UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

SUMMARY OF REFERENCES TO MINERAL OCCURRENCES (OTHER THAN MINERAL FUELS AND CONSTRUCTION MATERIALS) IN THE MT. FAIRWEATHER AND SKAGWAY QUADRANGLES, ALASKA

By

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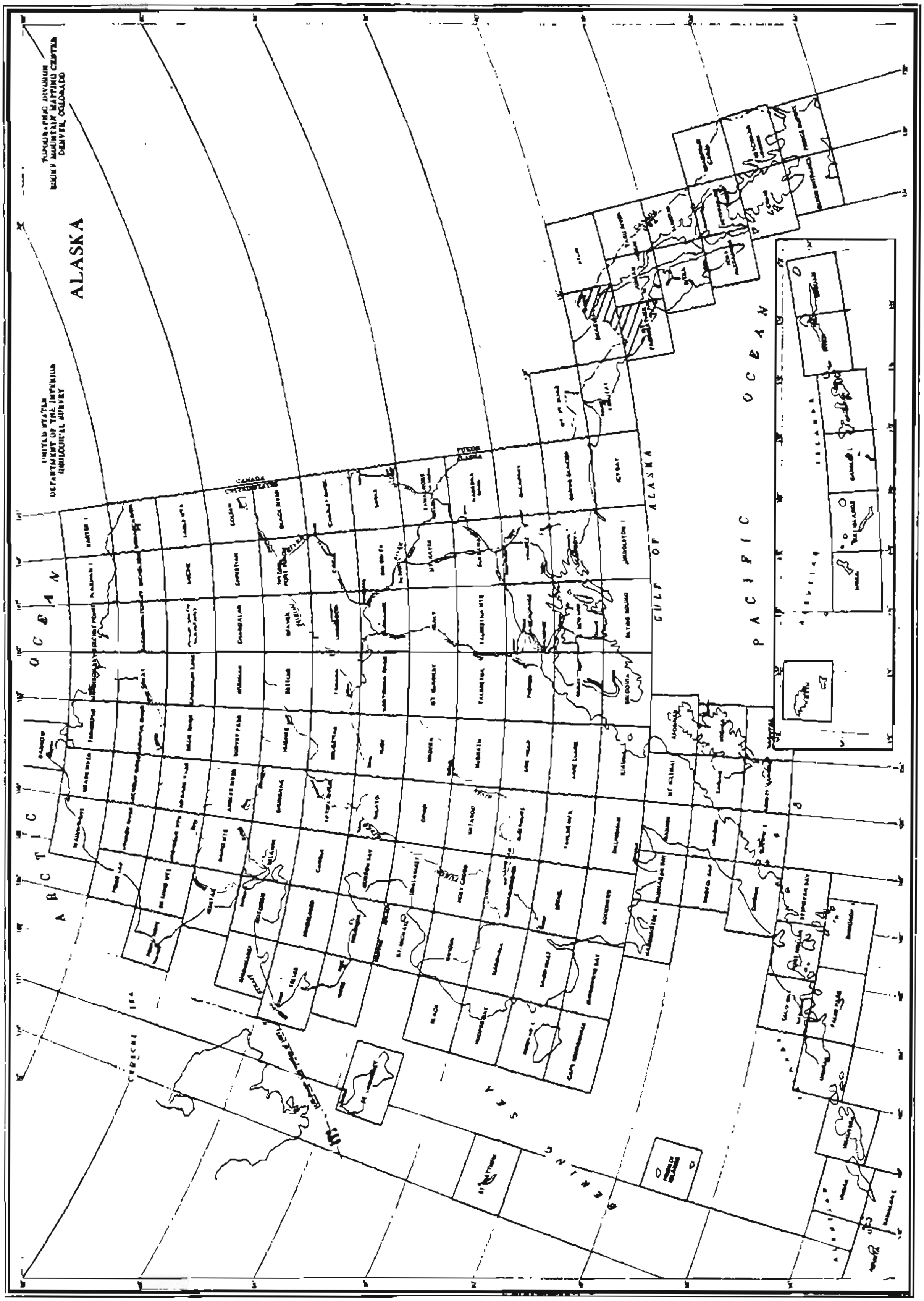
Introduction

These summaries of references are designed to aid in library research on metallic and nonmetallic (other than mineral fuels and construction materials) mineral occurrences in the Mt. Fairweather and Skagway quadrangles, Alaska. All references to reports of the Geological Survey, to most reports of the U.S. Bureau of Mines, and to most reports of the State of Alaska Division of Geological and Geophysical Surveys and its predecessor State and Territorial agencies released before November 1, 1977, are summarized. Certain, mainly statistical, reports such as the annual Minerals Yearbook of the U.S. Bureau of Mines and the biennial and annual reports of the State of Alaska Division of Geological and Geophysical Surveys and its predecessor State and Territorial agencies are not included. One report published in a scientific journal is included.

This report is divided into three parts: a section made up of summaries of references arranged alphabetically first by quadrangle and second by occurrence name; a section that lists synonyms for names in the first section, claim names, and the names of operators and owners of mines and prospects; and a section that lists, by author, all references summarized in the first section.



ALASKA
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
TOPOGRAPHIC DIVISION
ROCKY MOUNTAIN MAPPING CENTER
DENVER, COLORADO
A R C T I C O C E A N
P A C I F I C O C E A N
GULF OF ALASKA

Index map

Summaries of References

For each mineral occurrence there is a page that gives the name of the occurrence; the mineral commodities present (listed alphabetically for metallic commodities and then for nonmetallic commodities) [FM is used for uranium and(or) thorium determined chemically or present as a constituent of an identified mineral other than monazite; RE is used if a mineral (other than monazite) containing any rare-earth element was identified]; the mining district (Ransome and Kerns, 1954) in which the occurrence is located; the name of the 1:250,000-scale topographic quadrangle; coordinates (as described by Cobb and Kachadoorian, 1961, p. 3-4); the metallic mineral resources map number (Cobb, 1972, in the reference list for each quadrangle) and the occurrence number on that map if the occurrence is shown; and the latitude and longitude of the occurrence. These data, presented at the top of the page, are followed by a short, general summary of the published information on the occurrence. This is followed (continued on additional pages, if necessary) by more detailed summaries, arranged chronologically, of all references to the occurrence. Material in brackets is interpretive or explanatory and is not in the summarized reference.

Proper names of mines, prospects, and other mineral occurrences are given if such names appear in the reports summarized. If a deposit does not have such a name, but is near a named geographic feature, the name of that feature is shown in parentheses in lieu of a proper name. If a deposit has no proper name and is not near a named geographic feature, it is titled "Unnamed occurrence" and appears at the end of the list. If a part of a proper name is not always used in a reference, that part of the name is shown in parentheses. This is most common in company names and in place names with minor variations in spelling.

Citations are given in standard bibliographic format with the exception that references to reports and maps in numbered publication series also show, in parentheses, an abbreviation for the report or map series and the report or map number. Abbreviations used are:

AOF	Alaska Division of Geological and Geophysical Surveys Open-file Report
B	U.S. Geological Survey Bulletin
C	U.S. Geological Survey Circular
GC	Alaska Division of Geological and Geophysical Surveys (and predecessor State agencies) Geochemical Report
IC	U.S. Bureau of Mines Information Circular
OF	U.S. Geological Survey Open-file Report (numbers are informal and used only within the Alaskan Geology Branch of the U.S. Geological Survey)
MF	U.S. Geological Survey Miscellaneous Field Studies Map
P	U.S. Geological Survey Professional Paper
RI	U.S. Bureau of Mines Report of Investigations

Summaries are as I made them while reading the cited reports. I made no attempt to use complete sentences and did not edit for grammatical consistency, although I have tried to edit out ambiguities.

References cited only in these introductory paragraphs are:

Cobb, E. H., and Kachadoorian, Reuben, 1961, Index of metallic and nonmetallic mineral deposits of Alaska compiled from published reports of Federal and State agencies through 1959: U.S. Geol. Survey Bull. 1139, 363 p.

Ransome, A. L., and Kerns, W. H., 1954, Names and definitions of regions, districts, and subdistricts in Alaska (used by the Bureau of Mines in statistical and economic studies covering the mineral industry of the Territory): U.S. Bur. Mines Inf. Circ. 7679, 91 p.

(Abyss Lake)

Copper, Iron

Juneau district
MF-436, loc. 53

Mt. Fairweather (17.3, 7.9)
58°26'N, 136°37'W

Summary: Magnetite-garnet lenses (as large as 30 ft. long and 10 ft. thick) with minor chalcopyrite and pyrite between marble and granite. Bodies too small to exploit.

MacKevett and others, 1971 (P 632), p. 72 -- Steep lenses of magnetite-rich skarn at altitude of about 1,350 ft. Lenses are as large as 30 ft. long and 10 ft. thick. They comprise abundant magnetite and garnet, quartz and calc-silicate minerals and minor chalcopyrite and pyrite; bordered by marble and small masses of leucocratic granite. Bodies exposed are too small to be exploitable.

(Adams Inlet) Molybdenum

Juneau district
MF-436, loc. 45

Mt. Fairweather (22.25, 15.4)
58°51'N, 136°03'W

Summary: Molybdenite reported to occur on fracture surfaces in metamorphic rocks; granitic rocks nearby; deposit probably contact metamorphic in origin.

Buddington and Chapin, 1929 (B 800), p. 330 -- Molybdenite on fracture surfaces in metamorphic rock on north side of entrance to Adams Inlet.

Smith, 1942 (B 926-C), p. 178 -- Reference to above. Probably contact metamorphic deposit; granitic rocks nearby.

Kaufman, 1958 (IC 7844), p. 12 -- Molybdenum prospects have been found in several places, including Adams Inlet.

Berg and Cobb, 1967 (B 1246), p. 163 -- Deposit similar to that at Nunatak in Muir Inlet.

MacKevett and others, 1971 (P 632), p. 78 -- Reference to Buddington and Chapin, 1929 (B 800), p. 330. May be the same locality where MacKevett and others found copper-bearing amygdaloid containing trace amounts of Mo [Juneau quad.]; no Cu or Mo minerals identified.

Alaska Chief — Cobalt, Copper, Gold, Silver, Zinc

Juneau district — Mt. Fairweather (21.85, 8.2)
MF-436, loc. 59 — 58°27'N, 136°07'W

Summary: Massive sulfides (chalcopyrite, pyrite, pyrrhotite, and probably sphalerite) replaced tactite, hornfels, and marble in contact zone of a granitic mass; some surface oxidation; gangue mainly calcite with smaller amounts of quartz. Prospect consists of a stripped area about 150 ft. by 55 ft. and a 40-ft. adit; work probably done in early 1900's. Chip samples of stripped area contained as much as 15,000 ppm Cu, 700 ppm Zn, 300 ppm Co, 8 ppm Au (0.232 oz. per ton), and 150 ppm Ag (4.377 oz. per ton). Calculations based on incomplete data indicate about 28,125 tons of material similar in grade to that exposed in stripped area per 50 ft. of depth. Lateral extent of deposit and grade at depth not known.

Reed, 1938, p. 72-73 -- Country rock is marble, quartz monzonite, and a contact rock consisting mainly of zoisite and epidote; a few thin quartz and calcite veinlets. Sulfides have replaced contact rocks. In stripped area (200 ft. by 75 ft.) sulfides are partly oxidized. 40-ft. tunnel encountered unoxidized sulfides (pyrite, chalcopyrite, and pyrrhotite.

Rossman, 1963 (B 1121-K), p. K49 -- Replacement of contact rock between dioritic rock and calcareous sedimentary rock by sulfides.

Berg and Cobb, 1967 (B 1246), p. 162 -- Old copper prospect that was the site of some underground exploration in early 1900's. On contact between diorite and calcareous metasedimentary rocks. Pyrite, pyrrhotite, and chalcopyrite in marble and contact rock (tactite?).

MacKevett and others, 1971 (P 632), p. 3 -- Patented claims on massive sulfide deposit in tactite, hornfels, and marble near a granitic mass. Workings consist of a cleaned and scraped area about 150 ft. by 55 ft. and a 40-ft. adit. Deposit consists of pyrite, pyrrhotite, chalcopyrite, bornite, and sphalerite, and their oxidation products. Chip samples contained about 1% Cu, as much as 4.377 oz. Ag per ton, and lesser amounts of gold and zinc. Lateral extent of deposit not known; surrounding steep hillsides vegetation covered.

p. 5 -- Indications of genetic relationship to granitic mass are strong.

p. 45-48 -- Most of data summarized on p. 3 [above]. Deposit formed by sulfide replacement of metamorphic rocks; surface exposures locally consist of a gossan. [In this description sphalerite(?) is reported; on p. 3 sphalerite is listed without query.] Gangue predominantly calcite; minor quartz. Chip samples from cleared area contained as much as 15,000 ppm Cu; 700 ppm Zn; 0.232 oz. Au per ton (8 ppm); 4.377 oz. Ag per ton (150 ppm); and minor to trace amounts of Ni, Mo, Bi, and Co. Grab sample from ore pile contained more than 10% Cu; 1,000 ppm Zn; 2.917 oz. Ag per ton (100 ppm); and minor anomalous concentrations of Co, Mo, Ni, and Bi. Assuming that deposit extends to 50 ft. below surface at same grade as surface (possibly not warranted because some of surface material is gossan) indicated reserve is 28,125 tons.

Alaska Chief -- Continued

p. 69 -- From entire Glacier Bay area sample richest in silver (4.377 oz. per ton) was from Alaska Chief.

p. 73 -- Minor amounts of Co in samples (300 ppm by spectrographic analysis). Oxidized zone is manganese stained.

McGee, 1974 (AOF-47), p. 1 -- Has potential as large, low-grade copper deposit.

p. 8 -- Reserve estimates based on incomplete data approach 56,000 tons of 1% Cu material; material of unknown tonnage and grade extends beyond lateral and depth limits on which reserves were calculated.

Alaska Independence Mining Co. — Gold(?)

Juneau district — Mt. Fairweather
N 1/2 SE 1/4 quad.

Summary: Prospecting, 1932-33. No other data available. Probably was a gold prospect.

Smith, 1934 (B 857-A), p. 15 -- On Dundas Bay. A small crew did some work in 1933.

Smith, 1934 (B 864-A), p. 15 -- Shipped in considerable mining equipment and employed a crew of about 7 prospecting, 1933.

(Astrolabe Peninsula)

Iron, Titanium

Yakutat district
MF-436, loc. 9

Mt. Fairweather (14.75, 6.55)
58°22'N, 136°54'W

Summary: Layered gabbro stock makes up mountain on peninsula. Float samples from a zone about 900 ft. thick that appears to extend through the mountain contained 8%-22% magnetite and 2% ilmenite.

Rossman, 1963 (B 1121-F), p. F44-F45 -- Ilmenite and magnetite in layered gabbro stock; seem to be concentrated near top of mountain, which probably is recrystallized older rock. Extensive zone about 900 ft. thick that appears to extend through mountain. Float samples from talus contained 8%-22% magnetite and 2% ilmenite; magnetite from 2 samples contained 10.69% and 8.85% TiO_2 by weight.

Berg and Cobb, 1967 (B 1246), p. 194 -- Some layers in a stratiform gabbro stock contain as much as 20% titaniferous magnetite; between 1,100 and 2,000 ft. altitude and seem to extend through mountain that makes up the peninsula.

MacKevett and others, 1971 (P 632), p. 72 -- Data from Rossman, 1963 (B 1121-F), p. F44-F45.

(Blue Mouse Cove)

Gold, Silver, Zinc

Juneau district
MF-436, loc. 37

Mt. Fairweather (18.2, 14.2)
58°48'N, 136°30'W

Summary: Quartz vein in shear zone in granitic rocks contains tetrahedrite, pyrite, and gold. Sample, possibly not from same spot, contained an unidentified zinc mineral and a trace of silver.

Rossman, 1963 (B 1121-K), p. K50 -- Quartz vein more than a foot thick; contains tetrahedrite, pyrite, and gold; also reported to contain some silver.

MacKevett and others, 1971 (P 632), p. 50 -- Country rock is a complex assemblage of quartz diorite and younger granodiorite cut by aplite and andesite dikes. Shear zone contains abundant quartz and dolomite, muscovite, secondary iron minerals, and an unidentified zinc mineral; sample contained 700 ppm Zn and a trace of Ag.

(Brady Glacier) — Cobalt, Copper, Nickel, Platinum

Juneau district — Mt. Fairweather (14.4, 9.85)(in part)
MF-436, loc. 8 (in part) — 58°33'N, 136°56'W (in part)

Summary: Deposit near east edge and probably fairly near base of a large mafic and ultramafic layered pluton that elsewhere is exposed over a vertical range of about 32,000 ft. Deposit exposed in small nunataks and partially explored (largely by drilling through the ice) by 46 diamond-drill holes. Ore minerals (listed in order of abundance) are pyrrhotite, pentlandite, and chalcopyrite, which occur as small massive sulfide bodies and scattered through all rock types except a few aplite dikes. In the nunataks the average grades are probably less than 0.5% each of nickel and copper; sulfide masses run 2%-3% nickel, 1%-1.21% copper, and 0.25% cobalt. Identified resource as of 1973 was listed as 20,000,000 tons containing 0.25% nickel. Analyses of 17 samples for platinum-group metals showed average contents of 1.29 ppm for massive sulfides, 0.18 ppm for gabbroic rocks with disseminated sulfides, and 0.23 ppm for ultramafic rocks with disseminated sulfides. Radar measurements of ice thicknesses suggest that deposit may have been removed a short distance north of nunataks.

Noel, 1967, p. 65 -- Pyrrhotite, pyrite, pentlandite, and chalcopyrite as masses, veinlets, and disseminations in layered gabbro intrusive.

Berg and Cobb, 1967 (B 1246), p. 162 -- Masses, veinlets, and disseminated particles of pyrrhotite, pyrite, pentlandite, and chalcopyrite in a layered gabbro pluton exposed in 2 nunataks. Analyses show that sulfide masses contain as much as 3% Ni, 2% Cu, and 0.25% Co.

Cornwall, 1968 (B 1223), p. 37 -- Gabbro and peridotite crop out in nunataks. Sulfides include pyrrhotite, pentlandite, and chalcopyrite. Samples from nunataks contained more than 1% Ni and about 0.5% Cu. Diamond drilling before 1962 "did not disclose mineralized bodies of sufficient size and grade to be of commercial interest."

Plafker and MacKevett, 1970 (P 700-B), p. B25-B26 -- Reference to Cornwall, 1967 [preliminary version of P 632].

Cornwall, 1971 (P 632), p. 79-82 -- Deposits discovered in 1958 in 3 nunataks; diamond-drilling programs (46 holes) and surface sampling, 1958-61, much through ice near nunataks. Host rock is gabbro and peridotite of Crillon-La Perouse layered intrusive; intruded by dikes and irregular bodies of gabbro, diorite, aplite, and possibly peridotite; shear zone in one nunatak, with small parallel faults and intersecting faults; near base of layered intrusive which [elsewhere] has an exposed thickness of about 32,000 ft. Ore minerals (pyrrhotite, pentlandite, and chalcopyrite, listed in order of abundance), scattered through all rock types except aplite; some massive sulfide bodies as much as 35 ft. long and 5 ft. in diameter. Near surface pentlandite has been partly altered by weathering to violarite and polydymite. Overall average grade of nunataks is probably less than 0.5% each of nickel and copper; sulfide masses ran 2%-3% Ni, 1%-1.21% Cu, and 0.25% Co. Drilling indicated that low-grade nickel-copper mineralization is

(Brady Glacier) -- Continued

widespread in gabbro-peridotite complex. Some areas beneath ice appear to contain 0.3%-0.6% Ni and 0.2%-0.4% Cu; depth of mineralization not determined. One drill hole intersected for more than 100 ft. material with 1% Ni and 0.4% Cu.

MacKevett and others, 1971 (P 632), p. 53 -- Chalcopyrite is an important constituent of deposits.

Cornwall, 1973 (P 820), p. 440 -- Resource listed as 20,000,000 tons of ore containing 0.25% Ni.

Vhay and others, 1973 (P 820), p. 150 -- Identified resources of cobalt for Alaska listed as 125 million pounds; Brady Glacier is only deposit listed by name.

McGee, 1974 (AOF-47), p. 1 -- Deposit large enough and rich enough to produce ore.

p. 3-4 -- Layered gabbro body that contains Brady Glacier deposit is estimated to be 30,000 ft. thick.

p. 8 -- Massive and disseminated nickel-copper sulfides at SW margin of large layered(?) lopolithic gabbro and peridotite intrusion. Sulfides widely distributed in nunataks, but overall average grade would probably be less than 0.5% each of nickel and copper. Enriched [sic] sulfide masses run 2-3% nickel and 1-1.4% copper. Large reserves and grade indicate a commercial deposit. Grade may increase as the base of the ultramafic complex is approached.

U.S. Geological Survey, 1976 (P 1000), p. 6-7 -- Analyses for platinum-group metals on 17 samples showed average contents and ranges (in parentheses) as follows: massive sulfide, 1.29 ppm (0.19-2.98); gabbroic rocks with disseminated sulfide, 0.18 ppm (0.06-0.41); and ultramafic rocks with disseminated sulfide, 0.23 ppm (0.13-0.33). Could be of economic interest if a large-tonnage mining operation were developed.

Barnes and Watts, 1977 (C 751-B), p. B93-B95 -- Radar measurements of the thickness of ice in Brady Glacier indicate a very rough subglacier topography with many parts of the glacier bed below sea level. One arm of the glacier could have cut off the mineral deposit a short distance north of the nunataks where the deposit is exposed.

(Brady Glacier, near snout) — Gold, Molybdenum

Juneau district — Mt. Fairweather (17.4, 6.9)
MF-436, loc. 54 (in part) — 58°23'N, 136°37'W

Summary: Float specimens of molybdenite-bearing quartz have been found on glacier. Small gold-bearing quartz veins in mafic gneiss and diorite reported; veins are only a few inches thick and are exposed for only short distances along strike. See also (Taylor Bay).

Buddington and Chapin, 1929 (B 800), p. 329-330 -- Molybdenite in quartz veins in float on glacier.

Smith, 1942 (B 926-C), p. 177-178 -- Reference to above. Material probably from contact zone of an intrusive; could have come from almost anywhere in drainage basin of glacier.

Rossman, 1963 (B 1121-K), p. K50 -- Gold in quartz veins on west side of mountain between Dundas Bay and Brady Glacier; small number of veins, and few are more than a few inches thick.

Berg and Cobb, 1967 (B 1246), p. 163 -- Specimens of molybdenite-bearing quartz have been found.

MacKevett and others, 1971 (P 632), p. 67 -- Small gold-bearing quartz veins in mafic gneiss and diorite; veins commonly only a few inches thick and exposed only short distances along strike. Negligible amounts of gold in one sample. Specimens containing free gold found in moraines.

(Bruce Hills)

Copper, Lead, Molybdenum, Zinc

Juneau district
MF-436, loc. 41

Mt. Fairweather (19.45, 17.6)
58°59'N, 136°21'W

Summary: Metallic minerals in thin quartz veins, in disseminated deposits, and as mineralized fracture coatings. Near a steep fault zone (with a few branching faults) in granodiorite with a few small hornfels roof pendants and cut by a few andesite dikes. Ore minerals, associated with pyrite and(or) pyrrhotite, include chalcopyrite, molybdenite, and malachite and minor amounts of molybdite, sphalerite, and galena.

Rossman, 1963 (B 1121-K), p. K49-K50 -- Molybdenite crystals as much as half an inch in diameter in fractures in gray diorite mixed with sedimentary rock; deposit only a few feet in diameter.

Berg and Cobb, 1967 (B 1246), p. 163 -- Lode generally similar to Nunatak deposit on Muir Inlet.

MacKevett and others, 1971 (P 632), p. 41 -- Stockworks similar to those in porphyry copper deposits form part of deposit. Also disseminated copper minerals in granodiorite.

p. 48-50 -- Deposit near a steep fault zone (with a few branching faults) in granodiorite that contains a few small roof pendants of hornfels and is cut by a few andesite dikes. Extent of deposit not known because of cover of glacial material and ice. Sulfides are present in thin quartz veins, as mineralized fracture coatings, and disseminated in granodiorite. Ore minerals, associated with pyrite and(or) pyrrhotite, include chalcopyrite, molybdenite, and malachite and minor amounts of molybdite, sphalerite, and galena; also clay and secondary iron minerals. Reference to Rossman, 1963 (B 1121-K), p. K49-K50.

(Dundas Bay) Copper, Gold, Iron

Juneau district Mt. Fairweather (18.55-21.4, 6.4-7.0)
MF-436, locs. 57-58, 60 58°21'-58°23'N, 136°11'-136°29'W

Summary: Pods of pyrite and minor chalcopyrite in quartz-rich metamorphic rocks in contact with metabasalt. Samples contained traces of Ag, Mo, and Pb; minerals carrying these metals not identified. Thin quartz veins about a foot apart also carry Cu and Mo. Lode gold and iron (probably magnetite-rich skarn) reported by reliable observers.

MacKevett and others, 1971 (P 632), p. 4 -- Low-grade copper deposits in large altered zone in quartz-rich metamorphic rock locally bounded by volcanic rocks. Altered zone is as much as 300 ft. wide and at least a mile long. Samples contained as much as 0.2% Cu and traces of Ag, Mo, and Pb.

p. 40 -- Copper in altered fault zone(s).

p. 48 — One deposit is in altered zone in quartz semischist that has sharp contacts with adjacent metabasalt. Zone is 100-300 ft. wide, traceable for at least a mile, dips steeply, and contains sporadically distributed pods of sulfides (pyrite and chalcopyrite) with secondary iron minerals, malachite, and a few quartz veins. Spectrographic analyses of samples show as much as 2,000 ppm Cu and traces of Ag, Mo, and Pb. The other deposit is in cataclastic biotite quartz diorite; copper-bearing quartz veins 1-2 in. thick along foliation planes about a foot apart. Sample of veins contains 1,000 ppm Cu and 300 ppm Mo. Deposit poorly exposed.

p. 67 -- Lode gold occurrence reported; could not be found in 1966. Probably consists of small gold-bearing quartz veins in dioritic rocks.

p. 70 -- Iron deposits reported; one said to have consisted of claims staked on hematite showing; other probably is magnetite-rich skarn that causes magnetic disturbance.

p. 79 -- Some Mo in copper deposits.

(Dundas Bay, West Arm)

Copper

Juneau district
MF-436, loc. 55

Mt. Fairweather (18.35, 6.5)
58°25'N, 136°30'W

Summary: Chalcopyrite and other sulfide(s) in hornblendite dikes in a gneissic dioritic rock that locally is garnetiferous.

MacKevett and others, 1971 (P 632), p. 41 -- Disseminated copper minerals in hornblendite dikes.

p. 51 -- Gneissic dioritic rocks (locally garnetiferous) are cut by hornblendite dikes as much as 10 ft. thick. Some of dikes contain disseminations and impregnations of sulfide minerals, mainly chalcopyrite; one sample contained 10,000 ppm Cu.

(Dundas R.) Gold

Juneau district
MF-436, loc. 69

Mt. Fairweather (19.45, 8.25) approx.
58°27'N, 136°23'W approx.

Summary: Placer gold has been recovered from glacially derived gravels. Amount recovered not known, but undoubtedly very small.

Rossman, 1963 (B 1121-K), p. K50 -- Placer gold has been mined from glacially derived gravels.
MacKevett and others, 1971 (P 632), p. 67 -- 9 placer gold claims.
Cobb, 1973 (B 1374), p. 105 -- Have been attempts to recover gold from outwash.

(Francis I.)

Copper, Gold, Silver, Zinc(?)

Juneau district
MF-436, loc. 47

Mt. Fairweather (21.25, 11.35)
58°38'N, 136°11'W

Summary: Quartz diorite body intruded marble; contact aureole of hornfels and tactite 5 ft. wide. Silicified fault zone 10 ft. wide along contact between quartz diorite and tactite contains irregularly distributed chalcopyrite, bornite, malachite, pyrite, secondary iron minerals, and possibly sphalerite, tetrahedrite, chalcocite, and pyrolusite. Samples contained as much as 7,000 ppm Cu; 1,000 ppm Zn; 200 ppm Sb; 150 ppm Bi; and 1.46 oz. silver per ton. Old prospect (now covered by landslide debris) reported to have carried gold and silver values in bornite.

Buddington, 1926 (B 783), p. 56 -- 2 claims on diorite dike that cuts marble that makes up most of island. At SW end, dike is about 50 yds. wide; bordered by about 5 ft. of green contact rock; serpentine and tremolite in adjacent marble. Small pocket of bornite "yielding gold and silver assays" in contact garnet rock. Pyrite and pyrrhotite in dike at north end of island.

Buddington and Chapin, 1929 (B 800), p. 323 -- Small pocket of bornite found at contact between diorite dike and limestone.

Reed, 1938, p. 69 -- Data from Buddington's field notes; same as above.

Berg and Cobb, 1967 (B 1246), p. 161 -- Data from Buddington, 1926 (B 783), p. 56 summarized.

MacKevett and others, 1971 (P 632), p. 40 -- 150 ppm Bi in sample; no bismuth mineral identified.

p. 45-46 -- Prospect described by Buddington [above references] is covered by landslide debris. Deposit is near contact between quartz diorite and predominantly marble country rock. Narrow seams of tremolite in marble. Quartz diorite probably underlies island at shallow depth. Contact-metamorphic aureole of tactite and hornfels as much as 5 ft. thick in marble next to intrusive. Silicified fault zone as much as 10 ft. wide separates intrusive and tactite; contains irregularly distributed chalcopyrite, bornite, malachite, sphalerite(?), tetrahedrite(?), and chalcocite(?); also pyrite, secondary iron minerals, and pyrolusite(?). Samples from fault zone contained as much as 7,000 ppm Cu; 1,000 ppm Zn; 200 ppm Sb; 150 ppm Bi; and 1.46 oz. per ton (50 ppm) Ag.

Galena — Gold, Lead, Silver, Zinc

Juneau district — Mt. Fairweather (15.2, 15.05)
MF-436, loc. 25 — 58°51'N, 136°50'W

Summary: Vein of banded, vuggy quartz 4-18 in. thick was exposed for about 60 ft. Country rock is granodiorite with subordinate schist and a few lamprophyric dikes. Assay of a sample where vein is 12 in. thick showed 0.16 oz. gold and 0.30 oz. silver per ton and 0.79% zinc. Vein contains abundant pyrite, sphalerite, and galena. About 30 tons of ore (probably decomposed surface material) was reported to have been mined in 1939.

Reed, 1938, p. 63 -- Vein 12 in. wide; sample assayed contained 0.16 oz. gold and 0.30 oz. silver per ton and 0.79% zinc. [Name of prospect not used.]

Twenhofel and others, 1949 (B 963-A), p. 31 -- 30 tons of ore reported to have been mined in 1939.

p. 33 -- Vein of banded, vuggy quartz 4-18 in. thick has been exposed for about 60 ft.; abundant pyrite, sphalerite, and galena. According to owners, average value of vein material is about $60 a ton.

Rossman, 1959 (B 1058-B), p. 37-38 -- Vein discovered in about 1936. Decomposed vein material sluiced some time before 1941.

Berg and Cobb, 1967 (B 1246), p. 160 -- Has been minor production.

MacKevett and others, 1971 (P 632), p. 63 -- Country rock is granodiorite with subordinate schist and a few lamprophyre dikes. Rest of data from Reed, 1938, p. 63, and Twenhofel and others, 1949 (B 963-A), p. 33.

(Geikie Inlet)

Molybdenum

Juneau district
MF-436, loc. 52

Mt. Fairweather (18.05, 10.5)
58°35'N, 136°32'W

Summary: Molybdenite in tactite reported before 1930. Includes reference to Yehring.

Brooks, 1922 (B 722), p. 24 -- Molybdenite deposit discovered by Oscar Yehring in 1920. Near Wood Glacier about 1-1/2 mi. from beach and 200 ft. above tidewater.

Buddington and Chapin, 1929 (B 800), p. 329-330 -- Specimens of molybdenite quartz veins.

Smith, 1942 (B 926-C), p. 178 -- Reference to Buddington and Chapin, 1929 (B 800), p. 329-330. Molybdenite mineralization in tactite. Specimens "showed considerable molybdenite in rather large flakes in the midst of brown-red garnet."

Berg and Cobb, 1967 (B 1246), p. 163 -- Lode generally similar to that at the Nunatak, Muir Inlet.

MacKevett and others, 1971 (P 632), p. 78-79 -- References to some of above reports. MacKevett and others found no molybdenite or signs of old workings during a brief examination.

(Gilbert I.)

Copper, Gold, Lead, Molybdenum, Silver, Zinc

Juneau district
MF-436, locs. 34-36

Mt. Fairweather (17.25-17.8, 13.75-14.55)
58°46'-58°49'N, 136°33'-136°36'W

Summary: Stockworks of quartz veinlets in bleached and altered quartz diorite in west and southwest parts of island and on a small adjacent unnamed island contain chalcopyrite and molybdenite and as much as 0.292 oz. silver a ton. Also reported are tetrahedrite, galena, sphalerite, pyrite, and free gold.

Rossman, 1963 (B 1121-K), p. K49-K50 -- Quartz veins on south and west sides of Gilbert I. contain tetrahedrite, galena, sphalerite, pyrite and free gold. In the western part of the island are a few molybdenite-bearing quartz veins, the largest of which is less than a foot thick.

Berg and Cobb, 1967 (B1246), p. 161 -- Quartz veins, some of which contain tetrahedrite, galena, sphalerite, and gold, on south and west sides of island.

p. 163 --Small lode generally similar to that at the Nunatak, Muir Inlet.

MacKevett and others, 1971 (P632), p. 41 -- Stockwork similar to some porphyry copper deposits form parts of the deposits in SW Gilbert I. and on adjoining small unnamed island.

p. 50-51 -- Deposits have about the same potential for molybdenum as for copper. Stockworks of numerous quartz veinlets in bleached and altered biotite-hornblende quartz diorite cut by alaskite dikes with minor aplitic phases. Many near-vertical faults with displacements of only a few inches and gouge seams an inch or so thick cut veinlets and host rock. Veinlets (generally less than 3 inch thick) have minor amounts of chalcopyrite and molybdenite localized near hordes of same. Reference to Rossman, 1963 (B 1121-K), p. K49. Selected specimen contained 7,000 ppm Cu; 2,000 ppm Mo; and 0.292 oz. Ag per ton.

p. 73 -- Copper-molybdenum deposits.

p. 79 -- Molybdenum on significant amounts.

Highland Chief	Gold
Juneau district	Mt. Fairweather (15.0, 14.95)
MF-436, loc. 24	58°51'N, 136°51'W

Summary: Country rock is amphibolite, schist, and marble locally intruded by salients of granodorite. Veins that contain free gold are as much as 2 feet thick (one is as much as 6 feet thick) and can be traced for as much as 700 feet; covered at south ends. Prospect would be promising if less inaccessible; snow covered for much of year.

Rossman, 1959 (B 1058-B), p. 37-38 -- Discovered in about 1936. Leased by a major mining company and sampled, 1937.

p. 44 -- Veins strike N to NW.

p. 54-55 -- Main vein is as much as 6 feet wide and contains free gold. Other veins are as much as 2 feet thick and can be traced for as much as 700 feet; pinch out to north and are covered to south; all contain gold, some of which is visible. Veins in sedimentary rock. Prospect covered by snow much of year and difficult of access at all times.

p. 57 -- Vein system appears to be the most promising in the Reid Inlet area.

MacKevett and others, 1971 (P 632), p. 63-64 -- Country rock amphibolite, schist, and marsh; local granodorite salients. Rest of data from above reference.

Hopalong	Gold
Juneau district	Mt. Fairweather (15.6, 15.1) approx.
MF-436, loc. 27	58°51'N, 136°47'W. approx.

Summary: Vertical quartz-calcite veins as much as one foot thick in fine-grained diorite or quartz diorite contain uncommon pyrite and arsenopyrite. Gold reported to have been recovered from weathered surficial parts of veins.

Rossman, 1959 (B 1058-B), p. 38 -- East of Reid Inlet at altitude of about 2,000 feet.

p. 56 -- Veins reported to be in crystalline rock with granitic texture. Weathered surface material has been mined and sluiced; free gold recovered.

Berg and Cobb, 1967 (B 1246) p. 160 -- Minor production reported.

MacKevett and others, 1971 (P 632), p. 63 -- Vertical veins that pinch and swell are as much as 1 foot thick; in fine-grained diorite or quartz diorite; can be traced for about 60 feet; contain quartz, abundant calcite, minor muscovite, uncommon pyrite and arsenopyrite, and probably erratically distributed gold. Samples collected in 1966 were virtually barren. Reference to Rossman, 1959 (B 1058-B), p. 56.

Incas — Gold

Juneau district — Mt. Fairweather (15.1, 15.3)
MF-436, loc. 22 — 58°52'N, 136°50'W.

Summary: Quartz lenses in fault zone along which granodiorite wall rock is hydrothermally altered contain minor amounts of sulfides (chiefly arsenopyrite) and sporadically distributed gold. About 200 feet of underground workings; all production (probably small) was from trench along outcrop of fault zone and consisted of weathered lode material. Altered granodiorite also contains trace of sulfides and gold.

Rossman, 1959 (B 1058-B), p. 37-39 -- Veins discovered, 1924. Some decomposed vein material mined before 1941. A tunnel was driven, probably before 1951.

p. 46-48 -- Vein consists of lenticular bodies of quartz in a fracture zone (exposed for nearly 2,000 feet) in granodiorite which is altered along the fracture zone. All quartz lodes contain gold. Weathered part of vein (several feet deep) was excavated for a distance of about 55 feet. Tunnel driven about 140 feet to intersect fracture zone about 100 feet below surface; followed zone to north, but not to south beneath surface ore body. Other veins and altered zone in vicinity.

Berg and Cobb, 1967 (B 1246), p. 160 -- Has been minor production.

MacKevett and others, 1971 (P 632), p. 62 -- Mine consists of about 200 feet of underground workings and several trenches (caved in 1966). Deposits are in quartz lenses in altered fault zone in granodiorite; zone strikes northward and dips steeply. Quartz lenses contain minor amounts of calcite and sulfides (chiefly arsenopyrite) and sporadically distributed gold. Hydrothermally altered granodiorite contains traces of gold and sulfides. Reference to Rossman, 1959 (B 1058-B), p. 46, 48.

(Johns Hopkins Inlet) Copper, Silver

Juneau district Mt. Fairweather (12.95- 13.7, 15.5- 16.3)
MF-436, locs. 10, 11, 14, 15 58°52'-58°55'N, 137°00'-137°04'W.

Summary: Altered zones in metamorphic and granitic rocks, generally near intrusive contacts, contain very small amounts of chalcopyrite and some coatings of secondary copper minerals, trace of silver in one sample.

Reed, 1938, p. 58-59 -- Contact zone between granitic rock to east and limestone and slate to west. Local replacement bodies of massive pyrite containing an estimated 5% quartz and less than 1% chalcopyrite.

MacKevett and others, 1971 (P 632), p. 41 -- Copper minerals in hornfels.

p. 51-52 -- Altered and mineralized zones are chiefly in septa of metamorphic rocks (mainly marble) in a predominantly diorite terrane and in greenstone, phyllite, or granodiorite, generally near intrusive contacts; a few are near mafic dikes. Altered zones are from a few feet to several hundred feet wide and are exposed for lengths of as much as 1,000 feet; made up of assemblages of quartz, carbonates, plagioclase, amphibole, muscovite, chlorite, barite, epidote, and secondary iron minerals; locally contain lenses of sulfides (pyrite and very small amounts of chalcopyrite). Traces of Mo, Ag, and Sb. Malachite, chrysocolla, and secondary iron minerals on one altered zone in granitic rocks.

(Lamplugh Glacier) Copper

Juneau district Mt. Fairweather (14.4, 14.4)
MF-436, loc. 28 58°49'N, 136°55'W.

Summary: Copper stain on wallrock adjacent to pyrite-bearing quartz veins in hornfels. Samples only slightly anomalous in Cu and Mo.

MacKevett and others, 1971 (P 632), p. 52 -- Nearly vertical pyrite-bearing quartz veins as much as 10 inches thick cut hornfels. Wallrock heavily iron stained and sparsely copper stained. Samples of veins and wallrock contained only minor anomalous amounts of Cu and Mo.

p. 79 -- Small amounts of Mo (no Mo mineral identified).

(Lemesurier I.) Copper, Molybdenum; Asbestos [paligorskite]

Chichagof district
MF-436, locs. 61, 62

Mt. Fairweather (22.2-22.45, 4.9-5.35)
58°15'-58°17'N, 136°04'-136°06'W.

Summary: On south tip of island garnet-pyroxene hornfels at contact between marble and quartz diorite contains molybdenite along small gash veins and disseminated in contact rock. Molybdenite generally sparse, but forms several percent of rock in small pockets. Deposit also contains chalcopyrite and graphite. Deposit was opened by a 78-foot tunnel and a 25-foot crosscut; no record of production. At SW headland of Willoughby Cove small veins in limestone contain quartz, garnet, epidote, molybdenite, chalcopyrite, and bornite. Paligorskite was formed in or on top of beds near the top of a Silurian limestone formation; it has been found on limestone beneath soil cover, in a solution cavity, and in near-surface fractures cut by calcite veinlets. Most of material in 2 deposits has been removed.

Knopf, 1912 (B 504), p. 17 -- Molybdenite deposit at contact between diorite and limestone. Molybdenite intergrown with garnet and other lime silicates.

Brooks, 1918 (B 662), p. 25 -- Reference to above.

Brooks, 1919 (B 666), p. 98 -- Molybdenite-bearing lode reported.

Brooks, 1921 (B 714), p. 41 -- Reference to Knopf, 1912 (B 504), p. 17.

Buddington, 1926 (B 783), p. 55-56 -- 2 patented claims on southside of island, 78-foot tunnel and 25-foot crosscut 50 feet above sea level. At contact between diorite and limestone is about 30 feet of contact rock made up mainly of garnet and some green pyroxene. Molybdenite as facings along small gash veins and disseminated in contact rock. Molybdenite generally sparse, but forms several per cent of rock in small pockets. At SW headland of Willoughby Cove small veins in limestone consist of: quartz with garnet and molybdenite; epidote with bornite; pyroxene with molybdenite; quartz with chalcopyrite.

Smith, 1926 (B 783), p. 26 -- Reference to above description by Buddington.

Buddington and Chapin, 1929 (B 800), p. 329-330 -- Molybdenite in contact metamorphic deposit. Reference to Buddington, 1926 (B 783), p. 55-56.

p. 340 -- Contact metamorphic molybdenite deposit at contact of limestone and diorite.

(Lemesurier I.) -- continued

Reed, 1938, p. 74 -- 2 patented claims on southern tip of island at contact of quartz diorite and marble. Hornfels along contact contains disseminated molybdenite in the quartz (locally concentrated in streaks), chalcopyrite , and graphite. Reference to Buddington's field notes; same data as in Buddington, 1926 (B 783), p. 55-56.

p. 79 -- Deposit probably formed at high temperature.

Smith, 1942 (B 926-C), p. 176-177 -- References to Buddington, 1926 (B 783), p. 55-56; Reed, 1938, p. 74,79.

Fisher and others, 1945 (IC 7313) -- Paligorskite in seams parallel to bedding in, and fractures across, bedding of limestone; seams are 6-18 in. thick with calcite on each side of the paligorskite; blue clay with the paligorskite.

Kaufman, 1958 (IC 7844), p. 12 -- Molybdenite prospects have been found at several places, including Lemesurier I.

Rossman, 1963 (B 1121-K), p. K51-K52 -- Two deposits of paligorskite formed in or on limestone beds near the tope of the Willoughby Limestone [Late Silurian age]. Paligorskite is on surface of limestone beneath soil cover, in a solution cavity, and in near-surface fractures in limestone cut by calcite veinlets. Most of the paligorskite has been removed from both deposits.

Berg and Cobb, 1967 (B 1246), p. 145 -- Quartz stringers near Willoughby Cove carry molybdenite and a little chalcopyrite; in hornfels near contact between marble and quartz diorite; were explored by tunnel and crosscut, but no ore was shipped. Nearby stringers also reported to carry bornite.

Loney and others, 1975 (P 782), p. 92 -- Reference to Smith, 1942 (B 926-C).

LeRoy	Cadmium, Copper, Gold, Lead, Silver, Zinc
Juneau district MR-436, loc. 17	Mt. Fairweather (14.7, 15.55) 58°53'N, 136°53'W

Summary: Veins and veinlets of quartz with minor amounts of feldspars, calcite, and clay minerals, gold and silver, and the sulfides arsenopyrite, pyrite, galena, sphalerite, and chalcopyrite transect steeply dipping metamorphic rocks that form a screen between granitic bodies; altered zones along veins also carry a little gold. Samples contained as much as 10.34 oz. gold and 7.40 oz. silver per ton; 1,000 ppm Cd; 70 ppm Cu; 1,500 ppm Pb; and 15,000 ppm Zn. Mine developed by 4 adits on LeRoy vein (as much as 3 ft. thick); most of ore mined out from stopes above and below main adit level. Total production about $100,000 (2,857 fine oz.) in gold. Deposit discovered 1938 and mined until 1945 or later.

Smith, 1942 (B 933-A), p. 17 -- Small ore shipment 1940; mainly prospecting.

Twenhofel and others, 1949 (B 963-A), p. 32-34 -- Claims staked 1938. 3,300 lbs. ore shipped to smelter, 1939. Workings on 2 levels; no ore encountered on lower; upper level stoped ore 70 ft. to surface. 250 tons ore mined in 1941; recovery was a little more than $45,000. Production in 1942 reported to have been greater. Quartz vein pinches and swells; average thickness about 2 ft.; strike N30°E and dips steeply NW. Main pay streak on hanging wall. Ore contains free gold, sphalerite, galena, and pyrite. Similar veinlets on property have been prospected slightly.

Rossman, 1959 (B 1058-B), p. 38-39 -- Deposit discovered, 1938, after mill had been built and towed to upper Glacier Bay. Mining began almost immediately. Mining continued until 1945, when most of the ore above the main level was mined out .

p. 42 -- Mafic dike cuts across fracture that contains vein near face of tunnel; appears to have dammed ore-bearing solutions.

p. 45-46 -- Country rock is black graphite schist and crystalline rock of probable sedimentary origin. Veins are a northeastward-trending network which dips 50°-80° NW; some veins contain considerable gold, but most are too small to mine. 2 levels (altitudes of 987 and 950 ft.) were driven along the main vein and all ore above them mined out. Some ore also taken out of a third adit NW of the main workings. Other veins have been prospected. Mafic dike appears to have acted as barrier, so it is unlikely that there is ore south of it.

LeRoy -- continued

Berg and Cobb, 1967 (B 1246), p. 160 -- One of 2 principal producing mines in area; total production from area was probably about 10,000 fine oz. of gold.

MacKevett and others, 1971 (P 632), p. 53 -- Galena is a minor constituent of ore; one sample contained 1,500 ppm Pb.

p. 55-59 -- Sphalerite present; samples contained as much as 15,000 ppm Zn. Mine consists of 4 adits with subsidiary raises and stopes and minor surface workings; longest adit explores LeRoy vein for about 240 ft. About $100,000 [about 2,857 fine oz.] in gold has been produced. Gold in nonpersistent quartz-veins and (less commonly) in narrow altered zones next to veins. Veins transect steeply dipping metamorphic rocks that form a screen between granitic masses. Most veins only 1-2 in. thick; LeRoy vein as much as 3 ft. thick, which is terminated to SW by argillite (called mafic dikes by Rossman [B 1058-B]); most of vein stoped both above and below adit level. Veins consist mainly of quartz, and minor amounts of feldspars, calcite, and clay minerals. Sulfides (arsenopyrite, pyrite, galena, sphalerite, and chalcopyrite) are minor constituents. Subordinate amounts of silver with the gold. Samples contained as much as 10.34 oz. gold and 7.40 oz. silver per ton and 70,000 ppm As; 1,000 ppm Cd; 70 ppm Cu; 1,500 ppm Pb; and 15,000 ppm Zn.

(Lituya Bay) Copper, Gold, Iron, Platinum, Titanium

Yakutat district Mt. Fairweather (5.2-9.85, 9.25-13.85)
MF-436, locs. 1,2,65,66 58°31'-58°47'N, 137°26'-137°56'W

Summary: Beach placers discovered and mined by Russians before 1867. Americans began mining in about 1890. Total production through 1917 was worth about $75,000 [3,625 fine oz.] in gold, plus a little platinum. Mining continued until as recently as 1940, but production was small. Proximate source of gold, platinum, and other heavy minerals is glacial deposits that are eroded by storms; deposits are thin and patchy on modern and old raised beaches; all mining small scale. Ultimate source of heavy minerals is layered mafic and ultramafic plutons in Fairweather Range. Beach deposits contain as much as 16.5 lb. iron and 90.1 lb. TiO_2 per cubic yard of material in place; in magnetite and ilmenite. Gabbro dike exposed on shore of SE arm of bay contains irregular veinlets and blebs of pyrrhotite and chalcopyrite. Altered zones SE of bay carry a little gold (one assay showed 0.24 oz. per ton); a little gold in a stream draining an altered zone.

Brooks, 1904 (B 225), p. 46 -- Gold in beach placers; apparently concentrated from glacial material by wave action.

Wright, 1907 (B 314), p. 64-65 -- Black and ruby beach sands contain gold; have been worked at intervals since 1890. Production in 1891 said to have been worth $15,000; higher returns rumored in later years. Attempt at large-scale mining in 1901 was a failure. Auriferous beach sands extend for 10 mi. northwest of bay.

Brooks, 1918 (B 662), p. 23 -- Small quantities of platinum in beach placers.

p. 41-42 -- Beach placers discovered 1886. Mining, 1916. Quotation from Wright, 1907 (B 314), p. 64-65.

Brooks, 1919 (B 666), p. 96 -- Small quantities of platinum in beach placers reported.

Martin, 1920 (B 712), p. 28 -- Small beach placer mining operations, 1918.

Brooks and Martin, 1921 (B 714), p. 76 -- Small-scale mining, 1919.

Brooks, 1922 (B 722), p. 34 -- Small-scale mining, 1920.

Brooks, 1923 (B 739), p. 22-23 -- Assessment work, 1921.

Brooks and Capps , 1924 (B 755), p. 25 -- Probably was a little mining, 1922.

Brooks, 1925 (B 773), p. 23 -- Reference to Wright, 1907 (B 314), p. 64-65.

Buddington and Chapin, 1929 (B 800), p. 322 -- Gold mined from beach placers.

(Lituya Bay) continued

Mertie, 1933 (B 836), p. 133-135 -- Intermittent placer mining by Americans since 1894; best year was 1896 because of frequent heavy storms. Mining in 1915-16 and prospecting only in 1917. Production, 1894-1917, estimated at about $75,000 [3,625 fine oz.]. A little fine-grained platinum accompanies gold. Placers formed by concentration of heavy minerals from sand bluffs during storms from the southwest; must be mined right after a storm or the next one will either dissipate or bury the concentrated heavy minerals, which are in scattered patches 1 or 2 inches thick on the beach surface. Heavy minerals are garnet, magnetite, ilmenite, gold, and platinum. Placers are from 2 to 16 mi. NW and 4 to 9 mi. SE of Lituya Bay. Some of terraces SE of bay are auriferous, but have not been well prospected. Assays of beach gold as high as $18.92 and ounce [gold at $20.67] have been reported.

Smith, 1934 (B 864-A), p. 29 -- Small-scale mining, 1933.

Smith, 1936 (B 868-A), p. 30 -- Small-scale mining, 1934.

Smith, 1937 (B 880-A), p. 34 -- Small-scale mining, 1935.

Smith, 1938 (B 897-A), p. 40 -- Small-scale mining, 1936.

Smith, 1939 (B 910-A), p. 38 -- Small-scale mining, 1937.

Smith, 1939 (B 917-A), p. 36-37 -- Small-scale mining, 1938.

Smith, 1941 (B 926-A), p. 33 -- Small-scale mining, 1939.

Smith, 1942 (B 933-A), p. 32-33 -- Small-scale mining, 1940.

Kennedy and Walton, 1946 (B 947-D), p. 71 -- Reference to Mertie, 1933 (B 836), p. 135. Production since 1917 has been negligible. Occurrence of platinum is interesting because of proximity of a large basic intrusive. Gabbroic dike that cuts granite on SW shore of SE arm of Lituya Bay contains pyrrhotite and less than 1% chalcopyrite.

Rossman, 1957 (OF 149) -- Modern beaches and older beaches supporting growths of trees contain local concentrations of heavy minerals. Ilmenite constitutes 0.25% to 21.0% and magnetite 0.02% to 10.0% in the 11 samples collected, some of which represent apparently unconcentrated materials. Very small amounts of gold and platinum are also present. Beach deposits overlie bedrock or glacial deposits. Heavy minerals probably derived from mafic rocks in Fairweather Range or from Tertiary sedimentary rocks.

Rossman, 1959 (B 1058-B), p. 57-58 -- Hydrothermally altered zones SE of Lituya Bay in Tertiary sedimentary rocks and older volcanic and sedimentary rocks in places contain a little gold (one assay of 0.24 oz. per ton); a little gold in gravel of a stream draining an altered zone.

Miller, 1960 (P 354-C), p. 56 -- Was beach mining; by Americans from 1890 intermittently at least until 1917.

(Lituya Bay) continued

Thomas and Berryhill, 1962 (RI 5986), p. 1-2 -- Erratic, but possibly significant concentrations of magnetite and/or ilmenite were found. Ilmenite is the predominant heavy mineral in beach deposits; found only in limited areas; TiO_2 content was 20-50 lbs. per cu. yd. in samples. Traces of platinum have been reported, but were not found in USBM sampling. Gold has been mined.

p. 6-7 -- Data from Mertie, 1933 (B 836), p. 117-135. Private industry sampled beach deposits 4 mi. NW of Lituya Bay in 1957. 174 placer claims along beaches in general area.

p. 37-39 -- 37 anger-hole and shovel samples were collected. Iron was from 0.1 to 16.5 lb./cu.yd. and TiO_2 from 0.3 to 90.1 lb./cu.yd. calculated for material in place; only one sample carried more than 10 lb./cu.yd. iron and only 9 samples carried more than 20 lb./cu.yd. TiO_2 calculated for material in place; 3 samples carried traces of gold.

Rossman, 1963 (B 1121-F), p. F45-F46 -- Summary of Rossman, 1957 (OF 149).

Berg and Cobb, 1967 (B 1246), p. 195 -- Gabbro dike in granite contains irregular veinlets and blebs of pyrrhotite and chalcopyrite making up less than 1% of the rock.

Johnson and Plafker, 1969 (OF 379), p. 2 -- Reference to Wright, 1907 (B 314), p. 64.

MacKevett and others, 1971 (P 632), p. 3 -- References to Mertie, 1933 (B 836), p. 135; Rossman, 1957 (OF 149); Thomas and Berryhill, 1962 (RI 5986), p. 37-40. Placers could be worked under favorable economic conditions for gold; constitute a potential resource for titanium and possibly iron. Gold production since 1917 has been small.

p. 53 -- Reference to Kennedy and Walton, 1946 (B 947-D), p. 71.

p. 64 -- Reference to Rossman, 1959 (B 1058-B), p. 57-58.

p. 67-69 -- Summary of data from older reports; these summaries are further summarized on p. 3. Platinum in placers undoubtedly derived from layered mafic and ultramafic rocks in mountains behind bay.

p. 83 -- References to Mertie, 1933 (B 836); Rossman, 1957 (OF 149); Thomas and Berryhill, 1962 (RI 5986).

Cobb, 1973 (B 1374), p. 105 -- References to Rossman, 1957 (OF 149); Thomas and Berryhill, 1962 (RI 5986).

Page and others, 1973 (P 820), p. 541 -- Platinum identified resource is given as 0.06 million tray ounces.

Reimnitz and Plafker, 1976 (B 1415), p. 3 -- Reference to Thomas and Berryhill, 1962 (RI 5986). Has been recent investigation by private companies, but no production. Mined by Russians before 1867.

p. 7 -- Ultramafic and mafic plutons in Fairweather Range were source of much of placer beach deposits.

Marvitz — Gold, Lead

Chichagof district — Mt. Fairweather (19.2, 2.35)
MF-436, loc. 63 — 58°07'N, 136°25'W.

Summary: Quartz veins that appear to be lenticular and as much as 5 ft. thick and andesite dikes occupy closely spaced joints in quartz-sericite schist and slate. Veins carry free gold, pyrite, arsenopyrite , and galena. In late 1920's or early 1930's the prospect was developed by 3 tunnels, the longest about 210 ft. long. No record of any production.

Reed, 1938, p. 75-76 -- First staked, 1926. Developed by tunnels, the longest about 210 ft. long. Country rock is quartz-sericite schist and slate. Cut by closely spaced joints that are about normal to foliation. Quartz veins as much as 5 ft. thick and andesite dikes occupy some joints. Veins appear to be lenticular; carry free gold, pyrite, arsenopyrite, and galena. Only traces of silver in assays.

p. 79 -- Veins in "older sediments" rather than in granitic rocks.

Rossman, 1959 (B 1058-E), p. 211 -- Reference to above. Rossman could not find prospect.

Berg and Cobb, 1967 (B 1246), p. 143 -- Claims staked on quartz veins about a foot thick and a few tens of feet long; veins carry free gold, galena, and pyrite.

(Miner I.)

Gold(?)

Chichagof district

Mt. Fairweather (20.1, 0.5)
58°01'N, 136°21'W.

Summary: Gold prospect in albite quartz diorite. This may be the same as (Yakobi I.); reference in Buddington and Chapin, 1929 (B 800), p. 378 is very sketchy.

Buddington and Chapin, 1929 (B 800), p. 378 -- Gold prospect in albite quartz diorite.

Monarch — Gold, Lead, RE

Juneau district — Mt. Fairweather (14.95, 15.4)
MR-436, loc. 19 — 58°52'N, 136°51'W.

Summary: Altered zones in granodiorite contain quartz lenses and thin veins with gouge. Some of altered granodiorite contains allanite; quartz contains arsenopyrite, pyrite, galena, and free gold. Explored by 2 adits about 210 and 120 ft. long, short drifts, and a small stope. Ore, mainly weathered material from surface at Monarch No. 1 workings, taken to Lemesurier I. for milling; operation not profitable. Deposits discovered in 1924; development and mining from about 1941 to 1947 or 1948.

Rossman, 1959 (B 1058-B), p. 37 -- discovered, 1924.

p. 39 -- Aerial tram built, 1941; ore mined from surface and sent to Lemesurier I. for milling; operation not profitable. Tunnels 200 ft. and 150 ft. long driven, 1945 to 1947 or 1948.

p. 48-52 -- Monarch No. 1 vein similar to that at Incas property. Traced for nearly 400 ft. on surface; pinches out to south, covered to north; in granodiorite. Followed by tunnel for about 225 ft.; small stopes near north end. Weathered surface material also mined. Nearby vein has maximum exposed thickness of 10 in.; oxidized material at surface was mined. Another vein 5 in. thick contains abundant pyrite and a little galena. Monarch No. 2 vein is 2-8 in. thick and lies along a fault; explored by tunnel about 100 ft. long; vein lenticular and not continous; contains a little free gold. A nearby vein (covered by dump) reported to contain some galena and free gold. Rossman concludes that no large ore body is likely to be found at Monarch property. [Lengths of workings reported here do not agree with those given on p. 39; scaling from figs. 7 and 8 gives lengths of about 240 ft. for Monarch No. 1 tunnel and about 115 ft. for Monarch No. 2.]

Berg and Cobb, 1967 (B 1246), p. 160 -- Minor production reported.

MacKevett and others, 1971 (P 632), p. 60-62 -- At Monarch No. 1 adit is about 210 ft. long with small stope about 70 ft. from portal; explored altered zone 1-5 ft. thick in granodiorite. Zone contains quartz veins and lenses a few inches thick with abundant gouge and breccia; primary mafic minerals obliterated and original plagioclase replaced by oligoclase; minor constituents and alteration products includes sphene, allanite, epidote, and opaque minerals; sparsely distributed arsenopyrite, pyrite, galena, and gold. At Monarch No. 2 adit about 120 ft. long and 2 short drafts are in granodiorite cut by a few quartz veins and by mafic dikes and faults; rock less altered and more deformed than at Monarch No. 1 Quartz veins (bordered by thin gougey selvages) contain sparse calcite and sulfides and minor amounts of gold. References to Rossman, 1959 (B 1058-B), p. 50-51.

(Mt. Fairweather) — Chromite, Copper, Nickel, Platinum

Yakutat district — Mt. Fairweather (8.25, 15.75) approx. 58°54'N, 137°36'W. approx.

Summary: Float specimens of material from layered mafic and ultramafic pluton that underlies about 15 square miles high on SW flank of Mt. Fairweather contained chalcopyrite, cubanite, pyrrhotite, pentlandite, chromite, magnetite, ilmenite, platinum-group metals, and as much as 200 ppm cobalt.

Plafker and MacKevett, 1976 (P 700-B), p. B21-B26 -- Layered mafic and ultramafic pluton underlies about 15 square miles of southwest flank of Mt. Fairweather. Discovered during aerial reconnaissance in 1966. Inaccessible because of rugged topography and high altitude (up to 15,300 ft.). All petrographic and mineralogic data from float specimens from glaciers that drain the area. Rock types range from leucocratic gabbro or anorthosite to pyroxinite and dunite. Sulfide minerals identified in specimens included chalcopyrite, cubanite, pyrrhotite, and pentlandite; oxide minerals include chromite, magnetite, and ilmenite; thin veinlets (less than 0.02 mm wide) of cross-fiber serpentine make up as much as 20% of some rock. Sheared dunite contained 200 ppm Co, 0.184 ppm Pd, 0.171 ppm Pt, and 0.004 ppm Rh. Probable ultimate source of platinum, magnetite, and ilmenite in some of coastal marine placers. Nickel and copper contents of highest grade rocks sampled was about 0.5 percent each.

(Mt. Marchainville) Copper

Yakutat district Mt. Fairweather (13.0, 8.4)
MF-436, loc. 7 58°29'N, 137°05'W.

Summary: Copper-stained gneiss outcrops.

MacKevett and others, 1971 (P 632), p. 39-40 -- Copper mineral(s) in copper-stained zone in gneiss.
p. 52 -- Copper-stained outcrops reported.

(North Crillon Glacier) — Chromite, Copper, Iron, Titanium

Yakutat district — Mt. Fairweather (10.75-11.25, 11.5-12.25)
MF-436, locs. 4-6 — 58°39-58°42'N, 137°16'-137°19'W.

Summary: Layered mafic pluton. One layer about 5 ft. thick and extending for several thousand feet along south wall of valley contains as much as 60% ilmenite and 2%-3% pyrrhotite and chalcopyrite. Fragments of schist and quartz-garnet veins in moraine on glacier are copper stained. Float chromite reported; none found in place.

Kennedy and Walton, 1946 (B 947-D), p. 71 -- Fragments of amphibole-quartz schist and quartz-garnet veins in moraine on glacier are stained with copper carbonates. Layer about 5 ft. thick that crops out for several thousand feet along south wall of valley is composed largely of ilmenite and bronzite; about 60% of material is ilmenite; 2%-3% pyrrhotite and chalcopyrite.

Rossman, 1963 (B 1121-F), p. F42 -- Samples from a few hundred feet from contact between basic body and schist contained 7%-10% ilmenite.

Berg and Cobb, 1967 (B 1246), p. 195 -- In south wall of valley a layer in mafic pluton contains as much as 60% ilmenite and 2%-3% pyrrhotite and chalcopyrite. Chromite has been reported in float, none found in place.

MacKevett and others, 1971 (P 632), p. 39-40 -- Copper-minerals present.
p. 52-53 -- References to Kennedy and Walton, 1946 (B 947-D), p. 71, in 1952. Rossman reported copper-stained outcrops.

(North Marble I.) Copper, Iron, Zinc

Juneau district Mt. Fairweather (22.25, 12.15)
MF-436, loc. 50 58°40'N, 136°04'W.

Summary: Marble cut by a few mafic dikes. Sulfides in bodies as much as 1 1/2 ft. thick and 15 ft. long in marble near and along dikes and in many joints in dikes. Sulfides identifed are pyrite, pyrrhotite, chalcopyrite, covellite, and sphalerite; magnetite also present.

Reed, 1938, p. 69 -- Bedrock in marble cut by dark-colored, fine-grained, porphyritic dikes. Sulfide bodies as much as 1 1/2 ft. thick and 15 ft. long occur in marble near and along dikes; sulfides also in many joints in dikes. Sulfides indentifed are pyrite, pyrrhotite, chalcopyrite, and covellite. Nickel claim had been staked, but no nickel mineral was identified.

p. 78-79 -- Deposits appear to be related to lamprophyre dikes.

Rossman, 1963 (B 1121-K), p. K51 -- Sphalerite and magnetite in limestone; associated with dark-colored dike rocks.

Berg and Cobb, 1967 (B 1246), p. 161 -- Sphalerite and magnetite in limestone.

MacKevett and others, 1971 (P 632), p. 44 -- Island is marble cut by a few mafic dikes. Pyrite in some of dikes and in silicified zoned adjacent to them. References to Reed, 1938, p. 69, Rossman, 1963 (B 1121-K), p. K51; unpublished data of Buddington (1924) that stated that nickel claim had been staked.

(Nunatak) Copper, Gold, Molybdenum, Silver

Juneau district Mt. Fairweather (21.7, 17.7)
MF-436, loc. 43 58°59'N, 136°06'W.

Summary: Stockwork of quartz veins, mainly in hornfels around a quartz monzonite porphyry stock intruded into tightly folded metasedimentary rocks, but also in the quartz monzonite porphyry and in a silicified zone near the edge of the stock. Molybdenite in stockwork, in a mineralized fault zone, and disseminated in hornfels. Pyrite, pyrrhotite, chalcopyrite, and traces of silver associated with molybdenite in parts of the deposit. Resource estimates are (MacKevett and others, 1971): in stockwork above sea level near Muir Inlet-2,247,000 tons averaging 0.067% MoS_2 and 0.016% Cu; remainder of stockwork and fault-zone deposit - 129,530,250 tons averaging 0.026% MoS_2 and 0.018% Cu; additional 18,000,000 tons averaging 0.026% MoS_2 and 0.018% Cu under steep cliffs at south end of stockworks; similar tonnage of similar-grade material below sea level. Samples that contained 0.04 oz. gold and 7.07 oz. silver a ton were not duplicated in most recent investigations; only traces of silver were found. Deposits considered by MacKevett and others (1971) to have economic potential.

Reed, 1938, p. 56-57 -- Country rock is light-colored and dark-colored hornfels cut by porphyritic quartz diorite dikes, some more than 100 ft. thick. Hornfels contains pyrrhotite, pyrite, and possibly chalcopyrite. Mineralized quartz veins carry magnetite, chalcopyrite, and a little pyrite; sulfides partly oxidized to secondary copper and iron minerals on surface.

Smith, 1942 (B 926-C), p. 178-180 -- Intensely metamorphosed zone in which original minerals were almost completely replaced by quartz is bordered on both sides by less completely replaced hornfels (largely epidote and quartz) cut by an intricate net of small quartz veinlets; still farther from central zone the quartz veinlets become less abundant and garnet appears. Molybdenite is present as joint facings and in veinlets and irregular patches from central zone at least to outer zone where quartz veinlets are conspicuous; much of molybdenite is along edges of quartz veinlets; much less abundant in and near central zone. Chalcopyrite locally associated with molybdenite; more abundant and accompanied by pyrite in central zone. Molybdenite-bearing zone is at least 1,000 ft. wide and is several thousand feet long.

(Nunatak) continued

Twenhofel and others, 1946, (B 947-B), p. 9-18 -- Deposit first staked in 1941. Paleozoic (possibly Devonian) hornfels with some shale and limestone are metamorphosed and tightly folded; intruded by now-altered basaltic dikes and sills and by a younger (probably Cretaceous) small body of quartz monzonite porphyry surrounded by a contact aureole characterized by abundant diopside in hornfels. Hundreds of still younger dikes of hornblende andesite porphyry and dacite porphyry intruded the area; accessory minerals include pyrite, magnetite, and sphene. Many quartz veinlets in contact zone, increasing in abundance toward intrusive; outer margin of intrusive almost completely silicified. Metallic minerals in the deposits include molybdenite, pyrite, magnetite, and chalcopyrite. Two kinds of deposits: stockwork of quartz veins and veinlets, some as much as 9 in. thick, in the contact aureole beyond the silicified envelope around the intrusive; and deposits in fault zones that contain quartz veinlets and many open fractaves. Molybdenite mainly along margins of quartz veinlets in both types of deposits. Results of a USBM sampling and drilling program and geologic mapping allow conservative estimates that the stockwork contains about 100,000 tons of molybdenite-bearing material, about 8,500,000 tons of which contains an average of 0.075% Mo and the rest 0.048% Mo, and that the major fault deposit contains about 500,000 tons of molybenite-bearing material with an average content of 0.102% Mo (280,000 tons of which are richer; possibly as much as 0.34% Mo).

Sanford and others, 1949 (RI 4421) -- Geologic data quoted from Twenhofel and others, 1946 (B 947-B), p. 9-18. Details of USBM sampling program, the results of which were summarized by Twenhofel and others, 1946.

Kaufman, 1958 (IC 7844), p. 12 -- Molybdenite prospects have been found at several places, including near the head of Muir Inlet.

Rossman, 1963 (B 1121-K), p. K49 -- Exposure that may not have been visible when studied in 1946 yielded samples that contained 0.04 oz. gold and 7.07 oz. silver per ton; also visible molybdenite.

Berg and Cobb, 1967 (B 1246), p. 163 -- Tightly folded metasedimentary rocks cut by small quartz monzonite pluton surrounded by an aureole of myriad quartz veinlets. Principal metallic mineral in veinlets is molybdenite; minor amounts of pyrite, magnetite, and chalcopyrite. Random sample contained 0.64 oz. Au and 7.07 oz. Ag per ton. Lodes consist of a stockwork underlying an area of about 46 acres and smaller deposits along faults. Largest fault-controlled lode contains about 280,000 tons of material carrying about 0.102% Mo; stockwork contains about 8,500,000 tons of material with 0.075% Mo and mnay times more material of lower grade.

(Nunatak) continued

MacKevett and others, 1971 (P 632), p. 1-2 -- Deposit considered to have economic potential for molybdenum. Prospect consists of abundant, closely spaced molybdenite-bearing quartz veins, minor molybdenite disseminated in hornfels, and a mineralized fault zone. Deposits mainly in hornfels, but locally in quartz monzonite porphyry intrusive body, and in a silicified zone near the edge of the igneous body. Pyrite, pyrrhotite, chalcopyrite, and traces of silver associated with the molybdenite in parts of the deposit. Resource estimate for the closely spaced vein network (stockwork) above sea level near Muir Inlet is 2,247,000 tons of material averaging 0.067% MoS_2 and 0.016% Cu. Estimate for remainder of stockwork and the fault-zone deposit is 129,530,250 tons of material averaging 0.026% MoS_2 and 0.018% Cu; and additional 18,000,000 tons of similar material is inferred to underlie steep cliff near southern end of stockworks. Below sea level there is probably a similar tonnage of material of similar grade. 3 diamond-drill holes put down in 1966 explored parts of the deposits between 400 ft. above and 300 ft. below sea level; cores reported to indicate grades similar to those used in estimates of MacKevett and others (above) and Twenhofel and others, 1946 (B 947-B), p. 17-18.

p. 29 -- One of the most important known deposits in Glacier Bay National Monument.

p. 40-41 -- Copper minerals present; in deposits similar to some porphyry copper deposits.

p. 53 -- Copper is a minor constituent that probably would be recovered if the deposits were mined on a larger scale.

p. 69 -- Silver is a minor constituent; Rossman reported a sample with 7.07 oz. per ton, but MacKevett and others collected samples with only traces of silver.

p. 73-78 -- Most date summarized from other reports and (or) summarized on p. 1-2.

McGee, 1974 (AOF-47), p. 8 -- Data from Twenhofel and others, 1946 (B 947-B), p. 9-18.

Oregon King Consolidated	Gold
Yakutat district	Mt. Fairweather (10.2, 9.0)
MF-436, loc. 67	58°30'N, 137°23'W.

Summary: 36 placer claims on beach and probably stream and terrace deposits.

MacKevett and others, 1971 (P 632), p. 67-68 -- 36 placer claims, mainly on beaches, west of La Perouse Glacier. Intermittent exploration in early 1960's. Probably include a few stream and terrace deposits as well as beach placers.

Parker, A. F.

Gold, Lead

Juneau district
MF-436, loc. 16

Mt. Fairweather (14.5, 15.7)
58°53'N, 136°54'W.

Summary: Quartz veinlets 1/2 to 1 in. thick in 10 in. of gouge in a fault zone in granodiorite contain galena, pyrite, and free gold. Developed by a 20-ft. tunnel between 1938 and 1941. 7 or 8 tons of ore was mined.

Twenhofel and others, 1949 (B 963-A), p. 33-34 -- Property staked in 1938. 7 or 8 tons of ore reported to have been produced by July, 1940. 20-ft. tunnel driven along a fault in which 4 quartz veinlets 1/2 - 1 in. thick are exposed in 10 in. of gouge. Fault in tunnel is cut off by another fault at face of tunnel; a third fault crops out at portal. All fault fractures contain quartz veinlets locally. Quartz contains free gold, galena, and pyrite.

(Ptarmigan Cr.) Zinc

Juneau district
MF-436, loc. 18

Mt. Fairweather (14.75, 15.35)
58°52'N, 136°52'W.

Summary: Discontinuous lenticular quartz vein in fault zone contains sphalerite. Fault can be traced for 4,500 ft.; wall rock altered.

Rossman, 1959 (B 1058-B), p. 55-56 -- Discontinuous lenticular quartz vein exposed in fault zone for a length of about 200 ft.; contains sphalerite, arsenopyrite, and pyrite. Fault can be traced for 4,500 ft. to SW; wall rock altered along entire length.

(Queen Inlet) Cobalt, Copper, Iron

Juneau district
MF-436, loc. 39

Mt. Fairweather (18.0, 16.0)
58°54'N, 136°31'W

Summary: Small tactite bodies along contracts between alaskite (with associated porphyritic volcanic rocks) and marble locally contain enough magnetite to be called skarn. Skarn and mafic dikes that cut alaskite and marble contain veins and pods of sulfides (mainly pyrite, but some chalcopyrite and secondary copper minerals). Spectrographic analyses indicated that samples contained as much as 300 ppm Cu, 300 ppm Co, and 30 ppm Sn. Magnetometer traverse suggested more magnetite-bearing bodies under glacial drift. Known bodies too small and too lean to warrant economic interest.

MacKevett and others, 1971 (P 632), p. 41 -- Copper minerals are subordinate constituents of skarn.

p. 53-54 -- Chalcopyrite and secondary copper minerals in skarn. 30 ppm Sn in one sample.

p. 70,72-73 -- Tactite bodies that locally contain enough magnetite to be called skarn are as much as 20 ft. thick and are between alaskite and coarse white marble; contain sporadically distributed veins and pods of sulfides (chiefly pyrite). Mafic dikes cut the other rocks; porphyritic volcanic rocks (containing minute crystals of magnetite and pyrite) are associated with the alaskite. Samples contained as much as 300 ppm Cu, 300 ppm Co, 30 ppm Sn, and traces of Mo and Ni. Known iron deposits are too small and too lean to warrant economic interest; magnetometer traverse indicate probably presence of other magnetite-bearing bodies beneath glacial drift.

Rainbow — Gold, Lead, Silver, Zinc

Juneau district — Mt. Fairweather (15.0, 15.65)
MF-436, loc. 20 — 58°53'N, 136°51'W

Summary: Steeply dipping altered zone in granodiorite and alaskite extends about 1/2 mi. SW from sea level and contains quartz-calcite veins. Ore mined from brecciated vein material that contains gold and a mineral assemblage similar to that at LeRoy mine; 180 ft. adit (portal 15 ft. above sea level), crosscut, and stopes. Also from pit at SW end of altered zone. Altered rock along fault also contains a little gold. Total production not known, but probably second only to LeRoy mine in Reid Inlet area. Samples contained as much as 10.211 oz. gold and 2.043 oz. silver per ton; 1,500 ppm As; 500 ppm Pb; and 2,000 ppm Zn. Sphalerite and galena assumed to be present. See also LeRoy.

Reed, 1938, p. 63 -- [Assay of sample 7 matches data given in Twenhofel and others (B 963-A), p. 33; map (fig. 2) shows different location. Sample B (0.84 oz. gold and 0.10 oz. silver per ton and 1.02% Zn) is shown on map as from same location as Rainbow. Sample locations are probably reversed on map].

Smith, 1942 (B 933-A), p. 17 -- Prospecting, 1940.

Twenhofel and others, 1949 (B 963-A), p. 31 -- Almost 7 tons of ore mined in 1938.

p. 33-34 -- Lode is gouge and crushed quartz in fracture; material on outcrop was scraped out to a maximum depth of about 10 ft. for a length of 100 ft. Material said to average about $100 [about 2.86 oz. gold] per ton; some said to be worth $360 [about 10.28 oz. gold] per ton. Sample collected by Reed in 1936 across a width of 18 in. ran 0.97 oz. gold and 0.50 oz. silver a ton and 1.08% Zn. Tunnel near tidewater along a fracture in a siliceous, chertlike rock encountered crushed wall rock, quartz, and gouge; much limonite stain.

Rossman, 1959 (B 1058-B), p. 37-39 -- Staked in about 1936. Adit started, probably before 1941. By middle 1940's ore had been mined; milled at LeRoy mill.

p. 52-54 -- Mining started in about 1945. Vein is along a small fault in granodiorite; strikes about NE and dips 70°-80° SE. Altered zone along fault can be traced for about 2,000 ft.; quartz present for several hundred feet near sea level; quartz vein at SW and of exposed fault zone at elevation of about 2,000 ft. Near sea level tunnel was driven about 200 ft. on vein and an unknown amount of ore stoped out. Upper vein is 10-15 in. thick and crops out for distance of about 75 ft.; surficial material was mined.

Rainbow (continued)

Berg and Cobb, 1967 (B 1246), p. 160 -- Ore of major sources of the probable 10,000 fine oz. of gold from the area.

MacKevett and others, 1971 (P 632), p. 59-60 -- Altered fault zone about 1 ft. thick contains vein quartz. Zone can be traced about half a mile SW from sea level to altitude slightly over 1,000 ft.; strikes N30°E and dips from vertical to 70° SE. Workings consist of an adit about 180 ft. long (portal 15 ft. above sea level) with a short crosscut and stopes and a small pit near southwesternmost outcrops of zone. Zone cuts granodiorite and small masses of alaskite. Brecciated quartz-calcite vein contains gold and a mineral assemblage similar to that at LeRoy mine. Altered zone (abundant secondary iron minerals and gouge) also contains widely scattered gold. Samples from mine contained as much as 10.211 oz. Au and 2.043 oz. Ag per ton; 1,500 ppm As; 500 ppm Pb; and 2,000 ppm Zn. Mine worked in 1945 and shortly thereafter; no production figures available, probably second largest producer in area.

Rambler — Gold, Lead, Silver, Zinc

Juneau district — Mt. Fairweather (14.7, 14.95)
MF-436, loc. 23 — 58°50'N, 136°53'W.

Summary: Veins that pinch and swell (about an inch to 3 ft.) cut granodiorite that contains screens of metamorphic rock and is cut by mafic dikes contain quartz, calcite, feldspars, barite, arsenopyrite, pyrite, galena, and traces of gold. Assays of 0.26 oz. gold and 0.10 oz. silver a ton are reported. Float contains abundant galena and sphalerite and considerable free gold.

Reed, 1938, p. 65 -- In granitic rock near marble and other rocks. Granitic rock cut by altered zone about 20 ft. thick and consisting mainly of quartz and calcite with considerable pyrite. Zone splays out at north end of outcrop; small quartz veins (largest is locally 2 ft. thick) which carry pyrite, sphalerite, and galena. Sample of vein material contained 0.26 oz. Au and 0.10 oz. Ag a ton; sample of altered zone contained trace of Au and 0.20 oz. Ag a ton.

Rossman, 1959 (B 1058-B), p. 35-38 -- Claims are near Lamplugh Glacier and hard to reach. Staked in about 1936. Examined and sampled by a major mining company in 1937.

p. 44 -- Vein strikes nearly due east.

p. 55 -- Vein is in granodiorite, varies greatly in thickness. 3 ft. thick in some places; exposed for a few hundred feet. Contains considerable pyrite. Float (rocks may have come from another vein) contains abundant galena and sphalerite and considerable free gold.

MacKevett and others, 1971 (P 632), p. 64 -- Steeply dipping quartz veins that pinch and swell conspicuously in granodiorite that contains small screens of metamorphic rocks and is cut by mafic dikes. Veins mainly 1 or 2 in. thick, but in places are 3 ft. thick; bordered by narrow altered zones. Veins contain quartz, calcite, feldspars, barite, arsenopyrite, pyrite, galena, and traces of gold. Samples rich in gold have been reported.

(Red Mtn.) Cadmium, Zinc

Juneau district
MF-436, loc. 44

Mt. Fairweather (22.15, 17.25)
58°58'N, 136°03'W.

Summary: Small pods and impregnations in Middle Devonian limestone near a granodiorite cupola. Encrustations of a secondary zinc mineral. A sample contained 7,000 ppm Zn, 500 ppm Pb, 70 ppm Cd, and a trace of Ag. Deposits too small to be of economic interest.

MacKevett and others, 1971 (P 632), p. 40 -- Cd detected in sulfide lenses, probably a minor constituent of sphalerite.

p. 53 -- Deposit contains minor amounts of Pb.

p. 55 -- Small pyrite-rich pods and impregnations in Middle Devonian limestone near a granodiorite cupola. Largest is about 10 ft. long and 1 ft. in diamenter; encrusted with a secondary zinc mineral (probably hydrozincite or smithsonite). Sample contained 7,000 ppm Zn, 500 ppm Pb, 70 ppm Cd, and a trace of Ag. Deposits too small to be of economic significance.

(Rendu Inlet) — Cobalt, Copper, Iron, Molybdenum, Silver

Juneau district — Mt. Fairweather (16.4-16.95, 16.2-16.55)

MF-436, locs. 30-33 — 58°55'-58°56'N, 136°38'-136°41'W.

Summary: 2 claims patented in about 1892 as a silver prospect; developed by a short adit from which some ore may have been taken before 1900, carbonate-quartz vein about 6 in. thick along contact between marble and a diorite dike and several feet of altered wall rock; wire silver, tetrahedrite, and copper (potential byproduct) reported. Near mouth of inlet are scattered sulfides in bleached marble; principal sulfide is pyrite; sample contained 1,500 ppm Cu; 1,000 ppm Ni; and 700 ppm Co. In peninsula west of inlet are magnetite-rich pods of skarn or tactite in quartz diorite and near contact between it and marble; deposits appear to be small, but much of nearby bedrock is covered by surficial deposits. Thin quartz veins and thin quartz-rich pegmatite dikes in granitic rocks west of inlet contain scattered molybdenite, chalcopyrite, pyrite, and pyrrhotite.

Reed, 1938, p. 57-58 -- 2 claims patented in about 1892 could not be found in 1936. Country rock is quartz diorite which in a few places is cut by light-colored dikes. A few tiny mineralized quartz veinlets in altered zones. Tetrahedrite said to have been found on the claims, but only metallic mineral listed in rock descriptions is magnetite.

Rossman, 1963 (B 1121-K), p. K4 -- 2 silver claims located in about 1892.
p. K48-K49 -- Quartz vein along a fault "in a quartzitic phase of the rock mapped of diorite". Country rock extensively altered for several feet on each side of fault. Specimen of ore contained wire silver and considerable tetrahedrite.

Berg and Cobb, 1967 (B 1246), p. 161 -- Reportedly rich silver lode in altered zone along a minor fault consists of a small quartz vein containing wire silver and tetrahedrite. Discovered in 1892 and developed by a short tunnel from which ore was probably taken before 1900.

(Rendu Inlet)

MacKevett and others, 1971 (P 632), p. 29,39-40 -- Tetrahedrite and copper minerals present.

p. 50 -- Several small altered zones in bleached marble west of mouth of inlet contain scattered sulfides, chiefly pyrite, and secondary iron minerals. Sample contained 1,500 ppm Cu; 1,000 ppm Ni; and 700 ppm Co.

p. 53 -- Silver prospect (argentiferous tetrahedrite) also carries copper.

p. 69-70 -- 2 claims patented in about 1892. Developed by a short adit (caved at portal in 1966; most of outcrops covered by slide material). Deposits mainly in an ankeritic carbonate-quartz vein about 6 in. thick and a few feet of altered wall rock (bleached marble hanging wall; dioritic dike footwall); locally intense iron staining. Samples collected in 1966 were essentially barren. Argentiferous tetrahedrite and wire silver reported by Buddington (unpub. data, 1924) and Rossman (1963 (B 1121-K), p. K48-K49). Similar-appearing veins and altered zones nearby. In southern part of peninsula west of Rendu Inlet are magnetite-rock pods of skarn or tactite near contact between marble and quartz diorite and in quartz diorite; deposits appear to be small, but much of nearby bedrock is covered by surficial deposits. A few mafic dikes as much as 6 ft. thick contain small pyrite-rich blebs and pods.

p. 73 -- 700 ppm Co in samples from west of mouth of inlet.

p. 79 -- 1,000 ppm Ni in samples from pyrite-rich lens west of mouth of inlet. Thin quartz veins and quartz-rich pegmatite dikes in granitic rocks west of inlet in a zone about 25 ft. wide contain scattered sulfides, including molybdenite, chalcopyrite, pyrite, and pyrrhotite.

Richtmeyer	Gold (?)
Juneau district	Mt. Fairweather (14.15, 15.7) 58°53'N, 136°56'W.

Summary: Gold claim. No specific data; probably on quartz veins in granitic rock near contact with hornfels.

MacKevett and others, 1971 (P 632), p. 56 -- Gold claim. Probably on quartz veins in granitic rock near contact with hornfels.

(Russell I.) Gold

Juneau district
MF-436, loc. 29

Mt. Fairweather (15.3, 16.7)
58°56'N, 136°49'W.

Summary: 2 thin quartz veins in 3-ft.-thick altered zone in granodiorite contain gold. Sample carried 0.844 oz. gold per ton.

MacKevett and others, 1971 (P 632), p. 67 -- 2 gold-bearing quartz veins 2-5 in. thick in vertical altered zone 3 ft. thick in biotite-hornblende granodiorite. Veins also contain calcite and minor pyrite. Sample contained 0.844 oz. gold per ton and traces of Ag and Pb.

Sentinel — Gold, Lead

Juneau district — Mt. Fairweather (15.1, 15.5)
MF-436, loc. 21 — 58°52'N, 136°50'W.

Summary: Hydrothermally altered zone about a foot thick in granodiorite sparsely impregnated by galena and other sulfides; abundant secondary iron minerals. An unknown, but undoubtedly small, amount of gold was recovered from shallow surficial workings.

Rossman, 1959 (B 1058-B), p. 37-38 -- Staked in 1936. Decomposed vein material has been mined from surface.

p. 54 -- Small hydrothermally altered zone along a minor fault in granodiorite; no quartz vein. Gold-bearing zones 6-10 in. wide. Altered zone exposed over vertical and horizontal distances of about 50 ft. each; impregnated by galena and other sulfides. Red oxidation product on floor of a cavity a few feet long contained a high concentration of gold.

Berg and Cobb, 1967 (B 1246), p. 160 -- Has been minor production.

MacKevett and others, 1971 (P 632), p. 60 -- Ore localized along a one-foot-thick steep altered zone in granodiorite. Sparse impregnations of sulfides, erratically distributed gold, and abundant secondary iron minerals. Similar altered zones exposed nearby; sample from ore yielded negligible gold values. Small undisclosed production of gold from shallow surficial workings.

(Shag Cove) Cobalt, Copper

Juneau district Mt. Fairweather (19.7, 11.55)
MF-436, loc. 46 58°39'N, 136°40'W.

Summary: Pyrrhotite, pyrite, chalcopyrite, azurite, and cuprite(?) in small sulfide-rich pods in sheared and altered zone in quartzose rocks. Sample contained 3,000 ppm Cu, 700 ppm Zn, 200 ppm Co, and a trace of Ag. Probably are not minable quantities of ore.

MacKevett and others, 1971 (P 632), p. 51 -- Sheared and altered zone about 65 ft. wide in quartzose rocks contains numerous thin quartz veins (with pyrite) and several sulfide-rich pods (pyrrhotite with subordinate pyrite, chalcopyrite, azurite, and cuprite (?); sample from largest pod (3 ft. long, 1/2 ft. thick) contained 3,000 ppm Cu, 700 ppm Zn, 200 ppm Co, and a trace of Ag. Minable quantities of ore probably will not be found.

p. 73 -- 200 ppm Co.

(South Crillon Glacier) Chromite, Copper, Iron, Titanium

Yakutat district Mt. Fairweather (10.8, 11.25)
MF-436, loc. 58°38'N, 137°19'W

Summary: Specimens from along contact between base of a gabbroic intrusive and underlying schist contain 5%-6% sulfides, mainly pyrrhotite and chalcopyrite. There are ilmenite-rich zones in the intrusive. Chromite float has been found on the glacier, but not in place.

Kennedy and Walton, 1946 (B 947-D), p. 71 -- Specimens from along contact between bottom of basic intrusive and underlying schist on north wall of valley contain 5%-6% sulfides, mainly pyrrhotite and chalcopyrite.

Rossman, 1963 (B 1121-F), p. F42 -- Ilmenite-rich zones in gabbroic stock.

Berg and Cobb, 1967 (B 1246), p. 195 -- Contact zone between mafic pluton and schist contains 5%-6% sulfides, mainly pyrrhotite and chalcopyrite. Chromite reported in float; not found in place.

MacKevett and others, 1971 (P 632), p. 40 -- Copper minerals present.

p. 53 -- Reference to Kennedy and Walton, 1946 (B 947-D), p. 71.

p. 73 -- Chromite in float on glacier; not found in place.

(South Marble I.)

Copper

Juneau district
MF-436, loc. 51

Mt. Fairweather (22.45, 11.65)
58°39'N, 136°03'W.

Summary: Iron and copper sulfide minerals are in marble near dark-colored, fine-grained porphyritic dikes and in joints in the dikes.

Reed, 1938, p. 69 -- Island mainly marble; cut by dark-colored, fine-grained porphyritic dikes, one of which is about 30 ft. thick. Sulfide mineralization similar to (but less intense than) that on North Marble I. where pyrite, pyrrhotite, chalcopyrite, and covellite are in bodies in marble near dikes and in joints in dikes.

p. 78-79 -- Deposits appear to be related to lamprophyre dikes.

Sunrise — Copper, Gold, Silver, Tungsten(?)

Juneau district — Mt. Fairweather (15.45, 15.25)
MF-436, loc. 26 — 58°51'N, 136°48'W.

Summary: Altered zones in marble and hornfels cut by lamprophyre dikes contain small pods of sulfides, mainly chalcopyrite and pyrrhotite. Small quartz vein about parallel to bedding contain small amounts of gold and silver and some pyrite. Also a report of scheelite being found nearby.

Reed, 1938, p. 64 -- 10 claims along east side of Reid Glacier. Marble and slate with many lamprophyre dikes as much as 30 ft. thick and a few small quartz veins are about parallel to bedding. Dikes in places bordered by siliceous contact rock that contains as much as 15% sulfides (pyrrhotite, pyrite, and arsenopyrite) in places. Also small patches and kidneys a few inches in diameter contain chalcopyrite and pyrrhotite. Quartz veins contain a little gold and silver; material near vein said to carry considerable gold; assay showed only traces of gold and silver.

p. 78-79 -- Deposits related to lamprophyre dikes; some fissure veins.

Rossman, 1959 (B 1058-B), p. 38 -- Vein at altitude of 800 ft. was staked.

p. 56 -- Scheelite reported nearby. Gold-bearing material highly shattered.

MacKevett and others, 1971 (P 632), p. 62-63 -- Gold in discontinuous subparallel quartz-calcite veins with attitudes similar to those of metamorphic (marble and hornfels) rocks in which they occur. Quartz diorite or diorite and lamprophyre dikes as much as 30 ft. thick also present. Pyrite only metallic mineral noted in veins. References to Reed, 1938, p. 64; Rossman, 1959 (B 1058-B), p. 56.

(Surge Bay)	Copper (?), Nickel(?)
Chichagof district	Mt. Fairweather (18.25, 0.5) approx. 58°01'N, 136°21'W. approx.

Summary: Area of gabbroic rocks. Claim located in 1923, presumably for nickel and copper.

Buddington, 1925 (B 773), p. 95 -- Claim located in 1923.
Buddington and Chapin, 1929 (B 800), p. 373 -- Nickel-copper property; gabbroic rocks.

(Tarr Inlet) Copper

Juneau district Mt. Fairweather (13.55-14.2, 16.9-17.3)

Mf-436, locs. 12,13 58°58'-58°59'N, 136°56'-137°00'W

Summary: Veins and lenses of sulfide minerals contain chalcopyrite and secondary copper minerals. Sample from one lens contained 1,000 ppm Cu, 300 ppm Zn, and a trace of Ag.

MacKevett and others, 1971 (P 632), p. 40-41 -- Anomalous concentrations of copper. West of Tarr Inlet (loc. 12) disseminated copper minerals were found in siliceous lenses.

p. 51 -- West of mouth of Tarr Inlet (loc. 13) quartz-calcite veins in a zone of pegmatitic hornblende diorite contain chalcopyrite, pyrite, epidote, chlorite, and secondary copper minerals (chiefly chrysocolla). Sample contained 2,000 ppm Cu. West of Tarr Inlet (loc. 12) siliceous lens in locally altered leucocratic granitic rocks carry abundant disseminated sulfides and sulfide-bearing veinlets; principal sulfide is pyrite; subordinate chalcopyrite. Grab sample from lens contained 1,000 ppm Cu, 300 ppm Zn, and a trace of Ag.

(Taylor Bay) Gold

Juneau district
MF-436, loc. 68

Mt. Fairweather (17.4, 16.25) approx.
58°21'N, 136°37'W. approx.

Summary: Very fine gold in outwash was mined for a short time in early 1900's.

Rossman, 1963 (B 1121-K), p. K50-K51 -- In early 1900's was placer gold mining of outwash in front of Brady Glacier. Gold very fine grained; amount recovered probably was small.
MacKevett and others, 1971 (P 632), p. 67 -- Reference to above.
Cobb, 1973 (B 1374), p. 105 -- Have been attempts to recover gold from outwash.

(Tidal Inlet) Cobalt, Copper, Nickel

Juneau district Mt. Fairweather (19.6, 14.2)
MF-436, loc. 42 58°48'N, 136°21'W.

Summary: Sample of sulfide-bearing quartz veins in marble near contact with diorite carried 1,000 ppm Cu, 200 ppm Ni, and 300 ppm Co. Sulfides are pyrite, chalcopyrite, and pyrrhotite(?).

MacKevett and others, 1971 (P 632), p. 50 -- Thin quartz veins in marble near contact with hornblende diorite contain pyrite, chalcopyrite, and pyrrhotite(?). Representative sample contained 1,000 ppm Cu, 300 ppm Ni, and 300 ppm Co.

(Triangle I.) Molybdenum

Juneau district Mt. Fairweather (17.85, 17.05)
Mf-436, loc. 38 58°57'N, 136°32'W

Summary: Island is fine-grained granodiorite cut by a few aplitic dikes. A few hundred pounds of molybdenite was found; most was removed by one man in one day.

Rossman, 1963 (B 1121-K), p. K49 -- A few hundred pounds of molybdenite was found; most was taken out in one day.

Berg and Cobb, 1967 (B 1246), p. 163 -- A little molybdenite was found; most was removed by one man in one day.

MacKevett and others, 1971 (P 632), p. 78 -- Island is fine-grained granodiorite cut by a few aplitic dikes. Reference to Rossman, 1963 (B 1121-K), p. K49.

(Wachusett Inlet) Copper, Molybdenum, Silver

Juneau district
MF-436, loc. 40

Mt. Fairweather (19.2, 16.9)
58°57'N, 136°23'W.

Summary: Quartz vein 1-12 in. thick contains pyrite, molybdenite, and chalcopyrite. Sample contained 7,000 ppm Mo, 15,000 ppm Cu, 700 ppm Zn, and 15 ppm (0.0045 oz. per ton) silver.

MacKevett and others, 1971 (P 632), p. 53 -- Chalcopyrite and secondary copper minerals present.

p. 78 -- Molybdenite-bearing quartz vein 1-12 in. thick is exposed for about 75 ft. along strike; in quartz diorite. Minerals in vein include pyrite, molybdenite, chalcopyrite, and secondary iron minerals. Sample contained 7,000 ppm Mo, 15,000 ppm Cu, 700 ppm Zn, and 15 ppm (0.0045 oz. per ton) Ag. Deposit is too small to be exploited, but is rich enough to encourage exploration in vicinity.

Whirlaway — Gold

Juneau district — Mt. Fairweather (15.6, 15.1) approx.
MF-436, loc. 27 — 58°51'N, 136°47'W approx.

Summary: Vertical quartz-calcite veins as much as 1 ft. thick in fine-grained diorite or quartz diorite contain uncommon pyrite and arsenopyrite. Gold reported to have been recovered from weathered surficial parts of veins.

Rossman, 1959 (B 1058-B), p. 38 -- East of Reid Inlet at altitude of about 2,000 ft.

p. 56 -- Veins reported to be in crystalline rock with granitic texture. Weathered surface material has been mined and sluiced; free gold recovered.

Berg and Cobb, 1967 (B 1246), p. 160 -- Minor production reported.

MacKevett and others, 1971 (P 632), p. 63 -- Vertical veins that pinch and swell are as much as 1 ft. thick; in fine-grained diorite or quartz diorite; can be traced for about 60 ft.; contain quartz, abundant calcite, minor muscovite, uncommon pyrite and arsenopyrite, and probably erratically distributed gold. Samples collected in 1966 were virtually barren. Reference to Rossman, 1959 (B 1058-B), p. 56.

(Willoughby I.) Antimony, Copper, Gold, Lead, Silver

Juneau district Mt. Fairweather (21.55-21.75, 10.75-10.9)

MF-436, locs. 48, 49 58°36'N, 136°07'-136°08'W.

Summary: Island mainly limestone (marble in places) cut by lamprophyre dikes. Deposit in northeast part of island is on replacement body of pyrite, lollingite, and chalcopyrite. Deposit on southwest side of island is at intersection of 2 lamprophyre dikes; sulfides include chalcopyrite, pyrite, and tetrahedrite, some of which are argentiferous; some silver ores reported to have been mined. Sample contained 25% Pb, 25% Sb, and 1.74 oz. gold and 42 oz. silver per ton. Jamesonite also reported.

Reed, 1938, p. 70-72 -- In northeast part of island a replacement body in limestone is exposed in an area 15 ft. by 5 ft. and 15 ft. high. Consists almost entirely of metallic minerals among which are pyrite, lollingite (?), and chalcopyrite; gold and silver content not known. At least 3 similar deposits on island have been reported. On southwest side of island is a prospect where 2 lamprophyre dikes in marble intersect. Some rich ore said to have been mined from a kidney at dike intersection. Sulfides in joints in marble and along margins of dikes; those recognized include chalcopyrite, pyrite, and tetrahedrite; jamesonite reported. Assay (?) of 25% Pb, 25% Sb, and 1.74 oz. Au and 42 oz. Ag per ton reported.

p. 78-79 -- Deposits in NE part of island probably, and that on SW part certainly, associated with lamprophyre dikes.

Wedow and others, 1952 (OF 51), p. 67 -- Argentiferous sulfides (chalcopyrite, pyrite, tetrahedrite) in pods along mineralized dikes.

Rossman, 1963 (B 1121-K), p. K48 -- Reference to Reed, 1938, p. 70-72.

Berg and Cobb, 1967 (B 1246), p. 160-161 -- Deposit worked for silver probably consisted of a small kidney-shaped mass of chalcopyrite, pyrite, and tetrahedrite in limestone cut by a lamprophyre dike. Chalcopyrite also reported elsewhere on island.

MacKevett and others, 1971 (P 632), p. 39-40 -- Tetrahedrite and jamesonite reported from prospect on west side of island; ore sample contained 25% Sb. Lollingite reported from prospect on NE side of island.

p. 44-45 -- References to Reed, 1938, p. 70-72 and to unpublished data of Buddington (1924), which were also quoted by Reed. Prospects could not be found in 1966.

p. 53 -- Same data of Buddington as above (p. 45).

p. 69 -- Silver reported from NW part of island.

(Wood Lake) Gold

Juneau district Mt. Fairweather (18.5, 9.65) approx.
MF-436, loc. 70 58°32'N, 136°29'W. approx.

Summary: Placer gold has been mined from glacially derived gravels.

Rossman, 1963 (B 1121-K), p. K50 -- Placer gold has been mined from glacially derived gravels.
MacKevett and others, 1971 (P 632), p. 67 -- Reference to above.

(Yakobi I.) Copper, Gold

Chichagof district
MF-436, loc. 64

Mt. Fairweather (20.1, 0.45)
58°01'N, 136°20'W.

Summary: Claims located in about 1887, tunnel driven about 35 ft. on quartz vein in shear zone in mafic intrusive rock; $1,100 in gold (1887 price) reported to have been mined. Quartz vein above old tunnel contains a little chalcopyrite and visible gold.

Overbeck, 1919 (B 692), p. 121 -- 4 claims in angle between Lisianski Strait and Lisianski Inlet; first located about 30 years ago (as of 1917) and relocated in 1917. Tunnel was driven about 35 ft. near tide level (in about 1887) and about $1,100 worth of gold reported to have been mined. Lode appear to be a quartz stringer from less than a foot to 3 ft. wide in a shear zone in a "rather basic intrusive". Quartz pinches out in tunnel; farther uphill white quartz carries a little chalcopyrite and visible free gold.

Buddington, 1925 (B 773), p. 114 -- Overbeck (see above) reported that gold prospect was located about 1887; relocated in 1917.

Berg and Cobb, 1967 (B 1246), p. 143 -- Data (not correctly summarized) from above.

Unnamed occurrence	Gold
Chichagof district	Mt. Fairweather (19.2, 2.4-2.5)
MF-436, loc. 71	58°07'N, 136°26'W.

Summary: A little gold in beach gravel at mouth of a small stream.

Rossman, 1959 (B 1058-E), p. 211 -- Beach gravel at mouth of a small stream contains a little gold. Vein from which gold was derived probably crops out on cliff to west 800-1,000 ft. above sea level.

Unnamed occurrence	Gold
Juneau district	Mt. Fairweather (17.4, 6.95)
MF-436, loc. 56	58°23'N, 136°37'W.

Summary: Lode gold reported, probably in small quartz veins in dioritic rock.

MacKevett and others, 1971 (P 632), p. 67 -- Lode gold occurrence reported (Rossman's field notes); probably consists of small gold-bearing quartz veins in dioritic rock.

Unnamed occurrence	Gold, Tungsten (?)
Juneau district MF-436, loc. 27	Mt. Fairweather (15.6, 15.1) approx. 58°51'N, 136°47'W approx.

Summary: Gold-bearing vein in shattered metasedimentary rock. Reported to contain a little scheelite.

Rossman, 1959 (B 1058-B), p. 56 -- Shattered gold-bearing vein east of Reid Inlet in shattered rock of sedimentary origin crops out at altitude of about 700 ft. Reported to contain a little scheelite at a place due E of Incas property. In most places vein is covered by slumped debris.

(Bear Cr.)

Copper, Gold, Zinc

Juneau district
MF-424, locs. 14, 28

Skagway (16.5-16.9, 9.7-9.95) approx.
59°33'N, 139°06-139°09'W approx.

Summary: Specimen of a quartz vein a few inches thick from ridge west of creek at 59°33'N, 136°09'W (16.5, 9.95) contained pyrite, pyrrhotite, chalcopyrite, and sphalerite. Auriferous stream gravels discovered in 1900 did not prove to be workable and claims were abandoned. Stream now called Kelsall R.

Wright, 1904 (B 225), p. 63 -- Gold discovered, 1900. Restaked in 1903.

Wright, 1904 (B 236), p. 13 -- Stream not productive as of 1903. Mining difficult because of high water, great depth to bedrock, and presence of quicksand.

Wright and Wright, 1905 (B 259), p. 52 -- Only assessment work and claim staking, 1904.

Eakin, 1918 (B 662), p. 93, 98 -- Preliminary to B 699.

Eakin, 1919 (B 699), p. 15 -- Specimen from lode on ridge west of creek was apparently taken from a vein a few inches wide; consists of pyrite, pyrrhotite, chalcopyrite, and sphalerite with a little quartz gangue.

p. 18-19 -- Data from p. 15 on lode occurrence. Extensive prospecting of gravels failed to find workable deposits; claims were abandoned.

Berg and Cobb, 1967 (B 1246), p. 162 -- Quartz vein, apparently only a few inches thick, contains pyrite, pyrrhotite, chalcopyrite, and sphalerite.

(Big Boulder Cr.)	Gold
Juneau district	Skagway (16.0, 8.0) approx. 59°26'N, 136°12'W approx.

Summary: Lean or small placer gold deposits.

MacKevett and others, 1974 (P 832), p. 21 -- Leaner or smaller placer gold deposits than those mined on Porcupine Cr. were reported.

(Cahoon Cr.) Gold

Juneau district Skagway (15.65-15.8, 6.8-6.95)
MF-424, loc. 26 59°23'N, 136°14'-136°15'W

Summary: Placer mining near mouth and then down McKinley Cr. for 2,000 ft., 1908 to about 1913. Mining near head of creek in early 1900's was not very successful. Sample of pyritiferous slate contained 0.02 ppm gold. Includes references to (Calhoun Cr.)

Wright, 1904 (B 236), p. 26 -- Unsuccessful attempt at mining in 1903.
Brooks, 1911 (B 480), p. 37 -- Dead work and a little hydraulicking, 1910.
Brooks, 1912 (B 520), p. 36 -- Mining, 1911.
Brooks, 1913 (B 542), p. 43 -- Mining, 1912, on Calhoun Cr.
Brooks, 1914 (B 592), p. 59 -- Mining, 1913, on Calhoun Cr.
Eakin, 1918 (B 662), p. 97-98 -- Preliminary to B 699.
Eakin, 1919 (B 699), p. 22 -- Stream was diverted by a flume during mining.
p. 24-25 -- Mining began in 1908 on lower Cahoon Cr. and extended 2,000 ft. down McKinley Cr. Mining near head of creek in early 1900's was not very successful and was soon abandoned; has been a little prospecting and "sniping" since then.
Brooks and Capps, 1924 (B 755), p. 25 -- Development reported, 1922.
Cobb, 1973 (B 1374), p. 103 -- Placer gold has been mined.
MacKevett and others, 1974 (P 832), p. 21 -- Has been placer gold production.
p. 24 -- Sample of pyrite-bearing slate contained 0.02 ppm Au.

(Casement Glacier) Copper, Molybdenum

Juneau district Skagway (18.5, 1.2)
MF-424, loc. 8 59°03'N, 135°57'W

Summary: Molybdenite and copper carbonates in float on lateral moraines.

MacKevett and others, 1971 (P 632), p. 74 -- Molybdenite and copper carbonates in float on lateral moraines.

(Chilkat Peninsula) Copper

Juneau district Skagway (23.75, 4.05)
MF-424, loc. 19 59°12'N, 135°22'W

Summary: Chalcopyrite in greenstone/amphibolite(?).

Winkler and MacKevett, 1970 (OF 406), p. 7 -- Sample BD 473D is "Chalcopyrite-epidote-rich greenstone/amphibolite(?)."

(Clear Cr.)

Gold(?)

Juneau district
MF-424, loc. 28

Skagway (16.9, 9.7) approx.
59°33'N, 136°06'W approx.

Summary: Gold may have been found in 1900; if so, there could not have been much.

Wright, 1904 (B 236), p. 13 -- Tributary of Bear Cr. "....caused excitement in 1900...." No production as of 1903.

(Clifton) Molybdenum

Juneau district Skagway (24.7, 9.7)
MF-424, loc. 21 59°31'N, 135°13'W

Summary: About 1% molybdenite disseminated in light-colored granitic rock; locally concentrated along joints. Sometime between 1915 and 1917 a 15-ft. shaft was sunk and a 30-ft. tunnel driven. No production. Includes references to Combination and to molybdenite prospect north of Skagway.

Chapin, 1916 (B 642), p. 99-100 -- Granitic rocks contain molybdenite.

Brooks, 1918 (B 662), p. 25 -- 10-ft. shaft sunk and 25-ft. adit driven on molybdenite deposit north of Skagway. Country rock is granite.

Martin, 1919 (B 692), p. 23 -- Operations preparatory to mining, 1917.

Brooks, 1921 (B 714), p. 41 -- Reference to Brooks, 1918 (B 662), p. 25.

Buddington and Chapin, 1929 (B 800), p. 330 -- Reference to Brooks, 1918 (B 662), p. 25.

Smith, 1942 (B 926-C), p. 180-181 -- In 1917 a shaft had been sunk about 15 ft. E. of railroad and a tunnel driven about 30 ft. along a joint plane W. of railroad. Molybdenite distributed in patches in light-colored granitic rock; visual estimate is about 1% molybdenite. One of owners says zone can be traced for a mile or so. References to Chapin, 1916 (B 642), p. 100; Brooks, 1918 (B 662), p. 25.

Herbert and Race, 1964 (GC 1), p. 6 -- Repeated in GC 6.

Herbert and Race, 1965 (GC 6), p. 13 -- Shallow shaft sunk on molybdenite-bearing dike and short tunnel driven on a molybdenite discovery. Scattered grains of molybdenite may be found over a wide area.

Berg and Cobb, 1967 (B 1246), p. 163 -- Light-colored granite contains about 1% disseminated molybdenite that is locally concentrated along joints. Sometime between 1915 and 1917 was explored by 15-ft. shaft and 30-ft. tunnel.

(Cottonwood Cr.) Gold

Juneau district Skagway (16,15, 5,2)
MF-424, loc. 29 59°17'N, 136°12'W

Summary: Placer gold discovered in 1899. No development until 1902, and no data on how much then.

Wright, 1904 (B 236), p. 13 -- Gold discovered, 1899. No development until 1902.
MacKevett and others, 1974 (P 832), p. 21 -- Placer deposits present.

(Gable Mtn.) Copper, Silver

Juneau district Skagway (13.0, 1.6)
MF-424, loc. 4 59°05'N, 136°33'W

Summary: Joint coatings in coarse-grained dioritic rock contain malachite and chrysocolla. Composite grab sample contained 0.1% (1,000 ppm) copper and small amounts of silver and molybdenum (molybdenum mineral not identified).

MacKevett and others, 1971 (P 632), p. 4 -- Deposit discovered in 1966. Mineralized joint coatings in coarse-grained dioritic rocks contain malachite and chrysocolla. Composite grab sample contained 0.1% Cu and minor quantities of Ag and Mo.

p. 41 -- Copper minerals coat fractures.

p. 43 -- Same data as on p. 4.

(Glacier Cr.)

Copper, Gold, Lead, Silver, Zinc; Barite

Juneau district
MF-424, locs. 12, 24, 25

Skagway (14.4-15.15, 7.1-7.5)
59°24'-59°25'N, 136°18'-136°23'W

Summary: Placer gold discovered in 1899 or 1900. Evidence for 2 glacial advances with stream entrenchment after each; gold in base of gravels formed during each entrenchment. Gold-bearing gravels 40-50 ft. deep. Mining hampered by floods and large quantities of ground water. Probably never was much production. Lode deposits near southern boundary of a fault in chloritic schist that in places is several hundred feet wide consist of barite-rich lodes as much as 30 ft. wide that also contain sphalerite, galena, chalcopyrite, silver (probably in argentiferous galena), probably sulfosalts, a little gold, and secondary minerals.

Brooks, 1900, p. 375 -- Placer gold discovered, late 1899 or early 1900.

Wright, 1904 (B 225), p. 60 -- Prospects have been found.

Wright, 1904 (B 236), p. 12 -- Gold claims staked but not worked much because of uncertainty of location of Alaska-Canada boundary. Determined to be in Alaska; activity expected in 1904.

p. 19 -- Gold expected to be limited to lower claims on creek.

Wright and Wright, 1905 (B 259), p. 52 -- No work during summer, 1904; some expected in winter.

Brooks, 1913 (B 542), p. 43 -- Preparations for installing hydraulic plant, 1912.

Brooks, 1914 (B 592), p. 59-60 -- Hydraulic plant installed, 1913.

Eakin, 1918 (B 662), p. 93-97, 99 -- Preliminary to B 699.

Eakin, 1919 (B 699), p. 19-23 -- Valley shows evidence of 2 ice advances with downcutting by stream after each; gold in base of deposits formed during each entrenchment. Gravels where mined are 45-50 ft. deep.

p. 25 -- Early attempts at mining were not very successful because of depth of gravel and abundance of ground water. Large hydraulic plant installed in 1915, but floods prevented operation. Dead work and a little mining in 1916.

Winkler and MacKevett, 1973 (OF 406), p. 2 -- Lead-silver-barite lodes.

p. 6-7 -- Sample MK 25D is of barite-carbonate vein in float. Samples MK 55C-1, MK 55D-1, and MK 55D-2 are of sphalerite-bearing veins in float.

MacKevett, 1971 (OF 500) -- Barite-rich lode as much as 30 ft. wide near the southern boundary of a fault zone (in places several hundred feet wide) in chloritic schist is traceable for about 1/2 mile along strike throughout a vertical extent of more than 1,000 ft. Gaps in exposed lode and both on-strike extensions are covered by snow or talus. Lode consists dominantly of barite with small amounts of quartz; calcite; pyrite; chalcopyrite; galena; sphalerite; secondary zinc, iron, or copper minerals; and probably sulfosalts. Samples carry as much as 700 ppm silver. Some minerals, particularly those containing copper or zinc, appear to be localized near margins of lode.

Cobb, 1973 (B 1374), p. 103 -- Has been placer gold production.

(Glacier Cr.) -- Continued

MacKevett and others, 1974 (P 832), p. 21 -- Has been placer gold production; gold is minor constituent of barite deposits.

p. 25-29 -- Data essentially the same as in MacKevett, 1971 (OF 500). Strontium and lead apparently have substituted for some of the Ba in barite. Some samples contain minor amounts of gold. Most of silver probably is in argentiferous galena. Deposits are interpreted as vein deposits of hydrothermal origin that are probably genetically related to late-stage fluid emanations from Cretaceous quartz diorite-granodiorite magma apparently localized along favorable structural sites near exposed or inferred concealed plutons.

(Grizzly Cr.)	Gold(?)
Juneau district	Skagway (15.6, 7.0) approx. 59°24'N, 136°14'W approx.

Summary: Claims were staked in about 1900. No report of any other activity.

Wright, 1904 (B 236), p. 12 -- Claims have been staked.

(Haines)

Iron , Titanium

Juneau district
MF-424, loc. 18

Skagway (22.55, 4.65)
59°15'N, 135°29'W

Summary: Pyroxenite surrounds epidote granite and in turn is surrounded (with gradational contact) by metabasalt. Contains probably less than 10% magnetite in grains as much as 1/4 in. in diameter. Ilmenite intergrown with magnetite; as much as 3.91% (Knopf) or 2.3% (Robertson) TiO_2. Some apatite present. Pyroxenite may be magmatic segregation deposit (Wright) or recrystallized basaltic rocks (Eakin). Resource estimated at several billion tons of material containing less than 10% magnetite. Only exploration was 100-ft. tunnel driven in about 1906.

Wright, 1909 (B 379), p. 86 -- Magmatic-segregation iron deposit being explored, 1903.

Knopf, 1910 (B 442), p. 144-146 -- Rocks in area are largely gabbro and hornblendite; much accessory magnetite and apatite. At north end of belt a tunnel was driven about 100 ft.; material on dump are hornblende augite rocks, some with appreciable amounts of magnetite. Most favorable specimens contain no more than 30% magnetite (about 20% metallic iron) in particles 1/8 to 1/4 in. in diameter in matrix of hornblende and pyroxene. Existence of an ore body of such material has not been demonstrated. A small amount of apatite (indicating presence of phosphorus) is in rock. Sample of magnetite contained 3.91% TiO_2. Material does not appear to be of ore grade.

Eakin, 1919 (B 699), p. 27-29 -- Extensive quotations from Knopf, 1910 (B 442), p. 144-146. Eakin suggests that the hornblendic rocks may have been formed by recrystallization of basaltic volcanic rocks contemporaneously with the formation of feldspathic zones and dikes, presumably during some epoch of the intrusion of the Coast Range diorites.

Brooks, 1921 (B 714), p. 42 -- References to Knopf, 1910 (B 442), p. 144-146; Eakin, 1919 (B 699), p. 27-29.

Buddington, 1925 (B 773), p. 134 -- Reference to Knopf, 1910 (B 442), p. 144-146.

Buddington and Chapin, 1929 (B 800), p. 319 -- Titaniferous magnetite deposits in gabbroic and highly ferromagnesian rocks.

p. 352 -- References to Knopf, 1910 (B 442), p. 144-146; Buddington, 1925 (B 773), p. 134.

Robertson, 1956 (OF 132), p. 10 -- Pyroxenite bodies covered by dense forest; boundaries can not be determined.

p. 13 -- Pyroxenite surrounds small body of epidote diorite and is surrounded by metabasalt. Boundary with epidote diorite is sharp; with metabasalt is irregular and gradational.

p. 24-27 -- Magnetite-bearing rock observed on beach in 1879. Claims first staked in 1906 and a 100-ft. tunnel (now caved) driven in pyroxenite body. Little (if any) activity since 1916. Magnetic iron content 2%-10%; nonmagnetic iron about 9%. Deposits too poorly exposed to estimate resources. Probably are several billion tons of

(Haines) -- Continued

low-grade magnetite-bearing pyroxenite. Analyses show 1.3%-1.8% TiO_2 for whole samples; 1.6 and 2.3% TiO_2 for 2 magnetic fractions.

Berg and Cobb. 1967 (B 1246). p. 163-164 -- Intergrown magnetite and ilmenite in pyroxenite. Data from Robertson, 1956 (OF 1321), p. 13, 24-27.

Hayes

Copper, Iron

Juneau district
MF-424, loc. 9

Skagway (23.4, 1.0)
59°02'N, 135°24'W

Summary: Prospect on a cliff at the head of a talus slope that contains float of magnetite in marble and chalcopyrite and hematite in schistose marble partially altered to skarn.

Herbert and Race, 1964 (GC 1), p. 8-9 -- Data repeated in GC 6.

Herbert and Race, 1965 (GC 6), p. 19, 24 -- Metasedimentary rocks, including marbleized limestone and gneiss, make up country rock. Prospect is on a cliff at the head of a talus slope that contains float of magnetite in marble and chalcopyrite and hematite in schistose limestone partially altered to skarn.

Berg and Cobb, 1967 (B 1246), p. 162 -- Magnetite in marble and chalcopyrite and hematite in schistose limestone partially altered to skarn.

Inspiration Point Mining Co.

Copper, Gold, Lead, Silver, Zinc

Juneau district
MF-424, loc. 22

Skagway (25,4, 11.3)
59°37'N, 135°08'W

Summary: Quartz diorite contains small lenses and masses of argentiferous galena and probably other sulfides. Gold also reported. A few tons of ore containing values in silver, lead, zinc, and copper is said to have been produced.

Smith, 1929 (B 797), p. 37 -- Prospecting, 1927. Numerous lenses and masses of silver-lead ore have been found, but no minable body.

Smith, 1930 (B 810), p. 14 -- Ore contains some gold. Prospecting and development, 1927.

Smith, 1930 (B 813), p. 57 -- Further work reported, 1928.

Smith, 1932 (B 824), p. 63 -- Further work reported, 1929.

Smith, 1933 (B 836), p. 16, 65 -- Underground development reported, 1930.

Smith, 1933 (B 844-A), p. 64 -- More work, 1931; will slow down because of high costs.

Smith, 1934 (B 857-A), p. 60 -- Same as last year, 1932.

Smith, 1934 (B 864-A), p. 65 -- Work discontinued, 1933.

Herbert and Race, 1964 (GC 1), p. 6 -- Data in GC 6.

Herbert and Race, 1965 (GC 6), p. 13 -- Production was a few tons of ore containing values in silver, lead, zinc, and copper.

Berg and Cobb, 1967 (B 1246), p. 161 -- Quartz-diorite with small lenses and masses of argentiferous galena and probably other sulfides. Exploration from about 1926 until 1932; a few tons of ore containing silver-lead, zinc, and copper may have been shipped.

(Klehini R.) Gold

Juneau district Skagway (14.7-15.9, 7.6-8.0)
MF-424, loc. 27, in part 59°25'-59°27'N, 136°13'-136°21'W

Summary: Placer gold near mouths of Jarvis and Porcupine Creeks and probably at many other places. Very little mining, but much testing to determine if deposits of river flats were amenable to dredging (mainly in early 1930's).

Wright, 1904 (B 236), p. 22 -- Stream-bed gravel known to contain gold.
Eakin, 1919 (B 699), p. 19 -- Auriferous gravel near mouth of Porcupine Cr. was prospected by drilling; no workable deposits developed and claims abandoned.
Smith, 1932 (B 824), p. 27 -- Small camp near mouth of Porcupine Cr. may have mined a little gold, 1929.
Smith, 1933 (B 844-A), p. 27 -- Plan for test drilling to evaluate ground for dredging, 1931.
Smith, 1936 (B 868-A), p. 30 -- Test drilling begun, 1934.
Smith, 1937 (B 880-A), p. 33-34 -- Test drilling continued, 1935.
Smith, 1938 (B 897-A), p. 40 -- More testing, 1936. Work hampered by litigation.
MacKevett and others, 1974 (P 832), p. 21 -- Placer gold near Jarvis Cr.

(Klukwan)

Copper, Iron, Platinum, Titanium, Vanadium

Juneau district
MF-424, locs. 15, 16

Skagway (18.55-19.35, 7.3-8.0)
59°24'-59°26'N, 135°50'-135°55'W

Summary: Titaniferous magnetite in pyroxenite; magmatic segregation with magnetite interstitial to pyroxene and idiomorphic against hornblende. Pyroxenite surrounded by diorite. According to Robertson, several tabular zones contain an average of about 20% magnetic iron; about 500 million tons of rock; several billion tons of rock contain about 13% magnetic iron. According to Taylor and Noble, the titaniferous magnetite is fairly uniformly distributed through the pyroxenite and makes up 15-20 percent of the rock. Other constituents are small amounts of chalcopyrite, hematite, pyrite, pyrrhotite, spinel, and leucoxene. By analysis it was determined that samples contained 0.01%-0.29% (average 0.2%) vanadium and as much as 0.11% P, 0.03% S, 0.03% Ni. Scandium identified spectrographically. Fan at foot of mountain slope contains an estimated 500 million tons of broken similar material with average magnetite content of 10%. Deposits long known, but no great interest shown until after World War II. A few tons were taken from the fan for metallurgical testing, but there has been no commercial production.

Wells and Thorne, 1953 (RI 4984) -- Data on metallurgical and concentration tests and problems [many of which have been alleviated by technological advances]. Head samples for beneficiation tests contained 13.2%-54.0% Fe, 1.5%-4.35% TiO_2, and as much as 0.11% P, 0.03% S, 0.05% Cu, 0.03% Ni, and 0.01%-0.29% V.

Robertson, 1956 (OF 132), p. 10-24 -- Pyroxenite body contains magnetite, titaniferous magnetite, ilmenite, feldspar, chlorite, epidote, calcite, and minor chalcopyrite, hematite, pyrite and leucoxene. Magnetite-ilmenite content ranges from 5% to 51%; grains range in size from 0.003 (ilmenite) and 0.01 (magnetite) mm to 0.2 (ilmenite) and 5.0 (magnetite) mm. Spectrographic analyses of magnetic fraction indicated 0.004-0.14% Ni, 0.28% V, and 0.0001%-0.0005% Sc. Pyroxenite exhibits layering when viewed from a distance; cut by closely spaced joints and a few faults with no large offsets. Pyroxenite surrounded by epidote diorite; sharp boundaries. Deposit discovered in 1899; serious exploration began in 1946; investigation by Survey (1950, 1953) included field geologic observations, dip-needle survey, and petrographic and chemical analyses. Body (to a depth of 1,000 ft.) is estimated to contain 1-5 billion tons of material containing an average of about 13% magnetic iron, of which 500 million tons near base of pyroxenite body contains an average of 20% magnetic iron.

p. 28-36 -- A fan below the pyroxenite body is made up of well mixed epidote diorite and pyroxenite and is calculated to consist of about 10 billion cu. ft. of material containing 350-600 million tons of magnetite-bearing detritus. Summary estimate is 500 million tons of material containing an average of 10% magnetite.

(Klukwan) -- Continued

Kaufman, 1958 (IC 7844), p. 11 -- Magnetite-bearing pyroxenite [reference citation incorrect; should be to Wells and Thorne, 1953 (RI 4984).]

Carr and Dutton, 1959 (B 1082-C), p. 80-81 -- Altered volcanic rocks average about 13% iron recoverable as magnetite-ilmenite in disseminated form and in anastomosing masses or veins; part of mass runs about 20% iron. Concentrates containing about 60% Fe and 2%-4% TiO_2 can be obtained.

p. 102 -- Large unclassified resources of unclassified potential titaniferous magnetite ore with approximate iron content of 20%.

Noel, G. A., 1966, p. 64 -- Geologic data from Robertson, 1956 (OF 132).

Berg and Cobb, 1967 (B 1246), p. 163 -- Intergrown magnetite and ilmenite in pyroxenite surrounded by epidote-bearing granite. Sampling and dip-needle surveys suggest the presence of 2 or 3 tabular zones with average magnetic iron content of 20%. Entire deposit is several billion tons of rock containing about 13% magnetic iron. Alluvial fan contains several hundred million tons of broken rock averaging about 10% magnetic iron.

Winkler and MacKevett, 1970 (OF 406), p. 2 -- Reference to Robertson, 1956 (OF 132).

Clark and Greenwood, 1972 (P 800-C), p. C159 -- Of 10 samples of pyroxenite, 7 contained platinum (average 0.046 ppm; maximum 0.100 ppm) and 7 contained palladium (average 0.040 ppm; maximum 0.100 ppm). Positive intercorrelation between Pt-Pd and Fe and V.

Cobb, 1973 (B 1374), p. 103 -- Alluvial fan contains estimated 500 million tons of broken material with average magnetite content of 10%. A few tons taken out for metallurgical testing, but no commercial production.

MacKevett and others, 1974 (P 832), p. 18 -- Alluvial fan has radius of about a mile and an apex height of about 700 ft. above Chilkat R. Derived from magnetite-bearing pyroxenite and gabbro and diorite. Components range in size from silt to large boulders. Similar but smaller fan about a mile to northwest.

p. 24-25 -- Most of data extracted from Robertson, 1956 (OF 132). Magnetite in pyroxenite is interstitial to pyroxene and idiomorphic against hornblende. Robertson estimates magnetite and ilmenite content to range from 5 to about 51 percent. Taylor and Noble [1969. Origin of magnetite in the zoned ultramafic complexes of southeastern Alaska, in Wilson, H. D. B., ed., Magmatic ore deposits--a symposium: Econ. Geology Mon. 4, p. 222] report that the titaniferous magnetite is relatively uniform throughout the pyroxenite and constitutes 15-20 percent of the rock. Pyroxenite also contains minor to trace amounts of hematite, chalcopyrite, pyrite, pyrrhotite, spinel, and leucoxene. "The titaniferous magnetite deposits are migmatic deposits that formed late in the crystallization sequence of the hornblende pyroxenite magma."

Fischer, 1975 (P 926-B), p. B5 -- Bedrock deposit contains 0.2% V_2O_5; total resource is 13 billion tons rock containing 13 million tons of vanadium. Fan contains 0.05% V_2O_5; total resource is a medium(?) amount of rock containing a medium(?) amount of vanadium.

(Marble Cr.) Gold(?)

Juneau district Skagway (15.6, 7.0) approx.
59°24'N, 136°14'W approx.

Summary: Claims staked in about 1900. A little gold may have been mined in 1929.

Wright, 1904 (B 236), p. 12 -- Claims staked in about 1900.
Smith, 1932 (B 824), p. 27 -- Small camp may have mined a little gold, 1929.

Margerie — Copper, Gold, Tungsten

Juneau district — Skagway (8,3, 0,35)
MF-424, loc. 1 — 59°01'N, 137°05'W

Summary: Quartz veins, mineralized shear zones, and pyrrhotite-rich massive sulfide bodies in light-colored granodiorite and (chiefly hornfels) high-rank metamorphic rocks. Quartz veins (as much as 2 ft. thick) contain arsenopyrite and chalcopyrite; samples contain minor amounts of Bi, Co, W, Mo, and as much as 5 ppm (0.145 oz. per ton) gold. Float sample of massive sulfides is mainly pyrrhotite with minor chalcopyrite, quartz, and an unidentified tungsten mineral; contains 3,000 ppm Cu and 3,000 ppm W. Deposits appear to be too small or too lean to mine, but prospect has not been fully explored.

MacKevett and others, 1971 (P 632), p. 3 -- In granitic rock and hornfels. Deposit consists of pyrrhotite and chalcopyrite lenses, copper-bearing altered zones about 6 ft. thick, and thin quartz veins. Deposits appear to be too small or too lean to be exploitable, but prospect has been little explored. Indications of mineralization widespread in general vicinity. Discovered in 1960.

p. 29 -- One of most important known deposits in Glacier Bay National Monument.

p. 40-41 -- Arsenopyrite present. 300 ppm Bi in sample; no bismuth mineral identified. Cypriferous pyrrhotite-rich lenses(?).

p. 43 -- In light-colored granodiorite and nearby (chiefly hornfelsic) high-rank metamorphic rocks. Deposits consist of quartz veins, mineralized shear zones, and pyrrhotite-rich massive sulfide bodies. Quartz veins as much as 2 ft. thick contain arsenopyrite and chalcopyrite; samples also contain minor amounts of Bi, Co, W, Mo and as much as 5 ppm (0.145 oz. per ton) gold. Float of massive sulfides is mainly pyrrhotite with minor chalcopyrite, quartz, and an unidentified tungsten mineral; sample contained 3,000 ppm Cu and 3,000 ppm W.

p. 83-84 -- Repetition of some of above data.

McGee, 1974 (AOF-47), p. 8 -- Mineralized quartz veins, shear zones, and pyrophyllite-rich massive sulfide bodies in light-colored granodiorite and hornfels. Samples from quartz veins contain as much as 2,000 ppm Cu and 0.145 oz. Au per ton. High tungsten values in float.

(McBride Glacier) Gold

Juneau district Skagway (17.4, 1.9)
MF-424, loc. 7 59°06'N, 136°04'W

Summary: Gold in altered zone between phyllite and marble.

MacKevett and others, 1971 (P 632), p. 56 -- Gold is a minor constituent of an altered zone localized along a facies change between marble and phyllite west of McBride Glacier.

(McKinley Cr.) Gold

Juneau district Skagway (15.7-15.8, 6.7-7.1)
MF-424, loc. 26 59°23'-59°24'N, 136°14'-136°15'W

Summary: Tributary of Porcupine Cr. Gold discovered in 1899. Both creek and bench placers mined. Creek placer mined for 2,000 ft. downstream from mouth of Cahoon Cr. Bench placer was an old channel 200 ft. above present stream. Mining was hampered by large boulders; flume needed to carry water around part of creek being mined. Mining probably ceased in about 1916. Bedrock is slate with many calcite veins, some cross-cutting quartz veins; much pyrite. A sample of mineralized slate contained $2.48 in gold per ton (gold at $20.67 an ounce).

Brooks, 1900, p. 375 -- Coarse gold has been found [as of 1899].
Wright, 1904 (B 225), p. 62-63 -- Mining on a creek claim and a bench claim (old channel 150 ft. above creek), 1903.
Wright, 1904 (B 236), p. 12 -- Claims staked about 1900.
p. 19-20 -- Stream gravels for a mile above mouth are auriferous. Rich gravel in bench deposit 3/4 mi. above mouth. Gold mainly flattened and well worn; assay value of $16.80 reported [gold at $20.67 an ounce].
p. 24-26 -- Creek and bench claims being worked, 1903. Bench claim has 2 old channels which are hydraulicked with water from Cahoon Cr. Slate bedrock contains many calcite veins and some crosscutting quartz veins, all with much pyrite. Sample of mineralized slate ran $2.48 in gold [at $20.67 an ounce] a ton.
p. 29 - Data on mining methods.
p. 31 -- Gold-bearing gravels extend up creek for a mile above mouth.
Purington, 1905 (B 263), p. 207 -- Gold worth $16.80 an ounce.
Wright and Wright, 1905 (B 259), p. 52 -- No mining, 1904.
Eakin, 1918 (B 662), p. 95, 99-100 -- Preliminary to B 699.
Eakin, 1919 (B 699), p. 21-25 -- 2 ages of placers. Below falls some gold is on bedrock without any gravel. Mining of creek placers (for 2,000 ft. below mouth of Cahoon Cr.) required diversion of creek in a wooden flume; many large boulders in gravels. Old channel in bench 200 ft. above creek also mined. Only bench placer mined in 1916.
Crooks and Capps, 1924 (B 755), p. 25 -- Development reported, 1922.
Cobb, 1973 (B 1374), p. 103 -- Has been placer mining.
MacKevett and others, 1974 (P 832), p. 21 -- Placer gold has been produced.

(Minnesota Ridge) Copper

Juneau Skagway (15.6, 0.4)
MF-424, loc. 5 59°01'N, 136°16'W

Summary: Pyrite, chalcopyrite, and secondary minerals along joints in granodiorite or quartz diorite. Small outcrop in extensive snowfield.

MacKevett and others, 1971 (P 632), p. 35 -- Float of copper- and iron-stained tonalite or granodiorite.

p. 43 -- Coarse-grained biotite-hornblende granodiorite or quartz diorite cut by 3-ft.-thick porphyritic andesite dike in a small outcrop in an extensive snowfield. Pyrite, chalcopyrite, and secondary copper or iron minerals were probably deposited as open-space fillings along narrow joints; subordinate replacement of wall rock. Sample of richest-appearing material contained 700 ppm Cu.

(Mt. Brack)

Cadmium, Gold, Lead, Silver, Zinc

Juneau district
MF-424, loc. 6

Skagway (15.45, 2.1)
59°07'N, 136°17'W

Summary: Veins in graywacke, limestone, hornfels, siltstone, and mafic rocks are 6 to 8 inches thick and carry sphalerite, galena, probably a sulfosalt, and a little silver and gold. Antimony, arsenic, and cadmium determined by analysis.

MacKevett and others, 1971 (P 632), p. 4 -- Deposit discovered in 1966. Veins and altered zones in metamorphic rocks contain sphalerite, galena, probably a sulfosalt, and a little silver.

p. 29, 39-40 -- Sb is a minor constituent (7,000 ppm); probably in a lead-bearing sulfosalt. As present (7,000 and 30,000 pm in 2 samples), but arsenic-bearing mineral was not identified. Cd identified chemically; probably a minor constituent of sphalerite.

p. 53-55 -- Sample contained 7,000 ppm Pb. Deposits are veins 6-8 in. thick and altered zones in graywacke, limestone, hornfels, siltstone, and mafic dikes. Veins (6 exposed) consist of quartz, calcite, ankeritic carbonates, sulfides, and sulfosalts(?). Samples contained as much as 15,000 ppm Zn, 30 ppm (0.875 oz. per ton) Ag, 7,000 ppm Pb, 7,000 ppm Sb, 3 ppm (0.087 oz. per ton) Au, and 30,000 ppm As. The numerous altered zones are as much as 30 ft. thick and are much leaner than the veins; maximum Zn content 700 ppm.

p. 69 -- 30 ppm (0.875 oz. per ton) Au in base-metal lodes.

(Mt. Ripinski) Iron

Juneau district Skagway (22.25, 5.0)
59°16'N, 135°31'W

Summary: Titaniferous magnetite associated with mafic and ultramafic rocks.

Winkler and MacKevett, 1970 (OF 406), p. 2 -- Titaniferous magnetite deposits associated with mafic and ultramafic rocks.

(Nugget Cr.) Gold, Silver

Juneau district Skagway (16.3-16.35, 5.3-5.55)
MF-424, loc. 30 59°18'N, 136°11'W

Summary: Bedrock slate. Placer gold discovered 1899; sporadic mining, 1902 to 1911 or 1912 and possibly in 1929. Total production was probably about 300 fine oz. One concentrate sample contained 266.60 oz. gold and 68.32 oz. silver a ton. All mining on claims near mouth.

Wright, 1904 (B 225), p. 61 -- Gold of local origin in belt of slate.
p. 63 -- Mining, 2 claims above mouth, 1903.

Wright, 1904 (B 236), p. 13 -- Gold discovered, 1899. No development until 1902.

p. 19-20 -- Gold limited to lower claims. Black sand concentrate from sluice boxes contained 266.60 oz. Au and 68.32 oz. Ag (value $5,544.20) a ton.

p. 26 -- Creek gravels worked on Discovery (third claim above mouth), 1903; gold in rich pockets in "potholes" in bedrock. Narrow bench deposits not far above creek level also present; hard to work because of many large diorite boulders.

p. 31 -- Gold on lower claims only.

Wright and Wright, 1905 (B 259), p. 52 -- Little work in 1904.

Wright and Wright, 1906 (B 284), p. 45 -- Small-scale mining, 1905.

Wright, 1907 (B 314), p. 64 -- A little work, 1906, but no production.

Brooks 1912 (B 520), p. 36 -- Preparations for installing hydraulic plant, 1911.

Brooks, 1914 (B 592), p. 59-60 -- Mining, 1912. Also preparations for installing a dredge on lower part of creek.

Eakin, 1918 (B 662), p. 98 -- Preliminary to B 699.

Eakin, 1919 (B 699), p. 19 -- Had been mining, but ground was abandoned by 1916.

p. 23 -- Mining, 1902-11; total production worth about $6,000 [about 290 fine oz. of gold].

Smith, 1932 (B 824), p. 27 -- Small camp may have produced a little gold, 1929.

Cobb, 1973 (B 1374), p. 103 -- Has been placer gold production.

MacKevett and others, 1974 (P 832), p. 21 -- Placer gold has been mined near mouth.

(Porcupine Cr.)(R.) Copper, Gold, Lead, Zinc

Juneau district Skagway (15.6-15.85, 7.0-7.5)
MF-424, loc. 26 59°24'-59°25'N, 136°14'-136°15'W

Summary: Placer gold discovered, 1898; mined intermittently to as recently as 1968. Porcupine Cr. and its tributaries McKinley and Cahoon Cr. accounted for most of the estimated 60,000 oz. of gold from the area. Bedrock mainly slate and limestone; dioritic rocks at head. Slate contains calcite and quartz veins and disseminated sulfides. Sample from apparently barren quartz veins assayed $5.28 a ton in gold (at $20.67 an ounce). Gold in creek gravels from mouth upstream to McKinley Cr., in low benches along the creek, and in old channels high above present stream. Mining of creek gravels was greatly complicated by many large boulders and by need to divert creek into large flumes; floods several times destroyed workings. Concentrates contained gold, galena, magnetite, chalcopyrite, much pyrite and some arsenopyrite; float sample of quartz vein contained sphalerite. Includes references to Porcupine (Gold) Mining Co.

Brooks, 1900, p. 374-375 -- Pyritiferous calcite veins in slate bedrock; no quartz veins in bedrock and very little quartz in creek gravels. Limestone at mouth of creek; contorted clay slates upstream. Gold derived from mineralized slate. Gold placers in irregular benches formed by jumbled masses of large boulders upstream from rock barriers. Pay dirt is 3-4 ft. thick on bedrock. In creek bed gravels as much as 18 ft. thick (bedrock not reached) carry gold; some nuggets worth $3-$5.

Brooks, 1903 (B 213), p. 48 -- Development, but no large production, 1902. Mining conditions very poor and operations expensive.

Wright, 1904 (B 225), p. 60-63 -- Creek has been profitable [as of 1903]. Country rock mainly slate and limestone (in which lower Carboniferous fossils have been found); upper part of creek in quartz diorite. Gold in creek and bench gravels; both being mined in 1903. Placer gold found from mouth of Porcupine Cr. upstream for 3 mi. to mouth of McKinley Cr. Production from basin through 1903 estimated at $450,000 [about 21,770 fine oz.] in gold.

Wright, 1904 (B 236), p. 12 -- Gold discovered, 1898. Probably about 400 people in area in 1899.

p. 15-24 -- In slate and limestone (lower Carboniferous) belt about 8 mi. wide SW of Coast Range dioritic belt [Coast Range batholith]; outlying dioritic body SW of slate belt. Sedimentary rocks mineralized by iron sulfides and calcite and quartz stringers. Sample from an apparently barren quartz vein on ridge south of creek contained $5.28 in gold. Area was glaciated. Gold in creek gravels from mouth upstream to mouth of McKinley Cr., in benches about 25 ft. above creek, and in higher benches. Gravels contain many large boulders of diorite (also some of greenstone); some "glacial mud" in stream gravel contains more than an ounce of gold a ton. Most of gold is well worn and flattened; assay value of $17.20 [gold at $20.67 an ounce]; of

(Porcupine Cr.)(R.) -- Continued

local derivation from slate belt. Gold in all of gravels, including a glacial(?) clay layer; richest next to bedrock. Concentrates contain gold, galena, magnetite, chalcopyrite, arsenopyrite, and much pyrite; report of platinum could not be verified. Both creek and bench deposits mined.

p. 28-29 -- Data on mining methods.

p. 31 -- Gold-bearing gravels extend upstream to mouth of McKinley Cr.

Brooks, 1905 (B 259), p. 31 -- Mining, 1904. No important developments.

Purington, 1905 (B 263), p. 207 -- Gold worth $17.20 an ounce.

Wright and Wright, 1905 (B 259), p. 51-52 -- Mining, 1904.

Wright and Wright, 1906 (B 284), p. 45 -- Mining, 1905. Flood in late June did much damage.

Wright, 1907 (B 314), p. 64 -- No mining, 1906.

Brooks, 1908 (B 345), p. 37 -- Preparations for large-scale mining, 1907.

Brooks, 1909 (B 379), p. 51 -- Large flume 6,280 ft. long completed and a little sluicing, 1908.

Brooks, 1910 (B 442), p. 41 -- More plant installation and a little mining, 1909.

Brooks, 1911 (B 480), p. 37 -- Mining, 1910.

Brooks, 1912 (B 520), p. 36 -- Mining, 1911.

Brooks, 1913 (B 542), p. 43 -- Mining, 1912.

Brooks, 1914 (B 592), p. 59 -- Mining, 1913.

Eakin, 1918 (B 662), p. 93, 98-100 -- Preliminary to B 699.

Eakin, 1919 (B 699), p. 19 -- Workable placers in drainage basin, 1916. Reference to Wright, 1904 (B 236), p. 20.

p. 22-25 -- Diverting flume and derricks for moving large boulders needed; failure of flume from time to time caused workings to be filled with debris and caused much dead work and lost time. Total production from district (mainly from Porcupine Cr. and tributaries), 1898-1916, estimated at about $1,200,000 [about 58,000 fine oz. gold]. Mining, 1916.

Brooks and Capps, 1924 (B 755), p. 25 -- Development reported, 1922. "Some work was also done on the Porcupine property, an auriferous lode."

Smith, 1929 (B 797), p. 16 -- Mining and considerable development, 1926.

Smith, 1930 (810), p. 21 -- Long flume completed, 1927; mining.

Smith, 1930 (B 813), p. 23 -- Development work, 1928; may have been some mining.

Smith, 1932 (B 824), p. 27 -- Development work, 1929.

Smith, 1937 (B 880-A), p. 34 -- Renewed work on large group of claims; no production; 1935.

Koschmann and Bergendahl, 1968 (P 610), p. 22 -- Most of data from earlier reports. Total production of district through 1959 was 53,250 oz. From 1917 through 1959 there was only occasional small production by individuals [applies to entire district rather than to Porcupine Cr.].

Winkler and MacKevett, 1970 (OF 406), p. 6 -- Float sample of quartz vein with pyrite and sphalerite (sample MK 21C-3).

Cobb, 1973 (B 1374), p. 101, 103 -- Gold discovered in 1898 and mined intermittently since then (one 3-man operation in 1968). Concentrates contained gold, galena, magnetite, chalcopyrite, much pyrite and some arsenopyrite.

(Porcupine Cr.)(R.) -- Continued

MacKevett and others, 1974 (P 832), p. 20-21, 24 -- Gold discovered, 1898. Production of district mainly from Porcupine Cr. and tributaries; for entire district through 1955 probably was about 60,000 fine ounces. Stream, side bench, and high bench (old channels) placers. Gold of local derivation; concentrated from multiple lode sources. Reference to Wright, 1904 (B 236), p. 20.

(Rendu Glacier) Copper

Juneau district Skagway (10.7, 0.6)
MF-424, loc. 3 59°02'N, 136°49'W

Summary: Altered zone near contact between granitic rocks and metamorphic rocks. Float sample contained 2,000 ppm (0.2% copper. Copper mineral not identified.

MacKevett and others, 1971 (P 632), p. 4 -- Large mineralized altered zone exposed in steep cliffs south of glacier near contact between granitic rocks and metamorphic rocks. Float sample contained 0.2% Cu.

p. 40 -- Anomalous concentration of copper.

p. 43 -- Inaccessible altered zone appears to be in mixed rocks near contact with a light-gray granitic pluton; margins concealed; exposed in area about 50x100 ft. Sample of float contained 2,000 ppm Cu. [Copper mineral not named].

(Saksaia Glacier) — Copper, Lead, Silver, Zinc; Barite

Juneau district — Skagway (14.2, 6.6)
MF-424, loc. 11 — 59°22'N, 136°25'W

Summary: NW-striking, probably fault-controlled, lode about 20 ft. thick in metavolcanic rocks exposed in a nunatak. Mineral assemblage similar to that in barite lode near Glacier Cr. Includes reference to (Sakasia Glacier). See also (Glacier Cr.).

MacKevett, 1971 (OF 500) -- NW-striking, probably fault controlled, lode about 20 ft. thick cuts metavolcanic rocks exposed in a nunatak. Lode extends at least 1,000 ft. Mineral assemblage is similar to that in deposit on Glacier Cr. (barite, quartz, calcite, pyrite, chalcopyrite, galena, sphalerite, secondary minerals, and probably sulfosalts). As much as 500 ppm silver.

MacKevett and others, 1974 (P 832), p. 25-27, 29 -- Data similar to those in MacKevett, 1971 (OF 500). Other barite-rich veins exposed at north edge of glacier.

(Salmon R.) (Cr.)

Gold, Lead, Zinc

Juneau district
MF-424, locs. 23, 29

Skagway (13.9-16.3, 5.2-5.7)
59°17'-59°19'N, 136°11'-136°27'W

Summary: Gold in bench gravels on north side between Nugget and Cottonwood Creeks about 20-40 ft. above river. Bench has average width of 1,500 ft. River bars in same general area carry colors of gold. Gold discovered in 1899; a little mining in 1904-05 was reported. A float sample of a quartz vein near head of river contained galena and sphalerite. Includes references to: (Solomon R.), (Tsirku R.).

Wright, 1904 (B 225), p. 63 -- Gold in bench gravels between Nugget and Cottonwood Creeks about 50 ft. above Salmon R. Material from some pits reported to run 25 cents per cu. yd. Fine gold can be panned from almost any place along river.

Wright, 1904 (B 236), p. 13 -- Gold discovered, 1899.

p. 27 -- Bench deposit between Nugget and Cottonwood Creeks has an average width of 1,500; from 20 to 40 ft. above river. River bars from a mile below Nugget Cr. to above Cottonwood Cr. carry colors of gold; floodplain a mile wide.

Wright and Wright, 1905 (B 259), p. 52 -- Little work done in 1904.

Wright and Wright, 1906 (B 284), p. 45 -- Small-scale mining, 1905.

Eakin, 1918 (B 662), p. 93 -- Preliminary to B 699.

Eakin, 1919 (B 699), p. 18-19 -- Extensive prospecting failed to disclose workable deposits in auriferous gravels.

Winkler and MacKevett, 1970 (OF 406), p. 7 -- Float sample of quartz vein with sphalerite and galena (MK 52E-1).

MacKevett and others, 1974 (P 832), p. 21 -- Placer gold present.

(Skagway) FM

Juneau district
MF-424, loc. 20

Skagway (24.25, 8.85)
59°29'N, 135°17'W

Summary: Faulted quartz diorite intruded by fine-grained andesitic dikes and a small rhyolite(?) body. Globules of clay in fracture in rhyolite(?) contain as much as 0.72% eU (1.2% U). Mineralized iron-stained, altered rhyolite(?) contains as much as 0.22% eU. No sulfides; a few specks of purple fluorite. Very little of the radioactive material is present.

Freeman, 1963 (B 1155), p. 30 -- Small, altered rhyolite(?) body surrounded by faulted quartz diorite intruded by fine-grained andesitic dikes. Uranium is adjacent to a steeply dipping fracture in rhyolite associated with iron-oxide staining and globules of clay that resemble vesicle fillings. Sample of clay contained 0.72% eU and 1.2% U; only a very small amount of this material. Mineralized rock (iron-stained, altered rhyolite(?)) contains as much as 0.22% eU. No sulfides; a few specks of purple fluorite.

Herbert and Race, 1965 (GC 6), p. 13 -- More than 10 years ago [as of 1965] a zone of high radioactivity caused considerable excitement.

Berg and Cobb, 1967 (B 1246), p. 164 -- Data mainly from Freeman, 1963 (B 1155), p. 30 -- Rock called quartz diorite rather than rhyolite. A few hundred pounds of specimens taken from a prospect pit.

Stampede

Gold(?)

Juneau district

Skagway
NW 1/4 NW 1/4 NW 1/4 SE 1/4 quad.

Summary: Exploration of gold lode claims, 1929. Large company dropped option. Work may have been in Canada. This may be the prospect shown on several maps (e.g., Pl. 1, B 699) as being in Canada just north of Jarvis Glacier.

Smith, 1932 (B 824), p. 15 -- Gold lode claims along international boundary north of Haines. Alaska Juneau Gold Mining Co. involved in exploration in 1929; results unsatisfactory and option dropped.

(Summit Cr.)

Copper, Gold, Lead, Silver

Juneau district
MF-424, loc. 13

Skagway (17.1, 6.25)
59°20'N, 136°05'W

Summary: Small silver-lead veins have a maximum metal content of about $3 a ton in gold (at $20.67 an ounce), about 60 oz. silver a ton, and about 35% lead. One sample contained nearly 3% copper. Only slight development. Eakin considered the veins to be too small for profitable exploitation. Prospect could not be found in about 1970.

Eakin, 1918 (B 662), p. 97-98 -- Preliminary to B 699.

Eakin, 1919 (B 699), p. 14-15 -- Numerous silver-lead veins, all less than a foot wide. Maximum metal content said to be about $3 a ton in gold, about 60 oz. Ag a ton, and about 35% Pb; nearly 3% Cu in one sample.

p. 18 -- Has been slight development of veins; "too small for profitable exploitation."

Berg and Cobb, 1967 (B 1246), p. 161 -- Veinlets carry argentiferous galena. Grade data the same as in Eakin, 1919 (B 699), p. 14-15.

Winkler and MacKevett, 1970 (OF 405), p. 2 -- Lead-silver lodes.

MacKevett and others, 1974 (P 832), p. 25 -- Prospect could not be found in about 1970.

(Takhin R.)

Gold

Juneau district
MF-424, loc. 31

Skagway (16,7, 4,95) approx.
59°16'N, 136°08'W approx.

Summary: Gold-bearing gravels have been found.

Eakin, 1918 (B 662), p. 98 -- Preliminary to B 699.
Eakin, 1919 (B 699), p. 23 -- Gold-bearing gravels have been found.
MacKevett and others, 1974 (P 832), p. 21 -- Gold-bearing gravels on upper part of river.

(Tarr Inlet) Copper

Juneau district Skagway (8.65, 0.4)
MF-424, loc. 2 59°01'N, 137°02'W

Summary: Alteration zones 1 to 8 ft. thick and disseminated sulfides in hornfels. Major sulfides are pyrite and chalcopyrite. Sample of best looking material contained 0.15% copper. Bismuth, tungsten, and tin determined by analysis.

MacKevett and others, 1971 (P 632), p. 4 -- Disseminated sulfides and quartz veinlets that carry copper minerals are in siliceous lenses in light-colored granitic rocks. Sample of lenses contained 0.1% Cu.

p. 40 -- Copper present.

p. 43 -- Alteration zones 1-8 ft. thick and local disseminated sulfides in hornfels. Chalcopyrite predominant copper mineral; associated with more abundant pyrite. Sample indicative of best material contained 1,500 ppm Cu and minor amounts of Bi, W, and Sn.

Unnamed occurrence	Copper
Juneau district	Skagway (21.0, 6.0) approx.
MF-424, loc. 17	59°20'N, 135°40'W approx.

Summary: Bornite and hematite reported from prospects on ridge between Chilkoot and Chilkat valleys about 10 mi. northwest of Haines.

Buddington and Chapin, 1929 (B 800), p. 323 -- Bornite reported from prospects on ridge between Chilkoot and Chilkat valleys about 10 mi. NW of Haines. The quartz veins with bornite usually also carry hematite.

Berg and Cobb, 1967 (B 1246), p. 162 -- Bornite reported.

Unnamed occurrence	Copper(?)
Juneau district	Skagway (19.2, 4.15) 59°13'N, 135°52'W

Summary: Chalcopyrite(?) disseminated in hornfels.

Winkler and MacKevett, 1970 (OF 406), p. 8 -- Sample BD 539B is hornfels with minor pyrrhotite(?), chalcopyrite(?), pyrite dissemination.

Unnamed occurrence — Molybdenum

Juneau district — Skagway (17.4, 3.9)
MF-424, loc. 10 — 59°12'N, 136°04'W

Summary: Molybdenite disseminated in biotite granodiorite(?).

Winkler and MacKevett, 1970 (OF 406), p. 8 -- Molybdenite disseminated in biotite granodiorite(?) (samples BD 548A,B).

Synonyms, Claim Names, Operators, and Owners

Many mines and prospects have undergone changes in both their own names and in the names of their operators and owners. All names that appear in the cited references appear in this summary either in the first section as occurrence names or in this as synonyms. Descriptions of placer deposits commonly give little information on the location of individual mines or claims, so the names of all operators and owners of placer mines and claims are in this section with a notation to refer to the description of the stream or other deposit that was mined or prospected.

American Exploration & Mining Co. -- see (Nunatak)
Christmas -- see (Lemesurier I.)
Dodson -- see Monarch
Enterprise -- see (Lemesurier I.)
Fremont Mining Co. -- see (Brady Glacier)

Ibach -- see Galena, Incas, (Lemesurier I.), Marvitz, Monarch, Rainbow, Sentinel
Ibach & Beach -- see Highland Chief
Ibach & Smith -- see Galena, Rainbow
Johnson & Smith -- see (Nunatak)
Koby -- see (Geikie Inlet)

LeRoy Mining Co. -- see Incas, LeRoy, Rainbow
Lincoln -- see LeRoy, Marvitz
Lituya Bay Gold Mining Co. -- see (Lituya Bay)
Manville & Smith -- see (Francis I.)
Martin -- see (Dundas R.)

Mount Fairweather Mining Co. -- see Monarch
Mount Parker Mining Co. -- see LeRoy
(Muir Inlet) -- see (Nunatak)
Newmont Exploration Co. -- see (Brady Glacier)
Newmont Mining Co. -- see (Brady Glacier), Highland Chief, Rambler

O. K. -- see (Nunatak)
Parker, A. L. (, & Parker, A. F.) -- see LeRoy
Presbyterian Home for Elders -- see (Rendu Inlet)
Schotter -- see (Triangle I.)
Sullivan -- see Marvitz

Triton -- see (Nunatak)
Vevelstad (& Comstock) -- see (Nunatak)
Vevelstad, C. -- see (Nunatak)
Vevelstad, S. H. P., see (Surge Bay)
Whitney -- see (Lemesurier I.)

(Willoughby Cove) -- see (Lemesurier I.)
Yehring -- see (Geikie Inlet)

Alaska Corp. -- see (Porcupine Cr.)
Alaska Iron (& Steel) Co. -- see (Haines), (Klukwan)
Alaska Iron Mines, Inc. -- see (Klukwan)
Alaska Juneau Gold Mining Co. -- see Stampede
Alaska-Sunshine Mining Co. -- see (Porcupine Cr.)

Anway -- see (Cottonwood Cr.), (Nugget Cr.)
Barkdull and associates -- see (Klukwan)
Brown and associates -- see (Haines), (Klukwan)
Cahoon Creek Gold Mining Co. -- see (Cahoon Cr.), (McKinley Cr.)
Cahoon Creek Placer Mining Co. -- see (Cahoon Cr.)

(Calhoun Cr.) -- see (Cahoon Cr.)
Chisel & Chisel -- see (Haines)
Chisholm (& Clark) -- see (McKinley Cr.)
Combination -- see (Clifton)
Cranston -- see (Porcupine Cr.)

Delta -- see (Porcupine Cr.)
Finley -- see (Porcupine Cr.)
Franklin and others -- see (Haines)
Gold Nugget Mining Co. -- see (Porcupine Cr.)
Guyot & Cartwright -- see (Clifton)

(Kelsall R.) -- see (Bear Cr.)
Kenney Presbyterian Home -- see (Tarr Inlet)
Klukwan Iron Corp. -- see (Klukwan)
Le Fevre -- see (Klukwan)
Legal Tender -- see (Porcupine Cr.)

McKinley Creek Mining Co. -- see (McKinley Cr.)
Mix -- see (Porcupine Cr.)
Moneta-Porcupine Co. -- see Margerie
(Nunatak) -- see (Saksaia Glacier)
Palmer, Morlanand associates -- see (Glacier Cr.), (Saksaia Glacier)

Porcupine (Gold) Mining Co. -- see (Porcupine Cr.)
Quebec Metallurgical Industries, Ltd. -- see (Klukwan)
(Sakasia Glacier) -- see (Saksaia Glacier)
(Solomon R.) -- see (Salmon R.)
Takahashi, Upton and associates -- see (Klukwan)

(Takshanuk Mts.) -- see (Klukwan), (Mt. Ripinski)
(Tsirku R.) -- see (Salmon R.)
United Gold Mining Co. -- see (McKinley Cr.)
Woodin -- see (McKinley Cr.)
(Yokeak Cr.) -- see (Big Boulder Cr.)

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