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Lowell Burkhead

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I N T E R C O M

Published Semi-spasmodically By

THE IOWA GROTTO

National Speleological Society



Volume XXVII Issue 3

May - June 1991

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Volume 27 No 3

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. Membership to the Iowa Grotto is \$12.00 per year and INTERCOM subscriptions only, 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 in the hands of the Editor by September 14, 1991. Send articles, trip reports, photograph negatives, prints or slides, artwork, cartoons, etc. 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
NCRC
1-800-851-3051

Iowa County Emergency Management
1-319-642-3151

This number calls out Iowa Grotto rescue personnel

Cover: Beth Welch admires formations in Tourist's Delight Cave at Maquoketa Caves State Park in Jackson County, Iowa. Photo by Mike Lace



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

Chairman - - - - - Mike Lace
Vice Chairman - - - - - Marc Ohms
Secretary Treasurer - - Jay Wells

Volume Twenty-Seven

Issue Three

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IOWA GROTTO MEETING MINUTES

Regular meeting May 22, 1991

The meeting was called to order by Chairman Mike Lace with eleven members present. The minutes of the previous meeting were read and approved. No Treasurer's report was given. TRIP REPORTS: Greg McCarty reported on a trip with John Fuhrman. He reported that Wagner Cave was dug back open. It had been plugged with silt and trees. Marc Ohms reported on a trip to Backside Bonside with Pat Schenck and Gary Engh. 252 feet were surveyed and 70 feet were surveyed at Open Cut Cave. Both caves are in the Timber Ridge area. Mike Lace reported on a survey trip with Stacey Cyphert and Marc Ohms to the Dubuque area. River View Cave, Train Cave, and Rail Cave were surveyed. They also checked a 20 foot pit which was later called Hair In Rack Cave. Marc Ohms reported on a photo trip into Becker Quarry Cave with Pat Schenck. He also reported on a lead checking trip in Wisconsin. Jay Wells reported on a Coldwater Cave survey trip with Larry Welch and Stacey Cyphert. A passage off Pete's Pipe was pushed and surveyed. Jay also reported on the MVOR weekend trip with Dave Schwendinger and Bryan Bain. Caves included Tunnel, Indian, Bat, and Skaggs Caves in Missouri. Mike Lace reported on a trip with several others to Wonder Cave. He reported that a rock fall had wiped out some of the old stairway. The group then went to Decorah to the Decorah Ice Cave, Cave Man Cave, and Devil's Hole Cave. FUTURE TRIPS: NSS Convention. A beginner's climbing class at Dutton's Cave. A beginner's cave trip to Jones County in July. A Dubuque mock cave rescue June 2. A vertical rescue class September 8. The Grotto Picnic August 3 and 4. A beginner's survey trip in July or August. OLD BUSINESS: The Cave File is published and is in the grotto library. If anyone would like to see it, contact Lowell Burkhead to set up a time. NEW BUSINESS: Gerry Engelken, the owner of Engelken Cave, in in Mercy Hospital in Cedar Rapids following an automobile accident. His wife was killed. The meeting was adjourned at 8:30 p.m. A slide show of Honey Creek Cave followed the meeting.

Regular meeting June 26, 1991

The meeting was called to order at 7:42 p.m. by Chairman Mike Lace with 14 people present. The minutes of the previous meeting were read and approved. The Treasurer reported \$186.02 in the club treasury. TRIP REPORTS: Greg McCarty reported on some road cut crevice caves in the Gouldsburg Park area. He checked Yausla Cave near West Union. Greg checked several caves after the flooding in the area. Dutton's Cave had an 8 to 10 foot wide roaring stream coming out of it's entrance. Park Edge Pit was overflowing. Water at the mouth of Falling Spring was shooting out 10-15 feet. Greg later made a trip into Yausla Cave. The sump area was completely sumped out. The mock cave rescue with Dubuque Rescue was discussed and critiqued. It was the feeling of all the cavers involved that it was very beneficial to both parties with room for some improvements. Mike Lace reported on a survey trip to Dubuque with Marc Ohms and Stacey Cyphert. 600 more feet were surveyed in Becker Quarry and 350 feet were surveyed in Cleveland Circle Cave. Mike Lace and Marc Ohms surveyed in Becker Quarry Cave closing two loops. Two other survey trips were reported in Becker Quarry Cave. The first trip with Marc Ohms, Pat Schenck, Bert Jagnow and Chris Beck netted 262 feet through some very tight areas. The second trip was with Mike Lace, Stacey Cyphert, and Jay Wells in the Waterfall Passage area. The survey is nearly complete and now stands at 4400 feet. Marc Ohms reported on a CRF survey trip with Mike Lace to Mammoth Cave. They also visited Hidden River Cave and Horse Cave in Kentucky. Mike Lace reported on a trip to Bogus Cave and the surrounding area. He also reported on a Coldwater trip with Scott Dankof and Wanda Flatland. Al Jagnow reported on a trip with Bert Jagnow to Indian Bluff Cave and checked the surrounding area. Marc Ohms and Pat Schenck surveyed 175 feet in Theisen Cave in Dubuque. FUTURE TRIPS: Jones County trip sometime in July. The NSS Convention in New York. The Iowa Grotto Picnic August 3 and 4. Two different vertical training classes. The Hodag Hunt in Wisconsin and the Corn Feed in Minnesota. OLD BUSINESS: A collection of Iowa Cave maps may be printed in time to be on sale at the Grotto Picnic. Lowell

Burkhead has "Safety Racks" for sale for \$40 plus tax. The meeting was adjourned at 8:45 p.m. After the meeting a slide show was presented by Marc Ohms.

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TRIP REPORTS

FLORIDA CAVE DIVING TRIP

January 5 - 12, 1991

by Doug Schmuecker

Doug Schmuecker, Mike Nelson, Dave and Sue Ecklund

Mike and I had an around-the-clock drive to Northern Florida. The four of us were to complete our full cave diving training. I was to use a separate instructor and dove different sites. Some of the locations included:

Teford Spring

Manates Spring

Blue Spring, Madison Co Little River Spring, High Flow

Peacock System

Devil's Ear & Devil's Eye, High Flow

Several dives were decompression. The four of us made it through. Possible interest to several grotto members was the round-the-clock trip back. That netted Schmuecker a speeding ticket.

COLDWATER CRAMPS

Coldwater Cave, Winneshiek County, Iowa

April 20, 1991

by Marc Ohms

Marc Ohms and Mike Lace

Mike Lace and I entered the cave around 11:00 a.m. and headed downstream to Cascade Passage. The water was high due to all the rains. We went up to Rolling Hills Dome and surveyed a side lead. It is a low passage off to the left. It contained an 8 inch deep pool with stuff floating on the top. I was forced to lie directly in the pool while surveying this grimy passage in which we surveyed 50 feet in and set a chip. The passage will continue with digging and lower water levels.

Our next lead was about 200-300 feet before Rolling Hills Dome; this one was just as grimy. We surveyed aprox. 60 feet into it and set a chip. This passage continues as a low, wide crawl with a small amount of water. We stopped our survey here. I was getting very bad stomach cramps and wanted to get out of the crawlway. We later called this passage "Cramp 'em Up Crawl". The first passage is called Pungant Pool Passage. They both need more pushing in times of lower water. As we were packing up to leave, we met the other party consisting of Jay, Stacey, and Larry, who were further up in another passage and then exited the cave in time for pizza.

(Notes included with this report are as follows: 1. Sorry it looks like crap, I did not use my own typewriter and this one sucks! 2. My fault this report is late. Marc asked me to make some corrections and it got lost in my desk pile. Mike)

MISSISSIPPI HAT TRICK

Riverview Cave, Train Cave, and Railroad Cave, Dubuque County, Iowa

May 11, 1991

by Stacey T. Cyphert

Mike Lace, Marc Ohms, and Stacey Cyphert

As we walked along the railroad tracks beside the Mississippi River, Marc told Mike and me about the bodies that had been found in this area. This certainly made the walk exciting. There is nothing like feeling you might not get back alive from caving.

Mike and Marc had previously visited Riverview, Train, and Railroad Caves during the low vegetation season. At that time they were relatively easy to find. Dense undergrowth covered the steep hillside now, however, obscuring the entrances. Nevertheless, both Mike and Marc were confident they knew exactly where the caves were. Unfortunately, someone must have moved the caves because we had to spend a good deal of time plowing through thick brush hanging precariously from the side of the hill. The caves are still there, though, because we found all three.

Riverview Cave is approximately 19 meters long. It has a small upper passage at the entrance but the majority of the cave is entered through the lower passage. This cave is primarily hands-and-knees crawling size. A couple of raccoon skulls were found among the rocks on the floor. Train Cave is roughly 58 meters of passage. It is more interesting than Riverview as it contains several side leads and chimney opportunities. Much of this cave is walking size passage. A few formations and a bat were observed in this cave. Train Cave has a second, small entrance which is not large enough for human use. Railroad Cave is almost 91 meters of passage. It is essentially a straight cave varying between stoopwalking to walking size passage. The day we visited we found a dead raccoon in the entrance fouling the air. This cave had several bats. Mike and Marc recalled it was filled with bats on their previous visit.

As we exited Train Cave we saw one of the riverboats with a gambling casino heading up the river. It was a pretty sight from our perch overlooking the Mississippi. It must have brought us good luck too since we were able to pull off a hat trick, surveying three caves in one day.

INDIAN BLUFF CAVE

Pictured Rock Park, Jones County, Iowa

May 11, 1991

by Doug Schmuecker

Doug Schmuecker, Jay Wells, 9 Cub Scouts and Daryl Kriegel

Jay and I agreed to lead a group of Cub Scouts on a beginning trip. We made sure there were helmets and spare lights to go around. Everyone should take a trip like this.

WHILE IN KENTUCKY

May 24, 1991

by Marc Ohms

Marc Ohms and Mike Lace

Mike Lace and I were in Kentucky for a CRF Memorial Day weekend expedition. We arrived early and drove down to Horse Cave City, which is the location of the American Cave Conservation Association. We met Dave Foster who gave us a tour of the soon-to-

be karst museum and then took us down to the entrance to Hidden River Cave. This is a large sinkhole entrance, which was a tourist cave years ago. It has a bad odor coming from the cave but Dave informed us that it used to be worse. The clean-up of this cave is a project of the ACCA. We then went to Mammoth Cave for an awesome weekend of caving.

MORE CAVE THAN WE THOUGHT

Becker Quarry Cave, Dubuque County, Iowa
June 1, 1991
Mike Lace, Marc Ohms, and Stacey Cyphert

by Mike Lace

Becker Quarry Cave is one of the longer caves in Dubuque County and it seems to look longer every trip we take into it intending to complete the survey. More than half of its length lies off the main passage and consists of a complex array of numerous intersecting joints; this is where we have to mop up the survey.

We began the day in a reasonably comfortable hands-and-knees crawl that eventually turned into a clearly unreasonable squeeze. Marc and I had neglected to tell Stacey, who was handling lead tape, just how far we had been down this particular passage on a previous trip. He was momentarily impressed with our fortitude as he tried to wedge himself into this awkward opening until we told him that we had never been beyond that point. The squeeze could be easily dug open even though you would swear that you could fit through it as is. The current line plot shows that this passage most likely connects with the longest of the four side passages (the Waterfall Passage), making a large loop. We tried to spot the other side of the connection later on but were unsuccessful. Plotting up the day's survey should give us a better idea where to look on the next trip.

We then crawled our way down the Waterfall Passage to extend the survey toward the passage end. To get there, you have to bellycrawl a good part of the way and I had told Stacey that hooking your cave pack to your foot and dragging it behind you worked pretty well. After following me down the passage, he must of thought it worked pretty well too because he then hooked his pack onto mine while I wasn't looking. Being a little "slow", it took me a while before I realized that my pack was heavier than it ought to be. Thanks Stacey.

On a previous trip, we tied off the survey where a walking size passage intersected the crawl we were in. We surveyed the side lead first, thinking that it only went 100 feet but didn't reach the end until 200 feet later. All three of us felt a little chilled at that point and warmed up by continuing the survey along our original route. It was stoopwalking most of the way with pooled water on the floor and some active flowstone on the walls. I think it's fortunate that the finer speleothems are in the distant reaches of the cave where they're safer from vandalism. It also makes the trip out there that much more worthwhile. We tied off the survey right before the last crawling stretch before the terminal walking section and headed out, picking up the odd bits of trash (batteries, pull tabs, etc.) along the way. The cave survey total now stands at approximately 3600 feet.

ONE MORE CHECKED OFF THE LIST

Cleveland Circle Cave, Dubuque County, Iowa
June 2, 1991
Marc Ohms, Mike Lace, Stacey Cyphert

by Marc Ohms

It was Sunday morning and we were to meet at Hardee's at 11:30 a.m. for the Dubuque County mock rescue. This left us some time.

This past winter Mike and I found Cleveland Circle Cave but did not enter so today we decided to go survey it. After crashing through the jungle of brush we stumbled across the entrance which is a small hole at the base of a small outcrop. Once inside, it opens up to a hands and knees crawl and has a few rooms where one can stand. It contains some flowstone and small stalactites, plus a nice cephalopod fossil. The cave was blowing air and did not want to end, and we were running out of time. We came across a muddy, watery crawl. I was doing book until this point but somehow ended up doing lead tape through this passage to the end. Just like the saying "Don't send a boy to do a man's job!"

The cave ended up being 344 feet long, much longer than I expected. (See map in this issue)

DUBUQUE COUNTY MOCK CAVE RESCUE

Becker Quarry Cave, Dubuque County, Iowa

June 2, 1991

by Doug Schmuecker

Doug Schmuecker, Jay Wells, Stacey Cyphert, Mike Lace, Marc Ohms, Al Jagnow, Bert Jagnow and about 18 members of Dubuque County Rescue

We met Dubuque County Rescue at Central Firestation, exchanged introductions and briefed everyone on what we'd be doing and went over equipment needs. At the cave Mike, Jay, and Bert went in, with Bert being the victim. The Air Passage was used in the mock rescue. There were no major problems and everyone worked well together. We debriefed at the cave entrance. They want to drill with Grotto members again next year. Further, they're going to help us gain access to certain currently closed caves in the area.

BECKER QUARRY CAVE SURVEY

Becker Quarry Cave, Dubuque County, Iowa

June 9, 1991

by Marc Ohms

Marc Ohms, Pat Schenck, Cris Beck, and Bert Jagnow

On 6/9/91 we went into the cave to continue on with the survey. We went into the Waterfall Passage to pick up where we left off the last trip. The passage quickly got real small and the survey went real slow. Soon we got into larger passage and things sped up. There is a tight spot which is challenging to get through and even more so to survey. Beyond that is the prettiest part of the cave. We surveyed a total of 262 feet.

LOOPED OUT

Becker Quarry Cave, Dubuque County, Iowa

June 14, 1991

by Mike Lace

Mike Lace and Marc Ohms

It was Friday, a work day, so we went to work in Becker to tie up a few odds and ends in the survey in our quest to complete the (censored adjective) map by the end

of June. The first side passage on the left, the "Cephalopod Passage", was almost connected to the second left-hand passage, the "Waterfall Passage", by a small crawlway. There were several side passages leading off the Waterfall Passage toward the connection but it wasn't until after Marc plotted up the last trip's data that we narrowed it down to two.

Marc crawled into the first one we came to and soon returned to report that we had hit the right one. He had seen the rock cairn we had set on the last trip to mark the end of the survey. We pulled out the survey stuff and ran the survey into a small but not too uncomfortable crawlway. The uncomfortable part came when we had to make that last shot to connect through a squeeze where Stacey had thought he might get stuck before. With helmet off and a slow squirm, it was finished. Now we had to check two other side leads branching off of this junction.

Marc took one, I took the other. Marc's went a short way to a low room and ended. Mine turned into a roomy hands-and-knees business that looked like it was going to take off after a junction up ahead but then I saw the poker chip. The chip we set at the second possible connection point on an earlier trip. We succeeded in closing not one but two linked loops.

We closed out the day by surveying the next side lead in the Waterfall Passage to its grim end. We exited, satisfied but leary of the remaining side passages to be surveyed and the surprises they might also be saving for us.

WANDA WALKS WAY INTO COLDWATER AND GETS A WASHBOARD

Coldwater Cave, Winneshiek County, Iowa
June 15, 1991
Mike Lace, Scott Dankof, and Wanda Flatland

by Mike Lace

A series of fast moving thunderstorms had pumped enough water into the cave to raise the water level at least $\frac{1}{2}$ foot from last month's reading. Any trip to the active survey areas was scrapped until the weather settled down so the three of us decided to take a more reasonable trip. Scott needed to scout out new photo locations upstream, Wanda wanted to get her feet wet after a several year absense from the cave, and I was interested in taking a brief inventory of any formation damage along the way.

We set out upstream first, wading through a stiff current of murky water. Usually we're in more of a hurry to get somewhere, rarely taking the time to enjoy the more subtle characteristics of the passage and its formations. It was a genuine treat. On our return, we passed North Snake Passage, noting the water exiting it was clear, while on the opposite side, the South Snake Passage was coughing out a muddy stream. We then passed a small infeeder just downstream of the South Snake Passage that dribbled clear water over a scalloped yellow wall of limestone. Wanda asked if this had ever been named and, finding that it hadn't, commented on its resemblance to a washboard. This tiny waterfall is now called "Wanda's Washboard".

We continued past the platform to the Gallery. I climbed up the right embankment to check on Friday Night Dome and Bertha's Balcony (a 150 ft long upper cut-around) showed more evidence of traffic. I counted about thirty broken soda straws and mud-slopped flowstone. The straws are irreparable, of course, but some of the flowstone could easily be cleaned up.

I really don't know how long we were in the cave but even though we didn't wander far from the shaft entrance we still found something new to see and more to do on the next trip.

KARST FIELD STUDIES

Mammoth Cave, Kentucky
June 16 to June 22, 1991

by Marc Ohms

I attended the Karst Field Studies held at Mammoth Cave. I was in the Karst Geology course taught by Dr. John Mylroie and Richard Zopf.

I and a few others arrived early Sunday morning and the course did not start until the evening. I knew of a cave outside the park but have never visited it, and it did not take long to get a trip going. The cave is called Indian Cave and is located in a very large sinkhole. Once inside, the passage size was about 45 feet wide by 25 feet high. This size varied little as we ran down the passage. After 3000 feet it ended. We then turned around and went back to a side passage. This was just as large but ended at about 1000 feet.

That evening Dr. Crawford welcomed us as the course started. A speleology course was also being taught by Roger Brucker. There were about 40 people total. The next morning started with lecture and slides as did every morning. After lunch we looked at some surface features. Our first stop was a roadcut to look at some dissolutional features. Next, we went to Cedar Sink. It is a very large sink, an actual karst window. We went into Owl Cave located on one end of the sink. It is about 500 feet long but of large size. Next was Smith's Valley Cave. This cave has two entrances which soon connect and lead to a water passage. The cave is about two miles long. We then looked at South End Cave located in the south end of the sink. It is about 2000 feet long. We looked at other features in the sink before leaving. After supper we went into Mammoth Cave via the historic entrance and went to Mammoth Dome and wandered around on the trails. We ended up down at Echo River.

The next day after lecture we went into Great Onyx Cave. We wandered around in here for a few hours observing the cave. After supper we went into Mammoth Cave via the New Entrance and out the Frozen Niagra Entrance. We went down to Crystal Lake which was used for tours. There was a boat and we took turns cruising the lake. After lunch the next day we went into the cave by the Austin Entrance. On the dirt road to the cave was a large fallen tree. We all got out of the vans and spent half an hour moving the tree. After one hundred feet we ran across a larger one that we could not move. Once in the cave we went down Pohl Ave. and up Brucker Breakdown into Turner Ave. Turner is filled with gypsum of all forms, flowers, cotton, and hair. We turned around and headed out. It was an awesome trip.

The next day we went into Salts Cave and into Lower Salts and did a large loop. We came to a spot where we were to pop back up into main trunk and it was tight. The guy in front of me was larger than me and had trouble getting through. He had to strip down and I pushed on his feet to force him out. It took an hour and a half to get 16 people out. The object of the next day was to enter Crystal Cave and for us to interpret the cave and write a summary. It was a short trip only lasting a few hours. This was the last day and the course was over in the morning. A few people wanted to hang around another day to do some more caving and we agreed we all wanted to get on rope. We entered the cave via the Carmichael Entrance and walked through the Snowball Dining Room and out to Cathedral Domes. Here there is a rope rigged to the top where there is passage. I went up second and at the top we nosed around a while before rappeling back down. The drop was 110 feet into an incredible dome and was entirely free. It was the nicest drop that I have done.

This ended an awesome week of caving. I learned a great deal in the course and recommend it to anyone.

THE IOWA GROTTO

What is the Iowa Grotto? It is a group of average people who find and explore and study caves. It is a productive marriage of recreation and work. It is mountain climbing in reverse (and in the dark), a new low in sports afield. Iowa's mountain climbers look out over Iowa; we look under it! Though we have many projects and scientific studies presently underway or in the planning stages, the obtaining of the information is our main source of enjoyment.

We use rope techniques for entering deep shafts, rubber wetsuits for the exploration of underground rivers and lakes, and SCUBA equipment for the exploration of water filled caves and pushing past sumps in dry caves. The fun of developing new techniques and equipment, the challenge of accurate mapping, the underground high of finding new caves and exploring virgin passage and the fellowship of working together toward a common goal are all part of the recreational activities of this organization.

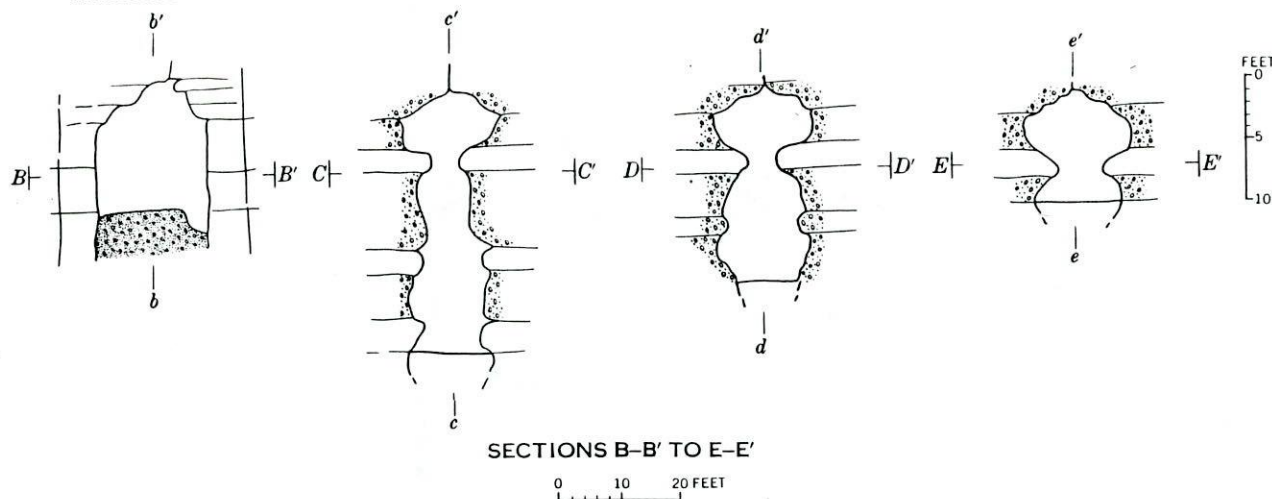
Who can join? Anyone 15 years of age or older and has some time to spare and would like to view a portion of Iowa seldom seen or would like to help explore Iowa's last frontier is eligible. If this kind of sport interests you, long crawls, lots of cold mud, wading, crawling, and swimming in 47° F. water, 100 foot plus rope climbs, miles of virgin passage, fantastic underground scenery, etc., we encourage you to join us and learn the techniques that make such things possible. We also encourage students and scientists with formal research that could be done in the unique cave environment, sometimes completely untouched by man, to join us. We also encourage cave owners who have a need to know caving and cavers to join us.

The Iowa Grotto has been a local chapter of the National Speleological Society, the world's largest caving organization, since 1949. We have members all across the state of Iowa and in most of the surrounding states, although most of Iowa's caves are in the northeast part of the state. We meet the fourth Wednesday of every month at 7:30 p.m. in room 125 of Trowbridge Hall on the University of Iowa campus. Even though most of our members live too far away to attend, we are brought together by our common interest, and brought close by special friendships wrought by shared hard work and hardships and the learning of our physical and mental limits together, whatever they are, and the pushing beyond those limits. We also have two publications that keep everyone informed and entertained. If you wish further information, contact the Iowa Grotto, P.O. Box 228, Iowa City, Iowa 52240 or contact Mike Lace, grotto Chairman at 319-351-1658. IS THERE A PLACE FOR YOU UNDERGROUND? YOU BET! AND WE'LL HELP YOU FIND IT.

The following three maps of the East & West Lockey Drybone Mines and the Royce and Frost Mine (Billboard Cave) were drafted by C.E. Brown (1953) and are reprinted from:

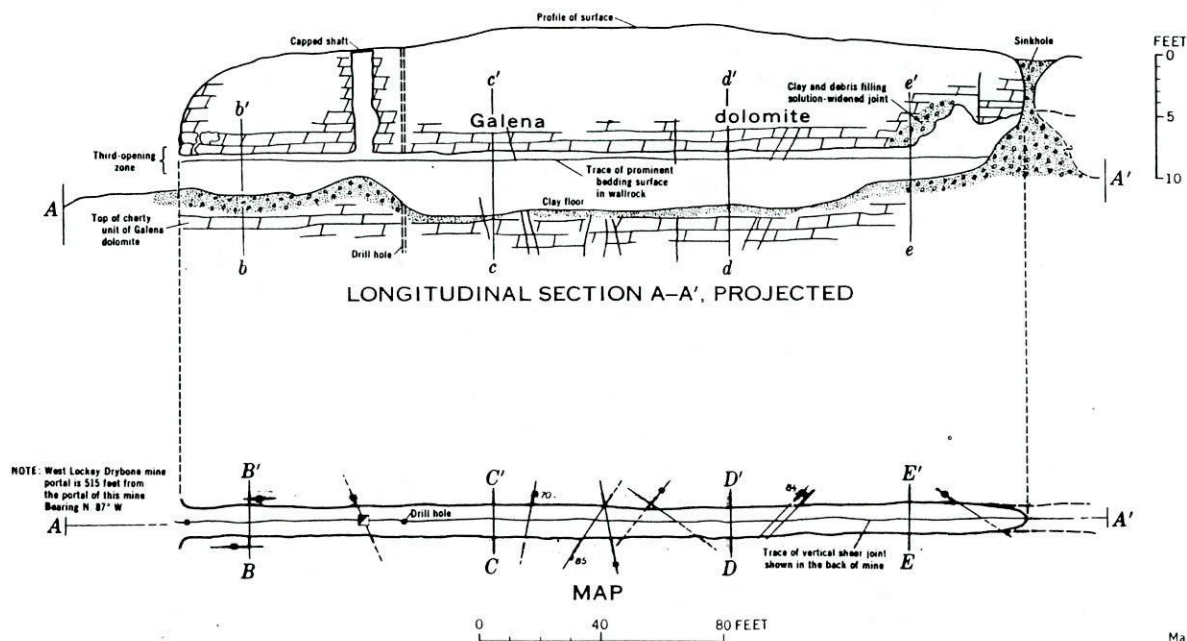
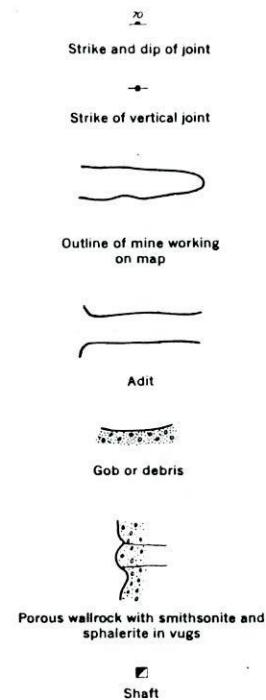
The Geology of the Dubuque South Quadrangle of
Iowa - Illinois, by C.E. Brown & Jesse Whitlow,
Geological Survey Bulletin 1123-1

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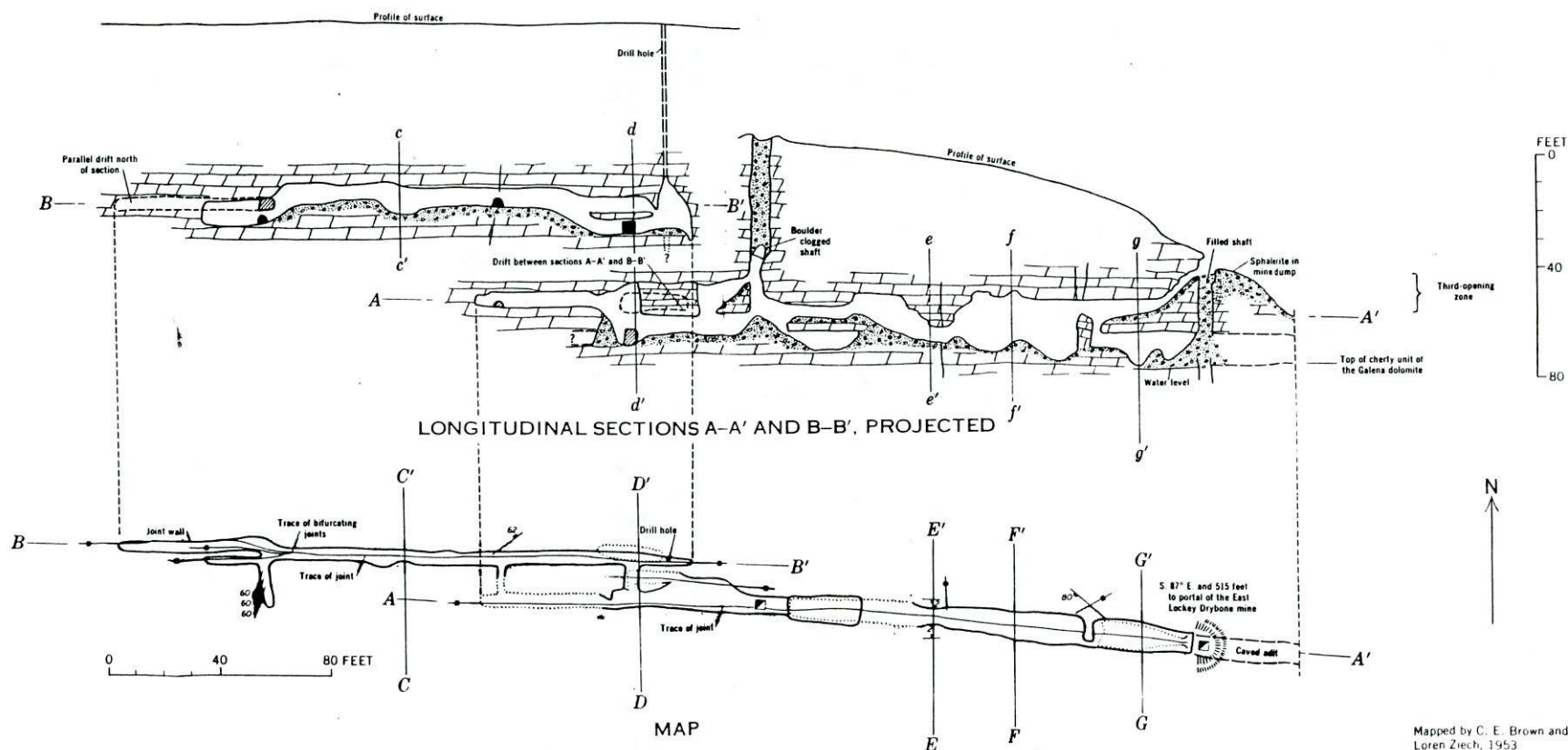
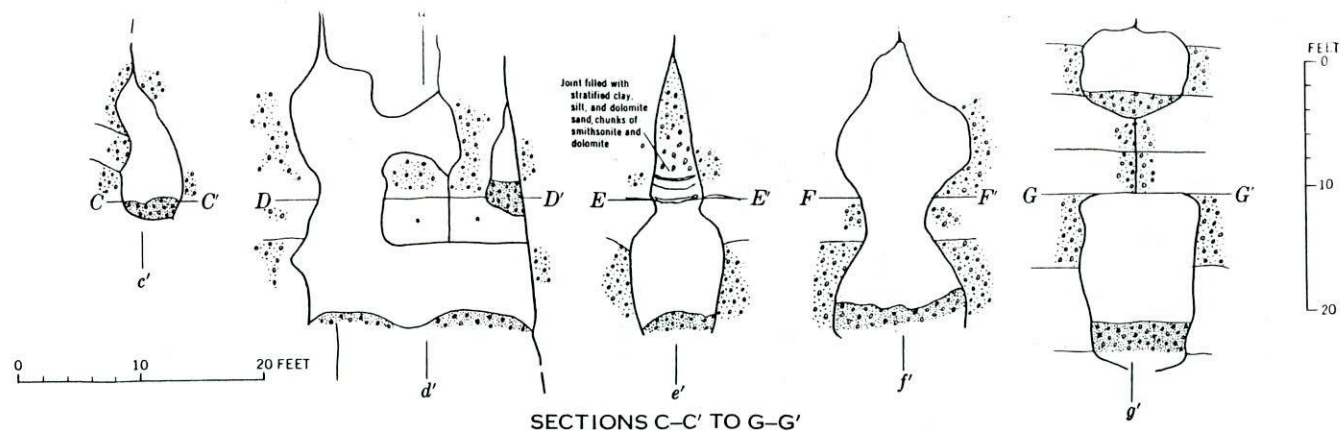
SECTIONS B-B' TO E-E'

EXPLANATION

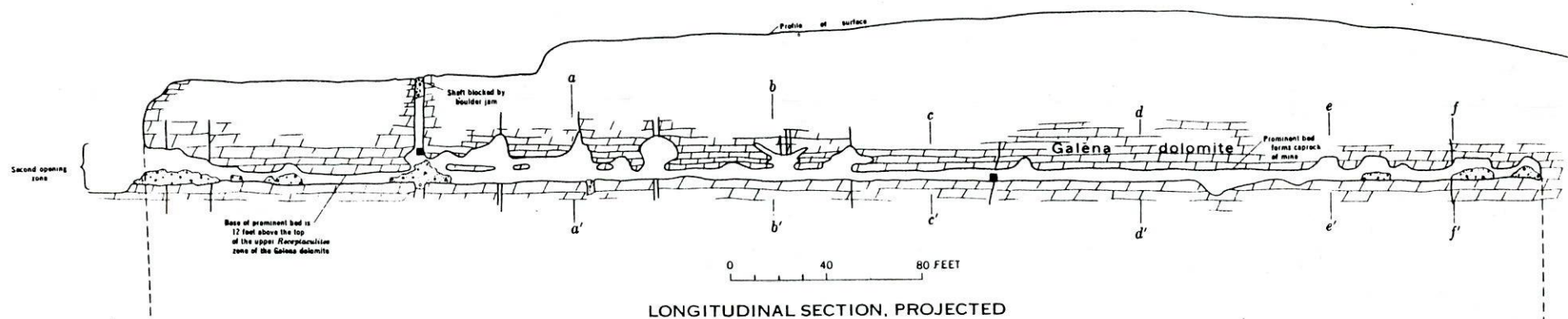
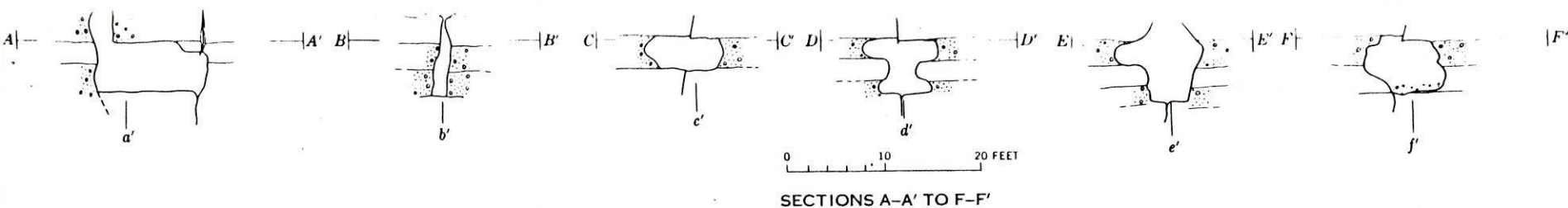


MAP AND SECTIONS OF THE EAST LOCKEY DRYBONE MINE,

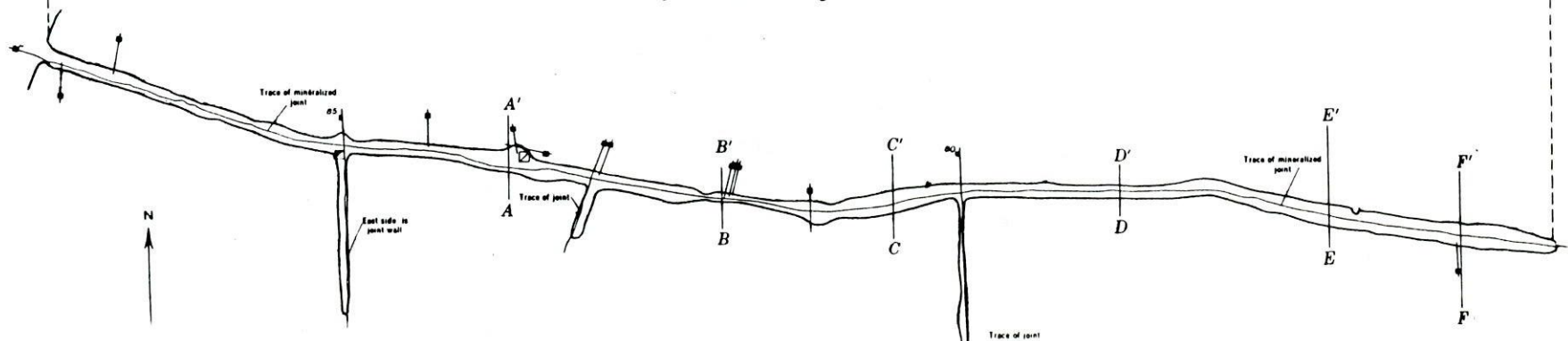
Mapped by C. E. Brown, 1953



MAP AND SECTIONS OF THE WEST LOCKEY DRYBONE MINE,



Map and Sections of the Royce & Frost Mine (Billboard Cave)
Dubuque County, Iowa

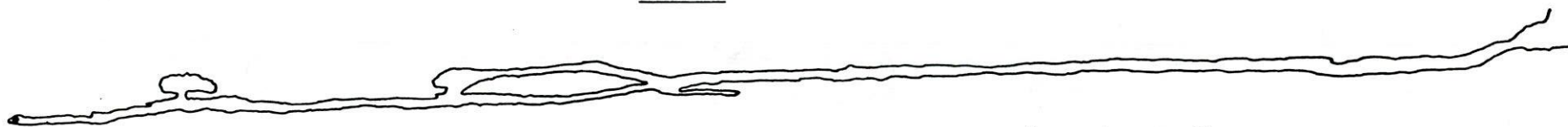


Cleveland Circle Cave
Dubuque County, Iowa



Total Length - 350 ft

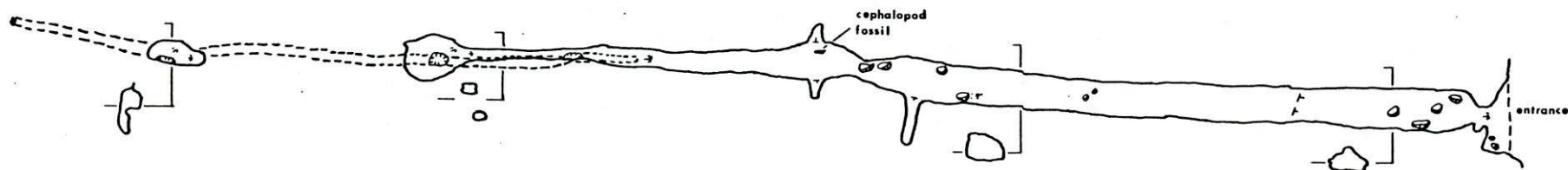
PROFILE VIEW



0 meters 10

0 feet 30

PLAN VIEW



compass & tape survey
by
Cypher
Lace
Ohms

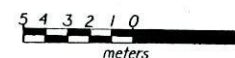
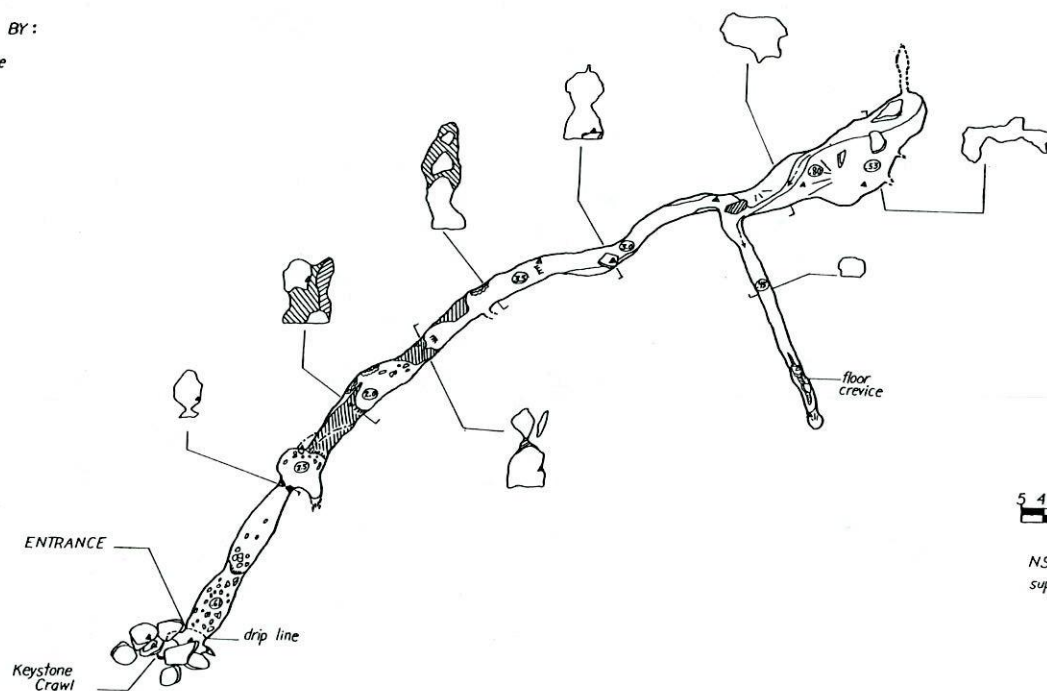
Marc Ohms

WILSON CAVE

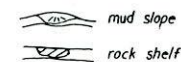
FLOYD COUNTY, IOWA

SURVEYED BY:

Michael Lace
Larry Welch
Mike Nelson



NSS STANDARD MAP SYMBOLS
supplementary symbols:



CRG Grade 5 Survey
Surveyed Length 66.50 meters
Michael Lace Winter 1988

