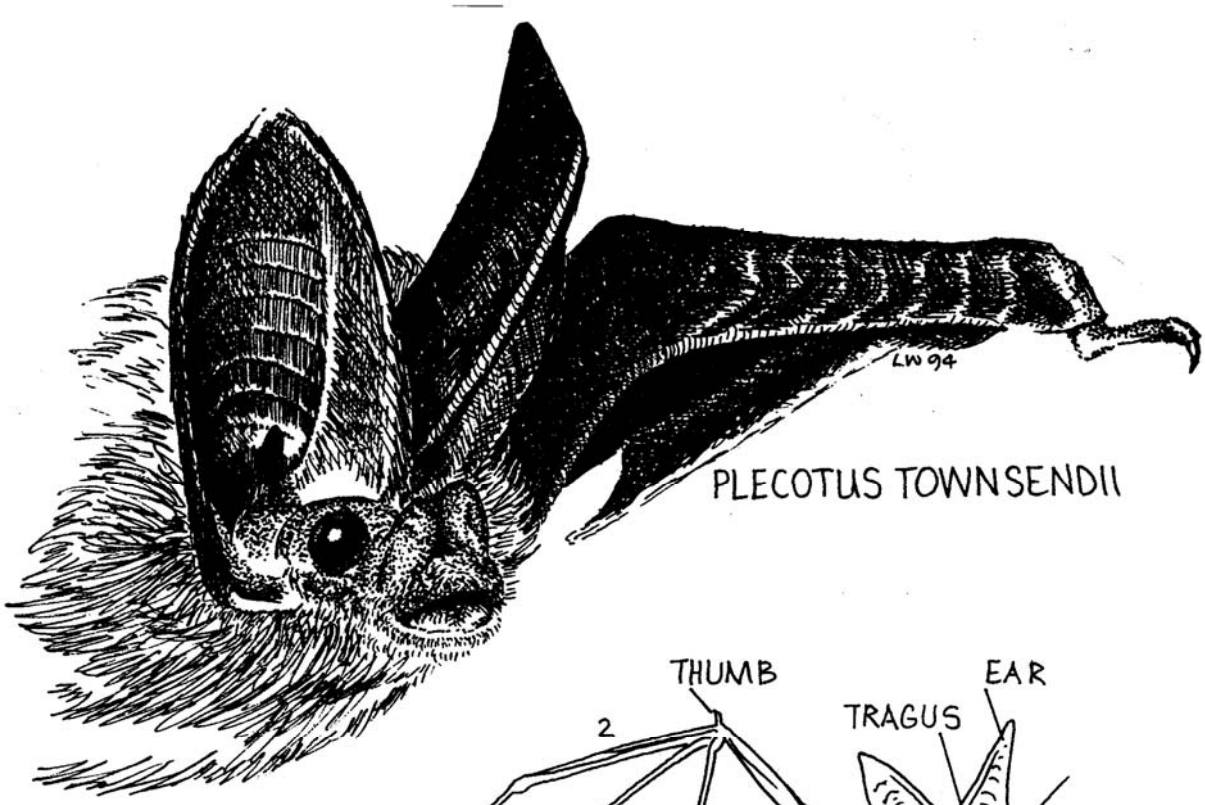
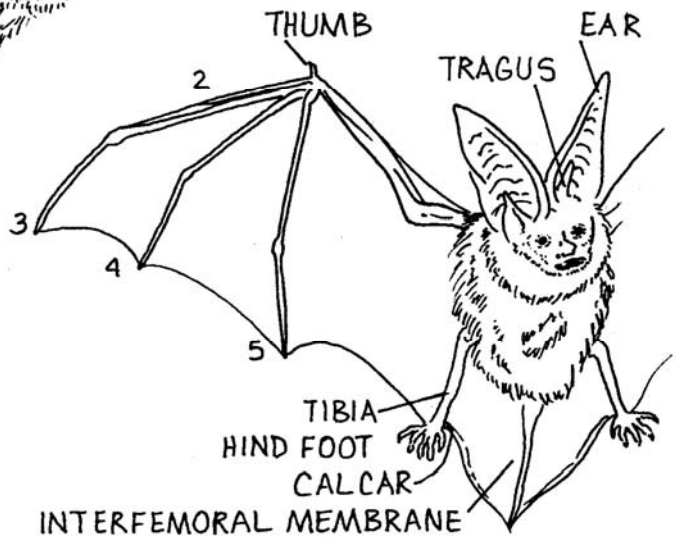
BAG RAG

JANUARY-FEBRUARY 1994 **VOLUME 13 NUMBER 1**





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Editor's Notes: In this issue Ray Miller brings us the first in a series of articles on bats. Ray says he will be glad to field any questions you may have about bats, or to hear about any bat encounters you would like to report. The bat hotline is (916) 926-2440. I also snatched two items out of the newsletter review in order to fill out the feature, along with Liz Wolff's beautiful bat illustrations.

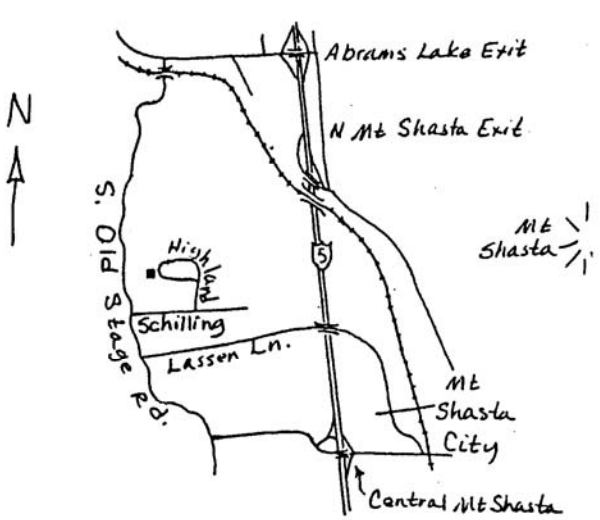
The point of all this bat stuff? Well, for one thing, let's remember the reminder from Bongo the Bat: "Hey all you caver people out there, just bug off already and let us bats get some sleep, OK?" Thank-you Bongo. Anyway, if you go into caves, you can't know too much about bats.

The Wolffs bring us reports from the cave management symposium in New Mexico last fall, and OREGON CAVES, where the restoration work has evolved into dome climbing and detailed inventory. It all sounds like continuing education to me. Right on Jim Wolff! Add that to your résumé.

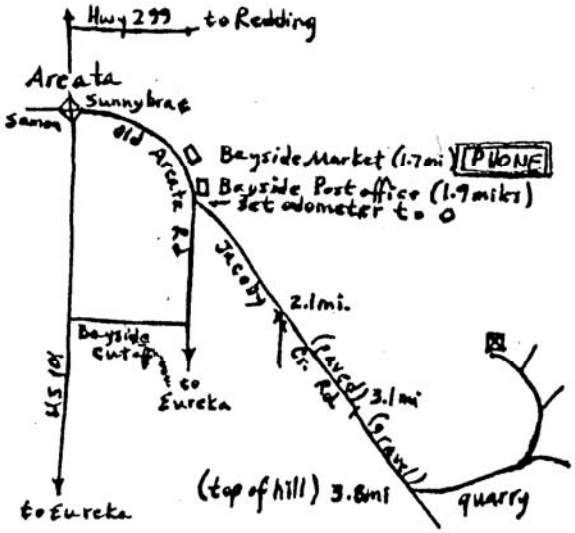
Judy Broeckel took one look at CUL-DE-SAC CAVE and had but one comment: "party cave". So near a highway, it should be full of old tires, dead cars, and painted slogans. But really, it is just lightly trashed, and you can reach it in the winter. So here it is, the results of the 1994 Broeckel family cave mapping project.

Welcome back to Dick LaForge, SAGs newsletter reviewer with reports on tremendous caves, and reprints from all over the Western Region. I have no problem at all with hearing more about LECHUGUILLA CAVE, and I suspect that other SAG RAG readers enjoy all the details you can put down on paper about that wondrous cave.

COVER: Thanks Liz Wolff for the really good bat drawings!



Map to **MARCH 11** SAG Meeting



Map to **APRIL 16** SAG Meeting

CALENDAR

March 11, 1994	SAG meeting at Kottingers 7:30 PM. Special topic: Cave survey basics.
March 12, 1994	Cave survey field trip (See notes).
April 16, 1994	SAG meeting at Fritzkes 7:30 PM.
June 20-24, 1994	NSS Convention, Brackettville, TX.

Meeting Notes: Jefferson State Grotto is specially invited to attend both the theory and the field sessions on basic cave survey. This is a great opportunity to learn what is involved in mapping a cave. Take advantage of this rare chance to learn from an expert. Liz Wolff will be organizing the information and the activity, so call her for details at (916) 964-3123. Dates: March 11-12. It would also be all right to simply show up at the meeting without calling ahead.

More is planned for the March meeting. Forest Service Biologist Francis Mangels will be attending the SAG meeting as a guest. He will be talking about the biological cave resources of the McCloud Ranger District. Do you have questions about cave life? Bring them to this meeting.

Now, about the April meeting, this is the same map as before to Fritzke's house. It will work if you can remember the following: once you hit the dirt road, do not turn left until you reach the quarry. After that, you should always turn left. The phone number is (707) 822-8566. Give them a call and let them know you are planning to come. Be prepared to go caving, just in case.

Newsflash and editorial comment: I just had a chance to look over the inter-agency draft instructions for the process of nominating caves as "significant". The worksheet includes very detailed inquiry as to the precise location of the cave. This would allow the government to field check the data. Now I'm all for responsible cave management on public land. But even with internal controls and assurances of confidentiality, I'm still nervous about turning over all "our" caves to the gentle ways of the US government. How about you?

All About Bats

WHAT GOOD ARE BATS?

To many the mere existence of an animal is not a good enough reason to have concern for its well being and future prospects. After all, the dinosaurs became extinct without the help or hindrance of humans. If the world can get along without *T. rex* there should be little impact at the loss of a wisp of an animal that we seldom glimpse.

Bats do pay their way in this world. The fruit and nectar eating bats pollinate blossoms and spread seeds. The insectivores, the kind of bats we have in this area, are the major nighttime insect predators. Each night the bats sally fourth and eat their weight in bugs. That translates to about 5,000 mosquitoes. They also eat moths, beetles and flying aquatic insects. One local species, the Pallid Bat, specializes in terrestrial insects. It finds Jerusalem Crickets (potato Bugs), scorpions and centipedes absolutely yummy. To learn what bats eat we examine their guano under a microscope. The hard parts of insects are not digestible, and we can identify prey species from body parts.

Bats are very good animals for use in studies of the well being of our environment. In the local area biologists have captured as many as 450 bats in 1 day. The animals are examined closely to determine their general health and reproductive status. This is an indication of how well other organisms are faring. Why use bats for this? Rabbits would work just as well, but it would take a long time to capture 450 rabbits. And think of the size pen you would need. In the good old days the primary collecting tool was a shotgun. Today we capture specimens without harming them and release them at the point of capture in plenty of time to feed before daylight.

Ray Miller

The following is a summary of discussion presented by Dixie:

The Plecotus is primarily a cavern dweller – it does not live in cracks, crevices, or buildings as do many other bat species. Historically, there have been large colonies in the Mother Lode: in Volcano, in Wool Hollow Cave, and in Coral Cave. For the past 40 years, these colonies have declined markedly, as have colonies throughout the state. With Coral Cave underwater and often disturbed when out of the water, the bats in this area of the Mother Lode now seem to move among Wool Hollow, Heater, and Crystal Stanislaus caves. They show extreme loyalty to their caves, but they move readily when disturbed. They do have a long lifespan and memory, and will often return if they determine a cave is "safe."

The Plecotus breed in the winter, store the sperm, get pregnant in the spring, then gather in maternity groups. They give birth around the end of May to the end of June with the females and young being the constituents of the colonies (the males are independent of these groups). It takes 6-8 weeks to raise the young. They may be in one cave when pregnant, move to another to raise the young, and yet another for normal living. They usually give birth to only one young per year; this makes them especially sensitive to population decline. They have no predators, but are <u>very sensitive to being disturbed</u> usually moving when discovered (e.g., by cavers). It is obvious that the population is at high risk from sports caving. One way to co-exist with them is to go in with groups of only 2 or 3; don't pass under them, move as softly as possible away from them, use red light filters, and make no loud noises or other disturbances. It is definitely preferable to stay away during the maternity season.

They prefer a cave with 2 entrances with a warm ceiling pocket, preferring a temperature range of 70-80 degrees F. They are usually found in the twilight zone, and they don't like tiny openings like some bats do. This species waits until it is completely dark to fly out and feed, making them harder to count and observe.

(From Newsletter Review material, Devil's Advocate, Vol 26 Num 12, Dec. 1993, P. 68. A letter from Columbia Grotto about bats and Wool Hollow Cave in the Mother Lode.)

BATS SLEEPING
Don Glasco

For years we've heard that even minor disturbance is bad for hibernating bats. But how much is "minor"? How much is "too much"? Research has been carried out on this by scientists at Aberdeen University in the United Kingdom. They tested six species in laboratory conditions, using a range of stimuli, such as photographers' flash-guns and speech, as well as actually handling the animals.

If aroused by a disturbance the hibernating bats increased their respiration rate and used up some of their fat reserves. Arousal by a torch beam or a sudden sound depleted a bat's fat store by 0.00 1 of a gram. Handling it depleted the store by about 0.05 of a gram.

That may not seem much but bats weigh precious little to start with. An adult female pipistrelle weighs about 8.2 grams when she goes into hibernation in October. By April she comes out with only 6 grams. Juveniles start out weighing 6.5 grams and end being 4.5 grams heavy at the end. So a small fraction of a gram can be critical. A bat with depleted reserves cannot hibernate for as long and the earlier it wakes up, the fewer insects there are around to replenish the depleted reserves.

The scientists calculated that handling a bat reduced the hibernation time by about 104 hours. Shining lights or shouting caused less impact –sleep was shortened by some 4 1/2 hours. But the effects of careless actions can add up over the winter months.

So what do the scientists recommend? Visits to bat hibernacula should be limited to no more than two or three per winter. Handling, flash photography, bright torches [that's flashlights in "American"], excessive noise, smoking, even lingering, are all no-no's. Heed these cautions or the scientists may find they have little left to study or conserve

(This article first appeared in "The Economist". February 27. 1993.)

Hibernating Western Big Eared Bat. Pleats in bats' ears allow them to fold to be tucked under wings; a habit of Plecotus bats also.

1993 CAVE MANAGEMENT SYMPOSIUM – CARLSBAD, NM by J. Wolff

I had the privilege to attend this year's symposium. It had the biggest attendance yet, compared to the last ten years they've been having them. This year's symposium (they have one every other year) was hosted by the BLM, NPS, USFS, CRF, and the NSS with additional support from the Carlsbad Chamber of Commerce, Carlsbad Environmental Monitoring and Research Center, National Outdoor Leadership School and the National Speleological Foundation. The Steering Committee members were represented by the American Cave Conservation Association, Cave Research Foundation, National Caves Association (commercial caves in the USA), National Park Service, U.S. Fish and Wildlife Service, among others. All in all, they had a very impressive line-up of speakers. One hundred and fifty registered, with unknown others showing up at the door. Grotto members Mark Fritzke, Bill McGahey, Liz and Jim Wolff attended.

All the speakers were great and informative. With help from McGahey, I was able to attend all the talks that I wanted to especially hear, and Bill was able to go to most of the others – for most of the sessions, although he did bug out and went "lint-picking" (no, not nit-picking!!) for one day at Carlsbad Caverns with Liz. Anyway, this way we could attend most of the sessions. ALL the talks sounded fascinating; it was really hard to choose between which ones to attend. I am putting the abstracts in the Grotto library until the actual Symposium Proceedings gets printed (and they just printed the '89 proceedings this year!)

On Friday, Mark and I were able to go on a field trip to the GYPSUM KARST east of town, where the BLM permits natural gas and oil exploration – all the while having to mitigate or just plain avoid the caves underneath. The group visited over three caves on this field trip. Most of us were not prepared to go caving, since we were told this was going to be a surface trip, so few carried even flashlights. Out of desperation to get out of the cold heavy winds, we ate our sack lunches in SKYLIGHT CAVE. All caves seemed to be used by owls as roosts. We disturbed several upon our entry to the cave mouths. In BRANDED CAVE we found beautiful selenite crystals on the ceiling. It was disturbing to notice organic debris on the ceiling since it was rather stormy outside and these caves DO flood on occasion …!

I must thank all those people and agencies for putting on such a fine symposium.

ANNOUNCEMENT

The NSS has recently signed a Memo Of Understanding (MOU) with representatives from the FS, BLM and the Park Service to begin the implementation process of the Federal Cave Resources Protection Act (FCRPA) of 1988.

As we all know, it takes time to get governmental gears a-goin'! It would be nothing new to tell you that the Forest Service is one of the last to get on the cave conservation bandwagon. But yet, there are several examples out West over the years that show, even without legal Washington Office direction, certain Forest Service land managers have gone that step further ahead and managed their caves, just because it was the ethical thing to do.

Now, we are faced with following the footsteps of the cavers who helped write the FCRPA. We must begin this pro-active approach to cave management and help out any way we can. True, we are having them (the Gov't) help us (the cavers) manage caves, but the fact is WE CAN make the difference in how "our" caves are managed.

I just received a package of papers from Jim Nieland, one of the authors of the FCRPA. He sent a description of how the implementation of the "significant cave" nomination process is going to work. The following is a very brief idea how the first year of nominations will go, from the FS point-of-view.

> As cavers submit their nomination for each cave, the system is set up with many quality checks. Each official directed to see that the forms are complete and each nominated "significant" cave is processed with speed and care. Total secrecy for locations, etc. is maintained and a tracking system is set up with the process logged from beginning to end.
>
> What makes a, cave "significant"? Just one criteria element out of five or so would do it. What makes the reviewing official sit up and take notice? Your completed nomination form, fully describing the cave – giving all the intimate details about it (as far as you know) – even caves with half-finished surveys. Anything is better than nothing.

The idea is to get a beginning list started through the initial process. Hopefully, next year the FS will have the idea how to go about the process; and with fewer reviews, the nominations can have an even shorter turn-around time. Not that all caves are going to end up significant, but 99% will. Examples of caves whose management would more or less stay the same would be **Lake Shasta Caverns** (a Special Use Permit cave), **Subway Cave**, and (maybe) **Pluto's Cave**.

The first year will be tough on the Federal land managers, getting to know their public allies, the cavers, plus having additional responsibilities in a day's work. However, I think that our new Forest Service Chief Thomas will see to it that this new hoop he has to jump through, will be an easy one. And one way to make it easy on him is to

COOPERATE WITH YOUR LOCAL FOREST SERVICE RANGER!

OREGON CAVES INVENTORY WEEKEND – Jan 15-16, 1994 by J. Wolff

It was slightly out of the norm from the usual participation at the park – usually we had been restoring the cave to "near-original condition", removing trail construction rubble and etc. from long hidden side passages. Now, we were being asked to help finish up the inventory that is nearing completion.

Twelve cavers showed up early that Saturday, in order to get a quick training session and assignments for the day. Since most of us hadn't ever seen, let alone, used the park's inventory form, John Roth, the Park Ranger, gave us a little leeway in accomplishing our goals – luckily! So, after assembling three teams, each with distinctively different jobs, we set out to do our best.

One team of four was to photograph and inventory four domes in the cave. These were pre-rigged with standing ropes, however one was to be watched closely because of a poorly placed bolt. Bad rock up there! One team was to be (see Liz's article below) setting stations in the cave – to be later found by my team, where we would do the inventory part of the deal at these points.

The team I was on had the honor of being with John and getting a geologically descriptive tour along the main tour route. He gave us visible examples of most of the cave features, formations, etc. that we were likely to encounter in the process of the inventory. Then he set us off in the right direction to locate certain survey points that needed inventorying.

The first area we actually worked in was in the Slab Crawl area. The little red spots on the map we had with us were our objectives. And these little points were waaay back in there, just past a few TIGHT spots. Bill Kenny and Jennifer Gould stuffed themselves past the tight spots and after some work locating them, found the elusive survey stations. Since I couldn't fit no matter how hard I tried, without much digging in the packed clay/mud, or undressing to go on, I chose to stay back with Neils Smith and wait. One problem, I still had the pack with the inventory gear in it – inventory forms, stick matches, pencils, but NO COMPASS! The compass was necessary for several of the, literally, one hundred bits of information we had to answer on the inventory form. Oh well, let's fake it! Actually Bill and Jennifer used the top of the Xeroxed map as "north" and oriented the two known stations that could be seen from one spot. After eyeballing these two points, they could reference any directional information needed – later to be corrected at the Park office. This data was later proved to be close enough.

That evening we got a real compass for our inventory work in the South Room, where we had two points to inventory, in order to meet our quota for the day. Now, don't get me wrong, John was not cracking the whip and **forcing** us to produce five stations a day, we really wanted to go into the cave one more time that day. Besides, I hadn't had a chance to try my wings with that new inventory form, and felt confident enough to try.

Once in the South Room, Bill K., Jennifer G. and myself soon found the little passage and the two stations. It was a breakdown slab room, perched high above the s.w. corner of the South Room, and it was totally devoid of features, formations, etc. But wait! I spotted some little 0.5 -1.0 mm diam. white specks on the ceiling, and as it turned out they were "cave slime" little organic specks that looked all for the world like traces of a carbide dump – but on the ceiling. There was some sediment, fine clayey sand, but that was it for the two stations – almost Zip! Anyway, we had a great time.

OREGON CAVES INVENTORY WEEKEND – Jan. 15-16, 1994 by Liz Wolff

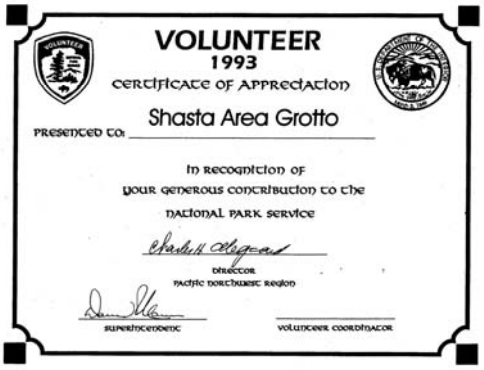
My (Liz's) team consisted of Chaz Davis ex-manager of Oregon Caves, Linda Gentile an unaffiliated NSS member that fell into the trip by being at the right place at the right time, Ernie Coffman a Jefferson State caver, and me. Our original objective was to relocate and mark stations for an inventory team following us. We climbed into the North Canyon Passage and proceeded to relocate stations, it turned out that the ones needing marking were up a 50 foot rope located at the bottom of a dome pit. The inventory team found us staring up the rope and figuratively scratching our heads. We had no vertical gear with us, so tried to find the other stations in another upper level passage. We did get one inventory station done. Luckily lunch time came to save us from a hairy – exposed – climb.

After lunch we had a trip out to the South Room to set stations and inventory. We managed to find the last station that had been done and we set off up the crawl way to our first station. Ernie and I located and marked them, while Chaz and Linda followed with the inventory. There wasn't much to inventory; there were no formations, Just corroded marble, tight crawl ways and lotsa mud. Ten stations and 6 hours after entering the cave, we wandered down to the chalet and dinner, the last team to come in. There was still spaghetti in the pot and salad in the bowl, then hot water in the showers.

The third team consisted of Mark Fritzke, Willie Ondricek of Jefferson State Grotto, his climbing friend James, and Nathan Jones. On Saturday they climbed and inventoried in 4 different domes, removed or replaced ropes and bolts, and took pictures.

Sunday saw the climbing team joined by Linda, Jennifer Gould of Jefferson State Grotto, and Bill Kenney. They were climbing again, this time to a lead in the Bone Dome above the Bone Room, the highest point in the cave. Bill, Linda and Jennifer went up to the Fourth Well to mark some stations and inventory. Mark, Willie, James and Nathan climbed to the lead in the dome and proceeded to try to stuff themselves into a tight hole across a pit in the floor and then into a room. I never heard what was across there, just that they made it. They also removed some bolts and ropes in other domes.

For this trip the logistics were a little different. We drove up early Saturday morning planning on being at the cave at 9 AM. The accommodations were the usual, with one exception. Instead of the concessionaire giving us room and board, the Park Service paid for us to stay in the guide quarters, eat, and do all the caving we could handle. There was no recreational caving this trip, mostly because the areas we would have recreated in needed inventory, and so we worked, and caved, and worked ... There is more to do before the inventory is finished, and more rubble to move; is anyone interested in another trip?


VOLUNTEER
1993
CERTIFICATE OF APPRECIATION
PRESENTED TO: Shasta Area Grotto
IN RECOGNITION OF
YOUR GENEROUS CONTRIBUTION TO THE
NATIONAL PARK SERVICE
DIRECTOR
PACIFIC NORTHWEST REGION
SUPERINTENDENT
VOLUNTEER COORDINATOR

CUL-DE-SAC CAVE by B. Broeckel

This may be the second most visited cave in the area. It is not far from well known Subway Cave. The entrance sinkhole is actually visible from the state highway, and is situated at about 4,000 feet elevation. Those approaching the cave are subject to the scrutiny of passing motorists.

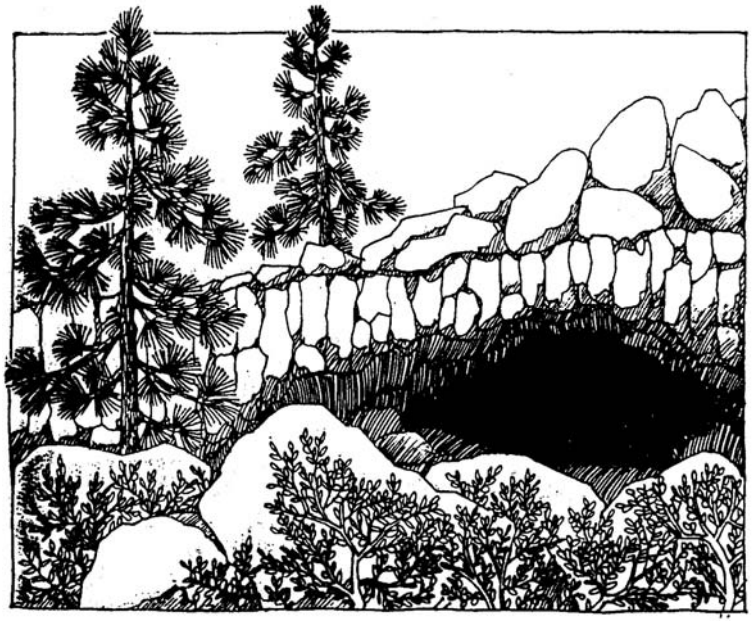
The sinkhole can be scaled on its eastern margin, adjacent to the parking area. One spot requires a slightly daring bit of rock climbing. After safely reaching the floor of the sinkhole, proceed north to the dripline of a broad, obvious entrance. The other (south) end of the sinkhole also looks like a cave entrance but it only goes a few feet toward the highway, ending very soon.

The north entrance is about six feet tall. As the eyes adjust, about 100 feet of large lava tube can be seen. The floor is completely covered with breakdown, and the cave appears to end in the back where the breakdown piles up to the ceiling. The whole space is washed in soft entrance light, and represents the major portion of the cave. In December, there were a few icicles.

A light source is needed to circumnavigate the large pile of breakdown at the end of the entrance passage. It is also a minor problem to pop through a 1 foot crawl hole in order to complete the circle. The first time I went through, it took me a long time to figure out that I hadn't found a second entrance. Becky was waiting at the crawlway, and was surprised, to have me come up from behind her.

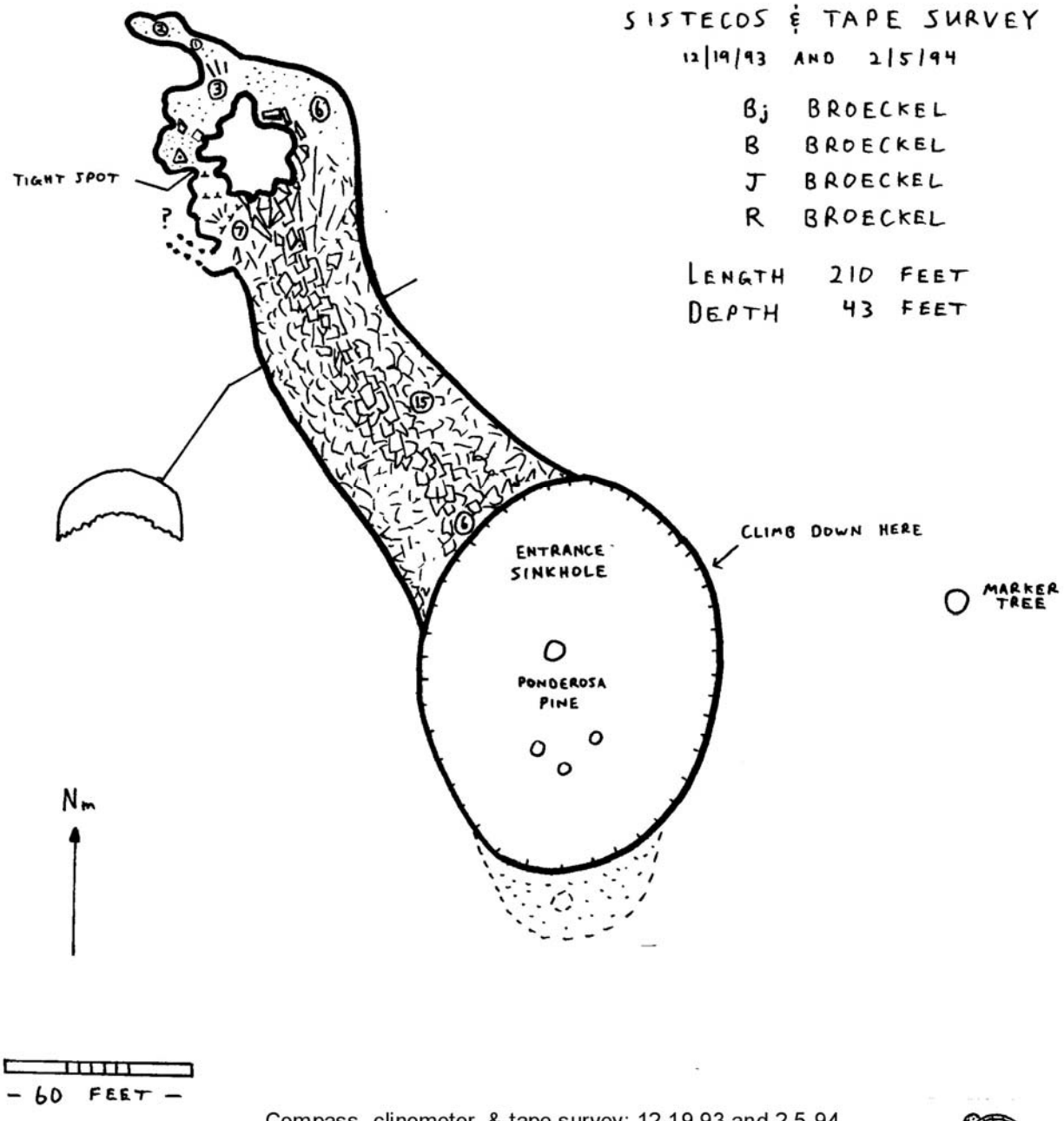
Some original lava tube surfaces can be seen along the east side of the cul-de-sac. A side passage extends 25 feet as a soft sand floored crawlway; that ends as a potential dig. The west side of the cul-de-sac is slightly more complex. A lead or two lurking in this area would probably require moving some larger rocks. In general, this cave seems to end too soon by a combination of cave collapse and dirt fill.

The survey tied in with the marker tree at the parking area. When the over-all trend of Cul-De-Sac Cave is compared with Subway Cave, it looks more like a parallel than a linear upper. Hmmm. Admittedly, these lava flows can curve around a lot. But wouldn't it be nice to have twice the cave potential in the Hat Creek Flow? It will be fun to see how other caves line up and what patterns are formed as more caves get found, mapped, and correlated.



CUL-DE-SAC CAVE

SHASTA COUNTY CALIFORNIA



Compass, clinometer, & tape survey: 12-19-93 and 2-5-94
Shasta Area Grotto NSS
Length: 210 feet Depth: 43 feet

Map: Cul-De Sac Cave

NEWSLETTER REVIEW, FEBRUARY 1994

By Dick LaForge

Your overcommitted newsletter reviewer was too overcommitted to write a review in December, so there wasn't any. My only excuse is that some of these overcommittments involved caving, for a change.

The trouble started with a trip to Lechuguilla at the end of November. Then I was asked to another week there, to coordinate Mineral/Geological inventory for another expedition. As you regular readers know, I have gotten involved with this project, which aims to inventory the cave's features in a computer database for the Park. The second week was an experiment to see if explore/mapping and mineral inventory could be done together.

The first week was mineral inventory only. Mark Fritzke, Cynthia Ream, John Bair, Julie Donovan, and Joel Despain also participated in this. We did not look for new passages (this is not allowed if not authorized for your trip), but were forced to scrutinize and photograph spectacular areas of the cave usually off limits. We were in the South West branch, where there are a large number of mind blowing areas quite close to each other. Here is a partial list of the more unusual items we found and scrutinized: a new occurrence of Sulfur, a yellow uranium/calcium/vanadium mineral possibly Tyuyamunite, spectacular examples of Folia covering all the walls near the deepest point (-15?? ft) in this part of the cave, Gypsum Hairs up to 30 feet long, the Hoodoos of Hoodoo Hall, the well-known gypsum Chandeliers, some sort of (probably) cave-dwelling fungus colonies, the Wizard's Staff, a 10 foot column of gypsum crystals about 3 inches in diameter, and several examples of Pool Fingers, which are underwater deposits of calcite on organic fibers probably made by bacteria. This is in addition to the usual abundance of gypsum flowers and hairs, helictites, heligmites, planar clusters, aragonite bushes, and ordinary flowstone formations of all types.

The second week I took a 5-daly trip to the Far East, which is the most distant part of the cave, time-wise. It took us about 10 hours, at a brisk pace, to get to the camp. We then spent three days mapping new passage (all maze, no long new extensions), and then the last day returning. This is like spending an entire work week underground, and is quite a cavey experience, to understate.

The problem with all this is that the mineral inventory write-ups take a lot of time afterwards. There are reports of notable findings, evaluation of inventory effectiveness and recommendations, and photographs to mark and label and send out for duplicating. It is a real load to come home with all this work right before Christmas, meaning that it really takes all of January. In the Good Old Days I would come home from caving, rinse the cave clothes in the creek, dump the equipment in a box, and wait for the next trip. Now it is two hours of organizing and writing for each hour underground.

I have to admit to some hesitation in writing about Lechuguilla. Perhaps some of you are tired of hearing about it. Perhaps some who do not see any chance of going there will feel that those who do are elitist braggarts. It is true that, since its discovery, the way has been open for anyone with sufficient caving skills, experience, and physical ability to cave there. It is also true that nowadays it takes more persistence and some luck for a newcomer to get on a trip. At the bottom, this is largely due to the fact that Lechuguilla caving is for the service of the Park, not for cavers' recreation. The key is being useful. At the same time, Lechuguilla is so unusual a cave that I cannot help but try to share the experience.

Still, it is just a cave, and all caves share the same essence. In this way, the most important way, all caves and cave trips are equal.

Lechuguilla is not the only monster spectacular cave undergoing active exploration. I have hot scuttlebutt that Jewel Cave is undergoing a sudden expansion, with miles of very large new passage being mapped.

Your reviewer has now another source of caving trivia and gossip. He (his wife, actually), has gotten an account with an Internet connection, so after a frustrating learning curve signed up for CAVENET, which is an electronic cavers' bulletin board (sort of). Anybody can write about any cave topic, ask questions, etc., and all get to see it. The result is about 15-30K of writing to look at every other day. It's all interesting; some letters are more interesting than others. There is a "thread" going now on medical skills in cave rescue. You will get some reprints from this source in the next review.

NEWSLETTER REVIEWS

The first subject is BATS. First, some bat science. The Explorer (S Cal.), November 1993, has an article, reprinted from New Scientist April 1993, on the relations between bats and moths. So summarize: It has been known that some moths, upon hearing the ultrasonic squeaks of bats, emit their own ultrasonic clicks. It is also known that these moths are less preyed upon by bats. It was thought that the clicks startled the bats or interfered with their echolocation system. But researchers at York U., Ontario, found that:

A/ These moths actually taste bad to bats

B/ Bats prefer not to catch these moths as much other moths

C/ When these moths have their clicking mechanism disabled, bats catch them as much as other moths, but generally do not eat them

The researchers conclude that the moths click to warn bats of their distasteful nature, much as other insects by their color patterns warn of the same thing, stinging ability, etc.

Then in The Speleograph (Oregon Grotto), November 1993, a short article by Don Glasco on the energy loss to a bat when it is disturbed during hibernation. See complete article after this introduction.

To bring this closer to home, in the Devil's Advocate (Diablo Grotto), Dec. 1993, a letter to the D Grotto from the Columbia Grotto, concerning cave gates and bat populations in some Mother Lode caves. Cavers in that area are concerned about Plecotus and are trying to manage these caves accordingly. The following excerpt explains about Plecotus: (Ed. Please see pages 4 & 5.)

CAVE RESCUE: Reprinted is a report from the Underground Express (WVG), Vol 13 #3. The NW Cave Rescue organization has been successfully integrating themselves with their local Sheriff's Office, which is the right thing to do. This gives some details. Cynthia Ream as promised to write more details for us

ONYX CAVE, AZ: The SFBC Newsletter, Dec. 1993, has a nice trip report by Terry Silva about Onyx Cave and Cave of the Bells, near Tucson, AZ. I keep telling people that, though far away, a trip there is well worth the effort. I used to go regularly. The way to do it is to sign up for a trip with SFBC or other grotto. While there you are guests of the Escabrosa Grotto which manages the caves.

SEA CAVING IN MENDOCINO COUNTY: A report by Dave Bunnell in the SFBC Newsletter, Jan 94, describes his forays into some sizable and interesting sea caves in Mendocino County, reprinted here if there is room. Dave welcomes newcomers on his sea caving trips and if he is going to continue to work northward, you might want to contact him about going along.

In The Speleograph, Oct. 93, is a report by the venerable and going strong William R. Halliday, on progress mapping lava tubes on The Big Island, Hawaii. Summer's total, 8.3 miles. The article will be reprinted, if there is room.

The last item is not from a caving publication, but from The Dust Devil, newsletter of The Desert Trail Association. It contains a letter to Darrel Tomer, alias "Ol Creosote", who you may know as a long-time caver and inventor, with Jim Gosset, and maker of the Gosset Box. It is from a younger caver (alias "Sidewinder", reminiscing about an experience Ol Creosote led him into many years ago. I am retyping the parts interesting to us.

Best Caving Wishes,

Dear Ol Creosote,

I can tie a one handed bowline around my waist faster and tighter than any other troglodyte I have lately come across and I owe it all to you. I wonder if you will recall an event that took place perhaps thirty-five years ago in Lost Soldier's Cave. Randy, you and I were with a group that may have included Ellis Hedlund and Jim Moses. The three of us were somewhere in the cave overlooking a vertical drop of about 60 feet that had been rigged with a wire ladder. We sat there for a while and ate cold chicken legs and cookies before Randy and I drew straws to determine who was to make the descent first. I think Randy and I were ten years old at the time so the immensity of the adventure was exaggerated by childhood illusions that happen in the dark when the closet door is ajar. I won the draw. I shall never forget that feeling of peering over the edge into the great abyss. I was committed, I had drawn the longest straw. Suddenly, my childhood consciousness became aware of self and was presented with amazing possibilities. Sixty feet down a well lit flight of stairs is in no way the same as sixty feet straight down a cold, wet, dark hole within the depths of a mountainside. The only light that has ever come to this place in thousands of years is mounted on the helmets of those brave souls that enter this place. Otherwise, complete and total darkness. Sixty feet is barely a walk across the street. In a cave, for a ten year old boy, it is an adventure.

I shall never forget the webbing you used as the belay line you tied around my waist. It wasn't one of those bright red, yellow, or blue colored ones that are so popular these days. No-sir-ee. This was the original. One inch tubular nylon a hundred feet long of the most innocuous color possible covered with old stains and abrasions and other evidence of past adventures. It was an honor to be tied to such a thing.

As you held the webbing around your body and slowly fed the line to me as I maneuvered myself over the edge, I fought my fear. I held onto that first rung and looked at Randy. He was my very best friend. Then I must have looked at you. The light of my carbide lamp was like a flash of a camera. I can still see you guys sitting there. Randy was egging me on while you just grinned. Down I went into the darkness. One rung at a time. With each downward step, the heels of my boots would find the next rung from the backside of the ladder. Finally I was at the bottom of the drop and you two were so far above me that it was almost impossible to see you. As I untied the webbing from my waist in order for Randy to be the next down, I heard from the order to come up. What!

It had been decided to start the climb out of the cave. There wasn't enough time to go any further so I had to climb back up the ladder. My belay line hung from the edge of the drop and dangled to the floor like a wet noodle. I picked up the end off the muddy floor and proceeded to tie the webbing around my waist with a knot that is probably not described in any literature on the subject of knotcraft. A once in a lifetime fluke. A knot tied in such a specific manner to this very day has not been duplicated. If this knot could be duplicated, it would have a tremendous impact on civilization as we know it. A "time release knot". A knot that automatically self releases exactly fifteen minutes after it is tied is what I had inadvertently invented. I had secured the belay to myself in this manner and began the ascent. When I was about fifteen feet from the top it activated.

I am not sure, but it is a possibility that it was not a coincidence that the cleats of my boots became hopelessly tangled in the cable of the ladder just as the safety line fell away from my waist. It may have been in the cosmic design . . .

I looked up at you with eyes that must have expressed a child's hope for a future. You saw what had miraculously taken place and knew that a rescue was

definitely in order. And then here you came. Head first. Down the ladder. It doesn't seem possible but that is what you did. You undid my tangled boots from the cable and guided me back up the rest of the way to the ledge. I was impressed. I sure would like to thank you for that. I think we sat there for a while and ate the rest of the chocolate chip cookies.

It was sad news to hear about the death of your friend, Jim Gosset. He probably led a more fulfilling life than most people. I was always impressed with him even though I knew him only from a distance. In your last letter you asked me if I would like a "Gosset Block". I would like to have one only because I was interested in the inventors and the relative importance of the device in the development of vertical techniques. I remember seeing you working with one of those finely machined devices. If one is available, it would be appreciated.

I hope this note finds you and your family healthy and happy if it finds you at all.

Your Friend,
Sidewinder

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From the SFBC Newsletter, January 1994, vol. 37, no. 1

trip report

Mendocino County Sea Cavin'
by: Dave Bunnell

Derek Hoyle had been scouting for sea caves since moving up to Gualala, and had enticed me with tales of large entrances. So it was that on a gorgeous Kodachrome day in early May, Derek and I were on the road to Point Arena. Just before the entrance into the lighthouse grounds, there is a pull-off on the left. From here , two large entrances were visible in a prominent point. Only 20 yards of treespassing were required to hop a fence and clamber down a dipping outcrop that stair stepped to the cove below. Ten minutes later found us at the cave entrance, and wet suits were deemed in order, The cliff face here was covered with orange lichen, and indeed, the cave within proved more colorful as the receding tide revealed orange, red and yellow sponges and purplish encrusting algae. Just inside, the cave split, the right fork leading to a second entrance which helped illuminate this portion of the cave. Derek got his first taste of real sea caving here as he took the survey tape and waded into the surf to connect this entrance. Despite his inherent fear of water, he approached it enthusiastically. Back in the main passage, we surveyed past two small entrances visible above a shelf before reaching a moderate sized chamber with two more entrances. Had this been it, it would still be a notable cave. Yet to the left was a major passage extending back over 200' into genuine darkness. The dark walls and spacious dimensions inspired the name "Black Borehole" for this passage. Scattered about on the floor of this passage were hordes of soles, not the fish, but soles of tennis shoes! No doubt someone is missing these poor lost soles, so we named the cave "Cave Of The Lost Soles" in their honor. All in all, this is an impressive cave and it took us a couple of hours to map all 467' of it. Next to this cave is another with a larger, more impressive entrance. It too cuts through the point, and is large and spacious with in. Unfortunately, the combination of a now-rising-tide and rough surf precluded mapping it. We spent the rest of the day scouting for caves on foot at the Mendocino headlands, spotting dozens of large entrances and a littoral sinkhole definitely an area to return to with sea kayaks.

Our next cave "lead" came from a local real estate newspaper, which had an article on Mendocino caves. This set of caves is reached by taking the first left hand turn off Highway 1 north of Peters Creek Bridge as you drive north from Mendocino. Drive to the end of the road and park. From here you can climb down to a cove. On the south side are a number of caves, the largest measured at 65'. The main cave is on the north shore, about a 10 minute walk at low tide. The entrance is a tall, narrow fissure and leads to what most cavers would concede is a "real" cave, because it's quite dark inside. The main passage is sandy-floored and continues 180' to a terminus in a small room. It's all walking with a couple of stoop ways. There are two side passages leading to other entrances. One of these is termed the Batstar Chamber, as it contained the largest and most diverse concentration of bat stars I've seen in any single cave. Derek counted 42 of them, purple,red,red & white speckled, pink, chartreuse.....There were also dark adapted (white) anemones, lacking the green color provided by the algae which normally lives in symbiosis with these creatures. Here the survey was delayed briefly for pictures....The second side passage was floored with fairly deep water, but we finessed the survey by walking along a ledge on the left side.

All in all, a very successful first trip for the Mendocino County Cave Survey with two caves over 400' and lots of tantalizing leads remaining.

From Underground Express, vol. 13, no. 3

A Northwest Cave Rescue Report

Things are finally starting to coalesce for the Northwest Cave Rescue organization. The group of people that had been meeting and training for the past eleven months has passed their SAR (Search and Rescue) exam. These include Carea Preston, Eric Mortensen, Bob Johnson, Cynthia Ream, Carol Kiggins, Brent Reed, and Tom Kline. Garry Petrie was already certified SAR and then they changed the certification (I think), so he has to take it again. Our next step is to get our non-profit status, which is less $200 away from reality. This is due in part to the group shelling out their own money and from the $54 collected at a hat passing at the Oregon Grotto meeting. If any other grotto would like to donate funds, it would be greatly appreciated. Once our non-profit status is official, we plan to solicit companies for donations.

This past month we did a weeknight drill where the sheriff was invited to observe our mock rescue. He didn't show, but Mike Christie, our trainer/ advisor, said that just letting the sheriff know he was invited stated to him that we were confident of our skills. We plan to invite the sheriff and others to all our mock rescues in the future. Mike recently has moved to Alaska, so we are on our own. He stressed that we were well prepared for whatever rescue might come our way. We will all miss Mike.

If there is ever a need for a rescue, contacting the local sheriff and informing him of the Northwest Cave Rescue through the Clackamas County Sheriff's office is the correct way to proceed. This is because if we are called out under the sheriff, we will be under state protection from lawsuits, an unpleasant thought, but necessary. Also, the county has a large resource of materials and personnel.

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From The Speleograph, vol. 29, no. 10, pages 122-123

EIGHT MILES INSIDE THE BIG ISLAND -- SUMMER 1993

By William R. Halliday

On June 27, 1993, Steve Smith (Flittermouse Grotto) and I flew to Hilo and began the summer field season of the Hawaii Speleological Survey. Because of the timing of the NSS Convention, it was an abbreviated season. Principal purposes were:

1. Compass and tape mapping of Puna District lava tube caves to obtain information requested by the USGS' Hawaiian Volcano Observatory staff;
2. Study of thermal erosion by downcutting of lava streams in lava tubes, desired by NASA teams;
3. Further reconnaissance of pit craters and high altitude lava tube caves on Hualalai Volcano, in part related to the source vents of the fascinating Kaupulehu xenollith nodule lava vents which are the subject of geological controversy, preparatory to 1994 SRT explorations.

Field time was limited by the need for days of cartography and administrative work, but a total of about 44,000 feet -- 8.3 miles -- was mapped. That totaled about 70,000 feet for the year.

Our beginning was not exactly Auspicious. In the crawlway beneath the main entrance sink of Kaumana Cave, it was raining so hard that eyeglasses and compasses got badly fogged and water-proof paper got soggy. Upslope it got better, however, and we pushed on past the commonly visited section to a beautiful jungly sink.

Next morning, we consoled Jim Martin (NSS #2886 and Chief Ranger of Hawaii Volcanoes National Park) who had just amputated his boot toe and rearranged some of his own toes. Then we went on down the Chain of Craters Road to have a look at lava flowing in the Lae Aupuki-Kamoamoa skylights. But the rains came and we never got near them.

July began bright and clear, however. On the first, we returned briefly to upper Kaumana Cave with local cavers Thomas Hargrave and his friend Edith. We continued the survey to the Garbage Entrance -- one of the two worst vandalized areas I have yet seen in a Hawaiian cave -- for a total of 2,795 feet. Then Steve and I went back to the flowing skylights and obtained some good photos of molten lava -- some shown at the NSS Convention in August.

After a morning of cartography on July 2, Steve and I returned to Epperson's Cave where new passages seem to appear out of nowhere on every trip. Here Steve pushed a tight lead at ceiling level at the makai end of the Right Hand Passage. Beyond was the Mud Complex as anticipated, partially mapped from the other end in and past. We found at least 200 feet of additional passage, but decided we had better uses for our time than mapping it, at least until 1994.

Remapping of the John Martin Cave System began July 3. When we had tried to plot Gerald Favre's 1981 map on the topo, it was obvious that something was wrong. Also, there was a question whether it is all one cave. On July 3, we settled that matter with the help of Ollie Fulks and another neighbor. Starting mauka the mid portion of the system, we covered about a mile (measured later) and found that there are two caves in the system, with two segmenting collapse sinks and a short natural bridge between them.

We still couldn't figure out what was wrong with the Favre map. Stephan and Christhild Kempe flew in on the 4th. On the 5th with Ollie, we all returned and mapped 5,266 feet, as far as the slab-edged Infamous Crawl. It was a busy day; in the evening, we attended an excellent lecture on historic preservation at the Lyman Museum.

We kicked around possible names for the cave at the makai end of the John Martin system, but we still couldn't figure out what was wrong with the Favre map. July 6 was a day for meetings and discussions at the U.S. Geological Survey's Hawaiian Volcano Observatory, followed by scouting for entrances reported in subdivisions between Volcano and Hilo, but July 7 was the breakthrough day for the John Martin System map. We pushed on through the Infamous Crawl (it only seems bad when you're in it) and mapped 3,463 feet to a lava sump. When we plotted it later, it turned out to be Pukalani Cave, which we thought had been lost forever to road construction. The construction fill is there, all right, but a lower level crawlway tunnels right under it.

With the lower end of the cave pinpointed, the problem of the Favre map became clear. Its north arrow lines up with the subdivision roads that actually run approximately NW-SE, not with the compass. Otherwise, it's a fine map, and we decided not to bother resurveying the mauka end of the cave. We did not find a reported small lower entrance, but left unchecked an overhanging orifice several feet overhead that looks like it should go. On the way back to Hilo, we pinpointed some of the lower entrances of Kazumura Cave, plus Road Seven Civil Defense Cave (which I did not then recognize as Doc Bellou Cave, which I had visited years earlier when the subdivision was much more densely vegetated). We also had another look at a confusing little three-level entrance section of John Martin Cave, and located some new openings near F Road. The neighborhood kids call one of these Pirates Cave.

July 8 was a day of cartography and meetings, and the 9th saw only limited field work, clarifying the short three-level section of John Martin Cave and checking the F Road caves. Pirates Cave was the only one worth mapping: 155 feet long, plus a 20-foot side passage. Its flow features are only minimally developed, and it appears to be a shallow subcrustal gas space rather than a lava tube. In the afternoon,

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From The Speleograph, (continued)

we began mapping the makai end of Epperson's Cave, finding it more braided than expected, with nonsuperposed upper level sections. The length mapped was 1,675 feet.

The big push on Keala Cave began July 10. This cave is roughly parallel to Kazumura Cave and the John Martin System in the Ailaau Shield flows where the Big Ones grow. On the 10th and 11th, we mapped 3,943 and 2,617 feet for a temporary total of 6,560 feet. On the 11th, we left an entire makai-trending lower level unentered, and when we plotted our data, the upper level curved unexpectedly toward The Puka and stopped just short of it. (The Puka is a spacious 1,225-foot lava tube cave we had mapped earlier in the year.) At several points, we could look down into the lower level so chances for continuation looked good.

Planetary geologist Ron Greeley arrived next day with two keen young graduate students he couldn't hold back: Steve Kadel and Scott Harris. Instead of our planned meeting, they were off to the skylights to observe the flowing lava. We got together next morning, but the 13th was a paperwork day, with the USGS' Jennifer Pallon joining us in working in our files at the Lyman Museum. In the evening, we all drove up The Hill to Hawaii Volcanoes National Park to attend a somewhat self-contradictory but impressive lecture on Hawaiian sacred places.

The 14th saw us back at the lower level in Keala Cave with the Greeley crew. Along with Stephan Kempe, they were delighted with examples of thermal erosion by downcutting lava streams, and joined in the mapping also. After 85 stations, we ended the day with the cave's length more than doubled, to 13,488 feet, and the cave still went in both directions. On the 15th, I was tied down by administrative work, but the others visited the makai section of The Puka where thick bare lava units are exposed in the walls. Neither Stephan nor Ron could determine whether they are eroded country rock, or trench spillover units. Then they returned to the corresponding section of Keala Cave, where they think they established sight connection back into the makai end of The Puka. Between is a crawlway with numerous thin plates of lava angling into the pahoehoe floor -- an interesting challenge.

On the 16th, I took a small crew back into mauka Kaumana Cave to check on segmentation (so far, it's all one cave). On the 17th, Ollie Fulks had a look at Road Seven Civil Defense Cave and emerged from what was thought to be one of the makai entrances of Kazumura Cave, but without tying into Kazumura Cave itself; our first clue that the CD cave is Doc Bellou Cave, though we didn't realize it at the time. Meanwhile, on the 17th, the Kempes, Steve Smith and I drove over to Kona to meet the Werners and Ron Greeley's group. Along the way, we checked out Petroglyph Cave (mapping 724 feet), but found little of interest except a block of lava used for sharpening tools.

Courtesy of Rick Robinson, the 18th was a special day-long tour of Hualalai Volcano for the geologists (and vertical caver Steve Smith) to look at virgin pit craters ("Bottomless Pits") and some high elevation lava tube caves with unusual degassing phenomena. Steve concluded that Crater 6083, which I previously had estimated at 250 feet deep, is considerably more. In shallow Kealoha Crater, we observed and mapped 163 feet in interesting little Genai's Cave, which is associated with an unusual lava pond and strand. With time running short, Steve also went part way down the entrance breakdown to Puu Pohakuloa Cave, and concluded that it is not as loose as it looks. Maybe in 1994 . . . The next two big pukas makai also look like they will go.

But time was beginning to run short for the entire field season. On the 19th was a less-than-satisfactory meeting with Dan Taylor, Chief of Resource Management at Hawaii Volcanoes National Park (he blandly maintains that he is complying with the Federal Cave Resource Protection Act, despite a list of points on which he is not), and very satisfactory meetings with Jack Lockwood and Dave Clague at the Hawaiian Volcano Observatory. In the evening, some of us returned to Kurtistown Civil Defense Cave in a driving rain, which was barely slowed by the cave's roof (like Kaumana and most other caves, this was not exactly an ideal fallout shelter). We found that the entire makai end had been closed off by loads of red cinders dumped in the makai entrance since we had mapped that part of the cave. We mapped the rest -- about 1,512 feet, and wrung quarts of water out of our clothes.

My time was up. The 20th was an administrative day and on the 21st, I flew to Honolulu for more of it, then to the mainland. Stephan, Scott, and the two Steves, however, didn't miss me at all. They returned to Keala Cave, and in two more trips, nearly redoubled its length to 25,638 feet. They found the upper end -- a plug of intrusive lava. At the lower end is a crawlway that needs hammering before serious consideration. In addition, Stephan and Spike Werner found an unexpected upper level bifurcation in Upper Paradise Park Cave; Stephan's crew mapped 1,335 feet. Stephan also sweet-talked Dan Taylor into permission to map another thousand feet in Upper Keauhou Trail Cave in the park, and to take Jack Lockwood into Upper Earthquake Cave for another look at the stratigraphy, which looks more and more exciting scientifically. But that finished the season, with a total of about 44,000 feet mapped -- 8.3 miles, or 13.4 km, most of it in the Ailaau Shield flows as the Hawaiian Volcanoes Observatory staff wanted. No one took part in all the mapping, but several took part in more than five miles. My personal mileage was 5.6; my best ever in four weeks, and a total of 8.9 miles for the year. It was a very good year.

Course #901 Intro to Advanced Caving
Mark Fritzke entering Sunbeam Pit, September 1993, Marble Mountains.

MEETING NOTES – SHASTA AREA GROTTO, February 11, 1994

Meeting held at Wolff's in McCloud and called to order by Jim Wolff (Chairman) at 7:49 PM. Present were Melanie Jackson, Bill, Cheryl, and Zane Kenney, Ben and Camelia Sutton, Jim Kottinger, Jim & Liz Wolff, Neils Smith, Ray Miller, and Richard Stewart and Barbara Williams as guests.

Jim W. introduced Barbara Williams, a Botanist with the USFS, but present in non-official capacity. She indicated that the land exchange involving PLUTO'S CAVE was almost a certainty. If it goes through, the area will be under her guidance. She came to this meeting just to meet us, toward developing a partnership with cavers for the best management of the cave.

Old Business: Newly elected officers are: Jim Wolff, chairman; Liz Wolff, vice-chairman; Cheryl Kenney, secretary; Neils Smith, treasurer. Annual report has been filed. Tax exempt paperwork status still pending. Special use permit to continue cave register program of last 10 years awaiting final approval. Shirts – screen improved, available.

New Business: Jim W. reviewed the land management plan for Shasta-Trinity NF, and made a five page response. Jim W. talked to Robert Linsy, Scott River Ranger District, regarding the Marbles cabin. Agreement will probably be renewed with little change. Cabin will need significant repair soon. Barbara added that the grant to KMCTF from last year is still available, and a new grant will also be. The Marbles is being established as a Research Natural Area. Jim W. also wrote a recommendation to Debby Selby regarding management of BAT CAVE.

Communication: The grotto received a letter and certificate of appreciation from the National Park Service for its work at OREGON CAVES.

Finance: There was no treasurer's report. Jim K. presented a bill for the cave registers in the Marbles. Motion was made by Ray and seconded by Liz to accept the bill. The motion was passed.

Future meetings: March 11 at Kottingers. March 12 (Sat) will be mapping practice with Jefferson State Grotto. CHANGE OF DATE for April meeting – Saturday, April 16 at Mark and Linda Fritzke's.

Neils moved and Melanie seconded that the meeting be adjourned at 8:48 PM. After the meeting, Ray Miller presented a BCI slide show and information on bats and bat calls. This included recorded samples of bat calls slowed down to human auditory range.

Meeting notes respectfully submitted by Cheryl Kenney

For those who forgot to renew, here goes a second chance.
If you liked this issue, good news, more of the same ahead.
Just fill out the form and send in your check. Its not too late!

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Make checks payable to Shasta Area Grotto. Send to Liz Wolff POB 865, McCloud, CA 96057.

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