



The Cascade Caver

Official Publication of the
CASCADE GROTTO N. S. S.



Volume 10 no. 10 Editor: Dr. William R. Halliday October 1971

COMING EVENTS

- September 27-27. Cave Ridge. Call Steinburn, EM3-1751
October 2-3. McLaughlin Canyon Caves mapping trip. Cope, SU9-0966.
October 9-10. Papoose Cave. Call Brown, RO3-9094.
October 16. noon.convention planning meeting, White Salmon.
October 16-17. Mt. Adams trip. Call Halliday EA 4-7474.
October 18. Regular grotto meeting, Hallidays, 1117 36th E, 8 PM.
 NSS slide show plus field trip reports and planning.
November 15. Regular meeting will be in some other location.
June 12. Pre-convention field trips begin.
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RECENT FIELD TRIPS

On Labor Day weekend, Jan Roberts and Jack Charleston dug away at the beautiful solution tube alongside the logging road on Whitehorse Mtn. The cave is now 28 feet long instead of 25, but is curving upward toward the top of the small deposit.

On the same weekend, yrs truly joined Jim Nieland and Frank Walsh at Oregon Cave. Big historical expedition: took all of 5 minutes to rediscover the long-lost "Giant Tongue" - in the only place it could be: the old "shortcut" which was abandoned when the tunnel was excavated between the Passageway of the Whale and Adam's Tomb. Jim also showed me the two little caves on each side of the gully south of the main cave. Wonderful weekend even if we didn't find any littoral caves near Cape Mendocinn next day.

Bob Brown reports that gates are now installed on Hellhole, Lookout and Cascade Caves at Cave Ridge, and others are staryed in Newton and Danger. So far the grotto has spent about \$40 on these, with about \$90 in contributions from grotto members.

Rumor has it that a determined effort to link Hellhole and Lookout Caves this summer was unsuccessful. No report at this point.

Seberal reports of trips to the Big Four Ice Caves; generally agreed that the stream has shifted its course well to the east and that the caves are larger and more complex than previously known by the grotto. Somebody needs to do some mapping before they change again.

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GLACIOSPELEOLOGICAL ABSTRACTS

Kiver, Eugene P. & Mumma, Martin D. 1971. Summit Firn Caves, Mt. Rainier, Washington. *Science*, 173:320-323, July 23.

The long-awaited report on the August 1970 week-long study (Gene returned again in August 1971 for a week).

The craters may be as much as 500 feet deep; the snow apparently compacts downward and is lost as water vapor every 50 years or so. The 1970 work was limited to the main (east crater); the perimeter passage is over 3,000 feet long; there are three main entrances and numerous smaller ones. The main passage is 25 to 35 feet wide and some 15 feet high; total passage lengths exceeds one mile. The perimeter passage is about 200 feet below the entrances. A 120' side passage extends downward to a room 120 feet in diameter and 70 feet high; the lowest point is at an elevation of 13,870 feet. The crater itself is about 1300 feet in diameter. "To our knowledge, no comparable system of steam-formed ice caves in a volcanic crater exists anywhere else in the world." Mapping was with tripod-mounted Brunton and steel tape. Crater slope is 35- to 40 degrees; it appeared deeper at the lowest point reached. Highest steam temperature recorded was 56°C; highest ground temperature, 86°F. Hundreds of small fumaroles are present; sulfur odor was detected in caves in the west crater but not in the main crater caves.

(Followup on the above: Gene tells me that the west crater caves are much smaller but one contains a sizeable lake - water temperature 1°C. Apparently he will not be able to return in 1972).
- W.R.H.

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Molenaar, Dee. 1971. The challenge of Rainier. *The Mountaineers*, Seattle, 352 pp.

Cavers will not respond to this book as will mountaineers. Although the author is a ground water geologist, the Paradise Ice Caves are barely mentioned (mostly because of the February rescue, recounted in some detail). As for the Summit Steam Caves, Whittaker gets much play, Kiver and Mumma some, and the Cascade Grotto, none. (This was not true of the Kiver-Mumma article above, which gave proper credit and references to the grotto work, including what may be the first time THE CASCADE CAVER has been mentioned in Science.)

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CHANGE OF ADDRESS

Capt. Wm. F. Zarwell 398-40-2315, 61st Medical Dispensary,
APO San Francisco, Calif. 96266.

(Bill writes that he is at Long Binh - no caves nearby and the Marble Mountain caves are now in hostile territory. He is hoping to go caving in Australia on R&R soon)

VULCANOSPELEOLOGICAL ABSTRACTS

Forney, G.G. 1971. Lava tubes of the San Franciscan Volcanic Field, Arizona. Plateau (Museum of N. Ariz.) 44(1):1-13. Summer.

Government Cave (3600' long), Basalt Cave (about 550 feet) and Slate Lakes Cave (about 1000' of passages) are located NW of Flagstaff, Ariz. Sunset Crater Ice Cave (225 feet) and Kana-a Kave (80') are near Sunset Crater. The latter is of interest because a hornito extends to the surface from its interior (like the uppermost entrance of Ole's Cave, Wash.). The caves are of considerable meteorological importance and play a major role in Hopi mythology. Slate Lakes and Basalt Caves show minor braiding; Government Cave is unitary; Sunset Crater Ice Cave is entirely in breakdown. All were formed in "comparatively recent" flows; no definitive dating is mentioned but Government Cave appears to be the oldest and the Sunset Crater caves, the most recent, perhaps being 907 years old.

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Harter, Russell. 1971. Lava stalagmites in Government Cave. *ibid*, 14-17.

The author uses the presence of some small conical spatter stalagmites as a basis for discussion of two types of lava stalactites which he terms "drip pendants" and "lavacicle" stalactites; the "tapered" and "tubular" forms of CAVES OF WASHINGTON. He notes that stalagmites rarely occur beneath the former; this is consistent with local observations. His concept of origin of the former is remelting of the surface, "and the remelted lava runs down the projections between the (cupped depression)" but the latter from heat release in a kind of chain reaction from late vacuolization, and are extruded. (If you find this difficult to follow, so did I). Apparently he totally rejects the idea of the latter resulting from slumping or dripping glaze. In short: a good food-for-thought article that demonstrates the need for much more study of the individual features of lava tube caverns as well as their sequence.

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Greeley, Ronald & Hyde, Jack H. 1971. Lava tubes of the Cave Basalt, Mt. St. Helens, Wash. NASA Technical Memorandum TM X-62,022.

This is the long-awaited sequel to the similar study of the Bend, Oregon area by NASA, just published by the Oregon Department of mines and geology (VS Abstract next issue maybe). Besides maps of the flow as a whole showing relationships of the main caves, it includes maps of Spider Cave, Flow Cave, Price Albert Cave, Bat Cave, Beaver Cave, Barney's Cave, and a longitudinal profile of the Little Red River-Ape-Lake system. Evidence is presented that the formation of the main tube system included downcutting into the pre-flow surface. Radiocarbon dates were 1860 plus/minus 250 years for Lake Cave and 1925 years plus/minus 95 years for Ape Cave. Entrance 4 of Ole's Cave was noted to be the hornito, not the uppermost one as I mis-recalled above. As for speleogenesis, the authors refer to the shear plane concept of Ollier and Brown, but speak of the destruction of such features by turbulent flow, and by subsequent surges of lava. The tubes represent the zone of highest flow velocity; the axis may migrate in a sinuous pattern within active flows. In some areas, however, the main system occupies and has modified a pre-flow stream bed. The entire flow apparently existed as a single cooling unit. In summation: probably the most important vulcanospeleological report to date. 59 (W.R.H.)

RECENT FIELD TRIPS

August 14-15. Cave Ridge. Chuck Coughlin, Vern Frese and Bob Brown donated three bags of cement for the gating project which (fortunately) were helicoptered to the top. Also donated were several 5-gallon cans, and lengths of chain and cable. The Lookout gate was finished, Bob, Steve and George doing most or all the work, I hear, on a rainy weekend. Bob stayed the whole weekend; Luurt Nieuwenhuis popped up on Sunday - first time in a long time and it was good to have him back. Bob reports an interesting weekend, staying on top alone the whole weekend, waking up in the middle of a cloud and having some nice talks with marmots. He installed one expansion bolt in Danger Cave; he quit working on the second when a rock fell on him.

Several more trips to the Big Four Ice Caves but no definitive reports yet. PLEASE!!!!

August 7-8. The Coughlins and Tuffy (in a pack) enjoyed Horsethief and Bighorn Caverns and Natural Trap, as well as (of course) Lewis and Clark Caverns on the way home. They met parties from the Nittany Grotto and from Missoula while there. 25,000 feet is said to have been mapped in the Bighorn system now. Plus 10,000 in Horsethief. The Shining Mountains Grotto is understood to have used 70 bags of cement plugging the connection.

September 3-12. Browns, several members of VICEG, others from the grotto whose names I don't have (sorry). First came a 15-hour drive to Crystal Ice Caves, then on to the regional meeting at the Tony Grove Campground at 8000' feet in Utah's Logan Canyon - a wonderful alpine karst. 20 minute hike from camp to caves. Lots of little caves not yet checked out. Thunder Shower Cave was one particularly visited - about 600 feet long, entered through a sinkhole about 30 feet in diameter and 40 feet deep. There are three interconnected levels and some small speleothems. A 15' ladder was used. Others visited Twin Sinks Cave; the sinks are 200' in diameter and 120 feet deep; the drop into the cave is 60' more.

After the regional meeting, the VICEG contingent visited Logan Cave; the Browns visited Minnetonka Cave, Idaho and were given the run of the place by the Forest Service. Then all drove to Lovell to meet Jim Chester for Glory Hole, Horsethief and some cave-hunting in Devils Canyon. Bill Deane of the Southern California and Nashville Grottoes rappelled 150' down a cliff and found that one hole went 200 feet - the cave is unnamed to date. Seems there's a nice area in Horsethief, but it involves a 600' crawl so dusty there was dust even on Jim Chester's teeth at the far end. Then on to Lewis and Clark and Papoose at 4 AM. The Canadians enjoyed 12 hours inside. Everybody else seems to have been too tired.

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Everyone is delighted to hear that the VICEG has joined the Northwest Regional organization and is interested in affiliation with the NSS. We certainly hope it can be worked out.

MORE FIELD TRIPS

The August eastern Washington trip went well. Besides the float trip on the Columbia River, Zarwell, the Browns and the Coughlins visited Gardner Cave. They found a new stairway and two gates in place, the second one at the lower end of the flowstone area, apparently intended to keep visitors out of the mud section beyond. They were not impressed by the lighting system. Attempting some cave hunting nearby, they found a resurgence about a mile from the cave but it was from gravel.

In the limestone cliffs above Northport, they saw some holes that are probably only shelters although the limestone is white and beautiful. they heard a local story of a girl who met a bear in one, thought it was a sasquatch and broke her leg. No report on the bear. A quick stop was also made at Dry Falls Cave where there was noted a small forest of small stalactites which may be siliceous.

Sept. 26- Oct. 2. Newell Campbell visited Limestone Cave, Montana and mapped 1927 feet to the point where water is 6 to 7' deep; he describes it as "like a railroad tunnel and still going".

Aug. 28- Charley Larson reports finding something new and different in northwest caving. He went down Little Goose Creek Canyon, along the edge of a fairly distinct lava flow and found that the canyon had sectioned some lava tubes about 20-30 feet from the top. He roped down, but was unable to do much in the way of investigation. At least one was blowing strongly.

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The Cascade Grotto wishes to express its sincere thanks to Charley Anderson for donating the new grotto cards and his work on the Cave Ridge signs. And for the new grotto letterhead. And for much more that nobody ever hears about.

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CAVES JUST EAST OF STEVENS PASS?

Jerry Roberts (EM5-2672; work 774-2141) called to inquire about some caves just east of Stevens Pass. He had heard that they were newly found and that the Forest Service was considering developing them. Has anyone any info? If so, call him - and the rest of us.

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Newell Campbell reports that Jim Chester has been exploring Lost Creek Siphon near Livingston, an area with 1120' of limestone above the West Boulder River. With the entrance waterfall at low water, he's gotten down about 200 feet in a wet suit; at that point he is at the head of a 60' pit. At Silvertip Peak, however, there is a 4000' thickness of limestone. The USGS has recently helicoptered into that area - no reports yet.

MOUNT RAINIER "STEAM CAVE" RESEARCH, 1971
- Eugene P. Kiver & William K. Steele

The studies initiated last year were continued for one week during August 1971 in the summit caves of Mount Rainier. Our cave research group was an official part of Project Crater this year, which was sponsored by the National Geographic Society.

The field notes and survey information have not been fully evaluated at this time, but a preliminary report would seem desirable in the hope that it might benefit others contemplating more exploration in the near future.

The larger eastern crater was explored and most of its main passages mapped during 1970. No noticeable or measurable changes in the cave dimensions and features occurred during the past year except for the shapes and dimensions of the entrances. Because of unusually heavy snow conditions this past winter, many of last year's entrances did not open during 1971. Cave air temperatures were still about 2° to 4°C and ice temperature about 0°C except in the upper-most 5 meters of ice which is subpolar and is -2° to -4°C.

No bones, gloves or other unusual objects were found this year in the large 120-foot room or other parts of the east crater caves. One of the Project Crater personnel, Jack Powell, reported finding a small chamber off the big room that had a very large boulder within the ceiling ice. Time and conditions did not permit a personal examination of this unusual phenomenon.

Descent in the big room is extremely hazardous because of the unstable debris on the steep slopes and should not be attempted by parties of less than three. No new mapping was accomplished by our party in the east crater. Where entrance passages enter the main tunnel, talus cones and sometimes bouldery moraine-like ridges occur. Some of the moraine-like ridges are in contact with the down-slope ice wall and others are a few feet away from the wall, suggesting that the position of the downslope ice wall has changed. Whether a ridge forms or not is related to the nature of the mass movement activity that causes the colluvium to slide to the base of the passage. In only one case the bouldery ridge not coincide with an entering passage. This exception might be due to the closing of an upslope entrance passage.

The west crater caves were only briefly explored last year, but were examined in more detail during the recent expedition. The caves were completely mapped except for some of the minor entrance passages leading down to a main periphery passage. The total length of passages is only 1000 feet, which is quite small compared to over one mile of passage in the east crater.

Of special interest in the west crater caves is a deep room 170 feet long that contains a small "underground" crater lake. The room extends down the 30° slope of the crater wall to a lake that is about 30 feet wide and 130 feet long. The lake deepens to three or four feet close to shore and will require diving equipment to explore adequately. The water temperature is 0.5°C and the far side of the lake is against a vertical ice wall. This is the only place in the crater cave system where sulfur fumes are strong. No major difficulty in breathing was experienced because of these fumes.

Other work accomplished included a surface survey using a plane table and alidade. The topographic map that will result will furnish a useful base map for scientific studies. Ice samples were taken for density determinations and ablation measurements were made.

The discovery of a crater lake in the west crater suggests that a more thorough examination of the big room in the east crater and other unexplored passages should be made. The big room should be examined again because it is also the deepest room in the east crater and is therefore closest to the crater bottom. Passages may change from time to time and a passage could open that will lead some fortunate explorers into virgin passages of unusual scientific interest.

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NEW CONSERVATION PROJECT ???

U.S. Senate Bill 2490, introduced by Senator Lawton Chiles of Florida would provide for the establishment of the GUANO RIVER NATIONAL PARK on 10,000 acres of land in St. Johns County, Florida. Referred 9-8-71 to the Senate Committee of Interior and Insular Affairs. WHERE'S OUR NSS CONSERVATION CHAIRMAN EX-CASCADE GROTTOITE ROB STITT? Who but a caver could properly appreciate a Guano River National Park?

Come to think of it, Rob's in Sweden.

Also come to think of it, this is likely bird guano. Aw, guano.

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1972 MONTANA EXPEDITION

Newell Campbell would like to hear from grotto members interested in a long, arduous expedition into a very promising Montana limestone area next year.

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SPELEOHISTORICAL DEPARTMENT

GREAT UNDERGROUND CAVERN NEAR OMAK IS EXPLORED

Just in case you think you have seen all the marvels of this North Central Washington Land of Natural Wonders, here is something new and more than a little unusual. It's a huge cave with yawning side caverns, steps, slides and queer formations, about 10 miles NW of Omak. It is known as Albright's Cave, and while a few people have casually visited it from time to time, it was never thoroughly explored until very recently. Harold J. Cundy, Wenatchee student of prehistoric writing, Barton Robinson, Omak geologist; George B. Ladd, Omak photographer; and Guy Tugaw, Riverside guide, made a survey of the cave recently and assembled some data on the structure.

- Wenatchee Daily World September 1, 1936.

VULCANOSPELEAN HISTORY ABSTRACT
(let's abandon that word right now!)

Stone, Olivia M. 1889. Teneriffe and its six satellites, or, The Canary Islands Past and Present. London, Marcus Ward & Co.

The author seems to have been the wife of a British engineer engaged in laying cable between the Canary Islands. She obviously was interested in caves and in their role in the local civilization, describing littoral caves, lava tube caves and rockshelters then and previously in use by man. To the vulcanospeleologist it is an exceptional travel book by an exceptionally perceptive individual. To the northwestern caver, it is of even more interest since it shows that multilevel lava tube caves were known well before that date. She quotes directly from a "Herr von Fritsch" whom I have not yet identified, for more than a page, in part recording: (Cueva de las Verdes, on the island of Lanzarote)

"...These galleries are here piled one above another like stories. Where even the roofs of these natural tunnels (they are masses of lava, usually as much as a metre in thickness) are broken it is possible to descend from one to another by means of a rope.... This cave is incontestably the largest lava grotto that is known. It is formed by the inner mass of a lava stream (which remains liquid longer than the outer), continuing its course under the hardened upper crust, when, no new lava flowing after it, empty spaces or caves, are left behind..."

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