



underwater speleology

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UNDERWATER SPELEOLOGY

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By

**The Cave Diving Section of
The National Speleological Society**

Membership in the NSS Cave Diving Section is open to any NSS member in good standing who is interested in cave diving and has paid the dues (\$3.00 for 1980). Persons not wishing to join may subscribe for \$5.00 per year. Checks should be made payable to "NSS Cave Diving Section" and sent to Stephen Maegerlein, P.O. Box 60, Williams, IN 47470.

Deadline is the second Friday of the preceding month. Send articles and correspondence to the Editor, Gene Melton, P.O. Box 2353, Titusville, FL 32780.

Opinions expressed herein are not necessarily those of the NSS Cave Diving Section.

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TIME TO RENEW?

Some readers started receiving Underwater Speleology in the midst of a volume. You can determine when to renew your dues or subscription by examining the top of the address label on this issue. If the top line of the label reads 07-5, then volume 7, issue 5 is your last issue. Send your dues (\$3.00) or subscription (\$5.00) to Stephen Maegerlein, Treasurer. Remember, you must be a current NSS member in order to be a member of the NSS Cave Diving Section. There is no longer an associate CDS membership. All NSS members pay \$3.00 for CDS membership.

Some of you will find an "*" after the volume-issue number on the address label. That means the Cave Diving Section will represent you at the 1981 NSS Congress of Grottos. Write to Mary Eckhoff, Secretary, if you want to change your status.



Stephen

Greg

CHAIRMAN: India Young, B. A. (English), age 27.

Our leader this year has been actively cave diving seven years, making approximately 250 cave dives, and is a recipient of the Abe Davis Safety Award. She has served the section as chairman of the Awards Committee and has also served as a director for Florida's NACD. She has published articles on cave diving in Underwater Speleology and Song of the Suwanee and is co-editor of the forthcoming NSS Cave Diving Manual. A journalist by profession, she makes her home in Byron, Georgia, where she enjoys photography, caving, motorcycle touring and raising African Violets, dogs and cats and husband Troy, who is also a cave diver.

India feels that an underlying problem facing us is keeping folks close to the Section. "We have created a viable organization that has to date been responsive to the needs of both cavern and cave divers, no matter their experience level. We need to retain that responsiveness through involvement of numerous people. Underwater Speleology must be made highly efficient. Above all, we must remember that we, too, were once novices, seeking information, pushing our knowledge and, in doing so, make ourselves/our resources available." She also suggests the possibility of a time-limited certification card to solve the problem of people who may not still be safe cavern divers after a 6 to 12 month layoff.

VICE CHAIRMAN: Greg McCarty, age 27.

Greg has been caving for nine years and diving for seven, making over 200 cave trips. His cave dives include penetrating the first two sumps in Dalton's Cave and a 290 foot dive in Mushroom Cave (both in his home state of Iowa) which were described in a two-part article he wrote for Underwater Speleology. He has served in numerous positions with the Iowa chapter of the NSS including Vice Chairman and is presently editor of their newsletter, the Intercom. He also organized the Cave Diving Session at the 1976 NSS Convention. Greg is presently working on a degree in science education from the University of Iowa, and in addition to checking out new leads in caves enjoys running, chemistry ("fooling around trying to blow myself up"), science fiction and outdoor pursuits such as fishing, hiking and rock climbing.

Greg feels that the major problem facing the Section is that the membership is so spread out across the U. S. He feels that this should be counteracted by "as much dissemination of information as possible, such as the planned NSS Cave Diving Manual."

TREASURER: Stephen D. Maegerlein, B. S. (Chemistry), age 39.

After six years of dedicated service to the Section on its Executive Committee, Stephen certainly needs no introduction. An Abe Davis Safety Award recipient, he is certainly one of the most versatile cave divers in the country with a varied 12-year career that includes dives in Florida, Kentucky, Tennessee and Texas as well as his native state of Indiana, where he has made many significant discoveries. He has also made an enormous contribution through his development of innovative cave diving equipment such as portable sonar, new compass designs, underwater audio tape recorders, lights and reels. In addition to extended service to the Section as treasurer and secretary-treasurer, Stephen has also served as editor and/or publisher of Underwater Speleology through the same period, for which he has written numerous articles. He has also written articles for many other publications including co-author of the chapter on "Surveying" in the NSS Cave Diving Manual. For all of these contributions as well as his twenty years of caving including 10 years as treasurer of the Bloomington Indiana Chapter, Stephen has most deservedly received recognition as a Fellow of the NSS, one of the few cave divers so honored. Not surprisingly, all of Stephen's hobbies are related to caving, diving or cave diving, including such varied pursuits as archaeology, photography (attendees at the Safety Workshop will remember well his Rock Bluff Springs film), computers and hydrology.

Stephen feels that the major problem facing the Section is that most cave divers have not received training. The solution should be to "expand the cave diver training program."

CONTACT LENSES AND DIVING

Editor, Pressure

Dear Sir:

Sport divers who wear hard contact lenses have written to us to report blurred vision after certain dives. Typically, blurring would follow a 60 foot for 30 minute dive and would last for about an hour. More conservative dives were less likely to cause symptoms. This appears to be a form of decompression sickness which, although not rare, has not been widely appreciated. We cite two items in support.

It was reported in the American Journal of Ophthalmology, 1976, that U. S. Navy divers wearing hard contact lenses were studied with a slit lamp during decompression from a 150 foot for 30 minute chamber dive. At the 70 foot level bubbles were seen in the tear film between the lens and the cornea. Thirty minutes after surfacing they had vanished, but corneal edema persisted. The divers complained of sore eyes, visual halos, and decreased acuity, beginning when bubbles were first seen and lasting up to two hours.

The proposed explanation: with edema the cornea loses transparency and vision blurs. The surface layer of the cornea has a pump mechanism to remove excess water that diffuses in. The energy to run the pump comes largely from oxygen and glucose in the tear film. Bubbles trapped

under a hard lens prevent free flow of tear fluid over the cornea, so the pump fails and the cornea absorbs water.

Dr. John Betts, writing in Triton (British Sub Aqua Club), reported post-dive blurring in a young lady who wore hard contact lenses during a 180 foot chamber dive. He removed the lenses and, using an ophthalmoscope, detected bubbles within the cornea itself.

The mechanism here may be that the cornea beneath the contact lense is able to absorb gas slowly during the course of the dive, but not to lose it rapidly upon ascent, so super-saturation produces bubbles. We suggest that the fit of the lense is important, a tight lense being more likely than a loose one to restrict flow of the tear film and to trap any bubbles within it. This is in keeping with the facts that our original correspondent wore contacts in both eyes but had symptoms in only one, and that many divers who wear hard contacts never develop symptoms regardless of the dive profile.

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Reprinted from the Letters to the Editor, PRESSURE, June 1980, newsletter of the Undersea Medical Society, Inc.

THE ABE DAVIS SAFETY AWARD -
earning it is gettin' tougher all the time!

BY SHECK EXLEY NSS 13146

To date 115 Americans have received the coveted Abe Davis Safety Award for successful completion of 100 or more cave dives. This NSS CDS-sponsored certificate not only recognizes a dedication to cave diving safety as evidenced by the only incontrovertible criteria - long-term survival - but also gives the cave diving community a positive statistic to counter the detractors of cave diving who ignorantly proclaim it as a "suicidal" activity. If you have logged 100 or more cave dives or know of someone who has, please notify India Young, Rt. 3, Box 119K, Byron GA 31008.

If you haven't yet qualified for the Abe Davis Safety Award, get set for some bad news: it is getting harder to get with each passing day. No, the criteria for the award hasn't changed. The simple fact is, today it is undeniably harder to make 100 cave dives than any other time in the past two decades.

One major reason is the rapidly escalating cost of diving, which is increasing more rapidly than the purchasing power of the diver. When I qualified for the Abe Davis Safety Award on 8/2/67, gas could be purchased for just over 20¢/gallon and scuba tanks retailed for \$60.00 to \$80.00. Today gas sells for over \$1.10/gallon and the same steel 72 cu. ft. tanks retail for \$187.00 and up. If you use John Harper, who started cave diving in 1959 and probably qualified for the award by 1961, the difference is even greater! Inflation has also increased your incomes during that period, but not by a multiple of 3 to 5½ unless you have been very lucky. Still another factor in the increased cost

of diving is the evolution of more sophisticated cave diving equipment. When I started cave diving in 1965, the best-dressed diver did not have to buy an octopus regulator, dual valve manifold, double 100's, nicad lighting system or scooter because such items did not exist. Finally, the dive sites that charged a \$5.00 admission fee prevalent nowadays were few and far between in the 1960's.

The three divers that have logged more than 1000 cave dives - Paul DeLoach, Tom Mount and myself - have one big factor in common. Like John Harper, who does not maintain a log but who also may have attained the thousand-dive plateau, the three of us logged large numbers of dives in the 1960's, when an interesting and challenging dive was far shorter and less involved than it is today. The frontiers of cave diving have advanced enormously. The longest penetration (in and out) made in Florida by 1965 was probably less than 1500 ft. - only about a fourth of today's maximum distances. So it is not surprising that the longest penetration made on my first 100 cave dives was only 400 ft. With today's improved safety equipment and procedures it is inconceivable that anyone could make a hundred cave dives without straying beyond 400 ft. back without collapsing from sheer boredom. (Unless, of course, he is a paid cave diving instructor, another advantage Tom Mount and I have enjoyed.) What all this means is that multiple-dive days were common back then because long exposures were avoided. I averaged two dives per day in 1966, but only one dive per day in 1979.

A final factor in the increased difficulty of logging cave dives today is that even if you can afford to dive, chances are that you don't have the time to dive. The people with plenty of time on their hands - college students, for example - no longer have the wherewithal to "O. D." on cave diving. My most prolific year of diving (287 cave dives) was my last year in college, when I took advantage of senior priority to schedule all of my classes in four days, two of which I often would cut to take advantage of a five-day cave diving weekend. Alas, with today's increased tuition costs most college students are hard pressed just to stay in school even with a part-time job, not to mention having enough money to go cave diving.

For many years in eastern Europe cave divers have not been able to afford their own equipment, so they join together in large clubs which purchase a few sets of gear to be used on a rotating basis. Also, they can afford to travel to the dive sites only in large groups once or twice a year. We may reach the same point in the U. S. soon.

So, hurry and get your Abe Davis Safety Award while the "gettin's still good."

Newest Abe Davis Safe Cave Diving Award Recipients include Judy A. Bauer of Gainesville, FL, and David Whall of Virginia Beach, VA. Congratulations Judy and David!

DEEP-DIVE 500

A new scuba rig for deep diving has been designed by Normalair-Garrett. Called the Deep Dive 500, the apparatus saves an estimated 75 to 80% of the helium used, and a work period of at least six hours. It can be used autonomously or with an umbilical.

In commercial diving, the umbilical is obligatory to supply gas to make up system leakage. With this equipment, there is improved safety if the umbilical is severed. Instead of one minute's gas supply, the diver using Deep Dive 500 would probably have 20 minute's supply.

The apparatus operates electronically, and can be used with a diving helmet, band-mask, or mouthpiece. It is equipped with a number of visual and audible warning signals to alert both diver and supervisor. Shallow water trials were completed late in 1979. Deep diving trials are scheduled for this spring. (Margaret F. Werts from an article in Oceanology International News, March 1980)

Reprinted from PRESSURE, June 1980, newsletter of the Undersea Medical Society, Inc.

A/V SLIDE SETS FROM NAUI

The National Association of Underwater Instructors (NAUI) has two A/V slide sets available. One is on diver rescue and serves as an aid to rescue training in basic through advanced classes. It consists of 41 slides and a script. The second is on accident management. These 37 slides and script are intended as aids in the training of divemasters, assistant instructors, and safety divers. Advanced techniques and management procedures. The price is \$21.95 for each set. Send to NAUI, Box 360, Colton CA 92324.

ISTVAN PLOZER (1948 - 1977)

With deep regret we inform that our colleague and correspondent ISTVAN PLOZER recently with his companion Pali FERENC died while diving in the spring of the lake in Heviz (Hungary).

As a member of the Delphin Diving Group, he worked with Gy. Hortolanyi who lead the speleological research between 1964 and 1966 finally he took part in the work of Gy. Morvath and of J. Derrecin until 1967.

After he finished his military duties ('67 - '69), he took over the work of a specialist diver in highwater duties for the Ministry of Defence.

Since 1967 we had excellent relations with our diving colleague. He kindly left us a few articles about his diving activities (Bulletin d'informations 54, 1973) as well his experiences in the Molnar Janos Cave (Bulletin d'informations 59, 1974).

Enthusiastic about his research diving he wrote his observations from which many are to be found in Karszt-es Barlang, the organ of the Hungarian Speleological Society.

Reprinted from Cave Diving Newsletter 1/78, Union internationale de Speleologie - Commission for Cave Diving, West Germany.

FIFTH INTERNATIONAL CAVE DIVING CAMP

The Cave Diving Section of the NSS is honored to be sponsoring and hosting the Fifth International Cave Diving Camp in the north Florida area. International cave divers from Germany, Belgium and Great Britain (and possibly more) will be here July 12-16, 1981. It is a grand opportunity to learn and be taught. It probably will be many years before we again have such an opportunity on our back door step. Take Advantage of It!

But if you can't, send your equipment! These divers will arrive essentially bare handed and whatever piece or pieces of equipment you can spare for their use, it would be highly appreciated--both by our guests and the hosts/hostesses on hand. To make your contribution, contact Sheck Exley at 10259 Crystal Springs Rd., Jacksonville, FL 32221. We are expecting at least 10 guests--hopefully more.

The Camp is being held in conjunction with the Eighth International Congress of Speleology in Bowling Green, KY (Mammoth Cave). NSS CDS member Exley has had a paper on Peacock accepted by the Congress which is a very high honor. Dates for this gathering are July 18-25, 1981. It will be based at Western Kentucky University in Bowling Green.

GOING TO CAVE IN AGAIN!

Those who missed it can cry in their beer . . . those who were there drank theirs. While it looked like a "fish out of water" escapade for a while, CDS members did show their colors at the July, 1980 Cave In/Dry Thing in north Alabama. Some 23 folks appeared out of the fog that Saturday morning in Scottsboro, AL, ate breakfast, talked big, then assaulted both the mountain and their bodies. By the time the mountain had had her say, the cave was safe. Prime leaders of this migrant herd were Paul W. Smith of Gainesville, FL, and E.T. Davis and Son of Atlanta, GA. Forrest Wilson and Mike Sanders were the able ram-rods. At the end of the day, when all the stories were compared, it was seen that some went down and some went deep; and on Sunday some went further down and some didn't go at all!

But! We're going again! Yes, May 9 and 10, we are going to meet at the Liberty Motel in Scottsboro, AL once again and re-salt. Watch the upcoming U.S. for more details, or call India and Troy (912/956-4578) to sign up (or down).

The position of Section Historian is open. Sharron Ransom of Miami, FL, has had to resign this increasingly important post because she complained of her being too much in New York and LA and husband John being too much in Europe and not enough in north Florida, and the job of historian was having to sit on the back burner too long. Sharron, we heartedly appreciate the immense effort you did put into it and who so ever takes up where you left off will appreciate it even more! And who will this ever so appreciative person be? All you need to do is volunteer, let either India or Dennis Williams know, and Presto! it's yours.

Quite seriously though, the Section is becoming an increasingly effective organization and its first steps in the early 1970's need to be logged. We all know how much our own personal logs mean to us; the Section's log will mean as much.

COVER STORY

The design adorning our cover is the art work adorning our new Section T-shirts! Through the work of Gene Melton in Titusville, FL, the new batch of T-shirts are new all way around. They also have the new logo of the Section, shown here. The art work includes the stalagmites/mites of the NSS logo and the eastern U.S. region, etc., where a lot of cave diving is done. . . not to say there's none in the West! Hardly so! But had we included the entire map, the diver would be coming out of your arm pit.

The price is still \$6.00 (send extra for postage) and there are navies, and light blues, silvers and oranges (supply of the latter two were limited); Plus! There are ladies' T-shirts, but they are on the small side of small. Contact Sheck Exley for yours.



REMEMBER

NSS CAVE DIVING SECTION DUES ARE DUE JANUARY 1981. Remit \$3.00 to:

Steve Maegerlein
P. O. Box 60
Williams IN 47470

16th NSS CAVE DIVING SAFETY WORKSHOP in Branford, FL, May 23-24, 1981, Memorial Day Weekend. Chairmen Henry and Beth Nicholson will have another informative, enthusiastic program lined up. Everyone is invited. For a pre-registration form, write them at 4517 Park St., Jacksonville, FL 32205.

