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Intercom, Volume 26, No. 3, May-June 1990

Lowell Burkhead

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I N T E R C O M

Published Semi-spasmodically By

THE IOWA GROTTO

National Speleological Society



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The INTERCOM is published semi-spasmodically by the Iowa Grotto, P.O. Box 228, Iowa City, Iowa 52240. The Iowa Grotto is affiliated with the National Speleological Society, Cave Avenue, Huntsville, AL 35810, and is dedicated to the exploration and study of caves. We will exchange publications with other organizations with the same dedication. Subscriptions to the INTERCOM are \$10.00 per year. Reproduction of material appearing in the INTERCOM by other caving organizations is encouraged as long as credit is given the author and the INTERCOM and a copy of the publication is sent to the Iowa Grotto. Material for the next issue of the INTERCOM is due by September 14, 1990. Send articles and trip reports for publication to:

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The Iowa Grotto meets at 7:30 p.m. on the fourth Wednesday of each month in room 125 of Trowbridge Hall on the campus of the University of Iowa in Iowa City, Iowa.

Air Force Rescue Coordination Center
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This number calls out Iowa Grotto rescue personnel.

Cover: Bryan Bain climbs up into a passage near the Out Room, Fitton Cave, Newton County, Arkansas. Photo by Scott Dankof



IOWA GROTTO
National Speleological Society
P. O. Box 228
Iowa City, Iowa 52240

Chairman - - - - - Mike Lace
Vice-Chairman - - Lowell Burkhead
Secretary-Treas. - Stacey Cyphert

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IOWA GROTTO MEETING MINUTES

Regular meeting May 23, 1990

The meeting was called to order at 7:34 p.m. by the chairman, Mike Lace. Eleven members were present. The April meeting minutes were read and approved as read. A balance of \$562.00 was reported in the club treasury. TRIP REPORTS: Marc Ohms reported on several sinkholes he visited in Dubuque. He also visited other caves including Worden's and Maquoketa Caves. Jay Wells reported on the brisk pace for a beginner tour Mike Nelson led in Coldwater Cave. Jay's trip to Grappling Falls in Coldwater Cave with Larry Welch and Stacey Cyphert was cancelled due to rain so the Obstruction Passage was visited and part of the Flash Passage was surveyed. A possible lead was found. Jack Decker and Tom Gustafson joined this trip and Jack climbed Two-Story Dome. Mike Lace reported on the caves he visited in Germany and noted a lot of columns have been formed in these caves. Bob Wahlstrom reported visiting Searryl's Cave and noted it is for sale. FUTURE TRIPS: May 26 is the survey instruction trip to Hatfield Cave. June 3, Mike Nelson is leading a trip to Livingood Spring. April Cave will be visited July 7. The grotto picnic will be August 4 and the WSS Hodag Hunt will be held September 7-9. OLD BUSINESS: People are encouraged to donate something for the Grotto Picnic Auction. Several caves will be lined up for the picnic including Conrad, Engelken, Evac, Mossey, Willard, and Zobac Caves and Nameless Pit. A full-page advertisement for the picnic will appear in the HOTLINE. Mike Lace is making copies of the Quint Cities Grotto material he has borrowed from the NSS for the Grotto Library. Stuart Peck (from Canada) is sending Lace some material on Dubuque caves. NEW BUSINESS: The current issue of the INTERCOM may be 32 pages long unless more editing takes place. Lowell Burkhead will look at the material again. The grottos we exchange reading material with will be sent flyers about the picnic. Al Jagnow has joined the grotto and Jack Decker has changed addresses again. Lowell presented receipts for new ribbons and print balls for his typewriter. The meeting was adjourned at 8:33 p.m.

Regular meeting June 27, 1990

The meeting was not called to order because the only ones there were Mike Lace and one visitor. Most everyone else went caving. It should happen more often.

##

LETTERS

Dear INTERCOM Editor:

I was somewhat surprised to read in the March-April, 1990 issue that someone had declared the Safety Rack unsafe. Imagine my shock as I reviewed my own personal experience with the Burkhead Safety Rack. Three 92 foot rappels into the Foot Dome entrance of James Cave, Kentucky, two 90 foot rappels into Echo Canyon of Coach Cave, Kentucky, a 60 foot and a 90 foot drop in Clover Hollow Cave, Virginia, and the 160 foot Neversink Pit in TAG country. About a 180 foot drop into Moonshine-Murder Hole inside Coach Cave, Kentucky. This is not including all of the other nuisance drops or out-of-cave practice rappels.

Maybe the rack is only unsafe on Iowa rappels? I am no engineer, but is a carabiner and bars or a figure 8 really safer? I've even seen foolish people do body rappels and carabiner wrap rappels. Are these two safer than the safety rack? My own gut instinct is no. I have trusted my life dozens of times to Lowell Burkhead's handiwork and will continue to do so. Not only his rack, but his carbide lamp igniters and grappling hook too.

The letter from Bill Bussey made a lot of sense and I'm looking forward to read-

ing the up-coming article about the testing of the Safety Rack. I just know it will pass with flying colors. But, with all due respect, I would not do anything over about a 200 foot drop with it. The only drawback to the Safety Rack is that one cannot adjust the number of bars used after beginning the rappel. Usually this is not a problem on shorter drops. Of course, there is no friction control on many of the other rappel devices either, such as biners and bars or figure 8's.

As far as I'm concerned, my Safety Rack has taken a lickin' and still keeps tickin'. I believe there are many weaker points, like your seat harness, or that fray on your rope. The Burkhead Safety Rack unsafe? Nonsense!

Cavingly Yours,
Bryan Bain

Lowell:

June 18, 1990

I am writing to let you know I enjoy keeping in touch with Iowa caves via the INTERCOM. I found the enclosed cover picture (INTERCOM Volume 26, No 2) fascinating. Turn it up-side-down and it is a mysterious landscape full of towering spires set in a deep canyon. (Business deleted, Editor)

Thanks
Duane L. Miller
Iowa City, 52240

SETTING THE RECORD STRAIGHT By Bryan Bain

The March-April, 1990 issue of the INTERCOM contains my article about Coldwater Cave entitled "Exploration Beyond Tuna Sea." Our hard working editor did a fine job of making it look good, but there were a couple of minor editing mistakes that I would like to correct. The February, 1986 entry where we surveyed up to Scandawhovian Sump, Sue Ecklund was inadvertently left of the list. Sue had the important role of keeping book on that trip. The second error was a typo in the January, 1988 entry. Over 1000 feet was surveyed, not 100 feet. The last retraction is my error. I stated that Mike Nelson unsuccessfully attempted to dive the Pyramid Passage Sump. The dive was actually just a recon dive, so therefore it was successful.

This summary article is going to be a springboard for another NSS NEWS feature that will hopefully be done next year (summer of 1991). Please write me if you have any other corrections or clarifications. We want the up-coming article to be as accurate as possible. In the meantime, much more work needs to be done in Coldwater Cave. We need more passages surveyed and more virgin cave found in order to make the article more appealing at the national level. Coldwater cavers, keep up the excellent work.

A LETTER FROM THE EDITOR

I have put up a new light over my typewriter which should cut down on the errors. I hope so anyway, I'm as tired of it as you are. And on a different subject entirely. Your editor is acutely allergic to perfume. This issue contains the first and last scented trip report that will be included in this publication.

Thanks for understanding,
Lowell Burkhead

SOME OF THE FINER (AND CRUDER) POINTS OF WETSUIT PURCHASE/USE/MAINTENANCE

by Mike Nelson

A new wetsuit is a major investment. Buying from fall to mid-winter will give you a tactical advantage. Water sports products do not move well this time of year. Dealers want to clear last year's inventories from the shelves. Bargains are rife. One should be able to procure a "nice" wetsuit for around \$200. Small sizes seem to move slower, hence a small person can expect a better deal yet.

A "nice" suit is $\frac{1}{4}$ " neoprene with nylon both inside and out. Newer models have a terrycloth-like inner lining that is supremely comfortable. "Nice" should also consist of the newer 4 way stretchy neoprene. All edges should be "finished". Exposed neoprene on the cuffs, sleeves, and around the neck and waist indicate a cheaper suit commanding a significantly reduced price. The only option worth consideration is factory installed knee pads of a thickness equal to the suit itself.

The most popular design is the Farmer John. The bottoms cover from ankle to chest with only the feet, head, arms and shoulders exposed. A jacket protects the arms and shoulders and puts a second $\frac{1}{4}$ inch layer on the torso. Most jackets have a "beaver tail" coming through the crotch from back to front that secures via velcro or snaps or twist buttons. The twist buttons protrude enough to wear holes in ones coveralls and catch or drag, much to their own detriment. However, a "shorty" top with some sort of arrangement for stepping through one or both legs before zipping in, is showing up regularly in the newer lines.

Neoprene dive socks, generally $\frac{1}{8}$ inch, fit into cave boots better than the more available dive boots with soles. They are harder to find, but usually reasonably priced at about \$20.

If you get cold feet, buy one pair that fits and one pair a size larger to fit over them. Wearing two pairs of your regular size may put the squeeze on the first pair, rendering them ineffective, and on your feet, cutting off circulation vital to warmth, health, and comfort. Be sure that two pairs will fit into your caving boots, or visa versa.

Cabella's ("The World's Foremost Outfitter", 812 13th Ave., Sidney, Nebraska 69160) has an inexpensive pair, presently \$13.95, in their section of waders and accessories. These are of a cheaper two piece construction with the seam running down the middle of the sole. They may be considerably less comfortable than those with a three piece construction, which have a sole that outlines the bottom of the foot and extends up the rear of the ankle. I don't know, I haven't tried them. However, these do have a built in gator that can be folded over the top of the boot to keep sand and rocks out. This would be a nice feature to retrofit to any dive sock you may acquire.

There is a vast variety of hand coverings available, from gloves to mittens to "lobster claws", a mit with a thumb, index finger, and pocket for the other three fingers. While these and regular mittens are warmer, they cannot be protected with an overglove of a more resilient, cheaper, disposable nature.

Standard gloves come in a wide range of styles. Buy the plainest, simplest you can get, with unfinished edges and sewn seams either internal or external. A well protected pair of gloves can last a long time but finer finished ones will rip out at stress points (mainly between the thumb and index finger) and don't repair very well for very long. Simpler sewn gloves will experience thread failure but can easily be re sewn. Standard $\frac{1}{8}$ inch thickness is generally sufficient. "Cold water"

gloves are too thick for most overgloves and feel cumbersome and rob dexterity. Expect to pay \$17 to \$24.

A "Cold Water" hood with a smaller face aperture than a "Warm Water" hood is a must for any serious wetsuit caver. I know a person or two who don't use them but many experience vertigo when immersing their head and ears into cold water. They would also have a very practical application in the event of a long unexpected delay in the cave. In a stranded or rescue situation, it may prove invaluable in warding off hypothermia. One can rapidly lose 50 to 70 percent of one's body heat through an unprotected head. Cost, \$30 to \$40.

Considering the abuse we cavers subject wetsuits to, purchasing a used wetsuit may be more practical and economical. The best possible deal is getting something someone bought and used only a few times. To all outward appearances, it should look like new and sell for half of that. Don't expect to pay much under \$70 or over \$100. An exception to this rule exists. A custom made suit seldom fits anyone well but its intended wearer. Magic marker marks along the inside seams are an indication that the suit is most likely a custom. If you find one that fits, you're truly lucked out. But that does not mean that you should pay more for it, *eau contrair*, you should be able to steal it. After all, you can always get an "off the rack" used one at a reasonable price. Again, a small person should be able to get a very good deal. My daughter, a tiny person, bought what appeared to be a very fine, new or near new, custom fitted suit for \$40.

A used suit with a few more miles (or leagues) on it might be your best bet. Dive shop rentals and those used by scuba instructors for their classes are usually genuinely good deals, when you can get them. These are generally only available when updating of inventory is necessary. The suits will more than likely be plain in nature, with unfinished edges and no knee pads, etc. They should be had for around \$50.

When buying "consignment" items from a dive shop or used gear from an individual, that is obviously older but well cared for, it is time to be more cautious. A suit with a history of deep dives has been subjected to a lot of compression that eventually tends to break down the nitrogen bubbles in the neoprene and destroys its insulating properties. I would not lay down my cash for an item in this category without first testing it in a tub of 45 degree water. This is the only way to see if an otherwise OK looking wetsuit is still functional. You may get a nicer suit, but keep your budget in the same neighborhood as the teaching or rental suits.

Used gloves should go for between \$5 and \$10, depending on condition, hoods around \$10. Don't expect to find used dive socks. However, with older style dive boots, the ones with tennis shoe type soles, one may be able to remove the sole to make one righteous tough dive sock.

Old wetsuits have little commercial value. They get brittle and tear at stress points, the crotch and under the arms. If they can be had for next to nothing and have some resiliency left in the larger surface areas, don't count them out. One may be able to fashion a couple of pairs of $\frac{1}{4}$ inch dive socks or mittens from them. They may also be suitable for add-on knee and elbow pads and patches.

For scuba diving, a wetsuit should fit like a second skin. The water between the suit and you is instrumental in maintaining warmth. The free interchange of water while submerged is counterproductive. However, in caving, a looser suit is vital, considering the contortions it will be put through. One may occasionally be fully immersed for short periods, but this is the exception, not the rule.

Get something that you are comfortable in. Finning around for an hour or so doesn't chafe the back of the knees like a multi-hour walk/crawlathon in a wetsuit. Be especially certain that the circulation in your hands and feet is not hampered. You should be able to hold your arms over your head with a minimum of effort or discomfort.

It's time to discuss one of the more unsavory aspects of wetsuit caving, an aspect of spending multiple hours encased in a black, spongy rubber suit that appeals only to the most truly deranged kinko. We don't discuss this with our mothers or our buddies at work. One generally rues the day that one of his work pals deduces it on his own. It is commonly discussed in scuba diving classes as acceptable behavior. As applied to wetsuit caving, it's hardly a moot topic. We are essentially walking, wading, crawling, belly crawling, swimming, and sometimes, scuba diving in what, for all practical purposes, amounts to a sewer. All the effluence man and mother nature can come up with is flushed through our beloved caves. Feedlot runoff, field chemicals, decaying vegetable matter, deceased critters, you name it, it's in there.

In an effort to cut down on the godawful stench that arose from my wetsuit after long, hard trips, I had mine custom fitted with a fly. The zipper was backed up with an 1/8 inch neoprene flap, as are the zippers of wetsuit jackets. Those that didn't label me daft thought I was one real macho sort of guy (or masochistic?) The rate of exchange of cold water for warm was a little greater than I had hoped for. However, in retrospect, it was no worse than when one's wetsuit begins to lose its integrity. That's always the first area to fail, anyhow. But alas, the reek after the next long, hard trip was the same. The content of the cave water and the concentration of perspiration were obviously equal culprits. I removed the zipper and resealed the seam.

Now you may be tempted to say that this info should all have been under the heading of use. Hopefully though, the preceding spell drove home the importance of prompt, thorough maintenance.

Start when you remove the suit after caving. One generally peels the suit off turning it inside out. Leave it this way. The part most in need of rinsing with copious quantities of water is already exposed. Any cave muds or clays will be on the inside where they will remain damp and soluble. Clastic materials that have been allowed to dry are infinitely harder to remove. It is preferable to fold the wetsuit nicely, as opposed to just stuffing it into something. I use a large rectangular tube for transporting my cave gear. It is much easier to deal with than even the best heavy duty garbage bags. Rubber Maid has several varieties and K Mart's and Wal-Mart's handle these along with some generics.

As soon as is humanly possible, thoroughly hose down, first the exposed insides, then the muddy outside of the suit. Hang each piece up on two or three heavy plastic hangers that have been taped together. These relieve stress on the shoulder seams. Allow to dry completely before storage, turning inside out a couple of times may speed the process, especially if drying in the basement or out in the garage during cool or cold weather. After drying and before storage, check for inevitable damage and repair it. Repairing is covered in its proper sequence.

Wetsuit socks may also have to be turned inside out a couple of times to fully dry. Gloves should first be hung by "the finger" until done dripping, then by the wrists until dry. Hoods should be hung on something that allows them to retain the shape they assume on your head (unless that shape is pointy). Before long, they should retain that shape when dry. My hood can be stood up, open, in storage. Permitting a hood, or any piece of neoprene, to lay unsupported will cause a permanent

crease to form along the fold. In due course, the peoprene will crush itself and become thinner and weaker along that fold. Hence it will become an area of early failure. For any long-term storage, wetsuits and accessories should be loosely stuffed with crumpled newspaper to approximate its shape when occupied by a body and lain out on a flat surface, not hung.

If the wetsuit exudes a slight taint when dry, or a disproportionate odor with moderate use, it's time to soak it in a weak solution of chlorine bleach. A tub full of water with 3 or 4 glugs of bleach should do it. Hose down thoroughly after this treatment. (From the editor: I have found that this is never required if the wetsuit is properly washed after each use. I have always machine washed mine in very warm to hot water and a little liquid detergent. With my top loading machine, I have to stand over it and push the suit down into the agitator for both the wash and rene cycle. I'm sure a front loader would work better. I leave my suit folded up in a trash bag for months at a time and it is always as fresh as a daisy when I want to use it. Hosing down doesn't remove all the bacteria or the dead skin that it can live in.)

If you use your wetsuit in a cave regularly, it should be given a good scrubbing a couple of times a year. After the initial rinsing, work in a liquid detergent or a paste made of a powdered detergent. A milk brush, as used on dairy farms, is excellent for applying and working in the soap. These are also damn handy for cleaning all your other cave gear. They come with various length handles and are readily available in farm service stores all over caveland. After scrubbing inside and out, rinse exceedingly thoroughly.

The cleaning is not only desirable for the obvious reasons. The accumulation of vile in the nylon and its interface with the neoprene seems to inhibit the flexibility of the material. Occasional cleaning keeps it more supple.

My water at home is quite hard, leaving rust stains in the area that I always use to clean my gear. The long term effect of this on my wetsuits, ropes, and other gear is not yet obvious.

A wetsuit can also be washed in a front loading washing machine. I have never had to resort to this. Nor have I ever used any of the products produced specifically for neoprene laundering.

Prompt attention to needed repairs beats patching up a wetsuit under the P.O.-ed glare of your cave teammates antsy to get underground, or recalling the need the first time you hit semideep water. Of all the contact cement type products I have tried, Decor makes the best. It works equally well whether fixing nicks and rips or replacing entire panels of material. Applied correctly, it is stronger than the neoprene itself. It does not bond neoprene to the nylon coating very well, as in trying to adhere new or add on knee or elbow pads. It will stick them on, but they will need regular upkeep to keep them on. I was never too impressed with Aquaseal. It lacks flexibility and seems to compromise the neoprene at the edges of the application.

Most blemishes are readily apparent. However, as I have mentioned, with age, funny things happen in the highly stressed areas, particularly the crotch. Little lesions start to occur in the neoprene between the inner and outer layer of the nylon. One generally feels their presence before they are visible, as the vulnerable area is introduced to water. Upon detection in this manner, close scrutiny of the material will reveal stretched or expanded lines in the nylon, usually more so on the inside. Slice along these lines with a sharp razor or a small scissors to expose the damaged area. Repair with contact type cement and be ready to re-

peat, as needed, for the rest of the life of the garment.

Although it can be done, alterations of a wetsuit to a serious degree are seldom worth the effort. If the one that no longer fits is in good shape, you can more than likely break even by purchasing a "new" used one that fits and peddelling yours off. If it is still effective, but esthetically lacking in marketability, consider using it to make accessories. One should be able to get a couple of pairs of $\frac{1}{4}$ inch socks and a pair or two of disposable mittens out of a shot wetsuit. When mine is beyond hope, I intend to experiment with it. I envision a pair of mittens that can be peeled back from the fingers and thumb without having to be removed from the wrist. These may prove most practical on survey trips, allowing freedom of the digits and the ability to conveniently warm them when needed.

I cave as much and as aggressively as anyone I know. My suit has seen five demanding years of service. Though tacky as hell, it has several more years of use in it. A poorly maintained suit's lifespan will be shortened and possibly invite bacterial skin infections. A properly maintained suit will become an old friend, who you will probably never be too crazy about caving with. That, though, is the price one must pay to see Iowa's best spring caves.

Deutschen Höhlen

Notburgarhöhle, Tropfsteinhöhle, Nebelhöhle, West Germany

Mike Lace and Richard Anderson

by Mike Lace

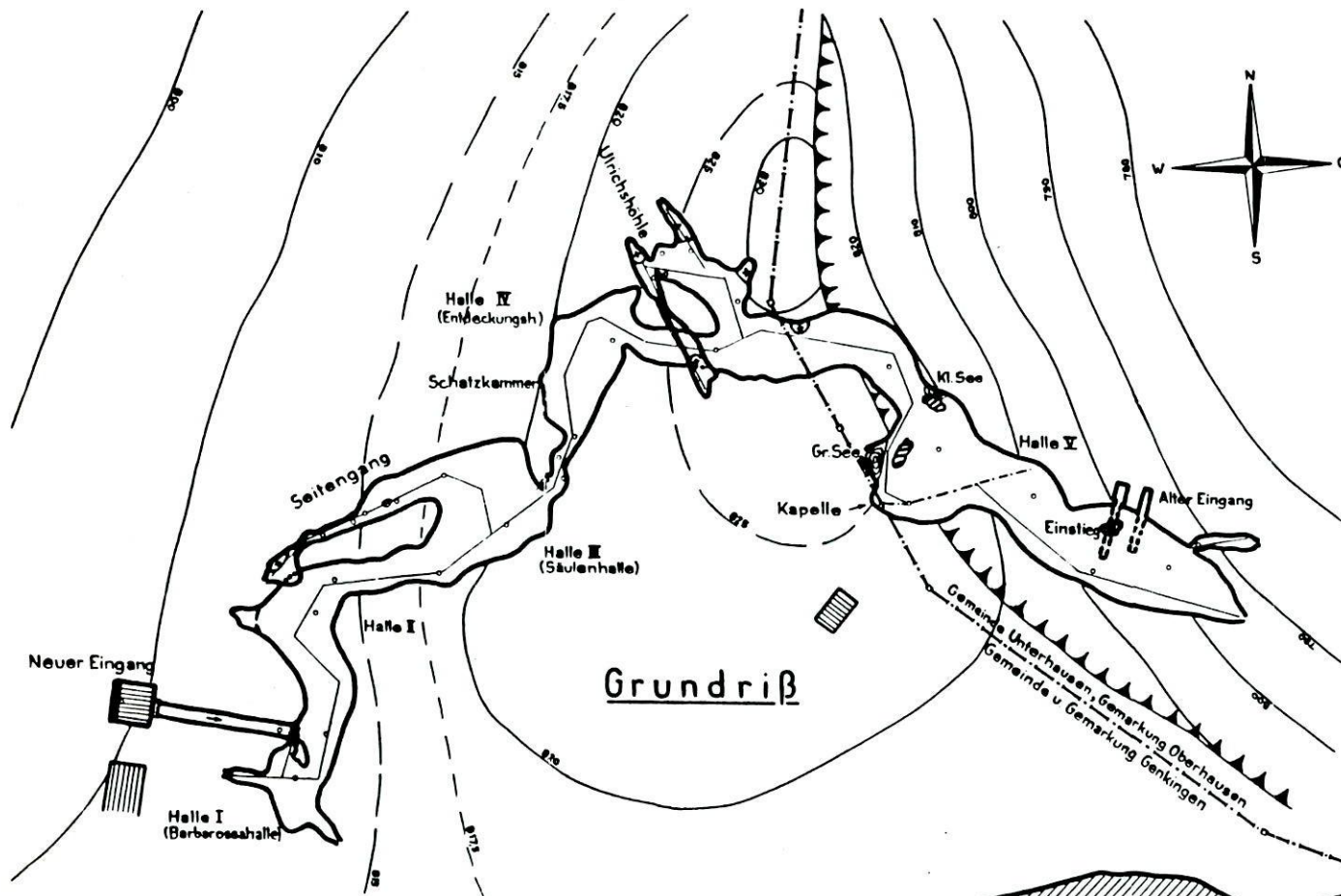
While attending a research conference in Heidelberg, I had the chance to visit a few commercial caves in the southern portion of West Germany. We had a few days to kill between the time the meeting ended and the plane left for home and since we had a rental car with unlimited mileage that would do a comfortable 97 mph on the Autobahn, we decided to go for it.

I had taken Richard to Kemmling Cave for his first cave trip two years ago so he humored me by stopping to do a little tourist caving along our way. The first cave we located was called Notburgarhöhle which must have been a minor tourist attraction years ago but now stands as an obscure curiosity along the bank of the Neckar River. It barely counts as a cave by Iowa standards, perhaps twenty feet in length and walking height through all of it. A stairway had been built up the face of the rock to the entrance so obviously the cave had been frequented at one time. There was, however, evidence of other caves in the area as a spring issued from a slot below the cave and several interesting limestone outcrops could be seen above.

The first active commercial cave we stopped at was Tropfsteinhöhle which literally translates as "dripstone cave". It turned out to be a very appropriate name for this 600 meter cave found at the edge of a quarry. The entrance fee was 3 DM (that amounts to \$1.70) which included a guide that led us along cobblestone trails through well-decorated passage.

Most of the passage was 25 feet high and 30 feet wide. Surprisingly, the damage to formations was less than I had expected even though I had to cringe once or twice when one of the tourists ran fingers along flowstone. The tourist's trail ended where the passage ceiling abruptly sloped down to form a roomy crawlway, thick with stalactites and pools, that led to even smaller portions of the cave.

During our last few days in West Germany, we drove through the Schwabian Alb ("mountain pasture") in the south central portion of the country. The area has been described as, "a slightly undulating plateau of permeable Jurassic limestone

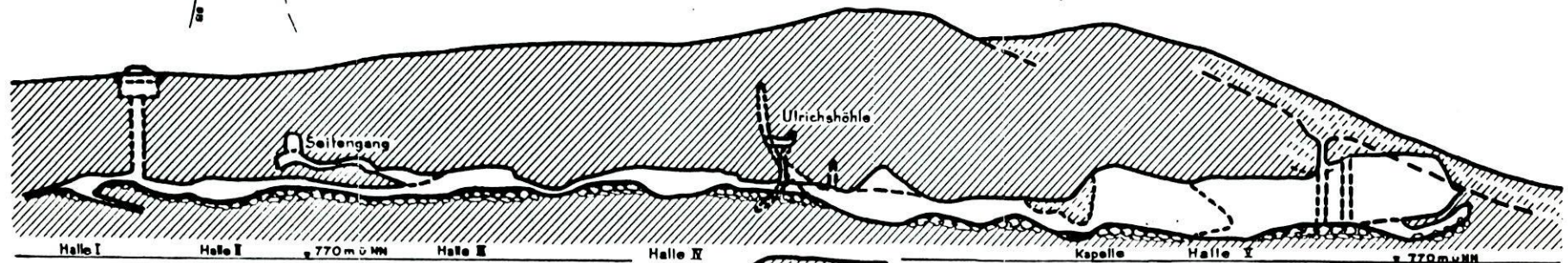


7521/01 Nebelhöhle

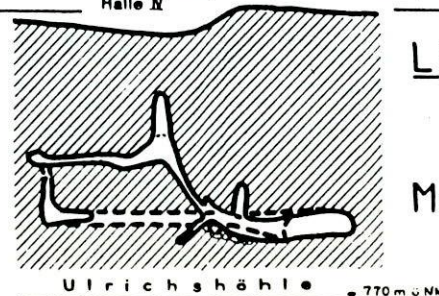
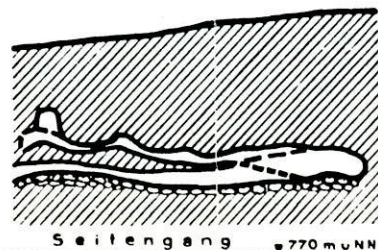
NE.: H=808 m ü NN, r=35°16'43", h=53°64'200

AE.: H=790 m ü NN, r=35°16'40", h=53°64'460

Aufnahme u. Originalplan: Köpf 1969
unter Verwendung des Grundrißplan-
nes von Brommer und Freiherr von
Czoernig-Czernhausen von 1928.



Längenschnitte



Maßstab d. Längen u. d. Höhen 10 0 10m 20m 30m 40m 50m

through which most surface water seeps away, forming caves, swallowholes, and dry valleys." (Baedeker's Guide to West Germany)

We had numerous caves to choose from but only a limited amount of time so we settled for a visit to the Nebelhöhle, a large cave which had been frequented regularly since the early 1800's. Over the years, local gentry frequently gathered here for a taste of underground adventure with torches and candles. At least part of this tradition is maintained as one takes a self-guided tour through its halls, but fortunately, with the aid of electric lighting and handrails.

The cave is accessed by a concrete stairwell that drops at least 150 feet to the level of the main passage which is mostly large solutional borehole with the occasional stoopwalking side passage. The most striking formations in this cave were the calcite columns rising up to eight feet above the floor forming a flowstone forest that the trail winds through. The damage to the cave was visible, with travertine oozing through the mesh of chain link fencing that borders parts of the trail but at least signs were posted warning against vandalism to the flowstone.

The original entrance, a crevice reaching up to daylight near the tour's end, was roped off but it looked like an easy chimney to the top if there hadn't been a ticket vendor waiting for us to exit the way we came in. The cave boasted 720 meters of mapped passage and I confess, I almost had to be dragged out of some of the more inviting, and unlighted, side passages (even a self-guided commercial tour can't compete with wild caving!).

We eventually packed ourselves up and went on our way, winding through the Black Forest, along the Rhine, and eventually back to Iowa civilization (?). The next trip will have to include some off-trail caving and it looks like there's plenty to be had.

ONE I FORGOT

Lead Check, Fayette County, Iowa

April 1 or was it May 20, 1990

by Mike Nelson

Mike Nelson, Delores Nelson, Aaron Nelson, and Ellie Dog

Between 2-24-90 and 5-20-90, we had made seven trips to Dutton's Cave to get proficient on rope and work the kinks out of and fitness into our climbing systems. On one or the other of the last two trips, we took a side trip to a prominent knoll on a hairpin curve of the Turkey River a couple of miles north on the Dutton's Cave campground road. Its layout, in relation to the river, reminded me of Gouldsberg so it seemed in order to see if it had any crevices or crevice caves. It didn't. It was a nice walk on a somewhat marginal, occasionally rainy though, spring day.

BACK TO THEISEN CAVE

Thiesen Cave, Dubuque County, Iowa

May 1, 1990

by Marc Ohms

Marc Ohms and Eric Winch

Theisen Cave is a cave I discovered earlier this year and briefly explored. (Last issue) Eric wanted to see it, so when our schedules permitted, we went to finish exploring it.

Last time, I stopped shortly before reaching a wye in the passage. This time we were stopped twenty feet after the wye due to a pit in both directions. It is the same pit but entered at different ends. Only one way is usable to descend because the other passage is about a foot tall. Having forgotten our vertical gear, we were stopped here. I would estimate the drop at 30 to 40 feet deep. It appears to have passage below.

The cave is a crevice running parallel to the hillside. At times, the floor of the passage seems to be a false floor, being large rocks jammed into the crevice. After exiting the cave, I showed Eric the sinkholes in the fields. They are plugged for now, but the landowner will allow me to dig them out.

BACKBONE CAVE

Backbone Cave, Delaware County, Iowa
May 15, 1990
Marc Ohms and Kent Hyde

by Marc Ohms

One hour after my last final exam in cartography, I was on my way camping for three days at Backbone State Park. This was primarily a fishing trip but knowing a cave existed in the park forced me to bring some gear. I have been through the cave before but didn't have any photos, so that was my primary goal. I also wanted to get Kent into a cave.

We spent about an hour in the cave taking many photos using my new tripod. The cave is about 175 feet long and is of easy crawling size. Due to the location, it has been heavily vandalized. There are some nice formations including a two foot column. The passages were very wet and we encountered many puddles making it all the more fun.

MEANWHILE, BACK AT COLDWATER CAVE

Coldwater Cave, Winnesheik County, Iowa
May 19, 1990
Mike Nelson, Brett Swanson, and Rich Jacobs

by Mike Nelson

This was just a short tourist trip that completely tuckered these two Minnesota lads out. Brett had the better caving attitude, Rich didn't like the idea of getting too icky. Brett pooped out quicker. Both had a hard time walking though, what with their knees constantly slamming into their jaws. It was the first time they had ever seen a cave the likes of Coldwater. We wandered upstream to the blood red flowstone cross joint then downstream to Guardian Fang with a short side trip into that crevassy side passage down by the Iron Fixing Bacteria Formation. "Suitably impressed" does not cover the effect Coldwater Cave had on them; "agog with awe" might.

MEANWHILE, BACK AT DUTTON'S CAVE

May 20, 1990
Mike Nelson, Delores Nelson, Aaron Nelson, Brett Swanson, and Rich Jacobs

by Mike Nelson

Hoping to show our friends from New Brighton, Minn. a well rounded caving good time, we decided that a little vertical training was in order.

We had heard, through the grapevine, that the local authorities wished to be informed as to our activities when using public lands for our particular purposes, so we stopped by the County Sheriffs office. The gal at the desk was not aware of such a policy but made note of our presence.

While rigging the ropes at Dutton's, I gave a thorough explanation of what I was doing and why, explaining my own personal policies (and quirks) as I went along. They each ascended first then repped back down. They seemed to enjoy the experience. I can't figure out why they both pronounced me mad, in the archaic sense of the word.

FLASHING IN THE UPSTREAM LOOP

Coldwater Cave, Winneshiek County, Iowa

May 19, 1990

by Larry Welch

Larry Welch, Stacey Cyphert, Jack Decker, Tom Gustafson, and Jay Wells

Part 1, Discovery

One of the most attractive features of any large cave system is that so many mysteries are offered in each of the major or minor branches of the cave. Unless a passage has been viewed with one's own eyes it is never really understood, and often, a single look does not unlock some of the subtler elements of the cave. Verbal and written descriptions of a portion of the cave often fail to make an impression on one who hasn't actually witnessed this area. False impressions usually can be conjured quite easily even from a well-written trip report.

The upstream loop in Coldwater is an area of many mysteries. The Rock River Speleological Society surveyed and described this area in the middle to late 1970's providing much of what is currently known about the region. Recently, activity in the Nelson Section has resulted in many cavers passing from the entrance of Pete's Pipe to the Spong Siphon. The rest of the upstream loop has lain dormant and many of the side passages have not been seen since they were surveyed.

Recently I spent some time perusing the back issues of the Rock River Spelunker that dealt with the upstream loop survey. I'd read all of them before, but this time, something struck me that hadn't registered before. A report written by Mark Rohn describing a trip in March of 1977 described Brad's Dome as off a side passage leading to the right as one goes upstream in the Flash Passage. It was noted that a lead exited the far side of the dome. The crew continued to survey up the Flash Passage and the side passage was not surveyed until November of 1977. This trip was described by Pat Hopper in the report, "November Work Trip". She described surveying into Brad's Dome and out the far side for 100 feet and also attempting to survey the "right fork" elsewhere in the Flash.

It hit me at this point: both of these areas surveyed in the November 1977 trip were side passages off the Flash Passage, yet I remembered the convention map as showing neither. A quick check of the map confirmed this. A check of the computer showed no record of these passages in the current map data. This sent me to the archives to check the original survey books, where nothing could be found from November of 1977. Two other books detailed the rest of the Flash survey, from which the location of Brad's Dome could be noted and the possibility of two right-hand forks could be deduced. The conclusion that had to be drawn was that the survey data from the November 1977 trip had vanished, meaning that there remained a lead or two to survey in the Flash Passage.

This little mystery had me rather intrigued and anxious to check out the Flash Passage. The timing worked out well since rain was predicted for the weekend and it was indeed raining when Saturday morning rolled around. Pete DeVries had stated several times how they had gone a long way up the Waterfall Passage during a flood and it didn't appear as if there was any risk in that area due to rising water levels. So the decision was easy to make and we all geared up and headed upstream. Jack Decker and Tom were anxious to go so joined us for the trip.

It was exciting to see water pouring out of little nooks and crannies that had previously been dry, lending a twist of freshness to the trip. Our first stop was at the legendary Obstruction Passage. Doc Lewis had been trying to sell this passage recently; Stacey and Jay were the reigning squeeze experts after their Wimp Hole effort, so they wanted to have a first-hand look at the famous Obstruction. All had full wetsuits and coveralls on and it was not surprising when everyone stuck out. Not by much, but either some excavating or some undressing will be necessary.

Next we checked the 200 Feet and Continues Passage. Mike Bounk had been lead tape on this survey which ended in a grim looking dig according to the survey notes. Stacey led the way into this passage which was belly-crawl for most of its unpleasant length. We had brought the survey gear along just in case but the end of the passage, as advertised, was grim. Thin-man Stacey negotiated a chest-compressing squeeze just past the survey chip but the passage appeared to require digging just ahead of him. It looked as if we would be able to take maybe one survey shot if we were lucky. It wasn't worth the effort to get started and I think it is safe to say there are better leads elsewhere in the cave. Those old-timers were animals just to survey as far as they did. We all backed up until the passage got large enough to turn around, then slithered out.

We continued up the Waterfall Passage, stopping while Jack climbed to look into the upper level of 2 Story Dome. The dome was really pouring to make things more difficult, nevertheless, Jack made it look easy. Once he was down, we made our way to the Flash Passage. The early part of the passage was a low crawlway opening after 100 feet or so to a pretty decent passage. The decorations were nice as well. We got up to the passage leading to Brad's Dome and cracked open the survey gear. Stacey took lead tape, I read back sights, Jack read front sights, and Jay took notes. Tom waited behind to catch a breather. Two shots brought us into the dome, which was quite impressive indeed. Fifty feet up was a lead that was spouting a cascade of water to the bottom of the dome -- climbable perhaps, but a stern challenge. It looked as if the dome used to drain into the Flash Passage, but it currently was draining away from the Flash into the lead in the back of the dome. We surveyed across the dome and down this passage. It looked similar to the IGA, being a flat-out mud crawl for most of its width, but the drainage had cut a trench on one side of the passage which we followed. We eventually found a chip where the Rock River group had terminated their survey. The passage continued onward and so did we, coming to a T junction after two more stations. This meant we had intersected the IGA Passage which was confirmed when we referenced the label on the survey chip which we encountered at the junction. I knew there was another lead nearby in the IGA so started crawling down the foot-high (but very wide) passage. Unfortunately, I had gone the wrong direction (east), and crawled until I could hear the Waterfall Passage before turning around.

We reversed our course and went back to the Flash, where it was decided it would be in the best interests of the group to start back. I knew there was another dome ahead, so while everyone rested, Jack and I crawled ahead for a brief look. I also remembered that there was a right-hand side lead near the dome. Once we got there, things got a bit confusing. The dome, another nice one, was to

the left off of the passage and contained no other exits. The Flash seemed to continue straight ahead with a smaller crawlway in between. Figuring this last crawl was an overlooked lead, I slid in for a look. There were crawl marks in the mud but I decided to continue until a distinctive landmark could be found. After passing two more crevice-domes and a lead to the right, I recognized that this was indeed the continuation of the Flash Passage and had been surveyed already. This meant that the larger fork had actually been a side lead. I hustled back to the junction then Jack and I probed ahead for a few feet into the lead. It was getting lower but looked larger than what we had been surveying earlier and had good water flow.

We had overstayed our welcome and headed back and out of the cave. I had a very positive feeling about the large side lead and was anxious to return.

June 10, 1990

Larry Welch, Stacey Cyphert, Mike Lace, and Jay Wells

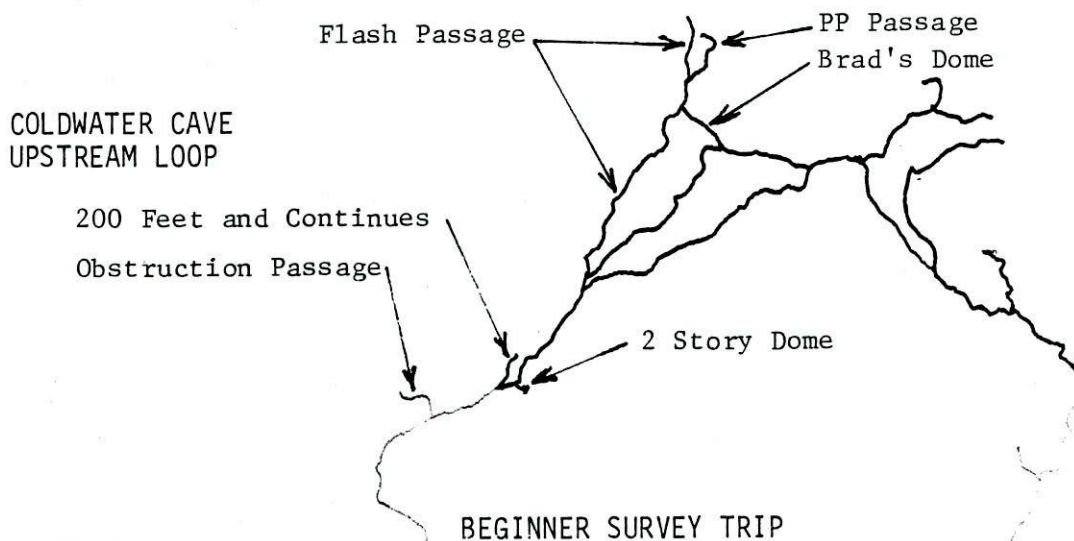
Part 2, The Incredible Shrinking Cave

Once we were out of the cave, I took some time to review the survey notes and old trip reports. It finally started to register that the lead I was excited about was the "right fork" that the Rock River cavers had started to survey in November 1977 (there were signs of traffic on the floor). I had been mistakenly thinking that they had started surveying the right fork near the end of the Flash Passage. They reported quitting after three stations because the passage got low and muddy and they were getting cold. Had they abandoned a good lead because they were cold? Or was this a primo mud sleazeway? It didn't look that bad to me, and what's more, they had abandoned the passage out of Brad's Dome, which we had finished without undue hassle. I was optimistic and no one else had gotten a good enough look to temper my positive outlook.

So we returned with a second survey crew ready to record this wonderful lead for posterity. Stacey got a turn reading compass, Jay read the other compass, Mike took book, and I got a chance to do lead tape for a change. Well, a funny thing happened. The passage got really small despite my best recollections. After the second station the ceiling dipped to a mere foot from the floor and stayed that way. The rest of the crew were good enough to stick with the survey but I caught a bit of flak for my memory lapse. One of them (I think it was Jay) christened it the Double P Passage which stood for Piss Poor. It looked as if the passage was unpassable at every turn but there was always a roomier spot through which we could pass. Finally, I reached a spot where I could see a large rock seemingly blocking the passage 20 feet ahead with a low, wet spot in between. After thoughts of stopping there, I decided to try to get one more shot up to the rock. Off came the helmet and I pushed ahead. My chest dug a trench in the soft mud as I pushed through the 8-9 inch squeeze and into more foot-high passage.

Once I was to the rock, I found that it did indeed block the passage but it was also sitting in a crevice leading into a dome. We were happy to escape the crawl and surveyed up and into the dome which had been sarcastically called Larry's Wonder Dome. In actuality, it was a fairly nice 30 footer that was not appreciated due to its entry squeeze. We surveyed to the back of the dome where a short passage terminated in a rubble slope that looked as if it blocked the way into another dome. While poking around, I found that one could bypass the boulder blocking the PP Passage by routing oneself through the dome. The passage ahead continued at height of one foot with a strong echo. Another dome lay ahead and to the left that needed a little easy troweling to allow access. Another survey trip would be needed. Since we had forgotten to bring any survey chips, we left a cyalume stick at the Wonder Dome, vowing to return to finish the job.

Once we got crawling again, everyone warmed up, so we decided to have a look at the other right fork near the end of the main branch of the Flash Passage. I had remembered it as being small and it was. It also had 6 inches of slime on the floor which led to the moniker, "The Beef Stew Passage". We tried to start surveying, but abandoned after a single station due to the mud. Neither the tape nor the compass was legible once we had ventured into the Stew. Each of us was completely coated with mud, so we crawled back until we found enough water to wash off some of the layers of slime. After an attempt at cleaning, we made an exit. The passage had shrunk considerably from my initial impression, not the first time this sort of phenomena had happened. Still, it continues onward at a passable size, and the opera isn't over until the fat lady gets stuck in the mud.



Hatfield's Cave, Jones County, Iowa

May 26, 1990

Lowell Burkhead, Loren Schutt, Jim Sinning, Marc Ohms, Eric Winch, Ray Houk, Dean Zimmerman, Pat Witzke, Bob Wahlstrom, Paul Miller

by Marc Ohms

We all met at Pictured Rock Park at 10:30 a.m. and then drove to the area of Hatfield's Cave. Mike Lace and Stacey Cyphert left to tell the owner we had arrived. They told us to start the walk to the cave and they would be along soon. This was the last we saw of them. After returning from the owners, they walked into the valley but could not find us or the cave.

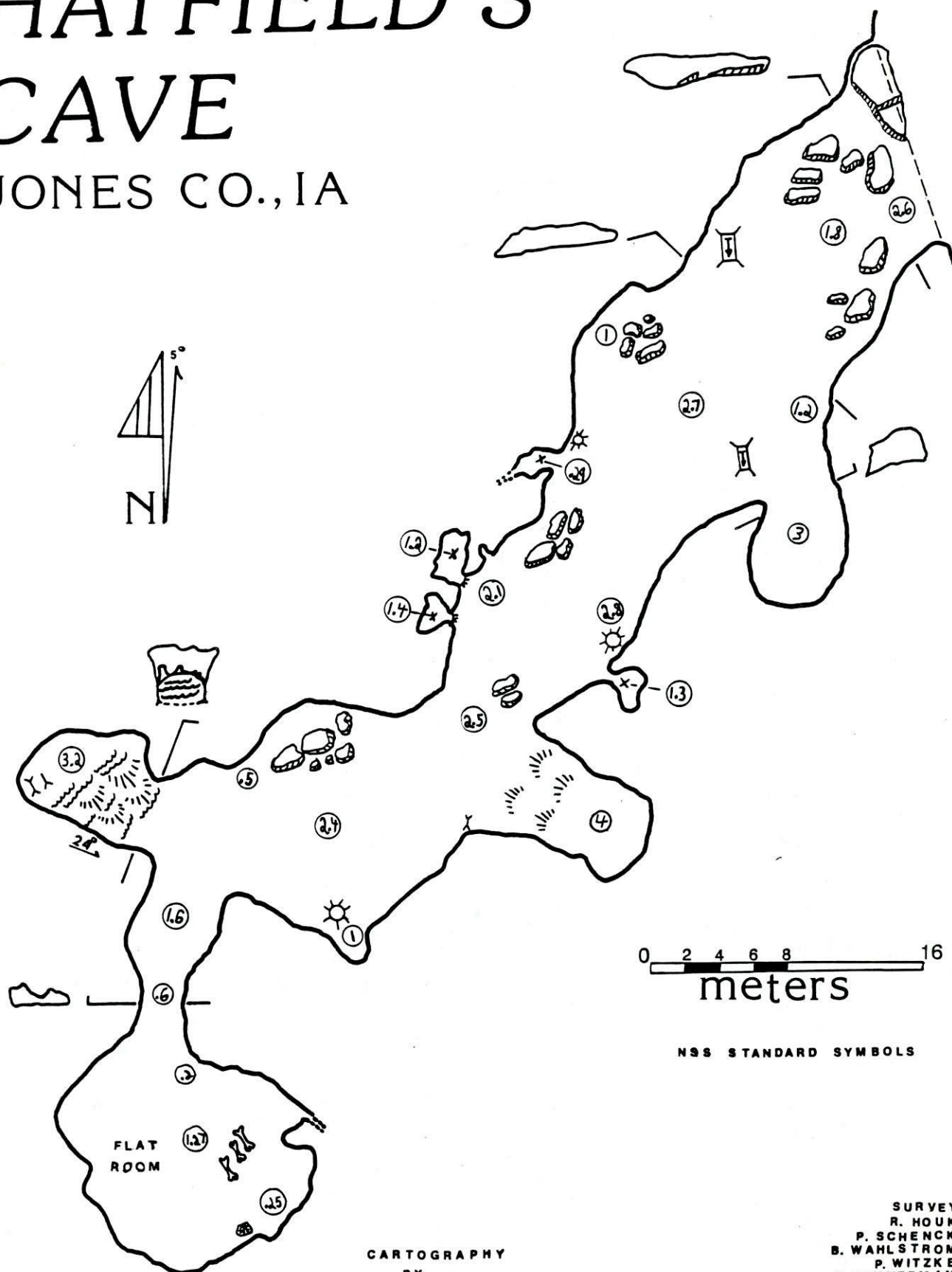
We arrived at the cave after a scenic 30 minute walk along the Maquoketa River. At the entrance, we waited for the arrival of Mike and Stacey; after quite some time, Lowell sent me in search of them. I went almost the entire way back without spotting them and turned back to the cave. Apparently, I did not go far enough since they claim they were down there somewhere.

After I arrived back at the cave, we started the survey. Since I was to draw the map, I wanted to learn how to keep book while everyone else was learning tape and setting stations. Having no experience or help keeping book sorta slowed me down, and the survey crew finally realized this after getting two stations ahead of me. After a little reorganizing, we were off and running. When everyone thought we were done, I mentioned the side rooms that were passed by. We went back and luckily tied them into survey station number three. Now we were done and we drudged back to our cars. Later, at home while attempting to draw the map, I realized that I needed some ceiling heights and passage widths. Eric Winch, Pat Schenck, and I then returned to the cave and got the information that I needed and checked my line plot.

Shaft entrance

HATFIELD'S CAVE

JONES CO., IA



NSS STANDARD SYMBOLS

CARTOGRAPHY
BY
Marc Ohms

SURVEYED BY
R. HOUK
P. SCHENCK
B. WAHLSTROM
P. WITZKE
D. ZIMMERMAN
L. BURKHEAD
P. MI
J. SINI
L. SCHUTT
E. WINCH
M. OHMS

STILL A LOOSE END

Livinggood Spring, Allamakee County, Iowa

June 3, 1990

by Mike Nelson

Mike Nelson, Delores Nelson, Greg McCarty, Mike Lace

Hoping to either find a cave, or go bust, we recruited help for one more push on the dig that Delores won't let die. But rather than coming up with anything conclusive, either passage or something that would terminally stymie our efforts, we dug until we hit water and bedrock simultaneously. A probing stick revealed 6 feet of water with loose rocks in it, under a lip. It appears that we have cave passage; a future trip with a dive mask will tell. Just what we can do with it is yet another thing.

We wish to thank Greg for his lessons in digging. The area already dug was stabilized and the short dig to the water, from where our previous efforts ended, was completed in a much shorter time than envisioned. I also wish to apologize to all the willing workers who did not make it to the dig because of a snafu in the directions to the site. I hope that the short article I submit, with some suggestions, will alleviate such problems in the future.

WHERE THE LEAD MEETS THE LIMESTONE

Crystal Lake Cave, Becker Quarry Cave, unnamed mine, Dubuque, Iowa

June 8, 1990

by Mike Lace

Marc Ohms, Eric Winch, and Mike Lace

Dubuque is that long neglected Iowa cave region that literally rests quietly under the city limits, waiting to swallow an unsuspecting resident's back yard with a forgotten mine shaft. Marc and Eric had both recently joined the Grotto and gone to work, cataloging the caves in the Dubuque area. They recently convinced me (a lot of arm twisting involved here) to take a trip to their neck of the woods to see firsthand what Iowa Grotto cavers have been missing for years.

Our first stop was at Crystal Lake Cave, one of Iowa's few commercial caves and one of it's best decorated. Marc and Eric currently work at the cave (must be rough) and led me along the tourist route. The tourist's trail is thick with gypsum, calcite and aragonite formations, making a pleasant 45 minute walk. Numerous in-cave improvements are being made with recessed lighting and trail upgrade so it will be interesting to see how things develop.

We then headed for Becker Quarry Cave (Becker Quarry Crevice in some of the older literature), an extensive cave system that was partially mined for lead years ago. The main passage is mostly a large (25x25ft) trunk that apparently bore the brunt of the mining effort. Two collapsed shafts are encountered in the 1000 feet of main passage, one in the middle which was filled with garbage (some of it smelled rather recent), and one at the back of the cave which blocks further progress.

The numerous side passages leading off of the main route are all accessed by dropping 3-4 feet below the main passage floor. These passages vary from stoop-walking height to down and out squeeze crawls and both of the side passages we visited consist of several hundred feet each. One of these passages is marked by a large fossil (about 18 inches long) in the ceiling of the main trunk. Photographs of the Cephalopod, however, would be difficult to take since the fossil blends in so well with the contours of the ceiling.

The last passage on the left (closest to the collapsed end of the main trunk) was entered first by easily squirming downslope into a near-walking route. Each of the side passages, of course, has several side passages of its own, intersecting one another at near perpendicular angles. All of the passages were dry and dusty with plenty of bedrock floor to punish the knees. We spent some time in the first side lead, unsuccessfully looking for the connection route to Level Crevice Cave, another mined cave that has an estimated 5 miles of passageway.

We eventually moved to the last side passage on the right of the main trunk. We immediately noticed the flow of fresh air emanating from somewhere within this passage. Marc climbed into an upper side lead that led to a tight squeeze which quickly ended in a dig lead. Air could still be felt but we had heard that larger people than ourselves had physically made the connection years ago without losing any critical body parts so we tried the next lead.

The other side lead we pushed in this passage was more easily climbed into and much more comfortable to negotiate ... at least at first. The hands-and-knees stuff wouldn't have been so bad if it were soft mud like in Coldwater Cave or Glenwood but this stuff was bedrock complete with a gritty coating of sand to enhance the knee-grinding experience. I was almost grateful for the belly crawls that crossed our path.

Again, the feel of air blowing out of the passage was easily felt and the longer length of this crawl seemed to jive with the fuzzy description we had of the connection route. We popped out into a stoopway that led perpendicular to the passage we just exited - we thought we had it. Following this winding passage led us to yet another "T" intersection and a right-hand fork that led abruptly to a small collapsed shaft and the end of this lead. The three of us sat there for a few minutes, wondering just where in the hell the "right passage" really was. We could see a small cavity around the corner of the collapse but we couldn't see if it was large enough to be a going lead. Eventually, we turned and worked our way out of the passage to the main trunk and on to the entrance of the cave.

The survey of such a complex system of passageways could easily become a long term project, requiring the help of lots of seasoned surveyors. Marc hopes to initiate such an effort soon, so surveyors, beware!

After lunch, the last stop of the day was at a mine/crevice not far from the highway. Eric had been told of a shaft that led down into a small cave that might also be reached by a horizontal entrance. We found a horizontal entrance at the base of a small rock outcrop that Eric hesitantly entered due to stories of a fox that supposedly lived there. Plenty of trash could be seen on the passage floor and it was clear that it was a small mine at one time. He got as far as a low crawlway that was covered with animal waste and gladly turned over exploration to someone with kneepads. I was the only one wearing kneepads (thanks Eric). The crawlway opened up to walking height after about 15 feet and 20 moldy "lincoln logs" but it ended quickly after that and without a shaft entering from above. This might not have been the one we were looking for but it was at least 100 feet of unrecorded passage.

SOLO SURVEY

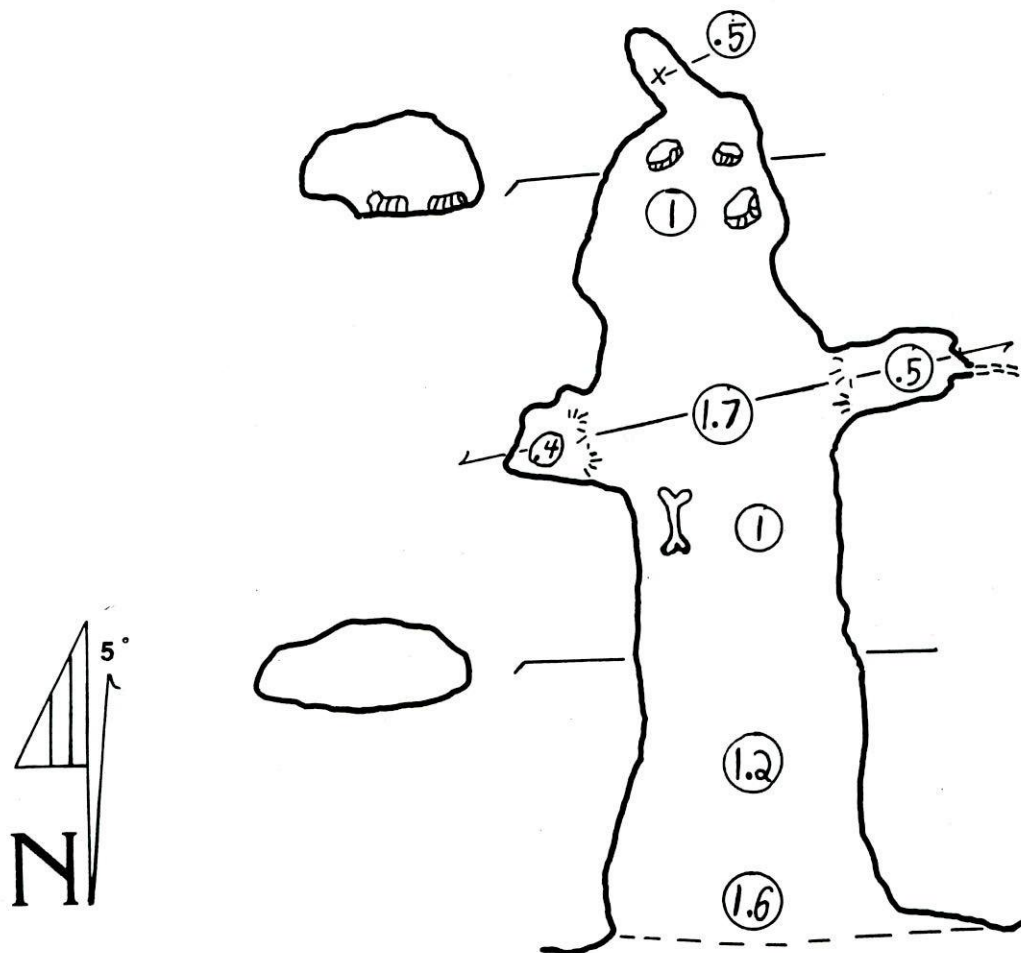
Big Mouth Cave, Dubuque County, Iowa
June 13, 1990

by Marc Ohms

A day after getting my survey compass, I was itching to try it out. None of

BIG MOUTH CAVE

dubuque county, IA



NSS STANDARD SYMBOLS

SURVEY &
CARTOGRAPHY
BY
MARC OHMS

my caving partners were home so I set out alone. Big Mouth Cave is about two minutes from my house, so it was the target. This cave was one of my first caves ever entered. If I remember correctly, I was 11 or 12 when we discovered it. It is of natural origin and has no signs of mining as most caves do in Dubuque. On the walls are small amounts of cave popcorn. Life in the cave consists of spiders, crickets, and occasionally, a few bats. I almost forgot about the large black and white beasts that inhabit the entrance and leave their dung pies as evidence.

I surveyed the cave in an hour and a half, then drew the map the same evening. I know it was no major project but being my first cave and so close to home, it needed a map done.

CARLSBAD CAVERNS CRF/NSS/NPS RESTORATION FIELD TRIP

Carlsbad Caverns, Eddy County, New Mexico

June 17 - 22, 1990

by Mike Nelson

Mike Nelson, Delores Nelson, Many Ecklunds, a host of other relatively unstable folks

This was Delores' trip, so she will write the "real" report. Personally, I did only what I felt like, so I didn't come away with the feelings of uncertainty that I had last year. However, looking back at last year's work from this year's perspective, restoration is worth the effort. This year, I spent a lot of time helping Dave Ecklund take video of restoration work, hauled a lot of buckets of old trail fill material and experimented with compressed air. The air experiments demand a separate report. We took a trip on the Sunday before the work began to Park's Ranch Gypsum Cave. It gave a whole new meaning to the term "bore" hole. Our first off-trail trip was to Lake Of The Clouds, EXQUISITE! Our second was to the right-hand fork. Delicate.

ARKANSAS ADVENTURE

Fitten Cave, Newton County, Arkansas

June 27 - 30, 1990

by Scott Dankof

Scott Dankof, Bryan Bain, Gary Engh, Larry Welch, Beth Welch, Jay Wells, Stacey Cyphert, and Steve Thompson

After months of planning, this trip finally became reality. A permit for the cave was obtained and we all converged on a small campground in Northern Arkansas. We camped next to the Buffalo River which is part of the Buffalo National Scenic Riverways. A beautiful area with towering cliffs and great caves. We set up camp, went for a swim in the river, and then hit the sack.

The next day, we got our gear together and started the 1 3/4 mile hike to the cave entrance. The cool cave air blowing out the gated entrance felt great after a very sweaty hike. We opened the gate and slipped through the small opening around 11:00 a.m. Down we went over slippery breakdown blocks into a large passage decorated with many stalactites and large columns.

We had a map of the cave with us, but it didn't show the many small passages that were part of the cave. We were looking for a passage called the Manhole. Naturally, we, being from Iowa, were looking into every sleeze-hole we could find thinking it was the right passage. Finally, after 1 1/2 hours, we found it. We chimneyed down about 12 feet into a canyon type passage. After following this for a hundred feet or so, we emerged into a large trunk passage, its dimensions measuring anywhere from 15 to 50 feet high and around 20 to 30 feet wide. We followed this for about 1500 feet till we come to the Needles Eye, a flowstone blockade with a body-

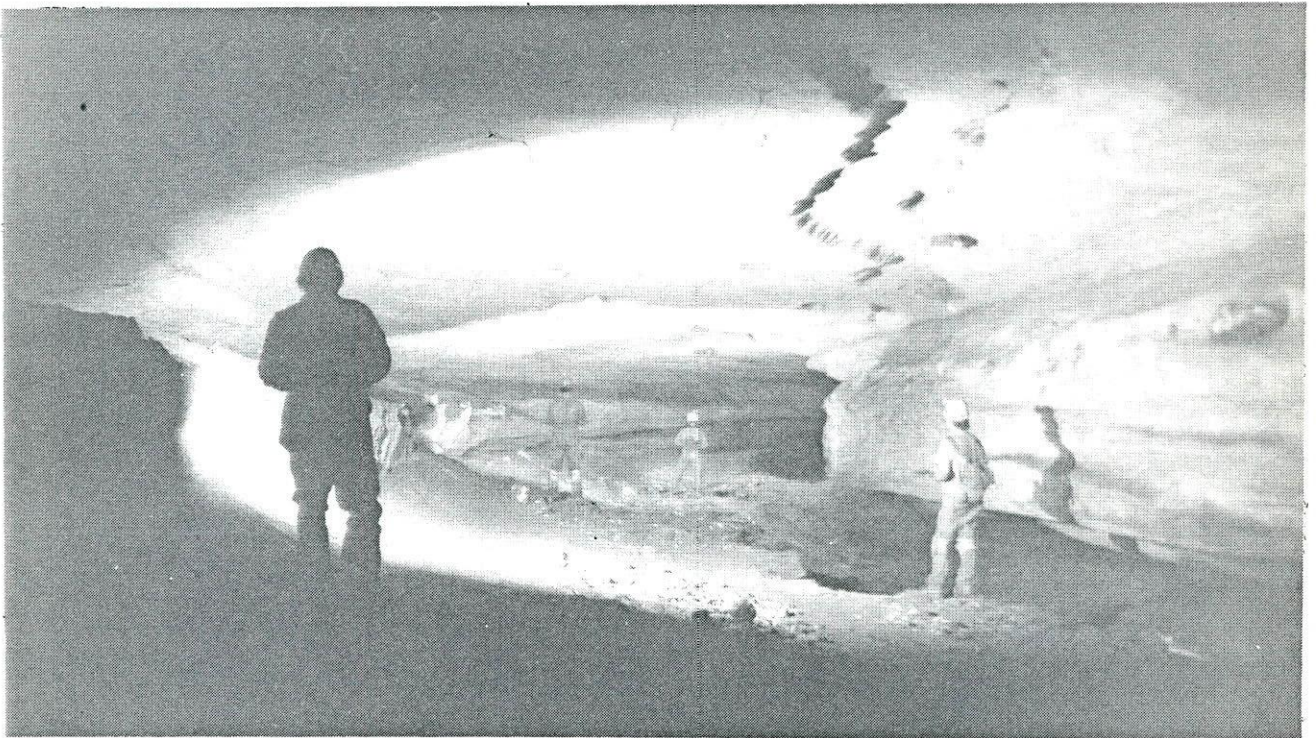
sized hole at the top. This led to a continuation of the same large passage. We squeezed through and walked around and climbed over breakdown for another 2000 ft. til we came to one of the largest rooms in the cave, the Out Room.

Massive breakdown littered the floor from one end to the other. We climbed up one side of the room to some dry upper level crawls. Jay and Bryan checked to see which one we should take. Soon we were all crawling along and emerged into a passage that had some spectacular gypsum flowers along some ceiling cracks. I immediately whipped out my camera gear and went to the task of blinding everyone with flashes. We followed this passage to a 12 foot climbdown then into a long room with a few crawls leading off. We checked out a few crawls, took more pictures, and headed out.

The trip back to the entrance was uneventful except for 15 minutes where we were a little off the main trail. Cool heads prevailed and we backtracked and found the passage we should have been in. We exited around 8:30 p.m. and started the hike back to camp. This hike will be known to me as the death march. Next time, I'll pack two canteens of water and stash one at the entrance.

Saturday was spent nearby in Lost Valley Park. This park featured a natural bridge, a 170 foot waterfall and a few caves, one of which had a 35 foot waterfall in a large room at the end of the cave. Bryan and Jay set up a rope outside for a 100 foot rappel. 80 feet of it was a free fall.

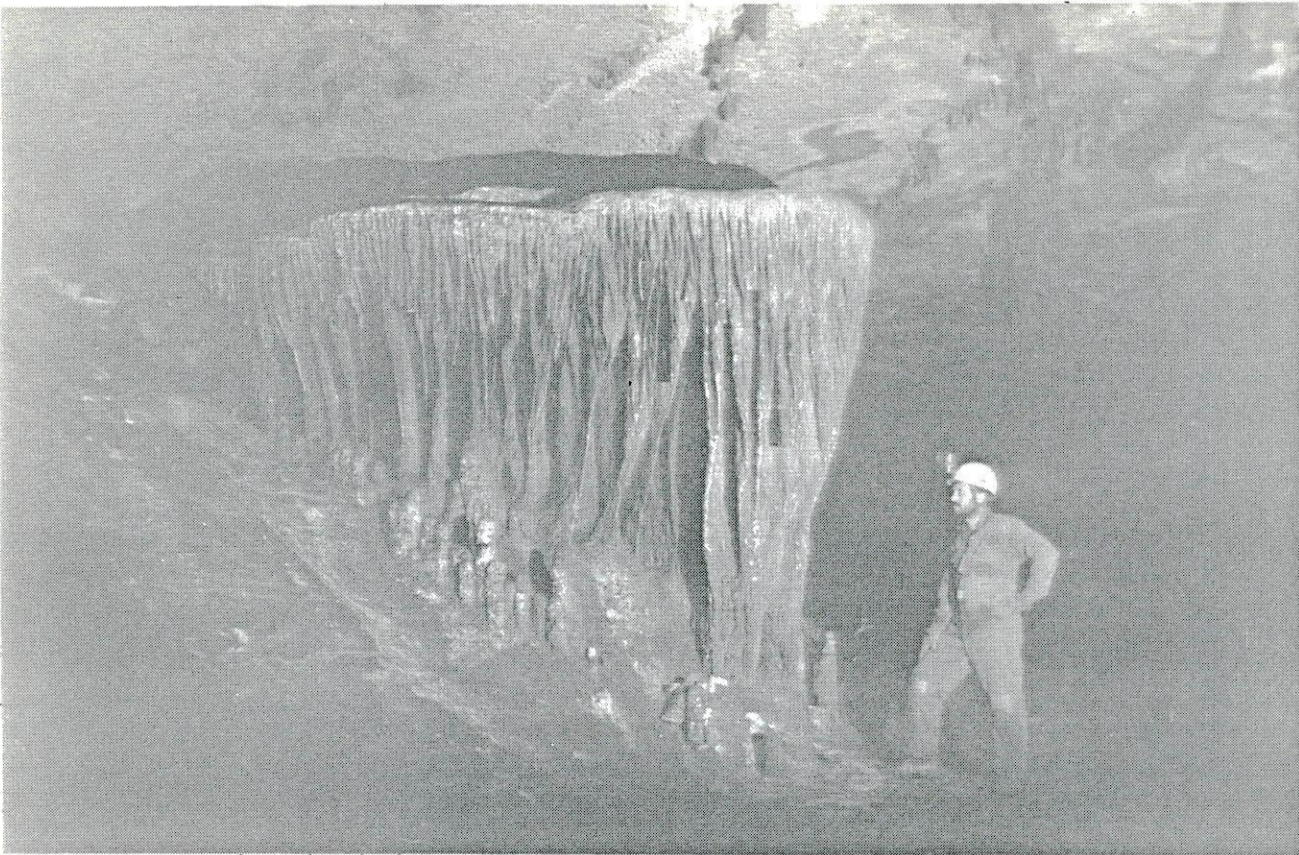
A good time was had by all, but everyone was a little tired of eating hotdogs.



Fitton Cave, Arkansas

EAST PASSAGE

photo, Scott Dankof



Fitton Cave, Arkansas

BRYAN BAIN NEAR NEEDLES EYE

Photo, Scott Dankof



Fitton Cave, Arkansas
PAST THE MANHOLE

BRYAN BAIN, STACEY CYPHERT, STEVE THOMPSON IN PASSAGE

Photo, Scott Dankof



Fitton Cave, Arkansas, Gypsum Flowers in the passage near the Out Room

Photo, Scott Dankof

DIVING FOR CAVE

Randal Quarry, Worth County, Iowa
June 30, and July 1, 1990
Mike Nelson and Aaron Nelson

by Mike Nelson

I did one dive with Aaron on Saturday and two solo dives on Sunday. Although there were many joints, they appeared to be accentuated by the quarrying process, none the solutionally enlarged joint mentioned in the old cave file lead that Lowell Burkhead had sent me.

The quarry is much larger and more varied than what I have previously dived. There seem to be at least two "bowls", so if one circumnavigates the pool at a constant depth, he will not see all the quarry. One must swim up and over a ridge and go back down to get into a large bay on the southwest side of the pit. There also seem to be some fingers projecting out from the banks. There were many small isolated cliff faces that could contain the lead. I have not likely found them all on three dives.

The upper shelf of the quarry, where I assume the overburden ended and the bedrock began, was at a constant 10 foot depth. The cliff face was sporadic with a depth of 15 to 25 feet below the surface. The areas between faces seem to consist mainly of sand banks. Where the cliff faces did not reach the bottom of the pit, there were extensive talus slopes, some with quite large slabs of "breakdown". There is no telling when this occurred or if the cave lead is buried in this material, or, for that matter, if the cave itself was not a victim of the mining process.

Luckily, I have open permission to dive this restricted pit for this summer, we'll see what we'll see.

Of interest also, were stories by the tenant farmers of this site. They drilled an irrigation well about a mile and a half away and at a depth of 220 feet hit a cave conduit that was 10 feet high, putting the floor at 230 feet deep. They have never run this dry, not even during our last couple of drought years.

Another quarry, near the well site, dry at this time, has a spring issuing from its floor that runs 6 to 8 inches deep and 4 to 5 feet wide. There are also many springs at a prominent bedding plane on the wall, one of which is a full fledged waterfall. Test drilling to the east of this quarry revealed that the area was severely fractured and contained much water that would hamper mining activities, hence mining in that direction had ceased.

SUGGESTIONS FOR AVOIDING SNAFUS IN MEETING FOR PROJECTS

by Mike Nelson

1) Get an "Iowa Trout Fishing Guide" by the Iowa Dept. of Natural Resources. These can be obtained at hatcheries and many state parks and county conservation commission outlets. Also well organized city parks in Iowa's northeast counties keep some in stock. Get several, as there are many uses for them and the word that I have heard is that there are no future reprintings planned. So hoard what you get and don't loan them out lightly. These maps basically cover the vast majority of Iowa's karst-o-rama, and contain a fairly complete, accurate set of county road maps.

2) Keep one copy by the phone and one in your cavemobile. When speaking on the phone assume nothing about your own or the other person's communication abilities. Be specific. We'll use Livinggood Spring as an example, as it was the site that establishes the need for precision planning. Start from an un-screw-up-able point, we'll use Postville. Go north on Iowa highway 51 about 3½ miles to near the north edge of Postville Township section 16. Turn right (east) and follow the paved road that runs diagonally northeast across section 9 and turn left (north) at the first gravel in section 10. We'll meet at the last farm house on the left in section 3, just before the road goes back east and crosses the bridge over the Yellow River. The worksite itself is north of the house and west of the section 3, both printed on the map.

If you are the "planner", have this all figured out before calling each of the "plannees". If people from several locations are coming, it's always nice to split up the phone bill, but probably more practical to have each contacted party give the planner the names and numbers of other interested parties and let him make the contacts. That way, if everybody gets lost, they should all be in the same place, mitigating rescue efforts. If these efforts fail, then there's only the one scapegoat to point the communal finger at.

When possible, it is best to start from a more obvious point; be at the Wall-Mart parking lot in Decorah at 10:30 a.m. Come early, no one in their right mind will wait more than ½ hour before proceeding with the plans. This isn't always possible, as with the "Livinggood Dig". We had people coming from different directions at different times.

Editor: Yes, great rules to live by except- Get a set of county road maps for the cave counties in the northeast part of the state. The trout fishing guide assumes that you have perfect vision and built in magnifiers. They are MIGHTY SMALL. I find it difficult to use the phone and handle the map and magnifier at the same time as well as the cavemobile and the map and the magnifier at the same time.