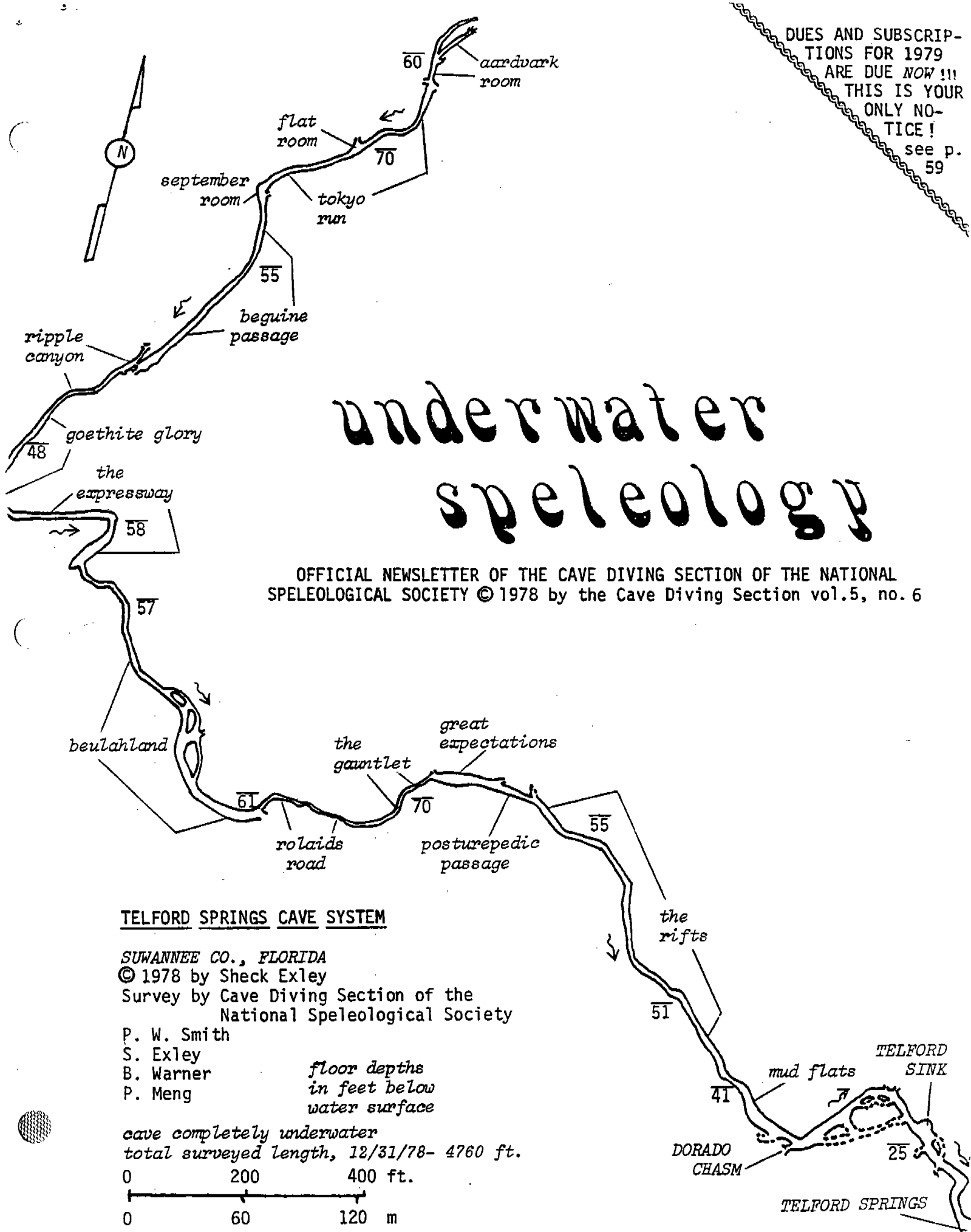


DUES AND SUBSCRIPTIONS FOR 1979 ARE DUE NOW!!! THIS IS YOUR ONLY NOTICE! see p. 59



underwater speleology

OFFICIAL NEWSLETTER OF THE CAVE DIVING SECTION OF THE NATIONAL SPELEOLOGICAL SOCIETY © 1978 by the Cave Diving Section vol.5, no. 6

TELFORD SPRINGS CAVE SYSTEM

SUWANNEE CO., FLORIDA

© 1978 by Sheck Exley

Survey by Cave Diving Section of the National Speleological Society

P. W. Smith

S. Exley

B. Warner

P. Meng

*floor depths
in feet below
water surface*

cave completely underwater

total surveyed length, 12/31/78- 4760 ft.

0 200 400 ft.

0 60 120 m

TELFORD SPRINGS

UNDERWATER SPELEOLOGY

published bi-monthly
beginning in February
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 that is interested in cave diving and has paid the dues (\$3.00 for 1978). Immediate family of members not wishing to receive a newsletter may also join for \$1.50. 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 the treasurer, Stephen Maegerlein.

Deadline is the second Friday of the preceeding month. Send articles and correspondence to the editor, Sheck Exley.

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

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COVER

The cover map is of Florida's 8th longest cave, the Telford Springs Cave System. Telford is now threatening to go over a mile in total passage surveyed, but 7 of Florida's caves, 6 of which are completely underwater, are already there! See p.55.

ELECTION RESULTS

The late publication date of this issue has enabled us to include results of the recent election held by mail. Both amendments were overwhelmingly passed (see revised constitution, p. 60), so 1979's officers will be John Zumrick, Chairman; Tom Cook, Vice Chairman; Stephen Maegerlein, Treasurer; Bill Fehring, Secretary; and Forrest Wilson, Training Chairman. The Section would like to express its sincere appreciation to the other nominees who expressed an interest in the Section by consenting to run for office: Terry More and Jim Pizarowicz, both of whom narrowly missed being elected. The actual final count is available from the editor.

MEMBERSHIP DUES ARE DUE

That's right, it's that time again. Fight inflation (rates same for 4th straight year) by sending Stephen Maegerlein your dues (\$3.00) or subscription (\$5.00) for 1979. See p. 59 for renewal blank. Thanks. *This is your only notice, and is the last 1978 issue!*

ABE DAVIS CAVE DIVING SAFETY AWARD

The NSS Cave Diving Section has created a new award for Americans who have completed 100 cave dives (or foreign divers if Section members). For applications, contact India Young, chairman of the Awards Committee (see address above).

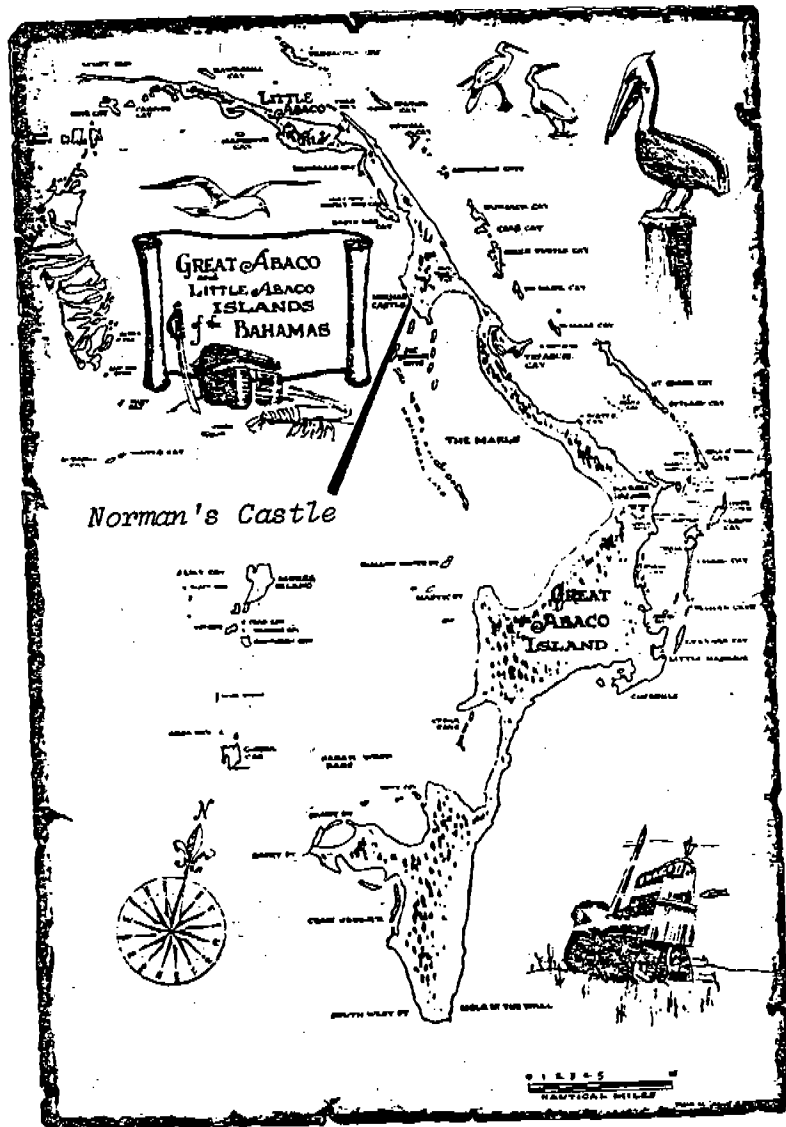
NORMANS CASTLE

by J. Billy Young (NSS 17268)

On March 22, 1974, the limestone sinkhole known as Norman's Castle was penetrated by Billy Young (NSS 17268) and Paul DeLoach (NSS 16517), two cave divers from Athens, Georgia. The first of two dives occurred at approximately 11:30 PM on March 22. Because of the native superstitions surrounding the so-called bottomless pit, the duo decided to install a permanent guideline in the sink as proof of penetration as well as a guide for future dives into the grotto. The line was tied to a large boulder just below the surface as the divers entered the water. Visibility could have easily been over 100 ft. with a temperature of between 70-75°F., showing characteristics of a typical limestone sink. However, the walls of the vertical shaft, being almost perfectly round, consisted of calcite limestone and large tubular stalactites, giving evidence of a once-dry pit.

At a depth of 50 ft., the team encountered a heavy hydrogen sulphide solution as evidenced by distinct visibility impairment and an odor and taste that can be slightly sensed underwater. This phenomena was not unusual as the divers had encountered similar conditions in south Florida sinks. However, a very unusual characteristic about this layer was that a reddish discoloration existed. This phenomena was probably due to iron oxide and other chemical constituents in solution.

At the 65 ft. level, the water cleared considerably and the bottom of the sink became visible. Very large stalactites adorned the walls and a very large "pocket" was noticed on the southeast side. The divers wrapped the line on a large stalactite,



continued to the east wall, then angled to the bottom and tied the line on a log at a depth of 125 ft. At this point the bottom sloped continually and the southeast wall could be seen. Hydrogen sulphide was still present at this point and no life of any form was observed. A heavy layer of sediment covered the bottom as well as the sides. Young and DeLoach ascended for decompression before surfacing.

The second dive in Norman's Castle occurred on March 24, 1974 at approximately 5:30 PM for the purpose of exploring the deep side of the sink in search of passages that supposedly connected the sink with the sea. After securing decompression bottles, the divers descended on the line to the 80 ft. level and installed an offshoot line into the pocket toward the sloping bottom. The cavern was very large with stalactites still present. The rounded wall stretched as far as visibility would permit and the divers began a sweep to search for offshoots. The depth attained was about 200 ft. as DeLoach ran the reel and Young swam on and off the line searching for tunnels. The divers then moved in an easterly direction until the east side of the cavern became visible. At this point the divers were assured that no large passages existed, just a large water-filled grotto that pocketed out. The team secured the line to a large rock at a depth of 210 ft. with a maximum attainable depth of 215 ft. Young and DeLoach then began their diagonal ascent and some lengthy decompression before surfacing.

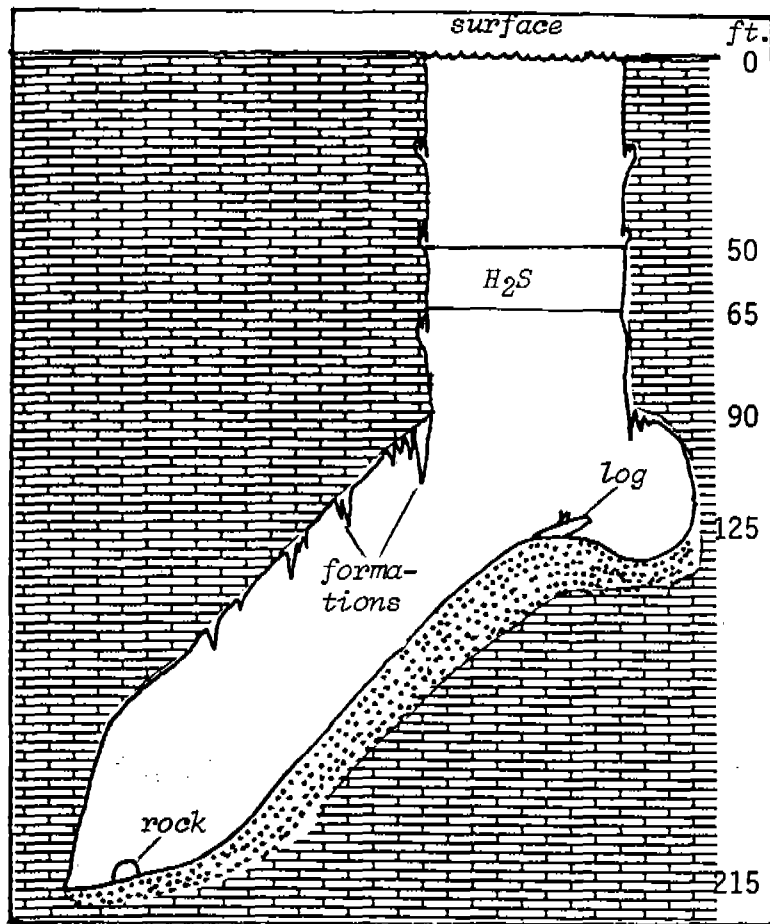


fig.- Profile, Norman's Castle

MINUTES OF SECTION MEETING 6/3/78, BRANFORD FLORIDA

A meeting of the NSS Cave Diving Section was held Saturday evening during the 8th NSS Cave Diving Workshop. Presiding was Gene Melton, Vice Chairman of the Section. Among the 26 persons in attendance were the following members: Bill Porterfield, Mike Sanders, Bill Fehring, Paul Meng, Larry Holland, David Taggart, Monte Evans, Mary Melton, Paul Smith, Forrest Wilson, Karan Exley, Sheck Exley and Gene Melton. After lengthy discussion on training and how to best reach all potential cave and cavern divers, it was voted to have a certification program. Publications, cooperation with open water diving organizations and the next Florida workshop were also discussed.

FLORIDA'S LONGEST CAVES, 12/31/78

compiled by Sheck Exley, NSS 13146

	*	total passage surveyed		
		<u>meters</u>	<u>feet</u>	<u>miles</u>
1. Peacock Springs Cave System, Suwannee Co. ¹	p	5985	19630	3.72
2. Warren's Cave, Alachua Co. ²	v	5549	18200	3.45
3. Green Sink Cave System, Lafayette Co. ³	p	3585	11758	2.23
4. Blue Springs Cave, Jackson Co. ⁴	p	3243	10638	2.01
5. Hole in the Wall Cave, Jackson Co. ⁵	p	2870	9415	1.78
6. Devils Eye Cave System, Gilchrist Co. ⁶	p	2205	7232	1.37
7. Hornsby Springs Cave System, Alachua Co. ⁷	p	1610	5282	1.00
8. Telford Springs Cave System, Suwannee Co. ⁸	p	1451	4760	0.90
9. Emerald Sink Cave System, Wakulla Co. ⁹	p	1238	4062	0.77
10. Ellis Cave, Jackson Co. ¹⁰	v	1189	3900	0.74

* *vadose (air-filled) or phreatic (water-filled) according to present water levels... no inference as to origin is intended*

- 1 Survey by C. Smith, K. Hillier, J. Zumrick, L. Holtzendorff, R. Johnson, I. Young, T. Young, P. W. Smith & S. Exley
- 2 Smith, Paul W.(FSS & FUKS)- personal communication, 1/27/77
- 3 Survey by E. Dixon, F. Fogarty, R. Goodman, L. Henkel, D. Manor, R. Miller, W. Skiles, P.W. Smith, K.S. Sullivan, D.W. Sweet & I.S. Exley
- 4 Survey by P. DeLoach, S. Forman, T. Chalkley, K. Fulghum, R. Goodman, B. Panter, P.W. Smith, J. Stone, K. Sullivan, W. Walters, I. Young, T. Young J. Zumrick & S. Exley
- 5 Survey by P. DeLoach, M. Evans, W. Fehring, R. Gomez, R. Goodman, P.W. Smith, K. Sullivan, D. Sweet, W. Walters, J. Zumrick & S. Exley
- 6 Survey by K. Hillier, E. Hall, E. Kalakauskis & S. Card, with additions by J. Zumrick and S. Exley
- 7 Survey by T. Chalkley, D. Fisk, S. Forman, R. Goodman, K. Hillier, L. Holtzendorff, A. Melton, M. Melton, C. Smith, K. Sullivan, D. Sweet, D. Turner & S. Exley
- 8 Survey by P. Meng, P.W. Smith, B. Warner & S. Exley
- 9 Goodman, R. W.- personal communication, 12/26/78
- 10 Boyer, Paul (SEKS)- "Florida Caverns," *NSS News*, vol 23, no. 10 (Oct. 1975), p. 155.

* * * * *

MINUTES OF ANNUAL SECTION MEETING, NEW BRAUNFELS TEXAS, JUNE 23, 1978

Presiding at the Annual Meeting was Tom Cook, Chairman of the Section. Among the 30 persons in attendance were the following Section members: Bret Zepp, Joseph Lieberz, Mike McEachern, Greg McGill, Lynn Wright, George Veni, Jill Yager, Charles Maphis, Gene Melton, Mary Melton, Bruce Herr, Jim Pisarowicz, Bruce MacMillan, Tom Iliffe, Rick Rigg, Don Monnot, Sheck Exley and Tom Cook. The certified training program was discussed at length. Joe Lieberz was appointed to help coordinate the 5th International Cave Diving Camp, to be held in the U.S. in 1981. Joe reported that sentiment was strong at the 4th Camp (Bristol, Great Britain, 1977) for the camp to be held in north Fla. The cave diving manual, nominations for 1979 officers, Pittsfield (MA) convention, section patch and stationery were also discussed.

ACCIDENTS and INCIDENTS

or: Learning cave diving the hard way.

by Sheck Exley
NSS 13146

The purpose of this column is to share these experiences in print with others so that all of us can cave dive more safely and hopefully avoid having the same problems ourselves. We encourage all cave divers to send in reports of dives on which problems have occurred, whether a participant in the dive or not. Please include the date, location and all pertinent details. If you like, include your own analysis of what went wrong and how the problem might have been avoided. Do not mention any names! The purpose of this column is not to fix blame or embarrass anyone, but to help us all to cave dive more safely.

DEPTH PROBLEMS

No other single factor has played nearly as important a part in cave diving accidents involving experienced cave divers as excessive depth. The NSS does not condone deep diving in caves. This month's column is intended to discourage diving to such depths until a safer method can be found to do so, or at least to provide those who intend to deep dive in caves anyway with more knowledge so that they may do so more safely.

October 16, 1971

"...my partner was taking me to the end of the line in Zuber Sink (Florida), a gauged depth of almost 250 ft. (this was the deepest I had ever been). I felt pretty good until at the bottom, where a rubber mermaid was tied to a log. Suddenly I felt slightly dizzy, and put a finger up to ask my partner to 'wait for a minute' while I tried to get my bearings.

"The next thing I remember is shouting at my partner to let go of the manifold of my double tanks. This was at a depth of about 150 ft., to which he had towed me after watching me black out on the bottom of the sink..."

Comments: While not a cave by strictest definition, the south wall of Zuber Sink overhangs sufficiently so that cave-like conditions are encountered, and at the bottom one is actually over 100 ft. back from the lip of the pit overhead. Many veteran cave divers have noted that, due to some unknown psychological reason, the effects of narcosis generally seem more pronounced in caves than in open water. For this reason and the greater difficulty of rescue in an underwater cave, this writer has recommended that one never exceed 3/4 of his maximum open water depth in a cave. The "depth blackout" illustrated in the above example is a fairly common phenomena in the deep Florida karst and the deep "walls" of the Caribbean. In 15 known instances where a successful rescue was effected, all of the victims were found to have been making their deepest dives to that date. The "depth blackout" victim appears to be merely "falling asleep on the bottom with his eyes open, while retaining his regulator and continuing to breathe. Fortunately for the reporting diver, he was accompanied by an alert diver who had been considerably deeper previously and knew what to do when the blackout occurred: with a minimum or exertion, grab the victim's tank valve and

inflate one's compensator to bring him up.

March 17, 1971

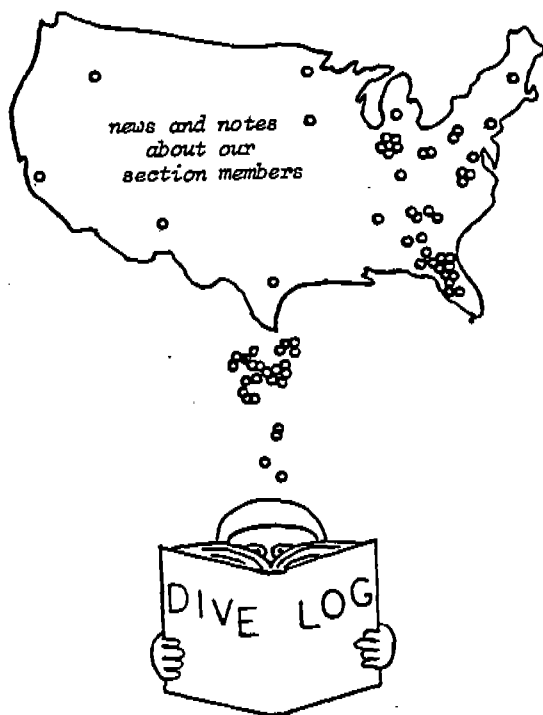
"...using the 'swim as fast as you can' technique popular at the time, my partner and I made our first trip into Eagle's Nest's (Florida) newly-discovered 'Super Room,' descending to 280 ft. en route. On the way out we were just coming up from the deepest point when very suddenly it became extremely difficult for either of us to breathe. Perilously close to blacking out, we sank to the floor of the cave at 260 ft., all of our energy consumed by our efforts to breathe. Suspecting a CO₂ build-up, I hyperventilated to try to relieve the situation but it didn't seem to help. Luckily, we recovered after several minutes and were able to continue swimming out, but not before consuming almost all of our air (we were using the 'half-plus-two' rule). We ran out of air during our second stop, at 40 ft., and had to ascend to 20 ft. to our decompression bottles to get more, a very hazardous procedure. Fortunately, neither of us got decompression sickness..."

Comments: This dive is an excellent example of how little we knew of deep diving procedures at the time. The divers did not allow themselves a full 2/3 reserve air supply but used instead the then-popular "half-plus-two" rule. One of the worst things one can do at depth is to exert, and "swimming as fast" as one can is a gross example of such. The CO₂ buildup from the exertion undoubtedly played a major part in the incident, causing severe respiratory distress. The divers may also have "overbreathed" their regulators, exceeding their capacity to deliver gas. The victim's hyperventilating by taking rapid breaths was not especially effective because they did not move a sufficient volume of gas into and out of their lungs during each respiration. This caused a "respiratory dead air space" with correspondingly greater amounts of CO₂. It would have been more beneficial to take slow, deep breaths, exhaling as completely as possible after each breath.

June 2, 1972

"...my partners and I were recovering the bodies of two drowned divers from Eagle's Nest (Florida) for the sheriff's dept. One of the divers had an ill-fitting wetsuit that was tight in the armpits. During our dive to 260 ft. depth and back out with the bodies there was considerable exertion. To minimize damage to the bodies, we swam them up to 30 ft. depth before releasing them for workers waiting on the surface. We then immediately returned to 50 ft. to begin our decompression after a bottom time of 20 minutes. Upon surfacing the diver with the tight wetsuit developed symptoms requiring recompression.

Comments: Dr. John Zumriok (USN Experimental Diving Unit) has indicated that the deeper decompression tables are not as well tested as the others, so it's reasonable to expect a somewhat higher incidence of bends while deep diving. One should also go over to the next longer bottom time, especially if there are complicating factors such as greater exertion or impairment of circulation from a tight wetsuit. Ascent to 30 ft. should have called for use of the "Omitted Decompression Schedule."



In case you missed it, "Newsletter Review" in the October 1978 *NSS News* included a report of a dive by Stephen MAEGERLEIN and Bud DILLON in May in Tennessee's *Dunbar Cave*. Pushing the "River Styx" sump resulted in over a mile of new air-filled passage! An air-filled route has now been found into the cave.

A 1978 summer expedition to Andros resulted in spectacular new discoveries by Roger MILLER, Frank FOGARTY and Terry MORE. Terry promises a future article on same for *Underwater Speleology*.

John KESSLER is now a diving safety officer for Caribe Diving Contractors in Puerto Rico and is busy looking for cave diving sites. If anyone knows of any in the area, please contact John.

Court SMITH is now spending a lot of time at Georgia Tech, but not enough to keep him from making 3 major discoveries along Fla.'s northern Withlacoochee River during the summer. Among the new sites investigated with Paul DELOACH, Hal Davis and Buddy Sanders are *Roster Spring* and *Shallow Spring*.

Paul W. SMITH, Ned DELOACH, Paul MENG and Sheck EXLEY got the 1978 NSS Convention started off right with a dive in Texas' *Jacobs Well* on 6/17/78. An attempt was made to dig out a restriction at 90 ft. so that it could be negotiated without removing tanks, but to no avail.

Rick RIGG and Tom COOK dived the deep lake in the back of Texas' commercial *Cascade Caverns* during the convention on 6/19/78.

Numerous trips to investigate the back of the *Devils Eye Cave System* (Florida) have finally paid off for Lewis HENKEL (formerly SOLLENBERGER) and Dave MANOR. Squeezing through a restriction almost a kilometer from the nearest entrance, they have discovered a new section that may extend more than 1000 ft. further.

On 7/15 Will WALTERS and Sheck EXLEY discovered a deep inflowing tunnel in Florida's *Die Polder II* that is headed due west toward *Weekiwachee Springs*.

Further investigations of Tennessee's *Lost Sea* (see *U.S.* 2:5, pp. 46-52) by Barry WARNER, Forrest WILSON, Sheck EXLEY and Ken Fulghum on 8/19 & 8/20 have revealed that the three large "tunnels" previously reported are probably in actuality only part of the huge lake room, whose underwater portions apparently exceed the 600 ft. x 400 ft. above water portions - called "world's largest" in *Guinness* - by a considerable margin.

Dennis WILLIAMS, Jill YAGER, Gene MELTON, Mary MELTON, Sheck EXLEY and others have participated in the exploration and survey of a sprawling fresh- and salt-water system on Grand Bahama Island whose 9 entrances have forever put to rest the rumor that all blue holes have only one entrance and have lengths of 1000 ft. or less. Many veteran cave divers are also calling this the "most beautiful cave" they have ever seen. Look for an article on this fabulous system soon.

A Labor Day AACS expedition to Arkansas' *Cave River Cave* headed up by Mike Warshauer resulted in more discoveries on the dive by Don MONNOT and Paul W. SMITH.

Mike SANDERS, Bill PORTERFIELD, Gorham "Mack" DONAHO and Tom BRELAND completed Sheck EXLEY's cave diving course in early fall.

Brett ZEPP writes of a very narrow and silty, 200-ft.-long sump in *Peppersauce Canyon* (Arizona), which he may dive soon.

Mike SANDERS and Forrest WILSON have been exploring north Alabama's *Champion Spring*, which promises to lead to an extensive air-filled cave.

Roger MILLER and Frank FOGARTY have been busy this fall mapping a vast underwater cave at *Marane Spring*, Missouri, for the James Foundation.

Bob and Cheryl GOODMAN are expecting a "youngun" soon, so Bob has confined his cave diving to the Tallahassee area lately. Another Goodman innovation - "recycling" unmeasured guidelines by removing them from the cave, measuring and marking them, then re-installing them - has helped immeasurably in his survey of the immense conduits of the *Emerald Sink Cave System*. Surveyed passage now totals 4062 ft., making it Florida's 9th longest cave. Other participants include Kirby SULLIVAN, Tex CHALKLEY, Larry Murphy and Jeff Parker.

Bob GOMEZ, Will WALTERS, Bill FEHRING and others in the Tampa area have discovered a new spring in the Weekiwachee (Florida) area this fall which has tidal inflow and outflow characteristics similar to a Bahamian blue hole. The new site is over 100 ft. deep and going, but has visibility of only 20 ft.

Teamwork has been the key to the exploration of an extensive single-entrance cave in the panhandle of Florida this fall, where quadruple stage dives are approaching 1500 meters. Participants in the effort have included Paul DELOACH, John ZUMRICK, Ken Fulghum, Ben Panter, Jamie Stone, Steve FORMAN, Tex CHALKLEY, Troy YOUNG, India YOUNG, Bob GOODMAN, Kirby SULLIVAN, Billy YOUNG, Dave MANOR, Lewis HENKEL, Ed Kellar and Sheck EXLEY.

Rumor has it that Lewis HENKEL and Dave MANOR have extended line in the *Manatee Springs Cave System* (Florida) this fall, possibly making a penetration of over 5000 ft.

On 10/6 John ZUMRICK and Jamie Stone continued the resurvey of Florida's *Blue Springs Cave System* (Madison Co.) by doing the end of the "Distance Tunnel" while Mike SANDERS and Sheck EXLEY surveyed beyond the *Martz Sink* entrance.

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SUBSCRIPTION FORM FOR VOLUME 6 OF UNDERWATER SPELEOLOGY

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Section members please check the box if you want the section to represent you at the Congress of Grottos, 1978 NSS Convention.

Enclosed please find \$3.00 for NSS member (\$5.00 for non-NSS member).

Please print or type:

Name: _____, NSS #: _____

Address: _____

City: _____, State: _____, Zip #: _____

Check or money order made payable to the NSS Cave Diving Section.

CONSTITUTION

I. The name of this organization shall be the Cave Diving Section of the National Speleological Society.

II. The purpose of this organization shall be the same as those of the National Speleological Society with the additional purpose of organizing NSS members who are interested in cave diving so that they may better promote the objectives of the NSS.

III. (1) The Cave Diving Section shall be governed by an Executive Committee made up of the following officers (all NSS members) elected by the members at the annual meeting during the NSS Convention: Chairman, Vice-Chairman, Treasurer, Secretary, and Training Chairman. In the absence of a quorum at the annual meeting, the previous year's Executive Committee shall nominate a slate of officers. In addition, nominations will be solicited from Section members through the mail, allowing 30 days for response. After this the election shall be held through the mail allowing 30 days for response.

(2) The Executive Committee shall have complete power to manage the business, to formulate by-laws, to raise funds in any manner not inconsistent with the policies of the NSS, and to perform all other necessary functions.

(3) Decisions or actions of the Executive Committee may be overruled by a 2/3 majority vote of the members.

IV. (1) The life of the Cave Diving Section of the NSS shall be perpetual or until terminated by a majority vote of the membership upon recommendation of the Executive Committee.

(2) Executive Committee meetings and general meetings shall be held at such times and places as are determined by the Committee with the exception of the annual meeting, which will always be held during the NSS Convention for the purpose of electing the Executive Committee.

(3) A petition signed by a majority of the membership shall be mandatory upon the Executive Committee to call a special meeting for the purpose stated in the petition.

V. Full membership is limited to members of the NSS.

VII. (1) The Constitution and By-Laws of the NSS shall be binding on the Cave Diving Section. Any action inconsistent therewith shall be null and void.

(2) Any NSS property shall revert to the NSS in the event of dissolution.

VIII. Amendments to this constitution shall be made by a majority vote of those present at any previously-announced meeting where a quorum is present called by the Executive Committee expressly for the purpose, or by written consent, of one-half the total membership.

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