THE SPELEOGRAPH

PUBLISHED BY THE OREGON GROTTO OF THE NATIONAL SPELEOLOGICAL SOCIETY

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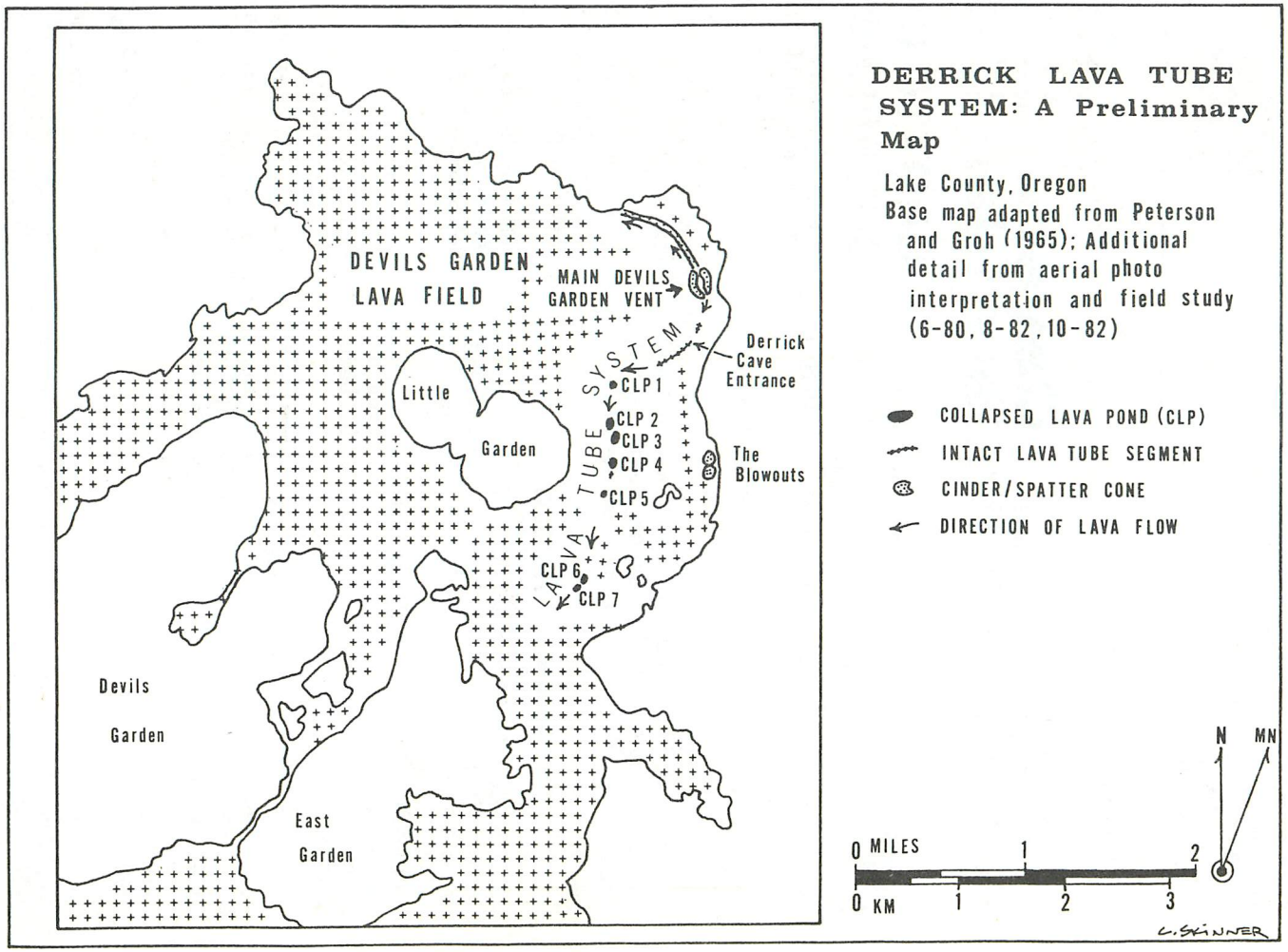
Volume 19, no.1 January 1983



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Oregon Grotto general MEETINGS are held on the 3rd Friday of every month, at 7:30 P.M., and until further notice, will be held at the Southwest Washington Research Unit, 1918 N.E. 78th St., Vancouver, Washington. (¼ mile east of Interstate-5 on 78th St.)

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1983 **JANUARY** 1983

SUN	MON	TUE	WED	THU	FRI	SAT
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1983 **FEBRUARY** 1983

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Cavers Calendar

1983 **MARCH** 1983

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1983 **APRIL** 1983

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January 21: Oregon Grotto General Meeting—7:30 p.m. at the Southwest Washington Research Unit, 1918 N.E. 78th Street, Vancouver, Washington (¼ mile east of Interstate -5 on 78th St.)

February 18: Oregon Grotto General Meeting, as above.

February 19: Symposium on Risk Evaluation and Risk Management in Cave Management. At the Marshall Center in Vancouver, Washington.

Money Wrench

DUES/SUBSCRIPTIONS DUE DECEMBER
Crawford, Rod
Grant, Bruce
Grant, Jack
Talent, Steve

DUES/SUBSCRIPTIONS DUE JANUARY
Benedict, Lyle
LaLond, Mike
Lindgren, Paul
Mixon, Bill
Nieland, Jim, Libby

DUES/SUBSCRIPTIONS DUE FEBRUARY
Ackley, Lee
Groo, Tyler
Poulsen, Steve
Roth, Norm
Schoonover, Keith
Vehslage, Gene

REINSTATED
Smith, Dave,Dianne

DROPPED
Czop, Bernard
Garlock, Lynn
Jones, Dave, Grace

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GROTTO CHAIRS SHUFFLED

In a nearly unanimous December election **(Bullwinkle** got one vote) all four grotto officers were **returned to** office for another year.

At its December meeting, the Executive Committee shanghaied Rick Pope to serve as conservation committee chairman.

In an earlier action, which we neglected report in these columns, Rick was replaced as Ape Cave Committee head by Roger Silver.

Following the December election, the new (old?) officers appointed Roger Silver, Jo Larson, Dennis Glasby and Bob Baker to the Executive Committee.

THANKS

Thanks to Lee Gilsen for the clipping regarding the Tennessee cave find.

Thanks to Irene and Gerald Forney for the little calendar they send each year—which, reduced in size even further, becomes the little months with "Cavers Calendar."

THE CHAIR CREAKS

I would like, at this time, to thank all the Oregon Grotto volunteers that worked to build the 1¼ mile Ape Cave Trail. This is truly a significant project and the grotto should be proud of it's accomplishment.

I hope the enthusiasm displayed by the Ape Cave Trail Project continues through the coming years, especially in regard to our agreement to maintain the trail, and also future Oregon Grotto projects. There are a lot of hard working, dedicated cavers in the Oregon Grotto and I appreciate being a part of such an active grotto.

Patty Silver

THE DERRICK LAVA TUBE SYSTEM: OREGON'S THIRD LONGEST ?

by Craig Skinner

What, you may say, am I talking about? The well known and often-visited Derrick Cave is only about 1200 feet long, not including an extra couple of hundred feet of uncollapsed tube between the cave and the vent. As I'll soon explain, though, it looks like Derrick Cave is only the largest (by far) cave in a three-mile-long lava tube system that originates at the upper northeast corner of the Devil's Garden lava field. Don't get out your helmets and lights yet, though - most of the system is collapsed.

Before I get started on the lava tube system, let me tell you a bit about the Devils Garden basalts where Derrick Cave and the lava tube system are located. Like the other two early Holocene (post-glacial and younger than about 12,000 years) lava fields in this area, the 45 square miles of the Devils Garden basalts have received little attention from geologists. Little more than passing mentions have appeared in Peterson and Groh (1963, 1965), Forbes (1973) and Allison (1979), the few studies that have included portions of the Devils Garden.

Cavers, attracted by the proliferation of lava tubes in the upper part of the flows, have spent more time here than most, with attention being focused in the Derrick Cave area (Benedict and Benedict,1982; Larson 1982; Nieland *et al.* 1977; Pope 1978; and Sims 1977). After walking around this area, though, it's obvious that the lava fields have been the scene of human interest for a long time. There are many scatters of worked obsidian flakes throughout the lavas and the "islands" in the center of the flows. An obsidian source can even be found inside the borders of the lava field in the Little Garden, three older rhyolitic domes surrounded by the more recent lavas.

The Devils Garden is a collection of thin, primarily pahoehoe lava flows that originated from two different vent areas. One of these vents is the site of the "Blow-outs," two giant spatter cones and a group of smaller spatter cones and spatter ramparts. The main vent area, located in the upper northeast quadrant of the lava field, a short walk from Derrick Cave, consists of a low cinder cone and a spatter cone. A prominent lava channel runs to the north while a large lava tube heads to the south from this vent. Many small lava tubes (up to at least 200 feet long) can be found in the overflow levees of the north channel, but it's the southern tube that I want to look at here. Fluid basalts from the main vent flowed south through this large tube, the remnants of which can be traced through a series of collapsed and intact lava tube segments, collapsed ponds and pressure plateaus for at least three miles (4.8+ km). Derrick Cave is the largest of the intact tube segments. Many other small lava tubes can also be found near the main lava tube system, most noticeably in the Derrick Cave area. These were probably formed in secondary flows originating from the main tube or in small channels and tubes paralleling the main lava tube.

For want of a better title, I've called the apparently unamed lava tube system the Derrick Cave Lava Tube System. Lavas that advanced through this tube appear to have fed much of the eastern part of the Devils Garden lava field that reaches about nine miles south to the Cougar Mountain area. The three-mile-long lava tube system here looks to be, after the Saddle Butte and Arnold systems, the third longest in the state. (Have I missed any?)

The age of the Devils Garden lavas has not been fixed, though some geomorphological evidence does suggest an early Holocene date. Shells collected from a former beach terrace (of the Pluvial Fort Rock Lake) at an elevation of 4,386 feet were radiocarbon dated at about 13,000 years in age (Bedwell 1973). The lowest level that the uneroded basalts of the Devils Garden reach is 4,375 feet (USGS 1981). Using the radiocarbon date from the lake terrace places the *maximum* age of the lava at about 13,000 years. The entire flow has also been blanketed with tephra from Mount Mazama (Crater Lake), an event well dated about 7,000 years B.P. Using this handily available information places the age of the Devils Garden lavas at somewhere between 7,000 and 13,000 radiocarbon years. Remember, you read it here first !

An intriguing speculation is the probablility that the volcanic activity here was watched (no doubt with great interest) by the early inhabitants of the neighboring Fort Rock Valley. Archeological sites there date back to 13,000 years in age.

BACK TO THE TUBES

Now, back to the lava tubes. Starting at the main source vent of the Derrick System, let me take you south and down the lava tube system as far as I've been. If you happen to have a copy of the *Lunar Geological Field Conference Guide Book* [*sic*] (Peterson and Groh 1965), take a look at the aerial photograph of the Devils Garden; the cinder cone at the main vent is easily visible as are the collapsed lava ponds farther down the system. It was while looking at aerial stereo photos of the area that I originally got intrigued by what looked to be a series of collapsed depressions running down the flow. These turned out to be large collapsed lava ponds.

Between the vent and the upper entrance of Derrick Cave is a few hundred feet of uncollapsed lava tube. It's not likely that this would have escaped being named, but I haven't run across anything yet.

Next is the first of several entrances into Derrick Cave. This unexpectadly large and diverse lava tube trends off to the southwest and toward the center of the lava field at this point. Derrick Cave has been thoroughly surveyed (see Nieland et al. 1977; Pope 1978; and Larson 1982,

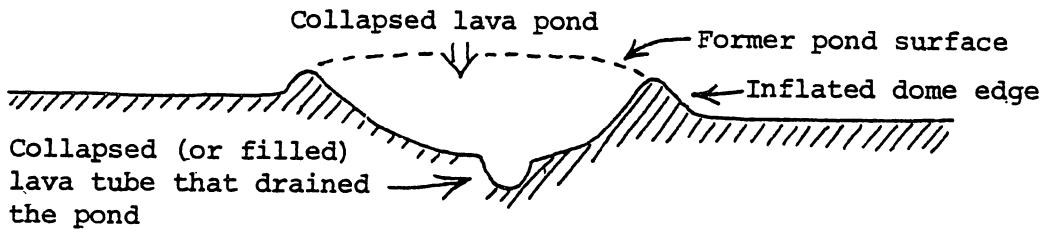
for maps) and depending on whose maps you use, appears to be between 1,200 and 1,350 feet long (from the main entrance).

From here, using Derrick Cave as a pointer, its time to head across the lava fields. About one-half mile from the main entrance to Derrick Cave (or, very approximately, 1,400 feet from the southern end of the cave), is the first of seven collapsed lava ponds. They're hard to mistake for anything else once you find them. Walking south from this pond soon takes you by three other collapsed ponds. I forgot to measure them while I was there, but I would estimate that they are at least 100 feet wide and 100 to 200 feet long.

These ponds are quite spectacular, and it's easy to see where the cooled crust of the pond broke apart as the level of the lava subsided. The ponds lie directly over the lava tube, and apparently were drained through the underlying tube. The ponds were also inflated by the pressure of the liquid basalt underneath and were raised 10—15 feet above the level of the surrounding lavas before they collapsed.

Little of the lava tube that drained the ponds remains intact. A short section is still uncollapsed in the bottom of pond 4 (see map) and another short peice remains intact in the southern end of pond 6. The sections of lava tube that ran between the caves and ponds look to be largely filled, collapsed or unenterable.

The sequence of events that filled and drained these lava ponds leaves them with an odd profile that looks typically something like this:



Down the system from collapsed lava pond 4 is the largest intact segment of the lava tube that I've located so far in the system below Derrick Cave. From the skylight entrance it's about 20 feet to the floor of the cave below (vertical gear required), and with no collapsed ponds or tubes for some distance downslope, this cave looked like it could be a major one. When I ran across the entrance in late September with a friend, Bill Cattrall, I thought we had found a rival to Derrick Cave. Late October found me back with Scott Murdock on a last-chance fall camping trip (gets cold out here), equipped with high expectations and vertical hardware. As you can see from the map of the cave, what we found wasn't exactly what I had in mind. Oh, well !

Several hundred yards south of Red Herring Cave is another collapsed lava pond (CLP 5 on the map), the smallest of the seven in the lava tube system.

Not far from this former lava pond is one of the most unusual surface features located anywhere in the Devils Garden. Hydrostatic pressure from the basalts moving downslope from the main vent raised a large pressure dome or pressure plateau above the bordering lavas (this phenomenon is described by Wentworth and McDonald 1953). This dome, about 150 feet by 300 feet (an estimate), similar in structure to a tumulus or schollendome (though the term isn't generally used for features this large), was inflated to a height of about 50 feet. The long axis of the dome appears to lie over the now filled lava tube. The highest point on this dome is sumounted by several hornitos, created when the lava was forced out of the top of the dome.

Small and abundant surface tubes radiate from the summits of these small cones. Toward the southern end of the dome are several 10 to 15-foot diameter lava blisters with ceilings collapsed into the hollow spaces beneath. One elongate blister, or possibly several joined blisters, is still intact and can be entered through several collapsed points in the thin roof. The chamber inside is about 70 feet long, 20 feet wide and three to seven feet high. Several small surface tubes radiate away from the *inside* of the chamber and can be followed (inside) for short distances. In the same vicinity are some small squeeze-ups that had been forced out through cracks in the dome by the pressure below. Elsewhere, surface tubes fed through small leaks in the dome abound.

Once again walking south, there looks to be the shallow, parallel surface trace of a collapsed lava tube. Following this takes you to the last of the collapsed lava ponds, both of which are very similar to the ones nearer the vent. Immediately past these two almost connected ponds is a 250-foot-diameter, five-foot-high pressure dome that was probably formed in much the same way as the ponds nearby. In this instance, the low dome (or inflated pond) didn't collapse. This dome was the last apparent part of the Derrick System that was visible on the aerial photos and is a bit over three miles from the vent. At this point, I was too tired to go any farther and it was time to make the weary hike back to the camp. It may well be that more signs of the lava tube system can be found down the lava field, extending the length of the system even farther, but this will have to wait for another year for me.

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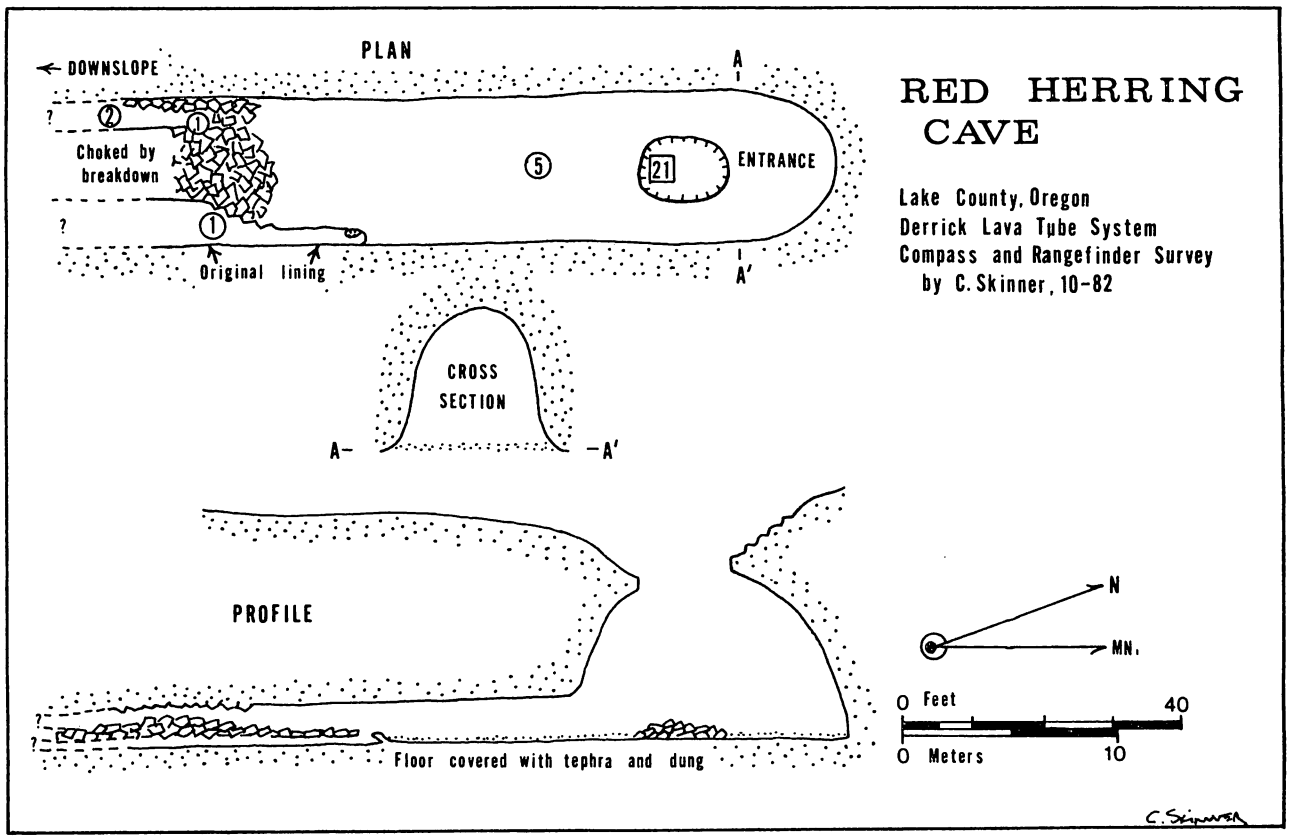


"MUD GLYPHS" FOUND

In early December an AP story broke about the finding, in a Tennessee cave of a passage containing drawings made by ancient Indians. Named Mud Glyph Cave (from petroglyphs in mud) the find is considered unique in North America because the mud drawings are so far inside the cave. Carbon dating [of burned torch material] and the style of the drawings indicate an age of about 700 years. The cave passage was found in 1979 by a Forest Service employee/caver who realized its importance and fearing its destruction, told no one until 1981. Following his revelation, the Forest Service called in the University of Tennessee and a team, including some NSS members was called in to investigate.

The finder of the cave passage had good reason to fear for its welfare—the public has the attitude that such things as artifacts and the like are for collecting. That "Bring-em-back-alive" philosophy is extremely difficult to counter, though, when persons like Dr. Charles H. Faulkner of the University of Tennessee (leader of the group studying the drawings) states: "Even if we wanted to remove some of the glyphs, we couldn't.....the clay is still soft."

MOUNT ST. HELENS CAVES– DECEMBER 5, 1982

by William R. Halliday, M.D.

Because of recent warm rains, I thought I'd better take a look at the mudflow situation in the Mount St.Helens cave area on December 5. For background, the Hopeless Cave Mudflow invaded the cave area two years earlier, after just such a rain. This time nothing catastrophic was found, but some interesting further observations were possible in the course of a mere one-day trip.

Major changes were apparent as we approached the Lava Cast Picnic Area. The mud plain on the north side of the road here had extended and broadened eastward, and on the south side of the road a tongue of mud had crossed the parking lot road for the first time (previously none had come within perhaps 100 meters on the side road here). This new tongue also was spilling laterally into a blocked lava sink just west of the side road, and between the main road and the parking area. New mud was present on the main road itself about 100 yards west of the parking area, and barely eroded banks of mud two or three feet high evidently had been graded off the road quite recently.

As we proceeded up the Ape Cave road, we found clear running water on both sides of the road, more on the east side. A considerable stream was running in the gully about 20 m east of the main entrance of the cave and a comparatively small amount was running through the parking lot. Six cars were parked there; two left while we were checking the Hopeless Cave Mudflow. Two more were parked in the Lava Cast parking lot, apparently visitors to Lake Cave. Stream debris in and alongside the parking lot and flattened grass indicate a greater recent stream flow here but I found no indication of more than local runoff into this entrance of Ape Cave.

The controversial rock dam at the hairpin curve above this entrance was unbreached and the erosion channels near the marker stump appeared unchanged from my last visit. The dam appeared to have been thickened and perhaps increased in height farther east, in line with what is currently the largest stream channel in the deltaic deposit. The mud pond at the west end of the dam was within a few inches of flowing around the dam. The dam was leaking at the usual place and this was the source of the water currently running through the parking lot. Probably the higher water whose traces remained in the parking lot flowed around the west end of the dam and through the erosion channels previously mentioned.

No snow was present in this area but as we went north on Road 81 we began to meet more snow and we finally stopped about 100 m before the Little Red River Cave trailhead. The snow had a very high water content from the rain but was mostly unbroken. Three bare gulleys were present in the width of the Road 81 mudflow (including the deepest one, at the east side) and a new mud tongue extended onto and along the road near the N818 junction, but its volume was small. Other tiny tongues were present in the area between the Road 81 and Gremlin Cave mudflows, but it was clear that the big difference between the November 1980 rain and this one was that this time, the upper elevation snows became saturated but did not melt. If we get another warm rain later, however, the potential for more, sudden massive mudflows here remains great.

ANOTHER "ANNUAL " SASQUATCH HUNT

by Clyde M. Senger

My son David was up from California and wanted to see Mt St Helens again so we planned a trip for Saturday 27 Nov. Fortunately, we decided to stay with relatives in Portland rather than camp. Otherwise, I suspect we would have been quite wet and cold. Another son, Stuart joined us in Portland and we also had David's daughter Tammy for her first caving trip. The weather didn't look favorable but we went anyway. As we rather expected, it was raining when we got to the Ape Cave parking area. As we were getting things out of the back, David heard a hissing sound. Sure enough, we had a tire that was going flat. Fortunately, the spare had air so out first job was changing a tire in the rain. With that accomplished, we decided on a tour of lower Ape Cave in hopes the weather would improve. David took quite a few pictures while I played grandfather with Tammy. She seemed to enjoy the cave but did get a bit cold and I suspect a bit bored. It was a pleasant trip but interupted by two other parties that passed us on the way out. It was even more of a surprise to see at least a dozen cars in the lot when we emerged. I am still used to the days when the area was closed. As expected, it was still raining but we (I) decided on a quick look at the debris accumulation above Ape Cave and a few measurements of my stations. We found no running water but several rather deep channels in the Hopeless Cave area. Obviously, a lot of material had moved on downslope as I had predicted. With that we headed back for the car and home, a little disappointed but with a few memories.

Stuart and I gave it another try on Friday 17 Dec. When the weather was clearing in Portland on Thursday, I had considered going but hated to awaken Stuart who had been having trouble sleeping. What a mistake. As we approached Cougar, we saw a snow covered grader going west and heard at the store that there was quite a snow storm at Merril Lake. Hoping for the best, we went on. I really didn't think it would be snowing at Ape Cave as it seemed too warm. Wrong again. As we passed thru the patch of big timber, the rain hitting the windshield became snow and soon there was a distinct layer of snow

on the road. I was about to have Stuart turn around when I recognized the last turn of the road before the Ape Cave Road. I figured if we could get to there we could go on to the Lake Cave parking area. We did OK but then I realized it was a bit uphill on the way out and it was still snowing heavily. I decided I was going to check a few stations anyway and by that time the snow had stopped. Figuring things were not going to get any worse, we wandered around more and then went on up to the Ape Cave area on foot. I had wanted to check the upper stations but found the stream running deeper than I felt like wading. When the snow started again we made a quick exit. We had both gotten wet feet from boots that leaked in the 2 inches of wet snow and shallow runoff so we gave up on a trip to Lake Cave and went home.

As I had expected, there were changes in the flow above Ape Cave. Most of the water now seems to be coming down more to the west and turning to flow along the north side of the Forest Service rock wall. It then cuts across the flat almost over Hopeless Cave, much further west than I have seen it before. At least two channels could be seen to the east much as I remembered them from November but they were empty. The water was filled with fine debris and where it was not so deep you could see that a lot of larger material was being moved too. I think Dr. Halliday is correct. I think there is a good possibility that the main stream might find a way thru or over the rock wall and possibly cause problems at Ape Cave. I still think my suggestion of a small diversion structure upstream would be cheap insurance but then I am not an expert on such matters.

There obviously has been quite a bit of new debris washed in just west of the Lake Cave parking area. Apparently the road had been graded several times recently and there was still several inches of new material on the road in places, some of which had been eroded away again by the stream that was flowing when we were there. Last spring I had recommended to the Forest Service that they have a couple of men block that channel where it branches not too far below Ape Cave but apparently they prefer to keep their large machinery busy. I am afraid that a change in flow upstream could cause a lot more washing onto the parking area and on beyond into the formation area. That would be a ral shame.

I was really quite disappointed in not getting to the higher area near Gremlin Cave. I had expected the culvert under the road might have washed out and that there might have been quite a few other changes in that area after the recent storms. Oh well, there is always another time, usually.

REPORT OF THE NSS MOUNT ST. HELENS CONSERVATION TASK FORCE FOR 1982

William R. Halliday M.D., Chairman

As of this date, the most important event of the year affecting the future of the Mount St.Helens caves was President Reagan's signing the bill creating a Mount St. Helens National Volcanic Monument on August 26,1982. In March I had presented the official NSS position and on April 3 several members of the Cascade and Oregon grottos also presented testimony in a filled hearing in Vancouver, Washington.

The final bill was a compromise with logging interests with a monument far smaller than that proposed by local conservationists. It was written by staff members of the U.S. Senate and House of Representatives, and differed in many ways from all earlier versions. As a result its text was slow to be disseminated even after it became law and maps showing the boundaries still have not appeared in major northwest newspapers. An advanced copy of the preliminary map obtained through Senator Slade Gorton shows the new national mounument to be — unfortunately — less than one mile wide in the Ape Cave area. Worse, the tentative southeast boundary cuts off part of the Cave Basalt Lava Flow and is so close to Ole's Cave that one entrance and a short section of the cave actually may be outside the tentative monument boundary. This is especially dismaying because of previous acknowledgements that a buffer zone of ½ mile should be included beyond the edge of the speleoliferous lava flow here. It is not yet clear, but Trenchend and Trenchside caves may also be in the tentatively excluded part of the lava flow.

Another problem is along the southern boundary of the national monument. Here the tentative boundary line precisely intersects Powerline Cave. Powerline Cave and the potentially impacted section of Olie's Cave are important bat habitats, and Trenchend and Trenchside caves contain notable geologic features in the form of beautiful patterns of subsurface lava flows. The new act contains provisions permitting small modifications of the exact boundary on the recommendation of the Forest Service. NSS President Rob Stitt has initiated correspondence seeking to correct the unfortunate boundaries but it is not yet clear whether the Forest Service is likely to consider such adjustments as "small adjustments" or whether it has any interest in doing so.

Perhaps the most unfortunate aspect of the entire act is that the new national monument will not be transferred to the National Park System (as the NSS has urged) but will continue to be administered by the Forest Service. Worse, administratively it will continue to be under the

—Continued on page 10

[Many thanks to Clyde Senger for furnishing his story ready to paste up.]

THE MANY SHAPES OF DERRICK CAVE

by Charlie Larson

Several maps of Derrick, either plan or profile, exist but until now no compatible plan *and* profile. Until recently, the earliest was thought to a 1961 OSS map—a plan view of both upper and lower sections (which located the cave in Deschutes County). An earlier map by Sceva and Bartholomew shows the upper section profile and is reproduced below. Jack Sceva was a charter member of the Oregon Grotto and during 1959 and 1960 (years before the grotto was formed), together with Bartholomew, mapped several caves in central Oregon; South Ice and Skylight caves among them.

Most earlier maps of Derrick agree reasonably well regarding the cave's shape, but few agree on its orientation. This disparity was no problem until 1980 when further examination indicated Ben's Cave[1] was a branch of Derrick and the exact spatial relationship of the two became important. In 1981 we carefully resurveyed from the Main Entrance to the Big Room (an obvious point of departure of lava from the main tube), backsighting and using the compass as a plane table. The data resulted in a plan view which corresponded closely with earlier maps, but added *still another orientation.* Worse, ambiguity regarding Ben's Cave had been compounded. Clearly, magnetic anomalies were a factor; backsights commonly differed by 5—7 degrees and more. Uncertainty regarding the location of Ben's Cave prompted the imprecise location—the fat "X"—in the '82 NSS convention guidebook.

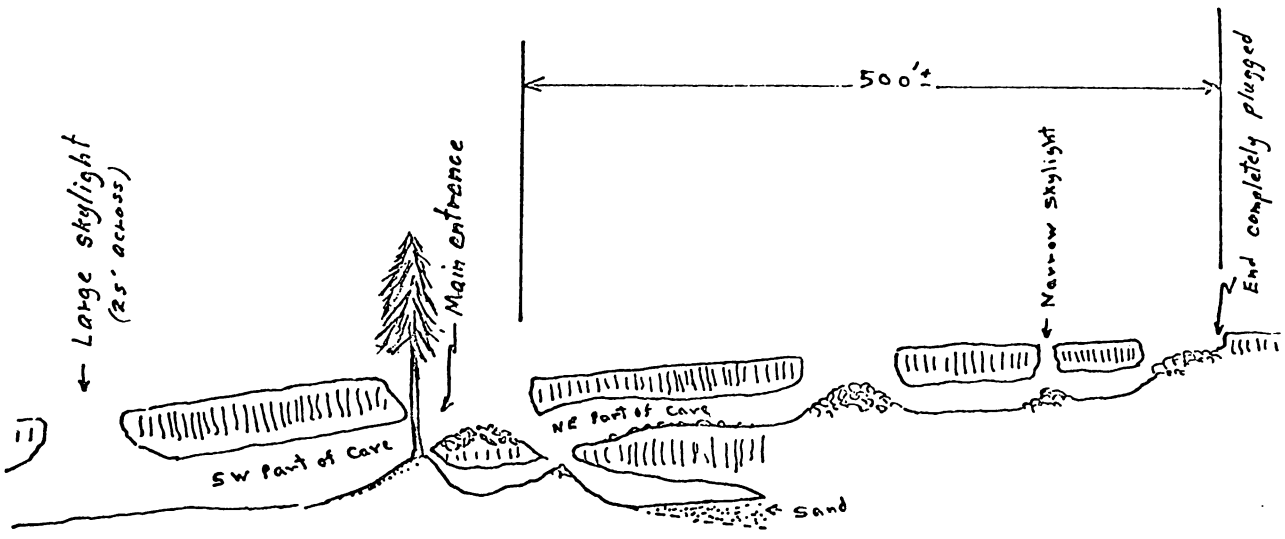
In late November, 1982, armed with recent (1979) aerial photos of the area, we determined to settle the Derrick/Ben's Cave relationship. We undertook what amounted to plane table surveys from the Main Entrance to Big Room and Main Entrance to Ben's Cave entrance, all tied to landmarks visible from either entrance and identifiable on the aerial photos. The data gathered satisfactorily agreed with existing data and, through indentifiable features on area maps and aerial photos, resolved the cave's orientation and the map with this article is the result.

The entrance to Ben's Cave can be identified on high altitude stereo photos *if* one has field data for guidance. It is 59 degrees true x 780 feet from the 30-inch-dia. pine tree growing in the southeast side of the main entrance of Derrick Cave, however, because of appreciable and indeterminate magnetic anomolies a magnetic compass is not especially useful in finding it.[2] For example, a 5 degree magnetic error—not uncommon here—would result in a 68 foot lateral error at the entrance to Ben's Cave and, because of the nondescript surface and difficulty seeing through the juniper and other brush, it could *easily* be missed by a person passing at that distance.

Derrick Cave is fairly complex and after reviewing the map I am struck by the lack of precision in cave morphology terms. Note for example, that the "entrance" to Ben's Cave is nearly identical to one of the "skylights" in Derrick Cave. The former is labeled an "entrance" because it's the only way in; the latter is called a "skylight" because there's a much easier way in. Hmmm.

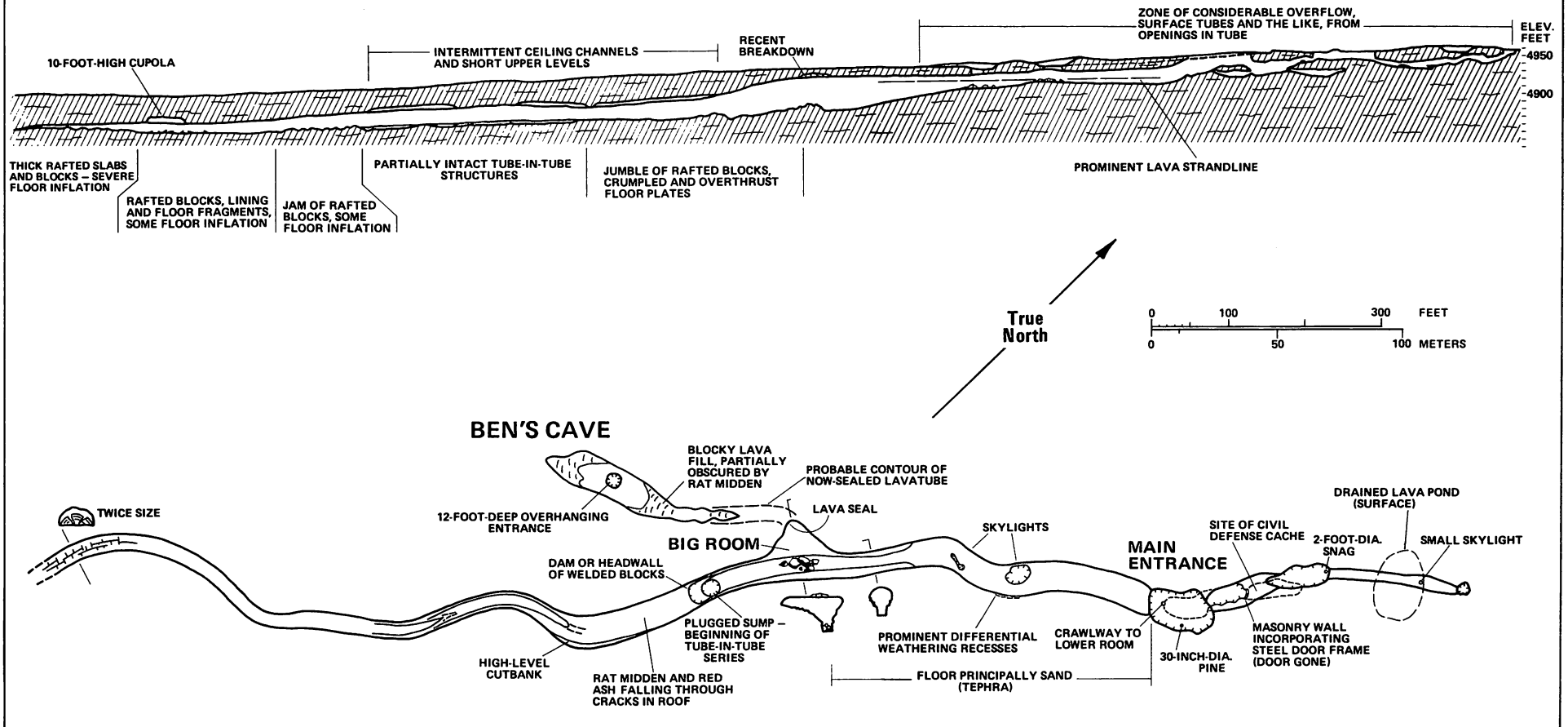
1. Ben's Cave (A.K.A. Ben's Whole; Fungus Forest Cave) is a high-level branch of Derrick Cave, found and mapped by an Oregon Grotto party in 1971.

2. Orientation of Derrick Cave (from Main Entrance to downtube terminus) averages about 53 degrees, true, on previous maps, all of which are apparently based on magnetic surveys. Its actual alignment is 47 degrees true.



SECTION THROUGH NORTH PART OF CAVE

J.E. Sceva and Wm.S. Bartholomew, 4-27-60



DERRICK CAVE

Lake County, Oregon
Compiled from 1971, 1980, 1981 and 1982 surveys.

Supervisor of the Gifford Pinchot National Forest and his clique which has mismanaged tha cave area very badly in the past. During the 1982 national monument bill hearing, local citizens and members of the scientific community expressed widespread outrage at this past mismanagement. The U.S. Forest Service has administered national monuments in the past, but they did it so badly that all were taken away from them. Possibly this little group of latter-day timber barons has learned something from these hearings. Only time will tell.

The advance copy of the map shows that there are major problems in critical areas in addition to those in the cave areas. In the northwest part of the devastated area, the Fawn Lake-Elk Lake area has been excluded, for example. This is an ideal location for a drive-up visitor center which could be constructed right now, without adverse ecological impact. Instead, the Gifford Pinchot National Forest is planning to wait until 1985 to open a visitor center in the northwestern area. Furthermore they are planning for it to be on Coldwater Ridge where the road and new buildings would impact scenic and scientific values. This ia an especially important issue, because this is the area from which visitors will be able to look into the crater from their cars. The Fawn Lake-Elk Lake area is just one ridge farther back, and when people learn that they are being denied this right, the present queit groundswell of insistence on a better national monument seems likely to accelerate.

Potentially the second most important event of the year was the "cave prescription" workshop called by Jim Nieland on August 15, to develop management recommendations for the caves and their environments. Participants included NSS President Rob Stitt, Western Speleological Survey Director Charlie Larson, speleobiologist Rod Crawford of the Universirty of Washington, this writer and other influential northwestern speleologists. A copy of the group's recommendations is attached (see December, 1982, *The Speleograph*). It is felt to be a model for lava tube areas and perhaps some limestone areas also. Jim reports that the document has been well received by planners in the Forest Supervisor's office. However in November a Gifford Pinchot National Forest spokesman said that they did not plan to develop a cave management plan before 1984 despite our urging that this be expedited.

Speleological research has continued and expanded during 1982 despite continued problems with administrative restrictions and unpredictable, unannounced road closures—on one weekend the latter cost us 600 miles of driving and loss of nearly the entire time for field work. After one rained-out attempt, on October 10, we were successful in getting a field party into the area of potential post-eruptive glacier caves on the south side of the volcano, and actually found one. We learned enough about getting around on the mountain that we may be able to check out the larger Swift and Dryer glaciers next year without running afoul of Red Zone regulations, which is what kept us from them this time.

In the lava tube area, surface and subsurface reworking of alluvial "mudflows" continues to occur with each rainfall, much as in 1981. March 1982 saw one new occurrence: ballistic fragments large enough to be potentially dangerous to humans fell on road 81 between the upper caves and the Utterstrom's Caves groups during the March eruption. In this part of the cave area, the Red Zone boundary has been shifted at least twice in the last year (this is often done without notifying the public). At present it lies between the Utterstrom's group and road 81. Neither this nor any previous Red Zone boundary here has any relationship to risk factors. The present line appears to have been drawn for the purpose of keeping the public away from U.S. Geological Survey instruments at Breakdown Cave. Probably this is a worthy purpose in its own right, but the Red Zone is supposed to be the danger zone and its misuse in this way amounts to prostitution of the risk evaluation-risk acceptance process.

Regarding the infamous "routine road maintenance" riprap dam above the main entrance of Ape Cave, small flash floods have repeatedly overtopped it during 1982 and have cut stream channels in its rock face. So far, however, headward erosion into its sandy core and the massive aggradation behind it has not occurred, but Ape Cave remains in danger.

Under the Western Speleological Survey Red Zone permit, field work has expanded to pseudokarstic areas north of the volcano. Only one short reconnaissance has occurred there to date, however. Here, we found some of the water of Spirit Lake draining into swallets in the May 18 pyroclastic/debris flow, but no one seems to know how much or where it is going. We are trying to find out if anyone has paid any attention to this. Meanwhile, the U.S. Army Corps of Engineers and its contractors have just installed an expensive, ultra-sophisticated pumping system to lower the level of the lake for fear that it would rise high enough to overtop the pyroclastic/debris flow and cause sudden catastrophic downcutting, with release of floodwaters.

In our reconnaissance on October 9 we found the contractors inexplicably bulldozing loose material from the debris flow into the lake's swallets. Nearby was a wide ditch more than 10 m deep in which the pipe was being laid: newspaper reports indicate that it subsequently has been finished and is in operation. Quite close to the pipeline trench are two enormous and magnificent geothermal kettles (locally called"craters" and a variety of other terms) formed by the geothermal melting of huge chunks of glacier entombed in the pyroclastic flow. As of October 9 the larger of these still was undamaged by the construction project the other was being used as a borrow pit. Both these huge kettles on the surface of the debris flow between gullies leading into them and much larger piping phenomena were present in their dry floors. Their bottoms appeared to be much lower than nearby Spirit Lake, suggesting a very steep piezometric surface for the subsurface drainage of the lake. The material of the debris flow is poorly consolidated and no open cave-sized pipes were found during our rapid reconnaissance (though one vertical pipe in one of the sinks draining the smaller kettle almost qualified). Apparently the resurgences are the most likely place to find cave-sized pipes of this sort. Officer's Cave in central Oregon is a piping cave large enough to have been the subject of at least one USGS report in the past. so we continue to be hopeful that at least one will be found at Mount St. Helens also.

On November 8, I attended a rather ominous meeting of the Mount St. Helens Protective Association in Longview. Washington. At this meeting GPNF planner Ed Osmun discussed current planning for the new national monument. Despite favorable unofficial comment on the input from Jim Nieland's workshop, many recommendations of local speleologists seem to have been tossed into the nearest wastebasket. For example, there are no plans to keep the Ape Cave road plowed in winter even though this would require very little effort or expense. Probably much worse, he reported that local cavers' recommendations for abandonment of the section of road 81 crossed by the Gremlin Cave Mudflow and the Road 81 Mudflow and the Road 81 Mudflow (recommended in order to preserve the magnificent geological record here) are in conflict with their recreational planning (a loop road for recreational driving here) and have been given short shrift without even an acknowledgment. Apparently this also is true of the recommendation for an interpretive trail and exhibit at Sand Cave, which does not appear on their planning map. Their preliminary plan is to be "signed off" by the Regional Forester around November 30, he reported.*Then* they will consider public input, he said: a bit late, it would seem.

On the basis of his report, the new national monument clearly will have a low status in the Gifford Pinchot National Forest. Instead of a superintendent it will have merely a "monument ranger", and the person selected is the present district ranger for the cave area—a nice guy but oriented almost exclusively towayd logging and mass recreation and not very interested in speleology, conservation of caves, research and other things we think are important. Its staff is almost entirely organized toward mass recreation; no scientific, research, or ecological positions are designated.

This is not a very good start for a new national monument. The U.S. Forest Service didn't want a national monument here in the first place, and the question inevitably arises as to whether they are setting it up to prove something or other now. As it stands, neither the boundaries nor the planned management meet NSS recommendations. This task force accordingly expects to continue to work vigorously for proper protection of the caves and their environments.

THE SPELEOGRAPH

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