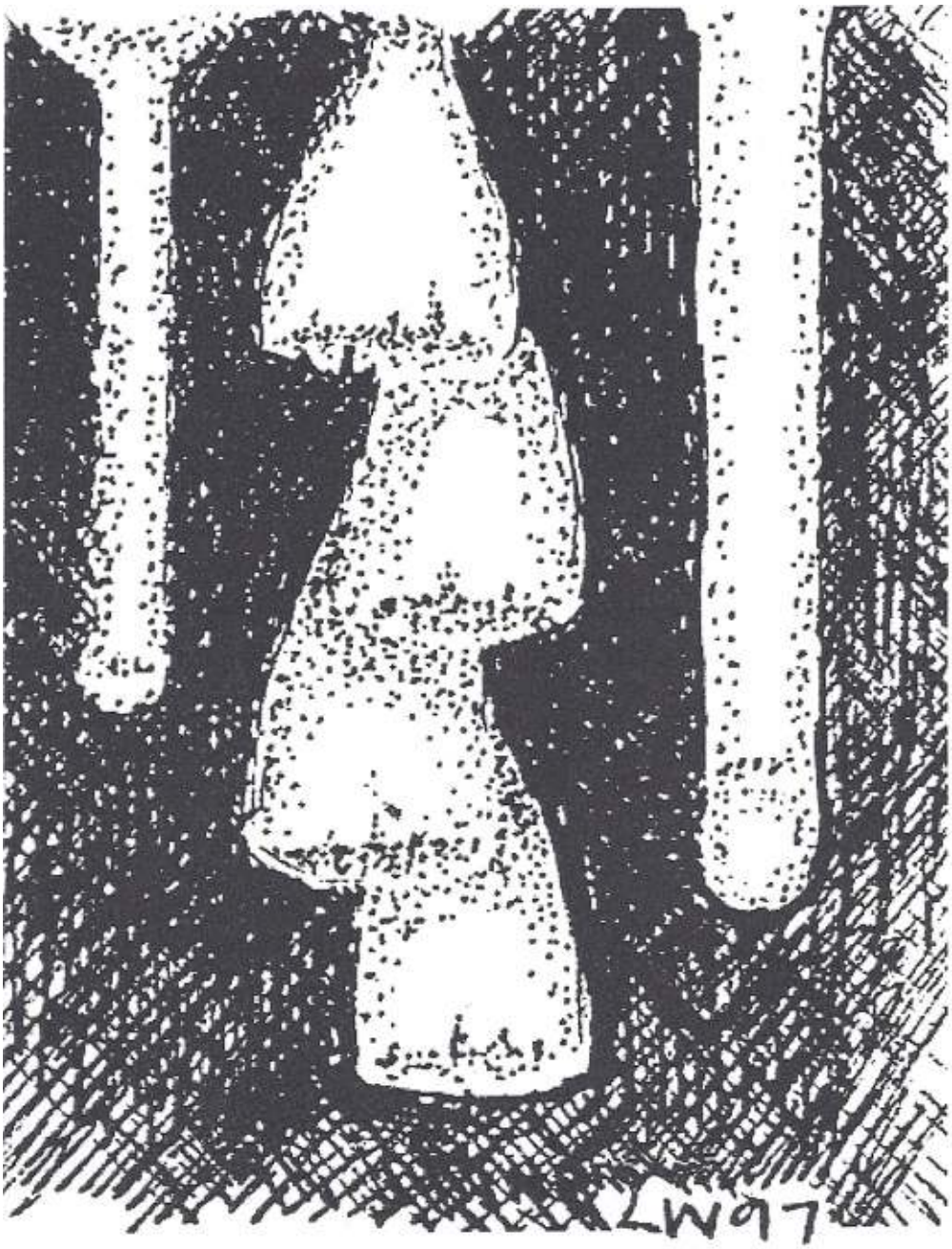
# sag rag

30:5 Sept-Oct 2011




SPATHITES

**INSIDE – ANOTHER SOLUTION CAVE ISSUE**

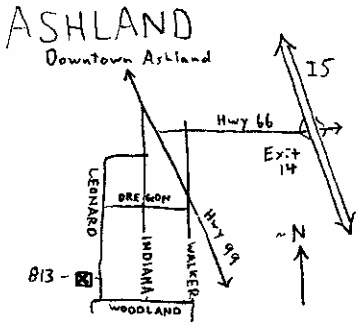
The SAG RAG is published by the Shasta Area Grotto of the National Speleological Society. Grotto meetings are held at different locations on the fourth Friday of each month at 7:30 p.m. Meeting locations are announced in the SAG RAG. Membership dues are $6 dollars per year and include newsletter subscription. 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 or <caverbill@live.com>. For more on SAG, check the web site at <http://www.caves.org/grotto/sag>.

## CAVERS CALENDAR 2011-2012

Dec. 2 SAG meeting 7:30 pm at Viners in Ashland. 541-601-0055.
Jan. 27 SAG meeting 7:30 pm at Hobson's in Redding. 530-242-8707.
Jan. 28 Samwel clean-up trip.
Feb. 24 SAG meeting 7:30 pm at Baxters in Mt. Shasta. 530-925-9077.
Feb. 25 Pluto's Cave clean-up trip. 530-925-3123.

## Maps to Meetings

**Dec.**

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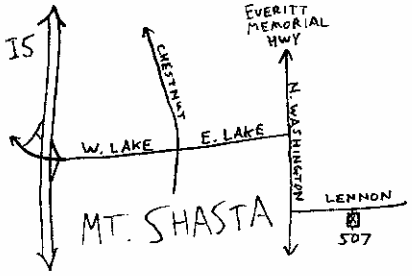
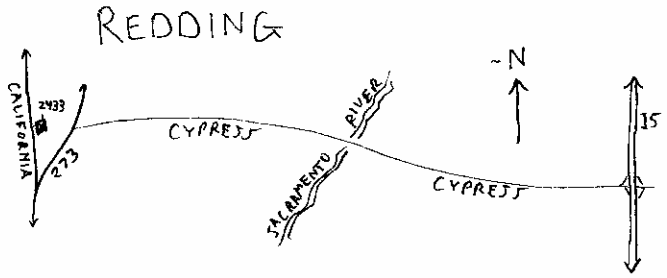



**Jan.**




**SAG RAG SUMMARY** By Bighorn Broeckel

SAG member Dallas Carlon reports the birth of a baby girl, Jamie Brielle Carlon, on Sep. 13, 2011. Congratulations to the Carlon family. Welcome also to new grotto members John Tinsley and Bill & Peri Frantz. Your support is appreciated. This issue features Spathites explained in detail by Bruce Rogers, our very own earth science guy, whose submissions are always popular with readers. Please forgive the delay in getting this one out. Errin Walker took hundreds of photos on that momentous cave hunt with Steve Hobson last May. This issue contains a small sample. We jumped in the water at the end of that day, but Errin still came down with an awful case of poison oak. We hope she is not discouraged. Like Liz, Hobson still has a large amount of leads and caves, known and unknown, that need to be tracked down, explored and surveyed. I might even have some. This year ain't over yet, so come on up to the December meeting in Ashland and find out what is going on this winter. **BB**

**PHOTOS FROM 5-21-11 CAVE HUNT by Errin Walker**

On survey in Elk Antler Caves

Flora on the forest floor

**SAG MEETING MINUTES Aug 26, 2011**

The meeting was called to order at 7:26 pm at the Wolff's home in McCloud. Members present: Virginia & Ed Bobrow, Sam Baxter, Steve Hobson, Jim & Liz Wolff, Melanie Jackson, Chris Kennedy, Jed Medin, Doug & Tabitha Viner, Bill & Benjamin Broeckel, Russ Yoder, and Arley Kisling. **Minutes:** were accepted as read. **Treasurer's Report:** Bank balance $1990.57. Expenses $214.23 for food at LABE and meeting at Wolff's and $15.00 monthly bank charges. **Website:** everything is working well just waiting for more information to put on site. **SAG RAG:** the next issue will be the lava issue and the one after that will be on limestone.

**Correspondence:** Oregon Caves National Monument (OCNM) sent us pamphlets on off trail adventures that they want us to support. John Tinsley and Mark Linn went to Samwel Cave and would like to do a restoration project in the cave. They would like SAG to help them (SFBC) to remove spray paint and clean up trash in the cave.

**Old Business:** Review of the Rescue Seminar at LABE. Critique was that SAG expected to be working with people who had more rescue and more caving experience ... Liz contacted Bob and Bob about SAG patches and is waiting for an answer. Sequoia – Kings Canyon comments are due Aug. 31. An address was circulated for members to copy and respond.

**New Business:** SAG is in need of a new address and e-mail list for members. The January SAG meeting will be at Steve Hobson's in Redding on the 27th. The SFBC and SAG joint restoration/cleanup of Samwel Cave is scheduled for Jan. 28th. The February meeting is in Mt. Shasta at Sam Baxter's home on the 24th and the annual Pluto's Cave Cleanup is on the 25th. The March meeting will be on the 23rd in Yreka at Melanie's.

**Trip Reports:** Aug. 13 & 14 the Bobrows took their 6 and 8 year old grandsons to LABE where they proceeded to explore 8-10 caves. Bill and Judy Broeckel went to the Marbles and showed 15 Girl Scouts the wonders of Skunk Hollow. A GPS co-ordinate for (a candidate) Nasal Passage near Looping Roote was obtained. This needs to be surveyed. Chris K., Liz and Jim W. found a cave with a log in the entrance. It was 15 feet to the water and the water was estimated to be 10 feet deep. They also surveyed Wolfe Den Cave. Chris K. and Jed M. went to Manzanita Cave. SAG had a self-rescue training from a shelf in Barnum Cave. Steve H. took brothers Geo and Guy Graening to APC, Potters Cave, Bat Cave, and Amy's Pit. While they were collecting bugs a small bear boarded the patio boat and munched on one of the seats. The brothers looked for bugs in the guano at the top of Amy's Pit.

**Meetings:** Sept. 23 at Melanie's in Yreka. Saturday Sept. 24 Insanity Culvert, Psycrawlogy, and Looney Tunes with possible survey. Oct. 8 SAG/SAR cave rescue training at Pluto's Cave. Oct. 28 Steve Hobson's in Redding. November no meeting. Dec. 2 Doug and Tabitha Viner's home in Ashland, OR.

Meeting adjourned 9:51 pm. Melanie Jackson SAG Secretary **MJ**

**SAG MEETING MINUTES Aug 23, 2011**

The meeting was called to order at 7:42 pm at Melanie Jackson's home in Yreka. Members present: Steve Hobson, David Smith, Ray Miller, Jim & Liz Wolff, Tabitha and Doug Viner, Arley Kisling, Melanie Jackson, Bill Broeckel, and guest Bill Pierce from Mt. Shasta. **Minutes:** were accepted as corrected. **Treasurer's Report:** Bank balance $1746.34. Expenses $15.00 monthly charge and bill submitted by Bill Broeckel. Steve has an appointment at the Scott Valley Bank on Monday at 1 pm. **Website:** SAG RAGs and next meeting are on it. Names on the old SAG RAGs were changed from just initials to the proper cave names. **SAG RAG:** the next issue will be limestone with three new cave maps from Shasta County, and Bruce Roger's article. Needed pictures to be printed out (so they can be scanned).

**Correspondence:** John Tinsley and Joke Vansweevelt gave a presentation on Cave and Earthquake Prediction in Missouri. John will be at our next cave meeting. Bill and Peri Frantz, Mark Linn and friend

continued

will access Samwel Cave for restoration work in January of 2012. If we don't go to Lake Level Cave SAG may join them at Samwel. Steve Givens from the National Park Service does national natural landmarks and Shasta Caverns has been nominated. November 11-13 Doug Billings will have a Cathedral Cave Restoration trip in Northern Arizona near Ash Fork. Received an article in Science News on Bats and WNS. Bill Broeckel entered a nomination for a 1,000+ foot talus cave in the Sierra Nevada.

**Old Business:** SAR SAG Cave Rescue Training Oct. 8 program very similar to LABE training. Some lecture, demos, practice and rescue scenario in Pluto's Cave. Meet at Pluto's Cave at 9am in the parking area. The rescue will take place beyond the last skylight. Dave Smith will bring Steve Hobson's rescue gear. Doug, Tabitha, Liz & Jim, Melanie, and Dave S. will be there. Any other available SAG people are welcome to come also. SAG patches: we voted to order 110 patches for $2.18 each plus $7.25 for shipping from Bob and Bob. Liz has a list of unsurveyed caves — 53 of them in the lavas. Steve says we can also survey Coyote Cave in the future.

**New Business:** Oct. 28 John Tinsley and Bill & Peri Frantz of SFBC will be at our meeting. Oct. 29, Sat. they will go to Samwel Cave to assess the restoration project needs for Jan. 2012. Steve said he would like to take John to APC possibly on Friday, but will have to check with Brad Rust first. Dr. Geo Graening has made bug collecting vials available to us for any cool bugs we see in any caves. We would then send the vials to him. There was a discussion about smoking pot before a cave trip. SAG doesn't condone the use of any mood altering substances before or during cave trips as it is a safety issue for everyone on the trip.

**Trip Reports:** Labor Day weekend — tour caving with Steve H., Jim W., Melanie J., Wayne C., and Dave Smith took Dee (retired mining engineer) and Kate (Professor of Russian History at Chico State) to Skunk Hollow. They were camped in the lower meadow. They may become cavers in the future. Steve H., Melanie J., and Jim W. took Rudy H., Steven J., and Gilly E. to the No Rope Entrance of Bigfoot Cave. (Rudy reported reaching survey station "MR3"). Steve H., Melanie J., Wayne C., Jim W., Dave S., Steven J., and Chuck L. hiked the Marble Rim and took GPS readings and some entrance photos of Crystal Draino, Liquid Plumber, October Pit, and Upstairs Downstairs Caves. Jim W. guided us inside Upstairs Downstairs Cave. Six cavers went in and Steve H. and Melanie J. made it to the windows looking out the cliff face into Elk Valley. Steve H., Melanie J., Wayne C., and Jim W. went to the No Rope Entrance of Bigfoot and Steve and Melanie proceeded in. Melanie made it to where she could see into Monkey River passage, but didn't go on because she would have to cave alone. Working caving Sundquists relocated a Blind Pit same as the cave found last year by Forrest after midnight, over 100 ft with alternate entrance and parallel passage. Bill B. helped make this into a 250 ft surveyed Snow Canyon Cave. Happened to be near a lead by the Discovery Entrance where after 20 years folks finally got down an 80 ft drop. It may connect into Discovery Creek area. Not enough rope for a second drop just then. He was on Kip's cave survey. The cave spiraled down a series of drops with over 300 feet surveyed. They were calling it Spiral Staircase, but it is Flush Cave. Walking the Black Mt karst found a small cave and surveyed it. He named it Wild Onion and it had big spiders. From Wahahshun Cave he, Kip B., and Midori S. left a deadfall trap and collected a scorpion for Geo Graening. Bill B., Benj, and Ken B. climbed North Pal and along the way surveyed part of a cave called Enterprise. It was a bigger tube with gutters. Jim W., Steve H., Russ Y., and Melanie J. surveyed Rat Castle Cave.

**Meetings:** Saturday cave trip Sept. 24 will be Insanity Culvert, Psycrawlogy, and Looney Tunes with some possible survey. Meet at Cecilville turn off at Callahan at 9:30 am. Oct. 28 Steve Hobson's in Redding. November no meeting. Dec. 2 Doug and Tabitha Viner's in Ashland, OR. Jan. 27, Steve Hobson's in Redding — Samwel Cave Restoration. Feb. 24, Sam Baxter's in Mt. Shasta — annual Pluto's Cave cleanup. Mar. 23, Melanie Jackson's in Yreka — Hat Creek if no blizzard. Apr 27, Chris Kennedy's in Weaverville — awesome limestone caves.

Meeting adjourned 9:51 pm. Melanie Jackson Secretary **MJ**

## SPATHITES IN BUTTER CREEK CAVE

Bruce Rogers

In July of 1997, when Liz Wolff was a young wisp of a girl, SAG made a trip to Butter Creek Cave near Hyampon. The purpose was to look for bats for Dr. Dixie Pierson, then compiling an updating of sightings of bats in California caves. While there were no bats observed in the cave on that visit, Liz did mention an unusual decoration seen in the cave:

"... During our search, Mark (Fritzke) found a very interesting formation, which started all of us searching crannies and cracks where these formations were found. They are very delicate, pure white hanging bells that are about ½ inch long and ¼ – ⅓ inch wide, with as many as 4 hanging in tiny cascades reminiscent of foxglove flowers. They are in small out-of-the-way places and were found while waiting for the rest of us to finish the guano search. ... " Liz included a lovely little ink sketch of the decorations as the cover of that issue of the SAG RAG, a quartet of ragged ended, bell-shaped forms framed by two soda straw stalactites.

These little cascades are called spathites. Their name comes from the Greek word spathe meaning enclosing petal (as in a foxglove flower). The speleothems are made of aragonite, the first mineral cousin of calcite. Spathites are rather uncommon, but are scattered across the world's caving realm. They are considered by Those That Know to be a very specialized form of soda straw stalactites. As we all know, when a water drop sits on a cave ceiling – or wherever – it loses carbon dioxide and leaves a mineral ring as the nucleus for an ordinary soda straw stalactite. This is the way common calcite soda straws form. When the drop of water is either super saturated with dissolved calcium carbonate, the solution itself is chock-a-block full of both calcium and magnesium carbonate, or the location is in a location where evaporation can play a major part in the process, the mineral aragonite often forms instead of calcite.

Caution: Science Content

Single calcite crystals, which soda straw stalactites actually are, have a crystal form of an elongated, six-sided rod. Soda straws just happen to be in the form of a hollow cylinder as a result of that initial water drip. If conditions in the cave change, they may eventually clog at their lower ends and gradually fill the tube until it is, indeed, a solid crystal rod. This hexagonal crystal symmetry consists of three, equally long axes of growth, all at 60 degrees from each other, and one long, "C" axis at right angles to this trio of other axes of symmetry. Thus the pull of gravity will elongate the "C" axis of the calcite and form a vertical soda straw stalactite. If the soda straw lacks any later over-growth of calcite, one can often see traces of the six-sided form glinting in one's cave light.

Aragonite, although is has the same chemical makeup, has the symmetry of a 2x4 – three axis of symmetry all of unequal length and at right angles to each other. Because of this unequal axis arrangement and the habit of aragonite to form very slender fibers, the wall of the "soda straw" does not form a neat little vertical crystal tube as with calcite. Instead it forms a hollow cone with a lower ragged edge. As the cone builds downward and outward to about the diameter of a water drop, which we all remember is three to five millimeters, (approximately 3/16 inch) in diameter. One side of the cone will be vertical while the remaining sides will flare away from being vertical at about a 60 degree angle. Thus the next water drop will collect on the lower, most vertical side and start the entire process over. This often results in a series of delicate, nested, cascading crystal “bells" hanging from each other. In several other California

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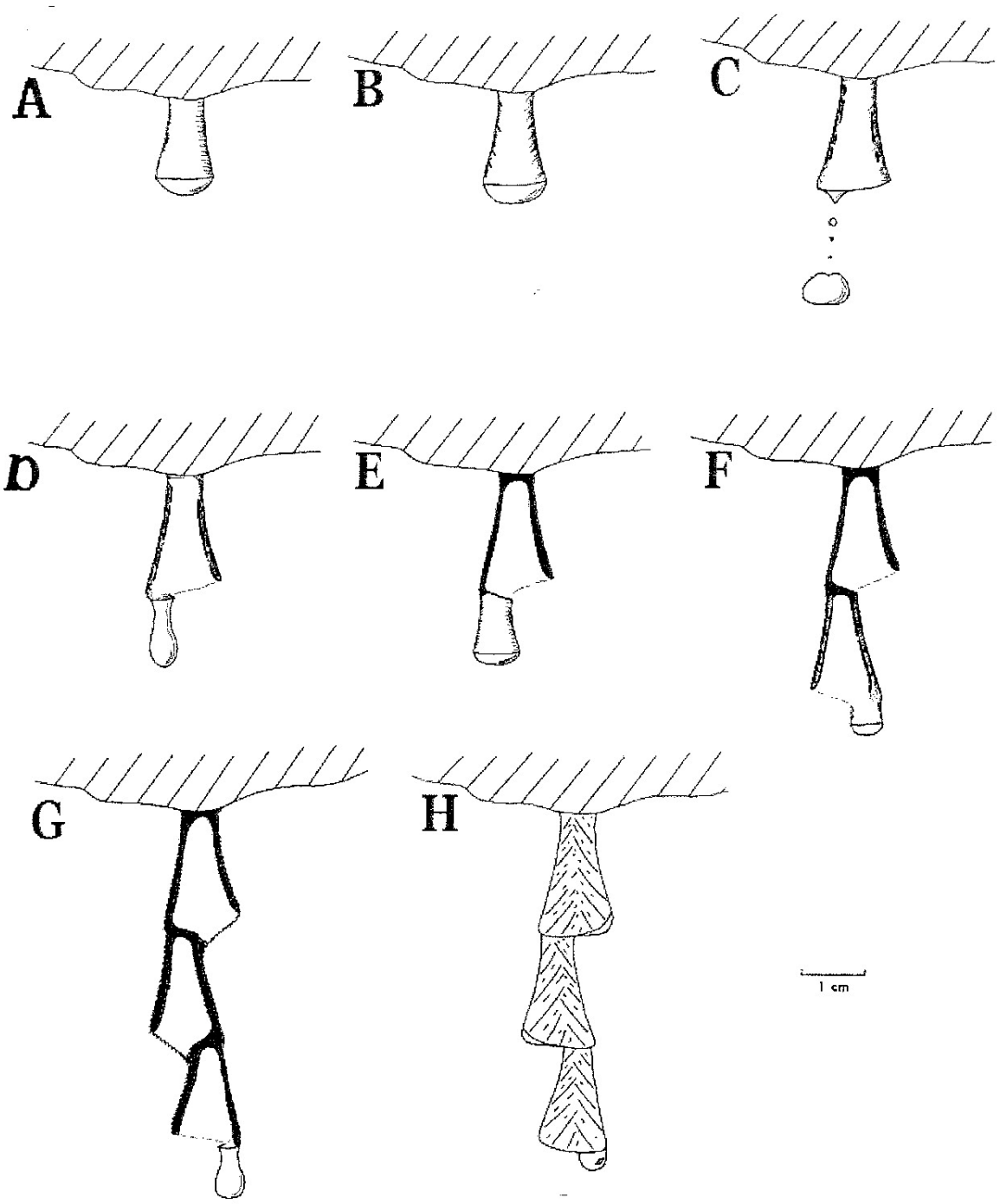



Drawing Caption:

At "A", the spathite is a regular soda straw, albeit made of aragonite rather than calcite. By "B", the developing spathite is beginning to look more bell-shaped. At "C", the unequal lower rim concentrates the drip water on one side, thus setting the stage for the start of the next bell. The interior of each petal/bell is somewhat ragged as tiny, skeletal crystallites of aragonite form and are later filled in to make the shell more robust. At "D", the spathite is starting to form a lip for the next bell. By "E", the first bell is fully developed and a second is forming. At "F", the second bell has formed and a third is on the way. At "G, the troika of petals is well formed and a fourth is starting to form. "H" is the same stage of development as G, but an exterior view. These are somewhat modified from Hubbard and Herman's paper in the NSS Bulletin.

caves spathites hang from the cave ceiling or other speleothems such as the singular "bells" forming at the ends of wire-thin helictites in Cave of the Quills in Calaveras County or the multiple "petal" spathites forming at the lower ends of soda straw stalactites in Santa Claus Cave in Amador County.

For those wanting more scientific information, I highly suggest looking at the article by David Hubbard, Jr., of the Virginia Division of Natural Resources, and Janet Herman and Richard Mitchell of the University of Virginia. They studied a small collection of spathites from Roberts Cave in Virginia. Their report can be found in the 1984 NSS Bulletin, v. 6, no. 1, p. 5-9. Carol Hill and Paolo Forti have explanations of how spathites form along with several photographs in their 1997 Cave Minerals of the World, second edition.

There you have it; a small natural curiosity exposed for the enjoyment of all. Next time you are endlessly waiting for a cave photographer or survey team, look among the soda straws hanging on the ceiling – you just might find a spathite or two. If you do, the author would appreciate a note as to where you found them and perhaps even a photograph of them, but please don't even consider collecting any of them. **BR**

**SHASTA COUNTY LIMESTONE SAG TRIP By Steve Hobson**

5-21-11. Trippers: Steve Hobson, Bill Broeckel, Dave Smith, Errin Walker.

Well, we had burritos for breakfast and got an early start (8:45ish). We were able to motor right up to the trailhead. A short hop later we were on the way to explore poison oak laden, tick filled, brush covered limestone. We easily found the log at the creek crossing. BR Hole was even deeper and it seems to come from solid limestone.

Dave and Errin played a short time in Rock Block Cave and we were on our way to the Pit-to-Nowhere and the Elk Antler Caves system. We checked every hole on the way up and up and up. There were quite a few holes. We dropped a rock into the Hole Lead. It goes down a long way, but is still a dig. We bush hogged down to the Pit-to-Nowhere. Bill got the compass reading he needed to finish the map. I picked off more ticks. We walked the short distance over to the Elk Antler Caves system and surveyed it. It has changed a bit since we were last there. We were able to make a connection to the southern pit. On our way again, more poison oak. We searched the limestone/poison oak to the northwest of Elk Antler and were rewarded with a small cave, Blue Foamy Cave. Errin named it for something blue and foamy. We surveyed it. On our way again, searching the never ending poison oak covered limestone. Ahhh ... another little cave, the Popcorn Passage Cave. It is covered with popcorn. We surveyed it.

On our way again, we were heading to Spongiomorph Rock, but we ran out of time. As we headed back, we were still looking for caves in poison oak covered limestone, this time on the other side of the ridge. Damn, another cave. We called it Nother Cave. We did not survey this one and it looks like it has a bit more to explore.

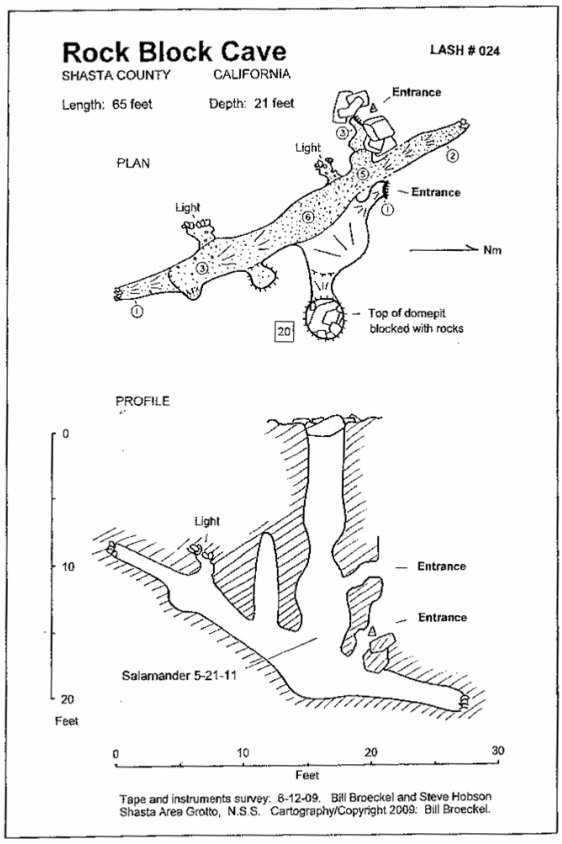
Down the hill, over the dale, through the poison oak, across the log bridge, and back to the starting point we went. We were covered from head to toe and toe to head in poison oak and ticks. We jumped in the water to wash off. We discovered Errin is a good caver and found several new caves (albeit small ones). We surveyed three caves and finished gathering data for a 4th. A good day was had by all, no poison oak yet. **SH**

**CAVE NOTES FOR MAY SAG TRIP**
By Bill Broeckel

5-21-11

Once again, Steve Hobson flawlessly provided transportation to a very remote limestone formation in Shasta County. Errin Walker and Dave Smith joined in, and we had a team of four with good focus, & able to stay together on a tough cave hunt in a steamy jungle. We also had a systematic plan that led to good productivity on the day and will springboard us into the next trip as well, if there are any takers out there.

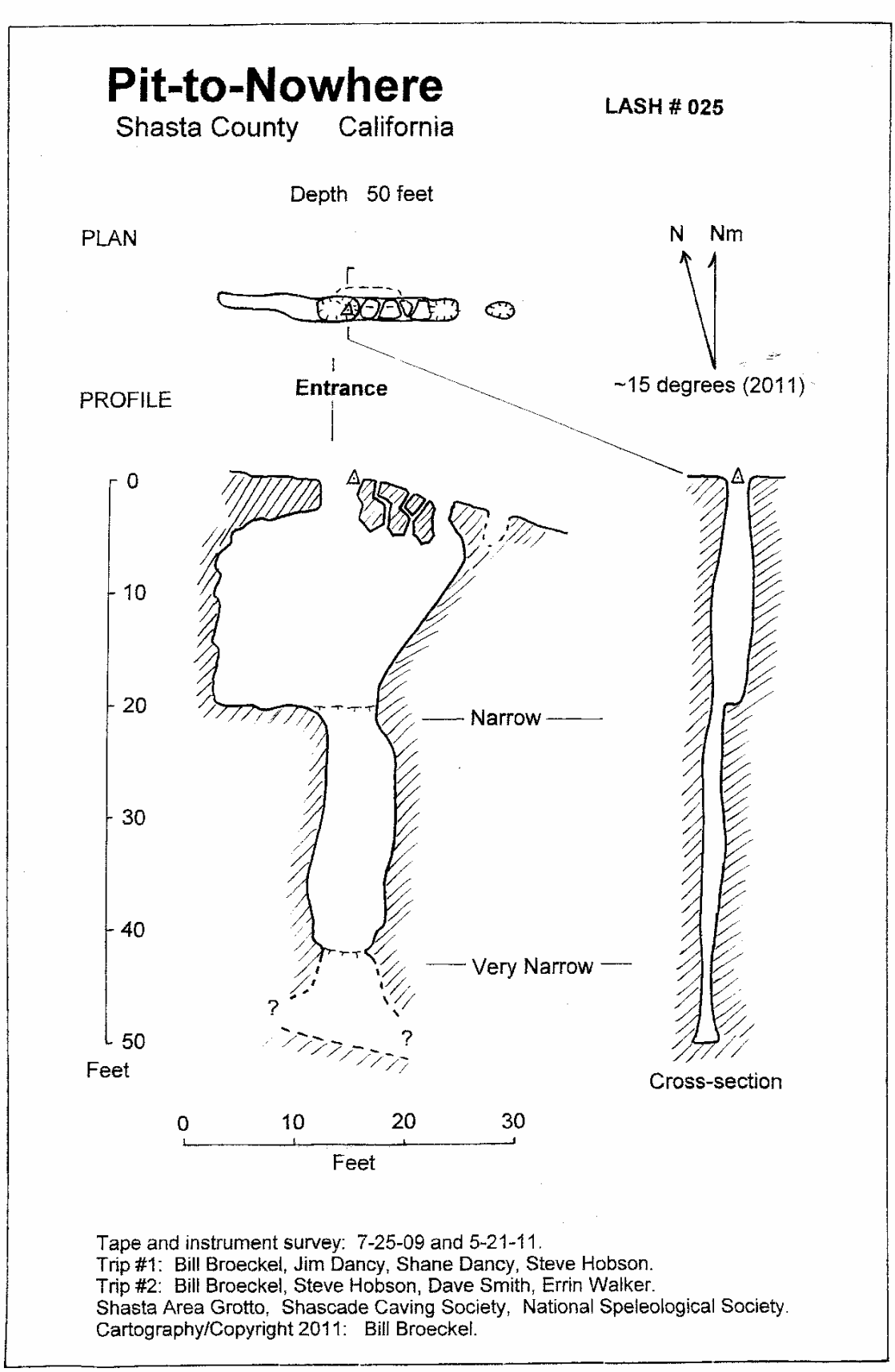
#1 ROCK BLOCK CAVE: already mapped. Hobson first detected this cave from above. Today, Smith and Walker went in for fun, & spotted a salamander. The map was in the Sept-Oct 09 SAG RAG, but this little version is included here with the additions of the survey # 024 and the salamander sighting.




Map: Rock Block Cave

Steve Hobson leads the way searching for darkness deep in the jungle. 5-21-11

Dave hits limestone. 5-21-11
Photos: Errin Walker




Map: Pit-to-Nowhere Cave

L-R: Steve Hobson, Shane Dancy, Jim Dancy at Pit-to-Nowhere. 7-25-09

#2 PIT-TO-NOWHERE: The survey on this cave was incomplete, until now. The pit was previously explored by Brad Rust and Steve Hobson. They couldn't reach the floor. On another trip, I did the same, but was able to tickle the floor with the dangling end of the survey tape, exactly 50-ft down from the surface. It was surveyed with two perfectly vertical shots, but I failed to do a supplementary azimuth to orient the cave, since vertical shots don't have an azimuth. The cave was still on the loose and couldn't be fixed to any paper with a north arrow. Today we were able to pick up the needed azimuth, so now for the first time ever, the finished map for Pit-to-Nowhere is presented for caver scrutiny. There is a small clearing at the site, so we ate our lunches there, with slightly less poison oak and insects to bug us. It is a rare bit of flat karst in a land of steep, heavily vegetated drainages.

continued

View into the mossy maw of Pit-to-Nowhere, a nifty fifty feet to the floor. 7-25-09

#3 ELK ANTLER CAVES: unsurveyed. Last time I didn't want to survey this mess, but now I had a good heart for it. Hobson came up with some awesome history. It was previously discovered, named, and described on July 2, 1975 by two young geologists. Dr. Sue Ellen Hirschfeld (Professor Emeritus of Geology, CSU Hayward) and Diane Cornwall (Masters student at Mackay School of Mines, Nevada) camped in the area for two weeks that summer, and made some other trips as well. Their goal was to study the fossils, bones, and geology of the limestone. In the course of their field work, they came across quite a few caves which played right into their objectives and are frequently mentioned in the notes. It is now an interesting challenge to correlate their notes with caves we might come across at this later time. In the case of Elk Antler, the correlation looks good and the original Hirschfeld/Cornwall cave name (Elk Antler Caves) may safely be applied. Here's the original description:

> "July 2. Tried to go back to caves found yesterday but got off track. Found some even better caves, best yet. I suspect they may produce a fauna but nothing apparent on surface. I'm calling the 3 cave complex Elk Antler caves because of the antler I found a short distance away. Large collapse structure with several entrances adjoining cave seems connected but is filled with debris. A. contains a large exposed fissure fill and contains a lot of fill and debris on floor. B. is larger room filled on the floor with dirt & wood but there is an even lower level. C. the cave to south is elongate with several small and one large opening. It is filled with considerable debris which could be very thick (10's of feet of debris fill ½ of a steeply dipping passage which leads toward the first cave and seems to continue toward the first cave). I think there is potential for bone in these caves although none appeared on the surface. There is probably a large amount of debris that is washed into them yearly. D. the third cave/fissure is about 30 feet deep but has a narrow opening on the east side. All 3 seem to drain into one common underground system." Sue Ellen Hirschfeld Field Notes 7-2-75

Elk Antler Caves became our primary survey objective. The whole thing is a swallet that takes in a seasonal stream. It is tucked under a bulkhead of limestone, against which there is a large trench-like cave entrance feature. Most of the actual cave passage occurs along an obvious piracy short-cut route that conducts current seasonal water flow down to the muds at the bottom of the caves. We found the interior cool and bug-free, a very pleasant place to be. Physical connections were made between all the entrances except for area "C", which was connected on the survey by passing the tape through a small hole in the muddy sticks clogging the passage. A bird kept flying into area "C", and eventually we saw the nest in a small pocket on the wall.

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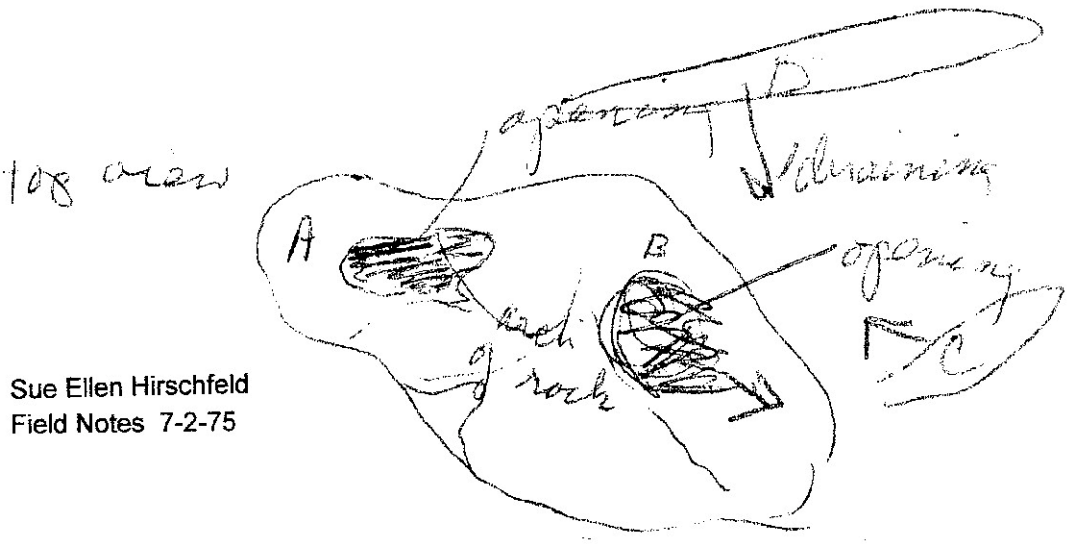
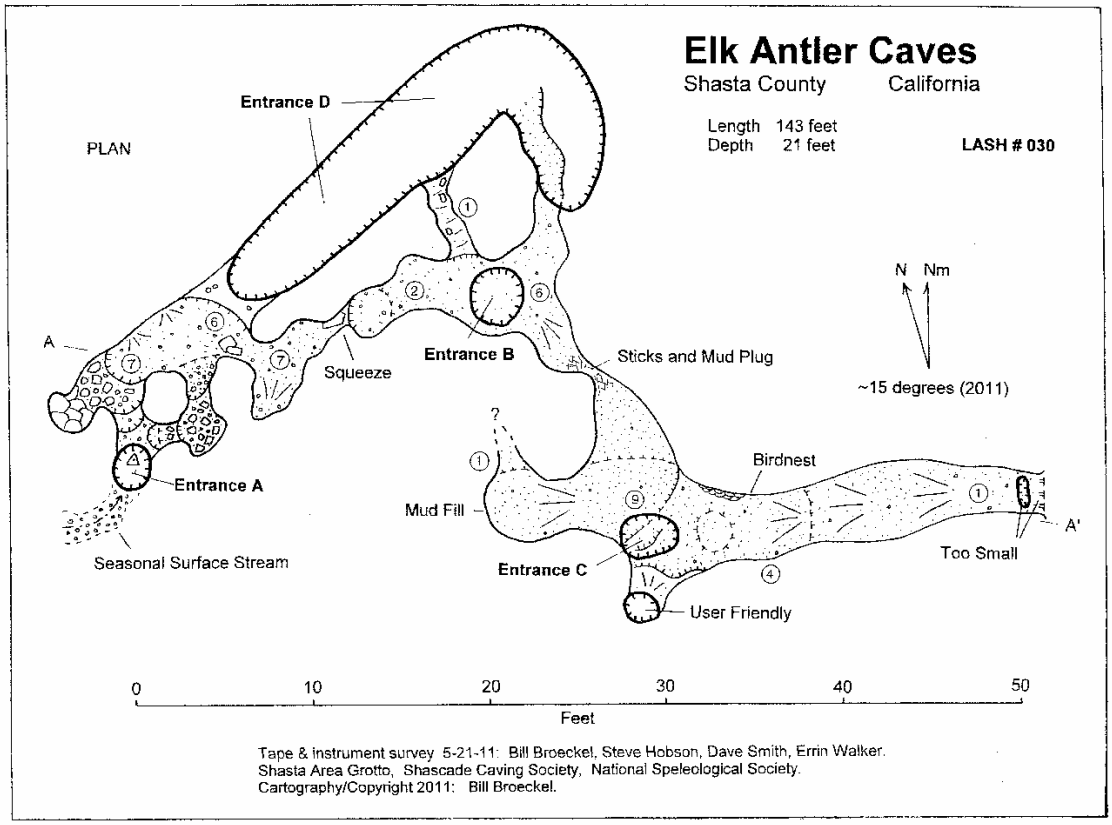
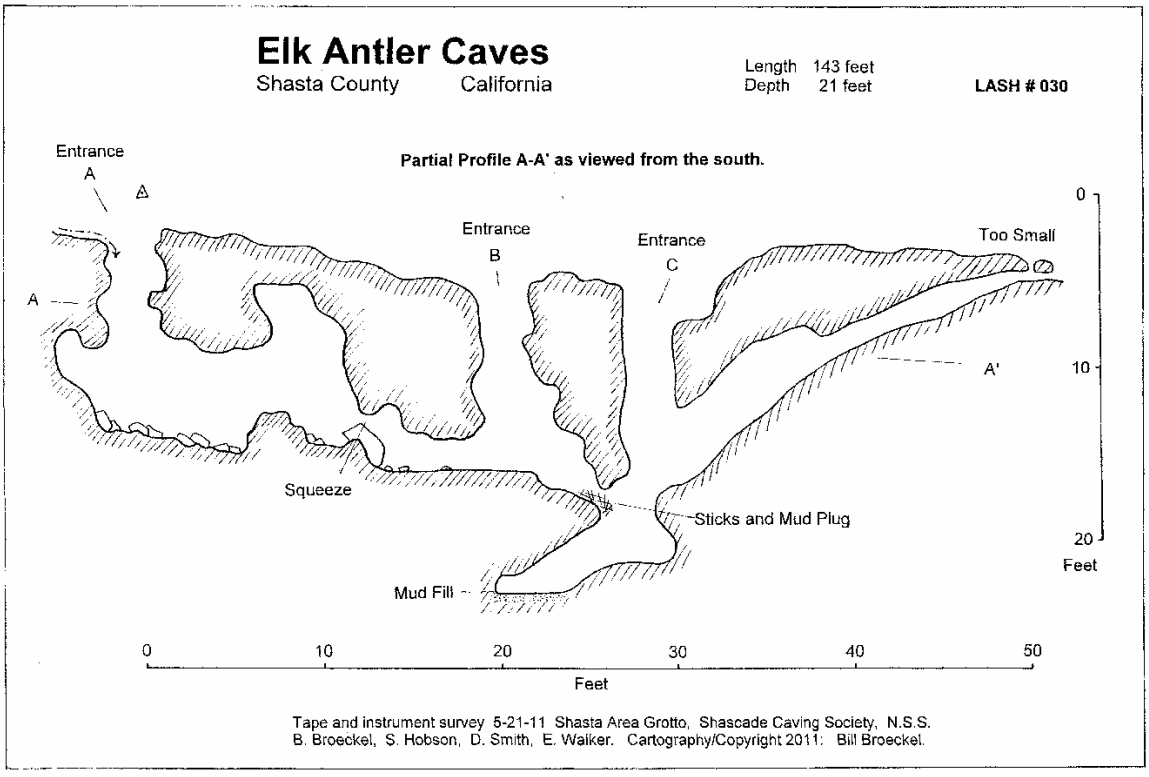



Sue Ellen Hirschfeld
Field Notes 7-2-75

Dr. Hirschfeld's sketch of Elk Antler Caves containing the words "top view", "opening", "draining", "opening", and "arch of rock", It is an interesting exercise to match up this 1975 sketch with the 2011 rendition.




Map: Elk Antler Caves

#4 BLUE FOAMY CAVE: new cave, surveyed. After Elk Antler, we still had time so we looked along the edge of the limestone further up the drainage. The next cave had a beautiful walk-in entrance, and a side passage, but it didn't go very far. Walker named this one after observing some weird blue foam in a pocket on the back wall. A salamander was also seen in this cave.

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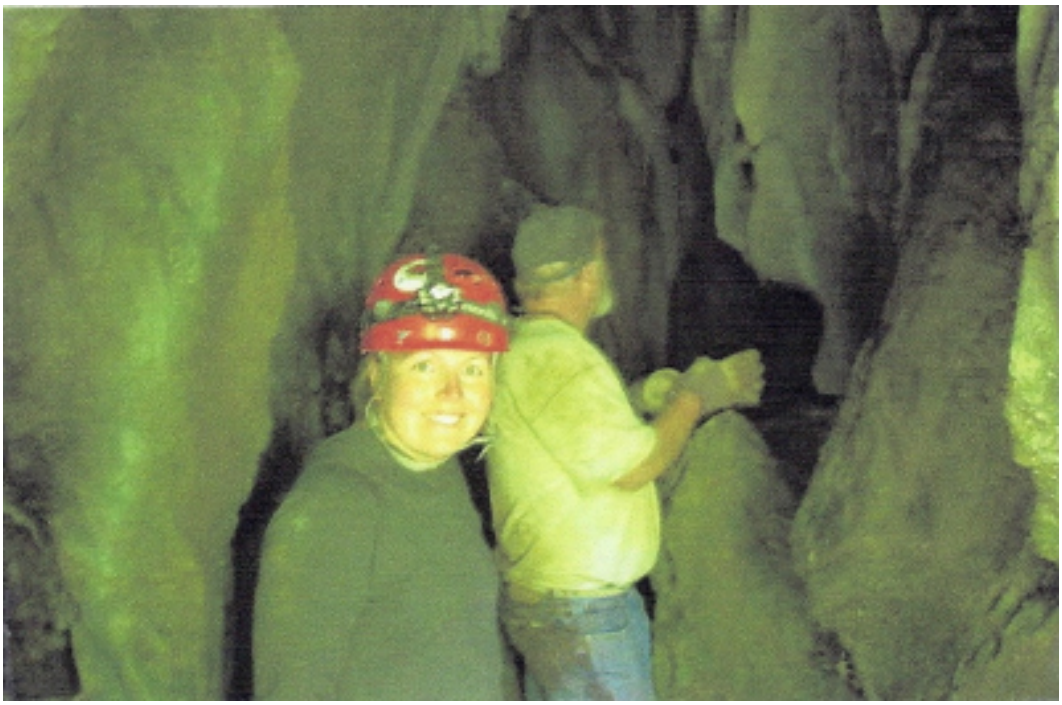
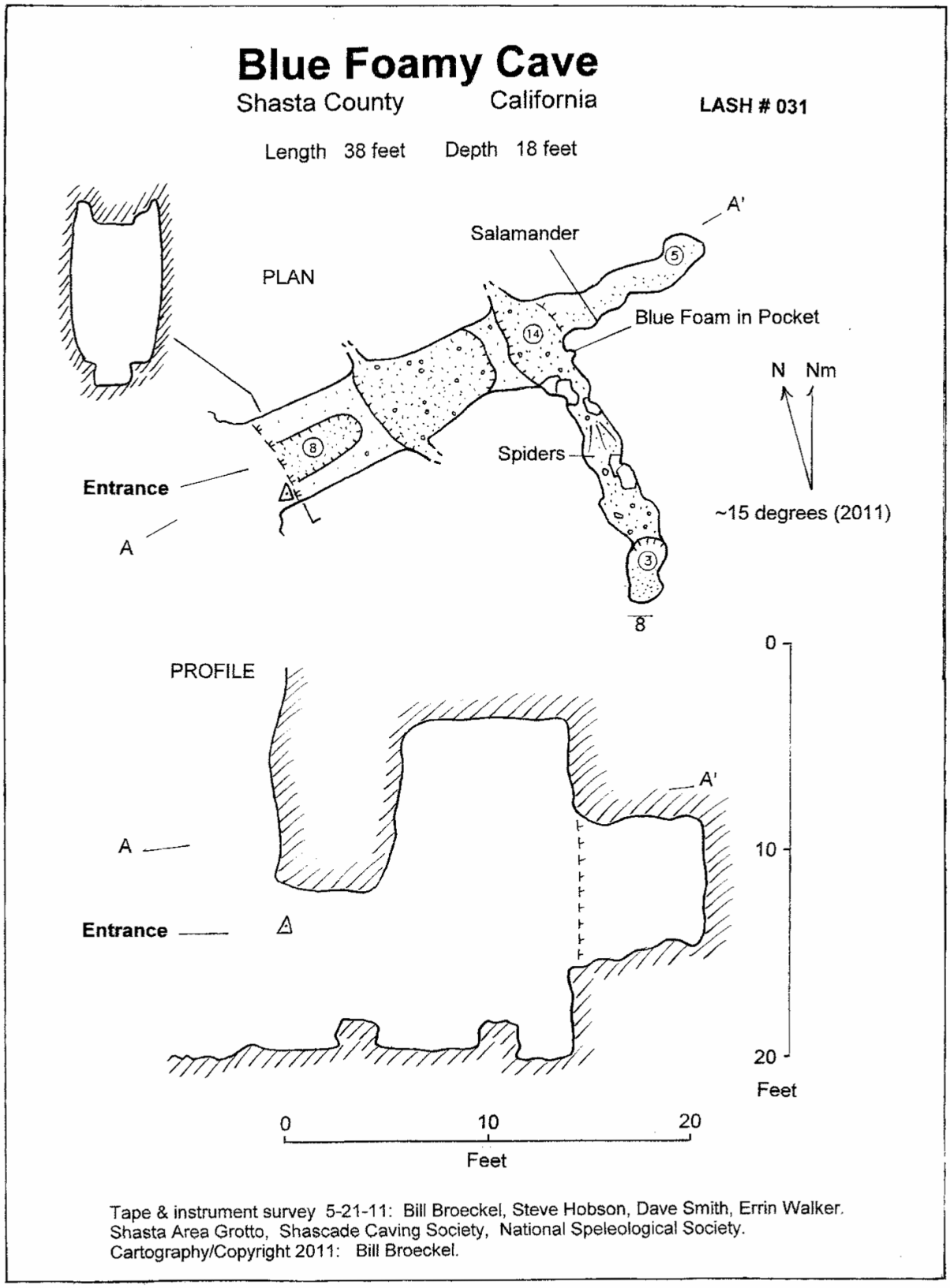
Looking into Blue Foamy Cave, and Hobson 5-21-11 Photo: Errin Walker.



Errin and Steve in Blue Foamy 5-21-11. This could be Hirschfield's "Dianes Cave" described as a "cave with large chamber [that] has smaller ones to side."




Map: Blue Foamy Cave

#5 POPCORN PASSAGE CAVE: new cave, surveyed. The next cave up had a small crawl down entrance into a nice walking passage. From there a higher, and smaller popcorn-lined passage continued, sloping sharply down into a small caliber dome-pit where it was quite comfortable to stand on the flat gravel in a bowled-out ledge. A narrow crevice dropped still lower, and took off on its own azimuth. It blew cool air but was too tight. I was able to drop in and stand on the floor of the crack, but that was all I could do. We surveyed our way back out. Smith and I were lagging behind a little on the hikes to these new caves, so I guess you could say that these last 2 caves were discovered or re-discovered by Hobson and Walker. Some of the other Hirschfeld descriptions might be talking about these caves.

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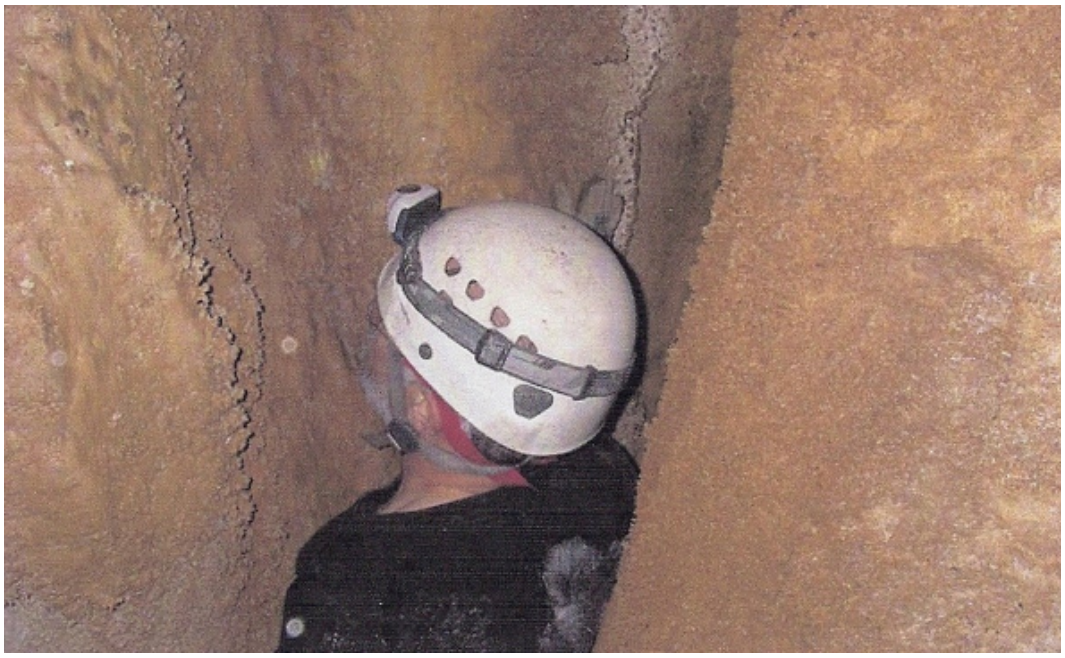
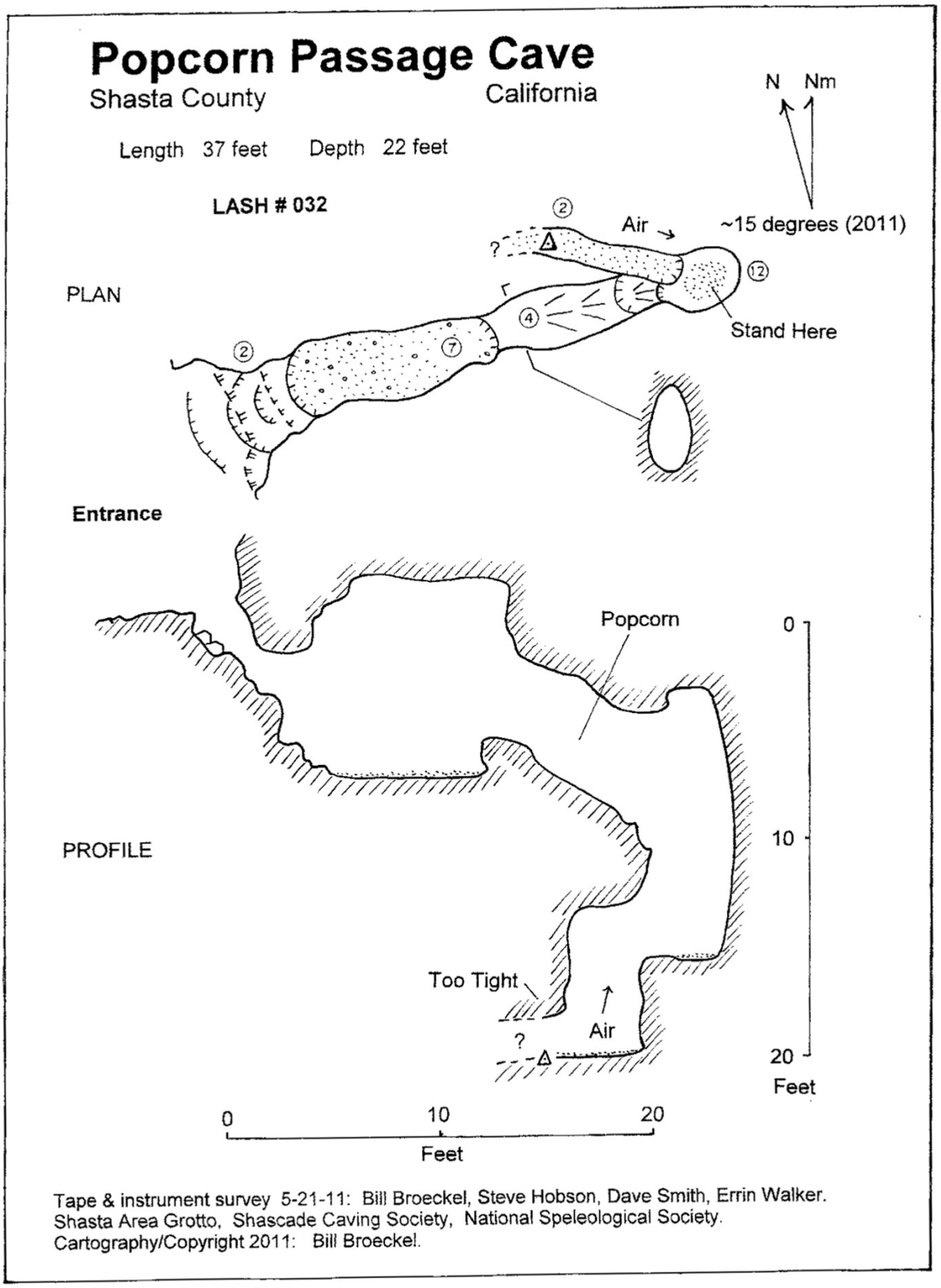
Detail in front half of Popcorn Passage Cave 5-21-11 Photo: Errin Walker.



Walking passage at Popcorn's end 5-21-11 Photo: Errin Walker. Broeckel went no further. This could be the cave Hirschfeld described as follows: "The upper one has curtains and is very beautiful, one can stand and walk comfortably. To the back is a higher passage, narrower, which goes back and down to a pit maybe 10 feet – 20 feet down".




Map: Popcorn Passage Cave

#6 NOTHER CAVE: new cave not yet surveyed. Next we broke off our productive line and set out to find Spongiomorph Rock. This would be a great key to locating more Hirschfeld/Cornwall caves. We reached a sub-saddle, and thought a big rock outcrop to the left might be it. But now it was turn-around time. We circled around the other side of the cave-rich limestone mass that had already yielded 5 surveyed caves. Near the top edge of the mass we found another cave. It was more complex and had leads we didn't completely explore. It will make a great primary objective for the next survey trip. Just be ready to deal with the poison oak, ticks, mosquitoes, biting flies, and possible bear or rattlesnake encounters. The wildflowers were nice. **BB**

**PHOTOS FROM 5-21-11 CAVE HUNT by Errin Walker**

Wall near bird nest in Elk Antler Caves

Bird nest in the wall of Elk Antler Caves

**MORE PHOTOGRAPHS FROM 5-21-11 by Errin Walker**

On survey in back of Popcorn Passage Cave

Fauna in the foliage

Hobson and Broeckel consider next move on cave hunt

**VERTICAL TRAINING AT MAY MEETING By Steve Hobson**

5-20-11. Present: Mel Jackson, Hans Stein, Dave Smith, Steve Hobson, Sam Baxter.

Melanie and I worked on self-rescue techniques during the early afternoon. Then we practiced climbing with knots and rappelling with a munter hitch. We helped Hans set up a frog system, while Dave and Sam practiced frogging, change-overs and all. Liz and Jim showed up just in time for dinner. **SH**

Errin Walker and Dave Smith on 5-21-11 cave hunt in Shasta County

**SAG RAG**
**2916 Deer Mdws. Rd.**
**Yreka CA 96097:** **STAMP**

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