

THE CASCADE CAVER
official publication
of the
Cascade Grotto of the
National Speleological Society

Volume 9 no. 8 Editor: Dr. William R. Halliday

August 1970

COMING EVENTS

- July 25 & 26. Twin Lakes karst area. Call Bob Brown, RO 3-9094.
- July 25 & 26. Littoral caves of N Olympic Peninsula. Call WRH Ea 4-7474.
- August 1-2. Mt. St Helens area. Call Halliday EA 407474.
- August 1-2. Lime Mountain scouting trip. Call Brown, RO 3-9094.
- August 8. Jackman Creek Cave. Call Jan Roberts PR 88503.
- August 9. Paradise Ice Caves. Call Charley Anderson ME 2-4898.
- August 15-16. Washington Monument karst area. Call Coughlin, PA 5-9127.
- August 15-23. N.S.S. Convention - somewhere back east.
- August 17. Regular meeting, Hallidays, 8 PM, 1117 36th Avenue E.
- August 22-23. Trip to be scheduled at 8-17-70 meeting.
- August 29. Cave Ridge. Call Bob Brown. RO 3-9094.
- September 5-6. Northwest Regional meeting. Meet at Goshute Cave, Nevada, Saturday; proceed to Lehman Cave Sunday. Many field trips planned. Directions available soon.

RUMOR HAS IT

that a certain glaciospeleophotographer of the Cascade Grotto has won a blue ribbon in this year's International Salon of Photographic Art to go with his last year's gold medal. Further, that a certain vulcanospeleophotographer of the Oregon Grotto and a certain whatyoucallitopscartoonist of the Gem State Grotto have won gold medals this year! Congratulations to two northwest Charlies and a Jerry!

Recent publications by grotto members

Halliday, William R. & Anderson, Charles M. 1970. The hollow glacier. Pacific Discovery, Vol. 23, no. 4, July-Aug. pp. 24-30.

ibid. 1970. Glacier caves. Explorers Journal. Vol. 48, no. 2, June, pp.

Halliday, William R. "1969". Oregon Cave. N.S.S. Bulletin Vol. 31 no. 2 pp.

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Summit Steam Caves of Mt. Rainier
4th of July weekend, 1970
- Chuck Coughlin

Personnel participating: Greg Thomson, Ron Pflum, Chuck Coughlin.

Climbs the five previous weekends had weeded out those who either couldn't afford the time or were too much out of shape to make the trip. However, these climbs had left the three of us who remained in good condition. We knew what to expect both of the mountain (mostly) and of each other, and therefore had a good chance of success.

Immediately after driving from Seattle, we began our hike from the Paradise Ranger Station at 3:30 AM, Friday July 3. On previous trips which had not reached the summit we had not started this early, but we had learned the importance of reaching our base camp (Camp Muir) in time to eat a good meal and get a good rest before the final climb to the summit at 14,410 feet. Despite heavy packs (Ron's weighed 53 lbs) we reached Camp Muir faster than ever - in six hours.

After setting up camp and eating a big meal, we hit the sack at 1:30 PM. I was soon fast asleep. Ten hours later we were up and eager for the mountain. Unfortunately, breakfast and readying the equipment took two hours. Nevertheless, we hit the trail at 1:30 AM, 2 1/2 hours earlier than previously. It made a big difference. The snow was firmer and the going much easier. We cached a few pounds of gear at Camp Muir and even though the packs were still over 40 lbs, they felt relatively light. Our pace was very slow, but we made few stops. We reached the crater after 8 1/2 hours, tired but not exhausted.

We had expected to find a Glacier Research Foundation team camped on top, and prior arrangements had been made to conduct joint meteorological studies of steam caves of the West Crater, the "hot spot" area of Mt. Rainier which the team is studying this summer. We found their camp, but only a broken stove provided a clue to their whereabouts. We were not alone in disappointment. One member of their party, Kyle Atkins, hiked up the next morning expecting to join them. He descended with us. This part of the project had to be abandoned, but we did make a partial photographic record of the cave entrances of the west crater.

In order to have any time left for caving atop Mt. Rainier, it is necessary to spend at least one night on the summit. We had been afraid that the added weight of a tent would make the packs unbearably heavy, so we planned instead to build an igloo for shelter as we had done earlier. Well... The temperature was well below freezing and the snow just wouldn't pack. We cut blocks but couldn't stick them together; the wind just blew through the shinks and we ended up with a holey, topless igloo. Fortunately the weather was mild; we could have bivouacked in the caves anyway. The unfortunate thing was that we worked on the igloo all afternoon, when we should have been caving. Next time we'll take a tent.

The crater was the scene of all sorts of activity that afternoon. A couple was wed while we worked on our igloo. We also witnessed something potentially very tragic. A climber walking near the summit slipped and fell about 20 feet down a scree slope. He received a head cut and was immediately given first aid. As he was in no condition to travel, someone descended for help. Later that evening an Army helicopter landed about 1,000 feet below the summit and made the evacuation.



We bedded down about 7:30 in our topless igloo and got another 10 hours of sleep. It was surprisingly comfortable. Dehydration was our only discomfort. We all awoke with parched dry throats, so our first action next morning was to go over to the steam vents, melt some snow for drinking water, and thaw our frozen boots. After this, we were finally ready to go caving.

The main crater at the summit of Mt. Rainier is approximately 1/4 mile in diameter. A rocky ridge surrounds the central collection of ice and snow. Along the northwest side live steam vents warm a pumice "beach". All along the perimeter of the crater are cave orifices formed where steam and warm air from vents melts tunnels to the surface. We detected no sulfurous odor and believe that the vents emit virtually pure steam.

After making a photographic record of a number of the entrances, we decided to start mapping. Rather than the well-known cave just west of the low point on the south rim of the crater or the cave traversed a week earlier by Lou Whittaker (see below), we chose a large entrance southwest of the summit and about 50 feet lower. The entrance was actually double; the main entrance was about 9 feet high and 12 feet wide. Like all the caves we saw, the walls and ceiling were smooth ice and the floor was gravelly pumice. About 150 feet into the cave, the terrain became so difficult that we had to stop mapping; we had come to a large room, perhaps 60 by 30 feet. Here the floor dropped steeply. We scrambled to the bottom and crossed the room but had to stop at a steep pit where the pumice was at the angle of repose - a slope of about 60°. The passage continued, 3 feet high and 12 feet wide, but without climbing gear, we felt that there were many more promising leads. We could hear water running below, and the cave will have to be re-explored eventually.

In order to reach Paradise Valley by dark, we had to leave the summit by 2 PM so we gave up further mapping. Thinking that we might find a more level passage, we chose another entrance located lower on the crater rim. This was a sink-like entrance on the north edge of the crater. It turned out to be the cave traversed by Lou Whitaker a week earlier. A small stoopway quickly led us to a passage 30 feet wide and 20 feet high. Here too we descended continually, perhaps to a depth of about 150 feet, but the grade was tolerable. Intermittently we encountered steam vents filling the passage with cloudy vapor. Our crampons were a hindrance. We encountered wands placed by Whittaker and followed them for about an hour and emerged on the opposite side of the crater, after a very short level stretch and a fairly steep climb. Because of the altitude the uphill grade was very tiring and progress was much slower than normal in caves. We believe that the cave does not traverse the center of the crater because there was an uphill slope to our left at all times.

Along the way we found a side passage leading right, downslope toward the center of the crater; we went back and followed this for about 150 feet at which point time ran out. We thought that we might have missed other side passages because of the steam and later found out that we apparently did so as Lou Whitaker's map or sketch shows a different side passage leading to the big entrance close to the low point on the south rim.

We learned a great deal from this trip, and next time expect to have much more time for mapping and exploration. There's still plenty of work to be done. Between Register Rock and Whitaker's cave there are so many small orifices that you have to be careful not to step into a cave.

Chapter 9 of "La Speleologie", Scientia publ., 1900, 126 pp. pp. 83-84:

Glacial speleology - subglacial waterflow - intraglacial waterpockets and resulting catastrophes - exploration of moulins and crevasses - natural subglacial caverns.

- "A special problem is that of the conditions of flow of the confluent streams beneath glaciers. Hardly enough studies exist to sketch out the questions to be resolved in this discipline: their first results have even caused divergent opinions among the various experimenters. At this time it is impossible to be dogmatic. See Spelunca no. 16. While M. Forel and some other glaciologists do not believe in the existence of true collections of water under glaciers, the opposite opinion is held by Messrs. Vallot, Rebot, Delebecque, Martel, etc. Experience with fluorescein clarifies the controversy by permitting determinations of the force of subglacial streams. The subglacial explorations of M. Vallot and his descent of moulins (see Annales de l'Observatoire du Mont-Blanc, Vol. 3), truly in a field of glacial speleology, have clarified the nature of certain features of glacial waters and watercourses.
- "Among these features it is necessary to include the existence of intraglacial waterpockets; these cause celebrated occurrences and unhappily catastrophes which are forgotten all too soon: the Schwemser-Ferner de l'Oetzthal (1891); the Tete-Rousse glacier at St. Gervais (1893); the Crete Seche glacier and the Bagne valley (1894 and following); the Jökullhapt of Iceland, the outburst of a waterpocket which I personally observed at Jostedal (Norway, July 11, 1894), etc. I have expressed my opinion several times (La Nature, March 23 and November 2, 1895; C.R. Soc. Geogr. April 5 and December 3, 1897) on the undeniable existence (or so I believe) of intraglacial reservoirs and of the formidable hazards which they present. Also, when one crosses the surface of a glacier, one can observe that certain crevasses are partly filled with water; in order to demonstrate the depth to tourists, the guides hurl down iron-tipped sticks which come back up and float. There is no reason for similar water-filled cavities not to be present within and beneath glaciers; as in the case of joints in limestone. After many an alpinist accident, is it not from this water that one recovers the bodies drowned at the bottom of crevasses into which they fell?
- "Regarding the catastrophe of St.-Gervais, M. Delebecque also points out the dangers of unsuspected intraglacial lakes which "seem to be more frequent than is generally believed" (French Lakes, p. 256, 316). Moreover, some examples are known of natural caverns carved under glaciers by water which is warmer than the melting ice (Arolla glacier, Ruens-Braß Cave, etc. See Spelunca no. 16).
- "In an important report Karstformender Gletscher (Hellners geographische Zeitschrift, Leipzig, Vol. 1, 1895, pp. 182-204), M.E. Sieger calls attention to the sinks, lapiaz, pits, blind valleys, underground streamways, caverns, underground waterpockets, etc. that occur in glaciers as in limestone terrain; most are due to ablation and erosion, and are considerably modified or deformed in their development by glacial movement. Let us add the note of M.A. Delebecque on the sinks of the Gerner glacier in Arch. des Scienc. phys. et Nat. de Geneva, Vol. 28, nos 3, Nov. 1892, p. 491.
- "All this confirms the existence of a subglacial speleology, wide open to future discoveries, but more dangerous than subterranean speleology, because of the natural advance of glaciers and the collapsing inherent thereto; the displacements, as slow as they seem, must render visits to deep crevasses singularly dangerous in comparison to explorations in limestone, where at least the walls remain fixed."



TACOMA NEWS TRIBUNE

and Sunday Ledger TACOMA, WASH., SUNDAY, JUNE 21, 1970

2 Climbers Thread Needle, Penetrate Rainier Tunnels

By JACK WILKINS

Jim Whittaker was the first American to climb Mt. Everest — but look at what his twin brother Lou did last week.

He and Lee Nelson, a Tacoma fireman, were the first two persons to climb directly through Mt. Rainier's 14,410-foot summit.

They traversed Columbia Crest by a route 400 feet under the surface of the snow.

Existence of steam caves at the Columbia Crest rim had been known since the mountain was first climbed 100 years ago, but until last week there had been no record of anyone having penetrated the caves for any great distance.

The greatest penetration had been by the Whittaker twins in 1954, when they turned back for fear of effects of sulphur fumes and other hazards in the gloomy, steaming caverns of the volcano crater. Columbia Crest is the easternmost and larger of two circular craters, with a diameter of 1,300 feet.

IN AND OUT

The two men, wearing fire department oxygen masks to protect them from the fumes, entered a cave at the south side of the crater rim. An hour later they emerged at the north side, near the point where climbing parties sign their names as tokens of triumph.

Interviewed afterwards, the two men reported they had descended about 400 feet on crumbling rock, at an incline of about 30 per cent, until their "floor" of hot rocks leveled out.

The deeper they went, the more the caverns opened, under spectacular ceilings "scaloped" by melting and freezing snow.

As the route leveled they entered a tunnel which forked.

They took the fork to their right, which eventually turned upward until they were at the destination for which they had hoped.

'SWEET AIR'

Then they explored the other fork, without using oxygen masks.

"I'm glad Nelson was along. I got spooked by the fumes, but Nelson, a fireman, told me there was no danger. He said we were in 'sweet air,'" Whittaker said.

Just inside the rim, it was dark, Whittaker said.

"Very dark," commented Nelson dryly.

But they were helped by high-powered head lamps, and both were backed with long experience scrambling on rock and ice on the topside of the mountain.

They saw no launching pads for flying saucers. (The first flying saucers were sighted near the mountain, and some theorists believe they are launched from the caves.)

They didn't see any "little people."

They would have welcomed them, though. It was eerie and lonely in there — much different from the open ridges the men were used to.

LED OTHERS THROUGH

But the next day the two men had company. Whittaker is chief guide of the Mt. Rainier Guide Service, and he and Nelson were in charge of a n "expedition seminar." Their students were camped on top of the mountain in tents and igloos. The leaders put wands (flags) along the under-snow route and the next day led the students through.

Other members of the climbing party, some of whom remained at the 10,000-foot level, at Camp Muir, included Mrs. Robert (Ethel) Kennedy and her son Joseph, 17, who is employed by the guide service.

Today in TNT

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Don't miss the Tahoman Magazine and 12 pages of colored comics.





RECENT FIELD TRIPS

On July 18, a Twin Lakes scouting party (Whatcom County) found a 15foot pit. At the bottom, a duckunder led to a second pit estimated at 20 feet deep, about ten feet long and two feet wide. Excavation was necessary; a return trip is planned for the immediate future to see if it goes. Participating were Bob Brown, Jan Roberts, Ron Pflum (chief digger). Bill Halliday and Ross were scouting the upper limestone deposits NE of the lakes at the same time, little but snow was found - latest snow ever.

On July 19, Bob, Jan and Ron scouted the Ridley Geek area, finding an extensive karst but no caves as yet.

A Washington Monument trip July 11-12 produced three new swallets, but again, no new caves.

On July 14, Bob Brown led a trip to Cave Ridge. All the main caves were open; plenty of icy water was running into Newton Cave. A possible entrance to a new cave near Red Cave was located but needs excavation.

On July 9 and 10, Dee Molenaar and a group of National Park Service rangers visited and sketched the main cross-crater corridor of the Summit Steam Caves of Mount Rainier. Dee's sketch looks very different from that of Lou Whitaker, which we hope to be able to reproduce next month. They measured the room "200 feet wide" as less than 50 feet wide.

On July 12, Charley Anderson and the editor went to photograph the Pillar Passage. Only the Water Passage was open, however, with a great flow emerging from the main route at the rear of the junction room at the start of Suicide Passage. The latter was penetrated as far as the offset; no quicks and this time. Two grylloblattids were found.

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