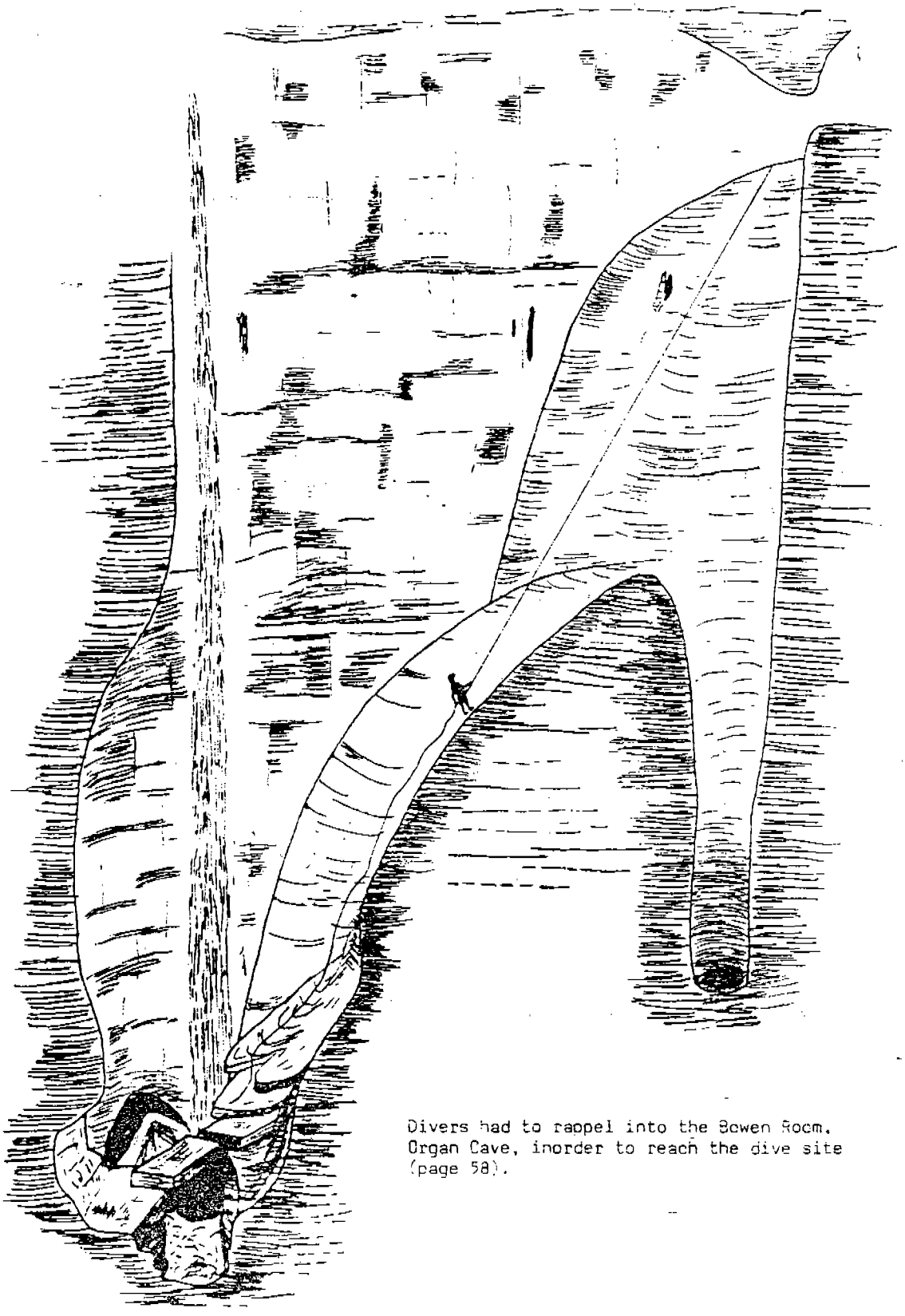
UNDERWATER SPELEOLOGY

OFFICIAL NEWSLETTER OF THE CAVE DIVING SECTION OF THE NATIONAL SPELEOLOGICAL SOCIETY

Vol. 2, No. 6- Winter 76



Divers had to rappel into the Bowen Room, Organ Cave, inorder to reach the dive site (page 58).

UNDERWATER SPELEOLOGY

published bi-monthly
beginning in February
by
The Cave Diving Section of
The National Speleological Society

Deadline is the second Friday of the proceeding month. Send articles and correspondence to the Editor:

Sheck Exley
1591 S. Lane Ave.
118 Coventry
Jacksonville, Florida 32210

NEW MEMBERS

Paul O. DeLoach, 592 Oconee Street, Athens, Georgia 30601

David W. Fisk, P.O. Box 195, White Springs, Florida 32096

ADDRESS CHANGES

David Jagnow, 11306 Whittingham Lane, Houston, Texas 77099

John R. Kessler, 2111 Irquois Lane, Falls Church, Virginia 22043

CDS ELECTION

Election of officers for the Cave Diving Section was planned for February after nominations were received. The election did not take place because no one was nominated for any of the offices. Last years executive committee will attempt to find members interested in serving as officers. An election will be helt at the NSS Convention this spring if enough members are present.

SUBSCRIPTION RENEWAL

This is the last issue of volume two of Underwater Speleology. If you have not sent in your subscription renewal, this is your last notice.

COVER DRAWING

Divers had to lower equipment into the Bowen Room inorder to reach the sump at the end of Bowen Canyon, see page 58. Modified from a drawing by D. Hartline, 1964, page 28.

NEW CDS EDITOR

Sheck Exley will be the editor of volume 3 of Underwater Speleology, therefore, send new material for the newsletter to him. Unpublished newsletter material that nas been sent to me will be forwarded to Sheck. I will continue to publish and mail out the newsletter. Send subscriptions and dues to Stephen Maegerlein, R.R. 14, Box 17, Bloomington, IN 47401.

NACD SEMINAR

The 9th annual National Association for Cave Diving Technology Transfer Seminar will be held in Atlanta, Georgia. June 11-13, 1976. Bart Jones, 531 East 44 Street, Savanah, GA 31405 is the seminar director.

CAVE DIVING SECTION MEETING

The NSS Convention will be helt from June 27 through July 3 on the campus of West Virginia University in Morgantown. The site is centrally located to the caving area of western Pennsylvania and northern West Virginia.

Tom Cook is currently investigating some 30 potential cave diving locations for possible use during the Convention. Most of these dive spots are new and he has only accounts of cavers as to the size of the sumps and underground lakes. He plans to check out as many of these dive sites as possible before the Convention. Tom also has located three air compressors in the state — don't laugh, scuba is almost an unknown activity there.

The Cave Diving Section meeting will be an opportunity for members to exchange information on equipment and techniques as well as elect officers and discuss goals for the section.

BLUE HOLE SPRING, KENTUCKY

The rise pool is 30 feet across and has a spring run 100 foot long into Green River, east of Munfordville. In wet weather, the water may surge a foot or more above the pool surface. Fifteen feet below the surface is a 10 foot high passage with a 30 foot wide entrance. Back in 1973, Bob Nadich explored approximately 60 feet of the submerged passage in the spring basin.

Kevin Hennings and Ed Arters explored 250 feet of submerged passage to a water depth of about 40 feet on September 6, 1975. The divers reported a passage 6 to 10 feet high and about 20 feet wide. The passage trended northeast parallel to the river. There were eroded stalactites on the flat ceiling of the passage. Visibility was poor due to disturbed mud in the slow moving water. Exploration was halted because the divers ran out of safety line.

Joe Saunders states that "the presence of stalactites thirty feet under the present low flow level of Green River supports the idea that the river at some past time flowed at a lower level in the (Green River) valley, an idea primarily supported by deep gravel deposits in the river bed." Joe had previously reported underwater stalactites in two sites that are about 10 miles east of Blue Hole Spring: Lawson Cave Spring near the Green River and Vento Sink near the junction of the Green and Little Barren River.

References:

Saunders, J. W., 1973, *A Reconnaissance of Springs and Caves Along the South Side of the Green River in the Central Kentucky Karst*, The Wisconsin Speleologist, Vol. 12, # 2, pages 45-50, 1 illus.

Saunders, J. W., 1973, *Vento Sink, Roundstone Spring Complex, and Lone Star Saltpeter Cave: A Classic Example of the Influence of Structure on Karst Hydrology in Kentucky?*, COG Squeaks, Vol. 16, # 11, pages 103, 104, 1 illus.

Saunders, J. W., 1975, *Special Teams Caving in Grady's Cave and Vicinity, Kentucky*, The Wisconsin Speleologist, Vol. 14, # 1, pages 24-27.

* * * * *

DIRECTIONAL GUIDE LINE

by John R. Kessler (NSS 13411)

What should you do if you do happen to get separated from your team? First, stop and think — with a positive attitude — never swim off blindly. Ascend to the top of the cavern to get out of the silt and make a 360 degree scan for lights or a wall. Turn on your emergency strob light. You should carry an additional 25-50 feet of personal safety line. Anchor this line to the bottom using a rock or jam your knife into the mud with the line secured to it to prevent aimless wandering. Swim along a compass bearing that is perpendicular to a wall. The cross current may be used as a secondary guide, but do not rely on the current entirely because of the possibility of cross or branching tunnels. If you do not locate the safety line when you reach another wall, set a reciprocal compass course to the opposite wall.

NORTHEAST CAVE DIVING

by Tom Cook (NSS 15548)

When one thinks of cave diving, images of clear spring pools and large submerged tunnels are conjured up. Such things are almost nonexistent in the Northeast. The style of cave diving in this area in some cases is radically different than that which is practiced in other areas. The techniques and equipment used here are dictated by the specific geologic and environmental factors of the Northeast.

There are relatively few large phreatic passages or open springs in the Northeast. Most diving sites are sumps which are located at the end of more or less dry cave passages. These sumps are usually small and tight with negligible current. The underwater passages are narrow and twisting and in some cases, as in the marble caves of Vermont and northern New York, sharp edges may shred safety lines as well as wet suits. Thus, in these caves, an eigth-inch line is preferred over a sixteenth-inch safety line. Visibility at its best is about 15-20 feet. Poor visibility of a foot or less is common. Flippers are not used much. The finger walking technique is used because of the low ceiling-floor height. The lights that are used are seldom over 50,000 cps, because brighter lights only illuminate more particles in the turbid water. Helmets are usually worn as it can be disconcerting to run ones head into unseen objects. The turbidity of the water can change markedly depending on outside weather conditions. During one dive in a cave in Schoharie County, N.Y. visibility went from 30 feet to a few inches in less than five minutes, because of a sudden rainstorm. Melt water from snow causes the same thing. "Silt outs" and poor visibility are run of the mill experiences and much practice goes into learning how to handle these situations.

In the Northeast one does not jump out of the car and fall into a pool of water. Equipment may have to be packed in a half mile or even five miles as in northern New York. You need snowshoes or skies to reach the cave if you go to Vermont. That is the easy part of the trip. One may have to travel, and not all walking, several miles underground. Equipment may have to be dragged through 1100 feet of narrow passage as in Morris Cave or lowered down a series of drops over 300 feet deep as in Ridge Pit.

The man/woman power required to support a full diving team of three is large and requires the help of personnel from regional splunking groups such as the Boston and Adirondack Grottos. It usually takes a minimum of three cavers to support one diver. One dive lasted less than 15 minutes. Eight cavers spent 12 hours underground to support one diver. The lead pinched out. Most dives require most of a day to accomplish, and only a small fraction of that time is spent in the water.

A major aspect of most dives in the Northeast area caves is getting the equipment intact to and from the dive site. It is very disconcerting, after crawling through mud, water and rock to arrive at the sump and find that your mask is cracked or your regulator has dined on a full course meal of mud with a side order of sand. Special equipment and tank "pacs" have been developed to transport the diving equipment safely (see description in Underwater Speleology, Vol. 2, page 17). The tank "pac" that encloses the scuba tank can be worn, dragged or hoisted without damage to the tank.

It is also worn during the dive and protects the valve and regulator first stage and cuts down on fouling of the safety line. The equipment "pac", in which the rest of the diving equipment is transported, looks like a plastic backpack only thinner.

I've mentioned how the physical conditions have affected the techniques and equipment used. Meteorological conditions also effect them. Rain during the spring and fall cause cave streams to become swift and turbid. There are two good seasons for cave diving in the Northeast, the summer and winter. Nothing need be said about the pleasent summer weather; however the winter is another story. Temperatures outside may range between 40 and -20 degrees. Tramping half a mile to the van through snow and frigid temperatures in a damp wet suit is very annoying and more than one person has acquired a case of frost bite from such activity. Cave diving in the winter requires use of such non-diving equipment as skies, sleds, snowshoes, fiberglass reels, and wool clothing. Wet equipment must be packed carefully as wet nylon and rubber will crack and break in the low temperatures. The temperature inside the caves are constant usually around 46 degrees.

Cave diving in the Northeast is not an activity that one jumps right into. It requires much research, planning and coordination of personnel to produce a successful diving experience. Cave diving in this area offers good comradeship and interesting problems and experiences for those who tackle them.

Postscript: This spring, when the ice departs, we are opening up a completely untouched area of New York. There are many sinking rivers and springs that are huge for around here. Many "black holes" as they say up here. We have pulled together all the known info and have maps of the area. We finally have gotten all the "wilderness" cavers together and we all are planning the big assult. Most of these caves are in marble which really eats up equipment. I should have some concrete information and underwater sketches of this new area in a few months.

* * * * * *

LEWIS HOLTZENDORFF

NSS Cave Diving Section (NSS 14831)
National Association for Cave Diving

Lewis Holtzendorff, a respected caver and cave diver, was responsible for many submarine cave discoveries in the karst area of Florida, and did much to advance the knowledge and skills in the cave diving community. He spent much of his time exploring, mapping, and investigating safe methods and techniques of cave diving. Some of his most significant explorations included Jackson Blue Spring, Washington Blue Spring, Devils' Eye Spring, Little River Spring, and an experimental dive and exploration in the Manatee Spring System upstream from Friedman Sink. Lewis was responsible for exploration and mapping of several thousand feet in the Peacock Spring System, the longest cave system in Florida.

Lewis served on several committees, was Vice President of NACD in 1975, was active in the NSS Cave Diving Section, and contributed much information to the NSS files reguarding underwater speleology of Georgia, Florida, and Missouri. He initiated an investigation and completed a report on the standardization of hand signal communication.

Lewis died on November 30, 1975, while completing decompression on an experimental dive in a spring system in the Florida Panhandle. Lewis was the son of Dr. and Mrs. L. C. Holtzendorff of Valdosta, Georgia.

Lewis will be missed as a friend, diving partner, and a valued contributor to the knowledge of submarine cave systems.

Paul DeLoach (NSS 16517)

* * * * * *

FLORIDA KEYS CAVE DIVING

by Charles Heller (NSS 6618)

I was down in the Florida Keys Dec. 15 - Jan. 3 and logged about 20 hours of scuba, but only about 30 seconds of cave diving. The Florida Keys have some very interesting karst features in what I believe is called Key Largo Limestone, which is roughly only 50,000 years old. The limestone is very pitted with erosion and solution holes (unfortunitely extending only to a depth of a few inches below sea level). I found quite a few dry type cave formations under concrete bridges on Route one. Eighteen miles east of Key West, at the 18 mile marker on U.S. 1, State Highway # 939 goes south for about 5 miles to Tarpon Creek. One of the channels in this 15 foot deep creek leads to an underwater limestone cave. The north entrance is a vertical hole on the creek bottom which connects with both a vertical and horizontal entrance about 30 feet to the south. The creek floor drops down to the side and under the key itself into a grotto at this same location. The depth could be 40 feet or so. Last year a 6-foot moray eel was in the cave.

* * * * * *

ORGAN-HEDRICKS (GREENBRIER) CAVE SYSTEM, WEST VIRGINIA

The following article is adapted from a report by Ken Hensley and Forrest Wilson in the D.C. Speleograph, 1976. This is the first diving exploration in the cave system that has been described in the NSS literature. H. W. Blanchard, 1976, reported the cave to have 32 miles of mapped passage and that it is the sixth longest mapped cave in the world.

CAVE DIVING IN THE BOWEN SUMP

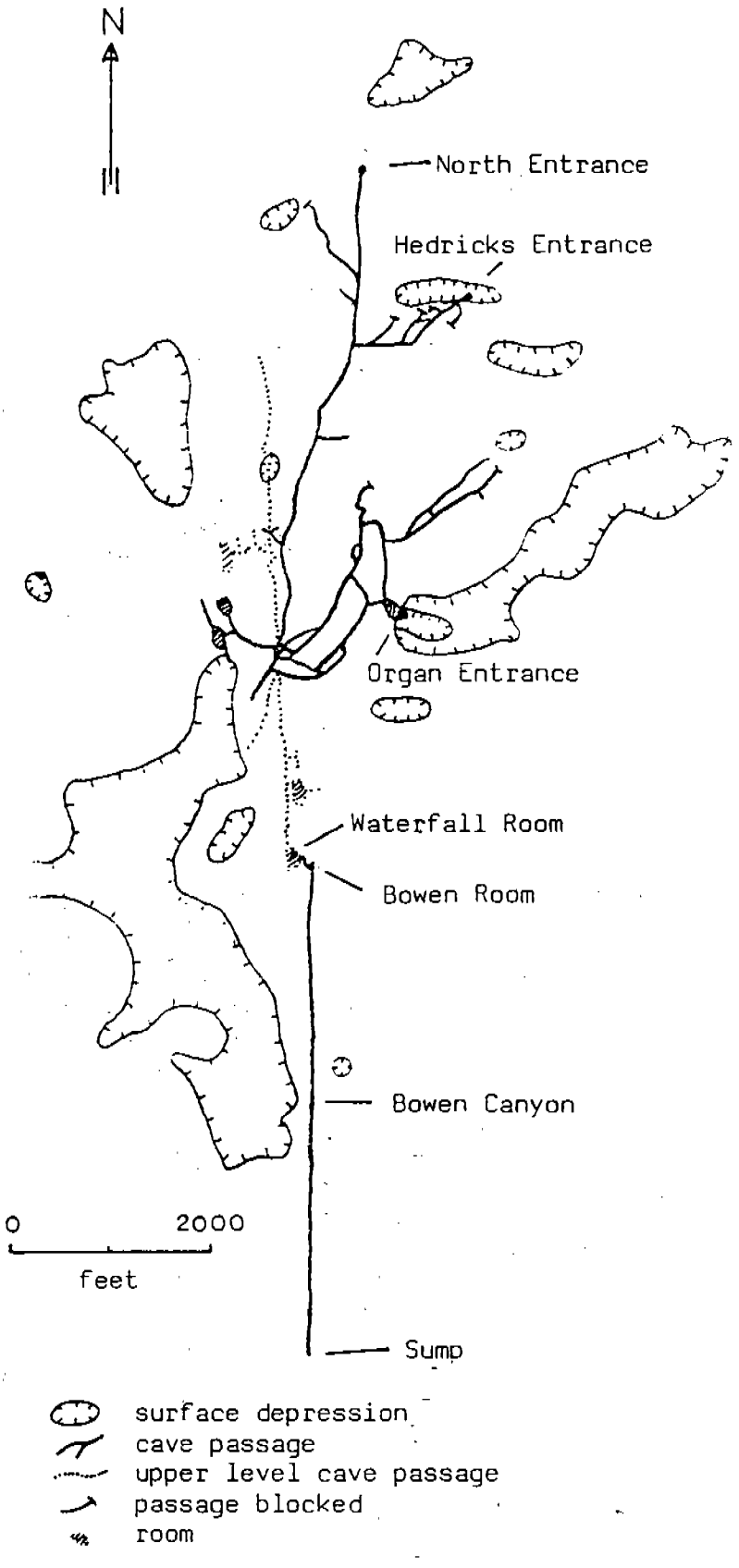
The sump is at the end of Bowen Canyon, two miles from the main entrance of Organ Cave, West Virginia. Bowen Canyon is a stream passage one mile long which begins at the bottom of a 135-foot drop near the Waterfall Room. The sump is approximately 25 feet wide, 15 feet across, and four feet deep. It is fed by streams originating in the main part of Organ Cave. Flow rate into the sump at that time (Jan. 3, 1976) was one cu. ft. per second. The sump is blocked by an almost vertical wall that extends below water level. Below the surface the wall drops back at about a 45-degree angle, stopping about six inches above the sump floor. There are two leads below the wall. One lead splits after about five feet and branches back to the other lead through a through a horseshoe-shaped passage. The other branch continues in the same direction as the stream for at least 75 feet. We did not push the sump any further because we were hoping it was merely a "duck-under" into new passage and we had not planned a long penetration dive.

The above background report by Forrest Wilson sets the stage for a more personalized account, which follows, by Ken Hensley, describing the event. On January 2, 1976, a party consisting of Forrest Wilson, Marsh Blake, and VonDel Chamberlain, Steve Stokowski, Paul Stevens, Ken Hensley, Dennis Seekins, Carl Coward, Dave Meade, and Dave Morrow carried in 120 lbs. of scuba diving gear, vertical gear, and photographic equipment.

As I slithered and splashed between the cave wall and the mud bank on my way to the Bowen "Siphon" Room, one hundred feet away, I saw a faint orange glow and heard a far-away chatter of excited voices breaking the eternal darkness and stillness of Organ Cave. The sump had waited for us for possibly a thousand years, waiting in the darkness, waiting to yield its secrets of the other side, which no man had ever seen. As I rounded the bend, Forrest Wilson and Von Chamberlain were suiting up to make the big push. The hundreds of pounds of diving gear that eleven of us had carried into a mile and a half of cave and down the Bowen drop were about to be put to use.

We all stood in the sump room, a room approximately 30 feet wide, 10 feet high, and 25 feet long with a floor covered with water. A mud bank came down to the sump pool 10 feet from the far wall and 15 feet from the right wall. Most of us were standing in ankle-deep water, but our feet were numb by this time and it didn't bother us much. We stayed away from the deep ends of the pool near the steep mud banks where the water disappeared into the unknown.

As the scuba tank was locked securely onto Forrest's back, preparations were made to tie the 50-foot safety line to Steve Stokowski. Paul Stevens organized the camera crew while final preparations for the dive were made.



Organ-Hedricks Cave System. Modified from a sketch map by D. Hartline, 1964, page 26. The original map by R. Handley, 1940, in Caverns of West Virginia.

The Bowen stream was up due to rain the previous week and was flowing steadily into the muddy brown sump pool. It appeared by observing the movement of the flecks of white foam floating lazily on the surface that most of the current was going under the right side of the mud bank wall.

Forrest stepped into the water, with flashguns going off as if the event were a movie premiere. As he sank beneath the faintly lapping muddy waves of the pool, Steve let the line out slowly — 10 feet, 20 feet, a little more. . . . Then, to our surprise, amidst much bubbling and roiling of water, an orange light appeared beneath the surface and up came Forrest in his black wet suit and mask, looking much like the Creature of the Black Lagoon. He told us he had gotten to a dead end and had wanted to be pulled back, but hadn't been. After getting the signals straight with Steve, he explored to the left of the bank and submerged again, amid a volley of flashes. This time he appeared to be going straight back — 40 feet, 50 feet, to the end of the line — and actually started to pull Steve into the pool. Several men grabbed Steve and all began to pull Forrest gently back. As he came up he said he had reached the end of his line but that the passage still went!

Steve had some handline of lesser strength in his pack and brought it out. Both lines were tied securely together and Forrest made another dive, this time a little to the right of the second one. The line played out and out — 50 feet, 60 feet. . . then, quickly, to our surprise, bubbles and a light appeared over in the far right corner of the pool. Forrest had gotten turned around in the muddy water and had made a circle in the underwater passage. He told us he couldn't see a thing in the murky water, even though he had a good strong head lamp. The danger of the lines getting snarled on something or breaking had become very apparent to all of us.

It was decided that one more dive should be attempted, this time with Von in the wet suit tied at one end of the line, and Forrest, diving in the area of the second dive, on the other end. As he went down for the last time, we all became aware of the risk involved. If that line broke, he might never come back alive, for his tank was low on air as well. As he swam toward whatever awaited him on the other side, the line played out — 50 feet, 60 feet, 70 feet, and finally to 77 feet — the end of it. He stayed there for what seemed an eternity; then gradually men began pulling in the line. They could not feel him on the other end! The limp and lifeless line came slowly back, and all of us held our breath and prayed that the line hadn't broken or that he hadn't come up on the other side and untied himself. Then, to our great releif and delight, up popped Forrest as the line came in. We were all so relieved and proud of our accomplishment that we burst into a spontaneous round of applause. More pictures were taken as Forrest described the size of the passage (three feet high and very wide) he had swum through. From the sound of his description, he had gotten very close to something. He noted that just to the end of his line, the passage turned slightly upward, and he passed through a clear layer of water, indicating that he was possibly within several feet of coming up into more cave beyond. That kind of discovery could lead to a considerable extension of the Organ system, which is presently ranked sixth among the world's longest caves. There is about a half-mile of limestone between the sump and the resurgence on Second Creek.

As we packed all our gear and trekked back through the stream, we knew we had accomplished a unique exploration and a difficult logistical feat; and we knew we would be back some day to find out what lay on the other side. As we splashed our way back up stream, chattering excitedly about what we had just done, darkness once again closed over the silent sump, and the voices gave way to stillness broken only by the trickling of water through the darkness, as it had done for thousands of years before we existed.

References:

Hartline, D., 1964, Trip to the Bowen Room and Slate Room, Organ-Hedricks System, The Massachusetts Caver, Vol. 3, # 4, pages 18-28, 4 illus.

Wilson, F. and Hensley, K. 1976, Diving into the Bowen Siphon, D.C. Speleograph, Vol. 31, # 2, pages 3, 5.

Blanchard, H. W., 1976, *The Twenty-five Longest*, NSS News, Vol. 34. # 2, page 29, 30.

* * * * * *

HOT SPRINGS, UTAH

The following account was extracted from a trip report by Bruce Frank in the Inner Mountain News (Salt Lake Grotto), Vol. 7, # 9, page 48 (1975).

Here we were, riding down the road, thoroughly disgusted with this unproductive trip, heading back to Salt Lake. Off to the right I noticed a rather large mound with a crowd of people around it. Then on the left by the road, another smaller mound with six people in full scuba gear, standing on top.

Well, we'd heard about the hot springs in Midway, but none of us had been there before. On top of this travertine mound was an opening 3 by 4 meters, filled with divers from Salt Lake and very blue water. Some of the divers were down for 50 minutes. They told us the cavern was somewhat bell shaped, 15 meters deep and 10 meters across at the bottom. Visibility was about 4 meters with lights.

Leonard Wojick and I donned fins and masks for some limited exploring. The surface opening was difficult to locate from about 4 meters down, and Leonard was beset with claustrophobia at about 6 meters depth. The rest of our crowd was puttering around the surface and Ken Smouse later put on a mask for his own exploration dives.

The water flow over the top of the mound is about 2 gal/min. We noted the water has a rather sweetish taste and leaves calcium deposits on one's skin and hair. Water temperature is 34°C.

University of Utah divers have gone down in the spring in the big mound, down the road, to a water depth of over 150 feet and have not reached bottom. It is 30 feet from the top of the mound to the water requiring a rappel. A thermometer lowered to the water registered 37°C.

There are numerous smaller holes in the area, some stagnant, some flowing. Permission should be sought as these holes are on fenced property.

* * * * * *

CONSTITUTION OF THE CAVE DIVING SECTION OF THE NATIONAL SPELEOLOGICAL SOCIETY, INC.

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

II. The purposes 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.

a. Chairman
b. Vice-Chairman
c. Secretary-Treasurer

(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 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 2/3 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.

VI. The first Executive Committee shall consist of the temperary organizing officers selected by interested NSS members during June, 1973. The first Executive Committee shall serve until the first annual meeting of the Section unless nomination is made and seconded by the membership to the chairman. In the latter case election by mail will be held and ballots will be accepted until 30 days after the ballots were initially mailed out by the Executive Committee.

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 2/3 favorable vote of those present at any meeting called by the Executive Committee expressly for the purpose, or by written consent, of one-half of the total membership.

* * * * *

UNDERWATER SPELEOLOGY INDEX

VOLUME TWO

NSS Cave Diving Section
STEPHEN D. MAEGERLEIN
R. R. 14, BOX 17
BLOOMINGTON, IND. 47401