MINERAL RESOURCES OF ALASKA

REPORT ON PROGRESS OF INVESTIGATIONS IN 1943 and 1944

PAPERS BY
JOHN C. REED AND OTHERS
CONTENTS

(The letters in parentheses preceding the titles are those used to designate the papers for advance publication)

(A) Mineral investigations of the Geological Survey in Alaska in 1943 and 1944, by John C. Reed

(B) Molybdenite investigations in southeastern Alaska, by W. S. Twenhofel, G. D. Robinson, and H. R. Gault

(C) Nickel investigations in southeastern Alaska, by George C. Kennedy and Matt S. Walton, Jr

(D) Geology and associated mineral deposits of some ultrabasic rock bodies in southeastern Alaska, by George C. Kennedy and Matt S. Walton, Jr

(E) Copper bullion claims, Rua Cove, Knight Island, Alaska, by Karl Stefansson and Robert M. Moxham

(F) Copper deposits of the Nizina district, Alaska, by Don J. Miller, with an introduction by Fred H. Moffit

(G) Copper deposits of the Kotsina-Kuskulana district, Alaska, by Ralph E. Van Alstine and Robert F. Black, with an introduction by Fred H. Moffit

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ILLUSTRATIONS

Plate 1. Geologic sketch map of head of Muir Inlet, Glacier Bay, southeastern Alaska

2. Geologic map of Nunatak area, Muir Inlet, Glacier Bay, southeastern Alaska

3. Geologic isometric block diagram of Nunatak area, Muir Inlet, Glacier Bay, southeastern Alaska

4. Geology and topography of Shakan molybdenite deposit, Kosciusko Island, southeastern Alaska

5. Map of adit, Shakan molybdenite deposit, Kosciusko Island, southeastern Alaska

6. Sample locations and analyses, Shakan molybdenite deposit, Kosciusko Island, southeastern Alaska

7. Geologic map of east-central Baker Island, southeastern Alaska

8. Geology of molybdenite deposits, Baker Island, southeastern Alaska

9. Geologic map of Yakobi Island, southeastern Alaska

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857676
Plate 10. Geologic map showing location of drill holes in and near the Tripod, Tunnel, Side Hill, and Muskeg sulfide-bearing bodies. In pocket
11. Section through certain drill holes in the Tunnel, Tripod, and Muskeg sulfide-bearing bodies. In pocket
12. Geologic sections across sulfide-bearing deposits, Yakobi Island. In pocket
13. Generalized structure-contour map of base of sulfide-bearing deposit, Bohemia Basin. In pocket
14. Map with sections showing magnetic anomalies, Muskeg deposit, Bohemia Basin. In pocket
15. Geologic map of the stock near Davison Bay, Chichagof Island. In pocket
16. Sketch map of concentrated-sulfide deposit on Fleming Island, Alaska, showing underground workings and diamond-drill holes. In pocket
17. Cross sections of concentrated-sulfide deposit on Fleming Island. In pocket
18. Map and cross section of disseminated-sulfide deposit on Chichagof Island. In pocket
19. Geologic sketch map of Lituya Bay-Mount Crillon area, southeastern Alaska. In pocket
20. Geologic reconnaissance map of central Baranof Island, southeastern Alaska. In pocket
21. Geologic map of the Blashke Islands, Kashevarof Passage, southeastern Alaska. In pocket
22. Geologic map of Mount Burnett and vicinity, Cleveland Peninsula, southeastern Alaska. In pocket
23. Geologic map of the Copper Bullion claims, Rua Cove, Knight Island. In pocket
24. Topographic map of Rua Cove and vicinity, Knight Island. In pocket
25. Diagram of mining claims, Rua Cove, Knight Island. In pocket
26. Sketch map showing location of copper deposits of the Nizina district. In pocket
27. Sketch map of the Green Butte and Tjosevig patented claims. In pocket
28. Generalized map of underground workings of the Green Butte mine. In pocket
29. Sketch map showing geology of underground workings at the Westover prospect and geology of the adjacent area. In pocket
30. Index map of copper prospects, Kotsina-Kuskulana district. In pocket
31. No. 1 adit, Clear Creek. In pocket
32. Lens of chalcocite, granular quartz, and bornite, Big Horn prospect. In pocket

Figure 1. Index map of southeastern Alaska showing the location of molybdenite deposits investigated in 1942 and 1943. 9
2. Geologic reconnaissance map of vicinity of Shakan molybdenite deposit, Koseiuko Island, southeastern Alaska. 19
FIGURE 3. Diagram showing probable sequence of mineralization, Shakamolybdenite deposit, Kosciusko Island, southeastern Alaska. 24

4. Index map of southeastern Alaska showing location of Yakobi Island and nickel-copper deposits on Chichagof and Baranof Islands. 41

5. Generalized geologic map of a part of western Chichagof Island, Alaska. 58

6. Geologic map of the south shore of a protected cove near the head of Davison Bay, Chichagof Island. 60

7. Sketch map and cross section through drill hole in concentrated-sulfide deposit, Davison Bay, Chichagof Island. 61

8. Index map showing location of Lituya Bay, Red Bluff Bay, Blashke Islands, Kane Peak, and Mount Burnett, southeastern Alaska. 67

9. Map showing isomagnetic lines near chromite deposit No. 2, Red Bluff Bay. 74

10. Geologic map of Kane Peak and vicinity, Kupreanof Island, southeastern Alaska. 79

11. Sketch map of Alaska showing location of Rua Cove, Knight Island. 86

12. Index map of part of Alaska showing the location of the Nizina district. 96

13. Sketch map of the Regal mine, showing accessible underground workings (1943) and geology of the adjacent area. 102

14. Sketch map of the Nikolai patented claims. 105

15. Map of underground workings of the Nikolai mine, showing geology of the adjacent area. 107

16. Geologic sketch map of the vicinity of the Nelson and Radovan copper prospects. 112

17. Map of underground workings at the Nelson prospect, showing geology of the adjacent area. 113

18. Map of patented claims at the Erickson prospect. 116

19. Sketch map of tunnel No. 2, Erickson prospect. 117

20. Sketch map of Alaska, showing the location of the Kotsina-Kuskulana district. 124

21. Mullen prospect, Copper Creek. 127

22. No. 2 adit, Clear Creek. 135
MINERAL INVESTIGATIONS OF THE GEOLOGICAL SURVEY IN ALASKA IN 1943 AND 1944

BY

JOHN C. REED

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(Pages 1-6)

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## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Field work of 1943</td>
<td>2</td>
</tr>
<tr>
<td>Field work of 1944</td>
<td>3</td>
</tr>
<tr>
<td>Aeronautical maps and charts</td>
<td>4</td>
</tr>
<tr>
<td>Reports issued</td>
<td>5</td>
</tr>
</tbody>
</table>
MINERAL RESOURCES OF ALASKA, 1943 and 1944

MINERAL INVESTIGATIONS OF THE GEOLOGICAL SURVEY IN ALASKA IN 1943 AND 1944

By JOHN C. REED

INTRODUCTION

For each of the 37 years 1904 to 1940 the Geological Survey issued a report regarding the yearly production of minerals from Alaskan mines and prospects. Reports for 1941 and 1942 were withheld for a time because it was felt that the information might be of value to our enemies; but as the activity of war moved away from the coast of Alaska the need for restriction lessened, and a report covering the mineral industry for 1941 and 1942 was issued in 1944 (Bulletin 943-A). Late in 1944 the responsibility of recording Alaskan mineral production was transferred from the Geological Survey to the Bureau of Mines.

This report is directed primarily toward recording the field and office activities of the Geological Survey in Alaska during 1943 and 1944. As a result of its war programs, the technical personnel of the Alaskan Branch has been substantially increased and the branch's work has been very greatly modified to meet the changing war demands.

The primary objective of the Geological Survey in Alaska has always been to aid in the development of the resources of the Territory. This has involved field investigations, in the course of which all the known productive camps have been examined and an area of about 300,000 square miles, or approximately half of Alaska, has been mapped topographically and geologically on reconnaissance standards. Small areas where the need for more comprehensive information was most acute have been mapped in greater detail. The results of this work have customarily been made available to the public in the form of printed maps and reports. During the war years the information gathered by the Geological Survey in Alaska was made immediately
available, both to the war agencies of the Government and to au-
thorized individuals who had specific need of it, by means of mimeo-
graphed preliminary reports, pending the availability of permanent
printed reports.

War demands resulted in a shift of emphasis of the Geological
Survey's work in Alaska from a combination of economic and scien-
tific projects to projects that would make the maximum contribution to
the Nation's war plans. Consequently many of the more general
and broader studies that would require years for their completion
were temporarily laid aside so that those promising more immediate
results could be stressed. As a result, the tempo of the work was in-
creased and the conclusions reached were more definitely quantitative
than heretofore.

FIELD WORK OF 1943

During the 1943 field season 5 general projects and 17 projects in-
volving specific mineral localities or materials were in progress. The
five supervisory projects were designed to keep track of all the Survey's
work in each of five large regions of Alaska, as well as to learn about
the mining activities in progress in each region. In addition the
supervisors devoted varying amounts of time to brief examinations of
deposits of many different types of minerals, with the primary objec-
tive of appraising the general significance of each deposit as a basis
for further and more comprehensive studies where additional work
seemed desirable.

In southeastern Alaska five local projects were carried out. One
field party spent the summer studying the iron-copper deposits near
the western end of Kasaan Peninsula, Prince of Wales Island. Sev-
eral of the larger and more promising areas were mapped in detail,
and a careful reconnaissance was made over much of the intervening
area. At Baker Island and near Shakan on Kosciusko Island mo-
lybdnite deposits were mapped in detail. Zinc deposits at Moth
Bay, Revillagigedo Island, and at the Lake claims on the mainland
east of Wrangell, were studied. Detailed mapping of zinc and zinc-
lead deposits in Groundhog Basin in the Wrangell district, begun
in 1942, was extended to cover the area southward for several miles
into the Glacier Basin, where other detailed studies were made. The
more promising areas of basic and ultrabasic rocks were examined to
determine the presence or absence of significant quantities of war
minerals, such as nickel, chromium, and copper. In connection with
these examinations magnetic investigations were made in an attempt
to determine the presence, structure, and relationships of deposits
of valuable minerals in these rock bodies. Detailed investigations
begun in December 1942 at the Salt Chuck copper-palladium mine
were continued into the spring of 1943. The supervisor visited other areas containing deposits that may warrant further detailed investigation.

Work in the Copper River-Prince William Sound region was primarily the investigation of known copper deposits. An area atRua Cove, on Knight Island in the Latouche district, was studied in detail, and many of the mines of the Kuskulana and Nizina districts were examined. Brief studies were made of many of the prospects and workings in areas adjacent to Prince William Sound.

Along the Alaska Railroad Belt parties were engaged in the mapping of coal deposits in the Matanuska district at Moose Creek. Zinc deposits at Mount Eielson in the Kantishna district and chrome deposits at Red Mountain on the Kenai Peninsula were mapped in detail. The supervisor made brief examinations of other mineral deposits, including the coal deposits at Herendeen Bay.

In the Fairbanks district a geologist was assigned to tungsten investigations in connection with a project being carried on there by the Bureau of Mines. Detailed studies of quicksilver deposits and further reconnaissance geologic mapping continued to be the principal activities in the Kuskokwim region, with one party assigned to the DeCourcy Mountain deposits and another engaged in reconnaissance geologic mapping in the search for other areas of quicksilver mineralization. Brief investigations of several other quicksilver areas were made. Tin investigations were carried out at Tozimoran and Morelock Creeks, and the Lost River lode deposit on Seward Peninsula was mapped in detail. Brief examinations were made of quicksilver, tungsten, and graphite deposits on Seward Peninsula, and of an asbestos prospect in the Kobuk district.

FIELD WORK OF 1944

In accordance with the general policy of keeping the activities as flexible as possible to meet constantly changing war needs and to investigate areas or deposits that seemed most likely to become possible producers, the work in the field season of 1944 was modified considerably from that in 1943. Much of the work was directed in the field by four regional supervisors.

In southeastern Alaska comprehensive and detailed examinations were made of iron and copper deposits in Jumbo Basin, and of iron-copper deposits at Tolstoi Mountain on Prince of Wales Island. At Tracy Arm, on the mainland between Juneau and Petersburg, zinc-copper deposits were systematically examined. A Geological Survey representative was assigned to study further the iron-copper deposits at Mount Andrew on Prince of Wales Island in connection with a trenching and drilling program being carried on there by the Bureau
of Mines. The regional supervisor made brief examinations of nine copper deposits, two barite deposits, and one deposit each of asbestos, lead, lead-zinc, magnetite, and tungsten.

In the Copper River region detailed work was completed at Orange Hill near the head of the Nabesna River on deposits that contain copper, molybdenum, gold, and silver. Brief examinations were made of the geology of the Alaskan portion of the Alaska military highway and of the Bering River coal field near Katalla.

In the Alaska Railroad Belt detailed examinations of coal deposits were carried out in the Matanuska and Nenana districts, and a brief investigation was made of lignite deposits near Broad Pass. In addition, the Railroad Belt supervisor made brief examinations of limestone, of a tungsten deposit, and of an asbestos deposit in his region; and of a zinc deposit on Sedanka Island southeast of Dutch Harbor. He also revisited chromite deposits at Red Mountain on the Kenai Peninsula.

In the Kuskokwim region reconnaissance geologic mapping was continued in areas not previously studied geologically by members of the Geological Survey, in the search for deposits of war minerals, especially quicksilver.

Along the lower Yukon River and at two places in the Unalakleet area coal was investigated at seven localities. The same party made a brief examination of a molybdenite prospect in the Kaiyuh Hills. A geologist was attached to a drilling and trenching project of the Bureau of Mines at the Lost River and Cape Mountain tin deposits on Seward Peninsula, and he continued his detailed investigations after the departure of the personnel of the Bureau of Mines from the area.

Five field parties were organized under a supervisory officer to examine several of the Alaskan areas in which petroleum might be found. Most of the effort was directed to detailed field work at Yakataga and Katalla in the Alaska Gulf region, on the Iniskin Peninsula in the Cook Inlet region, at Wide Bay on the Alaska Peninsula, and along the Colville River in northern Alaska.

**AERONAUTICAL MAPS AND CHARTS**

A major activity of the Alaskan Branch during the years 1943 and 1944 has continued to be the compilation of aeronautical pilotage maps and charts from photographs furnished by the Army Air Forces. This work was entirely financed by funds made available by the Army Air Forces and was done in close cooperation with and under the general direction of the Aeronautical Chart Service of the Army Air Forces. The work of the unit was originally restricted to Alaska, and by 1944 most of the previously unmapped portions of
that Territory had been covered by small-scale aeronautical pilotage charts. The success of the processes was so manifest and the need so great that at the close of 1944 the Alaskan Branch's work of this type was predominantly the preparation of maps of other widely distributed areas throughout the world.

Between the beginning of this project and the close of 1944, planimetric mapping of more than 6,600,000 square miles of country and topographic mapping of more than 800,000 square miles had been completed. Existing topographic data on about 3,000,000 square miles of the earth's surface were coordinated with the new aerial photography and adjusted to the planimetric maps produced from this aerial photography. By December 31, 1944, about 150 multicolor aeronautical charts had been produced, showing the usual map data in addition to layer tints and aids to aeronautical pilotage. At the close of the year a force of about 200 was employed on the project.

REPORTS ISSUED

In the years 1943 and 1944 the following geologic bulletins were published:

Bulletin 933-B, Geology of the Nutzotin Mountains, Alaska, by F. H. Moffit,
with a section on the igneous rocks by R. G. Wayland; Gold deposits near Nabesna
by R. G. Wayland.
Bulletin 933-C, Relations of structure to mineral deposition at the Independence
Bulletin 933-D, Reconnaissance of Porcupine Valley, Alaska, by Gerald
FitzGerald.
Bulletin 943-B, Mining in the northern Copper River region, Alaska, by F. H.
Moffit.

The following preliminary reports were issued in mimeographed
form during this period, some covering field work done wholly or
partly within 1943 and 1944, others covering work done in preceding
years, the office compilation of which was completed in this period.
Each of these reports was announced by a press release.

Caamaño Point antimony deposit, Cleveland Peninsula, southeastern Alaska,
by G. D. Robinson.
Asbestos deposits of the Dahl Creek area, Kobuk River district, Alaska, by
R. R. Coats.
Chromite occurrences and a nickel prospect on Baranof Island, southeastern
Alaska, by M. S. Walton, Jr., and G. C. Kennedy.
Part of the Herendeen Bay coal field, Alaska, by G. O. Gates.
Coal deposits of the Costello Creek basin, Alaska, by Clyde Wahrhaftig.
Copper-bearing iron deposits of the Mount Andrew-Mamie area, Kasaan
Peninsula, Prince of Wales Island, southeastern Alaska, by E. N. Goddard,
L. A. Warner, and M. S. Walton, Jr.
Fluorite reserves at the Lost River tin mine, Seward Peninsula, Alaska, by R. R. Coats and P. L. Killeen.

Graphite deposits on the north side of the Kigluaik Mountains, Seward Peninsula, Alaska, by R. R. Coats.

The Iron King No. 1 copper prospect, Kasaan Peninsula, Prince of Wales Island, southeastern Alaska, by L. A. Warner and M. S. Walton, Jr.


The Poor Man iron deposit, Kasaan Peninsula, Prince of Wales Island, southeastern Alaska, by L. A. Warner and M. S. Walton, Jr.


Lead-zinc deposits at the Lake claims, Wrangell district, southeastern Alaska, by H. R. Gault and G. M. Flint, Jr.

The Shakan molybdenite deposit, Kosciusko Island, southeastern Alaska, by G. D. Robinson.

The nickel-copper deposits on the west coast of Chicagof Island, southeastern Alaska, by G. C. Kennedy.


The ultrabasic rocks of the Blashke Islands, Kane Peak, and Mount Burnett, southeastern Alaska, by G. C. Kennedy and M. S. Walton, Jr.

Quicksilver deposits in the Cinnabar Creek area, Georgetown and Akiak districts, southwestern Alaska, by W. M. Cady.

Occurrences of scheelite in the Solomon district, Seward Peninsula, Alaska, by R. R. Coats.


The zinc-copper deposits near Moth Bay, Revillagigedo Island, southeastern Alaska, by G. D. Robinson.

Zinc deposits of Mount Eielson district, Alaska, by Clyde Wahrhaftig.

The zinc deposits of the Lucky Boy Claims, Dora Lake, Prince of Wales Island, southeastern Alaska, by W. S. Twenhofel.

Press releases embodying technical information and designed to take the place of preliminary reports pending the publication of the material in printed form were issued on the following subjects:

- Zinc-copper deposit at Tracy Arm, Juneau district, southeastern Alaska.
- Magnetite deposits at Jumbo Basin, Prince of Wales Island, southeastern Alaska.

Press releases covering maps produced as a result of the following field investigations were issued:

- Mineral deposits at Orange Hill, Alaska.
- Baker Island molybdenite deposits, southeastern Alaska.
- Quicksilver-antimony deposits in the Sleitmut area, Georgetown district, southwestern Alaska.
- Tungsten deposits of the Hyder district, Alaska.