

The Cascade Caver

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on account of
this time we scooped NASA by almost a year and a half. All dedicated readers of the CAVER will take varying degrees of delight in perusing the clipping below, then rereading page 4 of the May 1966 issue, with the photo (from a Russian space vehicle) of what sure looks like pahoehoe.

The Seattle Times 29
Monday, September 4, 1967

'Flow Patterns' Seen on Moon.

WASHINGTON — (UPI) — Photographs sent back from the Boeing-built Lunar Orbiter 5 spacecraft have revealed "flow patterns" on the floor of the moon's huge Tycho crater that are "characteristic of hardened fluid material."

The National Aeronautics and Space Administration announcement this weekend tends to confirm the theory that the crater was formed by a great meteorite crashing into the visible side of the moon.

Some scientists believe the fluid material ejected from the crater may have resulted from the intense heat generated by the meteorite's impact.

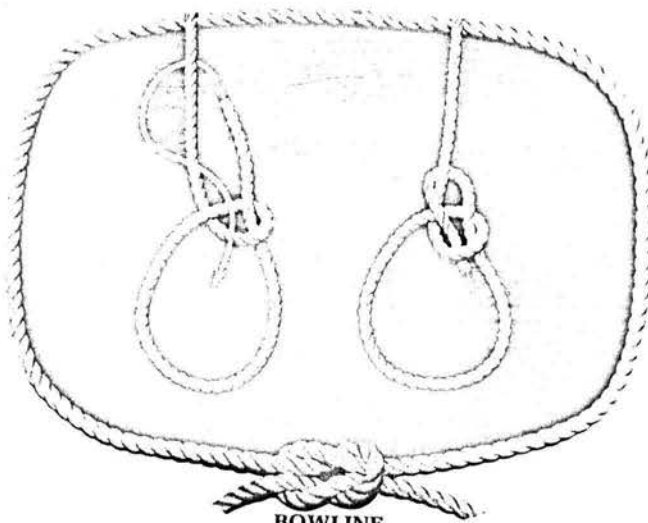
TRY a Want Ad: MA 2-0300.

And what's this jazz about impact vulcanism? The walls of Copernicus, photographed from Orbiter, sure look like the autobrecciated lava we see so often in lava tubes.

AND AS FOR WANT ADS: Dear Mr. Boeing..... round trip, that is...

Second nationwide Cave Ridge meet - W.R.H.

On Saturday August 5, the Cascade Grotto hosted its second nationwide cave meet on Cave Ridge. Bernie Dunn of the Shihing Mountains Grotto was back for his second such meet, two members of the D.C. Grotto arrived from different directions, and the party was enlivened by the inimitable Bobbi Nagy, formerly Nittany Grotto but now from Tennessee. The Andersons and Don Tubbs camped overnight at Hellhole Cave; everyone else hiked up only for the day. Still more sinks turned up on the lower flat near Guye Peak; Jan Roberts dug away at two but we still lack any cave there. Up on top, people prowled all the caves except Newton and Danger, without trying to accomplish anything tremendous. Nevertheless, a major shortcut was discovered in Cascade Cave and what may be a new room was located. While partly cloudy with occasional wisps of fog, it was a most delightful day and the easterners were impressed despite the lack of size of most of the caves.



BOWLINE

For a simple running loop, the Bowline is the sailor's best friend. Begin with a small overhand loop, make a larger loop and bring the free end through the first loop, as shown at left. Now form a bight by bringing the free end under and over the standing part, then back through the loop. This won't slip or snarl under strain, yet unties easily with one tug on the bight.

Stream-deposited manganese in Dynamited Cave - W.R.H.

During the July joint grotto trip to Dynamited Cave, I noted a black coating on some rough red lava chunks in the Waterfall area of Dynamited Cave, in a rivulet channel. The coating looked like the manganese seen on cobbles in some caves in Virginia, but it still was a surprise when the Washington Division of Mines and Geology gave the report: manganese.

Plagioclase laths in vesicular basalt are what cause the peculiar appearance to the lava at Conepickers' Caves, also according to the Division of Mines and Geology.

Vulcanospeleological abstract - by W.R.H.

Plantz, Charles. 1966. Lava caves. "etherworld News, 14(8):117-119, August.

This report is based on a week's trip through northern California and central Oregon in June, 1966. The writer visited Subway Cave, several in Lava Beds National Monument including Labyrinth Cave, Catacombs Cave and Valentine Cave plus Fleener's Chimneys, Arnold Ice Cave, Wind Cave and Skeleton Cave plus commercialized Lava River Cave. Concerning Catacombs Cave he noted: "...contains a pit connecting to a lower level, and it is difficult to see how this pit could have formed.."

On the other hand, he noted "hydrospeleothems" - deposited by water- as well as "primary thermospeleothems" and possibly "secondary thermospeleothems" in Lava River Cave: "They do not look like the usual lava stalactites, but as if lava had squeezed out of holes in the wall to form very irregular blobs, and occasionally drippings below the blobs...my assumption is that a later lava flow flowed over the cave and reheated it to near the melting point. Then lava came through cracks in the cave walls..." He attributes the ordinary form of lava stalactites to remelting due to hot gases late in vulcanospeleological stabilization.

All in all, pretty darn good for a single week's analysis of a highly complex subject.

Joint trip with Oregon Grotto to Mt. St. Helens area Aug. 17, 1967
- by Bill Halliday

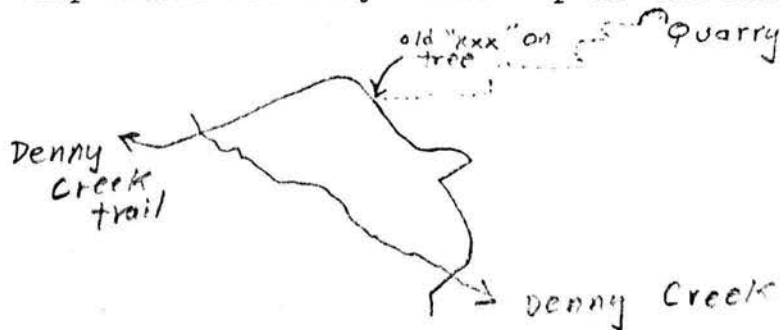
On Aug. 17, Don Tubbs, Marcia, Pat and I met Clyde Senger (and kids) and a group from the Oregon Grotto for another look at the Powerline Cave area. The others (including Charlie and Jo Larson, the Buismans, Jim Wolff and Jan Hessel, stayed on to map and photograph Flow Cave; we came home that night. In the process, we located an easier route to Powerline Cave. By taking the left fork where Ole's road enters the powerline clearing, then the first main (impassible) right fork, 100 yards of easy walking leads to powerline pole 7/2, which is the one east of Powerline Cave.

By hiking a few dozen yards down the flow from the main entrances, we found a splendid area where the Powerline complex is partially unroofed, leaving some fine surface "railroad tracks". In the intervening cave segment we found a large clump of *Pleocotus* sp. (about a foot in diameter). This will be fun to map as there are occasional points with a height of hardly one foot.

We then returned to pole 7/2 and headed north to a smaller, less interesting surficial complex just E and SE of a large, rocky tumulus - the Rockpile Caves - which Clyde Senger had noted and flagged previously. Thence about 200 yards NW to tiny Vine Maple Cave and larger Duckwalk Cave, a more spacious little complex. While scouting in this area, Don Tubbs discovered another little cave, this one without glaze.

It was too hot to map; we gave up early and showed the others the area of Utterstrom's caves where we found that hideous logging had just been completed. despite the small size of the timber on the cavernous flow; bad erosion and slash everywhere. Don't blame this one on the Forest Service; the Northern Pacific Railroad happens to own that section.

To find the little limestone quarry on Denny Mountain, try this map which recently turned up in the files:



Cave Ridge trip - August 20. - Jan Roberts

On this trip were Robert and Christine Williscroft and Robert's cousin Doug Williscroft and friend Kim Kueirem, and myself. This was Doug's first spelunking. We hiked up through Commonwealth Basin in about 2½ hours, passing through the new karst area between Guye Peak and Cave Ridge. On our way up, we looked into the two sinks I had dug in, two weeks before, when I found good breezes blowing out of small holes. This is particularly noticeable in one marked by a "Fresca" drink can. Anyone have enough math background to calculate the theoretical size of a cave system here?

Up on Cave Ridge, we met several people about to explore Newton Cave; eventually they went on to the 40-foot pit. We explored Cascade Cave and I'll bet we didn't see more than a fraction of the cave we could have seen with more time. We also had a quick look at Lewton, and practically ran down the way back and were on the road to Seattle by dark.

Note on a cave near Soda Springs, Chelan County - Jan Roberts

In the summer of 1937, Dave Erickson crawled down a dirt-filled crawlway pushing dynamite ahead of him. This was in conjunction with recreation work with a forest ranger in the Wenatchee National Forest. He doesn't think he could find it now.

Notes on cave-hunting on Black Mountain - Jan Roberts

Trips to Black Mountain require a written letter to Northern Electric Company, attention Keifer Forbes. He and two others own the property containing the limestone with several karst areas. The letter should state that those visiting his property relieve Mr. Forbes of all legal liability.

This is a promising area with a small waterfall falling into an unexplored pit. I would like to organize a trip there this Fall. Please call me or write me at 5706 236th SW, Mountlake Terrace. A local contact is Orville Ferry, Maple Falls, Wash.

Oregon Caves Studied

VALE, Ore. — (AP) The lava tube cave reported a month ago in Oregon's Malheur County is part of a single tube that runs for six, eight or more miles under semiarid rangelands.

Maurice Hurd of the Bureau of Land Management said an exploration party found it plugged in many places by caveins and silt.

But, he said, the party returned to the surface, soon located another entrance, and pressed on. And a scrap of paper dated 1897 showed the caves had been visited by man before. Some of the sections entered run unobstructed for 1,000 to 4,500 feet, Hurd said.

IT WAS the first one explored last month that ran the 4,500 feet he said.

"We have not finished looking at caves in this area," Hurd said, "so we are not in a position to make a final summary."

However, he said, it appeared that in addition to the one long, often interrupted, tube there are others in central Malheur County, in Southeastern Oregon. They will be investigated.

One of the things to be determined, he said, was whether there was some recreational value to the caves. Some appear to be dangerous because of the possibility of collapse or of rocks falling from the roof or walls, Hurd said.

"I WAS spooked going into some," he said, because of rocks hanging by seemingly slender connections.

Until the safety is checked, the specific location of the openings will not be made public, Hurd said, although he agreed they could not be kept secret.

The entrances are the result of roof caveins. "Only the original needed a ladder," Hurd said. "At the others we could walk or crawl down over rubble. Some openings were as wide as 40 feet."

The tube varies in width from 25 to 75 feet and the height is as much as 50 feet. In some places silt all but fills the tube, evidence of water flow at some past time. The tube now is dry and cool, Hurd said.

"WE FOUND an old note," he said, "with a sketch of a hat and a coat. It had the name Arge Harrison and was dated 1897."

Hurd said it was not known who Harrison was although there was speculation he might have been a surveyor since a survey party covered the area about that time.

Ranchers who have lived in the area say shepherders used the caves in years past.

With Hurd on the exploration were John Fournier, lands and minerals examiner at Vale for the Bureau of Land Management; Norman Wagner, Baker, geologist with the state; and Robert Ciesiel, Baker, mining engineer.

The tube caves were formed when molten lava hardened at the surface while that just underneath was flowing toward some opening.

Fort Rock cave to be studied by scientists

Central Oregon's Fort Rock Cave, oldest known habitation of man in the state, is back in the limelight.

Under a National Science Foundation grant, a new study of the cavern, opening of which was once washed by waves of a long-vanished lake, is in progress. Again in charge is Dr. Luther S. Cressman, emeritus professor of anthropology at the University of Oregon.

In studies started nearly 30 years ago, Dr. Cressman made discoveries that won national attention. Sandals found in the cave were given a Carbon-14 date of some 9,000 years. Hunters lived in the cavern, Dr. Cressman determined, when huge lakes spread over parts of south-central Oregon that are now arid and dusty.

Last year, in a renewal of studies, Dr. Cressman's party found charcoal from a hearth in the tip of black gravel on the floor of the cave. That charcoal, he was sure, would pinpoint the earliest possible time at which man could have occupied the site.

The sample was shipped to a Carbon-14 dating laboratory, only to be lost. This year, Dr. Cressman returned with a bulldozer. This is being used in removing from the cavern floor huge rocks that through the ages tumbled from the ceiling.

Cressman is hopeful that his crew may find undisturbed sites where there is an association of artifacts with fossils. Such a find could be strong evidence of man's occupation of the Oregon country long before the 9000 years evidence by the sage of the Fort Rock Cave sandals.

The cave, being restudied this season by Dr. Cressman and his associates several years ago, was designated by the National Parks Service as a place of great scientific interest.

The cave was made available for the research by Mr. and Mrs. Reuben A. Long of Fort Rock. In addition to the new study in the cave, the party will make further studies of the interior region.

This will be in connection with Dr. Cressman's continuing research dealing with "Early Man in the Northern Great Lake Basin."

Ollier, C.D. & Brown, M.C. 1965. Lava Caves of Victoria. Bull. Volcanologique, V. 28, p. 215-229.

An analytic study prepared entirely independent of any knowledge of the expanding speleological literature on lava tube caves, this report is at least a minor landmark.

The portion of Australia west of Melbourne contains numerous lava tube caves which the authors consider to be of Pleistocene to Recent age. It is believed that there have been no eruptions or flows since arrival of the bushmen some 5,000 years ago. The longest is Mt. Hamilton Cave with 3,162 feet of passage. Its floor plan resembles Dry Creek Cave, Skamania County, Wash., but reaches a maximum width of 70 feet and height of 15 feet. A major difference, however, is "a radial drainage pattern, with tubes radiating from the volcanic center".

The authors conclude that total length of a lava tube gives an indication of the viscosity of the lava, and "absolute size", of the strength of the surrounding rock. They point out that while elongation is dominantly in the direction of flow of the lava, small tributaries and linking tunnels may be up to right angles to the main trend. Without giving details, however, they indicate that a Parwan Cave is discordant with this concept, and at least part of a Turk Cave is 180 degrees out of phase. The lack of data on these discordances is tantalizing.

Some of these lava tubes are on the flanks of cones, some in wide lava plains and some in small plains. Some show bulbous elongations at the up- or down-tube terminations and a few bubble chambers are present. Vertical walls are uncommon. Typical is a flat floor and an arcuate roof. Tubes-in-tube are present.

A particularly important observation is that two of these caves show cross-sections and structures strongly suggesting plastic deformity of the tube outlines after formation. One of these suggests lateral movement of surrounding basalt toward the cave. No multilevel development is recorded, however.

The authors' observations seem to indicate that all these caves lie in lava which is stratified into sub-horizontal layers. They point out the discordance of the lateral tube coating (multiple in one case) with the layered lava of the country rock. They feel that the tubes serve as dendritic drains for lava draining out from and between the layered lava as the latter hardens. This, plus the lack of multilevel tube caverns available for their study, appears inapplicable to Northwestern lava tubes, where a remarkable variety of rocks are exposed by lateral breakdown.

On the other hand, the authors point out that "a jet of lava" can break into lava tubes, with resulting features, and thus lava beds should not be considered static after tube development.

One type of lava cave not known to this reviewer is reported: a "mere gap between a tunnel wall and the contents of the tube, pulled apart only slightly". Such a gap is present locally in Lake Cave, Skamania Co., Wash., but hardly forms entire caves in our area. One other cave is said to have been formed in plastic or a semi-solid flow, but details are tantalizingly scant. On the other hand, they clearly indicate that lava tube caverns can be "squashed" after formation, requiring surrounding rock to be plastic (Turk Cave is one such), and further indicate that "lava must have come in under pressure from below the cave", and also that an increase in pressure in the tube can push aside the material of the cave walls. Further, that flow through the tube can erode or melt "some of the earlier lava".

This report, then, is much more in accord with current vulcanospeleological concepts than its nonspeleological predecessors. It is regrettable that the authors did not have available the remarkable variety and length of study material with which we are blessed.

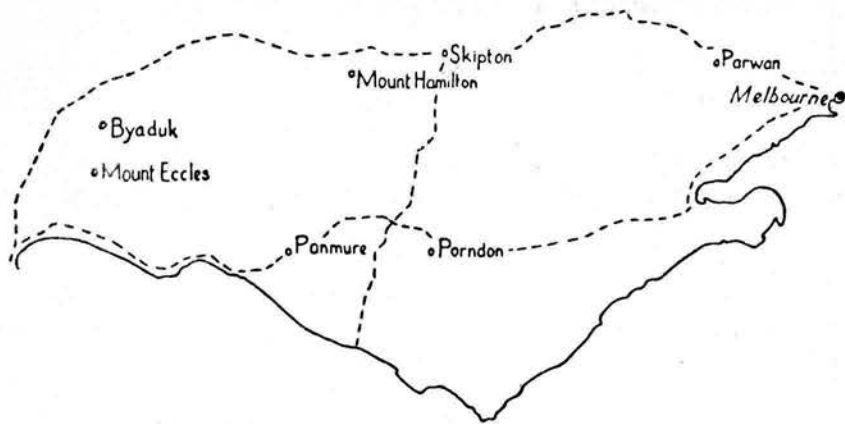


FIG. 1. - Location of lava caves in Western District, Victoria, Australia.

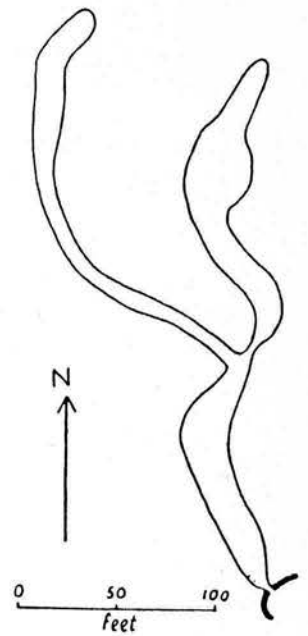


FIG. 2 - Plan of Panmure Cave.

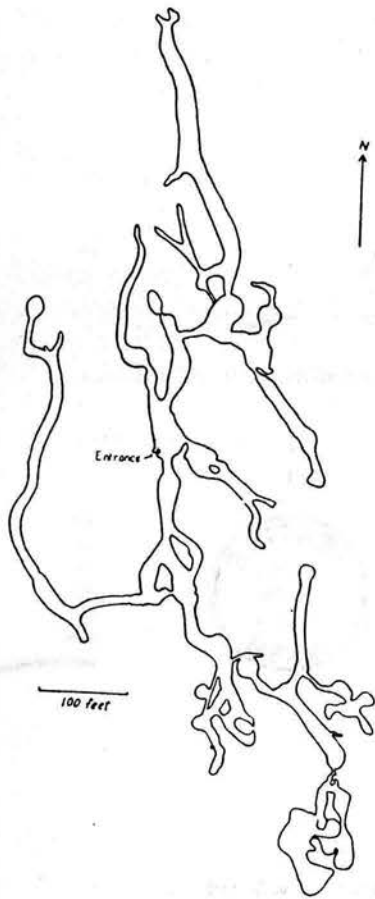


FIG. 3 - Plan of Mount Hamilton Cave. The cave is situated on the flank of a volcano, and the crater is to the north.

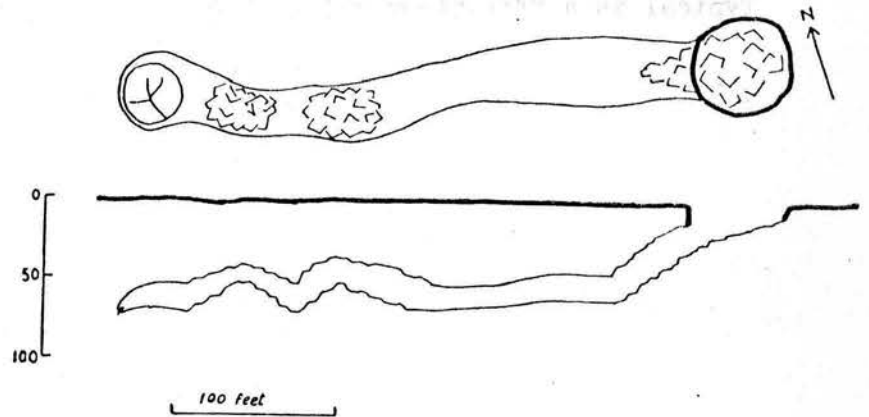


FIG. 4 - Plan and long section of Harman I Cave, Byaduk. A lava blister is indicated at the termination.

Exchange

COMING EVENTS:

September 9-10. Joint trip with Oregon Grotto to rear of Dynamited Cave; also slide show at Trout Lake, at dark Saturday.

September 16-17. Cave Ridge.

September 18. Regular meeting 8 PM at Dr. Halliday's; 1117 36th Ave. E at East Madison St. Doors open at 7:55.

September 23-24. Probable Mt. St. Helens trip; mapping some of the new caves.

September 30-Oct. 1. Mt. Adams and/or Cave Ridge.

Oct. 7-8. Ditto. Come to the meeting and make more definite plans. We also need a Black Mountain trip.

Oct. 16. October regular meeting. Same schedule as September.

In case you didn't hear, the Labor Day Papeose Cave trip was postponed until next Memorial Day weekend; the forest was closed because of fire hazard.

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