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DEPARTMENT OF THE INTERIOR

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GEOLOGICAL SURVEY

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A MOLYBDENUM PROSPECT IN THE KAIYUH HILLS, ALASKA

During September 1944 a Geological Survey party in charge of Robert M. Chapman examined briefly a molybdenum prospect near the southern end of the Kaiyuh Hills, about 70 miles south of the town of Kaltag, according to a report made to Harold L. Ickes, Secretary of the Interior, by W. E. Wrather, Director of the Geological Survey. The prospect is on a low divide near a prominent treeless hill about 14 miles east of the lower end of the island in the Yukon River that is 8 miles below Blackburn Creek.

The locality has been visited by several prospectors, and the ground is now claimed by Ernest McLeod of Galena. Samples of the molybdenum-bearing rock had been given to J. B. Mertie, Jr., of the Geological Survey, but the occurrence had not been examined by the Geological Survey.

The rocks in this area of hills seem to be of the same types as those in the northern Kaiyuh Hills. As in the area farther north, the hills are well covered with vegetation, and outcrops are scarce, even on the hilltops. Fragments of rhyolite porphyry and fine-grained greenstones are common on the steeper slopes and hilltops.

Loose pieces of molybdenum-bearing rock, presumably from a vein, were found in a saddle on the southwest side of the most prominent barren hill in the area. The bedrock source of these pieces could not be seen because of the mantle of weathered rock fragments. The probable strike of the vein, judging from the distribution of loose pieces, is approximately N. 60° E. The vein material is milky quartz and is common in the loose rock on the southeast slope of the saddle. The molybdenum occurs as tiny scattered grains and clumps of molybdenite, a molybdenum sulfide, in the quartz and silicified rhyolite wall rock. No large flakes of molybdenite were found, although some flakes as much as half an inch in diameter have been reported. The fragments are not greatly mineralized, and none were seen in which molybdenite constituted more than a very small portion of the rock. It is reported, however, that an assay sample taken from a prospect pit showed 2 percent of molybdenum. Weathering has altered some of the molybdenite to molybdite, an oxide, which occurs as a fine yellow powder on the surface and in the fractures of the mineralized fragments. The molybdenum-bearing fragments are scattered over an area about 250 feet long and several hundred feet down the slope.

Several prospect pits on or near the vein and a trench several hundred feet south of the pits were dug in 1942 by Mr. McLeod. No further work was done, and in 1944 the pits had slumped and filled. Judging from the material removed, molybdenite-bearing rock was found about 4 feet beneath the surface in some of the pits, but none could be found in the trench.

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In view of the very limited extent of the mineralized area, development work seems unwarranted at this time. Because of the relative inaccessibility of the area and the distance from market, only a large or especially rich molybdenum deposit would be worthy of development.

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