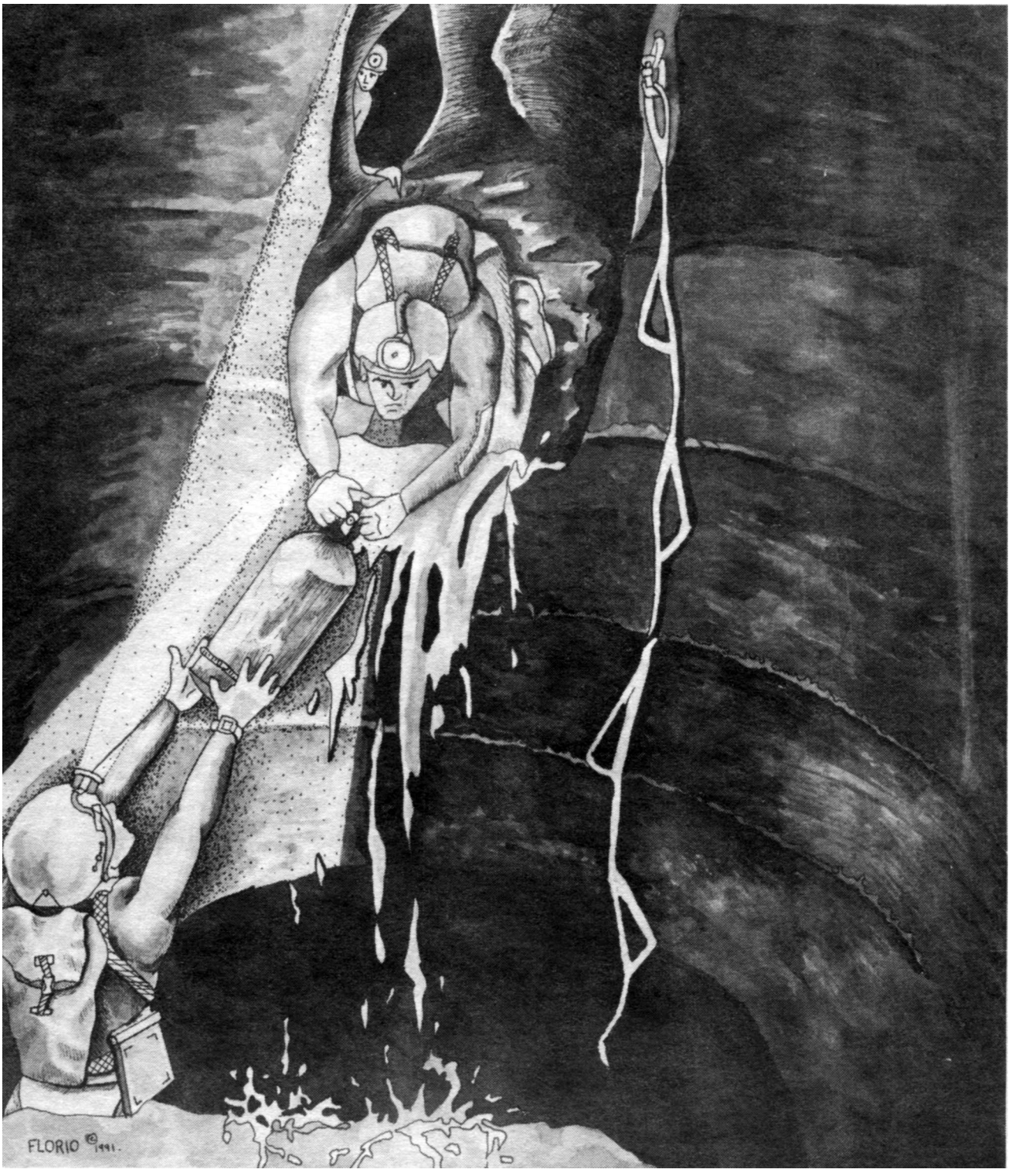
UNDERWATER SPELEOLOGY

National Speleological Society • Cave Diving Section

November/December, 1991 • Vol. 18, No. 6



UNDERWATER SPELEOLOGY

The official publication of the Cave Diving Section of the National Speleological Society, Inc.
P.O. Box 950 • Branford, FL 32008-0950

Editor: H. V. GREY
P.O. Box 12 • Nokomis, FL 34274-0012
(813) 484-7834 • (813) 484-6665 (fax)

TABLE OF CONTENTS

Magazine Submissions — We welcome all news items, articles, Letters to the Editor, photos, slides, cartoons, and other items of interest or importance to the cave-diving community from all members, subscribers, and other interested parties. They should be sent directly to the Editor (see address on left column). We can also use text processed in most IBM-compatible formats. (Please contact the Editor directly for details and arrangements.)

Advertising — The NSS-CDS Board of Directors has approved the reinstitution of paid commercial advertising for *Underwater Speleology*. Please contact the Editor for information and arrangements (see address on left column).

The NSS and Cave Diving — Founded in 1941, the National Speleological Society joins together thousands of individuals dedicated to the safe study, exploration, and conservation of caves. The first cave-diving information ever published in the United States was in a 1947 *NSS Bulletin*. In 1948, NSS divers were responsible for the first cave dives in the United States using scuba. Prior to 1973, cave diving within the NSS was on a purely local level. That year saw the creation off the NSS Cave Diving Section to provide a vehicle for information exchange. Today, with over 750 members, the Cave Diving Section promotes safe cave diving through semi-annual workshops; cavern- and cave-diving training programs; warning-sign installations; search, rescue, and recovery through the National Cave Rescue Commission; cave exploration and mapping; several texts and publications on cave diving; and the bimonthly magazine, *Underwater Speleology*.

NSS Membership — The National Speleological Society welcomes the interest of anyone who has a sincere concern about the safety, study, exploration, and conservation of caves, wet or dry. You may join the NSS either by writing directly to its main office (National Speleological Society, Inc., Cave Avenue, Huntsville, AL 35810) or to the Cave Diving Section. Annual membership is $25.00 and includes subscription to the NSS's monthly magazine, *NSS News*, as well as voting privileges and discounts on publications and conventions.

CDS Membership — As a sub-organization or "section" of the NSS, the Cave Diving Section is subject to the bylaws and ethics of the NSS. Membership in the Cave Diving Section is open to anyone who is a member in good standing of the NSS. Annual membership is $5.00 per year and includes subscription to the CDS's bimonthly magazine, *Underwater Speleology*, as well as voting privileges and discounts on publications and workshops.

Subscription — If you do not wish to join the NSS and CDS, but would like to keep current on cave-diving events, exploration and technology, you are invited to subscribe to *Underwater Speleology* for $15.00 per year.

GEOLOGIC CATACLYSM TAKES CAVE DIVER'S LIFE

On the evening of Sunday, November 17, veteran cave-diving explorer and NACD instructor Parker Turner (NSS #27953) died as the result of what is believed to have been a massive geological disturbance deep in the Woodville karst-plain area, which resulted in the sudden and extremely forceful reversal of Indian Springs near Tallahassee, Florida and disturbed the River Sinks system some 7-8 miles away.

Turner and five other cave divers were in the Spring at the time of the reversal. Four of the divers were already at decompression, and noticed a sudden severe silting at the mouth of the cave. Turner and his dive buddy, Bill Gavin, were more than 1000' back in the system on their way back from a 7-hour dive, when the sudden flow reverse took place, sucking in an enormous amount of rubble and debris down the slope of the basin and entrance cavity.

Observers on the surface reported that the level of the basin (the size of a small lake) dropped fully a foot in only 15 minutes. (Under normal conditions, Indian Springs is a 5th magnitude spring and empties out into a small creek. In more than 15 years of being cave dived, it has never been known to syphon, and has not been considered an unstable system.)

A wide, but fairly low bedding-plane area not too far from the cave entrance, approximately 100' long, was heavily inundated by rubble and silt, which completely covered the line and greatly restricted passage. Despite this, both Gavin and Turner slowly but successfully negotiated this now very difficult, wide bedding plane in zero visibility and without a permanent line, although, following established emergency procedure, they had deployed a safety line.

Unfortunately, due to the extreme restriction caused by the syphon rubble, the divers were separated, and Turner tragically ran out of air before finding the decompression bottles or being found by the decompressing divers who had gone back into the cave in the low visibility to search for them.

It is believed that Turner removed his tanks and pushed them ahead of him in order to try to negotiate the restriction. Only the extreme experience, skill and level-headedness of both divers allowed them to successfully negotiate the rubble restriction. It is considered nothing short of a miracle that all six divers were not caught deep in the system when the geologic cataclysm occurred.

In addition to his many important leadership roles in the NACD, Turner was the Coordinator of the NSS-sponsored Woodville Karst Plain Project, and Coordinator of the Underwater Speleology Unit for Florida State University. He will be greatly missed by the cave-diving community and is survived by a daughter. ■

PARKER TURNER: IN MEMORIAM

by Dennis Williams (NSS #18261)

In September, 1982 I was helping to staff a NAUI instructor course being held at the Florida Institute of Technology. A young California instructor stopped by to see how we East Coast guys ran an instructor course. In addition to being a NAUI instructor, this guy was a technical rock climber, someone who had figured out how to enjoy the night in a sleeping bag held high above any reasonably sized horizontal surface by a piton crammed in a crack. When he found out that I was a cave diver he said I was crazy. My response was to invite him to visit me in Freeport. When the instructor course was over he showed up on Grand Bahama and stayed for a week. After a some equipment changes and a few warm-up dives, I took Jeff Bozanic on a Lucayan Caverns 3,000' rinky dink that must have made that "suspended" sleeping bag seem like being in his mother's arms. Jeff, the rock climber, became a cave diver.

In 1984 Jeff was vacationing on Cozumel when he found the cave system now known as Quebrada. He and I went to Cozumel that same year and began the exploration of this remarkable system. Cave diving biologist Jill Yager was just beginning her Ph.D. program, and we had hopes of finding a cave-adapted crustacean belonging to the class Remipedia in Quebrada for her to add to her studies. Jill and I had first found remipedes during the late '70's in Lucayan Caverns. By 1984 Jill had remipede specimens from several caves in the Bahamas, the Canary Islands, and Turks and Caicos. The Mexican karst seemed a likely place for this oar-footed speedster of open cave to live. We found a lot of world-class biology in Quebrada, but no remipedes.

After a couple of years of "hanging around" with me, Jeff had gained too much weight to rock climb; however, I had certified him as an NSS-CDS cave diver and he was on his way to being an influential member of the cave-

diving community. In February, 1986 he called me from California with the news that he had just finished teaching a cave-diving course to four guys in the Yucatán.

It seemed that during the training dives in Car Wash, Jeff had failed to notice that there were remipedes swimming around! After the course was over and Jeff had left Mexico, his students found and collected what they thought were remipedes. They had just called Jeff with the news and he wanted to know if I was interested in a collecting trip to the Yucatán. That same day I called Washington D.C. and cancelled a visit to Freeport which had been planned for that week by Bill Hart, a curator at the Smithsonian. I explained to Bill that there might be remipedes in Mexico.

Two days later, Jeff and I met in Cozumel and set up our equipment with the help of Bill Horn of Aqua Safari. Bill Horn was (and still is) an indispensable part of our Mexican research. (He is also is a damn good arm wrestler.) The next day, we took the early morning ferry across the Cozumel Channel to the mainland. We then went south by taxi to meet the new cave divers who thought they had found Jill's famous crustacean.

The inside of the taxi was the home base of a squadron of Quintana Roo mosquitoes which breakfasted on me. As the taxi approached the Cedam Dive Center, I wondered if I still had enough blood pressure to walk. Once out of the taxi and standing on my own, I met two of the four divers from Jeff's class. I said hello for the first time to Mike Madden and Parker Turner.

Parker Turner . . . Who is this guy that sounds like he is using someone else's voice? He just got cave certified, yet says he used to cave dive with Frank Martz.

As we moved out of the Mexican sun into the shade of a palm tree, I nodded knowingly about Frank Martz while trying to sort out this time warp. Let's see, Martz disappeared in a South Andros Bluehole in 1971 while working with George Benjamin. Parker looked like he was in his mid thirties; so if he was telling me the truth, he had become a North Florida Cave Diver while still in his teens. Sensing my confusion, Parker explained that he had not been certified; he stopped cave diving after

Dennis Williams, Roger Werner, Mike Madden, and Parker Turner on Andros. Photo by Dennis Williams.

Frank died, but wanted to start again.

Well, there were remipedes in the Yucatán, and there was gold in Parker Turner. I decided that this guy was something else. Parker was bigger than life and had the ability to think. His thoughts were to change me, change cave diving in Mexico; in fact, he was about to effect all of cave diving. Between the time of diving with Frank Martz and Jeff's course, Parker had been a business man, a competitive kick boxer, and the Lord knows what else. After my first meeting with him in Mexico, as we stood talking on the edge of the Mayan jungle, there was one thing that I was certain of—he was committed to cave diving. For the next five years he was to do little else.

Parker and I did a lot of diving together in 1986. In June we were back in Mexico exploring Quebrada on Cozumel, and Car Wash and The Temple of Doom on the mainland. During this trip, Parker placed three of his big aluminum safety signs into caves on Cozumel and several more aluminum signs went into caves on the mainland. This was some of his first work in what was to become an outstanding effort to improve the safety of submerged caves.

We finished up the year by spending an entire month on South Andros in the Bahamas. The Brits had asked Jill and me to go to Andros in 1987 to do the biology for a little get together they had planned. However, it became clear to me that since oil money was paying some of the expenses, geology, not biology, would lead the way. Looking for cave-adapted animals in a water-filled cave after a geologist has been in there, is like looking for flying insects in a sand storm.

When I asked Parker if he wanted to go to Andros a year early to help do the biology, he said yes. Four guys went to South Andros: Parker Turner, Mike Madden, Roger Werner, and I—what a time we all had. I set up a field biology lab in an old Haitian shack with one light bulb hanging from the ceiling, and the four of us went cave diving. Parker, a red-blooded North American, took pride in the scientific work we accomplished that month.

Parker's sense of humor was too dry for some folks; others believed that he had none at all. Late one night in the Yucatán, he and I were at an outdoor bar drinking rum and Cokes, and dis-

cussing life. It was a terrific scene: a Caribbean sea breeze worked its way through the palms; our bartender understood how rum and Coke should go together; and Parker was telling me stories. We had been there an hour or so when something the size of a small bat flew into one of those blue-light bug-zappers. When the hissing and crackling started, Parker had just picked up his glass; he paused patiently until it was quiet again and said, "Casual electrocution of insectoids," and then took a drink. My feelings for insectoids aside, he still makes me laugh.

The 1987 Diving Equipment Manufactures Association (DEMA) convention was held in Las Vegas. I helped to man the NACD booth, and what a booth it was. Parker's touch was there for all to see. In the booth there was a custom-built backdrop with chrome spotlights shining on several of the new NACD safety brochures. The safety handout, using two divers to show the equipment differences between open-water and cave divers, was perfect for the DEMA crowd. Parker's business sense worked well in Vegas.

In the fall of 1987 Parker asked me to take part in a cave-diving safety seminar on Cozumel. Parker had helped to put together this meeting in order to educate local government officials, dive-shop owners, and the Mexican open-water guides about cave diving. It was held in the museum auditorium and was very well attended. One of the highlights was the presentation of a plaque to Ramón Zapata. Señor Zapata was the first diver into the caves at Parque Chankanaab on Cozumel, and is probably Mexico's first cave diver.

1988 found Parker, Bill Gavin, and me on the island of Bonaire in the Dutch West Indies. Parker had planned this trip to look at some water-filled caves that the local open-water divers knew about, but had not yet dived. I was along to look at the biology. Bonaire was good fun. I had never dived with Bill Gavin before, and Parker had put together a well-run initial exploration trip.

I found a couple of crustaceans, new to science, swimming in those shallow caves. Parker worked on educating the dive-shop owners and guides about cave-diving safety. By then, I believed he was the one of the foremost promoters of safe cave diving in the world. The year I was Chairman of the NSS-CDS (1981), I did some work on safety and have worked with many other cave divers who have an unquestioned commitment to safety and education. I have been to several international cave-diving meetings and have cave dived throughout the world. I have met few divers more outwardly committed to safety than Parker Turner.

It was 3:00 a.m. on Saturday, March 23, 1991. My alarm had just gone off and I headed for the shower. Then I drove from Melbourne, Florida to Tallahassee, where I gave a one-hour lecture at FSU that started at 10:00 a.m. When my talk on "Cave Diving for Science" was over, I drove back to Melbourne—a 10-hour commute for a one-hour lecture. Only Parker Turner could be behind this. I did it because he asked. Parker gave the 9:30 a.m. presentation to this Underwater Speleology class. It was titled "Diver Impact." He outlined some of the environmental changes that cave divers have caused in the Yucatán Cenotes.

He described a horror story of broken speleothems, water-chemistry changes, and rare cave-adapted crustaceans being eaten by fish that use the cave divers' lights to see their meal. Jill and I had watched this same thing happen in the Bahamas during the early '80's. I had given a teary-eyed lecture about Diver Impact in Blueholes at the Cozumel Meeting in 1987. Then, in 1991, Parker was telling us that cave divers had not yet figured out how fragile and special this environment was.

By the time he was finished, I was teary-eyed again. Then Parker introduced me, and when I shook his hand I understood that he had joined the battle to protect the environment of the submerged cave. I started my talk by telling the class that cave environmentalists could have no better person on their side than Parker Turner.

Not too long ago the phone rang; it was midnight. On the way to answer it, my wife, Alexandra, said that it would be bad news. She always says that if the phone rings after some mystical hour, but I have never believed her. Jill Yager was calling from Ohio. Mike Madden had just called Jill from Mexico. Parker Turner died today while cave diving in Indian Springs. I was wrong. We sat stunned in a dark kitchen.

For the last three years, Parker had worked at Florida State University as the Coordinator of the Under Water Speleology Unit. This position was created by Greg Stanton, Director of the Academic Diving Program at FSU. Parker was one of the first to get paid for what we all love to do—cave dive. By teaching Greg Stanton, Dr. Larry Abele (Dean of the College of Arts and Sciences at FSU), and many others from the academic community to cave dive, Parker helped to bring the research community safely into the submerged-cave environment. Dr. Able has told me that he feels the scientific community owes an incredible debt to Parker for his contributions and his commitment to safety.

With this in mind, Florida State University has established The Parker A. Turner Memorial Scholarship Fund. This money will provide support for a graduate student doing research in underwater speleology. The scholarship will exist in perpetuity and will be awarded by a committee representing the NACD, NSS-CDS, academia and other friends of Parker. All contributions are tax deductible.

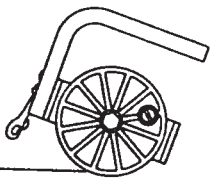
I am really going to miss this guy named Parker; the space he occupied in all of our lives will take a long time to be filled by others. As Larry Abele has put it, Parker could irritate the dickens out of you while you couldn't help but love him. My guess is that Parker never allowed himself to think much about how important he was to us.

I think a lot about how very fortunate I was to have known him. Now, when I close my eyes, I can see one of those big aluminum cave-diving safety signs in place at Indian Springs. It reads: "WARNING — THIS CAVE WILL OCCASIONALLY SWALLOW ONE OF THE BEST OF US."

Please send your contributions to:

Parker A. Turner Memorial
Scholarship
c/o Annette Weglinski
Florida State University
College of Arts and Sciences B-155
Tallahassee, FL 32306 ■

THE SAFETY LINE



by Wendy Short (NSS #30802), Safety Coordinator South

As the end of the year approaches, it's time to think about making New Year's resolutions again. Many resolutions only last a few days or weeks into the New Year (if you're lucky). They are usually made in the midst of celebration or the next day recovering from celebrating. Either way, they are not thought through clearly or realistically.

So take the time now to consider some cave-diving resolutions. For those of you who draw a blank, here are some suggestions to consider:

- Dedicate your next dive to practicing safety procedures.
- Try to come and go through the cave with no signs of your passing. Be especially considerate if people are behind you.
- Review all your equipment and upgrade or repair it as necessary.
- Set a good example by following the safety rules.
- Be conservation minded. Don't leave trash, trespass, or damage the property surrounding the cave, even accidentally.
- Don't dive beyond your level of training or ability, and don't encourage others to do so.

Some people think New Year's resolutions are made to be broken, but try to make some resolutions this year that you can keep and that will make you a safer and more skilled diver. If you cannot keep any of these resolutions, try giving up cave diving and take up raising chinchillas. ■

LOST BACK ISSUES AVAILABLE

Thanks to the generous response of CDS members Harman Taylor and Bill Mixon, and especially NSS Librarian Bill Torode, we are now able to offer photocopies of the "lost issues" of Underwater Speleology:

1976 - Volume 3
No's. 1, 2, 3, 4, 5
1977 - Volume 4
No's. 1, 2, 3, 4
1978 - Volume 5
No's. 1, 3
1981 - Volume 8
No. 1
1982 - Volume 9
No. 5

With this issue that you are reading, Vol. 18, No. 6, we are now able to offer a complete set of the full 18 years of Underwater Speleology, 6 issues per year (volume).

The price for back issues is $2 per issue, which includes postage and handling. List the issues you desire (give the volume/year [make sure these match!] and numbers) and send your check or money order to:

NSS Cave Diving Section
P. O. Box 950
Branford, FL 32008-0950

Please allow 4-6 weeks for processing, as requests must be processed and forwarded through the Section a couple of times before reaching the appropriate volunteer. ■

RECOVERY TEAM AREA COORDINATORS

by Capt. Henry Nicholson (NSS #21028)

Below is a copy of the list of Recovery Diver Coordinators and their respective area locations. The listed names are only the contact person for a specific area and not a total list of available recovery divers. It is the responsibility of the Area Coordinator to establish and maintain a current availability list of qualified recovery divers and resources in his/her area.

The list below is the only list that the NCIC (National Crime Information Center) Operator will maintain. It is solely the responsibility of the Area Coordinators to establish and maintain the area lists.

Upon implementation of the new Area Coordinator List, the new policy will require the NCIC Operator to give the agency requesting recovery divers only the names of the respective Area Coordinator(s). This will streamline the operation and place more responsibility on the Area Coordinators, who will have a current knowledge of available qualified recovery divers in their area.

If there are any changes or corrections to be made to the list, each Area Coordinator should contact me at the following phone numbers and address:

h 904-786-6363
w 904-630-1062 or 604-630-2991

Mailing Address:
H. W. Nicholson
5927 Hyde Park Cir.
Jacksonville, FL 32210

Qualified cave divers who have taken the NSS-CDS Rescue/Recovery Course should contact the Area Coordinators in their region and provide them with their current address and all telephone numbers.

Thank you for your cooperation.

RECOVERY DIVERS

AREA 1 COORDINATORS (North Florida)

Dive Rite Mfg. w 904-752-1087
Mark Leonard h 904-752-1087
Lamar Hires h 904-755-5913
Rt. 14, Box 136, Lake City, FL 32055

Branford Dive Center w 904-935-1141
Gene Broome h 904-935-0146
P. O. Box 822, Branford, FL 32008

Ginnie Springs w 904-454-2202
Steve Berman w 904-454-4811
Mike Hanna
Jarod Jablonski
7300 N.E. Ginnie Springs Rd.
High Springs, FL 32643

Spring Systems Dive Center w 904-776-2310
Arwyn Carr h 904-776-2310
Rt. 5, Box 171B, Live Oak, FL 32060

Karst Environmental Services w 904-454-3556
Wes Skiles h 904-454-3749
Pete Butt h 904-497-4823
Jim Gabriel h 904-454-8571
Rt. 1, Box 153, High Springs, FL 32643

Sheck Exley h 904-362-7589
Rt. 8, Box 374
Live Oak, FL 32055

AREA 2 COORDINATORS (West Florida)

John Burge w 904-492-2232
11711 Chanticleer Ct. h 904-492-2232
Pensacola, FL 32507
TELEX 803956 JBPNS

Wayne McKinnon w 205-793-0327
1520 S. Oates St. h 205-792-5720
Lot 28, Dothan, AL 36301

AREA 3 COORDINATORS (Central Florida)

H. V. Grey w 813-485-7747
P. O. Box 12 h 813-484-7834
Nokomis, FL 34274-0012

Roger Werner w 407-380-4593
2101 Tangerine St. h 407-894-4606
Orlando, FL 32803

Lt. Joe Harrell w 813-847-8102
4317 Sylvan Ramble h 904-596-4395
Tampa, FL 33609
h 904-596-2480 (parents)

Paul Heinerth w 813-863-6911
8109 New York Ave. h 813-862-2486
Hudson, FL 33567

AREA 4 COORDINATORS (Caribbean Area)

Joe Prosser w 305-592-3146
7400 N.W. 55th St. h 305-966-0619
Miami, FL 33166

Jim Coke w 5-2-987-22211
Postal 1
Playa Del Carmen
Quintana Roo, 77710, Mexico

Mike Madden w 5-2-987-22211
Postal 117
Playa Del Carmen
Quintana Roo, 77710, Mexico

ALABAMA

Joe Dabbs w 205-544-0623
1815 Inspiration Ln. h 205-534-8668
Huntsville, AL 35801

Jack Brightwell w 205-876-0341
10112 Bluff Dr. h 205-881-6240
Huntsville, AL 35803

CALIFORNIA

Jeff Bozanic w 714-846-5220
P. O. Box 3448 h 714-846-4100
Huntington Beach, CA 92605-3448

GEORGIA

John Crea w 912-246-3500
P. O. Box 1906 h 912-246-9349
Bainbridge, GA 31717

Steve Hudson w 404-764-1437
P. O. Box 803 h 404-764-2296
Lafayette, GA 30728

INDIANA

Noel Sloan, M.D. w 317-929-5255
8715 Garden Rock Ct. h 317-845-8821
Indianapolis, IN 46256

KANSAS, MISSOURI, ARKANSAS

Dave Porter w 913-823-2753
h 913-888-0094, h 913-472-5325
10801 W. 99th St
Overland Park, KS 66214

OHIO

Steve Ormeroid w 513-644-2559
629 W. 4th St. h 513-642-7775
Marysville, OH 43040

PENNSYLVANIA

Clark Pitcairn
h 215-357-8137, 215-357-8167
Meadowbrook, PA 19046
215-448-2432 (mountain home)

TEXAS

Jim Bowden h 512-928-4727
P. O. Box 49461, Austin, TX 78765

CANADA

Maj. K. David Sawatsky, M.D.
h 416-638-2058
#41 Wild Gingerway h 416-635-2079
North York, h 416-635-2000
Ontario M3H 5W9 Canada

Staff Sgt. Randy Hancock
w 416-965-4890
c/o R.H. Hodgson, Superintendent
Special Forces Services Branch
Ontario Provincial Police
90 Harbour Street
Toronto, Ontario M7A 2S1 Canada

John Pollack w 604-352-6200/6274
R.R. #1, Site 12, h 604-359-7341
Comp. 40, South Slocan,
British Columbia V0G 2G0 Canada ■

A SINKHOLE CAVE IN

by Edward Stoner (NSS #32613)

In 1988, not wanting to make the long haul to north Florida from Orlando, I dove a local sink with my wife, Denise. This dive had been planned for some time. Both Denise and I worked as part-time instructors at a local dive shop, the owner of which had certified both of us as cave divers. He gave us the location and orientation to the downstream section of this system. Finding the sink wasn't easy and encompassed a trek into the woods that lasted until noon. A trip to north Florida would only have taken four hours. An efficiency expert in time management, I am not!

Upon finding the sink came the proverbial statement from my wife, "You've got to be kidding! Do you think I'm going to get doubles down into that hole?" She was right; on our first dive I took her doubles down. While dropping 50' down the edge of the sink, covered with slick clay, holding on to a knotted rope, her words of encouragement—"That-a-boy, sweetheart!"—rang in my ears.

But my struggle was soon forgotten with the refreshing feeling of water entering my wetsuit. After our equipment safety check and S-Drill, we found ourselves floating through the cavern, my reel laying line effortlessly as we descended deeper into the darkness of the sink. We detected evidence of a subtle current as we approached the Junction Room. We followed the downstream restriction, then passed through a low tunnel where we entered the main phreatic system. Again, we were cave diving, this time at home.

After two mini-circuits, turning on air calculated for this siphon, we returned to the cavern. Our decompression was short: 11 minutes. Resting at the surface, looking up at the sky, only one thing was going through my mind, that the next 20 minutes would prove that there *are* mountains in Florida. That was three years ago.

The next five dives took place in a 30-day time frame during 1991. What happened in this short period gives food for thought concerning the stability of the upstream portion of this system. Two friends of mine asked me to dive this local sink. It could have been the mountain that kept me from saying yes on the spot. But I did give directions on how to locate this sink to my friends about a year ago. At that time one of them was investigating a couple of new primary lighting systems and I recommended someone who could custom build him a unit. After discussing a custom light, a downstream dive was planned.

Now, in order to protect the privacy of the individuals involved, their names have been changed. On Dive One, Jerry and Sam ventured to the terminal room to a penetration of 1067'. A couple of days later Dive Two found Sam, Mary and I doing the downstream run. Dive Three upstream found Jerry and Sam digging out the restriction that keeps most cave divers from venturing in this direction.

At this time I would like to describe the condition of the last room upstream. This room, about 50' by 100', was in pristine condition with no signs of

pristine condition with no signs of diving activity in the past few years. The floor was velvety smooth with no silt disturbance. Dive Four found Sam and Mary again digging through the entrance restriction and venturing to the last room. This time it was noted that the floor was pock marked. Golf-ball-size depressions had appeared throughout the room and trails of falling ceiling percolation lay along the curved sides of the walls.

Dive Five . . . "Now for the rest of the story." This was my first dive upstream. The day started fine: my truck was rear-ended on Highway 434 in Longwood. One hour later, with a goose egg on the back of my head, I rendezvoused with Sam and Mary at the dive site. Mary is a sight to behold; she can't weigh more than 100 lbs.; her doubles cover 90% of her body as she walks down my mountain. I'm 45 years old, I work out three times a week, put 60 miles a week on my bicycle—so why is my face so red? Oh, well!

Now I've been through my share of restrictions but come on folks, this was side-mount country! The shape of this restriction was like an hourglass. Slowly, I let all the air out of my wings; visibility was at zero. Using hand-to-leg contact, we progressed inch by inch. As I got to the tightest area the team slowed, each one knowing our predetermined touch signals. I had to force myself about 2" into the floor, my tanks against the ceiling as I exhaled to move forward.

Finally I was clear, I was on the other side. I gave the leg signal for the three of us to hit our inflators. Slowly we rose out of the gloom into cobalt-blue water. From here on we would be in an advanced, very technical cave dive. I knew our capabilities, that the three of us could glide inches above the floor, with not a sign of our presence ever showing. If I hadn't known my partners' abilities, I would not have been there.

Another 50' and we broke out of the low ceiling. The next sight took my breath away! I had never thought of silt as a thing of beauty. Never had I heard in my talks with fellow cave divers of anyone raving about beautiful silt formations. My heart skipped a beat; I knew my buoyancy was good. I dared not scar the sight in front of me. A deep spring vent over years and years of time had burst through the floor on the side of this big room. The silt on the leading edge was that of a perfect crescent moon about 8' in height, peaked at the top to a fine razor's edge. Its texture was that of a pure velvet dress in a rich amber hue.

Ever so gently our team traversed the room close to the cave ceiling so as not to awaken the sleeping beauty. Trust me, narcosis was not upon me, as our depth in this room was only 60'. We glided on through a small restriction that opened to a very large room. A "T" in the line went straight up into a huge dome in the ceiling, calling for exploration. No one gave a signal, but the team, thinking as one, ascended over a natural bridge formation to the dome above. Awesome! I had never seen so many fossils of complete vertebrates decorating a cave before. Here were the full skeletal remains of prehistoric turtles and opossum-like creatures. There were sea biscuits as big as my hand, and my mind was trying to document the site before me.

I caught an "OK" signal and returned it on the wall before me. A quick air check and we descended to venture on. We were flying, gliding, up through a chimney into a craggy low restriction-like tunnel on our way to the last room. The room was just ahead. I saw Sam up front, and Mary was just entering the room. But what was going on? Who was behind me? Someone was grabbing my legs with great strength! My God, could an open-water diver have secretly followed us up to this point and now be in a panic state? But it couldn't be, as I always check the cave behind me. My legs were pinned to the floor! As I spun around, I didn't like what I saw. Heavy silt scattered the rays of my light. Through this cloud, rocks were falling like rain on me. A cave in! I pulled hard and freed my legs. Still it was raining rocks in the low restriction.

I was surprised at how calm I was. My heart rate had gone up before I realized what was happening. But now it was out of my hands. I needed to get out my slate and inform Sam and Mary. But no! Why should I? I would wait.

We were in the last room now and Sam tied off a safety line. As we traversed the room, Sam noted its condition. This time the silt was marked with even more craters. At the same time the ceiling was percolating limestone the size of quarters, marking the cave floor. I noticed a suprrised look coming from Mary—then Sam. A rock the size of a large van was in the room. A white limestone dome over it made a shocking contrast to the black ceiling above. Tree roots were seen sticking out of this white dome. After a moment the realization struck me that this huge rock had fallen after last week's dive.

An air check, then a turn around was called. I approached the restriction before the others, and I was now the lead man. It looked okay, as if we could pass. The debris on the floor was equal to that of a few orange crates. We took our time going out, but visibility wasn't all that bad in the main rooms.

The exit restriction was just as bad as before—last one in, first one out eats the silt of the whole team. One hour had passed. I felt good; as a whole it was a great dive. If I ever go upstream again, it will only be to the dome room. The cave appears to be stable to that point, but beyond the chimney—never again! Sam has related his findings to Jerry, and with conditions as reported, Jerry said he wouldn't go back to the last room again.

Now for a sad note. You can drive up to this sink today. Back in 1988 you had to haul your equipment in. The use of this sink by open-water divers is evident. Two weeks again a truck drove up with two divers. I asked if they were going to dive. One said he was a cave diver, the other, a cavern diver. I inspected their equipment, all of it new open-water equipment, with not a scratch to be seen! Only one light each, and not even one line reel. I took the diver recovery manual out of my truck and asked them if I should call the morgue before or after their dive. Recently someone installed a 1/2" nylon rope from the surface all the way to the permanent lines. If that someone is reading this, I want to thank you for the new rope in the back of my pickup!

Due to this pressure, Sam and I are going to move the permanent lines back into the cave zone. We will soon be installing a stop sign. On a good note, Sam just discovered a virgin passage with many new rooms downstream. If you would like to read more about these new areas in future articles, write or call me. Refer to your membership list for address and phone. ■

BOOK REVIEW: The Darkness Beckons, by Martyn Farr

Review by Bill Mixon (NSS #5728 Fellow)

The Darkness Beckons. The History and Development of Cave Diving. Martyn Farr. Diadem, London; 1991. 280 pages hardbound, 8 x 10 format. £22. (Published in the United States by Cave Books, St. Louis, MO. See below.)

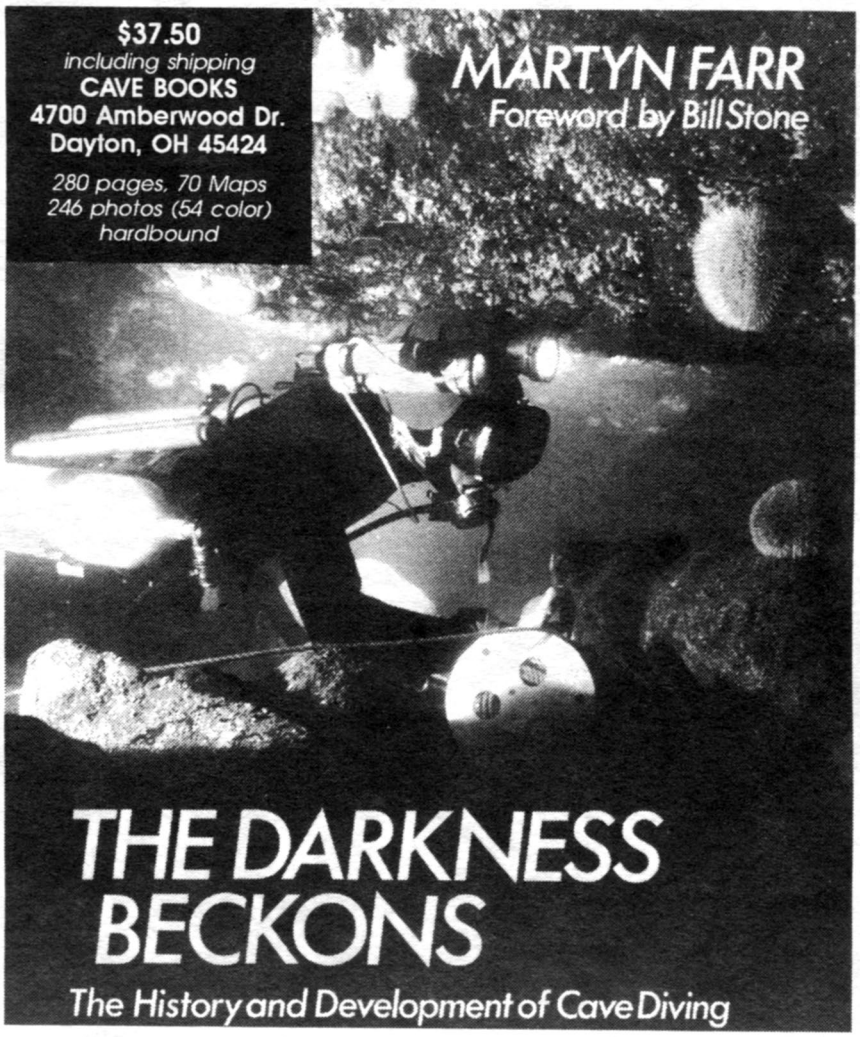
Martyn Farr has expanded and updated the earlier, 1980 edition of this book, and it has doubled in size. He covers the history of cave diving from Norbert Casteret's free dives in 1922, through early dives with equipment that fed air to the diver from the surface, and on to the days of rebreathers and modern scuba equipment. Rebreathers recycled the diver's air, and only a small amount of oxygen had to be added to replace exhaled carbon dioxide that was chemically absorbed in the apparatus. They were, however, cumbersome and unreliable, and by the middle sixties they had been entirely superseded, even in Britain, by the familiar scuba tanks. Ironically, modernized rebreathers are today being considered for very long or deep dives, where the waste of air inherent in scuba is a serious obstacle.

The majority of the book is about British cave diving, which is covered in considerable detail. This coverage is amazingly up-to-date; it includes the connection between the Kingsdale system and King Pot, which I had read about in a magazine barely a month before I got a copy of the book. There is some evidence that this news was included hastily, however. That connection is referred to in the previous paragraph as something for future generations.

There are about a hundred pages about cave diving in the rest of the world, and coverage is less detailed, although I can't think of any very major explorations that I have read about elsewhere that aren't mentioned here. NSS diver and Bicking laureate Sheck Exley has more entries in the index than anyone else. The news that Sistema Naranjal in Mexico is now the world's longest underwater cave didn't quite make it, but that just proves that cave diving is still a dynamic field, with new discoveries or records every few months.

Nearly every page contains a black-and-white photograph, and there are about four dozen color photos. The maps, many of which are extended profiles of sumps, together with very clear writing, make is easy to follow the often lengthy history of cave diving in various caves. The successive points of furthest penetration are clearly marked. The very small-scale maps of major cave systems that have been integrated by diving could have used some clue as to which of the passages are underwater, however.

Most cavers know far too little of the story of cave diving, and they should read this book. In fact, I would recommend this fine book to anyone, caver or not, who likes to read about exploration. The frontiers of underwater-cave exploration today are as challenging, if not more so, as the conquests of the sea, mountains, and arctic, and the history of cave diving is happening now. ■



THE WORLD'S LONGEST UNDERWATER CAVE PASSAGES

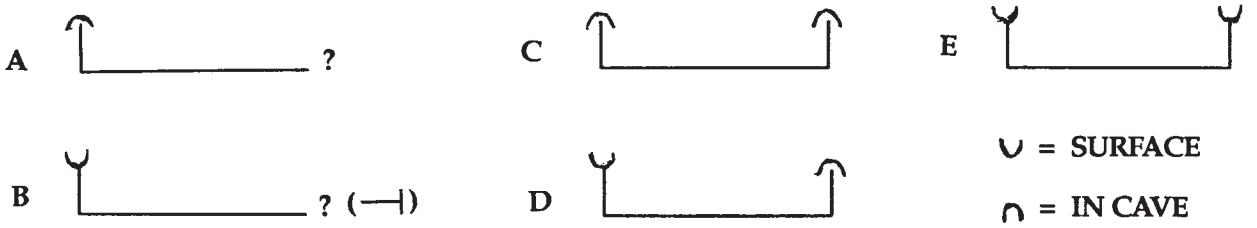
by Oliver Knab

The following is a list of the world's 19 longest underwater caves current as of August 6, 1991.

All of the caves listed meet the following specifications:

- The indicated length (given in both meters and feet) represents the distance from the beginning of the phreatic cave zone (in sumps, where the ceiling meets the water) to the nearest surface or return point of the divers.
- The length measurements were made with guidelines made of either nylon, perlon or steel wire.
- The indicated length refers to the guideline length, which must not be in the middle of the passage.
- All listed submerged passages are without natural airbells or surface entrances.
- The cave passages have been dived by cave divers. Parts of sumps which have merely been sounded or viewed are not listed.
- If a traverse dive was made (e.g., King Pot to Keld-Head) two groups of divers can explore the cave passage from both entrances.
- In the case of underwater cave systems, the length given is the distance between the surface and the nearest exit point.
- The same rule applies for T-sumps with two different exit points.
- The dive routes are the shortest routes between two surfaces.

meters x 3.2808 = feet feet x 0.3048 = meters



Rank	*Category, Name and Location*	*Meters*	*Feet*	*Explorer and Source*
1.	B Doux de Coly, France	4050	13,287	O. Isler, Switzerland personal communication G.D.
2.	B Cathedral Sink, Florida, USA	3291.8	10,800	S. Exley, USA *NACD Journal*, Vol. 23, No. 2, p. 34, Jan. 1991
3.	B Chips Hole, Florida, USA	3169.9	10,400	S. Exley, same as #2
4.	D King Pot - Keld Head, England	3050	10,006	R. Carter, J. Cordingley, G. Crossley, R. Skorupka, G. Yeadon, personal communication, J. Cordingley, England
5.	E Sullivans Sink - Cherry Sink, Florida, USA	2590.8	8500	B. Main, B. Gavin, L. English, P. Turner, USA *NACD Journal*, Vol. 20, No. 1, p. 1, Jan. 1991
6.	B Source de Bestouan, France	2460	8070	M. Douchet, France *Info Plongee*, No. 56, p. 4, 1991
7.	B Manatee Springs, Florida, USA	2342.4	7685	B. Main, B. Gavin, USA Personal Communication, S. Exley
8.	B Covol dei Veci, Italy	2340	7677	O. Isler, Switzerland *Info Plongee*, No. 54, p. 26-7
9.	E Luraville - Telford Spring, Florida, USA	2194.5	6743	T. Morris, W. Jasper, L. Hires *NACD Journal*, Vol. 21, No. 6, p. 69, Nov. 1989
10.	C Hornsby Sink, Florida, USA	2055.3	6743	S. Exley, C. Pitcairn, USA Personal communication, S. Exley
11.	C Cocklebiddy Cave, Sump 2*	11970	6463	R. Allum, P. Rogers, H. Morrison, Australia *Info Plongee*, No. 47, p. 19 * From last airbell to first airbell (sump length 2550m), Ref. Cave map, R.A.

12.	C	Emergence de la Bourne, Sump 3, France	1880	6167	O. Isler, Switzerland *Info Plongee*, No. 54, p. 23-4, and No. 29, p. 4
13.	D	Source du Ressel, France	1865	6118	O. Isler, Switzerland *Info Plongee*, No. 55, p. 9-12
14a.	D	Keld Head - Kingsdale, England	1828.8	6000	O. Statham, G. Yeadon, England *The Darkness Beckons*, M. Farr, p. 147
14b.	B	Madison Blue Spring, Florida, USA	1828.8	6000	B. McGuire, USA *NACD Journal*, Vol. 23, No. 2, p. 35, Jan. 1991
15.	A	Cocklebiddy Cave, Sump 3	1790	5872	H. Morrison, Australia *Info Plongee*, No. 47, p. 19-21
16.	B	Source de Port Miou, France	1670	5478	B. Leger, France *Info Plongee*, No. 32, p. 5-6
17.	(B)	Atlantida - Tunnel, Lanzarote, Italy	1618	5308	O. Isler, Switzerland *Info Plongee*, No. 47, p. 4
18.	D	Source de la Loue, France**	1580	5183	O. Isler, Switzerland *Info Plongee*, No. 45, p. 5

** From entrance to first airbell in a side passage (sump length 1720 m) ■

INSTRUCTORS TAKE NOTE:
State Parks to Stop Accepting Pink Forms

Acting Training Chairman Lamar Hires has announced that Florida State Parks are going to stop honoring the pink carbonless copy of student registration forms as proof of certification. Instructors should advise their students of this and contact Lamar if they have any questions regarding the issuance of temporary certification cards, which are available. Lamar Hires - Bus. phone: (904) 752-1087, Res. (904) 755-5913. ■

A WEEK IN THE FOOTSTEPS OF MARTEL
by William R. Halliday, M.D. (NSS #812 Fellow)

In October 1991 I had a wonderful week in the cave country of southern France, seeing some of the world's most famous caves, springs and speleological museums. As a result of the heartwarming help of Jacques Choppy (an outstanding oldtimer of the Speleo-Club de Paris and a Director of Grotte de Clamouse, an especially notable show cave) we were able to accomplish about twice as much as we could have done alone. But this report will give an idea of what is possible in a week, in case you are headed that way.

The venture began poorly, but that did not last long. We travelled by Eurail Pass from Paris to Brive, where we picked up a Hertz car. From Brive, Lascaux II was only a short drive. This is the artificial replica of "the Sistine Chapel of prehistoric art." At first glance it appears impressively cavey. But it is disappointingly small, and most of the replicas of the famous paintings seemed dull and lifeless in comparison to published photos of the real things. Rather sadly we walked the short distance to the entrance building of the real Lascaux Cave, thinking about what we had not seen.

Shaking off our somber beginning, we veered through a network of back roads, heading generally toward the prehistory center of Les Eyzies. French roads are good, with signs at every little intersection. But usually the signs indicate only the next village. Even for Jacques a good map and constant navigation were necessary everywhere off the main roads.

Soon Jacques pointed us to the Abri de Cap Blanc, which I had never heard of. Abri means grotto or rockshelter, and this was a great one. It was closing time but Jacques was welcomed as a VIP (here and everywhere else we went, except Lascaux), and we received a special tour to view and admire

prehistoric wall sculptures of horses, bison, and deer about 14,000 years old. I had not known that such sculptures existed.

Then on to Les Eyzies itself, where new and old buildings cling beneath overhanging cliffs of the Vezere River, home of man for perhaps 35,000 years. In the Abri Pataud we were welcomed in the middle of a lecture on the current excavations and exhibits. Adjacent to the diggings is a little archeological museum, beautifully done. Our hotel was in an old mill nearby, really delightful. There are so many caves, archeological sites, and archeological and speleological museums in and around this tiny village that we could have spent the entire week here, happily. Make reservations far in advance in tourist season.

Next morning was the amazing Musee National de Prehistorie. I had expected all the portable wonders of Cro-Magnon art to be somewhere in Paris. Instead, world-famous carvings like the Venus of Brassempouy are here where they belong, for anyone to study and photograph at leisure (as long as no flash is used). I had not realized that the Venus (also known as La Dame a la Capuche) was so small, but that scarcely lessened its impact.

And from the museum, the Grotte (or Abri) Cro-Magnon itself, where Cro-Magnon man was first found, is only a 10-minute walk. The grotto is only a small rockshelter, but for spelean history buffs, this short pilgrimage is a must.

In the museum I met a Neanderthal skull for the first time. I was shocked. It appeared far less human that I had expected, as did others we saw later. I could not help wondering if the interbreeding of Cro-Magnons (modern-looking *Homo sapiens*) and Neanderthals vividly described in *Clan of the Cave Bear* really could have happened.

Already our time was limited. Regretfully bypassing beautiful little Grotte du Grand Roc and the nearby speleological museum we drove north to the ruined cliff dwellings of La Roque St. Christophe where tremendous undercut ledges a half a mile long had sheltered an entire town. Located in a cliff 250' high, it was almost invincible before the development of artillery. Long a citadel of Protestant Huguenots, it was totally destroyed in 1588 on the order of King Henri III during the Wars of Religion; a tragic end to perhaps 25,000 years of habitation.

Then on to the Grotte de Rouffignac, notable as a surprisingly lengthy cave in chalk (said to be 6 miles long) as well as the site of amazing wall paintings and carvings 10,000-12,000 years old. First reported in 1575, these gems of prehistoric art were only acknowledged in 1956. Depictions of herds of mammoths and rhinos have the greatest impact, but individual ibexes, horses, and bisons are magnificent. Thin films of calcite cover some of them. Nearly all the paintings here are in the form of black line drawings. Proportions are exact, careful attention was given to detail, and considerable stylization is obvious. Bear wallows and claw marks are common; speleothems are rare. These features all are widely scattered in several branches of the cave, and small electric trains conduct visitors to the most impressive sites.

Although its paintings are about 1,000 years older than those of Rouffignac, those of the Font-de-Gaume Cave are mostly in color. Here prehistoric art is said to have entered its classical period, with excellent composition and perspective. Body shapes of the depicted animals are in harmony, and the perspective gives a sense of realism to the animals. A herd of polychrome bison is especially notable, but reindeer, horses, and mammoths also are impressive. The entrance passage is almost choked by flowstone, but the inner frescoed regions are dry.

As we drove east from Les Eyzies, innumerable cave openings adorned the cliffs. Jacques spoke of unpublicized painted caves, two of which he had discovered, but noted that all the caves of this region are small. We reached the medieval town of Martel too late to get a room in the delightful country inn called Hotel les Falaises (Cliffs) on the Dordogne River, but had no difficulty finding a room in the middle of town. Next morning we were off to Rocamadour, a spectacular, mildly troglodytic town of great fame. Next came Gouffre de Padirac, one of Martel's most famous conquests. From the surface, the vertical entrance shaft appeared smaller than I had expected from photos, but it bells out impressively as one descends. A sequence of three delightfully old-fashioned elevators conducts visitors down the 250' entrance pitch, then steps continue down to the underground river 328' below the surface. Martel led 9 expeditions here between 1889 and 1900. One-half mile of his discoveries now is an enjoyable boat trip, leading to a large chamber, richly decorated and largely vertical. Truly, we were in the footsteps of Martel now.

Grotte du Pech-Merle is a few dozen miles farther south, near the Lot River. It is notable geologically, archaeologically, and scenically. Unlike most of the caves containing Cro-Magnon art, its painted sections contain extensive groups of stalagmites and columns. A spectacular frieze of dappled horses in perhaps its most famous scene, but numerous other wall paintings and remains of cave bears also are on display. Red ochre dots and hand outlines are reminiscent of similar cave art in Spain's northern coast. Unique here is a hug oolite shaped like a spinning top, about 2" wide and more than an inch high. It is displayed upside down next to its growth cavity.

We overnighted at a motel on the outskirts of Carcasonne. En route were innumerable cave orifices in cliffs along the Lot River. Some of them sheltered cliffdwellings. Just west of Cahors we inspected the artesian Fontaine de Chartreux. Cave divers here have penetrated well below sea level, although not nearly as deep as at the Fontaine de Vaucluse, which we saw later.

After a quick look at the ancient walled city of Carcasonne and its cisterns, we were off northeast, through beautiful Upper Languedoc and into Mediterranean karst briefly rejuvenated when the Mediterranean dried up a while back. Probably by coincidence, starting here we met none of the restrictions on photography in caves that hindered my documentation farther north.

First here was Grotte de la Deveze, a fine cave in its own right and the new home of the French Museum of Speleology, formerly in Paris. Among are the exhibits here are the original "singes" ("monkeys") used a rope-climbers in 1934. They are sort of primitive Gibbs-type ascenders. With this early beginning it is surprising that single-rope techniques never caught on in France until A.C. (After Cuddington). In addi-

tion to the work of Martel, pre-Martel Austrian and Trieste speleological organizations are given credit here. In the cave, monocrystalline speleothems, aragonite clusters, helictites, shields (palettes) and soda-straw stalactites are notable. Some are on dipping schist beds.

In this cave, we accompanied a tour group of elementary school children. It was interesting to hear them being addressed much like adults, and as responsible cavers-to-be. Education rather than entertainment was the clear intent. We observed this with another school group in another show cave later, and also in another school group intently studying roadcut geology. I thing we have something to learn from French educators and show-cave operators.

We proceeded eastward, to Grotte de Clamouse, Jacques' special cave. Here are even more notable helictites, aragonite clusters, soda straws, and vast chambers. I could have shot two full rolls of film here, and not taken half the photos I wanted. We overnighted nearby, at a delightful country inn well known to the caving community: Hostel St. Benoit.

Next morning we veered north along the scenic Herault River to Grotte des Demoiselles (Fairies), entered by a funicular. After a series of small passages and rooms, visitors enter a huge, splendidly decorated chamber measuring about 400' by 250' and some 150' high. The illumination is excellent. Martel was here in 1884, 1889, and 1890.

Still farther north is the Abime de Bramabiau, site of a remarkable underground stream which was the location of some of Martel's most famous explorations, beginning in 1888. Even at low water, the roar of the waterfalls up which he dragged boats is impressive. Speleothems are few, but nodules of barite jut out into the passage like chert. In one unilluminated section of high, narrow passage, my flashlight revealed an open barite geode originally about a foot in diameter, with classical barite crystals. Besides the show cave, we visited the upstream sink and the first karst window along the course of the underground stream, not open to visitors. Through trips involve wading in up to 4-1/2' of water. Jacques has done it twice.

Continuing north into the fringes of the Cevennes and the high Causses (great limestone plateaus), we soon came to one of the greatest of all: Aven Armand. En route, we had a fine view of Porte Bonheur, a natural bridge that eliminated a long meander of its stream.

The story goes that Martel took one look down the preposterous entrance pit of Aven Armand and delegated the 225' ladder descent to its discoverer, Louis Armand. Struggling up the ladder 4 hours later, Armand's remarks were immortalized: "Superb! Magnificent! More beautiful than [nearby] Dargilan! A true forest of stone . . ." And so it is.

Martel himself descended two days later, with Armand Vire. America's Horace Hovey missed out. He was with the Martel team, but was ill and stayed in the village. Probably it was just as well. It is doubtful that Hovey's physical conditioning was sufficient for a ladder climb of such magnitude. In any event, below lay a single vast vertical chamber, about half of which is studded with a huge thicket of strange thin stalagmites with flared projections like trimmed cauliflower leaves. This stone forest is one of the truly great spectacles of the entire world of caves. Every caver should experience what Louis Armand first saw.

Overnight was in the surprising La Riche Hotel in the town of Ales, definitely recommended although parts of the road through the Cevennes seemed below West Virginia standards. Especially at night.

Next morning we continued through the Cevennes to the Aven d'-Orgnac. Originally explored by Robert de Joly rather than Artel, Orgnac is almost the equal of Aven Armand in its forest of odd-looking stalagmites up to 75' high. Some are flattened and are termed "piles of plates." They occur in a larger chamber than Aven Armand, in a lengthy cave which contains a greater variety of beauties including subaqueous calcite crystals, extra-thin helictites and much more. This is another must for cave connoisseurs and was a proper climax for a climactic trip.

Although we still had a lot to see, from here it was all downhill, figuratively and mostly literally. We visited the beautiful limestone natural bridge called Pont d'Arc to check out phreatic cavities in its abutments shown on a 1971 postage stamp of France. Nearby are spectacular limestone gorges. In the Gorge de l'Ardeche we stopped at newly commercialized Grottes de St. Marcel, notable for a pre-commercialization cave restoration project. Especially impressive here is a large terrace of big rimstone pools, cleaned out, prettied up and beautifully illuminated. Then we were off to Pont du Gard, a famous Roman aqueduct with nearby Grotte Prehistorique de l'Age du Renne de la Salpetriere. Unlike Les Eyzies, we found the latter fenced off very effectively and deserted. I could not learn anything about its saltpeter or manufactory.

Back in civilization now, we overnighted at a roadside hotel near L'Isle sur la Sorgue. The Sorgue is the river that emerges from the famous Fontaine de Vaucluse, but I don't recommend that hotel. We visited the great artesian spring next morning. It is not very impressive at low water, but was dived by robot to a depth of about 1015' in 1985: far below sea level. Some 400 swallets have been traced to this spring, from as much as 60 miles away. Innumerable other solution features open high in the natural limestone amphitheater above the spring.

Along the walk from the village center to the spring is the Norbert Casteret Speleological Museum, displaying Casteret's equipment in realistic settings. Also on display is his speleothem collection, which really should be out of sight, as a study collection, rather than in full view where it encourages others to collect. Otherwise, the museum has a good conservation message, and sells notable biospeleological postcards.

We drove back to Avignon, turned the car back to Hertz and caught a TGV train which sped us back to Paris nonstop, in 3-3/4 hours. But as we sped north, my thoughts turned to what we had NOT seen: more than a hundred show caves, some of them almost the equal of the greatest we had visited. And other great chambers described to us by Jacques, known only to cavers. We had not even entered the great cave areas of the Alps nor the Pyrenees. We will have to return, hopefully for more than a week. But even a week in the company of a Jacques Choppy in the caves of southern France is truly an unforgettable experience. ■

ON THE LIGHTER SIDE . . .
Commando Diver Specialty

by Steve Berman (NSS #27704)

Due to the increasing number of cave-diving sites being closed, it is time for the NSS-CDS to offer a new type of specialty to meet the needs of the cave diver of the '90's. The **Commando Diver Specialty** brings the needed training and knowledge to the qualified cave diver who desires to visit some of the more pristine cave-diving sites that are unfortunately closed.

OBJECTIVE

- Make two clandestine dives into private or state-owned caves without being detained by authorities

PREREQUISITES

- Full cave level with at least 100 caves dives
- Attorney that can be reached during the middle of the night
- No past criminal record

LECTURE

- Discussion of various county ordinances on trespassing
- Statistical evidence of the number of court convictions and/or fines for various counties
- Technique for cave diving in the **STEALTH** mode
- Method of communication which blends into night sounds

LAND DRILLS

- Crawl 50 yards through heavy underbrush while making minimal noise and wearing double 104's and pushing a stage bottle in front of you
- Climb 10'-high chain-link fence while wearing double 104's
- Exit a moving van ***and*** become completely hidden in underbrush in under 15 seconds, while wearing full cave-diving regalia

CAVE DIVES

- Swim 50 yards through dense hydrilla with no light
- Two illegal cave dives incorporating techniques of the Commando Diver

EQUIPMENT

- Black or Camouflage wetsuit/drysuit
- Black stage bottle
- Black duct tape
- Black spray paint
- Large wire cutters
- Police scanner
- Cash deposit for bail purposes

RECOMMENDED TEXT

- *Soldier of Fortune* ■

CAVE DIVING MANUAL

When the final outstanding chapter was received last month, we printed the manual out in its entirety for the first time and were surprised when it clocked in at a whopping 460 pages! —fully half again as large as we had originally projected.

Opinions are somewhat mixed as to whether it would be better to apply the methods of the Slash and Burn School of Editing, or to allow the rich detail and redundancies to remain, so that each chapter will essentially stand alone. In any event, the editors are extremely pleased with the high caliber of all the chapters and special appendix material submitted. (In addition to the decompression tables, we have some very useful field charts for calculating similar air volumes for all different size cylinders, etc.)

We have been overwhelmed by the tremendous financial support from our members and business sponsors. Contributions have been pouring in from all over North America, and we have been very moved and proud to see the list of sponsors grow. There have been a couple of especially generous contributions from a couple of lifetime supporters of cave diving, for which words cannot express our gratitude and appreciation. A very special thanks goes to veteran cave-diving explorer and instructor Tex Chalkley, of Ocala, Florida, for his very special gift of $1000.

Our press date has been pushed back some because of some of these new developments. But we look forward to having the book in hand shortly and will announce its availability immediately. Thank you all!! ■

IMPORTANT PHONE NUMBERS

DAN - Divers Alert Network
919-684-8111
Diving Medical Assistance

NCIC - Nat'l Crime Information Ctr.
904-630-0514
Rescue/Recovery Emergency

UWS 17:4 RECEIVES NSS GRAPHIC ARTS SALON HONORABLE MENTION

Congratulations!—to *UWS* Vol. 17, No. 4 (July/August, 1990) editor, Harry Averill, and front-cover artist, Joanna Florio-Jefferys. This fine issue, with a beautiful glossy black-and-white rendering of Joanna's artwork, set in Harry's impeccable design, was awarded an Honorable Mention in the Non-Photographic Category of the Graphic Arts Salon held at the 1991 NSS Convention this summer.

This is Joanna's third ribbon for Honorable Mention for her artwork appearing on the cover of *Underwater Speleology*, and we are fortunate once again to have her beautiful pen and ink wash of the . . . dubious joys of being a sherpa for sump divers. This issue will be appearing in the 1992 Salon. ■

President of the FCDA - Future Cave Divers of America. Photo by proud father Mark Barstow.

Cave Diving Section of the National Speleological Society, Inc.
A nonprofit scientific and educational organization recognized by the IRS
P.O. Box 950 • Branford, FL 32008-0950

NON-PROFIT ORGANIZATION
U. S. Postage
PAID
Nokomis, FL
Permit No. 91-148