



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

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August 19, 1952

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DEPARTMENT OF MINES
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Mr. P. R. Holdsworth, Commissioner
Territorial Dept. of Mines
Box 2811
Juneau, Alaska

Dear Mr. Holdsworth

Transmitted herewith for placement on open file in your office is a copy of a by-pass open file report entitled "Quicksilver deposit near Aleknagik, Nushagak district, southwestern Alaska," by W. M. Cady.

As indicated in the enclosed press release the release date for this report has been set for August 25 and the report should not be made available to the public prior to that time.

Sincerely yours,

George M. Flint, Jr.

George M. Flint, Jr.
Geologist-in-Charge
Alaskan Geology Branch
Washington Office

Enclosure

Quicksilver deposit near
Aleknagik, Nushagak district,
southwestern Alaska

by

Wallace M. Cady

U. S. Geological Survey

This report is preliminary and has not
been edited or reviewed for conformity
with U. S. Geological Survey standards
and nomenclature.

Quicksilver deposit near Aleknagik, Nushagak district,

southwestern Alaska

by

Wallace M. Cady

U. S. Geological Survey

The deposit here described is on Marsh Mountain, three miles due east of the village of Aleknagik (Mosquito Point), near the foot of Wood River Lakes (see fig. 1). Marsh Mountain $\frac{1}{2}$ is comprised of a group of peaks

$\frac{1}{2}$ Mertie, J. B. Jr., The Nushagak district, Alaska: U. S. Geol. Survey Bull. 903, pl. 2, 1938.

arranged in a horseshoe pattern around the basin of Arcana Creek, which flows southeastward and then westward joining Wood River about six miles downstream from the lakes (see fig. 2). Wood River is a navigable stream which flows south into Nushagak Bay near the small seaport of Billingsham. The principal industry in the vicinity is fishing. Mining has been of little or no importance in the past. Cinnabar float was recognized in the Arcana Creek by Frank Mashey in 1941, and he uncovered the lode in September 1942. He and his two partners, Clarence Wren and Charles Wolfe have operated the claim since that time. The U. S. Geological Survey first investigated the geology of this part of the Nushagak district in 1935 $\frac{2}{2}$. The field investigation reported here was conducted during the first week of October 1942.

$\frac{2}{2}$ op. cit. (Bull. 903)

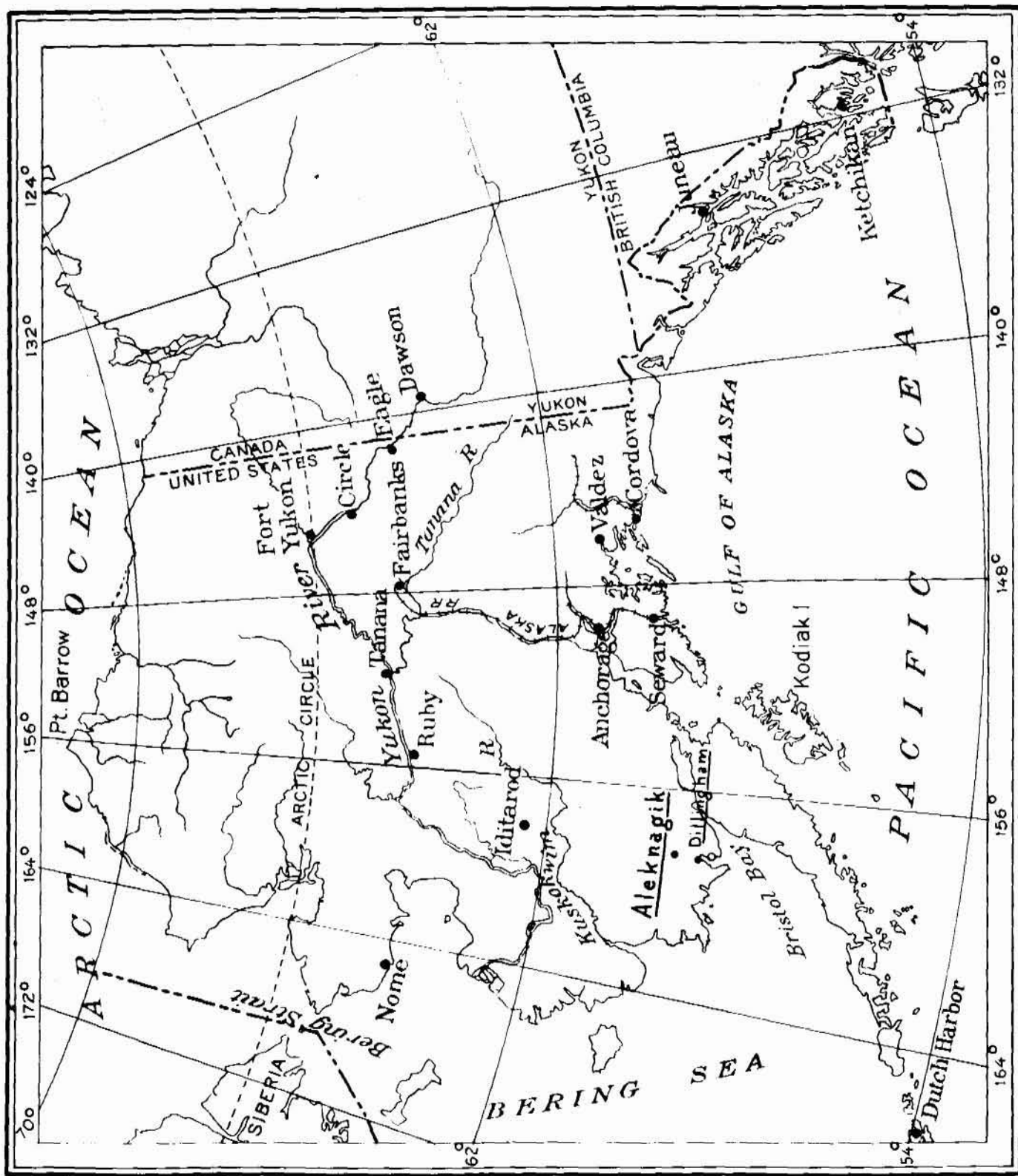


Figure 1. Index map of Alaska showing location of Aleknagik

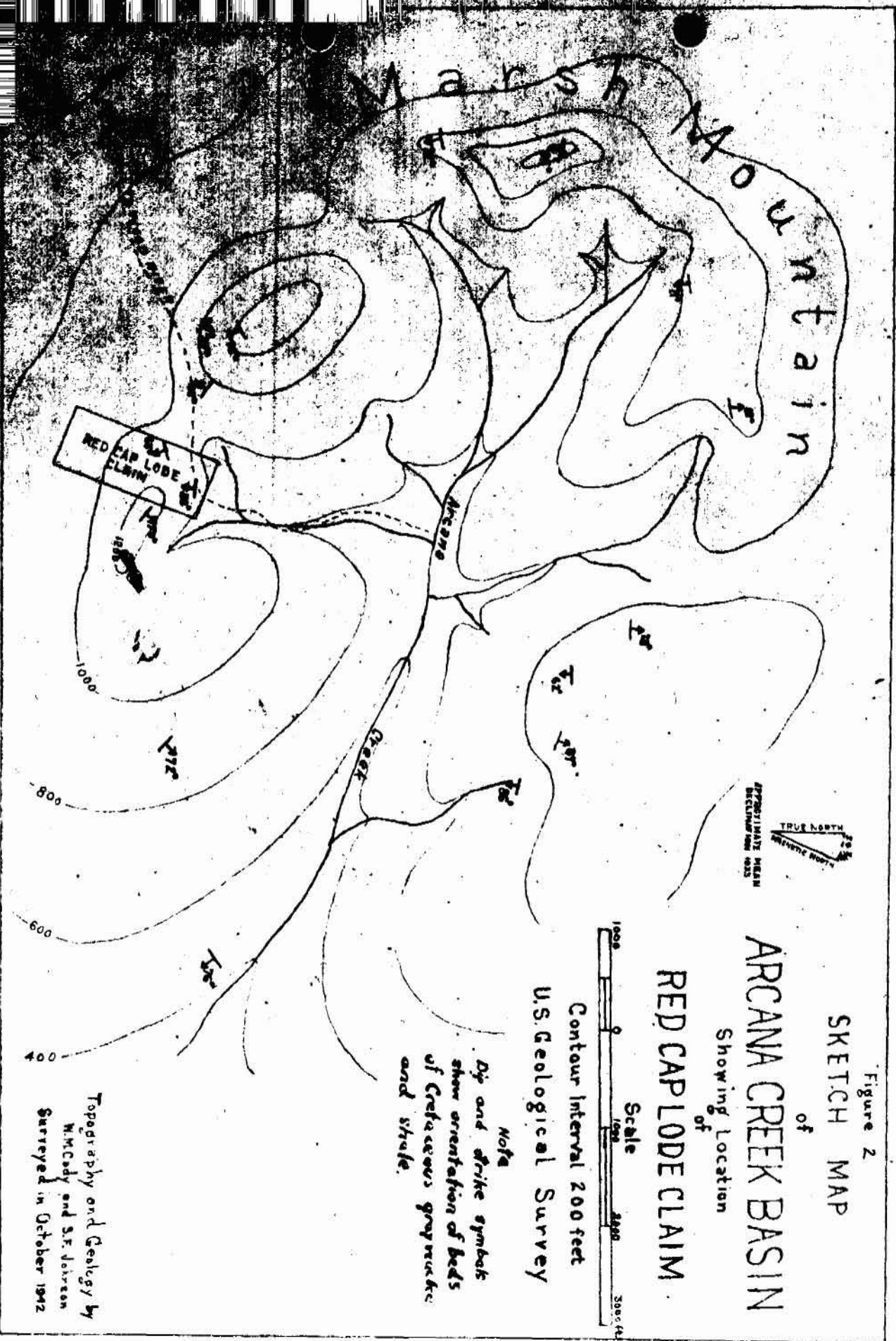


Figure 2
SKETCH MAP

of
ARCANA CREEK BASIN

Showing Location
of

RED CAP LODGE CLAIM

Scale

Contour Interval 200 feet

U.S. Geological Survey

No. 1

Dy and strike symbols
show orientation of beds
of Cretaceous granitic
and shale.

Topography and Geology by
W.M. Cady and S.F. Johnson
Surveyed in October 1912

The ledge ore is localized in joints and breccia masses which parallel the bedding of Cretaceous graywackes and shales. The cinnabar lies stratigraphically below flat nodular masses of vein calcite a few inches thick and a foot or two in diameter distributed roughly parallel to the bedding along certain horizons. The nearest known igneous rocks are granites exposed in the Making Hills about seven miles to the northeast.

The Red Cap ledge is on the hillside southwest of Arcana Creek at an elevation of about 1,000 feet above sea level, a little below the crest of the ridge between Arcana Creek and Wood River. The ledge has been exposed by hand-trenching at intervals across the strike of the bedrock. The frost-weathered overburden, about four feet thick, contains cinnabar float. This float extends down the hill about half a mile to the flood plain deposits of Arcana Creek, from which considerable cinnabar has been recovered by panning. Here the creek flows at an altitude of about 600 feet.

Very little ore in place has been proven at the Red Cap ledge. The prospectors have trepanned through a bedding vein one to four inches thick that strikes N. 81° W. parallel to the hillside and dips 35 degrees south into the hill (see fig. 3). About 20 cubic feet of ore were removed from this vein. Three pounds of the ore were treated by the author in an amalgam retort and yielded one pound of quicksilver. It is believed another pound was lost in the retorting process. Preliminary inspection indicated a grade of about 80 percent of quicksilver for the vein material. In the course of the examination by the Geological Survey another cut was made in strata about 10 feet stratigraphically below the above mentioned vein, and another vein containing ore of comparable grade was exposed. These veins are in a fractured zone about 100 feet wide which is iron stained and which contains much calcite. This zone appears to extend about a claim length south to a point

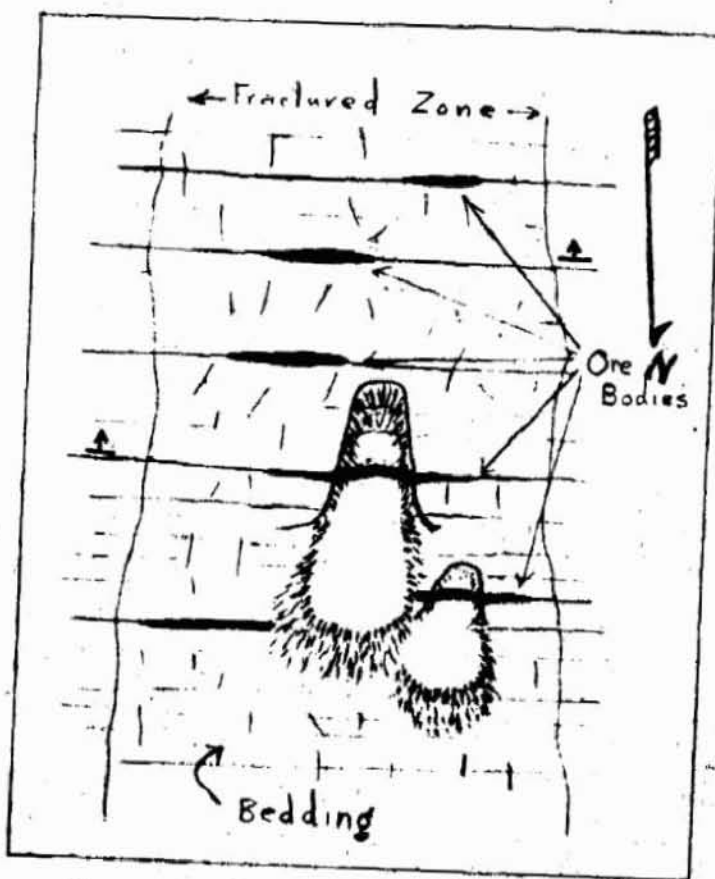


Figure 3. Diagrammatic sketch of fractured zone on Red Cap lode claim showing distribution of ore bodies in the zone and their relation to bedding.

beyond the crest of the ridge and trends roughly perpendicular to the strike of the sedimentary rocks. Most of the very abundant flint circalar comes from slopes intersecting this fractured zone.