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Rediscovery of the Reed River Hot Spring by Garnett H. Pessel, DGGs Mining Geologist

The only known hot spring in the Brooks Range was first visited by a scientific expedition in 1886. Ensign Reed of the U.S. Navy went to the spring by dog team in March of that year, and the visit was reported in *Naval Explorations in Alaska*, written by Lieutenant George M. Stoney and published by the U.S. Naval Institute in 1900. The location of the hot spring was obscure and, to the best of my knowledge, has not been mentioned in geological literature since then, except as a reference to the report by Stoney, which is quoted below.

Expedition to the Hot Springs

On March 10, 1886, Ensign Reed, with the sailmaker's mate and two natives, left Fort Cosmos with two weeks' outfit, two sleds, and nine dogs, to visit some reported hot springs. The route lay up the Putnam River (now the Kobuk River - ed.) for ninety miles, then to the An-ne-lag-ag-ge-rack River (now the Reed River - ed.), and up it to the springs in the mountains at the head of the valley. There was but one hot spring there, a pool twenty feet in circumference and two feet deep, full of water, of blood-warm temperature that wells up quietly from the bottom without bubbles or

disturbances of any kind and fills the pool with a clear, tasteless, odorless water; the overflow runs into and fills smaller pools lying lower down the mountain side. The bottoms of all the pools are covered with green moss, on which is a lime-like deposit, and the ground and rocks about the pools are similarly coated. About the edges of the main spring were thousands of small snails. The atmosphere is not affected in temperature, nor are the rocks and ground about. The natives say the temperature of the spring varies; that sometimes it is so hot they can cook meat in it. Mr. Reed was seven days reaching the spring and five days returning. During his entire journey the weather was excessively severe, and the traveling particularly difficult. The highest temperature noted was 12°F., the lowest -42°F. Gales of wind and snow-storms were continually encountered, and much of the road through snow had to be tramped out to make it passable. On March 21, the party returned to Fort Cosmos. The distance traveled was one hundred and fifty miles, which was made in fifty-seven and one-half hours (the time actually under way); the speed was 21.4 miles per day of 8.2 hours, or 2.6 miles an hour.

In 1971, a DGGs geological field party was operating in this part of the Brooks Range under the direction of the late C.E. 'Jim' Fritts, from a base camp at Walker

Lake. The field party was aware of the report about the hot spring and was on the lookout for it, but failed to locate it because the description and location given by Stoney was not entirely accurate. Stoney's map shows the spring at a latitude of $67^{\circ} 23' N.$, and notes that it is 'in the mountains at the head of the valley.' The spring is actually at a latitude of about $67^{\circ} 16' N.$ and is about 10 miles or so from the head of the valley. In 1973, another geologic field party, a joint project of the DGGs and the U.S. Geological Survey, was working in same area and 'rediscovered' the hot spring in June of that year. Credit for the find belongs to John McCamish, a helicopter pilot for Merric Inc., of Fairbanks, who noticed some anomalously green and luxuriant vegetation and brown patches of ground while flying in the Reed River valley in the course of work on the project, and pointed it out to the geologists. Investigation quickly showed that the vegetation and brown patches of ground were the result of hot-spring activity.

The hot spring is located on the east bank of the Reed River, across the valley from a major tributary. The surrounding bedrock is the granite of the Igikpak pluton, and the spring is a few miles from the contact of the pluton with the country rock. The hot spring is today very much as described in Stoney's report, except that there are at least two major spring vents and possibly a third, all within several hundred feet of each other. The spring comes out from a talus of granite boulders, and forms several pools and spring deposits. As noted by Stoney, the water is odorless and colorless. The hottest part of the spring tested had a temperature of over $120^{\circ} F.$ However, this was in amongst rocks of the granite talus, and possibly the spring water could be coming from farther up the hill and be much hotter at its origin. Besides the spring deposits, the most pronounced effect of the spring is on the vegetation in the area, which is much bigger, thicker, and greener, at least in the month of June, than anything else in the Reed River valley at this latitude. The spring is within 3 or 4 miles of the Arctic timberline in this part of the Brooks Range, and most of the nearby trees are small spruce and birch. The hot spring, however, supports a large grove of tall cottonwoods as well as large and healthy spruce. Grasses and broad-leaf plants are very thick and tall along the drainage of the spring. The snails reported by Stoney were not evident, but a multitude of tracks showed that the hot spring is popular with the local moose.

Our investigations of the spring showed that we were not the only modern visitors. A piece of plastic surveyors' tape was wrapped around a tree nearby, and certainly could be no older than a decade or so. The Eskimos in the Kobuk River valley are aware of the hot-spring location, and Tommy Douglas of Ambler Village later told me that he had visited the spring. Evidence of older activity consisted of old boards and a few pieces of rusted out iron pipe that may have been

part of an attempt to make a bathing pool, although these artifacts were so disintegrated by time as to make that pure supposition. The flow of water is certainly sufficient to allow for the use of the spring for mineral baths. The water of the spring was sampled and analyzed by the U.S. Geological Survey, and the results will be available in some future geologic report.

The hot spring is located in the proposed Gates of the Arctic National Park, and will therefore be exempt from any development in the foreseeable future. The spring is unique in that it is the only known hot spring in the Brooks Range, and it has the distinction of being the northernmost hot spring in the U.S., so it should be an important point of interest in the new park.

Juneau Gold Mines May Reopen

The famous Juneau gold belt, site of the first important lode gold discovery in Alaska, was mined continuously from 1882 until forced closure during World War II.

Presently, ownership of the former producing mines is about equally divided between the City and Borough of Juneau and the Alaska Electric Light and Power Company, a Juneau-based public utility.

In response to numerous inquiries, the two owners have decided, jointly, to solicit evidence of interest in operating the mines from responsible mining companies with financial resources adequate to fund a major development, rehabilitation, and construction program.

Agent for the joint owners is Juneau City Manager Mar B. Winegar, 155 South Seward Street, Juneau, Alaska 99801.

New

Open file report 72, "Geochronology and generalized geology of the central Alaska Range, Clearwater Mountains," is now available to the public. Coauthored by D.L. Turner and T.E. Smith, this report provides 53 K-Ar mineral ages and analytical data for intrusive rocks and metamorphites in a 5000-square-mile area of south-central Alaska. The report includes a generalized geologic map with age notations at 1:250,000 scale and 10 pages of text.

It may be purchased at Petroleum Publications, Inc., 409 West Northern Lights Blvd., Anchorage, Alaska 99503. \$3.65 without postage, \$4.06 with postage.

Offshore Oil...in Utah?

(from NEWSWEEK, Dec. 2, 1974)

The next U.S. "offshore" oil strike could be 600 miles from the nearest ocean. Utah has okayed plans for exploratory drilling in the Great Salt Lake. The rigs will be spotted at two locations in the lake and will drill to 10,000 feet below the water, searching for oil and gas some geologists have long believed to lie under the lake.