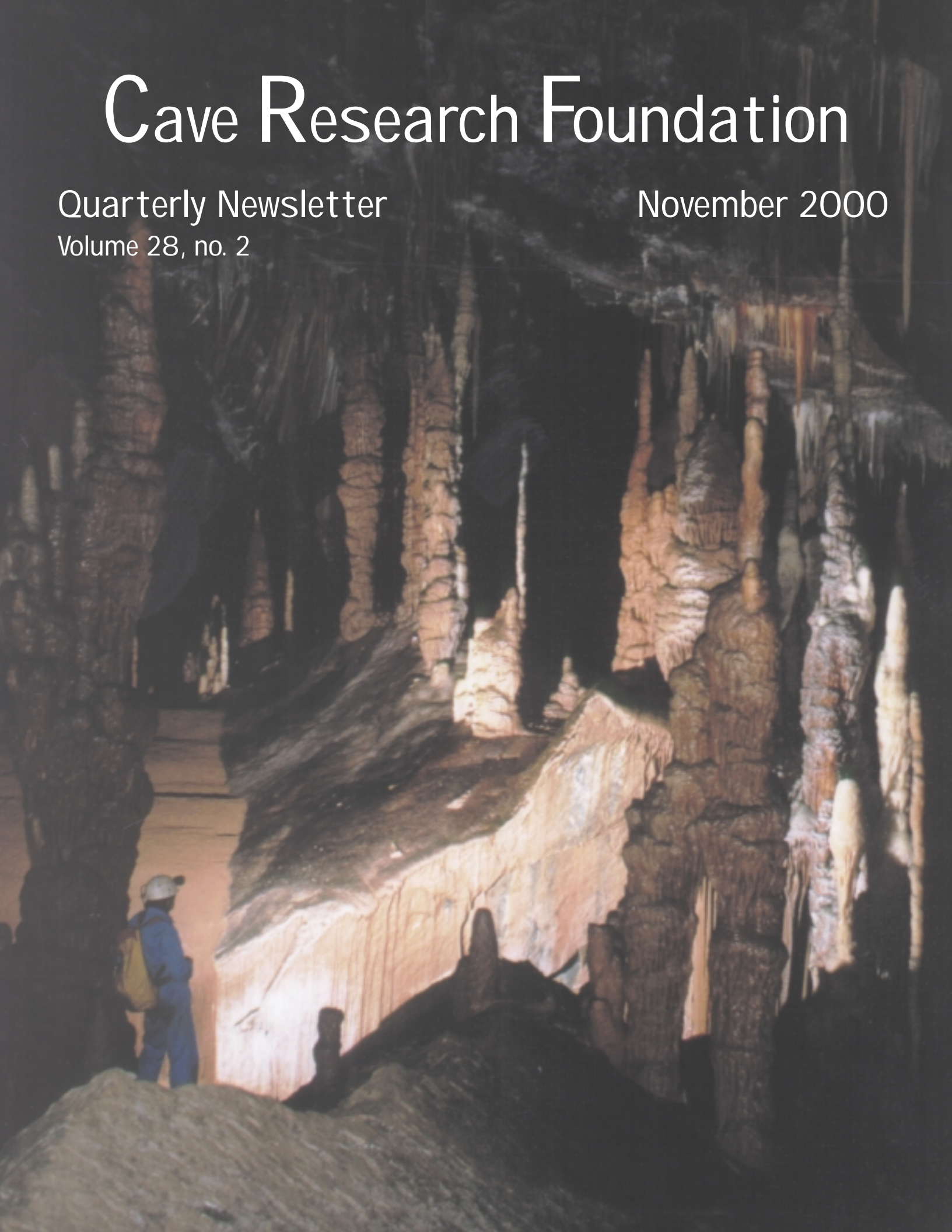


Cave Research Foundation

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CRF NEWSLETTER

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Paul Nelson, Editor
2644 Quarry Lane #D
Walnut, CA 91789-2864
Phone: 909-869-7623
california_caver@yahoo.com

The CRF Newsletter is a quarterly publication of the Cave Research Foundation, a non-profit organization incorporated in 1957 under the laws of Kentucky for the purpose of furthering research, conservation, and education about caves and karst.

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For information about the CRF, contact:

Pat Kambesis, CRF President,
P.O. Box 343 815-863-5184
Wenona, IL 61377 kambesis@bigfoot.com

Message From The Editor

I hope you enjoyed the last issue and enjoy this issue even more. The last issue was mostly trip reports, because I needed to catch up. Hopefully, the following issues will be more articles and less trip reports. However, to publish articles I need people to submit material. Thankfully, Janet Sowers came through at the last minute with her article on Merrill Ice Cave.

You have probably noticed a big change in the introduction of color pictures. This is possible because I am taking a pre-printing class at the local city college, and this newsletter is a class project. CRF is only paying for materials. Hopefully, I can continue to print color photographs. Again, I encourage you to submit stories, pictures and artwork.

Many thanks to Howard Hurtt for proof reading and Richard Zopf for labeling and mailing the newsletter.

As a reminder, there will be only two issues of the newsletter for 2000.

Paul Nelson

CRF s website is :

www.cave-research.org

Contact your operations manager for the user id and password for the members only section

About the Covers

Photos by Paul Nelson

Front

Caver standing in the Ridgeway, Hall of Kings in Kubla Khan cave in Tasmania, Australia. Taken with an Olympus Stylus Zoom 115 camera and two flashes with slaves.

Back

Cavers in front of the Spider Gate at Crystal Sequoia Cave in California. Taken with an Olympus Stylus Zoom 115 camera, on tripod, and two flashes with slaves; one in foreground and one in background.

I have achieved good results in cave photography using a small compact 35mm camera. While it does have limitations compared to a SLR, its size and weight are an advantage in moving through a cave.

Presidents Message Home at Last

Pat Kambesis

Hamilton Valley was busy during October 1-7, as Eli Winkler, Mel Park, Rick Toomey, Joyce Hoffmaster, Sue Hagan, Mick Sutton, and I moved in the last of our stuff from the Maple Spring facility at the Mammoth National Park. Roger McClure supervised the delivery of mattresses to the bunkhouses and tables and chairs to the main building. Elizabeth Winkler, Mel Park, Stan Sides, and others installed the new stove and refrigerator in preparation for the upcoming weekend. Building Committee members Dick Maxey, Cheryl Early, and Joyce Hoffmaster put some finishing touches on the utility shed. Elizabeth Winkler, Sue Hagan, Mick Sutton, Bob Osburn, and others took care of various last minute details to ready for the weekend. Eli found time to sew up some lace curtains which made for a nice touch in the men's room. Dave Hanson and Lacie Brailey made improvements at the Hoffmaster House. Bud Dillon contributed dishes and furniture and Dave Weller got our phones working.

Of course Murphy made an appearance at Hamilton Valley, as things began to go wrong. On Thursday, it was discovered the stove was not set up for propane and a converter was needed to make it operational. Could we get one on such short notice? Then in the afternoon we were informed of the possibility of a problem with the water pump - there might not be any water for the weekend. These would be significant setbacks in view of the impending Friday dinner, Columbus Day expedition, and the Hamilton Valley Open House on Saturday. But we weren't going to let a few complications spoil the weekend festivities - alternate plans were made, and a few offerings were made to Oztotl. The latter must have worked because by Friday afternoon the water problem was solved and a converter for the stove was on the way.

On Thursday and Friday, CRF co-sponsored, with the Park, the 8th Mammoth Cave Science Conference. Of the 25 presentations, 17 had CRF people as authors or co-authors.

On Friday night, CRF hosted a social hour and buffet held in the main hall of the new facility. The sixty plus in attendance included CRF members and researchers, partners from Division of Resource Management and friends and neighbors of CRF. An excellent meal of beef stroganoff and stir-fried chicken was catered by CRF member Al Wellhausen.

Friday evening also marked the beginning of Eastern Operations Columbus Day expedition with

Chris Groves as expedition leader. As usual, cavers arrived during the early evening and all through the night continuing the ongoing initiation of the bunkhouses. On Saturday morning as Chris gave the expedition orientation and assigned trips, preparations began for the afternoon Open House and Inauguration. While indoor preparations took place, Roger McClure tended to grounds maintenance on the property. He must have picked up Murphy along the way since he drove Stan Sides' tractor into a sinkhole. A contingent of CRFer's rescued the tractor and in the process opened up an interesting digging lead.

The Open House and Inauguration went superbly. With the view of Hamilton Valley from the main hall windows as a backdrop, we acknowledged the Hamilton Valley Projects biggest benefactors: Roger McClure, Red Watson and Patty Jo Watson. Red Watson and Roger McClure were presented with matching rocking chairs (compliments of Don Coons) for their vision and support of the Hamilton Valley Project. They were also given the honors of conducting the actual dedication. A piece of webbing was strung across the fireplace; Roger cut the webbing and Red lit the first fire. Gordon and Judy Smith continued the honors by presenting Roger, Red and Patty Jo with a plaque mounted with the door of the first stove used by CRF during the Flint Ridge days at the Park.

In the early evening, 27 CRF cavers went to Adwell Cave to witness Roger Smith propose to his long-time sweetie Shannon Smith. (everyone knew the plan except Shannon). On the way to the cave, Roger fell back so that he could put on a suit. In the cave, Shannon was quite confused to see Roger wearing a suit and then drop down on one knee. She was still in shock after he popped the question but she finally did accept.

Once everyone filtered back to the main hall, they were further entertained with two slide shows - Mick Sutton and I showed Hawaii slides and Chris Groves did a China caves/research program. Everyone spent the rest of the evening milling about the fireplace, taking turns sitting in the rocking chairs and snacking on the rest of the food.

On Sunday, Chris organized more expedition trips and then joined Red Watson and Dave Weller (and a host of others) as they vigorously investigated the potential of a sinkhole on the property. The last word is that it needs more work.

In all, the weekend was a great success and hopefully the first in a string of many more.





Janet Sowers recording measurements inside the ice cavity

The Ice Cavity at Merrill Ice Cave

by Janet Sowers and Bill Devereaux

Photos: Peter and Ann Bosted

Introduction

Beneath the solid ice floor of Merrill Ice Cave, located in Lava Beds National Park in California, unbeknownst to visitors or monument staff, lay a large bubble-shaped cavity, contained wholly within the layers of ice that underlie the floor. How long it lay there we do not know, but it was growing. The ice cavity suddenly "appeared" in the fall of 1997, when its

roof breached the top layer of the ice floor and the hole created gave us a view into the ten-foot diameter chamber below. The cavity appears to have formed naturally, the result of air flow in the breakdown beneath it. It is unknown when the cavity began, but unfortunately, it continues to enlarge.

Background

In the spring of 1997 Janet Sowers and Peri Frantz of CRF took a short trip into Merrill Ice Cave to give a tour to the new Lava Beds interpretive staff. We noticed that there was an air gap of an inch or so beneath a thin ice crust in the middle of the ice floor. It looked as if the top of layer of water had frozen, then the rest of the water had drained out from beneath the frozen crust. We thought that was a little strange, but quickly forgot about it.

In November of 1997 Bill Devereaux took a CRF party into Merrill Ice Cave to make routine ice level measurements. They discovered a one foot diameter hole in the center of the ice floor just at the edge of the walkway. Looking down the hole they could see airspace of about 10 feet below and a dry chamber. They reported the phenomena to Barney Stoffel that evening.

Bill returned to Merrill in January of 1998 measured the ice hole that had been found during the Thanksgiving trip. It had increased in size by a factor of 4. Cold air could be felt going into the hole, carrying their breath mist with it. The area below the breach is an air dome where the ice has been sublimated away, leaving a reverse 'igloo' dome under the ice floor. There was one stanchion of the catwalk floating free with no support except for the bracing posts from the adjacent uprights. Later that day they went to see Terry Harris in his office to report their findings. They concluded that descending into the hole or walking on the ice floor above would not be safe, and that a survey should be made by qualified people into the hole to look for artifacts that may be there from earlier times. The monument temporarily closed the cave, then reopened it after posting warning signs on the railings above the ice.

In February of 1998 we revisited the cave with several other CRF and Lava Beds staff to thoroughly document the ice chamber. Two teams - Bill and Peri Frantz, and Peter and Ann Bosted - photographed the floor and cavity. Janet, Jonah Perez, and Peri measured cavity dimensions and made a sketch map and profile. Bill Devereaux measured ice levels on the floor above. Kelly Fuhman and Janet measured the depths of historical artifacts found (wood, flashbulbs, paper, etc.) embedded in the ice (Table 1). These depth measurements were made by hanging a tape vertically from the lip of the hole in the ceiling, and sighting a level line to the wall with an inclinometer.

Description of the Cavity, February 1998

As of February 1998 the ice cavity measured 15 feet in diameter, approximately round in plan view, with a dome-shaped ceiling about 6 1/2 feet high. The floor generally slopes toward the Northeast with the deepest part of the chamber in a pocket in the far north corner. At this end the ice is deeper and the walls have receded further, making the chamber slightly elongate in the northerly direction. The hole in the ceiling of the cavity (or floor of the ice pool) is located within the southwest quadrant of the cavity. It is an egg-shaped opening of about 3 x 2 feet, with the wider end of the oval toward the center of the chamber.

The floor of the cavity is dry breakdown, 1 to 4 feet in diameter, with no noticeable accumulation of fine sediment on or between the rock surfaces. The breakdown is littered, however, with broken flash bulbs and other trash that were apparently released from the ice. Air can be felt rising up from between the breakdown blocks in the center of the floor. The walls of the cavity reveal horizontally layered ice, studded with pieces of wood, paper, and flashbulbs that presumably had fallen on the ice over the years.

Artifacts in the Ice Layers

Artifacts are embedded within the ice layers exposed in the wall of the ice cavity down to a depth of 6 feet, almost the entire thickness of the ice. Table 1 shows the artifacts recorded during our visit, which included all significant items that could be found. The artifacts appeared to be in their original locations where they had frozen into the ice. We thus presume that each must have fallen on the ice floor of the time, and must therefore be contemporaneous or older than the ice layer that covers it. All artifacts are historical (no prehistoric artifacts were found), thus we can conclude that the entire ice pool is historical in age.

If the entire ice thickness accumulated in historical times, then at some point in historical time the ice pool must have been virtually absent. When? We can make an estimate using ice accumulation rates computed from the position of the 1956 newspaper, located at a depth of 3.6 feet. If we assume the newspaper actually fell on the floor in 1956, then in 41 years, 3.6 feet of ice accumulated on the floor of Merrill. This represents an average accumulation rate of 0.09 feet per year. The total thickness of historical ice (thickness above the lowest flashbulb) is 6.7 feet. At a rate of 0.09 feet per year, that flashbulb would have been deposited about 74 years ago, in approximately 1923. Of course, ice accumulation is rarely constant - in some years more ice accumulates, in others ice may actually be lost - so the actual date could vary by ten or more years. But it gives us some idea.

It is interesting to note that from about 1917 to 1921, Charles Henry Merrill operated a resort for tourists at Merrill Cave (Larson, 1990). Perhaps he used the cave as a source of water and mined out most of the ice. Or perhaps it had been mined out by previous visitors, and the flashbulb at 6.7 feet was dropped by one of Merrill's guests. Or maybe natural climate variations had caused most of the ice to be lost in those years.

Regardless, about 75 years ago the ice floor was 6.7 feet lower than it is today. In other words there was almost no ice in the pool at Merrill Ice Cave. And ice has been accumulating fairly steadily since that time. Until now, of course.

The Ice Cavity Continues

In February of 1999, we remeasured the ice cavity and found it had increased in size as expected, and the breakdown in the center of the cavity was still dry with no new ice forming. The hole in the floor measured 7.1 feet by 9.6 feet, and the inside of the bubble revealed a burned stick of lumber and a rusty can. These items sat directly on the breakdown, supporting our previous conclusion that all the ice in that pool had been historic in age.

Location Of Artifacts in The Ice Wall

Wall	Depth (feet)	Description
West	1.2	Bottom of metal post (for reference)
	2.1	Flashbulb
	2.6	Charred corrugated cardboard
	3.1	Flashbulb
	3.6	1956 newspaper
	3.9	Matchbook
	4.4	Flashbulb
	5.9	Piece of lumber, 0.15 x 0.15 x 0.58 feet
	6.1	Scrap of heavy paper
North	5.2	Lumber resting on boulder, 6" x 1.5" x ?
	6.7	Flashbulb
East	4.6	Flashbulb

In February of 2000, the hole measured 8.8 feet by 10.0 feet, but the inside diameter of the bubble had not changed much. We noted an interesting phenomenon on the surface of the remaining ice floor. What once had been a smooth, planar floor, almost suitable for ice skating, was now becoming quite irregular. The floor has a scattering of cobbles, either fallen from the ceiling or tossed on to the ice by visitors. The ice surface itself is built up in places with small ice stalagmites under ceiling drips, and is eroded in other places by the dry air.

Origin of the Ice Cavity

How do we explain this intriguing phenomenon? In order for an ice pool to accumulate in a cave:

1. The cave must be deep and have a single, relatively small entrance so that cold air can sink into the cave and maintain below-freezing temperatures
2. Rainwater must drip or flow into the cave and freeze

The Hole in the ice floor, February 1998. Janet Sowers and Ann Bosted.



3. The ice must coat the floor entirely and form a seal so that additional water will pond on top and add to the ice thickness.

In the case of the Merrill Ice Chamber, apparently a change in air circulation caused the very bottom of the ice mass to begin melting or sublimating (ice evaporates.) The seal was broken. Air continued to circulate at the bottom of the ice, eating an ever larger hole. Of course, the ice could continue to pond at the top of the ice mass as long as the top layers formed an effective seal for each year's new layer of ice. But eventually, in 1997, the hole broke through the surface. The pool could no longer deepen, for the layer of water that dribbles onto the ice floor in this spring will not pond but will run down the hole through the breakdown and be lost.

Some important questions remain unanswered. Why the change in air circulation? Why would a cave that has had a growing mass of ice for so long be unable now to maintain one? The air presently flows through the breakdown at the bottom of the former pool, eroding the ice. We can only speculate as to why. Perhaps a recent collapse in a lower passage has allowed air to flow upward. Could we find this lower passage? For how many years had the hole underneath the ice been growing before it broke through?

We hope that our future studies may shed light on these questions. For now the ice cavity at Merrill will remain a curiosity. We expect the cavity to continue growing, and that eventually most of the ice pond in Merrill Ice Cave will be lost. The National Park Service has now gated the Merrill Cave in the hopes that reduced visitation will allow the cave to evolve naturally.

Hamilton Valley Building Project Supporters

Paul Cannaley, CRF Treasurer

The following people have generously given to the Hamilton Valley Building Project since the last newsletter went to print:

Scott Cundiff
 Cheryl Early
 Dennis Drum
 Ed Klausner and Elizabeth Miller
 Ira Sasowsky
 John McLean
 Mick Sutton and Sue Hagan
 Peter and Ann Bosted
 Richard and Patty Jo Watson
 Roger Brucker

Hamilton Valley Readied For October Expedition

Final preparations are being completed for the first official use of the Cave Research Foundation's Hamilton Valley facilities. Both bunkhouses will have shelves, bunk beds, and mattresses donated by Roger McClure. When you sleep on these wonderful beds be sure to say "thank you" to Roger. The best way of doing this is to make a donation to help pay off our debt to the Endowment Fund. If every JV made another donation to Hamilton Valley, Roger would be more than pleased. We own a wonderful facility and even a small contribution shows that you support what CRF is trying to do. Most people have a tendency to take better care of something that they have helped pay for and I want all of us to have that feeling. Please give either as a first time contribution (which Jack Freeman will still match), or as another gift to CRF to help us retire our debt.

Many thanks to the Land Management Committee, chaired by Roger McClure. Roger also purchased and donated chairs and tables for the dining room. Mel Park is buying the stove for us and will be delivering it around September 31.

The grading and seeding of the lawn around the buildings has been completed and grass is growing! The sidewalks are poured and look great. The Occupancy Permit was granted on September 21, 2000, and I will do a final walk-through in late September. I have already given the contractor a long list of items to correct. It will have been almost a year since the project started, which was longer than anyone expected due to weather, time to make decisions, some changes, and the addition of other projects. I felt the time delays now will prevent something from coming back to haunt us later!

I expect some criticism, but I will take it much better if you have contributed money and have that "ownership" working for you! I hope the facility exceeds your expectations. If not, donate more money to make it more to your liking. Call me Red Jr.!

Thanks, and enjoy your facility! Richard Maxey, Building Committee Chair on behalf of the whole committee (Cheryl Early, Richard Zopf, Joyce Hoffmaster, Daniel Greger, Dave Hanson, and Elizabeth Winkler). Sheila Sands was on the committee for some time also and helped early on with the planning. I would also like to thank the two previous building committees for their work, which we just modified.

Regional Expedition Reports

Sequoia and Kings Canyon, California

Lilburn Cave

August 5-6, 2000 Expedition

Bill Farr

The planned dive was successful, with old dive line cleaned out and repaired as far as the main phreatic borehole. Carol and Damion surveyed in the 2x2 complex. Other highlights: the tree crew finally made it down Saturday to remove the hazardous tree, and Chris Phoenix got some bivouac experience up on Redwood Mountain. On Sunday, Carol and Jed organized the quads to help future survey efforts.

Participants: Bill Farr, Carol Vesely and Brian, Damian Grindly, Amanda Grindly and Damon, Christopher Phoenix, Jed Mosenfelder, Todd Niles, and Lisa Tesler.

Lilburn Cave Labor Day Weekend Expedition September 2-4, 2000

Peter Bosted

Only six cavers attended this expedition, but it was a strong team, and a good amount of work was accomplished. Bill Farr, Paul Nelson, and Jed Mosenfelder hiked in Friday night, while Peter Bosted, Charlie Hotz, and Lynn Jesaitis hiked in Saturday morning. They split into two teams, and both headed into Lilburn around noon, bound for the most remote and most promising leads left in the cave.

The first team of Jed, Bill, and Lynne proceeded to Southern Comfort carrying a considerable amount of climbing gear. Although they had a map, it is quite complicated to find the route from the Mousetrack Passage to the southern end of Southern Comfort, and it took about six hours to get there. Breaking out the aid climbing gear, Jed led over the top of the 100 foot

drop that leads into the most southerly known extent of Lilburn (previously named Splash Down Dome by those who tried to climb from the bottom about 25 years ago). He did a low, exposed class five traverse, coming to the schist contact at the other side of the pit. He climbed up a 15-foot chute along the contact, and could see the chute continuing up for another 15 feet. This appears to be a relatively easy climb to large passage going in two directions. He left a rope rigged to a good natural anchor to facilitate a return trip.

The team left four ropes in the cave:

- Static rope across the pit, anchored on both ends with slings along the traverse;
- A 25-meter, 9-mm dynamic rope near the pit;
- A static rope of unknown length about halfway through Southern Comfort;
- The 40 foot pit near the beginning of Southern Comfort was left rigged.

The team took about five hours to exit the cave, returning to the cabin around 3:30 a.m. This is a cold, muddy, and remote part of the cave, but certainly worth another visit. In addition to the leads above the far end of the pit, several breezy questionmarks off of the passage that doubles back to upper Mousetrack are worth investigating.

The second team of Paul, Charlie, and Peter made the first trip of the year to Thanksgiving Hall. There was a short section of stream passage just beyond the Z Room where they got wet to just below their waists, but the rest of the stream passage was mostly ankle to knee deep. Charlie and Peter wished they had brought wetsuit booties, like Paul was wearing. With a little poking around, they found the 90-foot chimney climbed by Paul and Damian Grindley last year. Peter found the climb rather difficult, so Paul climbed the chimney and rigged a short piece of Goldline rope with sling attached to a natural bridge. This was left there for the next trip. There is still a lot of loose rock. One 15 lb rock hit Peter's pack, which was at the base of the chimney, and broke his camera box into many pieces. Amazingly, the camera seemed to be ok.

Lilburn Cave September 16-17, 2000 Expedition

Bill Farr

It was a small but successful trip.

After hiking in Saturday morning, Chris Phoenix and I went in to the cave to set up for a Sunday morning dive (4 hour trip). On Sunday, we made it into the cave at 10:00 AM. The dive accomplished the goal of pulling old line out of the silt in the deep section. Of course, the 4-foot visibility going in was

reduced to 4 inches on the return! The only excitement was a stage bottle regulator that went free-flow as I was trying to finish clipping it onto my body. Fortunately, the problem cleared itself after a couple of on/off cycles. Back at the surface, I discovered that the regulator had been twisted part way off the hose.

We were out at 4:30 PM and heading back up the trail an hour later. Thank you, Chris Phoenix.

Ozarks Region

July - August 2000

Mick Sutton

Mark Twain National Forest

Fieldwork for the past two months consisted of a single weekend-long trip to the MTNF Cassville district in Barry County in far southwestern Missouri. As in the case of the Chadwick area of the Ava District, heavy off-road vehicle has the potential for increased visitation and vandalism of the area's caves.

We first mapped and inventoried Chimney Rock Cave. This consists of 400 ft. of large passage ending in a short, wet crawl to a sump, with a few minor side passages. It was historically an Ozark big-eared bat site, but heavy visitation eliminated this colony some years ago (the species is now considered extirpated from Missouri). As far as we could tell, this cave, although well-known, is not receiving extremely high visitation, and seems to be beyond the present illicit ORV road network. It was good to get some baseline data, though, as the ORV road net is undoubtedly expanding. Biologically, the cave is quite rich. Highlights included an unusual sighting of a hoary bat (*Lasiurus cinereus*) in deep twilight, two species of stygobitic amphipod, and a tiny eyeless spider. The latter needs to be more closely examined, but it may extend the known range of the rare undescribed troglobite *Islandiana* sp.

We next split into two crews to inventory nearby short and wet Lohmer Cave and short and dry Sweet Potato Cave in the Radium Creek area. Lohmer Cave featured a troglobitic isopod species, *Caecidotea stilodactyla*, reported only once before in Missouri. Next day in the Radium Creek drainage, we inventoried Onyx Cave, probably the most heavily visited cave in the area, and within the current ORV zone. The entrance is marked on the USGS topo and an old Forest Service trail leads directly to it. Again, vandalism does not seem to have increased notably, although there is a great deal of old speleothem breakage and graffiti. The main entrance is a sink, and the resulting forest debris washed into the cave makes

for a richly-populated cave with a high diversity of terrestrial invertebrates.

Ozark National Scenic Riverways/ Missouri Dept. of Conservation

A large crew, including visiting paleontologists Rick Toomey and Mona Colburn, paid a visit to remotely-situated Mose Prater Cave (aka Chimney Cave and numerous other synonyms) for mapping and inventory. The 55 ft. entrance pit gives access to a trunk passage extending in either direction for a total of about 600 ft. The first excitement was the discovery of two live copperheads at the base of the pit. One of these was discovered inadvertently by touch, demonstrating that the snakes were not in an aggressive mood. After herding the copperheads out of the way, work progressed on mapping and documenting the rich assemblage of live fauna and faunal remains. The cave is most notable as a gray bat summer colony and Indiana bat hibernation site. The date of the visit was chosen accommodate these constraints. About 1000 gray bats were still in residence, and guano piles covered the entire floor of the eastern arm of the cave.

The Powder Mill Creek Cave survey advanced further into the unknown with three long, wet trips. The first two knocked off the last remaining inlet passage, the "ultra-wet lead," a low crawl off the third watercrawl. Water levels had moderated by several inches since the last trip, and the first crew mapped 500 ft., ending in a breakdown room with near-surface indications. The cave appeared to end here, but as has often been the case with this cave, a wet crawl continued. The follow-up team mapped through several more small breakdown rooms in relatively comfortable passage, 3-4 ft. high, then excavated the entry to a crawl, which led back to the continuing low-air-space stream passage. This led through another small dome before effectively ending in a near-siphon. The total surveyed on that trip to complete the inlet was about 500 ft. On the same day as the Mose Prater trip, another Powder Mill crew continued up the main passage, now the only remaining lead in the cave. The survey started 12,000 ft. upstream from the entrance and advanced under "rather nice" survey conditions (3 ft. high passage with up to a foot of water) for another 550 ft. without reaching an end. The cave is still trending well under the ridge and shows no sign of ending soon. It is just short of 8 miles long.

The following day, the paleontology crew visited Powder Mill to examine some large bones which had been noticed in the nearer reaches, about 2000 ft. from the entrance; the bones belonged to a deer.

Participants: *Chimney Rock* Scott House, Danny Vann, Sue Hagan, Mick Sutton; *Lohmer* Mick Sutton, Sue Hagan; *Sweet Potato* Scott House, Danny Vann; *Onyx* Mick Sutton, Sue Hagan; *Mose Prater* Scott House, Bob Osburn, Rick Toomey, Mona Colburn, Danny Vann, Mick Sutton, Sue Hagan,

Dan Childress; *Powder Mill* 1) Doug Baker, George Bilbrey, Bob Osburn, 2) Doug Baker, George Bilbrey, Steve Irvine; 3) Doug Baker, George Bilbrey, Kally Gehly, Jim Kaufmann; *Powder Mill paleontology*: Rick Toomey, Mona Colburn, Jim Kaufmann.

Thanks to George Bilbrey for the Powder Mill reports.

Eastern Operations

Mammoth Cave Thanksgiving Expedition 1999

Kevin Downs

It has been a long time since I have lead an expedition and a lot has changed since then. When Dave West asked me to substitute lead for Jim Borden, I was a bit reluctant. I had visions on fifty cavers per day going to all kinds of places, leads being submitted by people who only cave at Mammoth once a year, rock and roll music for breakfast, and all of the other things that traditionally come along with this expedition. Times have changed. Another anxiety for me was the image of hungry cavers tearing at the carcass of some unfortunate animal. Both Jim's camp managers bailed at the very last minute and there was no way I was going to prepare a dead bird! Fortunately for me, Dave and Karen were able to find replacements.

The keys were picked up on Wednesday and, except for the unreturned October expedition keys, everything was in place.

Thursday was the first day of caving and a total of two trips departed from camp! Karen Willmes stayed behind as camp manager and prepared the turkey. All trips came back successful. The average number of trips per day was two, and the average party size was five cavers!

The trips were as follows:

Mammoth Cave Video

Mike Yocum led Sue Hagan, Erik Sikora, and Wieslaw Klis went into the Boone Avenue area to video the "tight spot". This was puzzling for some of us at camp and a debate on the origin and end of Boone Avenue proper ensued in camp. The spot in question is in Roses' Pass at the end of Upper Boone, but apparently the Park doesn't know the difference. Light problems caused a somewhat early departure but it was a productive trip anyway.

Mammoth Cave Video II

Mike Yocum led Sue Hagan, Mark Ferguson, Rick Toomey, Dave West, and Elizabeth Winkler into the

Frozen Niagara entrance area to work on the video project for the Park. Toomey was able to make some ID's on paleontological stuff as well. He found bat bones in the sediment between flowstone layers. The trip was productive in spite of battery problems.

Salts Cave

Mick Sutton led Randy Schrieber, Karen Willmes, Erik Sikora, Wieslaw Klis and Jim Greer into Salts Cave on a split—up-the-party leapfrog survey. These operations are cumbersome. The crews were very productive as they worked in the old S-Survey main line upper trunk fragment area. Biological notes were made by Sutton as well. 102 feet of new survey and 1774 feet of resurvey were accomplished.

Bedquilt Cave

Dave West led Elizabeth Winkler, Randy Schrieber, and Mick Sutton to Bedquilt Cave to continue the resurvey of the Q-survey. This is the main line route between Bedquilt and Colossal Caves. 102.4 feet of new survey as well as 49.15 feet of new survey were completed. Mick made biological notes as well as inventory summaries on hydrology, cultural, and geologic observations.

Mammoth Cave

Rick Toomey led Elizabeth Winkler, Dave West, and Fish (Mark) Brooks into Gothic Avenue to work on flagging paleo stuff. They worked on the left side of the passage for about four hours.

Unknown Cave

Jim Greer led Elizabeth Winkler, Mike Lawrence, and Les Carney into Ingalls Way and resurveyed 133.2 feet of vertical stuff.

Mammoth Cave

Mark (Fish) Brooks led Bill Napper, Scott Cundiff, Randy Schrieber, and Tom (sing along with blood and guts) Brucker, into the Cocklebur Avenue area to continue the resurvey of a lengthy chert loop. They resurveyed 966.7 feet of passage and noted lots of leads and cutarounds in this area.

Notes and Comments

Many thanks to multiple camp managers: Karen Willmes, who fixed her first turkey by following Mom's advice. Sue Hagan for helping Karen with the preparation and making me spew when she pulled the skin off of the bird. It was a scene right out of Silence of the Lambs!

Mammoth Cave Presidents' Day, 18-21 February 2000

Dick Maxey and Cheryl Early

Twenty-nine people participated in the expedition, with eight parties organized.

Two parties supported paleontology, both led by Rick Toomey. The paleontology parties worked in Cyclops Way and Gothic Avenue, flagging resources for future data recording. The crews flagged over 150 points.

Two parties supported the Safety Video project, both led by Mike Yocum;. The Safety Video crews were each accompanied by Mammoth Cave Interpretation staff. The crews shot footage of Wild Cave tours and footage depicting Introduction to Caving Tour activities.

Four parties supported the Mammoth Cave cartography. The cartography trips logged 2731.1 feet of survey (182.2 ft new, 2548.9 resurvey for map enhancements). Dave West and Bob Osburn led parties that surveyed for the Bedquilt map. They each reported that "Bedquilt moments" were experienced by almost every party member. Pat Kambesis led a party into Proctor and happily found that the gate locks were in good working order. Unhappily, a party member became ill at the beginning of the Proctor trunk, so the group turned around and exited the cave.

Bob Osburn set our new compass course at Hamilton Valley with help from Matt. Mezydlo, Rick Toomey, and Janice Tucker, on Friday afternoon before the expedition. Some of our surface crew (cooking and camp cleaning) and one-day cavers found time to work on the utility building.

Thanks to: Lacie Braley, Paul Cannaley, Dan Greger, Joyce Hoffmaster, Randy Schrieber, Erik Sikora, Rick Toomey, Janice Tucker, Elizabeth Winkler, and Richard Young for help in the kitchen and with camp cleanup.

Memorial Day 2000 Expedition Report

Rickard S. Toomey

Expedition Summary

Approximately 30 people took part in part or all of the expedition. Eleven trips were run during the expedition. Two parties mapped in Wilson Cave. Four parties mapped in the Mammoth System (2 Historic, 1 Main Cave, 1 Unknown/Brucker Breakdown). One party filmed digital video along the Wild Cave/ Intro. to Caving tour route. Three parties mapped in Diamond Caverns. One party mapped in Dogwood Cave. Overall there were 43 people days of caving which netted 3,842.6 feet of survey (of which an amazing 3,565.5 feet was new survey).

The expedition took place out of Hamilton Valley. This had its pluses and minuses. Pluses are a feeling that Hamilton Valley is ours and that we are using it, no ferry worries for south side trips, and a chance for everyone to see the new facilities. Minuses included the logistics of cooking in the Hoffmaster House kitchen, mud, and lack of showers. Overall, I am glad I used Hamilton Valley.

One of the major problems for this expedition was a lack of objectives. The cartographers sent no objectives and other principal investigators others sent just a few. Unfortunately, as has become a pattern for CRF expeditions in the past year. Heavy rains in central Kentucky hampered the expedition. The river went from about 2 feet to over 8 feet. This eliminated at least four of the expedition objectives. Fortunately, Stan Sides delivered additional objectives in Diamond Caverns on both Saturday and Sunday. These helped fill what would have been a catastrophic void. One class of objectives lacking from recent expeditions has been ones that do not require the cartographer to be sketching. Also, objectives of medium length/difficulty have been in short supply.

Had I recognized how few objectives I really had, I probably would have turned some people away from the expedition. If we are going to run expeditions that will significantly use both bunkhouses, we are going to have to have more objectives. We also continue to be limited by the number of sketchers we have. Fortunately, the four-person team requirement provides training

In addition to in-cave objectives, Daniel Greger, Dick Maxey, and Cheryl Early worked on the property clearing brush and trees. Their work has improved the view from the porch.

Overall, the expedition was productive, and I enjoyed it. Elizabeth Winkler acted as unofficial Camp Manager; and also agreed to go to Wilson Cave (even though she had sworn not to go back there). My mother, Bev Toomey, also helped. Stan Sides came up with a major lead in Diamond Caverns when I needed an extra objective for parties on Saturday and Sunday. Daniel Greger, Joyce Hoffmaster, Roger Smith, and Shannon Smith helped with the closing of the expedition. Scott House changed his plans to provide me with an extra party on Saturday. Dave West changed his Wilson plans to accommodate more people. I had the pleasure of having two of our young, enthusiastic couples at the expedition; Erik and Courtney Sikora and Roger and Shannon Smith. They are excited about all sorts of caving and eager to learn new things. We need to keep them involved, and to find more like them. Most of us are not getting any younger.

Mammoth Cave July 1-5, 2000 Expedition

Karen Willmes

Expedition leaders: Dave West and Karen Willmes

We had a successful Independence Day expedition with 23 participants. The expedition began on Saturday to accommodate people (including the expedition leaders) attending the NSS convention the preceding week. We had an unusual number of cavers from outside the area: Peter and Ann Bosted from California, Hazel Barton from Colorado, Dan Lins from Mexico, and Gary and Jenny Whitby from Australia.

We fielded a total of eleven trips in the park during the expedition's three days of caving. Parties worked in Salts, Colossal, and Proctor, and in Long Cave, a small cave on the south side of the Green River. Six parties supported Mammoth Cave cartography, four parties supported Rick Toomey's paleontology project as well as cartography, and one party supported the Lesser Caves Inventory (Wilson Cave ridgewalk). Altogether, we surveyed 3,979 feet in-cave, of which 3,225 feet was resurvey and 754 feet was new.

Salts Cave

On Sunday, Mick Sutton led a party into the main East Salts canyon to continue the resurvey of the main line. Besides enhancing the sketch, they tied in a couple of possibly usable side surveys and mapped a short unsurveyed cutaround. The passage was notable for its "large masses of popcorn more or less throughout, in great variety, and much of it very scenic." Total surveyed distance was 667 feet. They traveled in via Incredible Salts Dig (ISD) and exited via Dismal Valley. There has been some debate as to which route is preferable for access to East Salts, but in terms of travel time, the ISD route is definitely quicker: 1 hour 20 minutes versus 2 hours 30 minutes. On Monday, Mick returned with another party to continue the replacement survey of the old S survey. This group surveyed 337 feet in an area of complex junctions and brought the survey to the brink of "Big Pit," which is 30-35 feet deep.

Mick returned to the area for a third productive day. Not only did his party survey the multiple levels around Big Pit, but they also mapped a previously unsurveyed lead to Tatiana's Dome, an impressive, 60-foot-high dome. They ran out of time while surveying a loop off the main canyon, which included another dome, 70-foot-high Olga's Dome. The day's total survey was 694 feet.

Wilson Cave Ridgewalk

Dave West took a ridgewalking party out to look for potential back entrances to Wilson Cave. They followed Wilson Cave Hollow to the Green River, then walked downstream along the river, where they found four cave entrances. Two of the caves, Double Domes and Black Feather Cave, seemed to end quickly. Vulture's Roost was not examined closely, since it was occupied by said vulture; however, "good airflow was observed coming from this cave, even if it smelled bad." Poison Ivy Cave was followed for about fifty feet and continues as an improving crawlway. Unfortunately, since the party ended up too far downstream of their intended objective, none of the caves are likely to connect to Wilson Cave.

Proctor Cave

Pat Kambesis led a party to Doyle Avenue, beyond the Proctor Crawl. Their goal was to fix an error in the survey line. They also enhanced the sketch of Bivalve Boulevard and surveyed an adjacent alcove, for 240 feet of survey.

Colossal Cave

Two parties went in the Bedquilt entrance. They had some trouble with the lock, and both party leaders, Elizabeth Winkler and Karen Willmes, resorted to licking the key clean. Elizabeth's party worked in the P survey beyond Prybar Junction, surveying 404 feet, while Karen's party continued the OM survey in Omega Trail for 501 feet. Many of the OM stations have disappeared under a layer of mud, so it would seem that the passage has backflooded since the original survey, even though the passage is 30-40 feet above base level. Two members of the survey teams, Arielle Freeman and Sophie DeMaio, are summer volunteers with the National Park Service. Although completely new to caving, they learned very quickly, and were very attentive and pleasant.

Sturgeon Cave and Little Jordan Pit

Rick Toomey led a party to Sturgeon Cave to evaluate its paleontological potential and identify the past bat colony. They also planned to evaluate Little Jordan Pit. Sturgeon Cave was occupied by a colony of about 30-40 Rafinesque big-eared bats (*Corynorhinus rafinesqueii*). The cave has a rich biota—including evidence of crickets, *Carichium*, *Neotoma*, *Peromyscus*, frog, rabbit, *Meta*, *Ptomophagus*, *Scoterpes*, surface land snails, a Rhagideid mite, a dipluran, *Pseudanopthalmus*, and salamanders—but very little paleontological material. The entrance of Little Jordan Pit proved to be too tight for the party leader.

Mammoth Cave

With the assistance of a metal detector, a party located the benchmark outside the Historic Entrance. It

was buried under three inches of dirt. The benchmark will be used to tie to the survey of Dixon Cave.

Long Cave

Two parties combined forces to perform survey and paleontological work in the entrance area and main trunk passage. One party began at the terminal room at the end of the trunk and surveyed the large talus and the main trunk for 692 feet. The other party began at the entrance. They also surveyed a side lead, the BA survey. Their survey footage for the day was 445 feet. Meanwhile, the paleontological crew flagged numerous areas of very abundant bone in the BA survey. Besides abundant bat bone, they noted bone from mice and rats, a turtle carapace, and part of a squirrel skeleton.

The Old Guide's Reunion took place over the weekend. CRF folks Larry Pursell, Kathleen Womack, and Diana Daunt, stopped by camp to say hello. We encouraged them to go over to Hamilton Valley to see the progress on the new field station. Thank you to Gary Resch, for remembering where Dave put his wallet; Sue Hagan, Rick Toomey, Mona Colburn, and Gary Resch for rescuing Dave from kitchen duty; Elizabeth Winkler for helping in the kitchen and taking charge of closing camp; and Rick Toomey for turning in the keys and handling the final administrative chores so the expedition leaders could head home.

Mammoth Cave August 4-6, 2000

Mick Sutton & Sue Hagen

The one-day expedition went well. One no-show left us with 19 in attendance, 18 of whom took part in caving trips. There was a short trip to Roppel on the Friday afternoon preceding the official start, and a longer Roppel trip on Saturday. The objective for the latter was an interesting lead accessed through a flood-prone squeeze, but a questionable weather forecast caused redirection to a lead off Resurrection Canyon, an unpleasantly small and slimy crawl. This was followed to a slab breakdown choke, which was excavated to reveal a definite end 15 feet beyond.

The remaining trips were within the Park. Two parties went to Long Cave, one for paleontological inventory and the other for detailed trunk sketching. The paleontology crew recorded a dense assemblage of bat bones, and down the Banzai ladders they encountered a large, inactive bat roost area of unknown vintage. The survey crew completed the main trunk sketch to the Banzai ladders, then continued the Echo Passage survey for a total of 1250 ft. One party resumed the survey of the East Bransford/Cocklebur complex in eastern Mammoth Cave Ridge by mapping 350 ft. of small drains. The remaining party went to Lower Salts and made a good start on resurveying the

complicated canyon-maze route from the main lower Salts canyon up to Moonwalk Boulevard, which is a big isolated section of Salts Trunk south of the entrance, and is badly in need of a detailed sketch. We reached as far as the base of the trunk breakdown. The next session should advance the survey into the Moonwalk trunk.

Personnel: Roppel; Ursa Ave, Resurrection Canyon - Bill Koerschner, Jim Borden, Arielle Freeman; Long Cave paleontology - Rick Toomey, Mona Colburn, Sophie DeMaio; Long Cave cartography - Bob Osburn, Roger McClure, Alan Wellhausen, Shannon Smith; East Bransford Ave.: Kevin Downs, Scott Cundiff, Bill Napper, Charlie Beimer; Salts - Mick Sutton, Jason Walz, Bill Baus, Roger Smith.

Make Freeman Pay!

Jack Freeman, one of CRF's distinguished and respected 'old-timers', has generously offered to match certain contributions to the Hamilton Valley Building Fund. Jack wants to support donations from CRF members who have previously given little or not at all. The qualification for the matching grant is that the donor, prior to January 2000, has given \$500 or less to the Building Fund. To receive the match, the new donation must be made by December 31, 2000.

This is a great opportunity to make your gift to CRF because your \$50 gift becomes \$100, your \$500 gift becomes \$1000. Whatever you can afford, it's time to Make Freeman Pay. Most importantly, you will have the pleasure of knowing that your gift is part of making the dream become a reality. If you haven't given before or haven't given much because you believed a little wouldn't make a difference, please take advantage of this opportunity. If your help wasn't needed we would not be asking. You can make a difference, and now that difference is twice what you can contribute.

CRF still needs your help to complete the facilities at Hamilton Valley. While the building will be finished in August, the furnishings still need to be purchased. Please send in your donations to:

Paul Cannaley,
CRF Treasurer
4253 Senour Road
Indianapolis, IN 46239-9437

Bats in the Belfry Disturbed

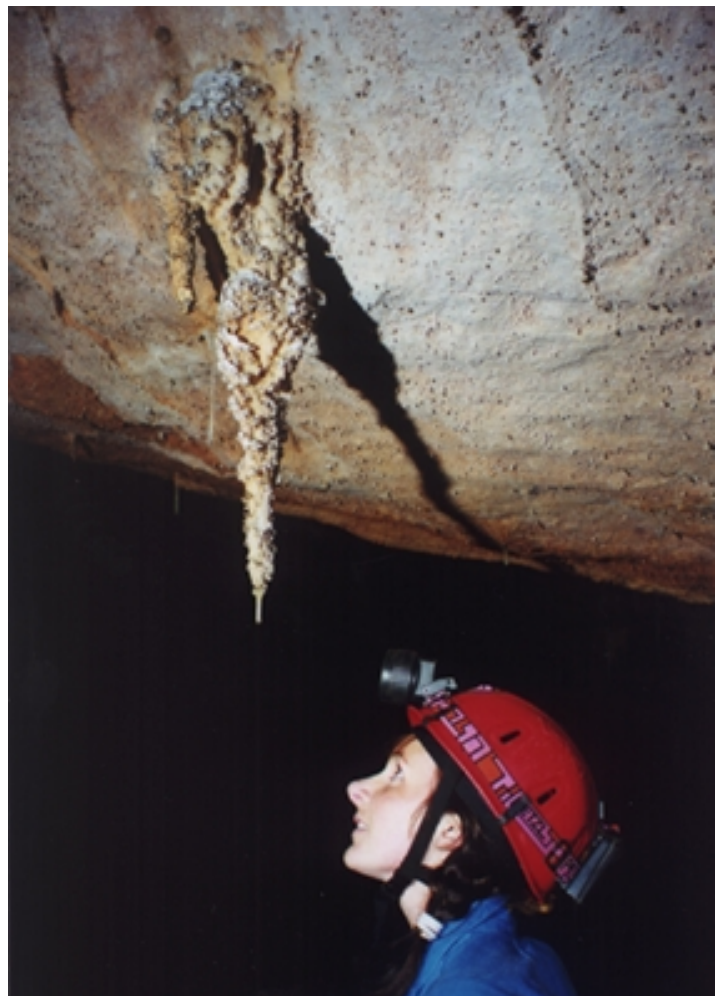
Sue Hagen and Mick Sutton



Wedding bells chimed on September 29th for Doug Baker and Mary Ellen Lawlor. Doug is a long-time CRF cartographer in both the Ozarks and Eastern Operations. CRF extends its best wishes to the couple.

Jodie Shoobert by Stalactite

Photo: Paul Nelson



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CALENDAR

Before attending any expedition, you must contact the expedition leader as trip sizes may be limited. Failure to contact the leader may prevent you from attending the expedition as the trip may be full.

NATIONAL CRF ANNUAL MEETING

November 10-12, St. Louis, Missouri. Scott House, 314-282-3246, rshcrf@aol.com

MAMMOTH CAVE

Thanksgiving Weekend, November 23-26. Jim Borden, 914-255-4663, jimborden@attglobal.net

All Eastern Operations CRF members who have not attended an expedition safety orientation must do so before they can participate in expedition activities. The safety orientation is scheduled at the beginning of each expedition after the morning meeting. Those who have attended one safety orientation are not required to participate in another. New members should arrange to be at the expedition early enough to attend the orientation. Those who do not attend will not be allowed to participate in expedition activities. Contact expedition leader for more details about the orientation.

OZARKS

Missouri trips occur frequently on a generally irregular schedule. Scheduling is usually flexible enough to accommodate all CRF members who wish to sample some Ozark caving. Please contact: Scott House (314-282-3246) or email him at rshcrf@aol.com

For Fitton Cave, Arkansas schedule contact: Pete Lindsley, 972-727-2497, lindsley@raytheon.com

GUADALUPES

For information about upcoming expeditions at Carlsbad Caverns National Park, contact Barbe Barker, Area Manager, at cavers@gte.net

CALIFORNIA

Lilburn / Mineral King

November 4-5, Lilburn, Cave Diving, Bill Farr, 626-357-6927, whfarr@plex-inc.com

Veterans Day Weekend, November 10-12, Lilburn, John Tinsley, (h) 650-327-2368, (w) 650-329-4928, jtinsley@usgs.gov

Lava Beds

November 23-26, Janet Sowers, 510-236-3009, lmsowers@aol.com

CRF Sequoia & Kings Canyon Annual Planning Meeting

January, 6, 2001, site to be announced, Mike Spiess, 559-434-3321, mikes@caver.com

PROJECT AREA CALENDAR

Lincoln National Forest/ Capitan Peak Study Area

Contact Dick Venters, Expedition Leader for schedule, 505-892-6121, rventers@aol.com

HSS/CRF Hawaii Caving - Big Island

The next expedition to the Big Island of Hawaii will be during the month of January 2001. For more information., contact Pat Kambesis 815-863-5184, kambesis@bigfoot.com

CKKC - Roppel Cave, Kentucky

As a result of the partnership between CRF and Central Kentucky Karst Coalition (CKKC), CRF cavers are welcome to participate in Roppel Cave Project trips. For more information on trip schedule contact Jim Borden at jimborden@attglobal.net

China Caves Project - Guizhou Province

Four-to-six-week trips are run every other year. Contact Ian Baren, Project Coordinator, 914-478-5133, chinacave@aol.com



Jenny Whitby, Paul Nelson, and Gary Whitby in front of the Spider Gate at Crystal Sequoia Cave in Sequoia and Kings Canyon National Parks

Photo: Paul Nelson



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