of 20 to 30 cubic feet per second (cfs) tumbling amongst boulders. There seemed to be air flow as well. Good enough! We would form the 1994 expedition around this cave. Another sumidero, that of the Rio Oqueba, was next to the road about 8 kilometers toward Carcha from the Finca Xicacao. This would be our secondary objective. This river, only about 5–10 cfs in the dry season, is shown by the map to exit in the Cahabon River Canyon about 0.7 kilometers from its sumidero.

My adventure wasn't quite over, however. I arrived back at the road at 4 PM to find the truck gone, and the place almost deserted. I had an LED flashlight that Bonnie Crystal had given me which has the virtue of running maybe a week on a set of batteries but the disadvantage of a wan, yellow beam. At night this would be sufficient to illuminate the path in front of my feet, but little more. What the heck, might as well walk the 40 kilometers back to Carcha. Sometime after midnight I was walking along in the pitch dark, forested karstlands and happened to flash my light to the side--HOLY SHIT! There were 8 or 10 men at the roadside, not more than a few feet away, all with guns. I jumped as if I'd stepped on a snake but recovered as quickly as I could and said, "Good evening!"(in Spanish). A voice menacingly replied, "Where are you going?" My mind was racing, trying to consider what kind of story they'd like to hear (maybe a dance routine, a couple of jokes?), but all I could blurt out was "Well, I went up to see the cave of the Rio Canlish, and when I got back to the road, the truck had gone and, uh, so I'm walking back to Carcha and, uh,....and how much further is it, anyway?" The voice said, "12 kilometers." "Yow!" I replied—"Well, I must be going! Good night!" and I walked away...

The 1994 Expedition

We set things up for April of 1994 to use the best of the dry season. Jeb and Bitsy Blakely from Idaho and Rick Koehler from California were flying in, Taco VanIperen and Monique Castaguay from Alberta, Canada, were driving down as were Bill McGahey and I in Bill's big Ford 4x4, which he kindly allowed to be used as the expedition truck.

Bill and I arrived in Guatemala on the 27th of March, picked up the gear in Antigua, and headed for Coban to make



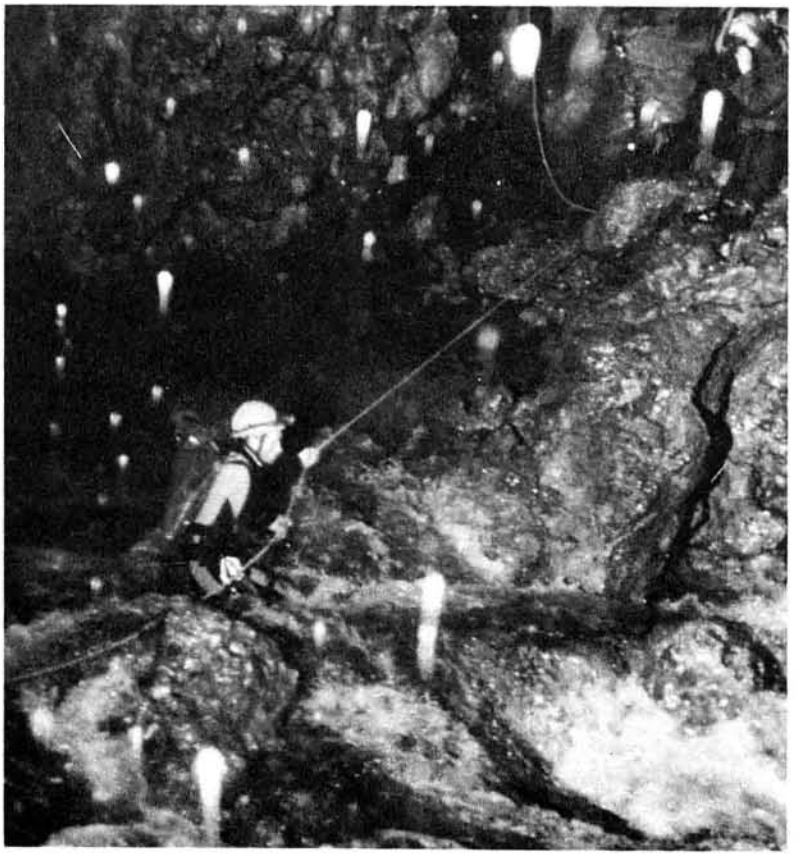
Rick Koehler and Taco VanIperen on the travatine trail over the Rio Canlish.

preliminary arrangements. The D'Acuna family runs a tour agency so we got their Land Rover, a Kek'chi speaking driver (just in case) and drove to the end of the road at Finca Xicacao to arrange for mules to carry the gear the ten kilometers to the Canlish River cave. To our surprise the Finca proved to be a cooperative, meaning it was not run by a single, worldly person, who would understand pretty much what we wanted to do, but by a large group of Kek'chi. This meant there would be no mules—they carried supplies and crops on their backs. I asked, through my Kek'chi translator, if there were 20 men willing to carry our stuff, for 25 Quetzales (about $4.30) a bag. "What size of bags?" they wanted to know. I explained that the bags were about the size of a coffee sack. The head man very quickly had a list of 20 guys, everyone joking and laughing. I presumed this was about the strange gringos and this bizarre trip they proposed but it was all in Kek'chi.

We returned to Coban and repacked the gear into man-sized lots. It rained off-and-on for several days and this was a bit depressing, but when we headed for Guat City to pick up the others on Saturday, April 2, the weather had cleared. On Sunday we met the plane and returned to Coban. That night Taco and Monique arrived by truck which made us a group of seven.

The next morning saw us off at dawn to arrive at Finca Xicacao by 9 AM as agreed on. The finca workers hadn't forgotten but now we had one extra bag. After some deliberation one of the guys strapped the extra one to the pack he already had and staggered off up the trail. These Mayan descendants are small of stature and this man probably didn't weigh more than the 100+ pounds he was carrying! When he got tired, he switched with another and eventually involved four men in the double pack carry. We kept track of this and gave them an extra 10 Quetzales each. Early in the afternoon we arrived at some reasonably level ground near the Sumidero, paid off the men, and found ourselves alone, beneath the towering Montana Yalijux.

The area above the cave is mostly used agriculturally so we set up our tents in a Cardamon grove that gave us adequate shade. We were just above the short, sheer-walled gorge leading to the Sumidero and the river was accessible for water and washing. The vegetation included banana and coffee trees. Later that day a few guys who lived nearby dropped in to ask why strange gringos were camped in their Cardamon. We said we intended to explore the river cave



River crossing in the Canlish Cave.

"We pushed up the canal against the current for another 30 meters to where you could see a tall falls ahead with daylight filtering down it. Could this be the downstream end of the karst window?"

and they immediately exclaimed "No!"—meaning they didn't believe that for even a second and asked again what we were really up to. We assured them that we were really there for the cave and had gear to make it possible–they just shook their heads, but didn't seem to care, and after a while they went home.

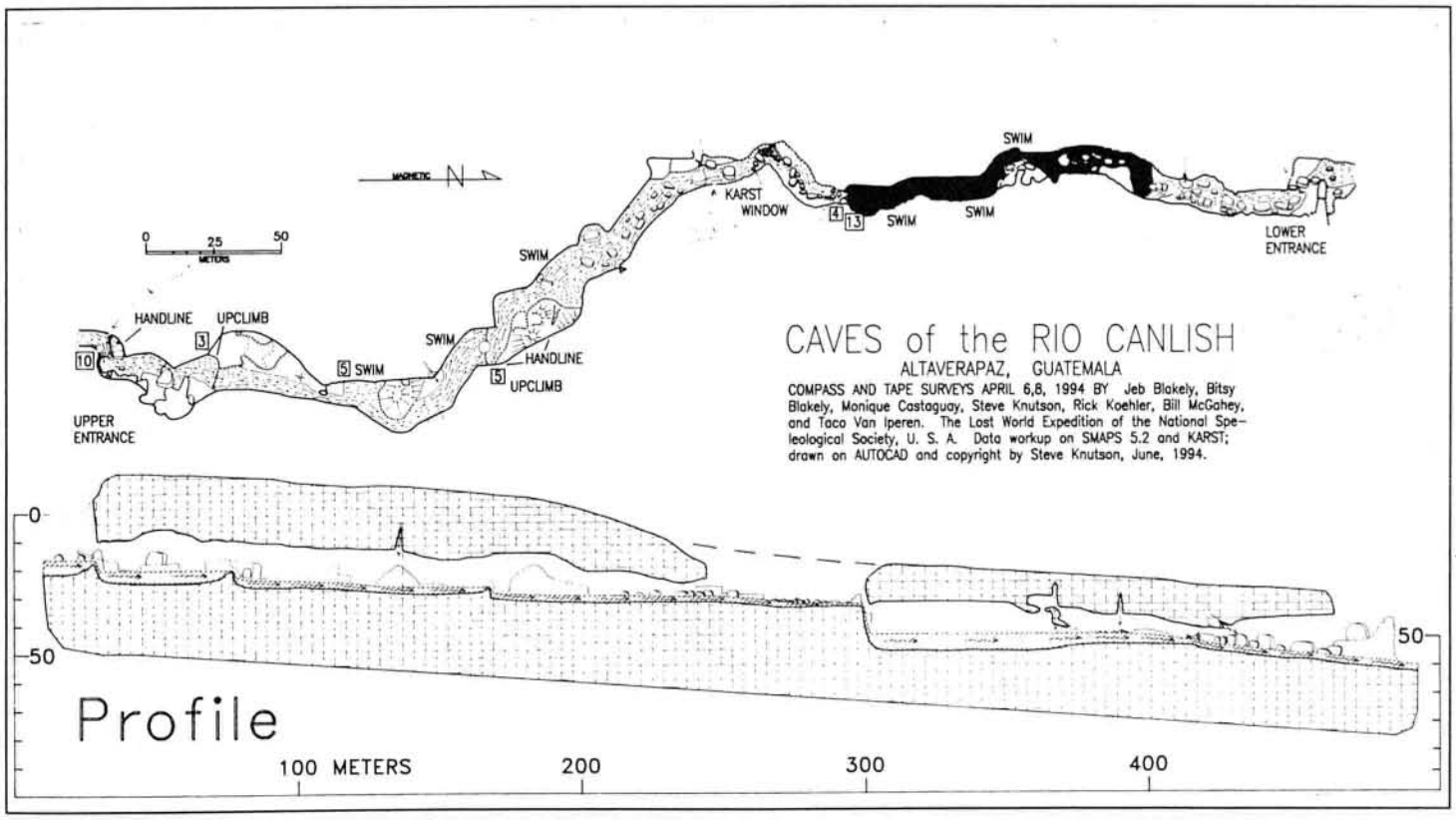
The Canlish River Cave

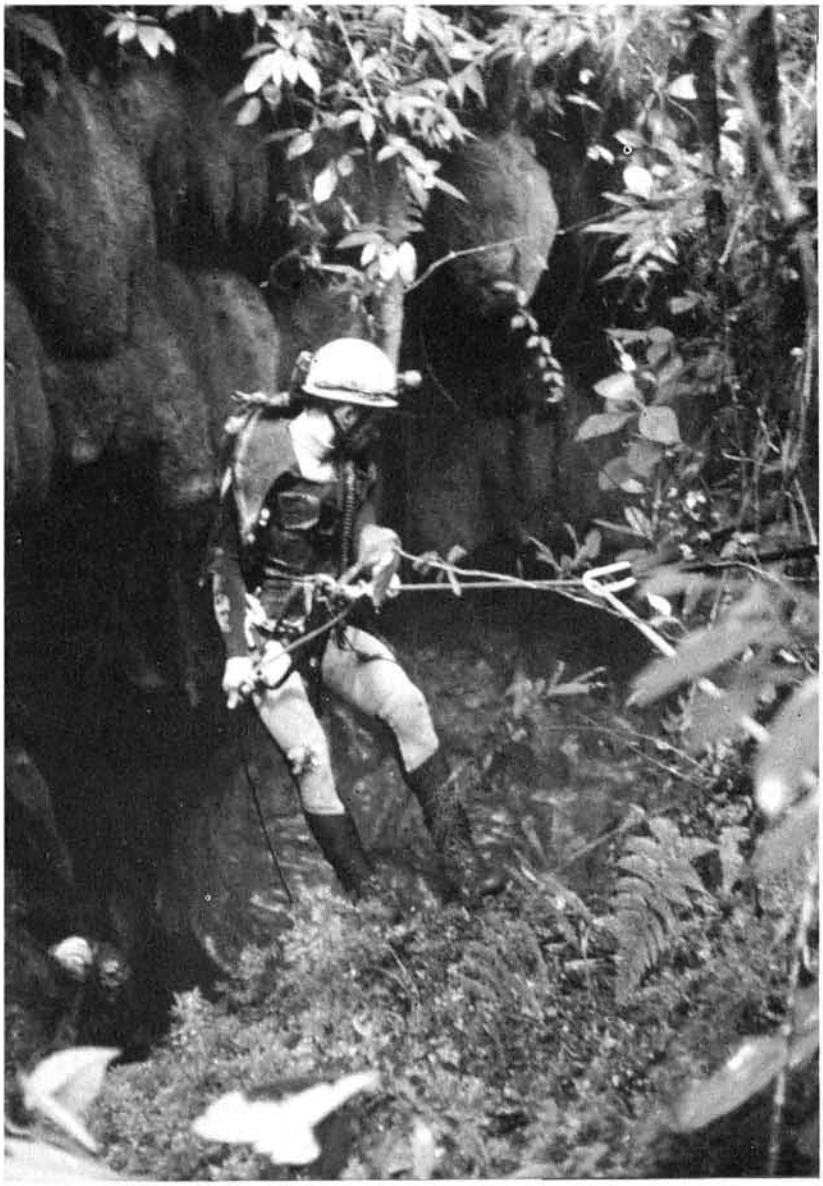
The night proved comfortably cool and quiet and the next morning Taco, Monique and Rick formed a crew and headed for the Sumidero. The area above the cave was mostly vegetation with open trails and traces where streams flowed and formed long sequences of little travertine pools. Unlike Semuc Champey, none of these were large enough to swim in. A main trail traversed the land bridge over the cave and at about the midway point on this one could hear river sounds in the dense vegetation. Jeb and Bitsy went to see if this was a third entrance—we suspected that there was a hole where the spring water which deposited the travertine went down. Bill was suffering a bit of Tecun Uman's revenge (he was the Mayan warrior-king who fought and was defeated by the rapacious Don Pedro de Alvarado) and I volunteered to be the first to watch camp.

The sumidero crew rappelled about 15 meters down into the sheer gorge at the entrance to land perfectly on a large log. This led to a rock in midstream at the edge of a 2 meter waterfall. They traversed through the fast water above the falls to the right-hand wall and proceeded downstream. The passage was large and broad, with the river, some 20 cfs, meandering from wall to wall. The rest of the floor was either flowstone ledges or boulders.

Soon they had to cross the fast water again to the left side of the passage. A short climb gained a ledge. A climb-down a bit farther led back to the river; they followed along its edge to where it ended and swam to a huge flowstone ledge with several tiers. This was wonderfully set off by water leaking through the roof and showering down. At the end of this was a short rappel to a swim and river crossing to another flowstone ledge in midstream. They proceeded across lesser flow to the right wall where Taco was able to climb to a flowstone ledge. He fixed a rope to help the others follow and they continued across an exposed portion where a handline was rigged. All stream crossings and climbs had been rigged with canal line or rope for safety.

Jeb and Bitsy made their way through the vegetation to the edge of a dropoff and rappelled down to find themselves in a section of river gorge. Was this the main river or was this a tributary to it? Immediately downstream the river cascaded noisily down a pit so they headed upstream across a swim to boulders and an obvious entrance some 30 meters





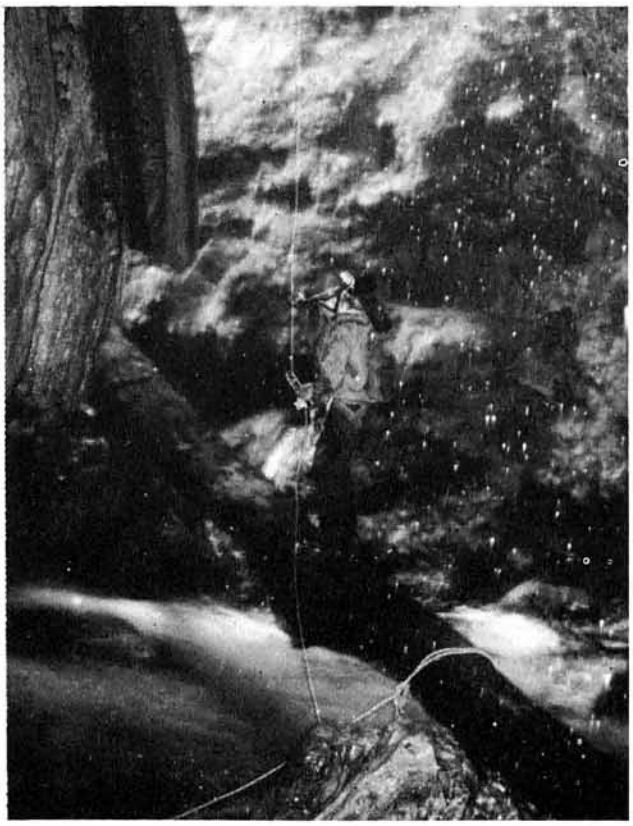
Rappeling into the karst window of the Rio Canlish.

away. The way into the entrance was mainly over boulders, and this continued to where they could walk in shallow water among more boulders. This then led to a swim with a ledge, beyond where they could hear the sumidero crew doing their traverse. The 1 kilometer distance from the sumidero to the resurgence shown on the topo map was broken by a karst window some 50 meters long.

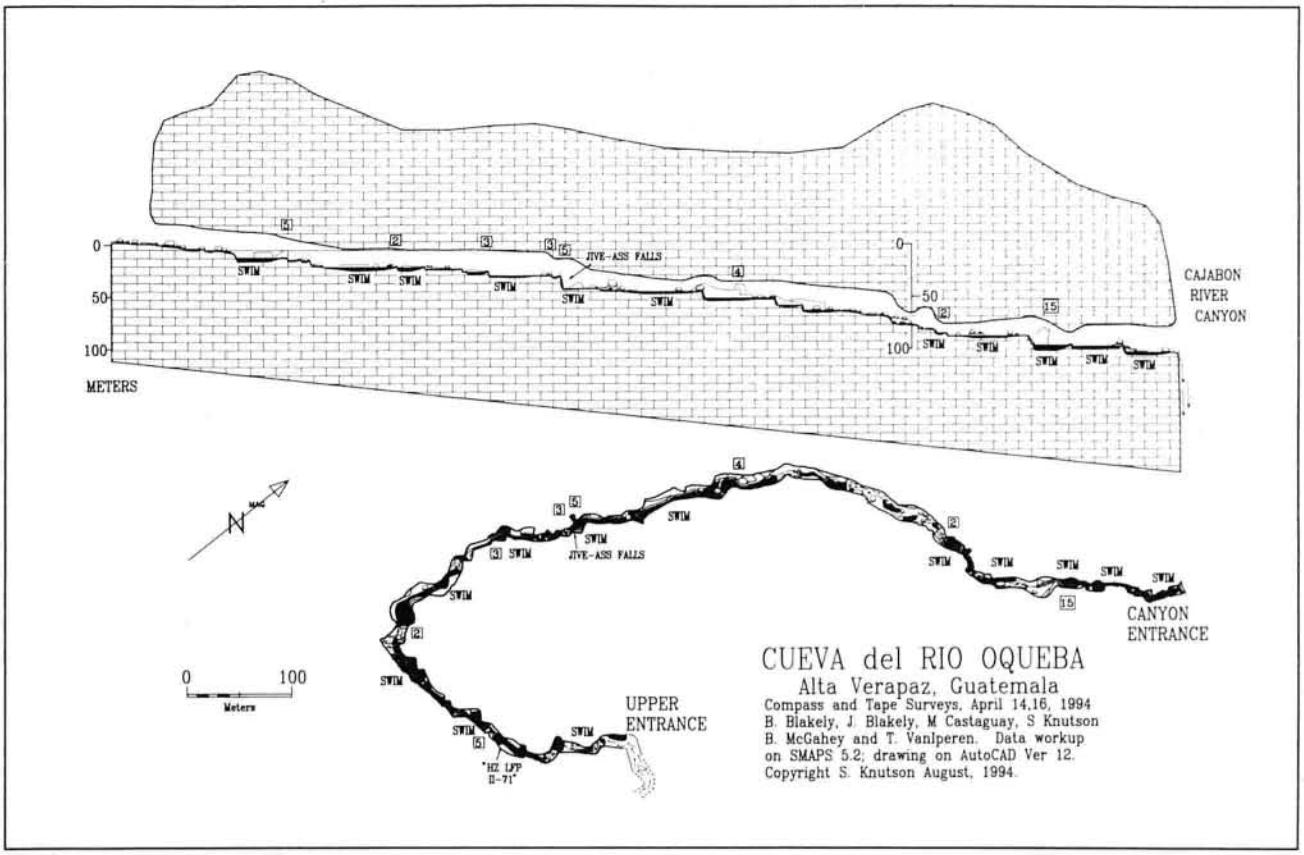
The next day Taco, Monique and I mapped the upper cave and made successful use of the Radio Shack two-way radios with earplug microphone. This radio has a transmitter/receiver which is only about 4x3x½", and the microphone/receiver is just a plug that fits in your ear. We put the transmitter in headbands on our helmets and were able to transmit compass/clino data from the compass person to the book person despite the noise of the river. (In a river cave you normally can't shout data to anyone more than a few feet away.) The upper cave mapped to only about 280 meters in length. That same day Rick and Bill through-tripped it doing some photo work. About midnight it started to rain.

It was still raining the next day (this was supposed to be the dry season!) so we scouted around—it is a bit foolish to enter a river cave in bad weather. Taco checked a hole one could see across from camp and up the valley side; it didn't go. I headed upstream to the base of Montana Yalijux, crossed the river and proceeded up what seemed to be an alcove in the mountainside. There was no stream issuing from this, but a little way up it a stream of some 10 cfs became obvious—apparently it entered the river underground. At the head of it was a large cave entrance! I went in to the edge of twilight where it was only a few feet high and became a swim. There was no obvious air flow but rapids could be heard farther in. This resurgence represented another possible outlet for the drainage of the huge closed depressions high on the mountain.

On the 8th (Friday) the weather was good so Jeb, Bitsy, Bill and I went to the Rio Canlish resurgence. The way in led over boulders and ledges, with the river beneath them, to a swim with a tall waterfall beyond. I easily climbed the flowstone on the left side of this and found a room above and just beyond the falls. There a hole in the floor dropped to what appeared to be a slackwater canal. The others came up and Jeb rappelled down. He was able to swim upstream with a canal line to a hold on the wall but couldn't get out of the water. Downstream was a shower of water from above. This was the waterfall we had seen from below—it was spring water coming in from above and we later found you could just swim through it. We



Bitsy Blakely on the log after the rappel into the sumidero of Rio Canlish.



The karst window, Rio Canlish.

pushed up the canal against the current for another 30 meters to where you could see a tall falls ahead with daylight filtering down it. Could this be the downstream end of the karst window? We mapped our way back downstream and out.

Taco and Rick had meanwhile tried to descend the lower end of the window but had found the pit to be intense with spray and had aborted, going up the valley instead to check the resurgence cave I had found. The swim where I had stopped led to a huge chamber, but they could find no continuation.

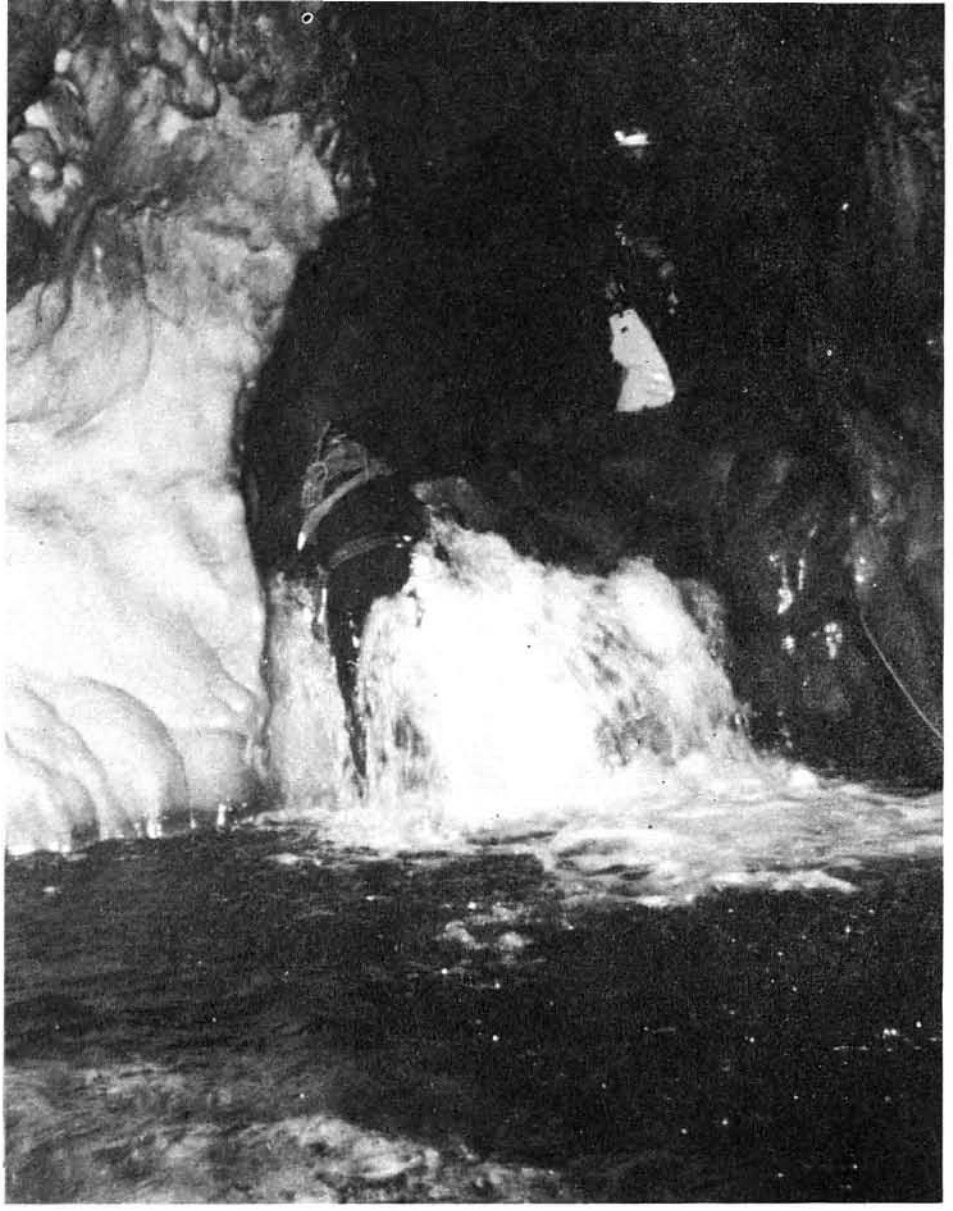
On Saturday Taco and Rick found the waterfall much less violent and they did a wet, but easy rappel to the head of the canal, only 16 meters from our last canal line. Jeb and Bitsy scouted part way up Montana Yalijux and found a couple of interesting holes. I chopped around a bit in the vegetation over the cave and got to the head of the travertine springs. There were no cave openings but I did discover that the springs came from *both* sides of the canyon. Surely this means two separate, saturated aquifers coincidentally issuing forth at the same point in the canyon. What are the odds against this? The next nearest travertine spring is 20 miles away.

With the caves done there was no reason to wait for the scheduled return of our porters from Finca Xicacao on the 20th, so we asked locals if they could find 20 men who wanted to make a fast 25 Q. The school teacher came back with a list of 15 and we called it a deal. The next day we did a photo/de-rig pulldown through-trip and on Monday several of the group hiked to the Quetzal (bird) preserve on Montana Yalijux while the rest packed for the carry out. On Tuesday the porters carried the gear down to the road. We had to carry some ourselves and got a bit trashed. In any case, we were able to load the truck and drive back up the road to our next campsite at the secondary objective, the sumidero of the Rio Oqueba.

The Rio Oqueba Cave

The topo map shows this sumidero and indicates a resurgence in the canyon of the Rio Cahabon about 0.7 kilometers to the north. I had visited the sumidero, immediately adjacent to the road years ago, but the water flow is small, some 5-10 cfs, and I had the feeling it would present little challenge. It had been a low priority objective until now.

On Thursday we had all recovered from the hike and with Rick watching camp, we headed into the tall, narrow sumidero. Jeb, Bitsy and Bill formed a



Short falls, Rio Oqueba Cave.

push team, with bolt kit, chocks and rope while Taco, Monique and I surveyed our way in. The passage, 30+ meters tall and 7–9 meters wide, was quite spectacular. A hundred meters in we had passed the zone of the White-collared Swifts and came to the first swim. By that time I had realized that the cave would be longer than the topo map indicated for we were heading southwest, not north toward the resurgence site shown.

About 150 meters from the entrance, the push crew found the initials "H.Z." and "L.F.P" with the date "II-71." Someone had gotten that far 23 years before—probably French cavers since they were very active in Guatemala in the early 70's. The push crew continued, climbing around short waterfalls and wading or swimming in the water with the passage maintaining its large size. Despite this large cross-section, they could feel downcave airflow, indicating that the cave was open to its resurgence. About 250 meters in, the passage turned north and even a little east, now heading for the indicated resurgence. This was not discernable to the push cavers. At 400 meters there was a 3-meter rappel and after that yet another swim. They came to a log jam requiring a short climb-up and rappel. That rappel led to a short swim and a drop of 8–10 meters. They used one rope for the two rappels; consequently the rope lay right in the waterfall of the second drop.

After a long swim, the passage widened and the left wall sloped up to a high ceiling. It was obvious that the wet season flow was not sufficient to flood the cave, for there were dirt deposits on high ledges and more life than one would expect in a well-scoured river cave—large crabs would be seen and occasionally they would spot huge spiders on the walls. Knowing the projected distance was only 0.7 kilometers, the push crew began wondering why they were not seeing daylight ahead. Finally they ran out of rope at a 15-meter-rappel and turned back. They passed us and we mapped on for a bit to let them get ahead of us. We finally left a marked station some 900 meters from the entrance.

When we got back to the 8–10 meter falls, Monique went up first and seemed to have a very wet time of it, but when Taco followed, the rope seemed to lay to the right of the falls. When I swam over and got on, it was right in the main flow. Ascending was like drowning but it had to be done. As I went up it occurred to me what Warren Anderson would probably have said about rigging in the falls—a jive-ass rig! So I named it Jive-ass Falls. On the next trip in we found a natural anchor to one side which kept the rope out of the flow.

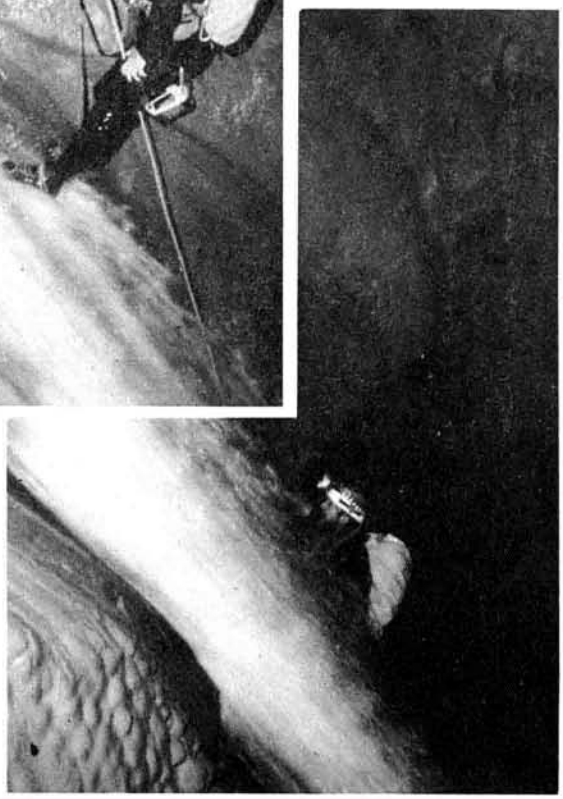
Back in camp we had been visited by some locals who told us that Oqueba means "sumidero" in Kek'chi.

The next day Taco, Monique and Rick returned to the cave, climbing past a waterfall in a narrow slot to the 15-meter drop and rappelling to a swim. More climb-downs and swims finally led to the lower entrance, about 1.2 kilometers from the sumidero. The river cascaded from this in a sheer drop to the Cahabon, far below, and there appeared to be no way to get out without rappelling. They returned through the cave but couldn't map because the compass/clino had taken in some water.

Jeb and I hiked around for some time looking for a way down into the canyon of the Cahabon so we could do a pull-down through trip, with some confidence of getting from the lower entrance back up to camp, but we never found one. Indeed, we finally found ourselves at a finca several kilometers away where the kind foreman gave us sodas and beer.

Several of the group were sick at this time and only Taco, Bill and I felt like finishing the survey the next day. We managed to derig and do some photography as well. We then called the cave done. A really fine and scenic little river cave, it had been much more than I had expected.

You never know what level of challenge a river cave will present when you first stand at the entrance. Even a



Top: Bill McGahey above the breakover, Jive-Ass Falls, Rio Oqueba Cave.
Center: Bill at the breakover, Jive-Ass Falls.
Lower: Bill starting up Jive-Ass Falls.

relatively low flow can present extreme difficulties and danger if the passage is narrow and ledges are scarce. These two caves happened to be more ecstacy than agony—the waterfalls, swims and climbs were exhilarating and the plentiful flowstone contributed a share of beauty. You never know.

Acknowledgements

I would like to thank the Dogwood City Grotto, NSS, for their donation of a complete SKED setup, the National Speleological Society for a monetary grant, Mike Shawcross for his continued hospitality, and the kind folks of the Finca Xicacao and Rio Canlish area for allowing us to go into their caves. We also thank Pigeon Mountain Industries for the rope donated to previous expeditions, which we are still using—it lasts and lasts. Thanks also to John Blum for the special light-weight bolt drivers we used.

DRAWING BY KIM VAN ZANDT

Andrew or Barclay Foord (they are twins and I'm not sure which brother it is) on the Bighorn entrance pitch. A drawing by Linda Heslop.

I have noticed that many of our new members have entered into or are considering the world of Vertical Caving. This is a very exciting aspect of the sport of its own right and also opens up access to many caves that lack horizontal entrances. Although vertical caving can be a safe specialty, it has inherent risks not found in horizontal caving. As Ted Scott would say, "falling screaming to your death" is a possibility if you make a really bad decision. What follows are some thoughts and safety tips, many of which have been learned the hard way. Although not all inclusive I offer them in the hope that they might prevent someone else from having a bad day.

Be aware of gravity—because of it your time to effectively react to a serious mistake is minimal.

Avoid making serious mistakes. The formula for this consists of three components; the first being the proper equipment for the task at hand, the second just as important is proper training and practice. If you are just beginning your vertical career, talk to experienced cavers and try out different equipment setups in a controlled environment on the surface.

There are several different ascending rigs available so try before you buy. Read *On Rope* and any other current reference on vertical caving you can get your hands on. Once you find a system that suits you and the type of work you will be doing, practice with it in a surface environment. A tree with a fixed rope is a good way to start. Then move up to small surface drops and climbs. When you and your companions feel ready for your first in-cave drop start slowly. A trip to Ellisons to do Fantastic Pit for your first major drop is pushing your luck. If at all possible, get on some trips with those who you know are experienced, responsible vertical cavers. The final part of this formula is to THINK before acting and check everything. Remember gravity is a fast and shifty character, he doesn't care how many times you have done things right in the past; he is just waiting for that one opportunity.

Always be extremely careful when working around vertical drops whether at the bottom or the top. That fear of heights which most people have is your body's way of getting your attention. When working on a lip, clip in a safety to the rope. Teetering on the edge of a drop will not impress anyone and is not a good long-term survival technique. When at the bottom of the drop, watch out for escaping gear and anything else which could be dislodged by those above you. On several occasions I have had packs, rocks and even a sledge hammer dropped in my immediate vicinity. Fortunately, I had removed myself from the fall zone by getting under an overhang and or moving out of the line of drop. If you are above someone waiting your turn on a drop, keep yourself and your gear away from the lip, and if possible, sit still, until they are clear. While these recommendations seem self-evident, watch a group of people at a drop. It is amazing how oblivious they

Vertical Safety Techniques

By Joseph Kaffl

can sometimes be to these precautions. It never hurts to diplomatically remind them of these precautions if things seem out-of-hand or folks are preoccupied.

When rigging a pit keep in mind that they are all different. If it is a known cave, talk to someone who has been there recently and benefit from their experience. If the pit is virgin, carefully consider *all* of the available rigging locations. Take into consideration the location and condition of available anchors and back-ups, the potential result of the failure of the loaded anchor to the rope and caver, the status of the lip (solid limestone or debris) abrasion points and padding requirements for the rope, and ease of access to the rappel point. Avoid rigging in waterfalls. Hypothermia on a rope can be a serious problem if you are stuck with a gear problem or fatigued after a long trip. Even if you are not in the waterfall as you begin the rappel will this be true farther down? Does this drop require a wet suit? Have you practiced climbing while in a wet suit? Unfortunately, a number of people have died because they over estimated their ability to deal with climbs in waterfalls.

Before lowering your rope make sure that the edge of the drop is stable. I once watched a 500 pound rock, which was the edge of the lip, begin to move as Ted rappeled over it. This was unexpected since this lip had been crossed by hundreds of cavers in the past without mishap. It was simply the rock's time. Fortunately, the rock allowed Ted to clear the drop before a small nudge sent it to its next resting place.

When rigging the rope, if at all possible, have someone else validate the tie-offs and always use at least one and hopefully more backups. Beware of any old bolts left in a cave. Carefully inspect them *before* making use of them and insure that you have a natural tie-off if possible. It is also a good idea to have a knot in the end of the rope no matter how sure you are that the rope reaches the bottom of the drop. You do know how to change over from rappel to climb on-rope, don't you? I unfortunately learned the hard way—the estimate for the length of rope required for a drop into a virgin pit was slightly off. It was an interesting way to learn this skill and things worked out well, but I would have been better off if I had first practiced this skill in a tree several times.

When clipping into the rope make sure that everything is perfect, this is not a re-testable skill. Check your harness to insure that all straps are routed properly and backed up through your buckles if required. Next insure that your attachment point for your descender is actually attached to your seat harness. There have been several cases where people have attempted to rappel and discovered they were clipped into their battery belts or other non-life-supporting parts of their equipment or nothing at all, the results were not happy.

If your attachment device is a locking 'biner make sure it is locked to the rappel device *every time* before trusting your life to it. This means checking it before *each* drop in multiple-drop series. Many vertical cavers use Mallon Quick Links™ because these are less likely to open unexpectedly as the result of rubbing against other objects as you travel through the cave. DO NOT USE A NON-LOCKING CARABINER. Next, insure that your rappel device is properly attached to the rope. Last year, one of the top women climbers, during a routine practice, stepped off to begin a rappel and discovered she was not attached to her rope, fortunately she survived and is still climbing.

Before doing the drop, make sure that long hair or any other body part which could be pulled into your descending device is properly stowed. Racks are notorious for eating hair, scalp and other vital body parts. Finally, make sure that your ascending gear is properly tethered to your seat and your safety ascender is also hooked in and ready for use. Some cavers will attach this above their descender and only remove it after they test their descender by loading the rope. This technique requires practice above ground or it can cause more problems than it solves.

One of the most important things to remember as you go through your mental check list is to *take your time;* being rushed or task-loaded leads to stupid mistakes. If a world class climber can make an almost fatal error, you can too. It does not matter how many drops you have successfully done, the cave does not care. Each time you do a drop you have to get it right that time or you may, "fall screaming to your death."

A major impediment to doing things correctly can be peer pressure. I was taking another caver on a vertical trip and after checking everything a second time at the edge of the drop he gave me a hard time about this practice—we no longer cave together. Do not allow peer pressure to force you to change your routine, or to rush other members of your group. If people seem task-loaded with too many things happening too quickly, slow the situation down. It is good to expand your limits and challenge yourself, but not to the point where you endanger yourself or anyone else's safety. Remember, we go caving to have fun.

The cave diving community has a philosophy—*any* cave diver can call *any* dive at *any* time for *any* reason. This approach also applies for regular trips, in particular those of the vertical flavor. Don't do something you are not comfortable with.

While this list is far from inclusive, I hope it will provide you with food for thought.

Good caving!

Vladimir Kisseljov:

Out Of Russia, A Memorial

Edited for publication by William Oldacre

Vladimar Kisseljov
Photo courtesy of John Sheltens.

Vladimir Kisseljov shook my hand nodding impassively. Initially, I wondered if this tall, good looking Russian was actually friendly. He seldom smiled. Moving briskly through his color slides, he matter-of-factly narrated some of the most stunning caving expeditions I've ever seen. A friendly deal with a military helicopter pilot, two weeks isolated in a mountainous "no man's land", bright yellow suits insulating them from water so cold it might freeze if it stopped moving, and spectacular rappels followed by miles of rugged passageway. All to do a difficult cave dive at the end. "Geez, Vladimir, how many tanks did you portage in there?" Richly accented, but in good English, he answered our questions. Vladimir and his friend Ilia were clearly world-class cavers routinely challenging Earth's subterranean equivalents of Mount Everest.

Probably ninety-five percent of us have never faced such enormous obstacles and that fact must have been obvious to him. But I never detected a hint of arrogance.

As we came to know each other, we argued caving techniques, equipment, and politics. A startled expression would often herald his response as he studied my English and the meaning would suddenly come to him. Despite his serious demeanor, Vladimir proved to be a friendly and generous human being whose devotion to caving spanned twenty years. That warm bond which unites cavers everywhere, though unspoken, required no language to express itself. We became fast friends.

His immense contribution to caving has won him respect from around the globe. A seemingly tireless expedition caver, he discovered or explored, and flawlessly mapped, hundreds of important caves inside Russia and elsewhere. Equipment and human resources were pressed to their limits as he pioneered new techniques and opened up uncharted areas for everyone.

He spent years compiling a massive data base on large caves of the USSR, cave accidents, and bibliographies. He prepared hundreds more English language abstracts of Soviet articles for publication in Western bibliographies. This, in addition to prodigious authorship of his own monographs on caving technique, mapping, regional analyses, cave descriptions, and literature reviews. Somewhere, Vladimir still found the time to participate in numerous International Congresses, symposiums, and boards where he often assumed a contributing role. His works, letters, and travels introduced him to thousands around the world.

Recognition for all of this remained unimportant to him, overshadowed by his true love of caving and an honest humility. His only ambition was to do even more. Tragically, he died in the attempt.

Vladimir Kisseljov lost his life March 8th, 1995 in a cave diving accident at ZhV–52 in the Arkhangelsk region of Russia. He was 41. His friends risked their lives to recover him under extremely difficult conditions. Vladimir's loss has left a great ache in all who knew him. Even more, I ache for his best friends because I know the closeness that mutual survival can forge among cavers. Most of all, I grieve for his wife Tatiana and his children. I wish I could paraphrase Vlad, "Don't worry, the future will still be okay—", though in today's Russia I know it might not be.

This tragedy has exacted a price which international caving can scarcely afford. We have all lost someone important to us—even those who never knew him. He wasn't just a good caver and friend...Vladimir Kisseljov was family.

Some background information was drawn from correspondence by Alexander Klimchouk, Victor Komarov, and Ilina Manevitch

The following information is for those who wish to send cards or messages to Vlad's family, friends, or to contribute to or inquire about archives.

Expressions of sympathy

Vlad's family: Tatjana Kisseljov, Krasnobogatyrskaja 2I-79, Moscow 107564 Russia. Fax (095)361-1415 (Moscow, English okay, translation available)

Vlad's parents: phone (095)964-2105 (Moscow, no English)

Vlad's friends: Ilia Alexandrov: phone (095)127-12-24 (Moscow, English okay)

Oleg Kazharsky: kaz@ogura7.kuee.kyoto-u.ac.jp (Kyoto, Japan. English okay)

Andrew Byzukin, Tanya Nemtchenko: andrew@microb.oil.msk.su (English okay)

Archives

The Speleo-Club "Barrier" (Moscow) is preparing a history of Vladimir Kisseljov's life. Those who wish to contribute articles (3-5 pages, June 1995 deadline) please contact: Grigori Sigalov and Konstantin Dubrovsky, phone (095)576-34-63, fax: (095)408-51-44, e-mail: sigalov@barrier.mipt.su

The Ukranian Speleological Association (Ukr.S.A) has created a fund to accept organizational and private donations in Vladimer Kisseljov's memory. Monies will be applied to future projects of the Ukr.S.A. which will bear his name. If you wish to contribute, please contact: Doug Soroka, Ukr.S.A. Treasurer (West), 1008 Schwenk Mill Road, Perkasie, PA 18944, phone: (516)477-0263, e-mail: dsoroka@arserrc.gov

A memorial videotape of Vladimir Kisseljov is being prepared, if you wish a copy, want to contribute material, or have questions, please contact: Alexander Klimchouk, P.O. Box 224/8, Kiev 30, 252030, Ukraine e-mail: klim@klim.carrier.kiev.ua

The large Vladimer Kisseljov archive is being preserved, intact, at this location. To access or contribute materials to this archive please write to: Tatjana Kisseljova, Krasnobogatyrskaya Str. 21, kv.79, Moscow 105564, Russia

"A seemingly tireless expedition caver, he discovered or explored, and flawlessly mapped, hundreds of important caves inside Russia and elsewhere."

Accident Report

On March 4th, 1995, a cave diving expedition was flown by helicopter to the town of Pinega in the region of Arkhangelsk, Russia.

The expedition's goal was to investigate caves with underground rivers on the plateau Belomorsko-Kulojskoje, and particularly ZhV–52 in which earlier work had been done. On a previous dive at this site, Vladimir Kisseljov passed 190 meters in the sump. At 1:45 P.M. on March 8, Kisseljov began a solo dive in ZhV–52 carrying 3 tanks (7 liters each, 160 atmospheres), a spool with safety wire, and two lights fixed to his helmet. Although a safety wire was laid in the sump last year, it was decided to lay a new one because the condition of the old wire was not known (very strong floods may occur in the springtime).

Two of his three tanks had gauges for air reserve control. According to the plan, Kisseljov was to leave the gaugeless tank 100 meters from the entrance and swim on with the other two tanks attached to his sides because a restriction was anticipated 190 meters into the cave.

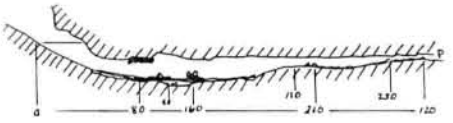
He planned to lay the safety wire as far as possible, retrieve the third tank on his return, and exit to the surface. After that, they were to take the regulators off his tanks and put them on the three other full tanks (they had 6 tanks, but only 3 regulators). Roman Prokhorov was to make the second dive to extend the main passage or to investigate its branches (depending on the conditions). The duration of Kisseljov's dive, according to the air reserve, had to be one hour.

Three hours passed and Kisseljov did not appear at the surface. Because the second diver did not have enough equipment for diving, the team attempted the only possible rescue under the circumstances: the inspection of the nearby dry caves in case Kisseljov managed to surface in one of them. These searches gave no positive results. Two heartsick members went into the town of Pinega to call a helicopter with the necessary rescue equipment.

Rescuers from Arkhangelsk arrived aboard helicopter on the morning of March 9th. At approximately 2:00 P.M. Roman Prokhorov, equipped with two special "Podvodnik–2" assemblies, entered the system and began searching for Kisseljov.

At 80 meters from the entrance he found one of Kisseljov's flippers with a broken strap. Two tanks were found at 100 meters. One of them was the one Kisseljov had planned to leave there on the way in. The air hose of the second tank was tangled in the safety wire laid by Kisseljov. Both tanks were empty.

Prokhorov followed the unspooled safety wire to its end where, at 220 meters, the unattached spool was found with the remaining wire. He continued to the 250 meter point where he rigged the safety wire to a hole in the wall, cut off the excess, and swam back.



On his return he collected the equipment and, approximately 60 meters from the entrance, found Kisseljov's body near the ceiling with the third tank (the height of the passage was 3–4 meters). This tank was empty too. According to the medical examination, death came as a result of classic drowning.

The following accident sequence is presumed. Kisseljov hooked the safety wire near the spare tank on his way in. Because it was not attached at the other end, a loop around the tank's air hose occurred on the way out. While attempting to untangle it, all of his air in the two tanks was consumed. It is likely that the wire's untangling was complicated by extremely heavy silt conditions and by weak batteries which, because of the extended stay, had seriously discharged. He finally abandoned the wire and attempted to swim to the exit with the air remaining in the third tank. He must have been swimming hard, when the strap on one of his flippers broke crucially slowing him down and forcing him to work much harder. Ultimately, too many things had gone wrong and he did not have enough air to make his escape.

Written by Victor Komarov from a first-hand account by Roman Prokhorov. Translated from Russian by Elina Manevitch, edited for publication by William Oldacre. *(Ed: This report has gone through a series of translations and interpretations which may have introduced some errors.)*

Forum

Continued from page 151

not read the articles, but were merely alerted to them. The mystery was solved when someone passed on an issue of *NSS News*—a call to action in that issue asked people to write to *Rock & Ice*. And write they did! You are to be congratulated for your loyal readership.

The purpose of this letter is to thank you for alerting our editorial staff to the ecological problems of climbing in caves. We share your concern for the Earth and wish to behave toward it in as responsible a fashion as possible. That brings me to my second point. I am unclear as to whether the Thailand climbing is, in fact, a problem. None of the climbing our article discussed is inside a true cave. The stalactites occur on overhanging walls that are otherwise open to the elements—wind, rain, sun and sea. They were obiously within caves centuries ago, but these caves no longer exist in the usual sense of the word. Similar "open cave" or steep-wall situations occur in Italy and France, among other countries—most have routes on them that involve climbing on stalactites. Is it detrimental to climb on formations in these areas? —*Majorie McCloy, Editor, Rock & Ice*

Caving for Conservation

Warren Anderson's letter regarding "Caving-for-a-fee" (*NSS News*, February 1995) points out valid issues, such as safety, conservation and access, that are of vital importance to all cavers. However, his assertions of federal land management agencies corrupted by unscrupulous outfitters and other wild claims are a disservice to the issues at hand and to caving in general. The intention of this letter is to correct the misrepresentation of the National Outdoor Leadership School's (NOLS) caving program and point the debate in a more constructive direction.

Anderson asserts that "commercial outfitting in caves will never be safe." This is true to the extent that no activity with inherent risks is ever safe. Indeed, any educational program hoping to teach judgment MUST have genuine risks. How risky is caving compared to other activities? No database of comprehensive caving use and accident information exists. While the NSS does an

Continued on page 169

1995 NSS Convention

BLACKSBURG, VIRGINIA

July 17-21, 1995

It's not too late! You can still decide to attend the one-and-only 1995 NSS Convention in Blacksburg, Virginia. The following are some last minute tidbits and a brief overview of the Convention. If you want to get more detailed information, please consult your 1995 *NSS News* issues from February through May.

Blacksburg and the surrounding area are in the heart of Virginia's cave country so Convention attendees interested in caving should have no problem finding a fascinating and challenging caving experience. If caving isn't your thing, this year's sessions are sure to be both educational and entertaining with activities geared for everyone in the family. The Convention staff has been hard at work to make sure things run smoothly and your stay in Blacksburg is as fun-filled as possible. And, if you pre-register, you will spend less time taking care of the boring business of checking into Convention.

PRE-REGISTRATION DEADLINE: Although the deadline for getting the pre-registration discount is past, you can still pre-register by mail and avoid most of the waiting when you arrive. However, act fast because your pre-registration must be received by **June 30**. Any that arrive after that date will be returned to you when you arrive at registration. Also, please remember that credit cards will not be accepted for on-site registration.

REFUND POLICY: If you find that you cannot make it to the Convention, call or write us for a refund. Anyone whose refund request is postmarked prior to July 17 will receive a full refund after the Convention. If you just don't show up we can't give you a refund, but we will mail you your Guidebook and program.

DIRECTIONS TO REGISTRATION: Convention registration is easy to find. The exact instructions are in the May *NSS News*, but in case you can't find them, take Business Route 460 into the center of Blacksburg and turn on College Ave. Registration is in the Donaldson Brown Center which is on your right after two blocks.

DAY PASSES: Day passes are available for $25 per day. The pass includes the day's sessions, access to the indoor and outdoor vendors, and access to the evening's non-dining activities. You can attend Monday's Howdy Party for an additional $5 if you have a day pass, or for $10 if you don't have a Monday day pass. You can attend Friday's Banquet for an additional $10 if you have a day pass, or for $15 if you don't have a Friday day pass. However, we must have your banquet reservation by Tuesday, July 18. You can pre-register for day passes or purchase them at registration during the week. Day pass pre-registrations can be sent to P.O. Box 311, Burtonsville, MD 20866 before June 30. After that you will have to register when you arrive.

COMMERCIAL CAVE DISCOUNTS: Several of the commercial caves along I-81 and I-64 (on the way to the Convention) are expected to offer discounts to Convention attendees. When you visit one of these caves, just ask whether they are giving NSS members or Convention attendees a discount. You may be asked to show your NSS card.

CHILD CARE: We are still investigating ways of providing child care during the Convention. At a minimum we hope to provide a baby-sitting service during the Photo Salon and the Banquet. Additional information will be available at the registration desk.

CAMPGROUND: The campground is a large, open athletic field. It has good drainage (for the inevitable Convention downpour), but there is almost no shade. We suggest bringing a tarp or other man-made shade. We expect to have bags of ice on sale at the campground throughout the week.

HANDICAP ACCESS: Most Convention facilities are handicap accessible. However, if you need any special consideration, please let us know ahead of time so we can insure that your needs are accommodated.

AUCTION & NSS MUSEUM ITEMS: Do you have lots of speleo-stuff cluttering up your house? Are you wondering what to do with those old items you used in your early caving days? Why not bring them to the Convention and donate them to the auction or to the NSS museum? Items donated to the auction are sold to raise funds for ongoing NSS expenses. If you have publications, memorabilia or equipment that is historically significant, this is a great time to cart it to the Convention and donate it to the NSS Museum. There will be a selection of museum material on display during Convention.

SPECIAL RUSS GURNEE PRESENTATION: There will be a special presentation entitled "The Expeditions and Explorations of Russ Gurnee" on Monday at 2 PM. This will be a slide program describing the late Russ Gurnee's long and illustrious career as a speleologist and conservationist, both in the U.S. and throughout the world.

NATURAL HISTORY MUSEUM RECEPTION: The Cave Conservancy of the Virginias' large exhibit on caves and cave science will be on display at the Blacksburg Natural History Museum throughout the Convention week. On Tuesday evening at 6 PM there will be a reception at the Museum to give the towns-people an opportunity to view the exhibit and to meet some "real" cavers. Everyone is invited to attend the reception.

VENDORS: Indoor vendors, including the NSS Bookstore and consignment sales, will be located adjacent to the primary Convention auditorium in the Donaldson Brown Center. The outdoor vendors will be located immediately adjacent to the campground. In addition to the on-campus vendors, Blacksburg and the surrounding area include many stores that can probably satisfy any shopping need. This is a prosperous and growing region with ATM machines and other "big city" conveniences readily available.

EMERGENCY TELEPHONE NUMBER: The Convention registration desk will have a telephone, and the registration staff will take emergency messages and post them on the bulletin board. However, the telephone number will not be known until registration is set up. When registration is not open, emergency messages should go through the Virginia Tech Campus Police at (703)231-6183. Needless to say, this number should only be used for true emergencies.

HAM RADIO FREQUENCY: 147.48 Mhz seems to have become the de-facto standard simplex frequency used by "ham-cavers". There is no official Convention "talk-in" frequency, but you can probably find some cavers monitoring this frequency.

Don't miss out on the 1995 NSS Convention in Blacksburg. Remember...

Virginia is for Cavers!

Down Through the Decades

By Peri Frantz

Speleana: In the absence of a **June, 1945,** *Newsletter*, we'll peek ahead to the July issue for a definition of Speleologist borrowed from the British Journal "Caves & Caving"; "One of the (fortunately) lesser known mammals. They shun the daylight and, although only partially nocturnal, spend many daylight hours in holes in the earth. Although gifted with legs they prefer to crawl on their stomachs and such are their dirty habits, that they are happier lying in the mud than on dry ground. When met in the dark they resemble huge Glow-worms and, although scientists cannot find a reason, the light is at the other end! Gifted with vocal cords they make numerous sounds, but listeners will hear most frequently the strange call of one to another of 'Dam, o'ell, dam!'; this call usually follows any bumping sound."

In the **June, 1955** issue of *The News*, Bill Halliday bemoaned the Speleological Confusion at Baker Creek, Nevada. Bill had discovered that his map of Deep Cave was entirely different than one done by Art Lange. Apparently sketchy directions had lead Bill to map a hitherto unknown cave, using the same name. Unfortunately, by the time the problem was discovered, both caves were "widely spred (sic) through western speleological literature."

In the **June, 1965** *NSS News*, Dwight Deal sought to "lay to rest, once and for all, the popular myth that boxwork is rarely found in caves, and then only in caves in the the Black Hills of South Dakota." His list of 29 caves containing these intersecting blades of calcite, spanned the country and include Hosterman's Pit in Pennsylvania, the Butler Sinking Creek System in Virginia, Cottonwood Cave in New Mexico, and Church Cave in California.

"The Backpacking Caver—Just Add Water," in the **June 1975** *NSS News*, offered a variety of low cost alternatives to freeze dried backpacking food. Libby Neiland observed that "the backpacking caver is the worst kind of masochist in the wilderness. He hikes his feet to sores, then grinds his knees to mush. Sleeping in a soggy sleeping bag under a tarp, ...standing in the smoke to dry his clothes, the poor guy's a mess; but goes home and tells of the wonderful time he had." "Half mule—half mole... everything...must fit into a bag of less than four cubic feet, and remain light enough to carry." "I am a member of this insane fraternity. I am also money starved. For these two reasons I have developed a cheap source of lightweight foods for backpacking." Then, becoming more practical, Libby discussed supermarket alternatives and how to repackage them. For carbohydrates, she recommended noodles, instant rice and cereals. For protein, dried meats and meat substitutes. Cooking tips were also included.

Cave Management and Vandalism: "Realizing the need for scientific research in the caves within areas administered by the National Park Service but recognizing the fragile and delicate character of many cave formations, ...superintendents will be guided by the following policy in considering applications for cave expeditions." The new NPS Cave Exploration Policy, reported on by Bennett Gale in the **June 1955** issue of *The News*, restricted expeditions to "representatives of recognized scientific or educational institutions" who were "fully qualified by physical ability, experience and knowledge of caves and their hazards, and ...(who were) adequately equipped."

In the same issue of *The News*, Leigh Readdy reported that Alabaster Cave, California, had been permanently closed by its owner, who feared that people partying in the cave might get hurt. Opened by quarry workers in 1869, initial efforts to protect Alabaster by commercialization failed. Subsequent attempts to close the cave also failed, and heavy looting, beginning about 1930, plundered the cave of its "Stalactites, Stalagmites, Curtains, Helictites (sic), Calcite crystals in an old lake bottom, and several masses of Azurite which is a copper carbonate having a beautiful blue color." By the time it was dynamited shut, Alabaster Cave was in a sorry state and the walls were covered with names.

All it takes is one careless piece of journalism to ruin a priceless treasure. The **June 1965** *NSS News* reported that Feather Cave, New Mexico, had been "ruined by vandals...(who) had entered and completely destroyed the ceremonial altar looking for any remains of artifacts they could find. Trash was found in both chambers and names written on walls with carbide lamps. ...Although the name and the location (of the cave) were purposely omitted from the press release...after excavation was completed, an article by the University...gave this information. ...Undoubtedly, this was the main reason for its downfall."

"Cave management is rarely simple... Although cave management in one form or another has been practiced at Wind Cave since its discovery, the managers of yesteryear operated under a different philosophy than do the managers of today. National Park Service personnel have reviewed the history of management at Wind Cave and are, indeed, making a new beginning." Kay Rhode's article, "Wind Cave—A New Beginning," in the **June, 1985** *NSS News*, described this effort. Since it's establishment as a National Park in 1903, groups as diverse as the NPS, Civilian Conservation Corps (CCC), various NSS Grottos, and the National Outdoor Leadership School (NOLS) had been involved in its exploration and management. As a result, the overall Cave Management Plan would "have to be one of coordinating and organizing separate projects, research studies, and inventory of resources in order to create a whole picture. ...the first step was to compile all of the survey data into one system and on one map. ...The impacted and developed area of the cave will be inventoried for needed restoration activities ...(and) results of past management actions will be mitigated (remove trash, old trail fills, airlock the artificial openings). ...It is critical to realize that as the cave continues to grow, and the knowledge about the cave increases, management of the cave resource first must catch up, then keep up. "

News and Notes

COLORADO

Historian Searches for Underground History

Letters, postcards, souvenirs, pictures, brochures and advertisements of the past, tucked away in Grandmother's closets, attics and hope chests around the country may contain the answers to present questions sought by Cave of the Winds historian Donald G. Davis. After spending nearly 10 years pouring over documents, archived files and books in more than a half dozen libraries statewide, there are still some very big black holes left unanswered about the early history of one of Colorado's oldest attractions. With Davis' help, Cave of the Winds is attempting to create a complete and accurate time line of the historical events that surround the Cave of the Winds property and its caves.

Working closely with the management of the Cave of the Winds, Davis is continually discovering more about the history of the caves and the canyon. However he feels that his best sources for new information and leads will now come from individuals that either have personal recollection of their visits to Cave of the Winds from 1900 through 1930 or can allow him to study correspondence or memorabilia about Cave of the Winds that they may have had passed to them from one generation to another.

Anyone who has information or materials related to the history of the caves of the canyon, including the Manitou Grand Canyon, another commercial cave now part of the Cave of the Winds is encouraged to contact Donald Davis in care of Cave of the Winds, P.O. Box 826 Manitou Springs, CO 80829. No matter how insignificant the artifact or document may appear it may be the key to revealing an important but forgotten chapter of the history of the caves.

NEW MEXICO

Seminars on Carlsbad Caverns and Guadalupe Mountains National Park Resources Planned

Five seminars on Bats, Caves, and Geology will be offered this summer and fall by the Carlsbad Caverns-Guadalupe Mountains Association at the two national parks the organization serves.

The first seminar "All About Bats" is scheduled for July 7. Dr. Kenneth N. Geluso will conduct the seminar which will provide information on the 15 species of bats inhabiting Carlsbad Caverns.

The second and third seminars, titled "Natural History of Caves" will be led by Dr. J. Michael Queen. This seminar will be conducted July 28–30 and again August 4–6 with registration for the first session requested by June 15, and the second by June 20.

The fourth seminar, also led by Dr. Queen, is on "Geology of the Guadalupe Mountains, New Mexico and Texas" and will be held August 11–13, with registration requested by June 30. One day of this seminar will be inside Carlsbad Caverns and two days will be spent in the field between Dark Canyon, Walnut Canyon, and McKittrick Canyon.

The fifth seminar, on the "Geology of Guadalupe Mountains National Park", will be conducted by Dr. Lloyd Pray. The seminar he will conduct is scheduled September 30–October 1 and has an August 15 deadline for registration.

For further information on the cost or contents of the seminars, or about membership in the Carlsbad Caverns-Guadalupe Mountains Association, call or write: Carlsbad Caverns-Guadalupe Mountains Association, P.O. Box 1417, Carlsbad, NM 88221-1417, Phone (505)785-2232, ext. 481. Those unable to register by the announced closing dates are encouraged to call since late registrations can often be accepted. A 10% discount on registration fees is offered to Association members.

World Heritage Site Designation for Carlsbad Caverns National Park Being Considered

In late 1994, a nomination was submitted to designate Carlsbad Caverns National Park a World Heritage Site. That nomination is currently being evaluated by the World Conservation Union (ICUN) and a decision could come in December, 1995.

Dr. James Thorsell, Senior Advisor on Natural Heritage Sites for ICUN, spent time at Carlsbad Caverns National Park to become familiar with the park's caves and scientific values, and to review portions of the nominations with the park staff.

The nomination will be presented to the 21 member World Heritage Committee at a meeting in Paris, France in July and could be voted on at the committee's December meeting in Germany.

WASHINGTON, DC

Photo Exhibit on Lechuguilla Cave

Cave photographer Peter Jones will be having a one-man exhibit of his photographs of Lechuguilla Cave at the Department of Interior Museum, Washington, DC, July through September. Admission to the exhibit is free.

The exhibit will consist of 18 prints taken in Lechuguilla since 1989. Many of these have won awards at NSS Photo Salons including last year's color print category Medal Winner, "Into The Jagged Canyon." Included in the exhibit will be a current map of Lechuguilla (now 84.3 miles in length), some of Jones' cave-related pottery work and a showing of the video by Tom Zannes, "The Spirit of Exploration." The National Geographic television film "Mysteries Underground" will be shown during the opening days of the exhibit.

For further information about the exhibit and the opening, contact the Museum at (202)208-4743 or Jones at (207)236-6112.

ACCIDENTS/INCIDENTS
Send reports to:

American Caving Accidents
41811 S.E. Loudon Road
Corbett, OR 97019

Society

Speleo Digest Address Change

Please note the following change in address for submission of I/O Newsletters for Speleo Digest. Submissions should be sent to Pat Kambesis, 2466 Drew Valley Road, Atlanta, GA 30319.

American Exploration Session–Call for Papers

Papers are still being accepted for the American Exploration Session of the 1995 NSS Convention. Presentions can be 20–25 minutes long and can feature slides, overheads and maps.

If you are interested in giving a presentation at the session, contact: Pat Kambesis, 2466 Drew Valley Road, Atlanta, GA 30319, (404)248-9538, FAX (404)676-8918, e-mail:pkambeis@mcimail.com

National Cave Rescue Commission Coordinators Sought

The terms of Southeastern Region Coordinator (formerly Butch Feldhaus), the Medical Officer (currently Noel Sloan, MD), the Training Officer (currently Bill Renaker) and the Caribbean Region Coordinator (currently Mimi Ortiz) of the National Cave Rescue Commission (NCRC) will expire this summer. During its summer meeting at the 1995 NSS National Convention in Blacksburg, VA, the NCRC Board of Regional Coordinators (BORC) will recommend to the NSS Board the reappointment or replacement of these coordinator/officers. Generally, whomever the NCRC BORC recommends is appointed (the NSS Board votes on all appointments to the NCRC BORC).

Who will they be? It's up to you to make recommendations to the NCRC BORC and let them know who you would like to see in these positions. Based on your recommendations, qualified persons will be nominated by members of the NCRC BORC and voted on. One person per position will then be recommended to the NSS Board for appointment to the respective position.

How do you make a recommendation? Put something together in writing and mail it to the National Coordinator. You must also include some indication from the person you are recommending that they will accept being nominated and serve if appointed. Preferably this will be a letter with their signature on it. Telephone recommendations will not be accepted. While the National Coordinator does not have a FAX, he has moved enough into the 20th century that you can send your recommendation via e-mail; however, as earlier stated, there must be a confirmation by the person you are recommending that they will accept being nominated and serve if appointed.

Ideally persons nominated should have both caving and rescue experience and training. It should be noted that neither the NCRC nor any of its regions are functional rescue units: the NCRC is a communications, training and diplomatic body. [For more information about NCRC, see page 18 of the Manual of U.S. Cave Rescue Techniques.]

If you have questions or would like to make a recommendation, please contact: Butch Feldhaus, National Coordinator National Cave Rescue Commission, 614 North Valley Drive, Chattanooga, TN 37415 (615)875-9804 e-mail 72144.3326@compuserve.com

Volunteer Wanted

A volunteer is being sought to chair the newly created "NSS Equipment Committee." This position, which reports directly to the NSS Treasurer, will oversee the identifying, inventorying, tracking and disposing of NSS personal property. For more information contact J. Kevin Smith, CPA, NSS Secretary/Treasurer, 6512 W. Alder Ave, Littleton, CO 80123-5803, (303)972-9495 or Internet:jks @mci mail.com

Editor Wanted

A new editor is being sought for the NSS Administrative Memo. The editor is responsible for both editing and layout of the Memo, short reports of how things are going and future expectations, and keeping an expense report. This position will be open at the end of 1995 with the new editor producing the 1996 Spring issue. For more information contact Sally Hand, 1810 Warrington Rd, Roanoke, VA 24015-3036, (703)985-0539 or Evelyn Bradshaw at 10826 Leavells Rd, Fredericksburg, VA 22407-1261, (703)898-9288.

Ray's Review

By Ray Hardcastle

Discovery and Exploration

Kazamura Cave has regained its position as the world's longest lava tube according to Kevin Allred's report in the May-June 1994 *Hawaii Grotto News*. In an effort involving many cavers over several months, making a number of connections between known cave and digging occasionally, the total length of the cave was surveyed to a length of 19.67 miles (31.66 kilometers) and a depth, based on surface control points, of 2111.8 feet (643.8 meters), which would make Kazamura the deepest cave in the U.S. They also found time to push **Pit 6083** to a depth of 862 feet, the deepest pit in the U.S.

Over 1000 feet of new cave was surveyed in Williams County, Colorado's **Pedros Cave** reports Charles Lindsey in the Spring 1994 *Rocky Mountain Caving*, newsletter of six Colorado Grottos. The cavers dug into the Hillside in Williams Canyon following blowing air in breakdown and naming their discovery **Deepwater Cave**. The new cave was surveyed by Jeff Block, Louise Hose, and Dale and Kathy Lankford. When the data was matched up with Paul Burger's Pedro Cave data, they realized that they had discovered the Deepwater Extension of that cave. Lindsey reports there is still a possibility of more extensions to the cave.

The exploration and survey of the longest cave in Missouri's Mark Twain National Forest is reported by Douglas Baker in the Cave Research Foundation's May 1994 *CRF Newsletter*. A nine year effort resulted in 19,291 feet of survey in **Still Spring Cave** along with the discovery of tracks of the long extinct American Lion (*Panthera leo atrox*). Casts were made of the cat tracks, measuring five by six inches, and the cave was gated. A line-plot of the survey is included with Baker's report.

The discovery and exploration of **Oz Cave** in northern Arkansas is reported by Steve Taylor in the Little Egypt (Carbondale, Illinois) Grotto's *Crawlway Courier* for Spring 1994. The low wide cobble strewn entrance was sucking air as they entered, but they expected it to pinch out as they surveyed one last shot where it became too tight for Myron Mugele. Imagine Taylor's and Jean Krejca's surprise to find themselves hanging over a 23 foot drop into borehole. They surveyed more than 800 feet of "**MASSIVE VIRGIN TRUNK PASSAGE**" to a downstream breakdown choke sucking air. They got 1376 feet of survey to a depth of 98 feet in Oz and left several significant leads, including one about five feet high and 40 feet wide!

Cave Maps

The Butler Cave Conservation Society, Inc. reports that **Barberry Cave** near **Butler Cave**, Highland County, Virginia was dug and blasted open in their 1993 newsletter. They surveyed more than 4000 feet of passage in the new cave with one lead getting to within 1300 feet of Butler. A two-page fold-out preliminary draft map of the cave appears in the back of the newsletter.

A Bill Balfour map of **Oaks Cave** in Lee County, Virginia appears in the Mountain Empire (Tennessee) Grotto's June 1994 *Underground Mountaineer*. The cave was taped to a length of 421 feet and a depth of 44 feet. Balfour notes it took longer to draw the map than to see the cave.

Maps and descriptions of eleven Virginia caves appear in Vol. 5, No. 1 of the Virginia Speleological Survey's *Virginia Cellars*. The caves featured ranged in length from 33,973 foot (10,355 meters) **Clarks Cave** in Bath County to 31-foot-long **Cybert Cave** in Lee County.

The exploration and mapping of **Marmots Nest Cave** in Wyoming's Gros Ventre Wilderness is reported by Garry Petrie in the Spring 1994 *Underground Express* of Oregon's Williamette Valley Grotto. The cave is mostly vertical at a depth of 229 feet with several pits and 650 feet of horizontal survey. Petrie provides a two-page map of the cave with his report.

A draft map by Gary Phelps of Manitowoc County, Wisconsin's **Maribel New Hope Cave** appears in Vol. 23, No. 1 of Wisconsin Speleological Society's *Wisconsin Speleologist*. The cave has been pushed to 350 feet of low passage, getting no taller than seven feet in one dome. Further digging is expected to extend the cave even more.

Conservation

An example of conservative exploration is given by Candy Leek and John Hettish in their reports on **Cripps Mill/Goat Cave**, Tennessee in the February-May *TCB Passages*, newsletter of the Tennessee Central Basin Grotto. Cripps Mill is a seasonal bat habitat, so the cavers carefully avoided the hibernating area in Goat Cave to find and explore a virgin lead to a flowstone festooned 60-foot-high triple dome. They spent two hours smoothing over their tracks as they exited the new section.

In a similar vein, John Bozeman recalls Bruce Ungers: "The Cavers Paradox" in his report on recent discoveries in Oklahoma's **Horseshoe Valley Cave**. Bozeman relates in the Central Oklahoma Grotto's May 1994 *C.O.G.Nizance*, that they ended their exploration when they encountered selenite needles growing out of the floor of a 10–15-foot-wide by 4–6-foot-high passage. They could see no way through without damaging the delicate needles, so left it. Unger's poem (circa 1976) appears next to Bozeman's report.

Instructions for nominating a cave for the National Park Services Significant Cave List are given in the Cave Conservation and Management Section's *Cave Conservationist* for May 1994. The worksheet given is only two pages and should be very easy to complete to help protect any cave under the Federal Cave Protection Act.

Safety

The rescue of an inexperienced spelunker from a wet pit in Missouri's **Cave of the Falls** is reported by Rick Haley in Middle Mississippi Valley Grotto's April–June 1993 *Underground*. Three spelunkers descended a wet pit on a knotted line and had difficulty ascending. One got dunked in a waterfall and fell 15 feet into a knee deep pool breaking his ankle. Within hours, Haley and other local cavers heard about the accident and responded before being notified by the NCRC. Along with the local fire department and emergency personnel, they were able to get him out safely within six hours.

Bryan Bain reports a caver suffered a fractured and dislocated finger on the way out of a Stone County, Arkansas cave in the June 1994 *Kansas Caver*, newsletter of the Arkansas Speleological Society. The accident happened after they had gone through the most difficult areas and the victim wasn't doing anything wrong or unsafe, illustrating that accidents can happen anywhere. Al-

though the finger looked gross and the victim was in considerable pain, he didn't panic and exited the cave without assistance.

Other Things in the Dark

Dave Mahon, Certified Meteorological Technician, advises cavers to access the National Weather Service's Telephone Information Briefing Service before entering caves subject to water hazards. Writing in the May 1994 *Near Normal News*, newsletter of the Near Normal Grotto of Normal, Illinois, Mahon teaches that up to the hour local weather forecasts are available anywhere in the U.S. via a touch-tone phone by dialing 1-800-WXBRIEF. He suggests that accidents in caves due to flooding can be reduced if the trip leader will just check the weather on TIBS first.

An analysis of drainage basins in the central Kentucky karst and correlations between passage levels between 340-mile-long **Flint Ridge–Mammoth Cave** and 72-mile-long **Fisher Ridge Cave System** by Brian Davis in the Detroit Urban Grotto's May & June 1994 *Dug Scoops* yielded some clues as to where to look for new passage in both caves. The recent breakout into the Northtown Ridge area of FRCS increased the known cave by about 50%, doubled the area covered, and at least tripled the number of questions. This gives FRCS cavers nearly insurmountable opportunities for finding more cave. Davis' analysis may help narrow down the search.

An article in the Washington, D.C. Grotto's May 1994 *DC Speleograph* reports the finding of aboriginal archaeological data in **Fisher Ridge Cave System**. Footprints, torch debris and a small piece of a "slow match" yielded Dr. Patty Jo Watson dates of from 1182 B.C. to 757 B.C., which would indicate visitation by the Woodlands People of the American Southeast some 3000 years ago.

International News

By Jay Arnold

The first U.S. expedition to the huge caves of Sarawak, Malaysia, took place in January and February and achieved great success, according to George Prest, who was co-organizer along with John Lane. A group of 16 Americans, plus Mulu National Park guides, Development Officer Dave Gill and two visiting British cavers, mapped nearly 30 kilometers of cave passage during a six-week effort in Gunung Buda, a large area of limestone lying just north of the famous Gunung Mulu caves.

The longest cave explored was Gua Gereja Hijau (Green Cathedral/Beachcomber system), at about 12 kilometers. The group added 10.4 kilometers to the 1.5 kilometers known from a 1980 British expedition, which has at least 18 entrances and possibly could connect with nearby Gua Hassan, surveyed to 3.8 kilometers.

The largest vertical extent was achieved in Gua Kulit Sipuk (Snail Shell Cave), where an ascending ramp in the 5.8-kilometer-long cave was free-climbed more than 400 meters to give a total vertical change of 465 meters. Prest says this could be a new depth record for Southeast Asia, surpassing the 423 meter Vertical range in Lubang Nasib Bagus.

On the southeast side of the Buda massif the cavers discovered and explored Gua Ulat Cin Cin (2.6 kilometers) and Gua Tartus (2.5 kilometers). A waterfall cave, Monkeys in the Mist Cave in the "Buda"" gorge yielded a 142 meter pit.

On the north side of the massif, a cave named Bio-Cyclone had a room with dimensions 150 meters long and 40 meters wide.

Contributions to this column are welcomed from any source, foreign or domestic. Please send material to Jay Arnold at 10031 Downey's Wood Ct., Burke, VA 22015-2731.

Forum

Continued from page 161

admirable job of publishing the highly educational "American Caving Accidents," we cavers are still a long way from having statistically significant information. Until we can gather objective baseline data, Anderson's contention that educational caving is unsafe remains moot.

I appreciate Anderson's description of NOLS as "arguably the most responsible commercial outfitter in America." But when he mentions numerous searches and rescues and a group size that is woefully exaggerated, I feel it is important to set the record straight. NOLS's caving safety record is excellent. We have had one search and no agency rescues in twenty-five years. We did use a SKED to haul out a student with a sprained knee once, but this was done by the course, on site, and with their own rescue cache. While we are suitably concerned about the famous Rachel Cox search in Wind Cave National Park, we are also proud of how we handled our responsibilities and the in-depth analysis that followed. Our wilderness education safety statistics were the first of their kind to be studied by an independent researcher and published in the medical literature. Data gathered by insurance companies, the NSS, and the Association for Experiential Education clearly show our record to be exceptional.

We have never caved in groups of 30; always three to five. NOLS' caving courses currently have an average of eleven students and three instructors. Anderson's high number of 30 may have been taken from past permits which allowed that number, but our courses are half that size in the campground, and far less underground. In fact, it is uncommon to find a NOLS course with more than 12 students.

Anderson mentions that organizations such as NOLS need to enroll "anybody who will pay." This statement, which seems to be the crux of Anderson's argument, clearly demonstrates a lack of understanding of how organizations like NOLS operate. As an educational institution we could not exist for long if we simply allowed anyone to participate in our courses, regardless of their motivation, medical condition or other constraints. Instead, over the years we have steadily increased the sophistication of our student screening. Coupled with our attention to screening has been a deliberate effort to offer a choice to semester students so they can decide if they want to cave or not. This commitment to both proper screening and lowering the profile of caving is a result of the constructive debate regarding cave conservation facilitated by the NSS.

Anderson mentions an "unnatural relationship" with the Bureau of Land Management and undue pull with the National Park Service. We are proud to be a committed partner with the federal land management agencies. We care about the lands on which we operate, and we participate—as anyone is allowed and encouraged to do—in the land management planning process. However, we have no special ability to affect land management decisions and we certainly have not striven to seek short-term expediencies for our program at the expense of long-term conservation. Our involvement in planning processes is consciously based on our commitments first to conservation and second to education as an important and valid use of public land. NOLS operates under the discretion of land managers and we routinely adjust our use per their request. NOLS continually abides by more stringent federal regulations than private cavers do.

We do not mind being held to a higher standard since we view access by any organization as a privilege and not a right.

Anderson makes the legitimate statement that non-cavers cause increased impact: this statement justifies caver education programs. Educational use of caves can accomplish two goals: First, to train cavers to be responsible in using the resource (we cavers all started as beginners) and second, to build the constituency for cave preservation. While the number of cavers is important to regulate, we firmly believe that habits count. Cavers with strong conservation ethics and proper skills have less of an impact on cave resources than uncommitted cavers, whatever their level of experience. Protective legislation like the Endangered Species Act, the Wilderness Act, and the Federal Cave Resources Protection Act are perpetually under attack and thus the increasing need for a committed constituency to fight for continuing these protections.

Schools like NOLS can contribute more to the caving community than just our field course program. As a non-profit educational institution, we feel a responsibility to assist land managers in reaching others. As a partner in the national "Leave No Trace" program, we are developing a public domain "Caving Skills and Ethics" booklet and a training curriculum for federal land managers. The upcoming Bureau of Land Management national cave brochure displays the important work that can come from NOLS, the NSS and the BLM working cooperatively.

We hope the caving community takes a hard look at the many important "cave-for-pay" issues and continues to examine safety, conservation and access. Viewing any issue this varied as black and white will never be fruitful. Short-sighted condemnation of one group of users by another will only distract us from the real issues and alienate people. The big issues on the horizon are larger than any one faction of wildland users can handle and we will work best if we work together.

1Hunt, Jasper PhD. The Ethics of Risk, Proceedings of the 1994 Wilderness Risk Managers' Conference, pp 82-89.
2Gentile, James MD, et al. Annals of Emergency Medicine 21:7 Jul '92, pp 110-118.

—John Gookin, NOLS Curriculum Manager, NSS # 26826, Lander, WY

"Speleothem Sales"

William Wilson's article on the sale of speleothems in the February *NSS News* appalled me—both as a cave explorer and a "rockhound" (one who definitely does not collect in caves). As a rockhound, I have occasionally come across mineral collectors or dealers with a speleothem or two in their collection or for sale. I usually try to talk to such people and try to get them to understand that it is simply wrong to remove speleothems from caves. But the case of the dealer discussed by Wilson is not one of a guy with one or two speleothems for sale, not by a long shot! I think this is the first case of a dealer carrying a major "line" of speleothems that I have heard of, and it worries me. It especially worries me that there are people out there who seem to think that if speleothems are "saved" from doomed caves, then it's okay to put them on the market. Such an attitude will lead to the clandestine rape of other caves when "doomed" caves are not available. Where there's a market, someone will always find a way ...

As Wilson urged, I wrote both the dealer and the promoter of the show where the dealer was hawking his wares. I also wrote out-going NSS Conservation Committee Chairman, Albert Krause, and the Conservation Committee's Information & Education Division's Director, Larry Mullins. I have additionally written a letter to the editor of the *Eastern Federation of Mineralogical & Lapidary Societie's* Newsletter, and I am trying to track down the name and address of the editor for the *American Federation of Mineralogical Societies* in order to send a copy to that newsletter.

I hope that my letter at least sparks some debate within the collecting community. But I have no illusions that this one letter will result in a boycott against buying speleothems; collectors are an acquisitive lot by nature, and I well know. At best, it might get a few people to think before they reach for their wallets. But, by-and-large, collectors will purchase speleothems so long as they are available on the market. The fact is—and I know this as an "insider"—many collectors are aware that it is wrong to collect or purchase speleothems. The sign noting that the speleothems for sale by the dealer Wilson discussed were "saved" from a "doomed" cave shows that people are aware of this, and that at least the more conscientious of them will not buy speleothems.

The real problem is the way collectors view "saved" speleothems, feeling that since they were taken from a "doomed" cave it is okay for them to be put up for sale and purchased by private collectors. As my letter to the *EFMLS Newsletter* stated, it is fatally flawed, but collectors do not understand this at present, and they are not likely to be too receptive to the reasoning I presented. Being acquisitive, they will jump at any loophole, no matter how unreasonable. Closing such loopholes will not be easy.

We need to work more diligently at educating collectors and dealers—and we need to be careful about how we go about it. While I agree with Wilson's conclusion that the speleothems discussed in his article should be returned to the people of China, I am not so sure that it is a practical solution in this case. The dealer may really have been duped into believing the speleothems were saved from a doomed cave; fair game for his shop. It would be unfair to expect him to absorb a major financial loss if this is the case. How would you feel if you went into a bank to make a deposit and were told that the wad of bills you handed over were counterfeit? Would you feel it was fair for them to be confiscated, and you left with the loss? Of course not. Similarly, the dealer in question should not be penalized if he is innocent of wrong-doing regarding the speleothems. Who is going to reimburse him several tens of thousands of dollars and pay the costs of getting the speleothems back to China? Perhaps it would be better to offer to help find museums and such which would buy the speleothems, finding them appropriate homes while at the same time getting him out from under a bad situation? (This all, of course, assumes he's innocent in the matter. If he isn't, then every appropriate law in the book should be thrown at him, and he should be made to foot the bill for getting the speleothems back to China!)

My point is that heavy-handedness isn't going to win us any points with the mineral collecting community. As trite as it sounds, it really is true that you catch more flies with honey than you do with vinegar. If we want to make collectors our allies in the preservation of spelean resources, then we have to educate them and obtain their willing cooperation—we can't bludgeon them into it. As someone who sits in both camps, I know that collectors will be unresponsive to cavers with a heavy-handed approach. It will only further exacerbate the situation.

So, now the question is: "What do we do?" I've posed this to both Albert Krause and Larry Mullins; now I pose it to the rest of you. My flurry of letters is certainly not going to have any significant effect on the problem. The society as a whole has to do

something. If we don't, then you can be sure that the problem is not going to go away—it will get worse. —*Alan Plante, NSS 11329, Gorham, New Hampshire*

Bat Damage

After reading Robert Duncan's letter about "bat damage" in the February issue of the *News*, I chuckled to myself hoping that he was joking, but utterly afraid he was not. It disturbs me greatly that at least one (and probably more) NSS member(s) think that bats are "insidious cave vermin" and are undesirable in caves. Where have we as an organization gone wrong? Clearly our conservtion message is not getting out if *our own members* promote eradicating bats as a "preservation" measure. It is discourageing that some NSS members do not recognize the fragility and importance of biotic communities in caves. I enjoy viewing pristine speleothems as much as anyone else, and make every effort to preserve them. However, I also value the opportunity to observe and learn from bats, crayfish, and other cave dwelling animals in their natural habitat.

I commend Mike Balistreri's article titled *Bats and Conservation* (February '95 *NSS News*) and wholeheartedly agree that although cleaning up trash and repairing speleothems is important work, it alone is inadequate. We as an organization must acknowledge the importance of cave biota and focus more of our attention on preserving them and their habitats. Caving softly means more than just preserving speleothems. Remember, bats are your relatives. —*Tom Liddle, NSS 28188, Prescott, Arizona*

Certainly man is a part of nature. With the combined gifts of language and reason (blessing or curse?) we are by default the entity that defines what we perceive as change or damage, we make the rules of our own game. So what is change and what is damage? Let us not lose sight of the fact that man is without doubt the greatest despoiler of habitat on a global scale that the earth has ever seen. A primary example is the substantial loss of species diversity through habitat destruction caused by the human species. That, friends, by my understanding, is change that I would call damage on a large scale. The cave environment is simply a microcosm of the whole.

Proof that our species is not so clever is that even with the realization that available resources will only support a limited population, man will continue to propagate until the population is forced down due to depletion of resources. Nothing fancy, just a die-off due to lack of resources. This is what happens to all other species, the populations expand to utilize available resources until a particular resource is depleted with the accompanying die-off of the population. One could hope we would be wiser; apparently not. So it is with caves also, man utilizes the resource and puts back nothing.

Justification for the utilization of the cave resource by man through comparison with other organisms which obtain physical benefit from caves is specious. Contemporary man (with few exceptions) does not need caves for shelter, food or water. The benefits we derive are mainly psychological. While this is a real need for us, it could be satisfied by other means. Most animals entering caves obtain some physical benefit and most leave a deposit, literally. Although I am not advocating leaving our feces in caves, in small amounts it would provide nutrient input into the ecosystem. Should an animal die in a cave, again this is nutrient input. If a human meets an untimely end in a cave what happens? Generally we remove the body. It's a social thing. In reality however, we are just cheating the ecosystem all around. We talk but we give nothing back.

I agree that there are not enough people performing cave related work, and certainly much work which needs to be accomplished. I applaud most of the work being done. The bottom line is however, that all of these wonderful efforts are either remediation of effects caused by man or prophylactic measures to protect the caves from human impact. Some people just don't get it. The possum had it right! —*Bob Pape, NSS 13765, Tucson, Arizona*

I read with interest Fred Wefer's response to Robert Duncan's (hopefully) sarcastically derisive letter (February '95, *NSS News*). He brought up some very interesting points to which I would like to respond.

The question of what state to preserve something to is a difficult one. It seems that each generation that comes along wants to return things to the way they remembered them as children. It's sort of the, "we used to be able to swim here" syndrome. The problem of course is that if you go back enough generations you'll eventually cross the Pleistocene on into the roots of human existence. The point is that all the processes on earth are indeed dynamic and the degree of change only relative to your point of reference. However, valid distinctions can be made as to what changes naturally, sometimes quite rapidly, but I don't think anyone would have trouble distinguishing which human affects this natural cycle.

There is no question that all actions of human beings can't be considered natural. If you view a natural act as one which maintains the balance of our existence with the environment, and one which is only destructive if our immediate well-being is threatened, then any action beyond this scope is natural. The human condition is exceptional in this situation in that we are the only creatures which are capable of, and knowingly and wantonly accomplish, the destruction of our environment. Technology has so sufficiently removed us from the natural world that we no longer consider our seemingly small alterations to be significant. As we convince ourselves that our brains will save us, we are rapidly destroying the very heart of our existence. Any action which upsets the natural balance is environmentally harmful, whether it's peeing in a cave or blow-torching bats.

So, in response to Fred's statement, I think it is indeed possible, if not imperative, to preserve both the natural processes and natural states of caves. This preservation in no way implies the complete exclusion of humans from caves, but rather the inclusion of thoughtful, respectful, and ecologically minded cavers. To this end, I fully support his proposed creation of a Conservation Advisory Board and wish you luck in gaining the Board's backing.—*Mike Balistreri, Bat Researcher, Albuquerque, New Mexico*

Railway Crossings

Upon reading Brad Wilson's letter concerning railroad crossings in last month's *News*, I felt the need to add my two cents worth. Unfortunately, my two cents have come with a higher price than Brad's: I was left a quadriplegic after being hit by a train and will likely spend the rest of my life in a wheelchair.

My point in writing however is not to bemoan my fate, but to strongly encourage everyone to heed Bruce's advice about taking extraordinary precautions at railroad crossings. Although it may seem like a tremendous pain in the keister to send someone ahead to scout a crossing whenever possible, I'm living proof that is worth the hassle. It could very well be a fatal mistake to take a crossing—any crossing's —safety for granted.

This is especially true in light of the fact that train horns are essentially worthless for warning motorists of a train's approach. I was dumbfounded to find this out as I'd often heard train horns being blasted miles away while camping or hiking. But it has been firmly established in scientific acoustic studies that the horns are unreliable at the very best in warning those in moving vehicles about a train's proximity. In short, don't ever plan on hearing train horns!

This fact, along with the rail companies' historic unwillingness to employ devices which could greatly increase a train's dis-

cerniblity, or to improve crossing safety unless forced to do so by governmental agencies (even when third parties have offered to foot the bill for crossing gates), leaves the motorist behind the proverbial eightball. The situation is in danger of becoming even more threatening as the Federal Railroad Administration (FRA), in its infinite wisdom, is currently considering a rule absolving the railroads of any liability for crossing safety. If and when this happens, crossing safety will likely suffer even more as no one will be legally liable for anything more than ensuring that the ubiquitous (and obviously ineffective) crossbuck signs are in place. (Most, if not all, states have already made laws absolving of all additional legal obligations the state agencies charged with protecting public safety at crossings.) As it is, the rail companies' concern in decreasing crossing collisions rarely—if ever—extends further than sending out one or two Operation Lifesaver vans to "educate" the public (i.e. tell them that motorists alone bear the responsibility for crossing safety). If the FRA rule is approved, the situation will—if possible—become even more dangerous for motorists.

In closing, I'd like to echo Bruce's feelings about the support he received from other cavers. In my own case, many cavers were there for me following my unexpected encounter with Conrail's finest and have remained so. They have long been and continue to be my second family. Their support has meant more than most can possibly fathom and I truly thank them for their concern.

For my part in the caving family, my commitment to caves has waned not one iota. Although caving itself has for me been prematurely removed from the trinity of caves, cavers, and caving, I still hope and plan to further the cause in any and all ways I can find. It's my fervent hope that this will never include the need to found a Disabled Cavers Section. I'd much prefer this to remain a Section of one, so please be careful when approaching any and all train crossings. "Cave on!" *—Bob Springston, NSS 29777, Watsonville, California*

Product Review

Sonin 250™ Electronic Distance Measuring Instrument

By Scott Earl
Director, Idaho Cave Survey

Wouldn't it be great to be able to survey a cave without dragging a tape around? This might be just the item you're looking for if you can balance the terms "breakable" and "caving gear".

The Sonin 250™ is a sophisticated electronic device for measuring distances without the use of tape, string, etc. It consists of two hand-held devices called an emitter and a target (even though each device both transmits and receives). The emitter sends an infrared beam to the target when a button is pressed and the target in turn sends a 25 KHz ultrasonic 'blip' back to the emitter. The emitter then measures the time lag (this being the difference between the speed of light and the speed of sound) and calculates and displays the distance. The readout is switchable from feet and inches (to the nearest ¼") to meters (to 2 decimeters). Metric is your best choice of course, since computers and calculators can't deal with inches. An internal memory can store distance readings and perform area and volume calculations.

The concept is simple enough, but the emitter must compensate for temperature and humidity which affect the density of the air, hence the speed of sound through the air. It does this through Speed-of-Sound Compensation Circuitry (SSCC) and Rapid Temperature Compensation Circuitry (RTCC). Sonin claims temperature effect is compensated for in less than 2 minutes. (Large temperature changes however require 2 minutes for each 5° F change.)

Both devices are encased in plastic and appear to be less than adequate for holding up to the rigors of cave use. We worried most about finding a way to keep from destroying them during use. Perhaps a way could be found to rubberize the cases. We transported ours to the survey area in a Pelican case™, which worked super, but which didn't help us during surveying.

Accuracy of the device is quite impressive and the places you can shoot the beams were impressive too. The literature says you need an unobstructed measuring path, but we found we could get the signals past some pretty strange places. In particular, if you have a tight restriction, use the target at that point, since the sound coming from a tiny restriction gets back to the larger area where the emitter is located without really encountering anything. It appears that the calculator uses the first signal it receives, since bounced signals would came back later than those taking the most direct route.

The maximum range of the device is effected by temperature and humidity, but due to the nature of the cave, our tests were not able to exceed that limit. Sonin says the maximum range varies from 120 feet to 330 feet, best being in high temperature and high humidity, worst being high temperature and low humidity. The emitter displays hyphens when out of range.

So how did the Sonin 250 perform? We used a borrowed model on three survey trips in Arco Tunnel, a 5800-foot-long complex lava tube cave at Craters of the Moon National Monument, Idaho with lots of crawling tight passage. Tape was pulled and the distance compared to the Sonin readout at each station. We used our own electronic thermometer/hygrometer to verify temperature and humidity in the cave. On each trip the temperature was 32-33°F while the humidity varied on different trips from 90% to 95%.

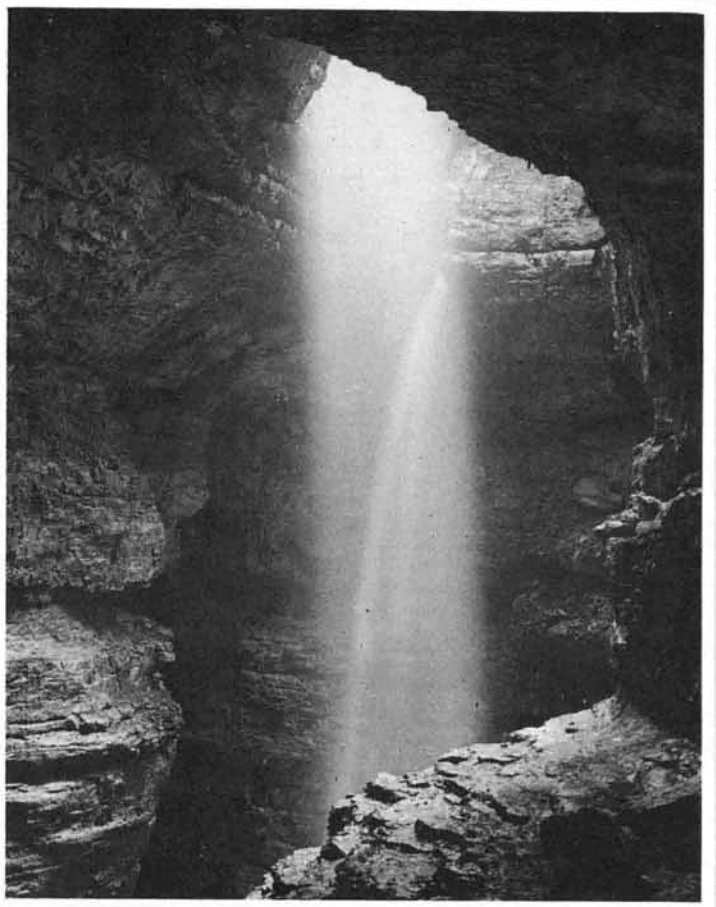
Our first trip gave us some inconsistent readings station to station until we realized that our emitter operator was putting the emitter inside her coveralls between readings. This warmed up the unit, making it think the air was less dense, and giving errors of up to a foot in 50 feet. Once this was fixed and the emitter kept close to air temperature, errors were never over 4 inches in 50 feet, and usually less than 2 inches. However keeping the emitter cold made it even more difficult to protect it.

Oddly the long shots had no more error than short shots, the two shots over 100 feet being under 2 inches in error. Sonin claims accuracy of over 99.85% in still air. We averaged 99.31% on the first trip, 99.57% on the second, and 99.79% on the third trip. The three surveys totaled 1324 feet by tape and 1333 feet by Sonin. The Sonin is factory calibrated but is user adjustable using a tiny recessed screw in the emitter. The Sonin read consistently a bit long in the cave and a calibration would have averaged the errors to near factory claims.

So what is the bottom line? I wish the devices were more rugged, I wish they cost less (about $150), I wish they read feet in tenths... and I hope to be able to buy a set soon. Since there are 80 known caves at Craters of the Moon National Monument and only seven of them have been surveyed so far, I am willing to accept the slightly lower accuracy in trade for the time and effort saved.

The Sonin 250™ is available through places that sell survey gear. For more information contact: Sonin Inc., 672 White Plains Road, Scarsdale, NY 10583, 1-800-223-7511.

News Scrapbook



**"Waterfall in a Waterfall"
The 142 foot pit entrance
of Stephens Gap Cave,
Scottsboro, Alabama.
Photo by Gary Beasley.**

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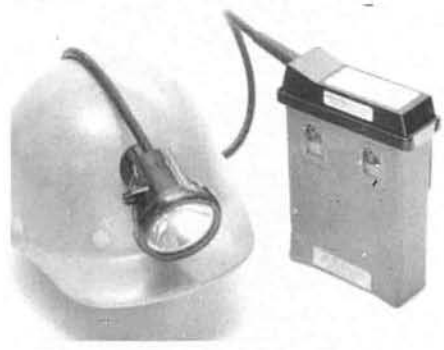

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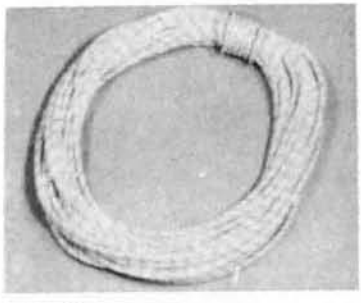

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