

July 1982

## Alaskan Caver, Volume 7, No. 4, July-August 1982

Richard A. Hall

Follow this and additional works at: [https://digitalcommons.usf.edu/alaskan\\_caver](https://digitalcommons.usf.edu/alaskan_caver)

---

### Recommended Citation

Hall, Richard A., "Alaskan Caver, Volume 7, No. 4, July-August 1982" (1982). *Alaskan Caver*. 35.  
[https://digitalcommons.usf.edu/alaskan\\_caver/35](https://digitalcommons.usf.edu/alaskan_caver/35)

This Book is brought to you for free and open access by the Newsletters and Periodicals at Digital Commons @ University of South Florida. It has been accepted for inclusion in Alaskan Caver by an authorized administrator of Digital Commons @ University of South Florida. For more information, please contact [digitalcommons@usf.edu](mailto:digitalcommons@usf.edu).

# アラスカ洞窟探索者

(THE ALASKAN CAVER)

Volume 7 Number 4

July-August 1982



The Entrance of Explorer Glacier Cave  
(Calligraphy by Hiroshi Miura)

BY MASATAKA IZUMI

THE THIRD EXPEDITION TO GLACIER CAVES IN ALASKA, KWANSEI GAKUIN UNIVERSITY EXPLORATION CLUB CAVING TEAM, JAPAN  
1982

## Abstract

In October, 1981, a caving team from the Kwansei Gakuin University Exploration Club visited Alaska to investigate glacier caves. This expedition followed previous visits in 1978 and 1979. Two new caves were discovered. One of these was in Explorer Glacier and the other was in Byron Glacier. Both are near Portage in Chugach National Forest, Alaska.

The entrance of the Explorer Glacier Cave was at the toe of the glacier. It was an obstruction cave within which we saw many ice speleothems. These were similar to speleothems in limestone caves, and included deformed icicles, ice helectites, flow ice and others.

In the Byron Glacier, a new cave was found. It was an ablation cave. Its entrance was to the right east side of a glacier stream in the middle of the glacier.

## \*\*\*\*\* Explorer Glacier Cave, 1981 \*\*\*\*\*

In October, 1981, the Exploration Club of Kwansei Gakuin University went on its third expedition to the Portage area in Alaska. (Fig.1) We investigated Byron Glacier and Explorer Glacier because it was comparatively easy to approach them and our expedition team had discovered glacier caves there in 1978 and 1979.

This October was rather warm in Alaska, and it rained heavily. When we camped at the Portage area for two weeks, there were only three days that it did not rain. Our investigation was concentrated on these three days.

October 17 was the first fine day since we had come to Alaska, we went to the Explorer Glacier area by car and then walked to the glacier from Beaver Campground.

Explorer Glacier is a hanging glacier. We climbed the mountain along the creek which ran from the right side of the glacier snout. It took about one hour to reach the snout of the glacier. We went east along the glacier snout, and we found some obstruction caves between the edge of the glacier and the earth. These caves were very small: about 0.7m high, 1.2m wide and less than 15m long. There were no speleothems in them. We found one cave which intersected a crevasse in the glacier (Fig 2). The part of this cave which was formed by obstruction was not big, being 15m long. About 0.5m inside the cave entrance, the cave crossed a crevasse which closed at the top and bottom. This crevasse was about 0.4m wide and about 15m high and its ceiling was blue. In this crevasse, blue light came through the ice from outside. An unusual ice speleothem connected both sides of the crevasse. It seemed that this speleothem was created by slow bending of an ice bar. Perhaps, as the sides of the crevasse separated, a connecting piece of ice had remained, which was deformed to produce this speleothem. The speleothems found in this crevasse are in Fig. 3.

We continued to make our way toward the center of the glacier snout. We could see the entrance of a glacier cave which we eventually investigated and have termed the Explorer Glacier Cave (Fig. 1 & 4). The cave entrance

was about 3m high and 7.5m wide. The cave ran parallel to a subglacial stream. It was about 67m long. This was in an ice fall area. Around the entrance were many ice blocks which we had to cross to enter the cave. This was an obstruction cave. We could see no scallops in the wall and ceiling except in the entrance area. But, on the wall and ceiling there were many grooves, running from the end of this cave to the entrance, parallel to the glacier stream. These grooves must have been scratched by the bedrock as the glacier flowed over it. Icy breakdown was found only around the entrance of the cave, with none inside the cave (cover photo). The floor of the cave sloped constantly to the left as we went in. On the floor was only one big rock but some smaller rubbles were present. Twenty-five meters from the entrance of the cave, snow had entered through the ceiling on the right side. Possibly a crevasse in the ceiling had formed a second entrance here. Thirty-five meters inside, the height of the cave was about one meter so we had to crawl. The floor was fairly flat. In this area, we found a number of ice speleothems that were new to us. Also the grooves on the ceiling were more prominent. Deformed icicles, ice helectites, floor ice, hair ice, and other speleothems were found. They sparkled beautifully, reflecting our lights. In places, the floor was covered with an ice layer about 15cm thick. This ice was on the bedrock floor of the cave and appeared to be flowing along the slope of the bedrock. Near the end of the cave, the passage became narrower (30cm wide). There, the rock was on the right and the ice of the glacier was on the left. The passage continued for 6 meters, before it pinched out. The surface of the cave had very beautiful ice speleothems everywhere. The hair ice in this section of the cave was particularly beautiful.

\*\*\*\*\* Special Mention Should Be Made Of \*\*\*\*\*  
Speleothems Altered By The Movement  
Of The Glacier

All ice stalactites seen in the Explorer Glacier Cave in 1981 were bent in the same direction, pointing opposite to the direction of the glacier's movement.

The altered stalactites were found in a single line near cracks in the ceiling of the cave. Perhaps water flowed into the cave through a

# THE LOCATION OF THE EXPLORER GLACIER, ALASKA.

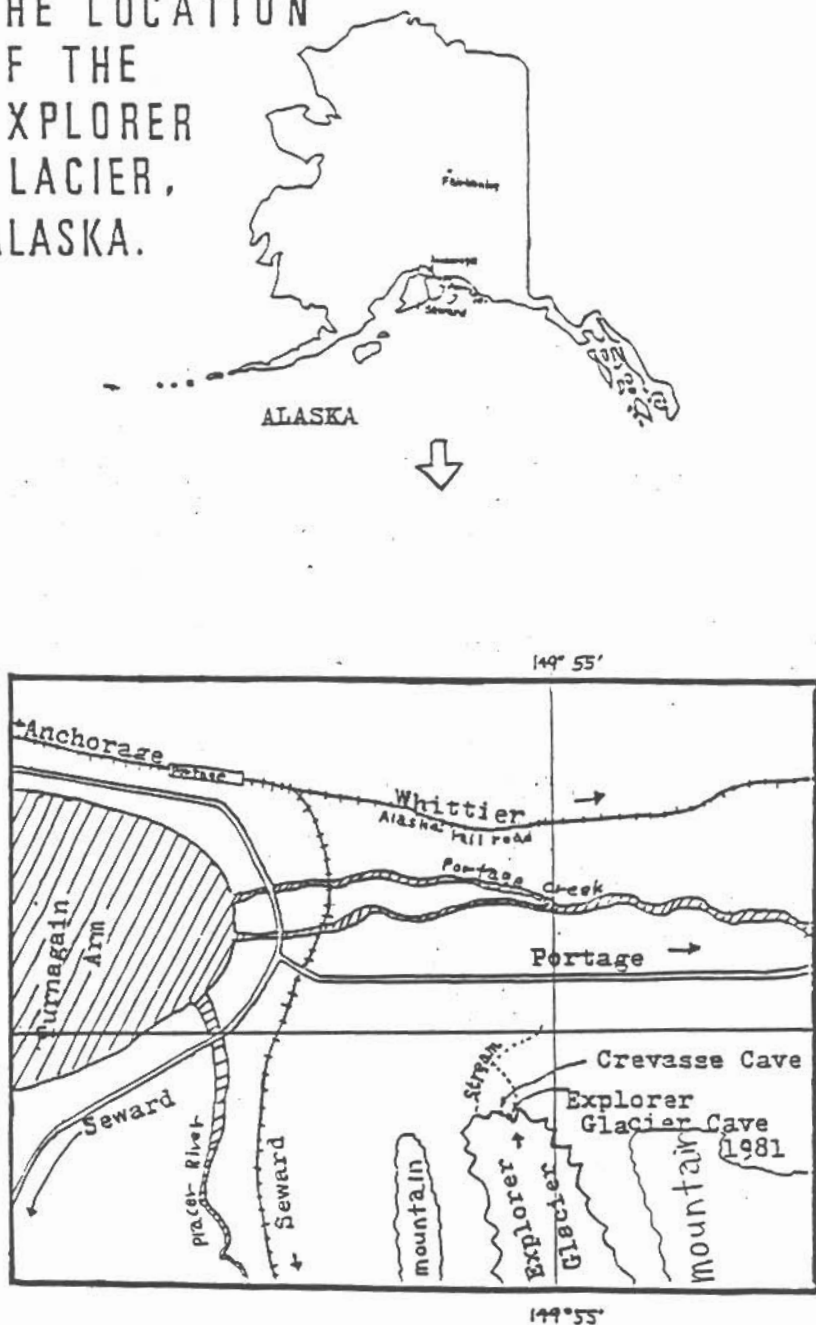


Figure 1. Location Map, Explorer Glacier, Alaska

narrow crevasse and turned into ice as soon as it flowed into the cave. In this area, ice speleothems formed. As the glacier moved, some ice broke off the glacier's bottom (ceiling of the cave). The ice column bent because of its elasticity. Gradually it parted from the point of contact with the earth, and took its present form (Fig. 5 & 6).

The fact that ice columns are bent by movement of the glacier was first reported by Peterson and McKenzie (1968) in an investigation of the Casement Glacier Cave; "In some instances, because the bases of the columns were frozen to bedrock and the tops were attached to the bottom of the glacier, columns were deformed by the flow of the glacier, which was about 1.8cm per day."

Though this deformed icicle has completely moved away from the bedrock, it retained the original form of the ice column. This kind of deformed icicle has not previously been reported from any other glacier cave.

## \*\*\*\*I.N.N. Cave in Byron Glacier\*\*\*\*

From a parking area near Byron Creek, we walked about 20 minutes along Byron Creek, to the Big Snowfield. Within this lay Big Snowfield Cave which was about 130m long.

After walking 10 minutes along the creek, we reached the snout of Byron Glacier. The snout area of this glacier was covered with many blocks of stone. We climbed the glacier to the line

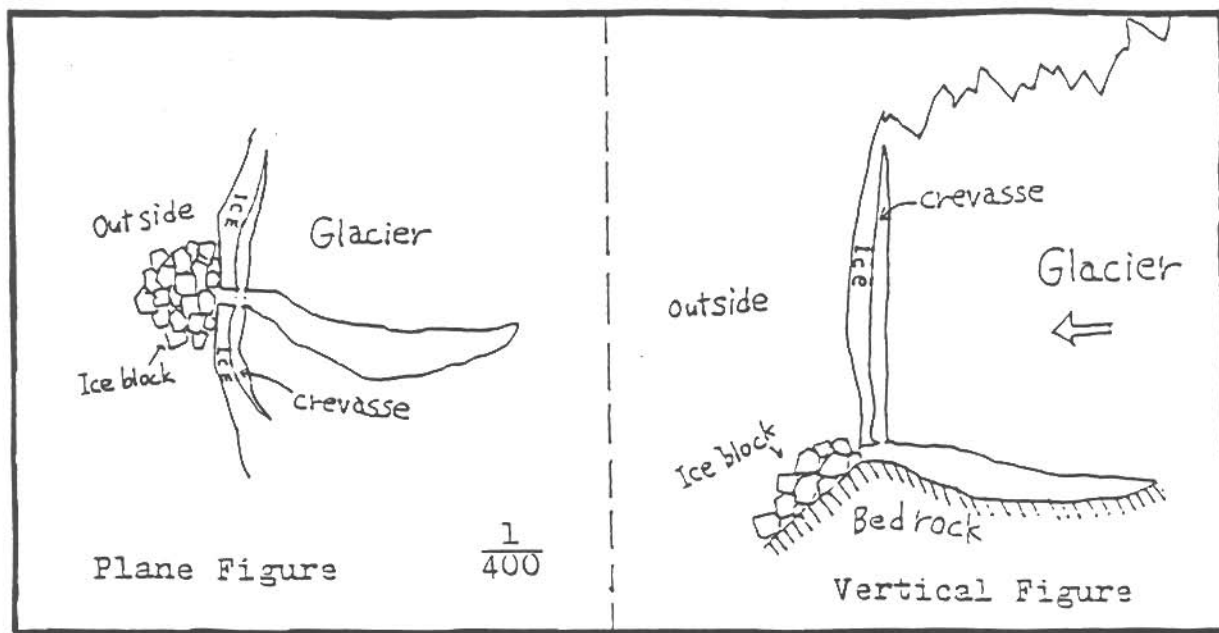


Figure 2. Crevasse and Obstruction Cave

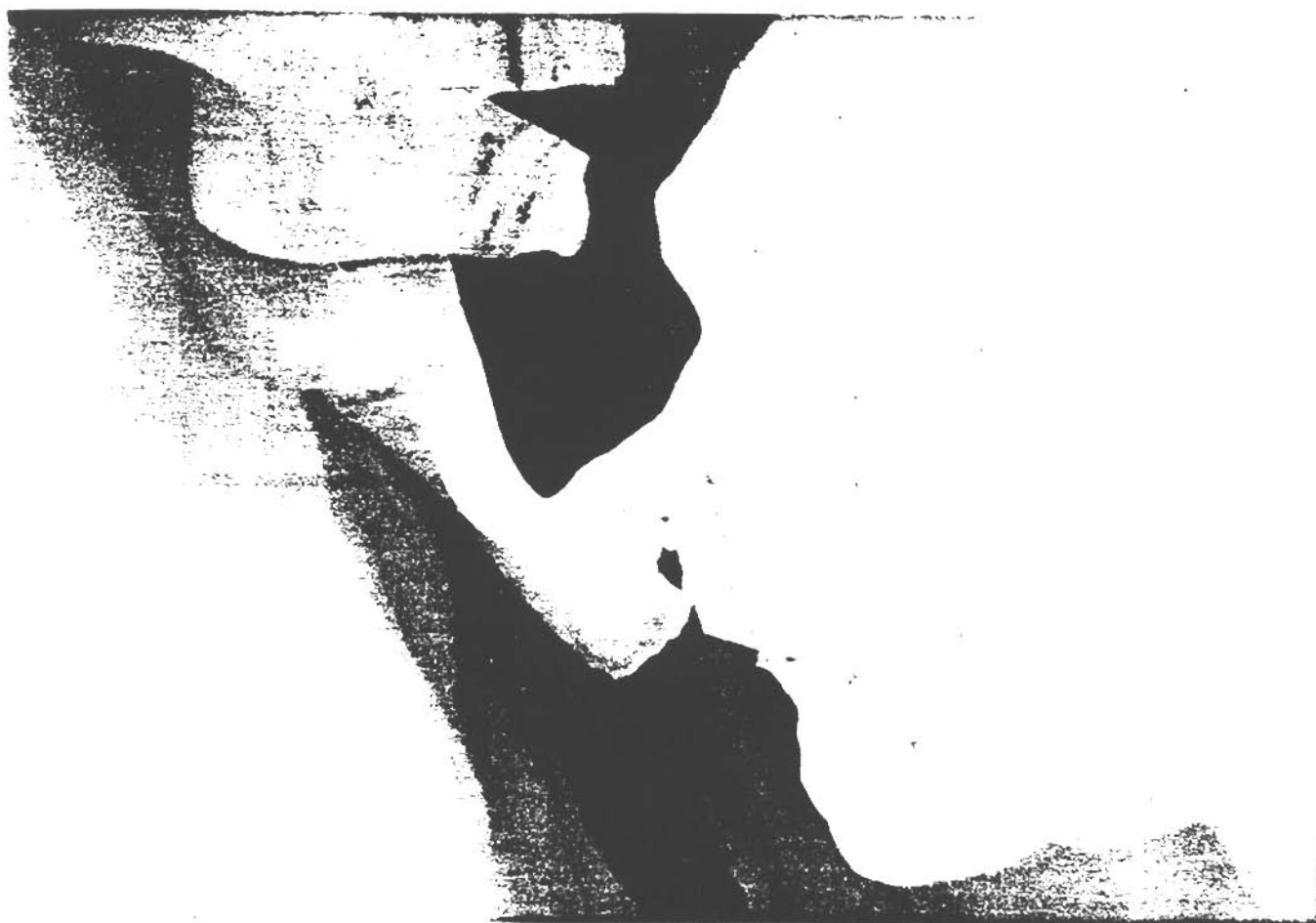


Figure 3. Ice Speleothem in a Crevasse, Explorer Glacier

# EXPLORER GLACIER CAVE 81'

CHUGACHI NATIONAL FOREST, ALASKA

SURVEY BY M.IZUMI, Y.NAKAMURA, N.NAGAI

MAP BY M.IZUMI

OCT. 18, 1981

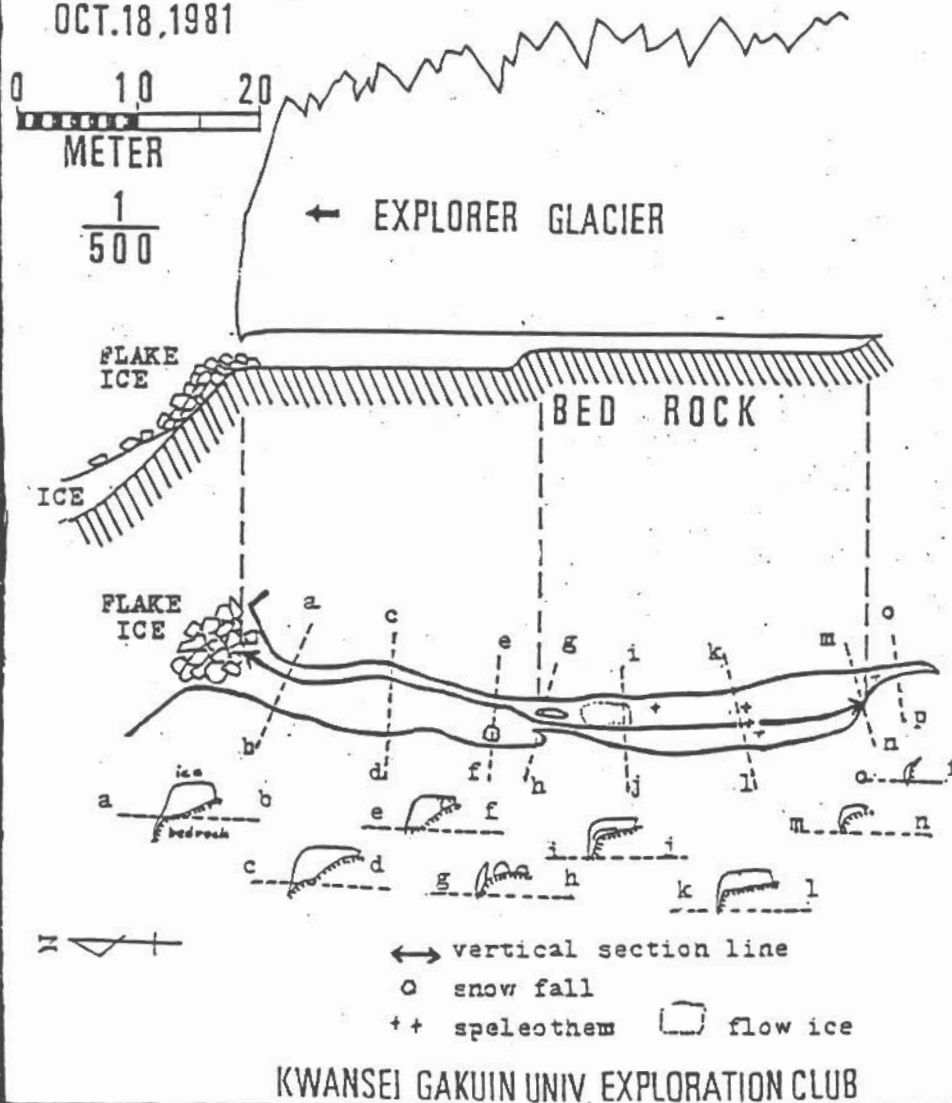


Figure 4. Explorer Glacier Cave, 1981

between the area of stones and the area of clean ice of the glacier. Then, we found a glacier cave in the right side of the glacier. This was a new cave (Figure 7). The arched entrance of this cave was 4m high and 8m wide. This cave was formed along the 460 cliff. It was about 70m long. We found a passage that had another entrance in the deepest point. This passage was parallel to the main route. As there were many falling stones, we had to discontinue mapping and leave the cave before we could survey it completely. This was an ablation cave. Perhaps, there were snow fields on the mountain above the cave. In summer, snow melt flowed under the bottom of the glacier with warm air, forming this cave.

By the way, Mr. Izumi, Mr. Nakamura, and Mr. Nagai found this cave so I named it "I.N.N. Cave" from the initials of their names.

## \*\*\*\*\*Acknowledgements\*\*\*\*\*

We left Japan on October 2, and reached Seattle on the same day. In Seattle, Dr William R. Halliday who had informed us of the information of the glacier cave by letter took care of arrangements. At first, we were going to investigate the Paradise Ice Caves in Mt. Ranier but, as the main entrance of this cave had collapsed at the end of September, 1981, we could not investigate it. And because of bad weather in October, we could not investigate other caves on Mt. Ranier.



Figure 5. Deformed Icicle in Explorer Glacier Cave, 1981

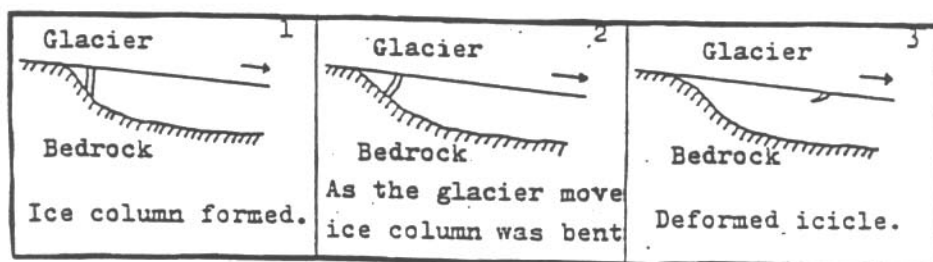


Figure 6. Deformation of Ice Columns



# I.N.N. GLACIER CAVE 81' IN BYRON GLACIER

CHUGACHI NATIONAL FOREST, ALASKA

SURVEY BY M. IZUMI, Y. NAKAMURA, N. NAGAI

MAP BY M. IZUMI

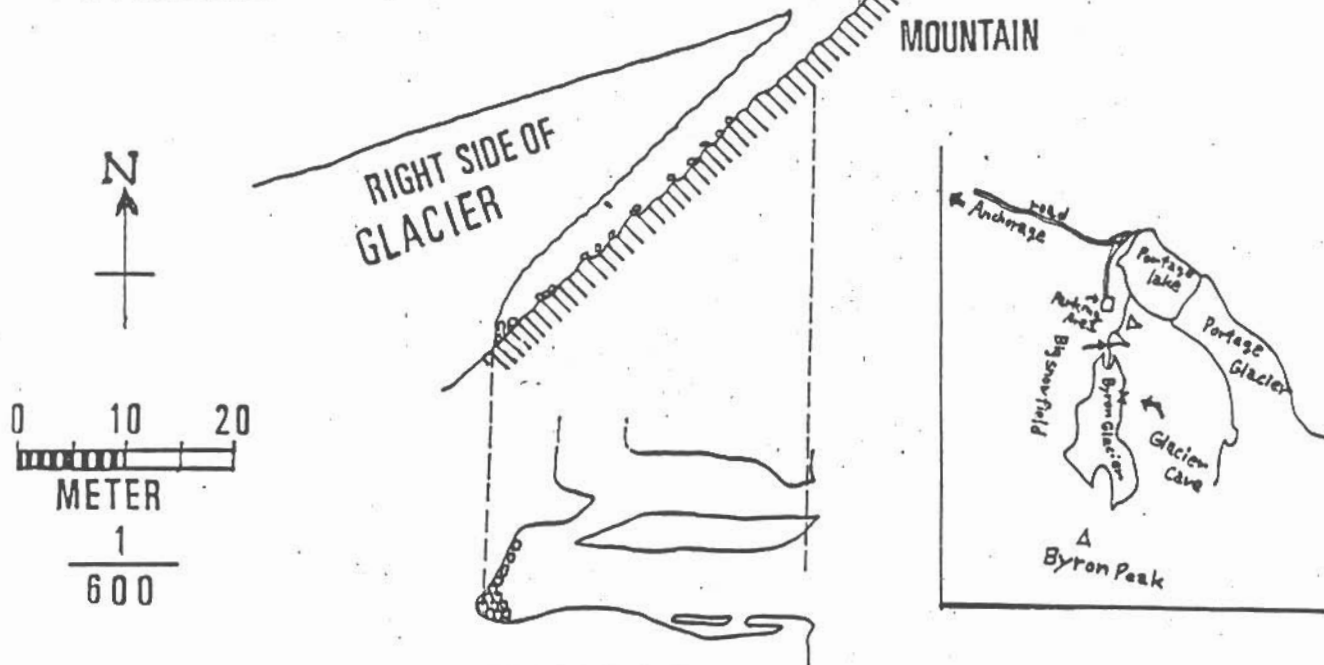


Figure 7. I.N.N. Glacier Cave, 1981

Then, we went to Alaska where we met Mr. Chuck Iliff & Mrs. Alice Iliff, who gave us information about glacier caves near Anchorage. Also we attended a meeting of the Glacier Grotto of the National Speleological Society. We met Dr. Julius Rockwell, president of this organization, who gave us additional information about glacier caves.

Also we were assisted by Japanese who attended the same university: in Seattle, Mr. Katsuo Minami and his family, in Anchorage, Mr. Tsuguo Arai and his family.

We are very grateful to all of them, especially to Dr. and Mrs. William Halliday.

During his visit to Japan from Dec. 20, 1981 to Jan. 3, 1982, I met Dr. Jay Rockwell in Tokyo and he kindly corrected our report on the Explorer Glacier Cave. Also Dr. William R. Halliday and Mr. Kevin Kiernan and Dr. Garry D. McKenzie kindly corrected our report. I thank them very much.

## \*\*\*\*\*Literature Cited\*\*\*\*\*

D. N. Peterson & G. D. McKenzie, 1968, "Observation Of A Glacier Cave In Glacier Bay National Monument, Alaska": National Speleological Society Bulletin Vol. 30, No. 3, pp. 47-54, July 1968

## \*\*\*\*\*Participants\*\*\*\*\* in this expedition

Masataka Izumi;  
Yoshiharu Nakamura;  
Nobuaki Nagai;  
Kazunori Hirota.

## \*\*\*\*\* Masataka Izumi\*\*\*\*\*

4-11-12, Nishitomigaoka, Nara, 631 Japan



(For information call Jay Rockwell, 277-7150)

#### CALENDAR OF EVENTS

- October 21 Glacier Grotto Meeting. Meetings are held in room 312 of Grant Hall, Alaska Pacific University at 7:30 pm. The program will be a slide show on glacier caving.
- November 18 Glacier Grotto Meeting. Meetings are held in room 312 of Grant Hall, Alaska Pacific University at 7:30 pm.
- December 16 Glacier Grotto Meeting. Meetings are held in room 312 of Grant Hall, Alaska Pacific University at 7:30 pm. The program will be an NSS slide show.
- January 20 Glacier Grotto Meeting. Meetings are held in room 312 of Grant Hall, Alaska Pacific University at 7:30 pm. The program will be an NSS slide show.
- February 17 Glacier Grotto Meeting. Meetings are held in room 312 of Grant Hall, Alaska Pacific University at 7:30 pm.
- March 17 Glacier Grotto Meeting. Meetings are held in room 312 of Grant Hall, Alaska Pacific University at 7:30 pm. The program will be an NSS slide show.

The ALASKAN CAVER is a periodic publication of the Glacier Grotto of the National Speleological Society. Subscriptions are free to members. Membership dues are \$5 per annum (add \$3 for overseas members wishing airmail instead of surface mail). Dues can be sent to Elisabeth Hall at 4607 Klondike Crt., Anchorage, AK 99504. Copyright 1982 by Glacier Grotto. Material not copyrighted by individuals or other groups may be copied by other NSS publications provided credit is given to the ALASKAN CAVER and a copy of such publication is sent to the editor.

Glacier Grotto  
The Alaskan Caver  
Richard Hall, Editor  
4607 Klondike Court  
Anchorage, Alaska  
99504