



# The Cascade Caver

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Editor, Dr. W.R. Halliday

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## COMING EVENTS

- July 4 weekend. NW Regional Convention, Horne Lake cave area.
- July 8-9. Paradise Ice Caves scouting trip. Call Anderson, 938-3575.
- July 15-16. Dynamited Cave preparation trip. Call Coughlin, PA5-9127.
- July 17. Regular grotto meeting, Hallidays, 1117 36th Avenue East, 8PM.
- July 29-Aug. 6. Summit Steam Caves expedition. Call Kiver, 235-6448  
(Area code 509).
- Aug. 12-13. Hells Canyon and Papoose Cave Convention trips. Call  
Larson, 695-4143.
- August 14-18. NSS Convention, White Salmon. Call everybody.
- August 20. Paradise Ice Caves post-convention trip, snow permitting.  
Alternate: Big Four Ice Caves. Call Anderson, 938-3575.
- August 21. Regular grotto meeting, as above.
- Sept. 1-4. Naas River trip with VICEG. Call Boorman.
- January 1973. Possible British Honduras trip. Call Halliday, EA4-7474  
after 6 PM.
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## RECENT FIELD TRIPS

Chuck Coughlin reports that a report by Greg Lane will be forthcoming on the Lower Snake River cave hunt; apparently the lack of caves still isn't satisfactorily explained.

Snow conditions are still hindering access to the Big Four caves. Ron Pflum and Charley Anderson have tried several times without success.

Farther east, things have been better. Mark Vining reported a trip to Albright and Gardner Caves at the June meeting.

And over the Memorial Day weekend, Chuck and Mary Coughlin checked out an old, old report of a cave near Trail, B.C. It turned out to be a limestone cave about 30 feet long, under Beaver Falls, they report.

Farther north, they expected to visit Cody Cave, but guess what! Snowed in.

Oh, well, as I type this the temperature is 88<sup>o</sup>, and everybody else seems to be on Vancouver Island.

74 11.100

Tube in tube structure in Ole's Cave, Mt. St. Helens,  
Washington  
by David Walker, U of W.

Ole's Cave is located in a pahoehoe basalt flow south of Mount St. Helens, Washington. The formation is known as the Cave Basalt (2) and consists of a number of flows erupted over the last two or three thousand years. Ole's Cave is in the youngest flow, possibly as young as 1842 or 1854 (3). The overall slope in the area of Ole's Cave is about 300 feet per mile.

The feature of this report is a small lava tube within the larger tube of the cave. The main cave was formed within the lava flow (2), not by accretion.

Field observations were made on May 27, 1972. The tube structure is found at two places in the cave, both over 100 feet in length. Roof collapse is present in several places, providing access to the inside of the tube. In other areas structures related to the tubes are found.

The lava which makes up the main tube is a dark basalt, in contrast to the lava which makes up the interior tubes. This lava is porphyritic, red-brown in color, very vesicular; some vesicles intersect the surface. The structure is very rough; the gutters, levees and tube roof appear to be composed of globs of lava which were splashed out of the main flow, which is rough but not globular.

In some areas of the cave the structure of the flow is flat. The flow in other parts of the cave has the tubular form or laterally ridged forms. It is not present throughout the cave. The lava in both areas appears to be the same. Evidence suggests that the temperature of the walls caused different structures to form.

The structure of the red flow suggests that the tube was still hot in the area when the flow was erupted. This would explain the local lack of levees or tubes, and gutters.

The structures in the areas which appear to have been cool at the time of eruption are the most interesting. Along each side of the flow, next to the wall, are low areas referred to as gutters. Between the gutter and the active flow is a raised area called a levee. The flow occupied the area between the levees at the time it solidified. In two areas the levees joined to form a tube above the flow.

The flow appears to have cooled rapidly where it contacted the country rock. There is no evidence of melting of the country rock, and no mixing of the country rock and the flow. This suggests that the main tube was cool before the red flow was erupted.

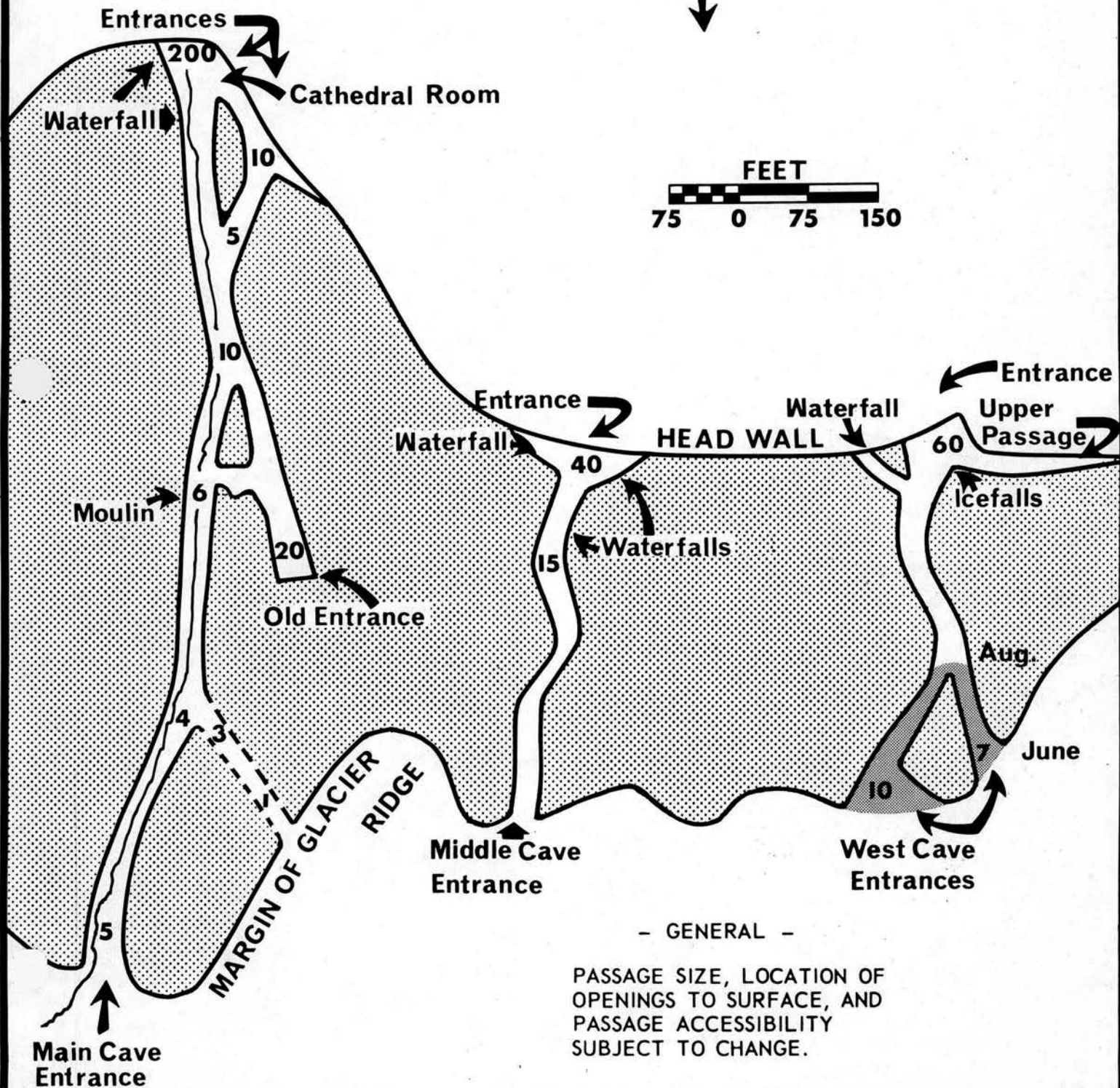
As the red flow moved down the tube the lava in contact with the tube walls and floor solidified, leaving molten lava in the center. After the sides and bottom of the flow cooled, the levees were built up by accretion of lava globs splashed from the flow. In some areas only gutters and levees were formed before the flow solidified. In two areas accretion continued long enough to allow the levees to join over the flow and form a tube.

# BIG FOUR GLACIER CAVES

## BIG FOUR GLACIER

### SNOHOMISH CO. WASH.

SKETCH MAP BY  
 CHARLES H. ANDERSON JR.,  
 JAN ROBERTS  
 DEC. 1971



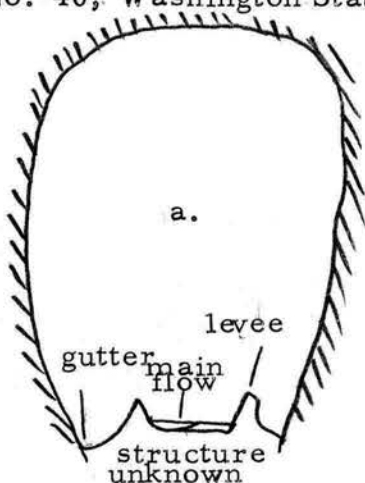


If the tubes in the red flow had formed within the flow, rather than by accretion above the surface, one would not expect to find the observed structure. If the tubes formed within the flow no gutters would be present, also the outside of the tube would not have an arched shape, but more or less level. The presence of the levees is further evidence of how the tubes formed.

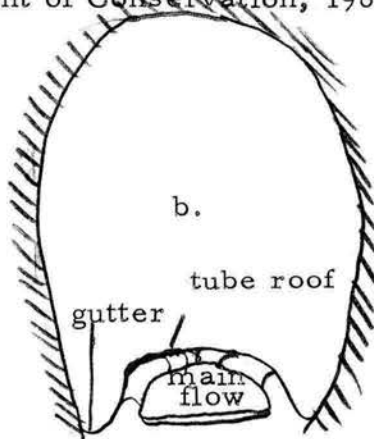
Lava tubes have been observed to form by the method I have described. The formation of tubes was observed during a 1970 eruption of Kilauea Volcano in Hawaii.

#### Literature cited

1. Greeley, Ronald. Observations of actively forming lava tubes and associated structures, Hawaii. NASA Technical Memorandum (NASA TM X-62, 014), March 1971.
2. Greeley, Ronald, and Hyde, Jack H. Lava tubes of the Cave Basalt, Mount St. Helens, Washington. NASA Technical Memorandum (NASA TM X-62, 022), May 1971.
3. Halliday, William R. Caves of Washington. Information Circular No. 40, Washington State Department of Conservation, 1963.



First stage in tube formation, showing levee, gutter and active flow.



Later stages and finished tube. The levees have grown by accretion until they joined to form the roof.

(Editor's note: Experienced vulcanospeleologists may take issue with some of the content of the above article. However it is the policy of this publication to encourage constructive undergraduate contributions. Similar articles and colloquy thereon are welcome.)

## APPLICATION FOR TASK FORCE DESIGNATION

We, the undersigned temporary co-chairmen of the would-be Mount St. Helens Cave Area Conservation Task Force of the National Speleological Society, hereby request the NSS Conservation Committee to formally establish such an organization through designated procedures.

The organizing body of the group consists of the following:

William R. Halliday, M.D., NSS member in good standing  
Charles Larson, NSS member in good standing

These individuals will act as co-chairmen and temporary executive committee.

Others signifying a desire to participate include:

Charles H. Anderson, Jr., Seattle, Wash.  
Robert Brown, Seattle, Wash.  
Charles Coughlin, Seattle, Wash.  
Jerry Frahm, Seattle, Wash.  
Patricia Halliday, Seattle, Wash.  
Jan Roberts, Mount Lake Terrace, Wash.  
Dave Howard, Olympia, Wash.  
Eugene Kiver, Cheney, Wash.  
R.W. Werner, Chehalis, Wash.

The last is a new Cascade Grotto member who is also acting as an unofficial liaison officer between several Northwest conservation groups including the Sierra Club regarding the proposed Mount St. Helens National Monument, Mr. Howard is a non-caver who has a similar status between the Sierra Club and The Mountaineers and the Cascade Grotto of the NSS. All others on the list above are long-term members of the Cascade Grotto of the NSS although some are temporarily in arrears in dues due to the current local financial situation.

The names and addresses of the leaders of the group are:

Charles Larson, 13402 NE Clark Road, Vancouver, Wash,  
Dr. William R. Halliday, 1117 36th Avenue East, Seattle, Wash,

The task force participant-applicants understand the NSS policies applying to Conservation Task Forces and agree to abide by them.

The proposed task force is actually a formalization of an unofficial informal group which has been studying the problem of protection of highly significant caves located in an area increasingly subject to population pressure, clear-cut logging, road construction, snowmobile utilization and other incompatible uses of the area. The problem is heightened by a "checkerboard" pattern of land ownership in the area, so that federal ownership of the caves is interspersed with private ownership, largely by large logging companies. The cave area is only part of the total Mount St. Helens area which is currently receiving increasingly intensive attention regarding preservation of its scenic, recreational and other public-oriented resources. The task force expects to continue to work in close cooperation with other local, regional and national conservation organizations in seeking the best possible land management of this nationally significant area.

(signed by Charles Larson and William R. Halliday, M.D., May 30, 1972. To date there has been no response from former Cascade Grottoite Rob Stitt, chairman of the NSS Conservation Committee. In all fairness to Rob, however, it should be added that Charley Larson held the application a while, seeing if anyone in his area wanted to be listed also. We hope for early action now.)

\* \* \* \*

Carbon copy to the editor:

Geology Department  
Eastern Washington State College  
Cheney, Wash.  
May 19, 1972.

U.S. Forest Service  
Bellingham, Wash.

Dear Sirs:

It has come to my attention that an area in the Mount Baker National Forest has been proposed as an "Alpine Karst Geological Area". As a geologist and educator, I was pleased to hear of the proposal and read a description of the area. If the area is as scenic and geologically interesting as described, I would encourage you to follow through on the proposal. Examples of good karst areas are rare in the Pacific Northwest and are extremely interesting to the scientist and layman alike.

The location of the area close to a population center, its scenic beauty, and the opportunity to provide a learning experience for Forest visitors make the proposal quite attractive. I encourage you to give careful study to the proposal.

Sincerely,

E.P. Kiver, Chairman  
Department of Geology

cc: Don Easterbrook WWSC  
WRH

(The grotto has received a gracious response from the U.S. Forest Service, too long to be included here. We need to do some planning for a joint trip after the NSS Convention.)

\* \* \* \*

Jim Chester writes from Montana that cavers should not enter French Creek Cave without first contacting him. The owner has asked Jim to OK all visitors and has threatened to blast the entrance if this is not done. Tom Miller strongly urges compliance even by those who, like him, formerly were given blanket permission by Mr. Shafer, the owner. He adds that long before this came up, Mr. Shafer was thinking seriously about closing the cave. Jim's number is (406) 587-8350; address: 410 E. Aspen, Bozeman, Mont. 59715.

IN MEMORIAM  
HOMER (RED) WARD

The following item appeared in the April, 1972 issue of The Totem, house organ of the Washington State Department of Natural Resources:

"The 100th anniversary of National Arbor Day was observed by the Department of Natural Resources on April 12 when officials of the state agency joined with others in planting a group of "superior" trees. Commissioner of Public Lands Bert L. Cole, U.S. Forest Service Deputy Regional Director Robert H. Torheim and representatives of the forest industry...participated in the dedication ceremony of a special group of "superior" trees at the entrance to the L.T. Webster Nursery south of Olympia.

"These trees were planted in memory of the late Homer "Red" Ward who served as manager of the Webster Nursery until his untimely death February 26, 1972. His widow, Mrs. Virginia Ward, was present at the dedication ceremony.

"Cole said the "superior" trees were the result of tree-breeding experiments by forestry scientists over the past ten years. Torheim said: "Red Ward did his job well and he made friends all along the way. His efforts will live on."

Newer grotto members never had the privilege of knowing Red, whose health had never been sturdy after a crippling industrial injury many years ago. He had not been able to be active for some time, but reinstated his NSS membership shortly before his death. The Cascade Grotto will always remember Red for his unflagging friendliness and quiet helpfulness. He played a major role in the rediscovery of the Red Cave system and the initial exploration of the Cave Creek Road system - and in the Tumwater Boy Scout cleanup of Ape Cave.

Farewell, Red. All who knew you, miss you in their heart.

Cascade Grotto of the  
National Speleological Society  
1117 36th Avenue East  
Seattle, Wash. 98112 (new!)

