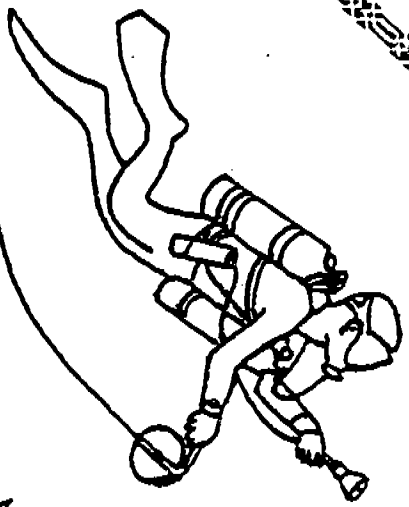


MARCH 27, 1878  
VAUCLUSE, FRANCE  
PENETRATION 50 FEET



100 YEARS OF CAVE DIVING



MARCH 26, 1978  
HOLE IN THE WALL, FLORIDA  
PENETRATION 4527 FEET

underwater  
speleology

OFFICIAL NEWSLETTER OF THE CAVE DIVING SECTION OF THE NATIONAL  
SPELEOLOGICAL SOCIETY © 1978 by the Cave Diving Section vol.5, no. 4

# 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

This month's cover celebrates the 100th birthday of cave diving in the world. It also illustrates dramatically the progress that has been made since Ottonelli's famous dive, culminating in America's longest dive to date, which ironically was made the day before cave diving's 100th anniversary.

## NEW MEMBERS

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## CALENDAR

- Nov. 11, 1978: NSS Cave Diving Workshop Committee Meeting, Branford, Florida. (Contact John Zumrick, 2114 NW 55th Blvd., Apt. 12-A, Gainesville, FL 32601)
- Nov. 18-19: Cavern Diver Instructor Institute, Branford, Florida. (Contact Forrest Wilson, 2832 Concord Dr., Decatur, GA 30031)
- Dec. 30-31, 1978: 10th NSS Cave Diving Workshop, Branford, Florida. (Contact John Zumrick - address above)
- Aug. 5-12, 1979: Cave Diving Session and Annual Section Meeting at NSS Convention, Pittsfield, Massachusetts.
- Sept., 1981: 5th International Cave Diving Camp, Bowling Green, Kentucky (Contact Joseph Lieberz - address on preceding page).

## ELECTION TIME!!!

At the Annual Section Meeting in New Braunfels, Texas, on June 23, 1978, the following members were nominated as officers of the NSS Cave Diving Section for 1979:

*Chairman*- Jim Pisarowicz, Colorado  
*Vice Chairman*- Tom Cook, New Hampshire  
*Sec.-Treasurer*- Stephen Maegerlein, Ind.

In accordance with the Section constitution, the membership has 30 days to submit additional nominations for consideration in the election which will be held by mail at that time. If you or someone you know is interested in serving, please contact Sheck Exley (address on preceding page) within 30 days of receiving this issue.

## NSS CAVE DIVING SECTION CAVERN DIVER PROGRAM

In an effort to do something about the high number of novices drowning in Florida caves, and to ensure that they have an orientation in cave conservation, the Section is sponsoring a "Cavern Diver" training program. This program is not designed to recruit new cave divers! Program standards are on the next page.

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## TEXTBOOK PROGRESS

The NSS Cave Diving Manual is well underway, and the editor is still hopeful for publication by the end of the year. Chapters are already in from Gene Melton, Forrest Wilson, Dan Lenihan, Bob Goodman, Tom Cook and Sheck Exley. Other members writing chapters include Mary Melton, Tex Chalkley, Lewis Henkel (formerly Sollenberger), Billy Young, Rick Rigg, Ned DeLoach, David Fisk, Stephen Maegerlein, and John Zumrick.

### **SUPPORT SAFE CAVE DIVING!!!!!!**

all the below items may be purchased at Cave Diving Workshops or from the below addresses plus postage:

#### **NSS CAVE DIVING SECTION T-SHIRTS**

"Cave Diving Bat"- hand drawn in various colors on white by Tom Cook - \$4.00 plus \$1.00 postage

"Devils Eye Diver" - white silk-screen of Gene Melton photo on light blue shirt with pocket, specify s, m or l size - \$6.00 plus \$1.00 postage (note dark blue shirts are sold out)

"Peacock Springs Cave System"- 18"x24" blueprint map by Sheck Exley - \$3.00 plus 50¢ postage.

"Alachua Sink Cave" - 18"x24" blueprint map by Sheck Exley - \$3.00 plus 50¢ postage.

"Peacock Map" postcards - 25¢ apiece or 5 for \$1.00, postpaid.

"Safety Procedures for Cave Diving in Florida" brochure - free, but donation appreciated.

**#! Cheapo Book of Home Brew Diving Equipment**- 42 pages of plans by Tom Cook - \$6.00 + \$1.00 post  
**ORDER ALL ABOVE FROM SHECK EXLEY**

## NSS CAVERN DIVER PROGRAM

sponsored by the Cave Diving Section of the National Speleological Society, Inc.

### A. Training Committee Chairman

1. appointed by the Chairman of the NSS Cave Diving Section
2. sees that Cavern Diver and Cavern Diver Instructor cards are issued
3. sees that Cavern Diver and Cavern Diver Instructor applications, waivers and other records are maintained
4. makes any changes to the Cavern Diver Program with the approval of the Executive Committee of the NSS Cave Diving Section

### B. Cavern Diver Instructor

1. must be a certified scuba instructor through NAUI, YMCA, PADI, FSDA, NASDS, SSI, BSAC, CMAS or other agency approved by the Training Committee Chairman.
2. must submit to the Training Committee a completed application including waiver, statement of purpose of course and conservation pledge (see attached forms)
3. must be a member of the NSS Cave Diving Section in good standing (NSS membership is required for members of the NSS Cave Diving Section).
4. a. must have attended an approved Cavern Diver Instructor Certification Institute approved by the Training Committee Chairman  
*or:*  
b. must be a certified cave diving instructor or cavern diving instructor through one or more of the agencies listed in B.1.

### C. Cavern Diver

1. must be a certified scuba diver through one of the agencies listed in B.1.
2. must comply with B.2.
3. must submit to the Training Committee the approved course registration fee.
4. must have the signature of an NSS Cavern Diver Instructor on the application as having completed at least the NSS Cavern Diver minimum requirements  
*or:*  
b. must be previously certified as a cave diver or cavern diver through one of the agencies listed in B.1.

## CAVERN DIVER MINIMUM REQUIREMENTS

### A. 7 hours of classroom instruction including the following topics:

1. cave conservation and the NSS
2. environment
3. psychological aspects
4. equipment
5. procedures
6. techniques
7. emergency procedures

### B. pool or open water instruction including:

1. use of guidelines
2. sharing air (conventional buddy-breathing and octopus)
3. following line at night or with blacked-out mask

### C. 3 cavern dives (each must be in a different cave) supervised in the water by an NSS Cavern Diver Instructor or his assistant.

# hole in the wall cave

by Sheck Exley (NSS 13146)

## *Introduction*

Jackson County has long been known as one of the better cave areas in Florida, thanks to the efforts of N.S.S. groups like SEKS, FROG Grotto, FSCC, FUKS and FSS. No fewer than three of the five longest "dry" caves in the state are found there - Ellis Cave (3900 ft. or 1190 m), Hollow Ridge Cave (3296 ft. or 1005 m) and Florida Caverns (2900 ft. or 885 m).<sup>1</sup> Since water discharge is roughly analogous to air flow as a harbinger of large caves, one would expect the longest underwater caves in the area to be found in the high-discharge springs. However, with one exception - Blue Springs Cave - the reverse seems to be true in Jackson County. Large springs like Hayes and Waddells have only short caves, while much smaller springs like Twin Caves and Gadsen have much longer caves, occasionally even rivaling their "dry" brothers in size and length.

Hole in the Wall Cave, also known as Well Springs Cave, is typical of this strange fact. Ranking no higher than a distant third among the eight known springs and sinks of the 4.4-mile-(7.1 km) long reservoir known as Merritt's Mill Pond, it has by far the longest known cave of any of them. In fact, with a current surveyed length of 9415 ft. (2870 m), Hole in the Wall is now the fourth longest cave in Florida and the third longest underwater cave.

## *Early Dives*

Except for the headspring of Merritt's Mill Pond, Blue Spring (where sport scuba diving is not permitted), the other springs and underwater caves of Jackson County were largely ignored until fairly recently. As a matter of fact, a popular skindiving guidebook described Blue Spring as "about the only diveable spring between Morrison Springs and the Leon - Wakulla Co. area" as recently as 1966.<sup>2</sup>

The Florida Speleological Society (FSS) was involved in some really difficult cave diving operations in nearby Climax Cave, Georgia, in 1956,<sup>3</sup> so it's quite possible that their members were the first to dive the Jackson County caves. One early explorer of Hole in the Wall may have been George Krasle, a dive shop owner in Atlanta and one-time president of the Descenders Cave Diving Group, which worked with NSS members in 1965 to produce the chapter on cave diving in Jim Storey's (NSS 5309) *American Caving Illustrated*.<sup>4</sup> George reputedly has told people for quite some time that "there are caves below the headspring that are better dives."<sup>5</sup> However, the earliest dive that we can definitely document was by Larry Briel, who told this writer of his discovery of the submerged pit just inside the narrow entrance to Hole in the Wall in 1971.<sup>6</sup>

However, most of the significant early exploration in the cave was  
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accomplished by Charlie Williams and his protege, Bill Alford. Unfortunately, on 9/16/72 the attempted rescue of a novice who had followed Bill and another diver into the cave without their knowledge precipitated an accident in which all three divers drowned. Charlie called the author to head up the recovery operation, so I got to make my first dive in Hole in the Wall under very trying circumstances, to say the least. Among the other persons assisting in the recovery were the following NSS divers: Tex Chalkley (NSS 17279), Dan Lenihan (NSS 17308), Dave Desautels (NSS 14184) and Charlie Sturdevant (NSS 14160). None of the victims were NSS or NACD, but Bill was reputed to have some cave diving experience. His inability to buddy-breathe the novice out of the cave suggested that perhaps not enough air had been reserved for emergencies, though of course buddy-breathing in caves can be quite difficult even for experienced cave divers under practice conditions.

To check the "insufficient reserve" theory out, George "Dutch" Vande Noord of Florida's NACD and I dived to the back of the cave on 10/22/72 and found the "Safeline" reel Bill had taken in on the fatal dive near the end of the line in "Alford's Room," about 1400 ft. (427 m) from the entrance. Bill and his partner had dived with much smaller tanks than Dutch and I were using, so would have probably been hard-pressed just to get themselves in and out from that point, much less an unanticipated novice needing air. We also took the opportunity to examine a number of leads including Bob's Pit, and put 200 ft. (61 m) into the most obvious continuation of the cave, which promptly ended. Another lead noticed on the way out was marked with a green clothespin, but its lack of promise and non-strategic location prompted us to surface confident that we had "walled the cave out."

#### *"Downstream" Discovered*

Within the next couple of years Ron and India Hendley and also teams led by Charlie Williams discovered and explored a new cave passage heading 180 degrees opposite from the previously known passage at the bottom of the entrance pit. The much greater outflow and clearer water coming from the old passage where the tragedy had occurred led to its becoming known as "Upstream," while the new side became known as "Downstream." (We later discovered that the "Downstream" connotation is a misnomer since that passage also outflows.) Eventually Paul DeLoach (NSS 16517) and Billy Young (NSS 17268) pushed exploration in "Downstream" to a penetration of 1498 ft. (457 m). Their discoveries included a series of three six-foot (2 m)-diameter goethite "bell canopies" in the ceiling and a large speleogen closely resembling the fifth letter of the alphabet (the "Big E"). Somehow the fact that the passage was still going never became widely known.

#### *The "Double Breakthrough"*

Finally, on 1/7/78 the author returned to Hole in the Wall with Will Walters (NSS 18801) and Paul W. Smith (NSS 14385). At the same time a team consisting of Bob Goodman (NSS 17260), Kirby Sullivan (NSS 17261) and John Zumrick (NSS 18788) entered the cave. Both teams dived "Upstream." Both groups surfaced bursting with excitement. Bob had wiggled through the narrow restriction in the pit in Alford's Room that now bears

his name, while our group had rediscovered my green clothespin and the passage leading beyond it. Both leads had opened up and were going!

So began the epic venture now known as America's Centennial Cave Diving Exploration and the most intensive three months of cave diving at a single location that this writer has ever known. Weekend after weekend would find us rediving dives and plotting future plans over beer and fresh oysters in the "Bali Hai" to the din of country music and the *Star Wars* theme.

### *Through the "Century Tunnel" to "Big Ben"*

On a pair of dives John Zumrick and I explored through an interesting area of small parallel passages including one of the few deposits of Pleistocene mammalian remains found in caves in Jackson County, past a shallower room filled with thankfully warmer water known as "Brief Respite" to the start of the "Century Tunnel," whose regular conduit seemed to remain unvaryingly at a depth of precisely 100 ft. (30 m). On a single stage dive on 2/4/78 Paul DeLoach and I pushed on back to p. 2310 ft. (704 m) and finally, on 2/11/78, Dale Sweet and I burst out of "Century" into the much larger "Picadilly Circus," swam over the imposing "London Bridge" and ended our line at p. 2656 ft. (810 m) in the center of a room even larger than Alford's Room, "Big Ben." From here two large passages appeared to be still going, though later John Zumrick and Paul DeLoach, after a warmup dive with Steve Forman, found that only one continued, for a scant 120 ft. (37 m) before pinching out.

### *"Breakthrough" in "Downstream"*

Knowing that further exploration "Upstream" would necessitate the 2-day operation of a double stage (as was done on John and Paul's later dive), Dale and I chose to accompany Bob Goodman and John Zumrick "Downstream" instead since all that was left of the weekend was Sunday. This decision has never been regretted. Continuing past the end of Paul and Billy Young's line, we squeezed through a restriction into a small room. The gravel-floored restriction itself was a remarkable sight, littered with many polished snail's feet that reflected our light beams like silver dollars. A subsequent dive with John and Paul found a second restriction at the bottom of the room that Paul and I promptly pushed through on a single stage on 2/26 into a spacious tunnel that opened into the "T Room," then continued into "Siltamander Slough" (after a name suggested by Paul W. Smith).

On 3/4 Dale Sweet and I single staged the other way in the "T Room" into the "Petrified Passage," a dismal passage that had the three negative characteristics of (1) colder water, (2) greater depth and (3) red clay on the ceiling that was dislodged by our exhaust bubbles and completely trashed our visibility. Oh yes! It is (4) still going, and (5) the reader is welcome to add line there but please don't ask us to go along!

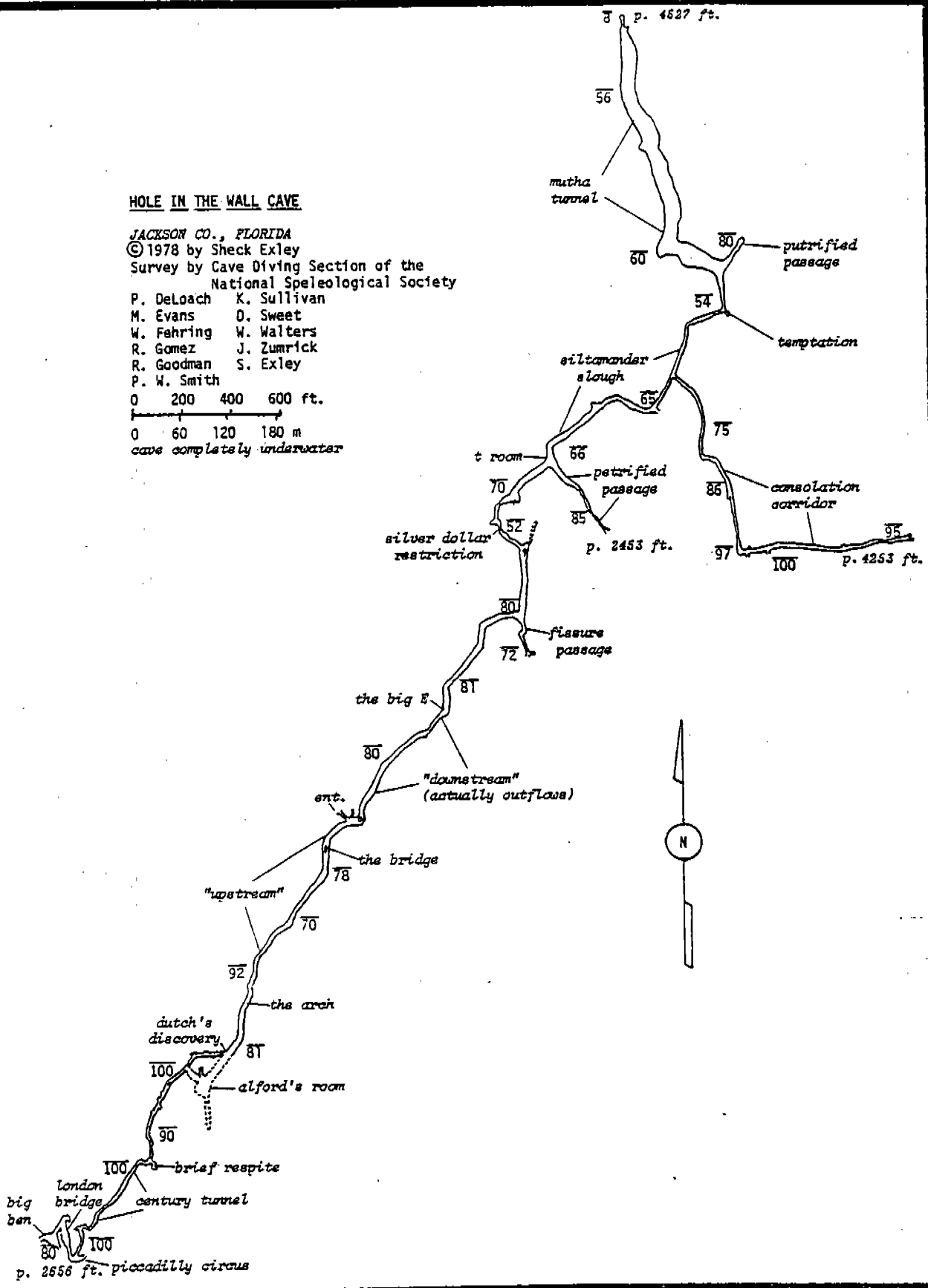
Rather underwhelmed by "Petrified," Dal and I elected the next day to continue into "Siltamander," pushing it to p. 3346 ft. (1020 m). It was still going, but further progress would necessitate double staging to preserve a safe air reserve (third rule).

**HOLE IN THE WALL CAVE**

JACKSON CO., FLORIDA  
 © 1978 by Sheck Exley  
 Survey by Cave Diving Section of the  
 National Speleological Society

P. DeLoach K. Sullivan  
 M. Evans D. Sweet  
 W. Fahring W. Walters  
 R. Gomez J. Zumrick  
 R. Goodman S. Exley  
 P. W. Smith

0 200 400 600 ft.  
 0 60 120 180 m  
 cave completely underwater



## *The "Mutha" of All Great Waters*

Now another problem common to many of our non-Florida members but unusual for us presented itself: poor visibility. The Chipola River (into which the creek fed by Merritt's Mill Pond flows) was in full flood, and visibility had dropped to a disgusting 5-10 ft. (2-3 m). A newcomer to double staging at that time, Paul DeLoach wisely cancelled out, but Dale and I decided to go ahead as long as we could see well enough to keep track of one another and not risk getting lost. To prevent the latter, our use of a good guideline was further augmented by following the right wall to ensure its continuity, and surveying as we explored, a technique that I had used earlier at the Telford Springs Cave System exploration and we had used throughout the 1978 Hole in the Wall project.

Unfortunately, our following the right wall led me right past the grandest discovery of all in Hole in the Wall into a narrow, silty side passage that I promptly silted out. The passage was similar to "Pettrified" except worse - it was farther back - so we named it "Puttrified." It was still going, but neither of us wanted any part of it (we never knew how good 5-10 ft. visibs was until we got in "Puttrified").

Turning around, we followed the other wall out and around and soon found ourselves curving to the right into better visibility and a much larger area. Ascending to the ceiling 20 ft. (6 m) above us, we found 40 ft. (12 m) visibs and our minds were promptly blown! This "mutha" was roaring due north, wide-open and so large that it could swallow up rooms the size of "Alford's" and "Big Ben." We tied off at p. 3642 ft. (1110 m) and reluctantly left.

On 3/19 Dale and I returned in better conditions and explored another 815 ft. (248 m) of our "Mutha Tunnel" that continued to run straight north toward a 1.5-mile (2.4 km)-long karst valley. The width of the tunnel was an awesome 60-90 ft. (18-27 m) and the remarkably flat floor and regular ceiling were separated by at least 20 ft. (6 m), quite sufficient for tractor/trailers, freight trains, or - since the *Star Wars* theme was almost continuously running through my head during our dives - Luke Skywalker's spaceship.

### *Disappointment... and "Consolation"*

The next weekend found Dale and I busy with plans for adding several hundred feet in "Mutha." The possibilities were certainly intriguing: water depths in "Mutha" on the ceiling had gradually ascended from 45 ft. (14 m) to 28 ft. (9 m) at p. 4457 ft. (1359 m). Would this trend continue? If so, we might need to decompress in the cave before continuing much farther. Another possibility was that the tunnel would actually continue on up into air, something virtually unknown in Florida. However, Merritt's Mill Pond is surrounded with limestone ridges extending more than 50 ft. (15 m) above the water surface, and these ridges are honeycombed with "dry," air-filled caves. The thought of surfacing in a large air-filled streamway after a dive of almost a mile was mind-boggling, to say the least.

To make our dive easier, we decided to move our staging area from the  
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"Silver Dollar Restriction" to the "T Room." Also, to ensure that our buddy-  
manship was as finely tuned as possible, we actually buddy-breathed 1711 ft.  
(522 m) out from "Silver Dollar," an unprecedented distance for that proce-  
dure. While the chances of an air supply failure requiring buddy-breathing  
was virtually nil considering the number of good regulators and tanks we  
were using, it never hurts to be prepared for any eventuality.

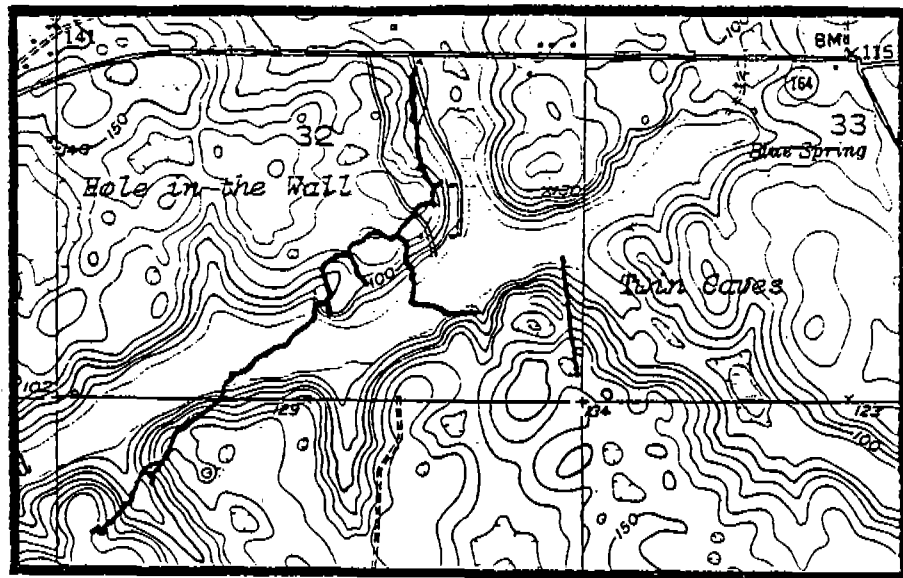
Unfortunately, despite all our plans, "Mutha" disappointed us by only  
going another 70 ft. (21 m) before ending ignominiously in clay fill at a  
depth of 8 ft. (2 m). We were so disappointed that we almost didn't notice  
that our 4527 ft. (1380 m) penetration was a new American mark. Ironically,  
it wasn't until months later that we learned that this dive took place the  
day before the 100th anniversary of cave diving (see cover).

With plenty of extra air to blow, we spent the trip out checking off-  
shoots and wandered into a small corridor that seemed to wander south back  
down toward the Mill Pond. After 380 ft. (116 m), "Consolation Corridor" was  
still going!

#### *The Twin Caves Connection?*

After plotting "Consolation" on the Hole in the Wall map with the topo-  
graphic overlay, it became obvious that it was crossing back under the Mill  
Pond. Further, it was not too far from Twin Caves, where Bob Goodman, John  
Zumrick and Kirby Sullivan had just found a new maze area at a water depth  
of 100 ft. (30 m), some of which seemed to head westward toward Hole in the  
Wall! Connecting the two would substantially add to the size of the cave,  
make access to "Mutha" somewhat easier and make possible a traverse of over  
a mile.

Before exploring "Consolation" further, however, we needed to solve one  
problem. Returning to the "T Room" on  
our previous dive,  
we found to our dis-  
may that our stage  
bottles had buried  
themselves in the  
soft, quicksand-like  
mud floor of the  
room. This was no  
major hassle except  
that the excavation  
of the bottles made  
a real mess of our  
visibility, some-  
thing that it would  
be nice to avoid  
doing if we could.  
I had noticed some  
natural arches in  
the ceiling, and  
suggested to Dale



*fig. - Topography of area showing relationship of  
Hole in the Wall Cave to Twin Caves*

that we attempt to hang the bottles from these with loops of line and snaps on our next dive.

Sure enough, on our next set-up dive on 4/23 we found that there were exactly four arches in the ceiling perfectly spaced, just enough to do the job. After the dive I commented on this remarkable coincidence to Dale who, unimpressed, replied with a straight face, "Naturally. That's why they (the arches) were put there!"

Some people just don't have any feeling for the miracles of nature!

Dale led off with the line in "Consolation" the next day, and our hopes for a connection increased when the depth dropped to 100 ft. (30 m) and the visibility zoomed upward to 100-ft.-plus, both characteristics of the maze area in Twin Caves. Things looked even better when the passage bent sharply to the left to head directly eastward toward Twin. However, at p. 4253 ft. (1297 m), we found the passage filled with sand. Checking the map later we found that this point is no more than 600 ft. (183 m) from Twin and it is possible that a connection could be made if it could be dug out. Unfortunately, extensive excavation that far back in an underwater cave is beyond our capabilities at the present time.

#### *Prospects for the Future*

Although several side passages shown on the map are still going (such as the "Fissure Passage" explored by Bob Goodman, John Zumrick and Kirby Sullivan on 2/26/78), the major passages have been completed, so for all practical purposes Hole in the Wall Cave is now "walled out," right?

Seems like we've heard that before...

#### *References*

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3. Walker, L.T. - "Climax Cave," *Speleo Digest* 1957, Chicago, Illinois: Pittsburgh Grotto Press, 1958, p. 1-27.
4. Storey, J. Welborn - *American Caving Illustrated*, Atlanta, Georgia: Cave Methods Research Group, 1965, pp. 233-244.
5. Hendley, Ron - personal communication to author, circa 1972
6. Briel, Larry I. - personal communication to author, Tallahassee, Florida, April 24, 1971.

\* \* \* \* \*

#### FLASH!!! BIG BRITISH CONNECTION

Word has just come to us that Geoff Yeadon, Oliver "Bear" Statham and Jochen Hasenmayer have just connected Keld Head to a sump in Kingsdale Master Cave on a 3750 ft. penetration. When the new traverse is completed it will cover a total distance of exactly 6000 ft. underwater! Details in new series no. 49 (October 1978) of *The Cave Diving Group Newsletter*.

