

Volume 9 no. 9

Editor: Dr. William R. Halliday September 1970

COMING EVENTS

(all N.S.S. members, past N.S.S. members or potential NSS members invited)

August 22. Twin Lakes pit. Call Bob Brown, RO 3-9094)

August 29. Cave Ridge. Call Bob Brown, RO 3-9094.

August 30. Paradise Ice Caves. Call Charley Anderson, ME 2-4898.

September 5-6-7. Northwest Regional Meeting, Nevada. Coughlin, PA5-9127.

September 5-6-7. California Regional Meeting, Merced. Halliday, EA4-7474.

September 12-13. Dynamited Cave. Call Halliday, EA 4-7474.

September 20. Emmons Glacier scouting trip. Call Anderson, ME 2-4898.

September 21. Regular meeting, Hallidays, 8 PM. 1117 36th Avenue E. @ Madison.

September 25. 8 PM. Wedding: Margaret Alice Watson & Charles Anderson.
Ravenna Blvd Presbyterian Church, 564 NE Ravenna Blvd.

September 26-27. To be decided at Sept. meeting. ? Mt. Adams, ? Vanc. Island.

October 3-4. Paradise Ice Caves. Call Anderson ME 2-4898 before Sept. 25.

December 5. Joint rescue practice with Mountain Rescue.

WHEEEEE!!!!!!!!

Charley Larson got elected to the N.S.S. Board! Congratulations, Charley!!
A great compliment to the perspicacity, intelligence and perception (pip) of
the N.S.S. electorate as well as to Charley.

Sure looks like another big step toward having the '72 Convention at White Salmon...
Keep telling your eastern friends: COME NORTHWEST IN '72 FOR VARIETY!

OTHER NORTHWEST NEWS

Jerry Thornton has the Gem State Grotto reorganized to the point of publishing
another issue of the Gem Caver. They've got a whopping limestone pit, it seems.
Baker Hole. 196' free drop and surveyed to -311 feet. Pretty much in the center
of the state, not easy to reach from Seattle. Cover illustration of this issue is
the 1970 Salon medalist for cartoons. By Jerry, of course.

Jim Chester writes from Montana (he's home from the Army). The Montana
cave survey got slowed up when Newell Campbell broke his leg (not in a cave).
Still they got a heckuva lot done this summer.

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RECENT FIELD TRIPS

Chuck and Mary Coughlin checked out the Big Four Ice Caves on August 16. No sign of recent or imminent flakefall. Lots of tourists, many of them going far into the main cave.

On July 25, a party led by Bob Brown returned to the Twin Lakes area to explore the new pit which apparently is more impressive than reported last month. Unfortunately bad weather halted the party despite the comparatively short distance between the cars and the pit. Boy, was it wet! Another try soon (see schedule).

On August 1 and 2, yr editor ran the visiting secretary of the Hungarian Speleological Society, Attila Kosa of Budapest, through the lower section of Ape Cave and the Red Passage of Lake Cave, then the Paradise Ice Caves as far as the offset section of Suicide Passage. He thought well of the caves, but was not unhappy to be climbing Mt. Rainier without ever seeing it. Seems nobody had told him about Northwest weather. (This is a plug for Lesser Seattle, Ltd.) The ~~Big Room section~~ ^{Pillar Passage} was also visited. No pillar this year.

This isn't exactly a field trip, but Frank Witt (Sunday ranger at the Paradise Ice Caves) reported that on July 26, the outflow of water was two or three feet higher than he had ever seen it. It was impossible to get to the entrance of Suicide Passage. External conditions: sleet.

Charley Anderson made his 96th trip to the Paradise Ice Caves August 9; got more excellent photos. The Big Room could be entered by a long rappel. Water flow had returned to normal, namely 3 1/2 feet deep at the place he fell in. He also witnessed a huge lateral flakefall in the Junction Room at the takeoff of Suicide Passage, perhaps 20 feet long, 10 feet wide and 4 feet thick. There was a preliminary crackling sound for perhaps one minute. He got a photo before it fell. Beetles were collected for the National Park Service. He reports that the back (lateral) entrances all seem open. The trail is free of snow to a point about 1/4 miles from the cave. (We have not reported all of Charley's trips to the PICs; he was also there on the 12th and 19th). (July).

Charley Larson writes that he crossed Ron Plum's trail at Wind Cave; the Windy City Grotto has a special project going and apparently Ron and Joe & Dave Jones of the Oregon Grotto stopped there a coupla days on the way to the NSS Convention. Concerning Charley, the NPS at Mammoth writes that Charley and Jo arrived, looked at the hordes of visitors and decided to come back later for their photos. (Nice to get nothing but second-hand news, isn't it!)

No definite word, but the weather was so foul July 25-26 that we assume that Dee Molenaar's Summit Steam Caves mapping trip got rained out. The radio currently has word that somebody is working on it now, presumably the Central Washington State College party. (Aug. 18)

On July 25, yr editor tried to lead a party to the littoral caves at Shi Shi Beach. The weather was bad but not impossible. The road, however, was both; churned to impassability by tote goats (shoot'em on sight!) several miles from the Beach.



DISCUSSION OF LUNAR LAVA TUBES

by Bill Harter

A number of people have calculated possible sizes for lunar lava tubes, and obtained extremely large maximum sizes. These sizes are calculated by assuming that the roof is either a continuous arch or a three - hinged arch. Assumption of a continuous arch is an error. Continuous arches are notoriously sensitive to thermal stresses, and lava flows are notorious for high temperatures, so the arch will contain hinges after cooling - even if it did not contain them when hot.

Examination of the ceiling of a moderate sized lava tube (with intact ceiling) shows a pattern of cracks. One crack, near the center, runs the length of the passage. This crack is the crown hinge of the three hinged arch. Two more cracks, near the top of the wall, are the abutment hinges.

Please observe that there are several more cracks present, and that the largest blocks in the ceiling are only about ten feet across. If any of these cracks were straight, they would also function as hinges. Unfortunately, an arch with four or more hinges is unstable, so the roof would fall in - return to the three hinged arch.

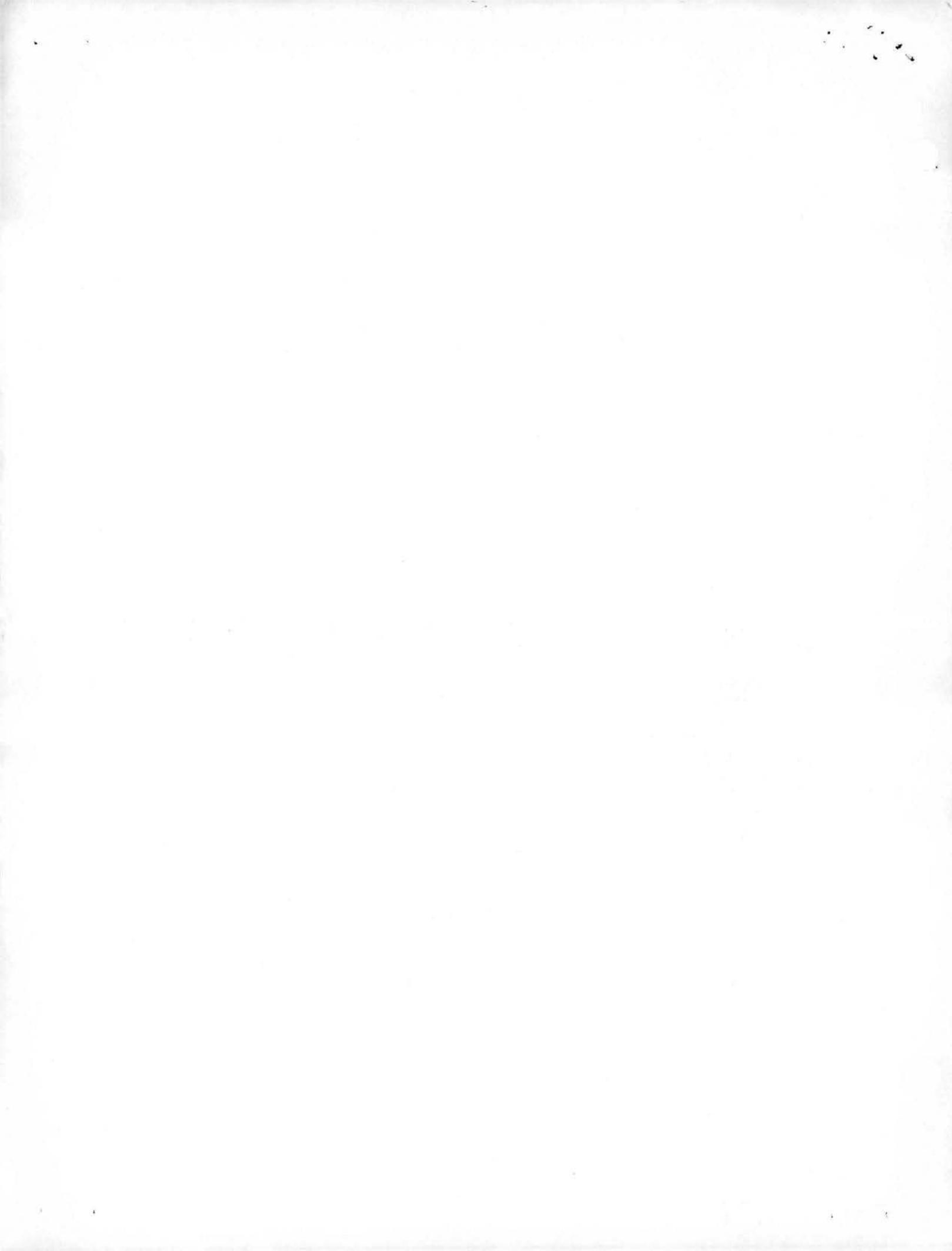
Notice that the crown hinge is not a straight crack. It is a rather poor hinge. Since strength of a three hinged arch is determined by strength of the crown hinge, and the major forces acting on this hinge are thermal stresses (it is a very poor hinge), maximum size of lava tube should be almost entirely independent of gravity. Calculating the strength of the crown hinge requires knowing how irregular it is, so field observations should give a better maximum passage width than calculation would give. Try one hundred feet?

The lunar rock analyses indicate that lunar basalts were deposited in a vacuum that partially smelted the flow surface. This is serious, since calculation of surface characteristics shows that the distinction between aa and pahoehoe depends on hydrogen ion concentrations, and the smelting would remove the hydrogen ions - forming aa. Since lava tubes in aa are rare to nonexistent, the calculation of maximum size is probably academic.

Perhaps interplanetary speleologists should set their sights higher and plan on studying the lava tubes on Venus? The hot climate should give a significant increase in tube size as compared with terrestrial tubes.

It has been suggested that the red color of Mars is due to a trioxane plastic that condensed from the atmosphere. How about some reports on the glacier caves?

(Editor's note: Bill and Russ Harter are planning to come up from California for the September Dynamited Cave trip.)



Forel, F.-A. 1887. Etudes glaciares: II. La grotte naturelle du glacier d'Arolla. Arch des Sci. phys. et nat., 3e periode, t. XVII, pp. 469-501.

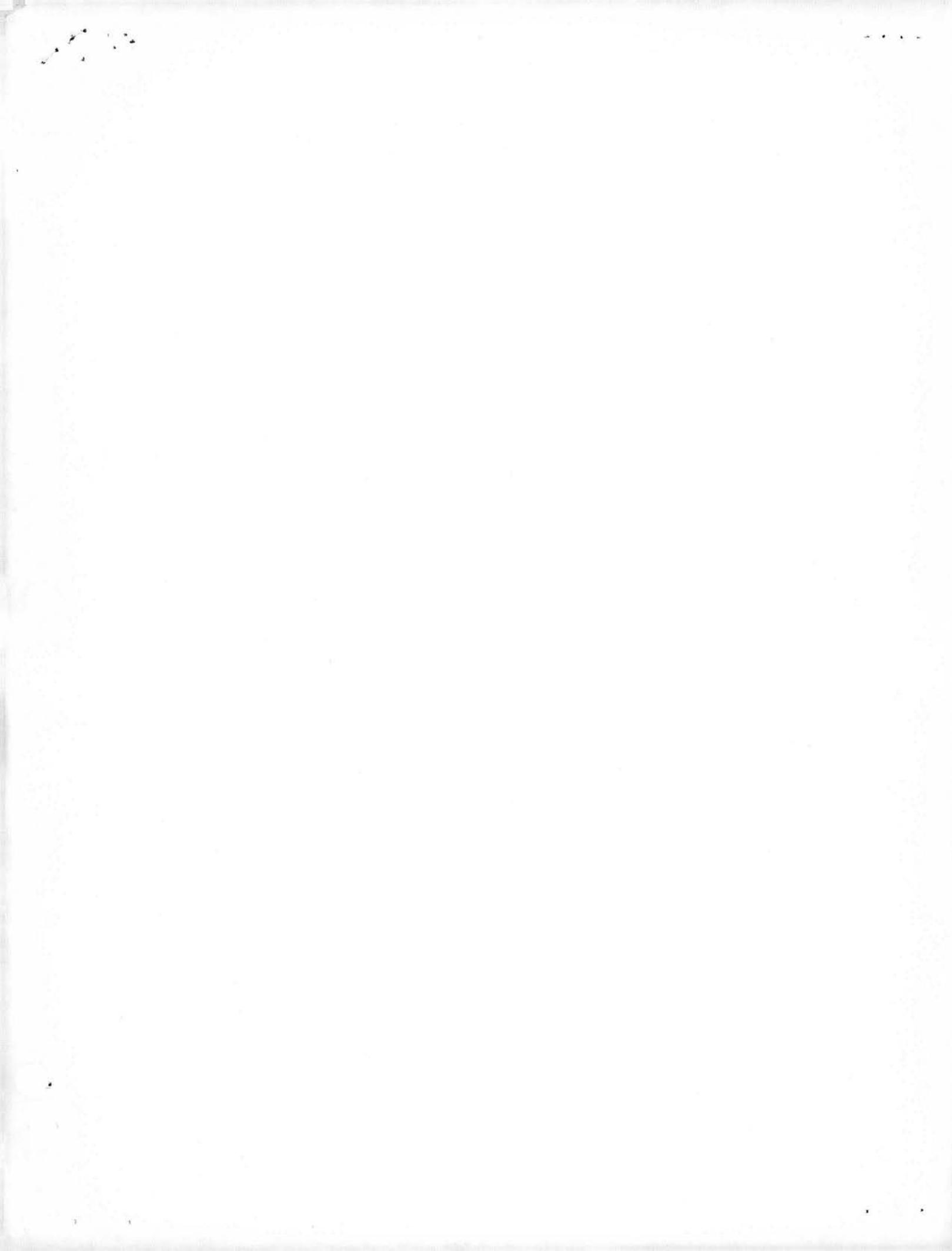
This obscure reference is a key paper in glaciospeleological thought. The author discovered a large glacier cave about 2 kilometers from the Mont-Collen Hotel at Arolla, Switzerland and a few hundred meters from the source of a stream termed La Borgne which issues from the central portion of the snout of the glacier. The cavern extended obliquely across the lower edge of the glacier, much as the Big Room section of the Paradise Ice Caves does today. The upper end of the cave extended to a snow-choked oval sink at the lateral margin of the glacier; the sink measured about 150 by 450 feet. The main cavern gallery was slightly over 800 feet long. Part of its lower section was divided longitudinally by a thin wall of ice. The active cave stream crossed under the up-glacier section, entering the lower parallel section through a low, narrow side corridor. Exploration of the stream passage was halted after a few yards. Beyond a point where the main corridor was almost blocked by flake-fall, it was possible to continue to the base of the snow-choked sink. The maximum ceiling height was 12 feet and maximum width about 40 feet. What the writer termed "a superb gallery" was 10 to 15 feet high and 6 to 10 feet wide.

Contribution in Northwest spelean history:

A WONDERFUL CAVE
explored for a mile by the discoverer

Probably the most wonderful discovery ever made in Idaho, and we might say in the Northwest, is the one that has just been found and was made (known) to the Lewiston Teller last Friday. While prospecting between the Little Salmon River and Hot Springs, Mr. Paron Harry Von Hubert discovered a cave that may in time prove to be as wonderful to the West as the Mammoth Cave of Kentucky is wonderful to the South and East. The way to the cave is to take the wagon road leading to Mount Idaho and John Day's Ferry. At this place the wagon road stops; but take the trail and follow it about 6 miles and then turn to the left and go about a quarter of a mile and you are at the spot. This cave can probably be seen from the trail. At the entrance, which is about the size of a common door, will be found a freely flowing spring, the water from which runs direct into the cave. The cave is about ten feet in width and fully as high. Go back about the distance of one mile, and there will be found a lake of beautiful clear water, about 30 by 40 feet in size, which is lined with fine green moss; and just beyond the lake are seven entrances to as many more caves. The explorer did not go any further as he had but two candles and they were fast burning and would only last long enough to find his way back to the place of entrance. Mr. Van Hubert said that the top of the cave was thickly lined with stalactites, caused by the continual dripping of the water, many of which were three feet in length. He had a few specimens with him and they were formed exactly like icicles only of a different color and perfectly hard.

Spokane Spokesman-Review
July 18, 1891, p.6, c.1.



Eastern Washington news - of Idaho.
by Tom Miller

Tom has been working with the Idaho Bureau of Mines this summer; late in July he visited Papoose Cave with Jim Crail and two others from Fairchild AFB; they descended only a short distance past the 40' pit. They also hiked to the top of Blue Mountain, just north of Papoose and found several caves but the longest was only about 100 feet long; two were about 60 feet long. He was planning on scuba-diving in Malheur Cave, Oregon on Aug. 6; we hope he surfaced - no word since.

Squaw Pit - by Jan Roberts

On July 19, Ron Pflum and I visited the largest deposit of limestone recorded in the Ridley Creek area. It is located on the north slope of a ridge near the southwest slope of Mount Baker, a three or four mile hike by trail #603 over Bell Pass.

We found a line of sinks running east and west from a large limestone cliff along the trail; another large cliff lies below the trail at this point. We found a small spring emerging from limestone nearby. The largest pit (Squaw Pit) is 5 feet in diameter and 7 or 8 feet deep.

Martel on origin of "Speleology, or Cave Science"

(from La Speleologie, 1900, p. 1 - Scientia Publ's, Paris)

Definition. - The new term speleology (1), proposed a few years ago by M. Emile Riviere (who wrote it as speleology) is derived from the Greek spelaion, cavern, and logos, discourse or subject; the term is the equivalent of the German Hohlenkunde, well established in Austria and translated knowledge of caverns.

(1) M. L. de Nussac previously proposed the term speology, a simpler word (Essai de speologie, Brive, 1892), but less exact; because the word speos, in the Greek language, signified purely artificial excavations of tombs and Egyptian mausoleums (speos of Ipsamboul, of Beni-Hassan, etc.).

Cascade Grotto of the
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