

May 1979

Alaskan Caver, Volume 4, No. 2, May 1979

Richard A. Hall

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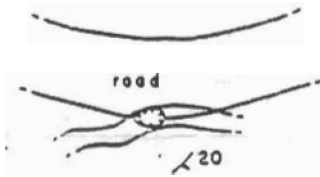
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The Alaskan Caver

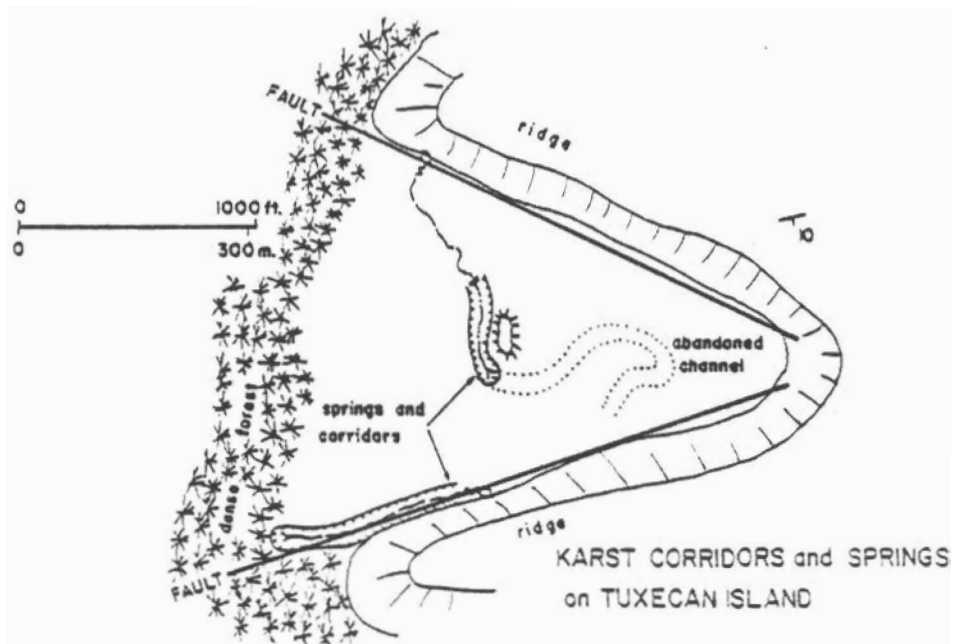
MAY 1979
VOL 4 NR 2



HYDA CAVE



ROADEATER CAVE



1979 CHITISTONE SEASON

After the results of last year's exploratory trip to the Chitistone River we're planning a big push this year to check it out more thoroughly; go in some of the caves we've seen, find more caves, do some mapping. The Chitistone caving area is located in the middle of the new Wrangell-St. Elias National Monument, about twenty miles hiking east from McCarthy, Alaska or an hour's flight from Gulkana in a light (four passenger) plane. The location of our last trip was near Peavine Bar near the junction of the Chitistone and Nizina Rivers. The area is covered by the USGS topographic maps for the McCarthy B-4 and B-5 quadrangles and the USGS geologic maps, Gq-943 and Gq-1146. (The trip and geology of the area was featured in the November 1978 issue of the Alaskan Caver).

At the March meeting we discussed possible dates for trips. Each time has its own advantages and disadvantages. The three potential trips are: a long weekend, May 26 to May 29; one week, June 30 to July 8; and two weeks, August 18 to September 3. The May trip would only consist of about four people. It's main purpose would be to try to enter Star Cave directly if there is a large enough ice mound below the entrance to reach it. Water levels should still be low which would make cave passage exploration easier. The major advantage of the July trip is that there will be people at the Peavine Bar mine who know the area and the location of some caves. It would be hotter and bugger and the water level, due to runoff and melt, will be at its highest. The water will be down some again by late August and the climate more moderate.

Each of the three trips would go, of course, if there is sufficient interest. The trips are open to anyone and it would not be necessary to stay for the entire length of the longer trips. When people come or go will depend on how many people come since it is cheaper per person to fly with a full plane.

Especially needed are experienced cavers and rock climbers with gear. Climbers are needed because the caves are usually up or down steep limestone cliffs. There being few cavers in Alaska with extra gear, everyone needs to bring their own gear plus group gear such as rope if possible. For further information write Jay Rockwell at 2944 Emory St., Anchorage Alaska, 99504 or Richard Hall at 4607 Klondike Court, Anchorage, Alaska, 99504.

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The Glacier Grotto meets on the fourth Thursday of each month (5th in Nov.) at the Anchorage Community Center, 325 E. Third Ave., Anchorage, AK.

THIS IS IT!

by Bruce W. Rogers

Whilst gainfully employed by the U.S. Geological Survey during the late summer of 1975 in southeast Alaska, I had the singular distinction of becoming acquainted with great masses of limestone and marble. Our base was on board the Don J. Miller, a 120-foot ship from which skiffs and helicopter work was dispatched to Prince of Wales Island and its closeby neighbors. Interspersed with attacking large submerged masses of greenstone with the skiffs, reducing silty limestone beds to gravel for fossil hunting, and overloading the helicopter with hand specimens, I was able to visit three caves, look at several others and gather enough information to find several more. In addition, we skiffed along, flew over and walked upon more limestone than exists in the states of California and Hawaii combined. All this and more, but first some background.

Where Alaska was during the first 9/10ths of the earth's history is not well known. However, it appears that it was conducive to the production of at least some Precambrian-aged limestone. Much of it is thin bedded, interbedded with black shales and devoid of fossils...this along with its association with very gunged-up skuzzy green rocks point towards its origins on the then continental slope outboard of the actual continental shelf. Some of the rock has retained its original textures and is recognizable as limestone; in fact, some looks much the typical Great Basin Paleozoic limestone. Other portions have been baked to within an inch of their life and are true marbles (A note here to explain these esoteric terms one bandies about: if you can't see any grains with the eye, it's limestone or dolomite; if you can barely make out very fine grains which give it a sugary look, it's recrystallized limestone or dolomite; if the grains jump out and hit you in the kidneys, it's calcite or dolomite marble).

There are no known caves in the Precambrian carbonate rocks in the area that I stumbled about in; however, there is a small creek named Cave Creek just out of the area. This along with a few sinkholes--largely choked with muskeg (a fine grained mixture of mud, whatever's at the bottom of last year's compost pile, Eastman 910, and assorted stray rocks, 2 x 4's, and Volkswagon parts), and a few small solution tubes about 18" in diameter blocked by phreatic spongework breakdown do hint at more to be found in the Grandfather Rocks of the Alexander Archipelago.

There is a large gap in the rock record still left on Prince of Wales. All of the Cambrian and a portion of the early Ordovician-aged rocks are missing. These same rocks elsewhere (i.e. Great Basin) are rich in caves, but we can only speculate what went on during this time here. There is one clue though: the next higher formation-- the Descon, which ranges from early Ordovician to Silurian in age, is largely lava flows, volcanic breccia, and siltstone. In addition, it rests on the Precambrian rocks either with a large fault or erosional unconformity between the two. This suggests that the world at large was at unrest with large rock masses of continental size thrashing about. Also the rocks in the Descon suggest that they were the type one would find at the bottom of Hawaii or many of the Pacific Islands, thus it appears that during this time and for the next quarter billion years there was an offshore island chain of volcanos with massive reefs forming in the Proto-Pacific Ocean. What limestone is present in the Descon is too little to form solution features of a magnitude greater than an empty Cration can.

Overlying the Descon is the Heceta Limestone. "This is it"...to quote Mike Churkin, one of the geologists talking about nearly anything of importance. The Heceta is the cave containing formation of the area along with the younger Wadleigh Limestone. The limestone is thick bedded to massive and has tremendous amounts of fossil debris. More important, it has caves. A chance meeting with Jerry Collins, the chief mechanic in the area for Ketchikan Pulp Logging Company, led to 3 caves. One cave, Heceta Cave, consists of an elongated sink that leads to a 20 foot long stoopway. At the end of the stoopway is a small chamber about 20 feet in diameter and 6 feet high. From the back of the room a 3 foot diameter crawlway leads at least 30 feet to where the logging crew decided it was better to leave these things to rock knockers. Unfortunately, the entrance was filled with slash when I visited the cave and I was unable to enter it. However, a line of at least four 20-foot diameter sinks leading back up slope were discernable under the slash over the estimated course of the cave.

About 1/4 mile east is Muskeg Cave. This small cave opens from the base of a low hill of Heceta limestone. A 3-foot in diameter crawl 5 feet long brings one to a 4-foot high room about 10 feet in diameter. A thin slot runs off one side of the room but is too thin to enter. The far side of the room is a low muskeg floored crawl that winds its way for about 25 feet before the tube lowers and the muskeg rises. The cave lacks any sort of decoration in either its small phreatic chamber or crawl. Both the entrance crawl, muskeg crawl, side slot and the walls of the small chamber are joint controlled. Along the flat coastal plain at the west base of Twin Mountain are several areas of sinkholes. None of the sinks were enterable; however, some had evidence of very recent lumping of the muskeg and soil down into their bottoms.

One further intriguing feature occurs in the Heceta. Just south of Lester River and on the coast west of Twin Mountain are two springs. Pouring out of the limestone at high tide level, these two springs are the only ones noticed along a 5-mile length of shoreline which also lacks any surface streams of any size. The northerly spring is a narrow slot 2 inches high and 18 inches wide along a bedding plane in the limestone. It was producing about half a cubic foot per second of clear water. The other spring welled quietly up from a fissure 4 feet long and tapering from 10 inches to 3 inches in width. The outflow channels were not dissolved below the limestone beach terrace. This along with the absence of travertine deposits suggests that the waters are just barely saturated with carbonate after their long travel from Twin Mountain. Further southwest by several miles is a large cave near the Staney Camp of the U. S. Forest Service. Proceeding past the camp one dips into a stream canyon and starts around a small limestone hill. At the base of the hill and facing the creek is a cave with a walk-in entrance. The main passage winds its way into the hill--Saddle Spur--for at least several hundred feet. A small stream flows along its floor. The helicopter pilot for the logging company--Ketchikan Pulp--has explored the known portion for placer gold. Needless to say, the tiniest thing found so far has been his flashlight beam.

In addition to the two caves near Twin Mountain, there are several caves known from Luxecan Island to the northwest. These are located in the southern portion of the island. Blueberry Cave is a small alcove off a pit. The pit now is filled with rubble and a muskeg seal allows water about one foot deep in the dry season and 4 feet deep in the wet season to accumulate in the cave. Roadeater Cave is a 3-foot diameter tube that has engulfed a portion of a logging road about 1/4 mile north of Blueberry Cave. The cave drops about 3 feet vertically to a horizontal passage that is now partly filled with road fill. The tube extends for an unknown distance, but can be seen for about 8 to 10 feet in each direction.

Blueberry and Roadeater Caves are located in a flat bottomed solution valley. Scattered about the floor of the valley or polje (a sometimes fault-determined valley of relatively large size; pronounced: pole-YAH) are many shallow sinks (or dolines); some of which are aligned. Entry into these was not possible because of the everpresent muskeg. Kinning the polje were two long fault-elevated while the north and west rims were delineated by groups of small hills. These hills might be the result of faulting, but look very much like the typical Puerto Rican and Cuban "mongotes" or residual hills. Included in the northerly group of hills are several sinks 400 to 600 feet in diameter. Further north between these and the sea-coast are two fault-bounded ridges. In the triangular flat between these last two ridges are a pair of small streams. The easterly stream rises as a spring on the northern most ridge base, flows southerly across the flat and sinks in a slot-like meandering bogaz or karst corridor. The westerly stream flows from the ridge at its base and heads north in a more or less straight karst corridor. More detailed inspection of these was precluded by devotion to duty and a strong desire not to walk back to the ship if missed by the helicopter.

Further to the east of this area is another karst corridor about 1/4 mile long. In its 200 foot high northern wall is another 4-foot in diameter phreatic solution tube that was nearly plugged with spongework breakdown. Still further east near the island coast was a small "cave" in a quarry. The quarry wall was pierced by a 14-inch high by 6-inch wide solution passage. Evidently the miniature cave had started as a series of anastomosis along the bedding about 15 feet below the surface. One favored set was enlarged and a vadose stream enlarged it until it was open enough for large amounts of surface clay to be washed in by the stream. The stream then filled its bed and cut into its ceiling forming a small stream canyon from the bottom upward to the top, the reverse of the normal...if anything can be considered normal in cave solution. Later increased flow cleared most of the clay filling out and blasting blew the wall of the tube open so that a slightly milcowed rock knocker could spend a relaxing lunch break wishing he were only 18 inches tall. The stream channel was aligned along joints and had vadose bedding plane grooves along its walls.

To the west of Twin Mountain lies Heceta Island, the type locality for the Heceta Limestone. Indeed, most of the pork chop-shaped island is limestone. And in this limestone are several caves. In the area that I mapped there were no obvious caves, although sinkhole alignments, karst corridors and such pointed to their presence. To the northwest of this area were two interesting lake groups: those about Chuck Lake and those

about Mink Lake. In Chuck Lake itself was a large hole that water disappeared out the lake bottom; several smaller lakes and ponds evidently drained underground into Chuck Lake itself. The small lakes about Mink Lake were comparable, but on a smaller scale. Both of these areas were looked over by Don Iberlien several years ago and several cave entrances noted.

To the southwest of Prince of Wales Island is Dall Island. On the island is an equivalent limestone to the Heceta, the View Cove Limestone. Although I was not able to visit the island there are reports of caves in Thunder Mountain and View Cove region. Certainly with 150 inches of rainfall and the 3100 feet plus elevation this seems a safe bet.

Above the Heceta is a series of interbedded limestones of Heceta type, volcanic cobble conglomerates and red sandstone. This mishmash of rock was finally given a tentative new formation status and termed the Staney formation this field season. No known enterable caves occur in the formation, but north of Staney Creek and on top of two large mountains are several sinkholes that are formed by the local subterranean drainage being ponded on the upslope side of the intervening redbeds. These sinks are unfortunately filled with both muskeg and logging slash. Little else is visible in the way of karst features, even in the many quarries present. However, there are no surface streams on the mountain slopes.

Evidently the Staney formation was recording a time when the sea both transgressed on the island arc and withdrew to allow the corals, etc., to regrow fringing reefs on the continentally deposited red sands.

Above the Staney there are two distinct rock types. The island arc was experiencing renewed volcanic activity and the rocks were underwater lava flows, ash falls and a very distinctive red and green calcareous siltstone and limestone in 1 to 3-inch beds. Needless to say, no caves were observed in the limestone. At the localities visited, the St. Joseph Island volcanics of this formation are found to have been bubbled out for over 50 million years and to have been contemporaneous with the Karheen, Coronados, Wadleigh and Port Refugio formations.

In another portion of the old island arc the Karheen Formation was being deposited. It was primarily red sandstone, black shales and conglomerate with some limestone on top. Being that most everything except the limestone quickly weathers to mush, little chance for cave development was possible as the limestone was left high and dry with no water input.

Also found in the Devonian Period of geologic time that encompasses the rocks we're talking about were the Coronados Volcanics. These rocks were lavas and ash falls from a rapidly sinking then new island. At their top are cobbles and scraps of volcanic rock mixed with limestones, but here again, too little of the limestone is present to form caves.

Directly above the Coronados and partly deposited alongside them are the very massive Wadleigh limestone with great quantities of coral and blue-green algal mound fossils. The Wadleigh is a massive cliff forming rock, but has little to offer the present caver. Being that the limestone is

very pure, one would expect a lot of holes...they may very well be there, but at present, they are well hidden in the hills. Again, no surface drainage is seen on the Wadleigh. Perhaps when the loggers finish with Wadleigh Island, the type locality, it will be possible to locate caves. The two caves that we were able to see in the limestone were visited by Mike Churkin on June 30, 1973. On the south side of the mountains previously mentioned under the Stanley Formation, he found two Indian Burial Caves. The two caves are actually shelters mostly formed by frost wedging large blocks and slabs off the 50 to 75-foot high "wall" that is typical of the Wadleigh limestone where it outcrops.

Exclaiming, "This is it!" as he scrambled into the first, more southerly of the shelters, he found the remains of one adult: a skull, jaw with 14 teeth--all well worn--; ribs, leg long bones and scattered vertebra. All these were apparently piled in a 2-foot square area. No burned wood, artifacts, or shelter remnants were found. He then made his way along the cliff to the northerly shelter, about 300 feet away. It, too was a shallow--about 4 feet deep--shelter about 30 feet long and 10 feet high. This site, however, had not only a skull, jaw, ribs and leg long bones, but also a pelvis. In addition, some of the bones were burned and branches and up to 4-foot long fragments of burned wood were piled on top of the bones. Over this were rocks; whether or not they were purposely placed on top of the pile or fell from frost action was hard to tell, but it appears that they may have been placed by hand. As in the other site, no other artifacts or signs of habitation were found.

Mike collected skull, jaw, arm (?) bone fragments as well as some charcoal for carbon 14 dating. This proved to be about 100 years old material, plus or minus about 30 years.

Above the Wadleigh Limestone are the beds and flows of the Fort Refuge Formation. This is largely lava and ash, indicating still further unrest. Some limestone beds are present with brachiopod (lamp shell), plant and primitive armored fish fossils. We figured if we couldn't find a cave, we may as well find some of these probably unde-

veloped. Finally, we hit the Mississippian aged rocks, those wonderful things that contain the endless miles of the Flint Ridge-Mammoth Cave System that you can run through for days screaming "Chocolate Sunday, Chocolate Sunday!!!" with only a few blind crawfish to sadly shake their heads and comment how the neighborhood has gone downhill. Up north on the island there is a funny pile of rock called the Peratovich Formation. This little baby starts as thin bedded black chert and gets to be dark gray to nearly black massive limestone and dolomite. The Peratovich outcrops in only a small area--mostly on islands with up to 300-foot high cliffs plunging into the crashing Pacific surf. Thus, detailed on-site inspection for caves was somewhat hindered. Sea caves, however were found at several places. The chert and silica-rich limestones were resistant enough to form roofs for the sea caves whereas the purer limestones were too soluble to stay in one piece and shortly collapsed after any sea caves would form. Finally we get near the top of the rock column in the Alexander Archipelago. Above the Peratovich are formations that formed near the shore. Both the Ladrone Limestone and the Klawak Formation--consisting of limey sandstone and silty limestone--are the products of shallow water deposition with less and more, respectively, sand and silt being dumped on

the fringing reefs of the old island arc. This indicates that the waters were becoming shallower--possibly either through the reefs building up or a portion of Siberia or mainland China finally making it all the way across the Protoracific and smashing into the west edge of North America (which, by the way, was rotated down to the south and was near the equator at this point. We know that because the same fossil corals, etc., are found in a belt that runs from northernmost Alaska down through Nevada to Peru along the present western mountain belt between the Pacific and the Rockies. It was like a super giant economy sized Great Barrier Reef). The underlying Peratovich, on the other hand, was a deep water formed rock, with black cherts, shales, deep water fossil sea lillies, sea urchins, etc.

Both the Klawak and the more cave-prone Ladrone Limestone were given a hasty looking at, but no obvious caves were found. When the Ladrone Islands are finally logged clean, perhaps some caves will be found.

This just about exhausts the cave possibilities for the area. Bob Hackman ran over the portions of the Archipelago that contained the Necota and Wadleigh Limestones in about 1948 and 1949 and commented on several caves he found, including one that I found later was 400 feet from one of our fossil collecting localities...sign. He wrote up all his adventures in the 1949 BSS Bulletin, No. 11.

The area holds more promise for caves, but one must temper enthusiasm with a few facts. The area is very remote; there are about four settlements on the entire 125 mile long, 35 mile wide Prince of Wales Island. The rainfall is not only restricting to travel by boat and air over the islands, but also comes in 150 inch a year drollops...thus prompting almost unbelievably thick rain forest. Overland travel is only possible at great expenditure of energy and time. In some places I found that an hour was necessary to slog across 1000 feet of forest. Not only does the Great Green Wall slow travel, but also swallows up the ground. Occasionally it was instructive to stop and look directly down through the 8 to 10-foot thick jackstraw pile of mosscovered rotting logs I was carefully walking on and wonder if there really was rock under it all...or was it really just a high mildew pile 7,000 miles thick?

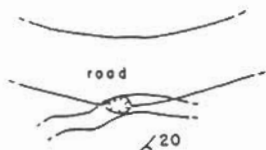
Also pertinent is the fact that if the caves do occur, they are usually found in the flatter, low lying portions of the region. In other words, the chances of finding a cave free of muskeg are small.

One final note on the biospeleology: standard caving gear should include a large rock and a 30-06 rifle. Being that large fuzzy mammals resembling teddy bears are found in the area, it is advised that the rock be thrown in first, then either enter cautiously with 30-06 at the ready, or go back to Craig and drink if the response is a low guttural growl.

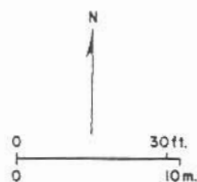
I am indebted to Greg Frantz, long suffering field assistant who would rather be farming; Norm Savage, brachiopod buster and definitely recent-aged Salmon fossil collector par excellence; Mike Churkin, rock pouncer, megathinker and person responsible for the phrase "This is it!"; and Lon Eberlein, who in a moment's weakness, hired a caver and expected him to actually work instead of cave hunting when transported to an area that had more than two square feet of limestone.



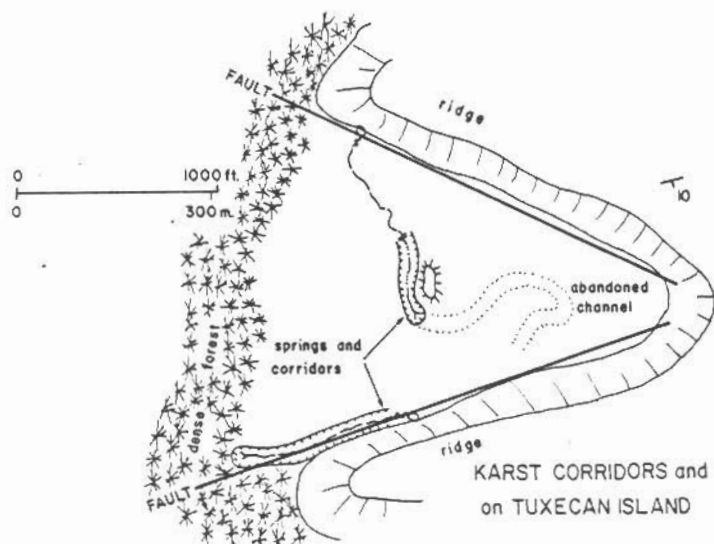
HYDA CAVE



ROAD EATER CAVE



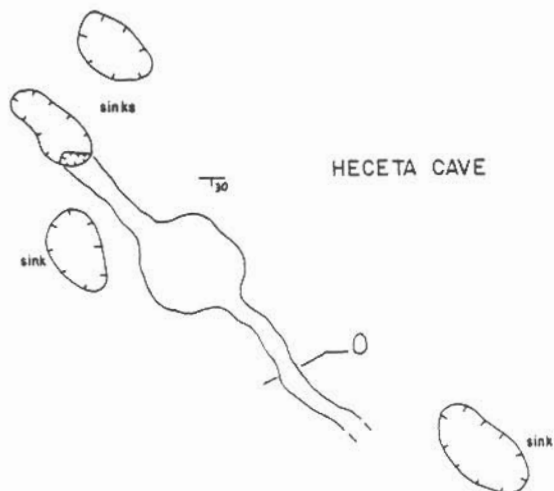
BLUEBERRY CAVE



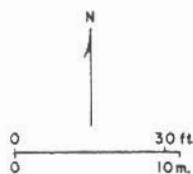
KARST CORRIDORS and SPRINGS
on TUXECAN ISLAND

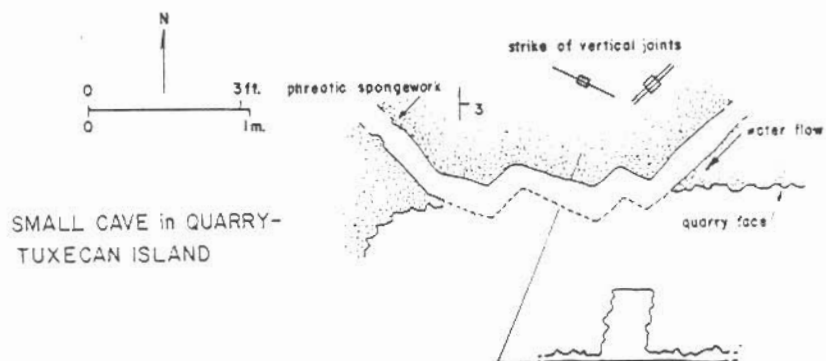


MUSKEG CAVE



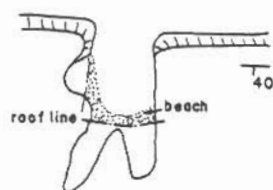
HECETA CAVE



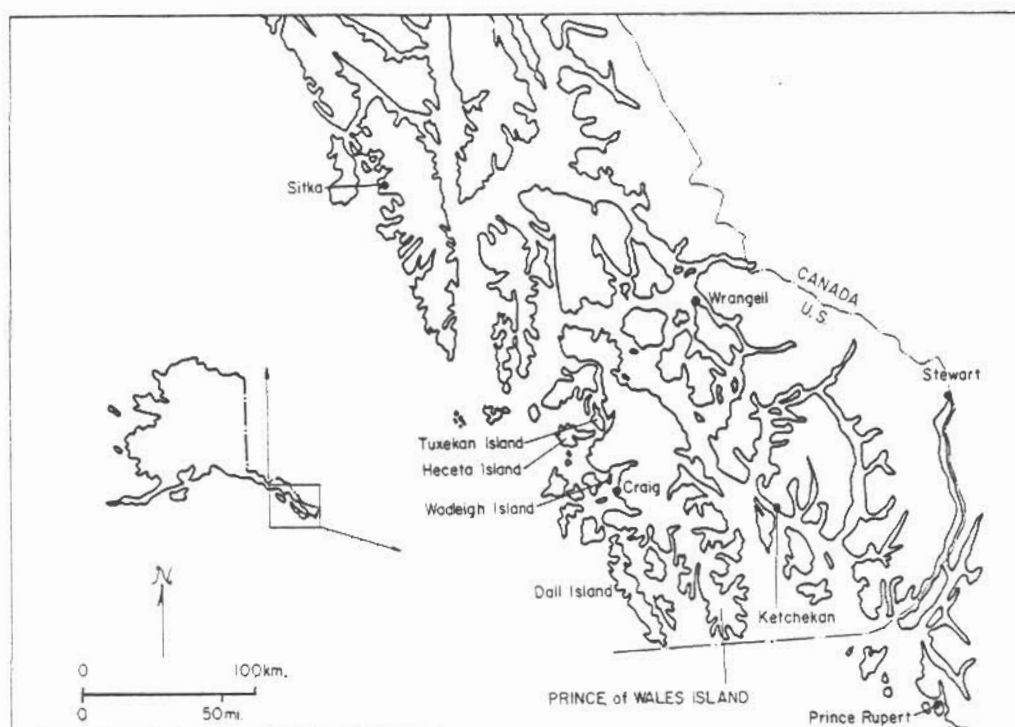
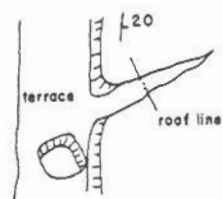
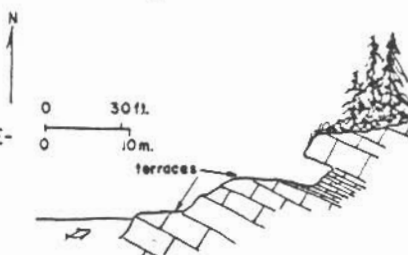


SMALL CAVE in QUARRY-
TUXECAN ISLAND

SEA CAVES in PERATROVICH
LIMESTONE - MADRE DE DIOS IS.



SEA CAVES in WADLEIGH LIMESTONE-
WEST ALBERTO ISLAND



ALASKA CAVE RUMOR -- To Be Checked Out

Please be as complete as possible, so that someone else trying to follow your lead will have specific information. One rumor per sheet; attach extra pages if you run out of space.

DATE OF RUMOR: December 8, 1975

LOCATION/NAME: (If possible give map name and coordinates; type of cave - limestone, littoral, rock shelter, etc.; access, etc.) Give as much description of the cave and area as you can:

Chilkoot Cave - A Shaman's cave

Name indicates location and is my own (JA), so named because it is in the valley of the Chilkoot River.

DIRECTIONS: (Give specific instructions, landmarks, etc.):

SOURCE OF RUMOR: Was it a person (give name, address, phone, has person been to rumored area?), a publication (give title, author, publisher, date, pages, where can the publication be found, etc.), a visual observation (give coordinates, topography description, was the cave entered?) or other source.?

Mrs. Julie Folta, Haines, AK

OTHER USEFUL INFORMATION: (Owner, on federal land, animal denning area?)

Rumor received second hand from Mrs. Dorica Jackson.
Property siad to be owned by Sealaska Corporation

YOUR NAME: Julius Rockwell

ADDRESS: 2944 Emory St.
Anchorage, Ak 99504

PHONE: 277-7150

DATE:

ALASKA CAVE RUMOR -- To Be Checked Out

Please be as complete as possible, so that someone else trying to follow your lead will have specific information. One rumor per sheet; attach extra pages if you run out of space.

DATE OF RUMOR: July 1975

LOCATION/NAME: (If possible, give map coordinates; type of cave - limestone, littoral, rock shelter, etc.; access, etc.) Give as much description of the cave or area as you can:

At the head of Basket Bay on the southeast coast of Chichagof Island there is a stream which is the principal outlet of a medium-sized lake. For much of the distance between the lake and the bay the stream runs through a cave in the extensive limestone formation which occurs there. The quantity of water which enters the bay is considerably greater than that which leaves the lake. It is extremely likely that side passages occur.

DIRECTIONS: (Give specific instructions, landmarks, etc.):

There is only one large stream entering the head of Basket Bay. It is about 1/4 mile from a logging camp.

WAS THE SOURCE OF THE RUMOR A

PERSON: (Give name, address, phone, has person been to rumored area, etc.)

Robert Sanderson, Box 76, Hydaburg, Alaska

PUBLICATION: (Give title, author, publisher, date, pages, where can the publication be found, etc.)

VISUAL OBSERVATION: (Give coordinates, topography description, etc.)

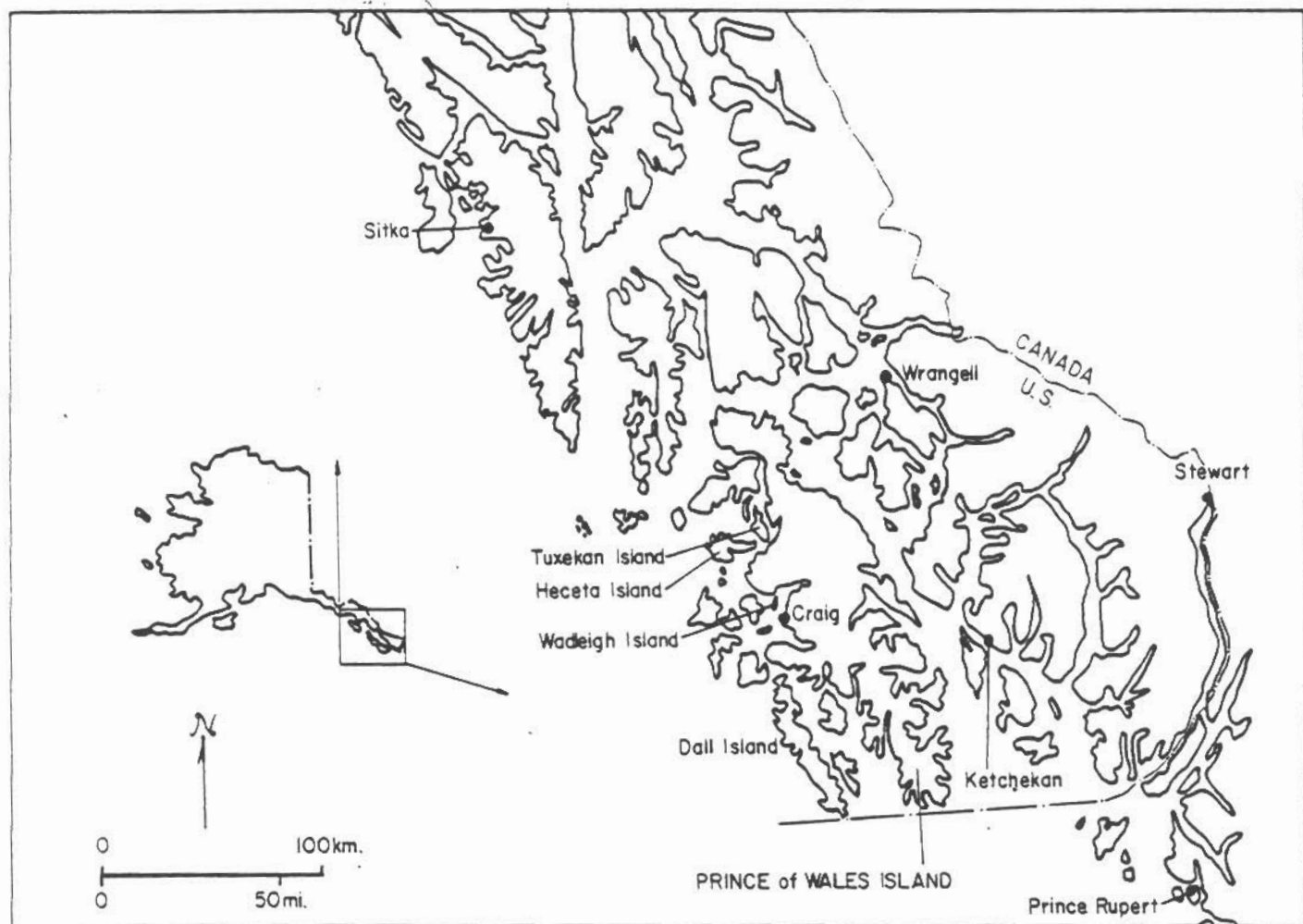
OTHER: *(actual visit)*

ANY OTHER USEFUL INFORMATION (Owner? On Federal land? Animal denning area? etc.)

The land is presently owned by the Tongass National Forest but soon may become the property of the Sealaska Corporation under terms of the Native Land Claims Settlement Act. The beach area just north of the mouth of stream was once a large village and remains can be found.

YOUR NAME: Derald V. Yancey
ADDRESS: P.O. Box 861
PHONE: Portland, Oregon 97207

DATE November 10, 1975



CAVENOTES

For anyone who plans to be in or near Fittsfield Mass. this summer note that the NSS Convention will be held there on August 5 to 12 which will give you a week to get back for our August Chitistone trip.

According to Bob Anderson in the D.C. SPELEOGRAPH, the deepest cave in the Western Hemisphere is now Cueva de Infiernillo at 879 meters based on surveys done at last summer's NSS Convention. He also claims that this system in Mexico has the potential of becoming the deepest cave in the world, or the longest cave in the world, or both.

RESCUE PHONE NUMBERS:

When caving Outside remember the National Cave Rescue Information and Dispatch Center can be reached at 800-851-3051. Call only for emergencies!

In Alaska, if you can not reach a local State Police Barracks, try the Elmendorf Rescue Coordination Center at 752-3437.

Glacier Grotto
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NEWS - DATED MATERIAL