

# SAGRAG

MAY-JUNE 1995

VOLUME 14 NUMBER 3



TURNING OBSCURE CORNER IN PATRICK'S CAVE - HAT CREEK

The SAG RAG is published by the Shasta Area Grotto of the National Speleological Society, Grotto meetings are held at different locations the fourth Friday of each month at 7:30 p.m. Meeting locations are announced in the SAG RAG, Membership dues are \$6 dollars per year and include newsletter subscription. Original material not otherwise noted is copyright to the SAG RAG. Such material may be copied with credit given to the author and the SAG RAG. For use outside of the caving community, please seek the permission of the author or editor first. Send material for publication any time to Bighorn Broeckel, 2916 Deer Meadows Road, Yreka, CA 96097. Material intended for the next newsletter is due by the 10th of the even month.

**EDITORIAL** This issue of the SAG RAG is rushed to the copy machine in hopes of recruiting a caver to help with the Earthwatch project at Oregon Caves. If you have time this month, this is a great opportunity to get off the tour route in Oregon's longest known cave.

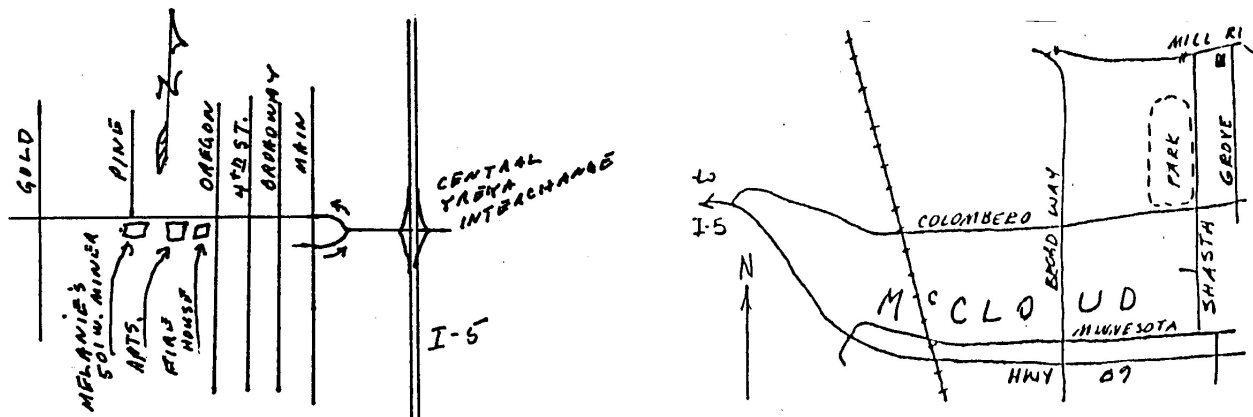
Bat Cave comes up for public comment, with the issue presented as recreation vs bat conservation. I'm happy to see the Forest taking steps toward restoring Bat Cave by repairing damage done to the cave by a past road building process. I also see some implications here regarding the cave nomination system. As we pick caves to nominate, and later on the agencies make management decisions, by habit this may come up for public scrutiny. We may consider all wild cave information as sensitive, but each and every government office might bring differing perspectives. My view on cave nomination – proceed with caution.

Liz Wolff brings us an obituary for Dorothy Reel. Many of us have fond memories of Dorothy, and extend sympathy to George during his time of sorrow.

In a previous year, SAG scheduled a cave camp at Hat Creek, and nobody came except some visiting cavers, who couldn't find us. Well, this time we actually put some cavers together and had a good camp-out. We put some wonderful meals out on the picnic table, and Patrick Smith came up with a new cave. His Dad would have been proud. Read on! **BB**

### CALENDAR

June 18-21, 1995	Oregon Caves Earthwatch needs volunteer.
June 24-26, 1995	Oregon Caves Earthwatch needs volunteer.
July 1-?, 1995	July 4th Speleocamp – Marble Mountains.
July 14, 1995	SAG meeting at Melanie Jackson's home in Yreka at 7:30 PM. (916) 842-9714.
August 11, 1995	SAG meeting at Jim & Liz Wolff's home in McCloud at 7:30 PM. (916) 964-3123.
Sept. 1-?, 1995	Labor Day Speleocamp – Marble Mountains.





Dorothy Reel NSS 31877  
1935 – 1995

The Shasta Area Grotto lost a quiet, adventurous, helpful member on April 28, 1995 when SAG member Dorothy Reel lost a 6 month battle with cancer. She was born Dorothy Petty April 29, 1935 in Mountain View, CA. She met George Reel at a choir practice where he had gone with the purpose of meeting the organist, Dorothy. They were married June 1956.

She had her pilot's license and belonged to the "99's", a women's pilot association founded by Amelia Earhart. George, a skydiver, would let Dorothy pack his parachute and Dorothy (sensibly) would pilot the plane; she never dove. She flew search missions for the Siskiyou County Search and Rescue, which she helped found. She was also an expert rifle and pistol shot, having won many medals as a young woman. She loved to square dance, travel and camp.

Dorothy began caving by visiting commercial caves all over the country. It wasn't until 1985 that she began wild caving with SAG. She joined the grotto in 1986 and served as secretary in 1991.

She graduated from San Jose State College with a teaching credential and taught English and music. She was also a church organist, pianist, and choir director. She taught piano and organ privately and high school English and music in Mt View and in McCloud after moving to Mt. Shasta in 1973. They owned and operated Abrams Lake Mobile Park for several years. George & Dorothy, who are now otherwise retired, have been traveling for 3 years with MMAP, a non-denominational missionary group that builds churches and camp buildings wherever they are requested.

She is survived by her husband George; stepsons Casey and Guy Reel, stepdaughter Cindy Peterson; and 15 grandchildren.

### OREGON CAVES EARTHWATCH PROJECT

Caver volunteers are needed for the Earthwatch Oregon Caves Project on June 18-21 and June 24-26, 1995. Volunteers will survey and inventory off the regular tour route, and see some of the many wild cave passages in Oregon Caves. Training will be provided. Vertical and horizontal cavers may volunteer. Room and board will also be provided. Sign up for some or all of the available dates. If you are interested or want more information about this opportunity, please call Steve Knutson ASAP at (503) 592-2100.

## SHASTA AREA GROTTO MEETING

May 12, 1995

The meeting was called to order at 8: 16 PM. at the Kenney home in Klamath Falls, OR.

Present were: George Reel, Bill, Cheryl, Zane, & Joel Kenney, Jim and Liz Wolff, Denise Wiley, Jim and Bea Kottinger, Bill Broeckel, Ray Miller, and Melanie Jackson.

The minutes were read and approved. There was no treasurer's report.

Correspondence: NCRC will be at Bristol, Virginia on July 8-15, 1995. It will be on Cave Rescue Operations and Management. Other Grotto Newsletters were also passed around.

Old Business: The forest service is working on the public segment (NEPA process) for Bat Cave closure progress. Our main concern is protection of the bats. There may be a physical closure of the man made entrance and limited use of the natural entrance (sign posted).

New Business: There is a copy of the NSS 1995 Congress of Grottos Agenda printed in the Mar-April SAG RAG Supplement. Members were asked to read to find out how much weight their votes can carry. It talked about caving for pay, safety training and certification. There were 10 categories to be rated 1-4. If anyone has any strong feelings they should let our chairman Neils Smith know before the June 15, 1995 deadline. The supplement of the SAG RAG was handed out at the meeting.

Members were reminded to read the BOG ballots and to vote and mail them in.

The June meeting is a camp out at Hat Creek on June 9-10, 1995.

The July meeting is in Yreka at Melanie Jackson's on July 14, 1995.

The August meeting is at Wolff's house in McCloud on August 11, 1995.

The October meeting is the Western Regional Meeting at Lava Beds on October 13-14, 1995

Trip Reports: Bill Broeckel visited Bat Cave on May 6 in the afternoon and saw 4 bats. Melanie Jackson and Christine LaGrange visited Barnum Cave, and went to Lava Beds seeing Valentine and Mushpot Caves, Merrill and Skull Ice Caves, and 11 other caves on the cave loop. No bats were seen, just lots of ice and icicles. Ray Miller has been doing regular checks of his bat caves.

The meeting was adjourned at 8:46pm.

A video was shown: Journey Through the Underworld, a National Geographic special on cave critters in the caves of Belize.

Respectfully submitted, Melanie Jackson



**SHASTA AREA GROTTO MEETING**

June 10, 1995

The meeting was called to order at 9:00 PM. at Cave Camp in Hat Creek.

Present were: Jim & Liz Wolff, Bill, Judy, Becky, & Benjamin Broeckel, Melanie Jackson, and guest Patrick Smith. Ray Miller had already gone batty? Batting?!

The minutes were not read.

Treasurer's report:      April Balance 603.33  
                                 May Balance 627.33  
                                 June Balance 567.33  
                                 Western Regional Dues were paid

Correspondence: NCRC is looking for officers (mostly East Coast) If you are going to the NSS Convention in Virginia there was an advertisement for NSS Travel Service. A Pre-Convention Trip is offered by Wild Dogs Experience that has cave descriptions, cave dates and times and maps available.

Old Business: Ray Miller received a letter from the McCloud Ranger District on Bat Cave. Bill Broeckel received a letter from the McCloud Ranger District on the Watershed Analysis. Jim Wolff changed 2 cave registers, one at Roadside Complex and one at Three Level Ice Cave (Ice River Cave). The Jot Dean Register was replaced 10/94 and Bat Cave Register was replaced 5/95.

New Business: Liz Wolff called for any COG(Congress of Grottos) questionnaires to be sent to her. They have to be postmarked by June 15, 1995.

Meetings/trips: August 26-27 at Oregon Caves the Friends of Oregon Caves will have a talk (history) and play (caving?) weekend. The Broeckels hope to go to Crystal Caves in Sequoia the last weekend of July for some off trail mapping. There will be Speleo Camp in the Marble Mts. in July (weekend of the 4th) and also the Labor Day Weekend in Sept. with a possible mock rescue. The rope climb at Lime Rock to be lead by Mark Fritzke is June 24, 1995, as of the last SOG LOG. Trip reports and possible maps for the Hat Creek Campout will be forth coming in the SAG RAG. Bill Broeckel suggested nominating Subway, Flashlight, and Double Door Caves for cave protection.

Trip Reports: Bill Broeckel visited Bat Cave on May 6 in the afternoon and saw 4 bats. Melanie Jackson and Christine LaGrange visited Barnum Cave, and went to Lava Beds seeing Valentine and Mushpot Caves, Merrill and Skull Ice Caves, and 11 other caves on the cave loop. No bats were seen, just lots of ice and icicles. Ray Miller has been doing regular checks of his bat caves.

The meeting was adjourned at 9:22 PM.

Respectfully submitted, Melanie Jackson

### SAG TRIP REPORT – INFERNAL CAVERNS

Bill Kenney provided the following trip report verbally at the last Southern Oregon Grotto meeting in Medford.

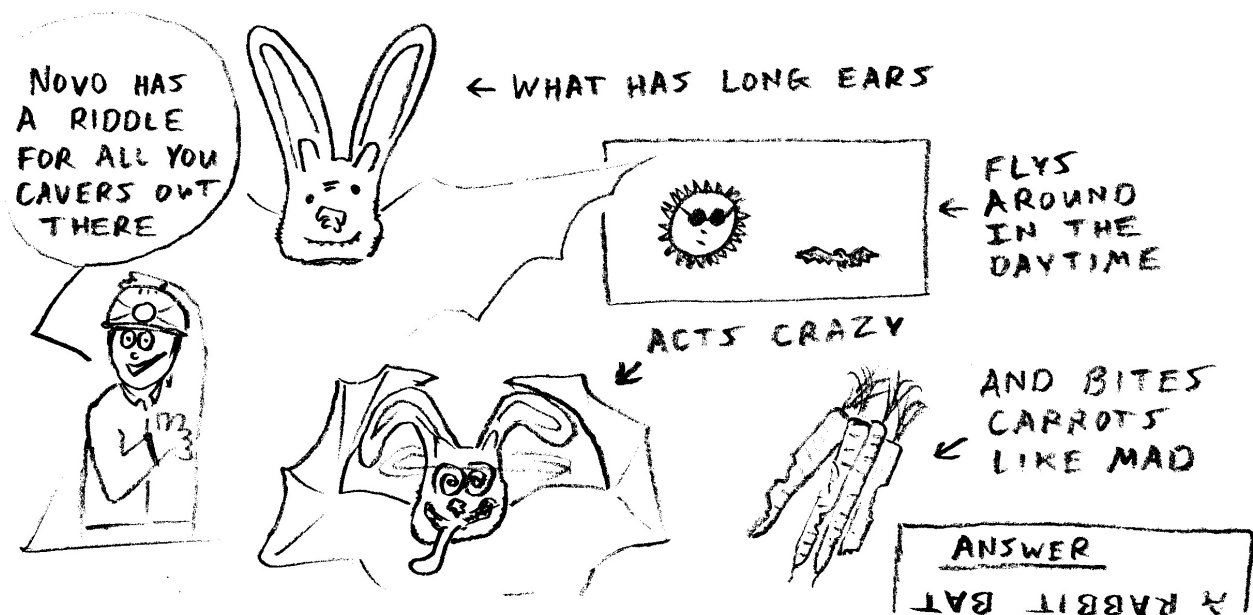
On May 13, the day following the first ever SAG meeting at Klamath Falls, the Grotto set out for Infernal Caverns. This place name has appeared near a battlefield site as shown on various maps of Modoc County. William Halliday described a possible lava tube.

The group made it to the town of Likely at the western base of the Warner Mountains, south of Alturas. (Ed: When the local post office needed a name, someone said "Wa'al, we're likely to find a name, and we're likely not to." The name stuck. The year was 1878.)

Anyway, this has been a wet, rainy year in these and many other parts. So, when the Grotto got within two miles of Infernal Caverns they found that the dirt road was a quagmire of deeply rutted mud. Some locals stopped by and reported that they had hauled out the last group of visitors, sunk to the floorboards in mud. Of course, anybody was free to go right on in, and the locals would be more than happy to haul anybody out as needed. But then they added that they would also "charge dearly."

The Grotto decided to not drive any further. Then they decided to not hike the four mile round trip through the mud. Then, they decided to go to Lava Beds, where the caves are long and easily reached. The Grotto approached "The Beds" from the east, and caved in Tichnor and Bertha s Cupboard Caves, and had just a great time. This was the very area we were unable to reach last January due to snow. Tichnor has a convenient entrance at which you can literally hop out of your car and into the cave. That sure beats hiking miles through the mud!

Ed: What a likely story. Apologies to Bill K.



# HAT CREEK

SAG HAT CREEK CAVE CAMP REPORT

By Bighorn Broeckel



FLASHLIGHT CAVE



### HAT CREEK CAVE CAMP

Shasta Area Grotto conducted a cave camp at Hat Creek on June 9-11, 1995. Jim and Liz Wolff had marked off campsites #21 and #22 at CAVE CAMPGROUND just across the highway from Subway Cave. That seemed like the appropriate campground, and it turned out to be a very nice spot, near the creek, springtime conditions abounding. The storm that weekend tried to blow in Friday night, but didn't quite make it through, and we ended up with warm days and cool nights.

Friday night we hiked over the lava flow to Flashlight Cave and finished the survey of that cave. Night caving has advantages, such as less adjusting of the eyes. It is a beautiful thing to emerge from a cave into moonlit landscape washed by gentle winds.

Melanie Jackson, Jim & Liz Wolff, Patrick Smith, and the Broeckel family were joined the next morning by Ray Miller. Ray patiently waited while we took considerable time over breakfast. It seemed like the whole week-end we were either caving or feasting, camp was close to the caves.

Eventually, we all hiked out to Double Door Cave to check for bats. There were no bats in the cave, and Ray said it was too wet for them. Melanie and Liz were glad to see the cave, after they had been disallowed last February on account of the hibernating bats. Afterward, Judy, Melanie, and Liz headed back for camp. Ray, Jim, and Patrick did some scouting.

The whole group re-assembled at camp for lunch on the picnic table. It was a big meal, and even included a watermelon. Patrick reported finding a crawlway that kept going. We decided to go back and check out Patrick's cave.

Melanie and Liz booked a considerable amount of surface survey all the way from Trail Cave to Big Nothing Sink deep in a thick forest of Curl-leaf Mountain Mahogany. They came back with pages full of numbers and diagrams, and twigs in their hair.

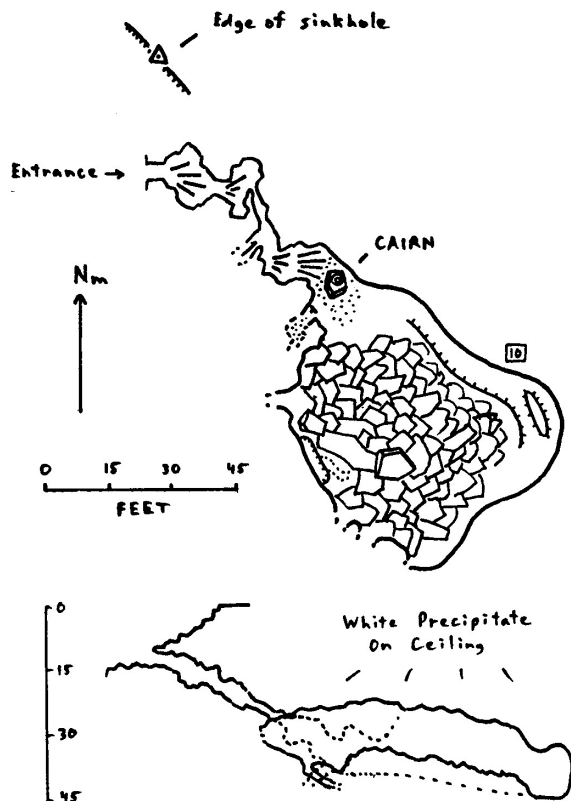
Patrick's Cave turned out to be a wondrous 140 foot cave that none of us knew about before. For me, this was the center-piece of the week-end. An unlikely breakdown crawlway opened up into a sizable chamber. We checked many leads, but could find no major continuation to the cave. It was still a nice find.

After supper, we convened for the monthly SAG meeting. Ray Miller adjourned himself early because he had an appointment with the bats. The campfire was cozy, but Jim and Liz needed to get Patrick back to Redding. When my family woke up in the morning, even Melanie was gone, so we had the rest of the time to ourselves. We hiked the Spattercone Nature Trail before going home. Does the cave entrance at #9 connect to the entrance at #11? I don't know. We didn't have any light sources, and the trail booklet kind of warns you not to check. "CAUTION Stay on maintained trails!"

This trail actually has a lot of items that would interest a volcanospeleologist. It winds around a number of spattercones in part of the area that produced the lava of the Hat Creek Flow. The trail starts just across the highway from the Hat Creek Campground. Try it some time when you have a chance.

## PATRICK'S CAVE

SHASTA COUNTY, CALIF.



SISTECOS & TAPE SURVEY  
6-10-95

B. BROECKEL  
P. SMITH  
J. WOLFF

SHASTA AREA GROTTO  
NATIONAL SPELEOLOGICAL SOCIETY

DRAFTED BY B. BROECKEL

LENGTH: 142 Feet  
DEPTH: 45 Feet

Map: Patrick's Cave

## PATRICK'S CAVE

Patrick's Cave was named for Patrick Smith. Patrick did the blind push in a grim breakdown crawlway, and was directly responsible for finding the cave.

The entrance is small and is found right out in the open in the midst of the rocks inside a shallow sinkhole. This sinkhole is on the Hat Creek lava flow in Shasta County, CA.

The passage opens up a bit and goes down over loose rock. At the bottom, an inconspicuous crawlway behind a rock goes to the right and keeps going. The floor here is soft dirt, and cold air blows through the constriction.

Past this section, the cave goes down again through more breakdown and more loose rock. We were with Patrick now while he went down to see what would happen.

Jim Wolff and I were waiting quietly for Patrick's report. His voice came up from below, "It goes big time." That was a good moment.

The big room that Patrick found turned out to be about 60-70 feet long and nearly as wide, with ceiling heights ranging in the 10-20 foot zone. Moderate sized blocks of breakdown pushed into the room from the right, with original lava cave surfaces present on the left.

The general structure of the cave, then, is a breakdown crawl leading to a remnant alcove under the side of the sinkhole, and now partially filled with collapse.

There were multiple leads to check, as you might imagine in such a room. We used the next 2-3 hours working our way around the room and checking leads. We gave it a good whack, but were unable to find any significant continuation.

At last we were back at the cairn which marked the entry point of the breakdown crawl. This cairn appeared to be man-made.

We greatly admired the white precipitate generously splashed on the ceiling of the room. Then we started our survey at the back wall.

## FLASHLIGHT CAVE

When SAG visited Flashlight Cave in January, 1992, Neils Smith remembered that he had been in this cave with Don Quinton years ago. Don had named it Flashlight Cave because he had found an old, rusty flashlight in one of the cracks in the floor. Flashlights were made of metal back in those days, right Neils?

The cave location is shown on many maps of the area, and a trail has been constructed that nearly reaches the entrance. The gaping sinkhole entrance is obvious. Remarkably, the cave remains in rather good condition at this time. However, the risk of heavier impact in the near future is high, and for this reason, nomination is suggested at this time as a first step toward formal cave management.

On the way out of the cave in June, we picked up two corroded D-cell batteries and a beer bottle broken at the neck. The bottle served as a container for removing the oozing batteries. Graffiti is minimal, with only one instance barely visible at the left side of the beginning of the lava tube floor. I have been checking on this cave since 1989, and it accumulates trash at a low rate. The cave is easy to find, and it was one of my first wild caves.

In March of this year we found a way through the breakdown that appears to end the cave. The survey was completed in June, 1995.

### Description

The entrance sinkhole is nearly full of broken rocks and is easy to climb into. The cave entrance is clearly seen at the north end of the sinkhole. A scramble down the rocks gains the flat floor of a lava tube, fifty feet below the surface level. This is a cold air sump, and seasonal ice occurs in this area much of the year. The flat floor continues to the end of the cave, dropping another 7 feet in the process. The floor approaches the ceiling in places, and ultimately reaches it at the far end of the cave. Near the raft, there are deep cracks in the floor, hungry for more flashlights.

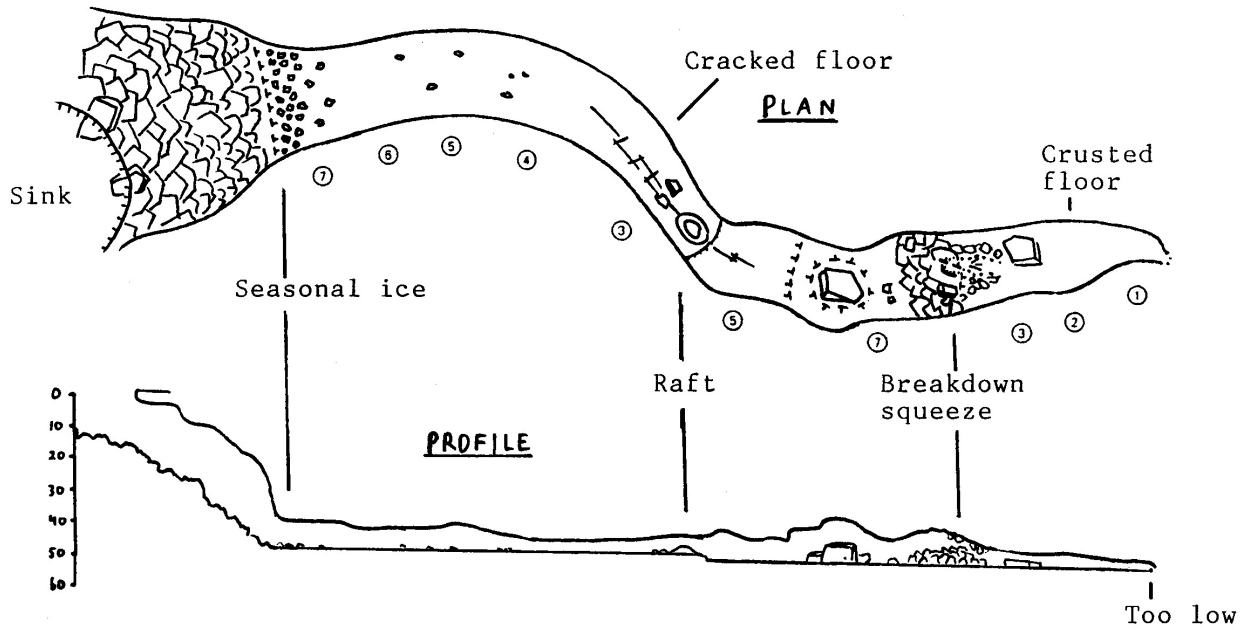
Proceeding down the tube, the passage height gradually drops from 7 feet to 3 feet, as the cave curves to the right. The raft can be passed on either side as a hands and knees crawl. Just past the raft is a slight step-off into larger passage. Beyond a large rock, a pile of breakdown fills the entire passage. Climb the breakdown, and poke into the space at the top, near the broken ceiling. A slot on the left leads down and through the breakdown. We moved a few rocks to open this slot. After the survey trip in June, we placed a flat rock over the slot when we left, to restore the original situation. Hopefully this will decrease traffic to the very back of the cave, and renew the possibility of discovery here.

Lava tube passage continues beyond the breakdown for about 50 feet. Passage height drops from 3 feet to 1 foot and less. This is a fragile area, with an interesting, blistered egg-shell floor and delicate, mineralized lava decorations on the ceiling. The cave ends with no space on the left, and slight space on the right, but too low to enter. No air flow was detected, and the last few feet were very wet.



# FLASHLIGHT CAVE

SHASTA COUNTY CALIFORNIA



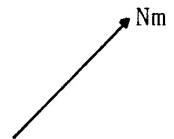
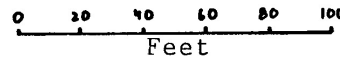
Sistecos & Tape Survey  
3-21-95 & 6-9-95

B. Broeckel  
J. Broeckel  
M. Jackson

SHASTA AREA GROTTO

National Speleological Society

Length: 407 feet  
Depth: 57 feet



Drafted by B. Broeckel

Map: Flashlight Cave

## Newsletter Review 6/95

By Dick LaForge

### Just an Idea

Let's see . . . the Sag Rag and the Sog Log both get the newsletter review . . . The Rag publishes every other month . . . The Log prints every month but need more articles . . . Both are concerned with the same caving area . . .

Suppose the Rag and Log were to combine themselves, with alternating editors? There should be enough articles for full monthly issues, yet each editor would get alternate months off. Writers would have a bigger audience.

Just an idea.

What have we for Newsletter Articles this month? As usual the Valley Caver (Mother Lode Grotto) wins the prize for the greatest volume of interesting articles, 21 pages of them. Of course with only four issues per year they will be bigger. But the Valley Cavers do seem to go caving a lot and they write good stories about their trips. The Mother Lode caves are typically small, or filled with carbon dioxide, or both, and it should be inspirational to the rest of you what good articles they can get from small caves. Typically most of the article concerns getting there, getting back, and eating both before and after.

This one is from Spring 95. In "Over and Under Hill in Amador County", by Daniel Snyder, washed out roads and a swollen creek actually force abandonment of the planned cave trip and instead the author and friends visit Masonic Cave in the town of Volcano. But this smaller trip results in a larger article as it gives an excuse to recount the history of this tiny "Commercial" cave, and to give interesting details about Volcano also. You, like myself, have been wondering how a town came to be called Volcano when it is, as you know, sitting on old metamorphic rocks. It turns out that solution tubes in the metamorphic marble have something to do with it. You only get to read the first page, as it is a long article. It's good, though. See the SAG library at Wolff's for the full story.

Next is a book review by Matt Leissring of The Caves Beyond: The Story of the Floyd Collins' Crystal Cave Exploration, by Joe Lawrence Jr. and Roger Brucker. This expedition took place in 1954, so an interesting part of the story is comparison with today's exploration techniques and conservation standards. Actually the review might be all you get, as the book was published in 1955. Wolffs might have it in the SAG library. I have a copy. Unfortunately I lost track of which newsletter this came from.

Next, going beyond our usual range of sources, there is Five Million Years of Solitude, a condensation of a longer article in The Sciences, a magazine based in New York. The condensation is from the Utne Reader, March/April 1995. It is about the strange creatures found living in Movile Cave, Romania. Their food chain starts with bacteria and fungi that are powered by hydrogen sulfide.

Five Million Years of Solitude up to now, anyway.

Last and in a way least is a trip report: Virtual Caves in Southern California, by Julie Hansen and Greg Crawford, from The SF Bay Chapter Newsletter, Vol 38 #4. I'll not comment on this one. I'm not a scoffer, though. This sort of thing could become the ultimate solution to the problem of cave conservation.

Oh Yes, now I remember that Bighorn wanted poetry for this issue of the Rag. But first I tried thinking of more "You Know You're a Caver If" jokes, such as: You

know you're a caver if your wedding reception was at an all-you-can-eat restaurant, and You know you're a caver if Sears refuses to sell you an extended warranty on a washing machine, but then I got stalled out, or maybe was stalled out to start with. So on to poetry . . .

Actually I got stalled out with poetry too, so (as is my habit with this job anyway) decided to offer some of my favorites by other people. For example:

### **CAVING NURSERY RHYMES**

Start your kids off right with these gems

Jack and Jill went up the hill  
To check the Onyx gate.  
When they arrived they moaned and cried,  
For once again, "Too Late."

Humpty Dumpty tracked up a flow,  
Humpty Dumpty's brain was slow.  
All the king's horses and all the king's men  
Wouldn't take Humpty caving again.

Twinkle, Flicker, carbide light,  
Now I'm in the dark of night.  
I wish I may, I wish I might  
Have not bought this fake Justrite.

Mary had a little bat  
Whose fur was black as night.  
And any vandal Mary met  
The bat would surely bite.  
It flew into her school one day,  
Which was against the rule.  
It made the children laugh and play  
To see its bloody drool.

Don't blame me; blame Rick Day and The Desert Caver, from many years ago.



The following poem is by Cathe McGrath. I copied it from the register of Coral Cave. It was dated May 29, 1977. Then it was in the canyon of the Stanislaus River, and some height above it. Now it is underwater, in the Melones Reservoir.

### CORAL CAVE

Cool breezes come forth out of the cave, refreshing hot tired faces  
eager with the thought of spelunking.

Our feet throbbing from our journey across sand mid rock,  
We've traveled far to find this secret wonder of nature.

The day is bright and hazy; a warm breeze touches us briefly from  
the river.

My companions prepare for their excursion into the icy darkness.  
Their anticipation is great as they boldly set forth to explore the  
depths of the opening.

Soon they are climbing upward at a slant, plunging into the  
blackness,

Their lights tiny pinpoints of color in so much dark.

Sound erupts from the silence: River people  
on their floating islands of rubber

Screaming through the icy white water  
slowly make their way past.

"Cathe – Cathe!" Voices from within calling for me to join them.

Should I go? Why do I hesitate?

What does this place hold inside,  
what kinds of visions would I see,

What kind of treasure will I find?

I'll never know, for I won't go in . . .

Sitting inside the mouth I feel concealed and protected.

But once inside, I'm swallowed up.

Each blind step can bring you closer to danger.

One false move could change you entirely.

The warm breeze caresses my face gently.

I linger here waiting for the adventurers' return,  
happy just inside this lonely protector.

I wonder how many humans and animals this dwelling has housed,  
how much time this place has seen.

I hope man won't destroy what earth created,  
This tunnel of mystery, Coral Cave.

REPRINT      REPRINT      REPRINT      REPRINT

From Valley Caver, Spring 1995, page 5

## Over and Under Hill in Amador County

by Daniel Snyder

While Amador County has little to offer cavers bent on exploring only the largest or most spectacular caves in California, it is well able to meet more modest expectations; and though most of us will always hope for more and bigger caves (witness the legend of Lost Amador Cave), the little gems of Amador County nestle undisturbed in a soft place within the heart of the MLG. As Marianne has pointed out, each cave has something different to offer. We like our caves for what they *are*.

Three weeks ago on Sunday, March 12, Martin and I intended to lead a trip to Sutter Creek and Fern Frond Caves, two of the aforementioned little (very little) gems. All proceeded according to plan: the weather cleared and the sun rose in a blue sky as we hoped it would, and we managed to persuade two other grotto members — Mary Stringer and Jay Fuller — into accompanying us. Meeting in Drytown at a comfortable hour of the morning, we left Mary's car in Amador City and headed in buoyant spirits toward Volcano only to find, alas, that the recent rains had swollen Sutter Creek into a 30-foot wide roaring river, with no tree crossings to be had and the ford down the road impassable. While contemplating possible ways to get across the creek, I realized the probability that the storms had had other effects: the road to Fern Frond would be in pretty bad shape and the neighbors would hardly appreciate us doing it further damage — even in the best season deep ruts cut into the section from Fern Frond Cave to the Charleston Road. A change of plans was in order.

Off then, to Volcano... a caver's paradise if only the soda fountain at the Jug and Rose were still open and the caves were a wee bit larger. The gold miners who established camp in The Volcano in 1848 believed the deep basin sheltering the town to be an extinct crater, and the gold found in neighboring gulches to have been ejected in volcanic eruptions from this and smaller craters found in the hills all around. A year later, travel-writer Bayard Taylor visited the camp and climbed up to two of the "craters,"

neither of which appeared to be the main opening of the volcano. On the contrary, I should rather judge them to be vents or escape-holes for the confined flame formed in the sides of the mountain. The rocks, by upheaval, are thrown into irregular cones, and show everywhere the marks of intense heat. Large seams, blackened by the subterranean fire, run through them, and in the highest parts are round, smooth holes, a foot in diameter, to some of which no bottom can be found. These are evidently the last flues through which air and flames made their way, as the surface hardened over the cooling volcano. The Indian traditions go back to the time when these craters were active, but their chronology is totally indefinite, and I am not geologist enough to venture

an opinion. Pines at least a century old are now growing on the rim of the craters. Further up the mountain, the miners informed me, there are large beds of lava, surrounding craters of still larger dimensions (*Eldorado* 184-5).

We will forgive Taylor for being a lesser geologist than he imagined. Within a few years, the miners had properly recognized the "beds of lava" as outcrops of crystalline limestone and the "craters" as the products of solution by acidic water — i.e., limestone caves and solution fissures and tubes.

The first Volcano cave our little group visited was also the first to attract the notice of early Volcano miners: that now known as Masonic Cave, located in a prominent island of limestone beside Sutter Creek. This cave has changed considerably since 1852, when John Doble and a shady character named Smith opened the Spring Saloon and bathhouse near the large gushing spring that then emerged from the rock year-round (*John Doble's Journal* 109-15). Two years later the Volcano Masonic Lodge held its first few meetings inside one of the entrances to the cave before moving to more comfortable quarters (*100 years of Freemasonry in California*). In 1855, the cave was still in use as a saloon and a favorite place to escape the summer heat; in this year and again in 1856, proprietor A.M. Bowden enlarged the cave to better accommodate his guests, adding a large frame building and making liberal gifts of ice cream to the editor of the *Volcano Weekly Ledger*, who responded with a number of plugs for the Masonic Cave, including the following:

A DELIGHTFUL RETREAT.— Have you visited the Masonic Cave since it has been enlarged and improved? If you have, all well and good, for you will go back again; if you have not, just drop in during the heat of the day, and you will find it one of the most delightful places under the sun. Hot as it may be without, it is cool and inexpressibly pleasant in the cave. You may recline on a sofa, and dip and drink pure cold water from a spring under the rocks, and not less than fifty or sixty feet deep; or if you prefer, you can be furnished with a dish of excellent ice-cream, or a glass of sparkling ginger-beer.— If you would spend an hour pleasantly and comfortably during this sweltering weather, just drop in at the Masonic Cave (*Volcano Weekly Ledger* 12 Jul. 1856).

A contemporary report of abundant trout in the cold Masonic spring suggests to me that Bowden was seeding them in as an additional attraction. This saloon remained open at least into late 1857, when a traveling correspondent of the *San Francisco Bulletin* wrote (7 Oct. 1857) that

...in the middle of the creek bed, near the centre of the town, is a remarkable rock, about the size of a large warehouse. A passage called a cave has been found leading from one side to the other of this rock,

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From Valley Caver

### The Armchair Caver: Book Review

by Matt Leissring

Lawrence, Joe, Jr. and Brucker, Roger W. The Caves Beyond: The Story of the Floyd Collins' Crystal Cave Exploration. New York: Funk and Wagnalls, 1955.

In 1954, Joe Lawrence led a large, multi-faceted expedition into a complex portion of the Flint Ridge Cave System of central Kentucky. For seven days more than thirty people lived, worked and explored unknown passages in a celebrated commercial cavern. This book is not about Floyd Collins. The cave bears his name (and his tomb) because he discovered it and developed it commercially, as well as exploring its distant reaches. The book, however, is concerned with the contemporary expedition rather than previous history.

The expedition was designed on a military model, with both a command and a support structure. A base camp was established at the cave office aboveground, with Camps One and Two situated a days travel inside the cave. From the two advance camps, expedition members would conduct explorations, surveys, and scientific observations while supply teams shuttled back and forth between them and base camp. A communication system linked all three camps and the outside world. Reporters and photographers were included in the expedition as were a full compliment of geologists, hydrologists, meteorologists, biologists, rock climbers, surveyors, linemen, cooks, and medical personnel. All had prior caving experience, with non-caving spouses and/or associates occasionally assisting in the support operations above.

Despite the complexities of moving such a large number of people through such a challenging task, the operation met with few major setbacks. There were no major injuries, though several people had to leave the cave due to exhaustion. There was great difficulty in moving supplies to the camps through the tortuous squeezeways. Finally, there was a forest fire which demanded the attention of all those aboveground!

Results of the expedition were impressive. The cavers spent a week underground, and many miles of formerly unknown passages were explored and mapped. Although no major new sections of the cave were discovered, many new connections were made, and there were a few spectacular finds. A number of sites boasted helictites and gypsum flowers, and a large room was discovered containing fossils within its limestone walls. Surveys established that many of the passages ran parallel at different levels, and the seemingly endless passages began to make sense. Many new tantalizing leads were found which would provide the basis for future expeditions. (The following year, this system was linked to the nearby Unknown Cave, together forming a major portion of the

Flint Ridge System. Eventually in 1972, this system would itself be found to connect to the famous nearby Mammoth Ridge System, making the combined system into the world's largest known.)

Lawrence and Brucker write in a lively, accessible, and enjoyable style. Their need to tell a compelling story is well balanced with the need to describe accurately the wonders encountered by the expedition members. For beginning cavers and non-cavers, the authors are careful not to get bogged down in jargon, and will often take the trouble to explain things through anecdotes or brief definitions. Yet, experienced cavers will also appreciate the careful attention to detail, the maps, photographs, and journal entries included, as well as the official expedition reports at the close of the book. So consistent is their work that it is often difficult to tell which chapter was written by which author.

Technology is of particular interest to anyone reading this book. A great deal of time and manpower was devoted to installing a telephone system between the camps in the depths of the cave, and the expedition headquarters above. It is quite amazing how much bulk was required by such items as sleeping bags, camp stoves and ovens, photographic equipment, food, survey and meteorological gear, and climbing gear.

One can't help imagining how this expedition might have fared had fiber-fill sleeping bags, lithium batteries, halogen lamps, expansion bolts, camcorders, cassette recorders, propane stoves, lap-top computers, modular phones, laser transits, and freeze-dried food been available. To the modern caver, it is often disconcerting to read about these earlier explorers caving alone, breaking shelfstone and false floors, chopping and blasting pathways through difficult passages, driving pitons, smoking and building fires in caves, burying carbide, cigarettes and human wastes, repeatedly carving and smoking various signs and arrows on cave walls, and abandoning vast amounts of food and equipment at the journey's. My how times have changed! It would be desirable to read a similar book about the modern expeditions in Lechuguilla to see how our vocation has advanced.

I do not know whether this book is still in print, or available. A copy is housed in the library at the California State University, Sacramento. Check with your local library or used book dealer. (Ed. Note: Books of this sort are usually available through Speleobooks, etc., which cater to the caver interest.)



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From the Utne Reader, March-April 1995, page 40

## FIVE MILLION YEARS OF SOLITUDE

*Deep in a Romanian cave, an improbable pocket of life*

First you must rappel down a rope through a rocky pit into a dark cavern 60 feet below the Black Sea coast of southern Romania. Then, aided by a powerful miner's light, you can walk upright for a thousand feet through a warm, dry cave passage. Finally the passage narrows, leaving only one forward route: a dive. Donning complete scuba gear, you must swim under the surface of the lukewarm standing water, then wriggle through a tight passage into a channel. In the channel you will find a few inches of space above the still surface of the subterranean lake, but you'll still need the scuba gear. There is little oxygen in the air. Welcome to Movile Cave. Look around. Play the light over the walls. After five million years of iso-

lation, the inhabitants of the cave are finally getting some visitors.

The isolation of Movile Cave—the Galapagos Islands of underground habitats—has been virtually complete. Without a natural entrance, no surface life could gain access, and clay on its walls and ceiling has kept the surface water out. In this coffinlike, lightless environment, warm volcanic waters, rich in highly toxic hydrogen sulfide, percolated up through fissures in the rock floor. The hydrogen sulfide in the water reacted with oxygen in the air to form sulfuric acid, which etched away at the limestone, enlarging the cave and depositing gypsum on the walls.

In 1986, during the construction of a power plant, the nearly flooded cavern came to the attention of the modern world. Romanian cave divers were the first to explore its nether regions, and as they explored, they came upon the spaces between the water's surface and the ceiling of the cave, spaces that turned out to be not only poor in oxygen but also rich in carbon dioxide. The divers would poke their heads up into the "air bells," and, according to the biologist Thomas C. Kane of the University of Cincinnati, they would "find themselves staring at all these strange insects crawling about on the walls." In all, 48 life-forms—both on land and under water—were discovered flourishing in the strange and self-contained ecosystem; 30 of them biologists had never seen before.

For biologists the lure of Movile Cave is the rich complexity of the ecosystem in spite of its lack of sunlight and its scarcity of oxygen. At the base of the cave's food chain are bacteria that can synthesize organic molecules from the carbon dioxide in the air and the energy derived from the sulfuric acid reaction. Thus, instead of depending on sunlight for energy, the ecosystem of Movile Cave relies on chemical energy. The bacteria grow along with fungi into white mats, which gently ride the surface of the lake, kept afloat by methane-gas bubbles, or cling to the rock walls in "air bells." All other life within the cave depends on the microbial mats.

After millions of years in the dark and toxic environment, the creatures of Movile Cave have lost both pigmentation and sight. Some retain empty eye sockets, but they have developed elongated legs and antennae to feel their

way about in the dark. Many also have novel ways of warding off the destructive properties of hydrogen sulfide and sulfuric acid. The water scorpion, for instance, is covered with a thick layer of sulfur-loving bacteria, which biologists think protects the scorpion from the toxicity of hydrogen sulfide.

Biologists divide the life of Movile Cave into two groups: the aquatic animals and the terrestrial animals; the latter make their homes on the limestone walls around air bells. In each region are plant eaters, which peacefully graze on the microbial mats, and meat eaters, which prey on the plant eaters and on one another. The aquatic community lives just below the water surface—no more than two inches down—and includes a variety of swimming flatworms, roundworms, microscopic roundworms, and snails as well as isopods, insects, and shrimplike crustaceans, none of which grow longer than half an inch. Three meat-eating species also live in the water: a flatworm with a triangular head, which feeds on the crustaceans; a reddish brown blind leech, colored by the hemoglobin in its blood, which eats the flatworms; and the water scorpion, which eats virtually anything.

On the walls are spiders, pseudoscorpions, millipedes, beetles, and more isopods. Many of the smaller animals feed on the wall and the floating mats. The top predator of the terrestrial environment is a centipede, which feeds on the mat eaters.

Because of the isolation of the cave, the microorganisms and animals have little similarity to the aboveground ecology of Romania. Many of them—particularly the terrestrial creatures—are relics of a period when the climate was tropical, more than five million years ago. The Movile Cave spider, *Lascona cristiani*, for instance, is most closely related to spiders living on the Canary Islands and in northern Africa.

To study the ecosystem further without damaging it, investigators will pump water out of the cave to a laboratory above ground. There they will re-create the cave environment, leaving the subterranean world undisturbed.

—Robert Zimmerman and  
Wendy Marston  
The Sciences

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From San Francisco Bay Chapter Newsletter, Volume 38, Number 4, pages 2-3

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**TRIP REPORT: Virtual Caves in Southern California**

*by Julie Hansen and Greg Crawford*

Having not been underground in 18 months or so, we decided to hop into the car and do some serious caving! The only question was where to go. Eastern Nevada? Too far. Arizona? New Mexico? Same problem. Borneo? Nah, that's been done. Then the solution dawned on us - where else could we combine our interest in both caving and standing for hours in the sun surrounded by hordes of petulant children, rude, ignorant teenagers, and gawking tourists but Los Angeles!?!

Yes, it is true - we, with our friend Kevin Justus from the Escabrosa Grotto, decided to spend our spring break from school investigating the possibilities afforded by new innovations in virtual caving advertised in the latest copy from Disneyland and Universal Studios. Isn't it interesting how often caves figure in "futuristic entertainment excitement?" Sometimes this is the result of cheap production budgets--check out how often the crews of Star Trek Generation and Voyager ended up spelunking because colored cavern sets needed only to be reorganized and spray-painted a different color in order to create new uncharted vistas for B-movie actors to re-discover. However, it is significant that the latest, most publicized, expensive, and technologically advanced entertainment rides in two of America's most famous theme parks offer rides that feature caving adventures. The following are reviews of the two most popular amusement rides in California--both of which prominently feature "cave experiences."

**DISNEYLAND--***"The Indiana Jones Adventure in the Temple of the Forbidden Eye."*

The first part of this adventure offered the unique opportunity to scrutinize all the people

you would never want to go caving with if your life depended on it. As the guide in the Jungle Safari snidely put it when we cruised by the exterior of the forbidden temple, "You too can wait three hours in the sun to ride a 3 minute 20 second roller-coaster." Luckily, we were privileged enough to get a special breakfast appointment with Mickey, Donald, and all their perpetually grinning friends, so we skipped out on the 20's slackers in furry costumes and sprinted to the front of the line, waiting only about 20 minutes for "THE EXPERIENCE."

The opening is a laborious walk through the grounds and inner chambers of the temple that has been set up as an archeological dig--as you enter, cheerful teens in safari outfits hand you decoder cards (care of AT&T, of course - why miss an opportunity to force feed the masses unwanted commercial advertising?) to "unlock the mysteries of the temple" while you wait. Turns out that essentially these are little warnings about the "horrors to come" transcribed in pig Latin hieroglyphics cloaked in a big plug for the company. There are, however, some nice touches here including some realistic stalactites, and skylights with lush tropical flora. After traipsing through some decent models of inner temple corridors to bat-filled lower levels (yeah, they'd hang out with all the people they pipe through there each day), you reach the "movie room" which offers a pretty cool 1930s rendition of "Movie Tone News" documenting the discovery of the temple and the dangers and wonders within, including a fountain of youth. A level lower, and you enter the jeep that will take you on one of three computer generated rides through the labyrinth which may include interactions with projected or animated rats, snakes, spirits (no, no, not the kind cavers like), insects, and many horrendous driving hazards.

Once the ride begins, you are forwarded into one of the three chambers of Mara, and then whisked through 11 grotto rooms in a route that is programmed to be different for every vehicle. Some of the chambers include the Tunnel of Torment with lightning bolts, the Cavern of Bubbling Death (pretty sissy), the bug room with lame projected insects that appear more like shadows you could make with some plastic spiders and a flashlight, The Crypt of Death that contains 2,000 human skulls, and the Snake Room, which has a Disney automaton cobra the size of a Buick with flashing red eyes that

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From San Francisco Bay Chapter Newsletter, (continued)

lunges at the passengers on the right side of the jeep.

Intermittently, there are several Indiana Jones "robots" that have that same dead quality of the long lost Hall of Presidents from the 1950s, that speak to you along the way (we sincerely hope that Harrison Ford was paid heavily for this unique indignity). The highlight of the ride is the huge rolling bolder that is pretty spectacular and does actually seem to be rolling over you before the car dips down into a hidden passage beneath it. After that, your three minutes are up, and you depart your jeep for some other poor slob whose been waiting an hour with his whiny kid for "the most thrilling ride ever!"

For our recommendation, we paraphrase Disneyland's own ad copy: "Now Fear Has A Name!" Yep, waiting in line in the cancerous sun with 2,000 other ugly Americans for a \$100 million dollar roller coaster--that is SCARY. By the way, Disney proudly announces that the ride can accommodate 2,400 people per hour--how's that for Yankee ingenuity?

Not satisfied with one fake cave, we immediately motored over to Universal City to check out what other falsehoods they could pull over an unsuspecting public...

UNIVERSAL STUDIOS--"*Back to the Future, and Beyond.*"

This is our vote for the coolest ride in North America, although the "park experience" is smarmier than the anesthetized cleanliness of Disneyland--many more potential gangland members here during daylight hours, and the gift shops are too depressing for words. However, the ride is well worth it. Part of the thrill is that you wouldn't expect it. We had such ambivalent feelings about the films that spawned it; Michael J. Fox--well, who could dislike such a mediocre actor? But the ride really isn't about stupid films. Sure you have to wait through an agonizing discourse by Christopher Guest (the Mad Doctor-Inventor) to set up the ride. But the innovative maneuver of placing you in a top-secret medical research facility examining room while you wait to climb into the car that seats only eight persons is clever--complete with charts, personal notes, and reports on the walls to read. But the real fun begins once you climb into the reconstructed

Delorean with your fellow passengers. There are a number of fairly intense warnings about the ride--apparently people do yak fairly often, the result of the ride's approximating real aerial maneuvers. But it really isn't any worse than the circulating teacups at Disneyland, that always make me feel queasy if I've eaten something greasy beforehand--in the latest scenario, it was an "authentic Mexican-American churro." The ride approximates the feeling of traveling 100+ miles per hour with a six story screen that curves around you (IMAX technology, for the geeks, excuse me, engineers among you), thus producing the "virtual" effect which is timed with lurches, bumps, and reverses through the programmed interactive space.


The ride officially begins with you crashing through a series of billboards and signs above the back to the future set in the movie (I will buy gas at TEXACO, I will buy gas at TEXACO....), and then blasts you into outer space. You are chasing another souped-up Delorean piloted by the enemy, Biff, and you follow him into an asteroid. This is really fantastic as you swoop and lurch through a series of vast rooms and curving tunnels in a gorgeous ice cave; but the experience really takes off when you flash back to the past and enter a prehistoric period. The car emerges outside a volcano where a gigantic Tyrannosaurus Rex lunges repeatedly at the car--trust me, relative to the bobbing, plastic snake, this thing looks like it COULD eat you! You then do a stomach-dropping dive bomb into the volcano (of course, dinosaurs DO live in volcanoes...), and follow a series of red lava-filled passages that lead to a main room of bubbling lava and smoke. Just then, the lava erupts, and just when it seems you will be engulfed in the waves of molten rock, the car time-travels again and you end up returning to the laboratory dock. At five minutes, it is a far more satisfying experience than the Indy Adventure, and the caves are much wilder, since they apparently used photos of some of the largest rooms in Carlsbad as computer graphic prototypes.

Our recommendations: go to Lech or Carlsbad if you can; if not, check out the Back to the Future Ride at Universal Studios. Happy Virtual Caving - no vertical gear required!

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