HISTORY OF THE JUNEAU GOLD BELT
1869 - 1965

Development of the mines and prospects from Windham Bay to Berners Bay

By: Earl Redman
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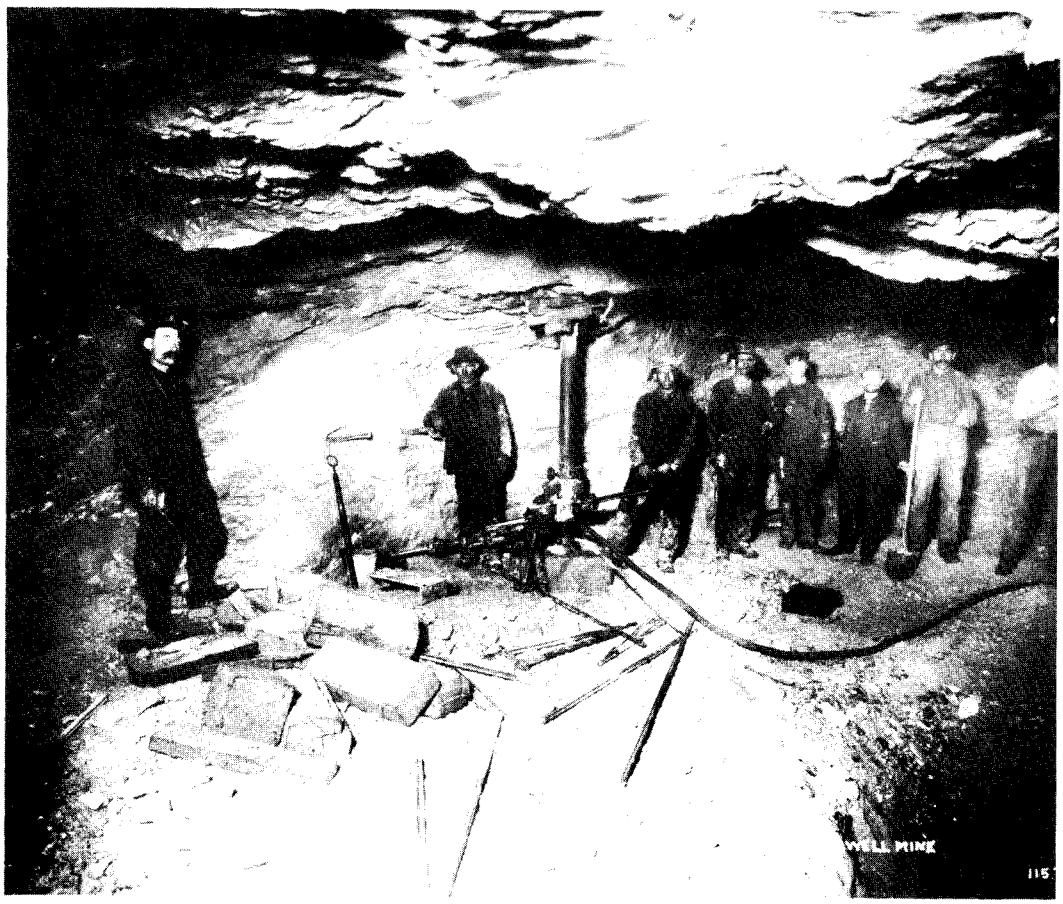

Underground at the Ready Bullion Mine (Case & Draper Coll., AK. Hist. Lib.)

D STATES DEPARTMENT of the INTERIOR
Donald P. Hodel, Secretary
BUREAU of MINES
Robert C. Horton, Director

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UNIT OF MEASURE ABBREVIATIONS USED IN THIS REPORT

elev	elevation	oz/st	ounce per short ton
ft	foot	ppb	parts per billion
in	inch	ppm	parts per million
lbs	pounds	%	percent
mm	million	st	short ton
oz	troy ounce	yd^3	cubic yard

HISTORY OF THE JUNEAU GOLD BELT 1869-1985
Development of the Mines and Prospects from Windham Bay to Berners Bay

by Earl Redman[1/]

ABSTRACT

This report chronicles the exploration and mining development history of the Juneau Gold Belt from the discovery of the first placer gold in 1869 to the reevaluation of the economic potential of the Alaska Juneau Mine in 1985. Using an outline form, historical information is given year by year for most of the mines and prospects in the Gold Belt. The report includes information about initial discoveries, timing of mine exploration, construction of mills, mining problems and closures, and pertinent general history.

INTRODUCTION

In 1985, the Bureau of Mines, through the Mineral Land Assessment Program, began a study of the Juneau Mining District. This study will evaluate the mineral resources of the northern portion of southeast Alaska (fig. 1). During the course of researching the Juneau Gold Belt within the study area, a variety of historical information was collected along with the geological and mining data. This historical information reveals the fascinating and colorful events that led to the development and exploitation of some of the largest gold deposits in the world and many smaller mines. The information also depicts the struggles, successes, and failures of many prospectors who spent their lives developing the mining industry in Southeast Alaska.

The historical information is presented in outline form by year to make it easily read and useful. It is a summary of the events in the Juneau Gold Belt from 1869, when the first placer gold was discovered at Powers Creek and Windham Bay, through the development and mining of the great deposits at Treadwell, Alaska Juneau, and Perseverance mines, to the renewed interest in the abandoned Alaska Juneau and Treadwell mines in 1985. The summary is as complete as possible, but in some cases the author was forced to make educated guesses about certain mining and exploration activity because of gaps in the documented historical record. The information for each year is presented according to the production of mines in the area. The Juneau area is always discussed first, followed by the Treadwell area, the Berners Bay region, the Eagle River area, and, finally, the area south of Juneau.

Table 1 presents a summary timetable of development and mining in the Juneau Gold Belt. It is intended to give a simple graphic overview of when and where events happened in the Gold Belt. For clarity, the table includes only those prospects and mines that the author concluded were significant in the history of the area and omits those of lesser importance. Table 2 gives a summary of metal production from the various mines.

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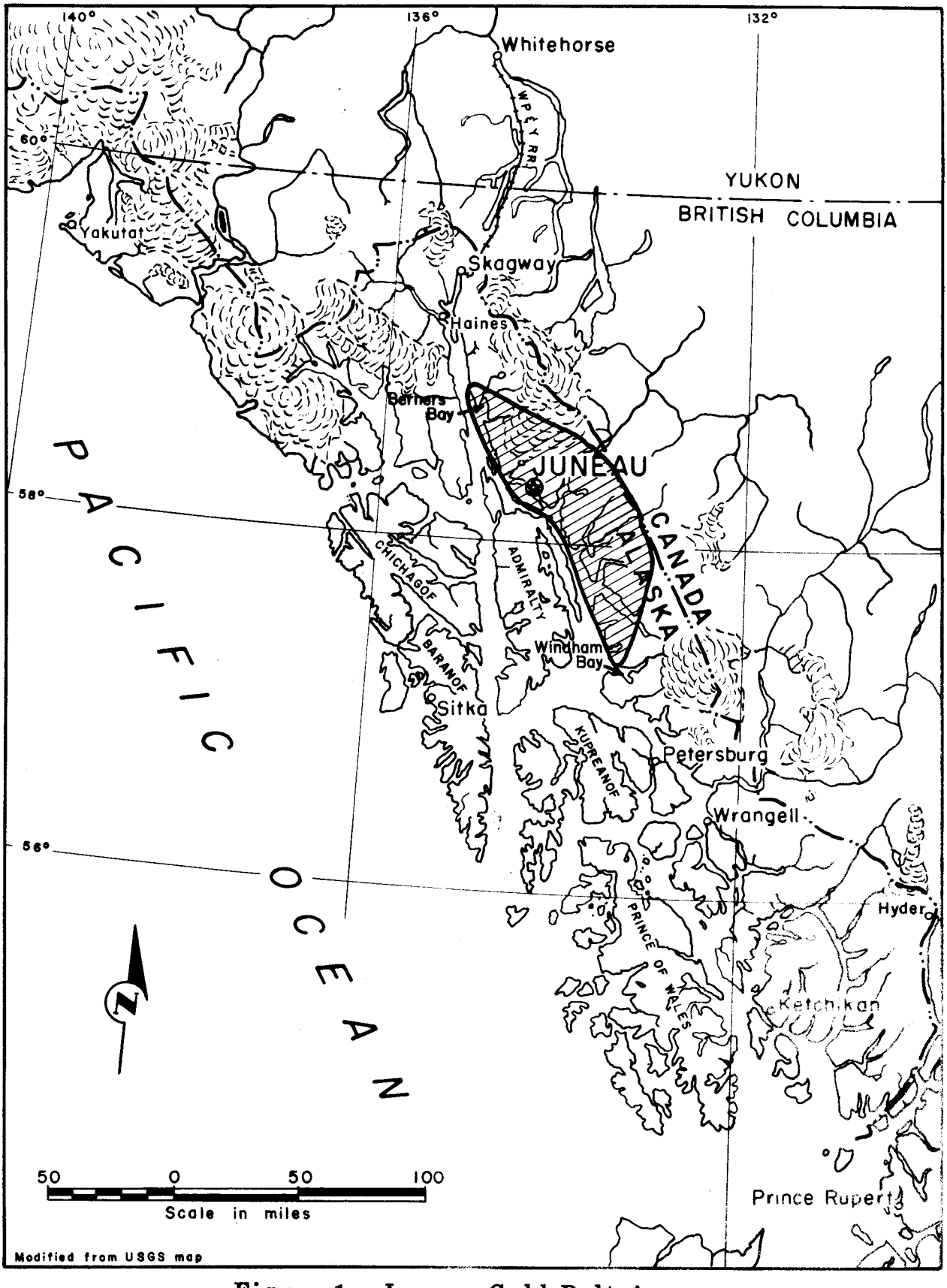

Figure 1. Juneau Gold Belt Area

Table 1. Summary timetable of mineral development and mining in the Juneau Gold Belt

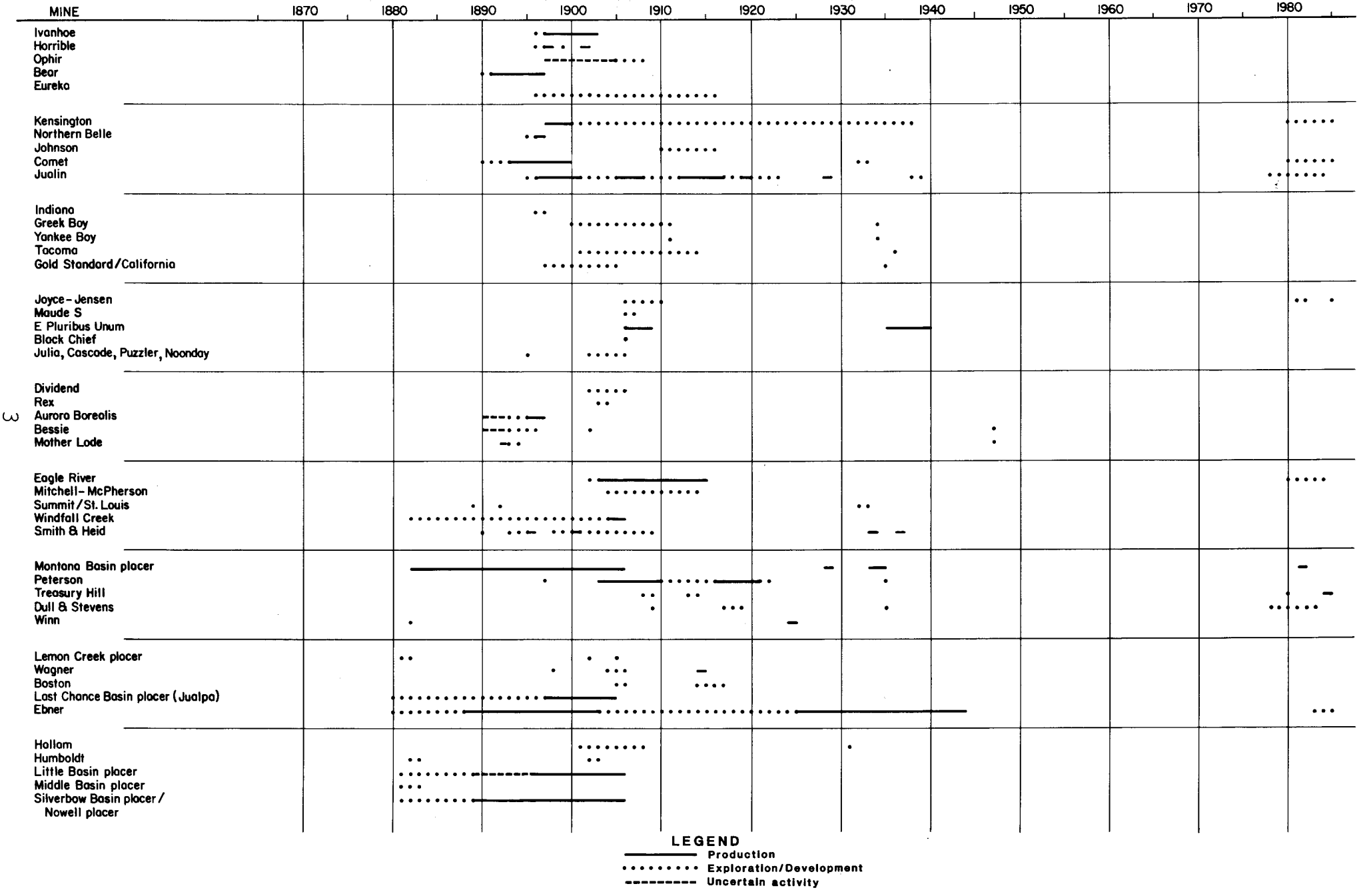

Table 1. (cont.)

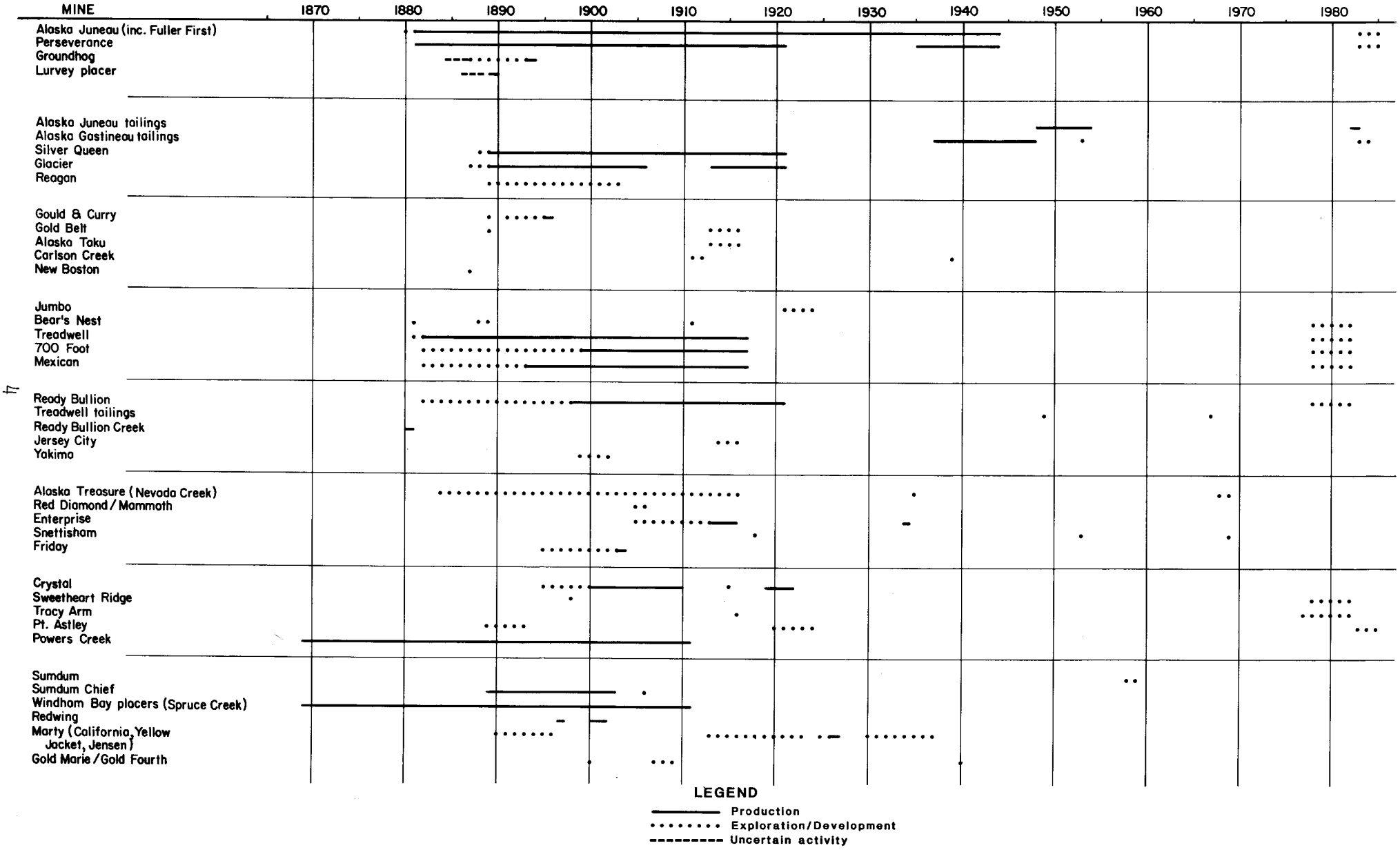
MINE
1870
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
Alaska Juneau (inc. Fuller First)
Perseverance
Groundhog
Lurvey placer
Alaska Juneau tailings
Alaska Gastineau tailings
Silver Queen
Glacier
Reagan
Gould & Curry
Gold Belt
Alaska Taku
Carlson Creek
New Boston
Jumbo
Bear's Nest
Treadwell
700 Foot
Mexican
Ready Bullion
Treadwell tailings
Ready Bullion Creek
Jersey City
Yakima
Alaska Treasure (Nevada Creek)
Red Diamond / Mammoth
Enterprise
Snettisham
Friday
Crystal
Sweetheart Ridge
Tracy Arm
Pt. Astley
Powers Creek
Sumdum
Sumdum Chief
Windham Bay placers (Spruce Creek)
Redwing
Marty (California, Yellow Jacket, Jensen)
Gold Marie / Gold Fourth
LEGEND
Production
Exploration/Development
Uncertain activity

Table 2. Summary table of mine production

Mine	Years Active	Production		
		Au (oz)	Ag (oz)	Pb (lb)
Alaska Juneau	1880-1944	2.9 mm	1.9 mm	40.0mm
Perseverance	1886-1921	500,900	311,000	4.8mm
Ebner	1888-1906	29,000	NR	NR
Nowell placer	1889-1906	19,350	NR	NR
Little Basin placer	pre-1900	2,400	NR	NR
Ground Hog	1893	150	NR	NR
Glacier/Silver Queen	1888-1906	1/	1/	NR
Gould & Curry	1895	1,250	NR	NR
Alaska Juneau tailings	1948-1954,1981-83	6,831	1,663	2,500
Alaska Gastineau tailings	1937-1948	890	NR	NR
Treadwell	1881-1921	3.1 mm	151,000	NR
Ivanhoe	1897-1903	340	NR	NR
Horrible	1897-1901	74	NR	NR
Kensington	1897-1900	2,600	NR	NR
Northern Belle	1896-1897	940	NR	NR
Bear	1891-1897	800	NR	NR
Comet	1893-1901	22,250	NR	None
Jualin	1896-1919	36,000	NR	None
E Pluribus Unum	1904-1909,1935-40	292	69	100
Aurora Borealis	pre-1885	300	NR	None
Rex	1904	145	NR	NR
Eagle River	1902-1915	20,000	8,853	NR
Smith & Heid	1897-1904,1933-34	min 50	NR	NR
Peterson	1903-1922	209	8	NR
Winn	1924	290	102	115
Enterprise	1906-1916	100	NR	NR
Crystal	1899-1909	3,500	NR	NR
Sumdum Chief	1890-1903	24,000	24,000	NR
Redwing	1897,1901-1902	3,000	NR	NR
Marty	1925-1927	55	NR	NR

1/ $500,000 combined Au and Ag.
NR Not recorded.

Throughout the report, mine production figures are given either as dollar amounts or as ounces or pounds of metal produced. Commonly, the source reports gave only dollar amounts for production and did not indicate how much of that figure was derived from gold and how much from some other metal. Where possible, dollar amounts have been converted to oz of metal produced for uniformity but in those cases where a dollar amount was reported but no single metal was identified, the dollar amount was used for accuracy. From 1869 to 1933, all dollar amounts are based on the price of gold that was in effect at that time which averaged $20.67/oz. Between 1934 and 1972, gold was worth $35/oz.

In the appendix, a glossary of mining terms is included for those unfamiliar with mining terminology.

HISTORICAL SUMMARY

The first recorded gold discoveries in the Juneau Gold Belt occurred at Powers Creek and Windham Bay in 1869. Since that time, mines in the Gold Belt have produced more than 6.7 million oz gold, 3.1 million oz silver, and 45 million lbs of lead (table 2). The vast bulk of this production came from the Treadwell and Alaska Juneau mines, both of which were the largest and lowest grade gold mines in the world while they were active.

Initial gold production from the Gold Belt came from placer deposits. In the early 1880's, however, lode deposits became of increasing importance. The first stamp mills were erected at Treadwell Mine and in Silver Bow Basin in 1881 and lode production increased rapidly. The years between 1890 and 1915 were the heyday of the smaller mines in the region, such as the Sumdum Chief, Crystal, Comet, Jualin, Silver Queen, and Eagle River mines. It was also the time of greatest production from the Treadwell complex (the Treadwell, 700 Foot, Mexican, and Ready Bullion Mines). During this period, the Treadwell mines were producing a world-record 5,000 st of ore each day.

By 1917, most of the smaller mines had shut down and the Treadwell Mine, except for the Ready Bullion, was forced to close because of a cave-in which completely filled the mine with sea water. The Treadwell mines produced a total of about 3.1 million oz gold from ore that averaged 0.13 oz/st gold. The Alaska Gastineau Co. (the old Perseverance Mine) and the Alaska Juneau mines, however, began their large-scale operations at this time. The Alaska Gastineau operation was highly innovative and, at first very successful, using ball mills patterned after those being used at porphyry copper deposits in the American southwest. But mine and mill problems forced the operation to stop work in 1921.

The Alaska Juneau Mine followed the milling example of the Alaska Gastineau Co. and used a ball mill for ore grinding. After initial difficulties, the mine and mill became very successful, handling over 12,000 st of ore each day and making a profit from ore than averaged 0.04 oz/st gold. During the 1930's and early 1940's, the Alaska Juneau Mine was the largest and lowest-grade gold mine in the world and one of the largest lead producers. The fixed price of gold and war-time inflation made the operation unprofitable and the mine closed in 1944 after it had produced 2.9 million oz gold, 1.9 million oz silver, and 40 million lbs lead.

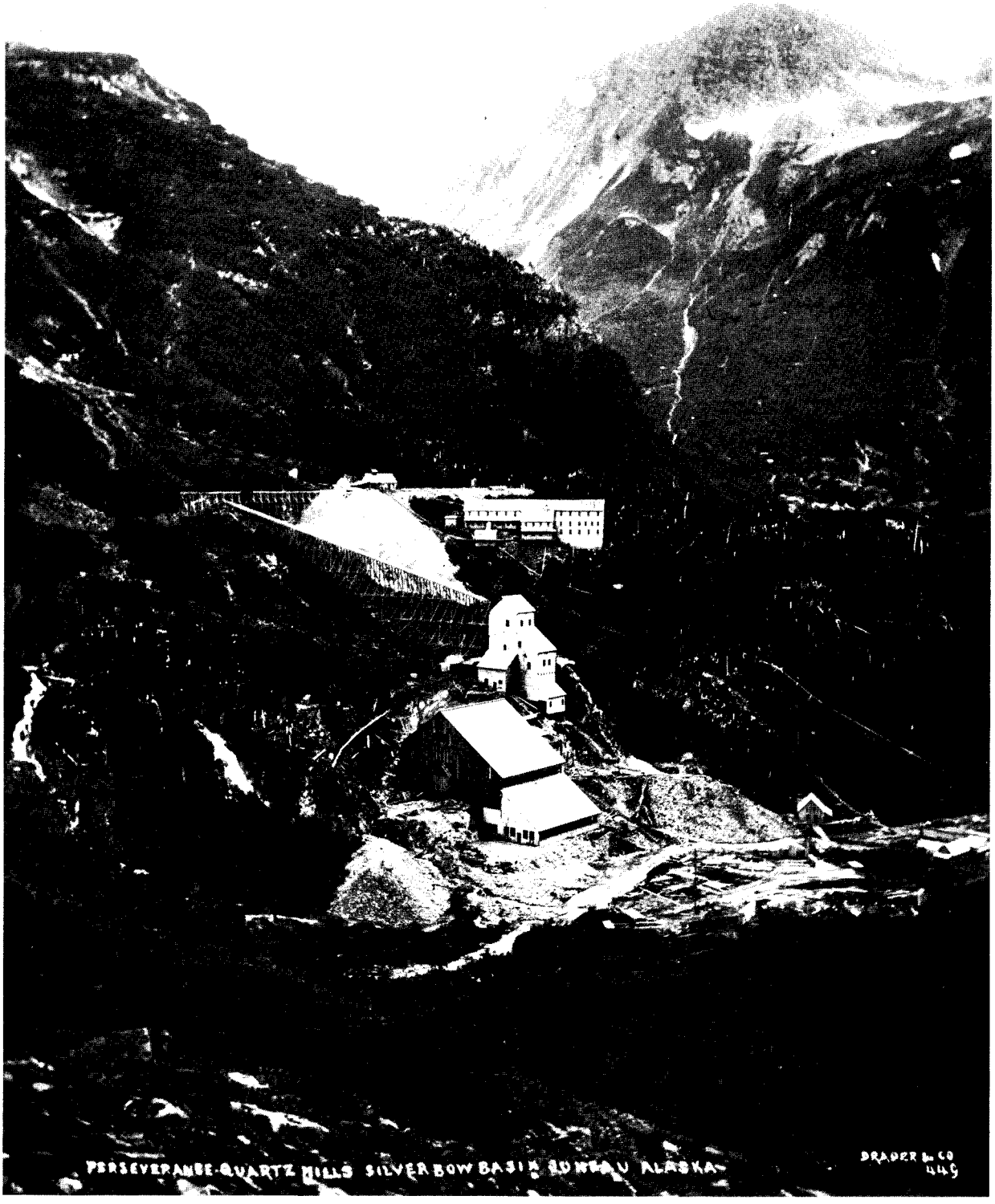

Figure 3 - Perseverance Mine, Silver Bow Basin, in 1908
(Case & Draper Coll., Alaska Historical Lib.)

With rise in the price of gold to $600-$800 an oz in the late 1970's, many claims were staked and old prospects and mines were reexamined by companies hoping to reopen them. In 1985, a major effort was being made to evaluate the possibilities of reopening the great Alaska Juneau Mine.

ACKNOWLEDGEMENTS

David Stone, Vice President of Customer Service for the Alaska Electric Light and Power Co., was a great source of help during the writing of this summary. His knowledge of the history of the Treadwell, Alaska Juneau, and Perseverance mines and his open cooperation added considerably to the completeness of this report. His assistance is greatly appreciated.

HISTORY OF THE JUNEAU GOLD BELT

1869

* Auke Indians brought specimens of gold to Sitka from "a river that empties into Awk Bay". A prospecting party found gold in creeks in the Auke Bay area but were run off by the Indians (33)[2/].

2/Underlined numbers in parentheses refer to references listed at the end of this report.

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* Placer gold was discovered at Powers Creek and Spruce Creek (Windham Bay) by Mix Sylva and others (88). Prospectors who found Spruce Creek placers reportedly found an old sluice box near the site of the Apache-Navajo Mine (46).

1870

* A group of prospectors reportedly left Sitka for the "Tarcoo" country and evidently worked in the Sumdum area. Indians threatened to run them off unless the Indians received free goods (33).

1876

* A prospecting party under Mike Powers from Wrangell prospected the Taku country and the Chuck River (33).
* Mix Sylva discovered gold on Sylva Creek (33).

1877

* Walter Pierce discovered placer gold in a narrow canyon several miles up the Chuck River (reportedly panned one half oz in 2 hours). A flume was built but little gold was produced (33).

1879

* John Muir and S. Hall Young explored the coastline from Windham Bay to Glacier Bay and predicted that the Juneau Gold Belt would prove to be rich in gold (98).

* Chief Cowee, head of the Auke tribe, brought ore samples from Silver Bow Basin to George Pilz in Sitka (33).

1870-1880

* There was intermittant mining of Powers Creek and Spruce Creek placers (88).
* Some of the Windham Bay lodes, such as Redwing, were discovered (88).

1880

* The Gold Creek placers and the lode deposits in the Ebner, Alaska-Juneau, and Perseverance areas were discovered in August (fig. 3). Richard Harris and Joe Juneau staked 6 placer claims and 16 lode claims (lode claims were over the Ebner and Alaska Juneau mine areas). Harrisburg was then established and about 40 miners spent the winter (33).
* On Dec. 17, Billy Meehan discovered gold in beach sands at mouth of Ready Bullion Creek (now called Bullion Creek) and sluiced $1,200 in gold by spring (33).

1881

* About $40,000 in gold had been mined from Windham Bay and Powers Creek by this year (88).
* Over 150 miners resided in the Harrisburg camp. The town name was changed to Pilzburg, then Rockwell and, finally, to Juneau (33).
* Arrastres were operated at the Fuller First (later part of the Alaska Juneau Mine) and Dix Gulch (by John Dix) deposits producing about $2,000 in gold (33).
* Pete Erussard discovered the Treadwell deposit and staked the Parris lode in May (33).
* The Bear's Nest prospect staked by Pete Erussard (91).
* Ground over the Parris claim was sluiced (33).
* John Treadwell bought the Parris claim for $5 and organized the Alaska Mill and Mining Co. (33).
* The first townsite on Douglas Island was established and called Cooperstown (33).
* Placer gold was discovered in Carroll and Boulder Creeks (88).

1882

* An arrastre grinding mill was used at the Fuller First claim (88).
* A 5-stamp mill was built by W. I. Webster and M. F. Lockwood at the Humboldt Mine and was the first to operate in the Juneau area (33).
* The Ready Bullion claims produced $15,000 in placer gold (88) with another $5,000 sluiced from Parris claim area (33).
* A 5-stamp mill was built at the Treadwell Mine and lode mining began (33). The first ore averaged $8 to $10 per ton (47). The Treadwell Ditch was started (91).
* Placer deposits at the heads of Windfall and Montana Creeks were discovered and some mining begun (53).
* Lodes at the Patton and Winn prospects were found (54).

1883

* The arrastre mill in operation at the Fuller First produced $2,000 in gold during the year (88).
* Placer operations over the Treadwell deposits had produced $45,000 in gold by this year ($25,000 produced during 1883) (33, 88).
* A 120-stamp mill was built at the Treadwell Mine (91).

1884

* The Johnson Mill and Mining Co. built a wagon road to the falls in Gold Creek (88).
* Another arrastre mill was built on the Fuller First property (88).
* The Treadwell lode mine had produced about $11,000 of gold by this year (88).
* The Alaska Treasure deposit was found in Nevada Creek (114).

1885

* George Garside and W. Sanders consolidated the Perseverance claims (91).
* Johnson Mill and Mining Co. built a grinding machine near the Humboldt mill but the machine was a failure (88).
* Treadwell Mine production rose to $280,479 (91).

1886

* An arrastre mill was constructed on the Perseverance deposit and two Huntington mills were erected in upper Silver Bow Basin for the Fuller First area (88).
* In August, all the Chinese workers at the Treadwell Mine, except China Joe, a baker, were packed onto two small boats and forced out of town (91).
* The Treadwell Mine was active (91).

1887

* The road from Last Chance Basin to Silverbow Basin was extended to the Perseverance Mine (91)(fig. 4).
* One hundred twenty stamps were added to the mill at the Treadwell Mine (91).
* An 80-stamp mill, wharf, and support facilities were constructed at the New Boston claims. Two adits, 1,040- and 415-ft long were then driven but no ore was discovered (91)(fig. 5).
* The Ibex and Glacier deposits were found (88).

1888

* A mill was built at the Ebner Mine by the Taku Mining and Milling Co. and an arrastre mill operated at the Perseverance Mine (88).
* An arrastre mill was built at the Dora prospect (91).
* About $200,000 of placer gold had been taken from Silver Bow Basin by 1888. Thomas Nowell aquired the placer ground (88).

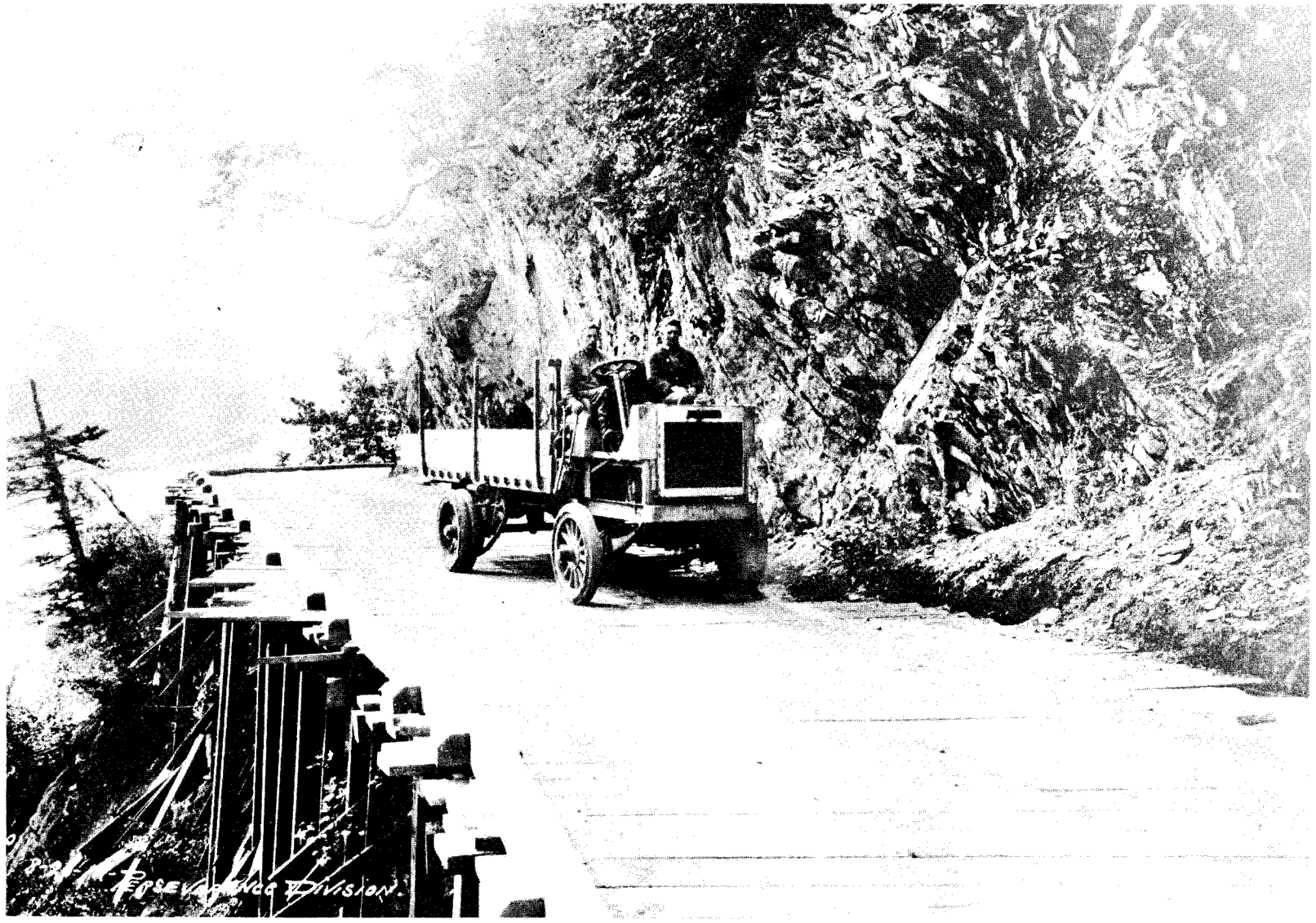

Figure 4. This road from Last Chance Basin to Silverbow Basin was originally built in 1887 for the Perseverance mine
(Winter & Pond Coll., Alaska Historical Lib.)

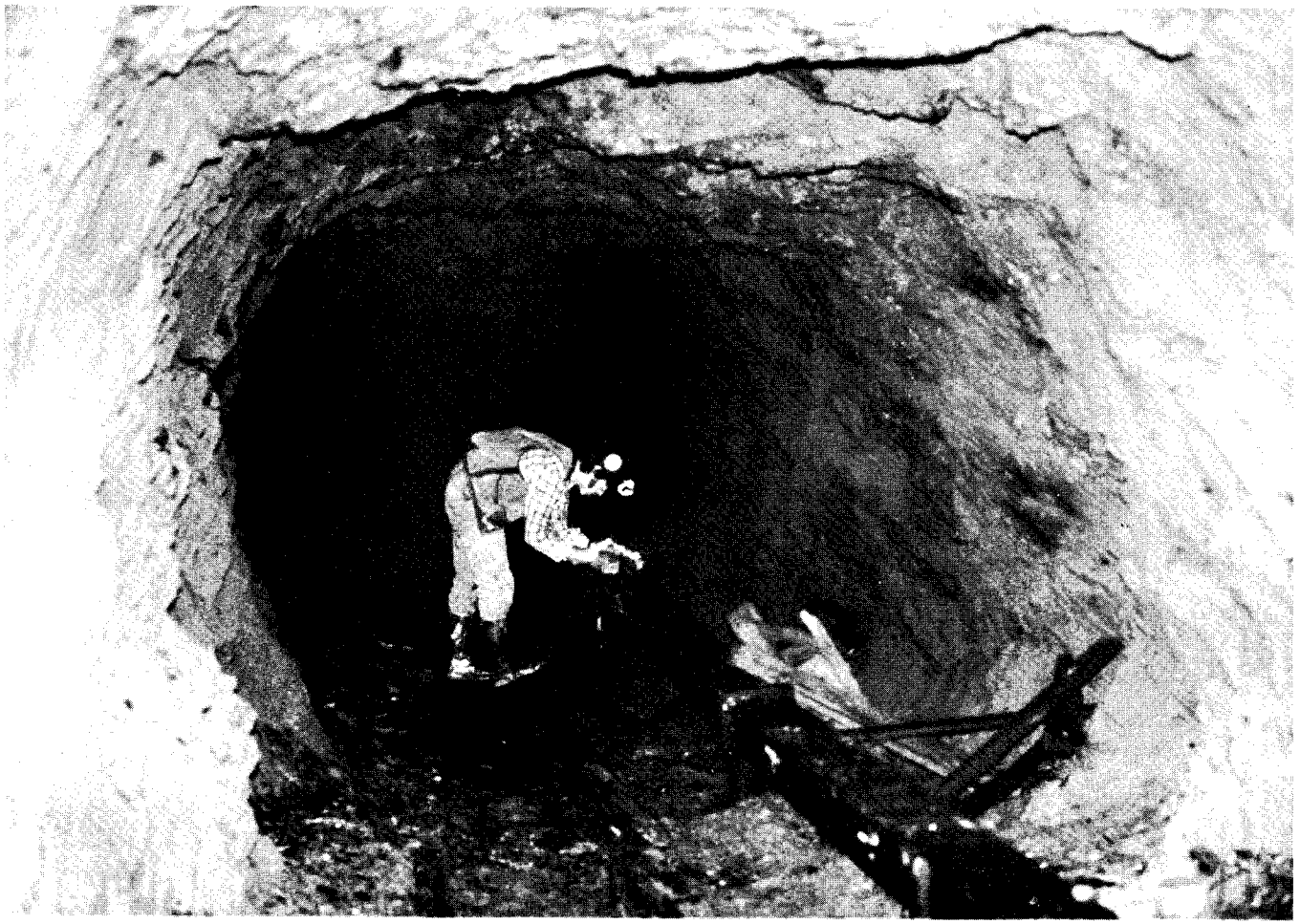

Figure 5. This 1040 ft adit was driven at the New Boston prospect in 1887 in a search for gold ore but none was found.

* The Silver Queen veins were discovered (88).
* The Treadwell Mine continued to be active (91).
* An 80-stamp mill and support facilities were built at the Bear's Nest prospect before a 1,200-ft adit was driven and revealed that the prospect had been salted and that there was almost no gold (91).
* A placer mining operation worked in the first basin of Spruce Creek (46).

1889

* A 10-stamp mill was built and connected to the Perseverance Mine with a 3,000-ft tram by the Eastern Alaska Mining and Milling Co. (88).
* Larger scale development began on the Nowell and Lurvey placer deposits. A 350-ft tunnel was driven into the Lurvey deposit (88).
* The Glacier and Silver Queen deposits were brought under the ownership of the Silver Queen Mining Co. which built a 10-stamp mill (88).
* The Raegan, Gould & Curry, and Gold Belt deposits may have been discovered by this year (23, 88).
* John Treadwell sold his mine interests to the Alaska Treadwell Gold Mining Co. (91). Average ore grade from 1885 to 1889 was $3.79 per st (43).
* The Summit and St. Louis prospects were discovered (54).
* The Point Astley, Sumdum Chief, and Portland prospects were discovered (82).
* Active placer mining occurred in the first and second basins of Spruce Creek (88).

1890

* Archie Campbell built a revolving Dodge mill at the Fuller First Mine (88).
* The 18-mile-long Treadwell Ditch was completed to bring water to the Treadwell mills (91).
* Between 1885 and this year, 617,112 st of ore were crushed at the Treadwell Mine which yielded about 113,180 oz of gold and a profit of $418,209 (87). Average ore grade dropped to $1.88 per st (43).
* Placer gold was found over the Smith and Heid prospect (72).
* The Bear and Comet deposits were found in the Berners Bay region and the town of Seward was established (later renamed Comet because of conflict with a town on the Kenai Peninsula) (51).
* Twenty-six tons of ore were backpacked from the Sumdum Chief Mine by F. Reed, Oliver Price, and S. B. Robinson (82).

1891

* A 3400-ft-long tunnel was put into the Nowell placer. There was active mining of Silver Bow Basin placer deposits (88).
* The original 5-stamp mill at the Treadwell was moved to the Fuller First Mine (33).
* From the Treadwell Mine, 220,686 st of ore were extracted from which about 10,675 oz of gold produced. Operating profit was $361,980 (91).
* The Alaska Mexican Gold Mining Co. was organized (91).
* The Berners Bay Mining and Milling Co was organized and began production at the Bear Mine (51).

1892

* Archie Campbell produced 1,064 oz Au at the Fuller First Mine (100).
* The Treadwell mines produced 239,633 st of ore and earned a profit of $385,614 (91).
* The Comet property was purchased by Thomas Nowell (51).

1893

* A 5-stamp mill was built at the Alaska Juneau Mine (91).
* The Juneau Mining & Milling Co. produced 358 oz gold (100).
* At the Ground Hog Mine, several tunnels and pits were opened, the 20-stamp Red Mill was built near the Nowell ground, a 4,000-ft tram constructed, and a few thousand dollars of gold mined (88).
* There was a profit of $429,949 from 220,043 st of ore crushed at the Treadwell Mine (91).
* A 60-stamp mill was constructed at the Mexican Mine (91).
* Development of the Comet Mine began (45).
* Quartz lodes were discovered at the Smith and Heid prospect during sluicing of overburden and the Falls Tunnel was driven 36-ft. Thirty five oz of placer gold produced (72).
* The Bald Eagle Mining Co. organized to work the Sumdum Chief Mine (82).

1894

* The Perseverance Mine had produced 3,000 oz of gold by this year (88).
* The Treadwell complex produced a profit of $309,535 from 241,278 st of ore (91).
* The Alaska United Gold Mining Co. was organized to exploit the Ready Bullion and 700 Foot mines (91).
* A 40-stamp mill was built at the Comet Mine and 6,300 st of ore crushed, yielding $72,833 (45).
* Twenty miners were working at the Sumdum Chief Mine and produced 175 st of ore worth $25,000 (82).

1895

* The Perseverance mill was destroyed by an avalanche in December (91).
* The Treadwell complex produced 263,670 st of ore resulting in a profit of $497,342 (91).
* W. I. Webster produced 58 oz gold from the Humboldt Mine (100).
* The Silver Queen and Glacier mines were purchased by the Nowell Gold Mining Co. who built a bucket tram, a railroad, and a 20-stamp mill (88). The Silver Queen Mine produced 681 oz gold in 1895 (100) and the combined production of the Silver Queen and Glacier mines was $100,000 of silver and $20,000 of gold by this year (23).
* The Gould & Curry Mine produced 1250 oz of gold (23).
* The Bear Mine produced 4,900 st of ore (45).
* Gold worth $149,201 was extracted from 10,800 st of ore mined at the Comet Mine (51).
* The Northern Belle deposit was discovered (51).
* The Jualin deposit was found by Frank Cook (92).

* J. McWilliams and Peter Early discovered the Bessie and Aurora Borealis deposits prior to 1895. The Bessie Mine had been explored by several tunnels and the Aurora Borealis had four tunnels and a 5-stamp mill which had produced 300 oz of gold by this year (66).
* The Alaska Washington and Mother Lode prospects were located (54, 66).
* J. Smith and J. Heid produced 193.5 oz of gold from the Smith & Heid prospect (100).
* The Crystal and Friday deposits were found (88).
* A 4-stamp mill was erected at the Sumdum Chief Mine and $80,000 of gold and silver produced (82).

1896

* A 30-stamp mill was built at the Alaska Juneau Mine by Lane and Hayward (88).
* The Juneau Mining & Milling Co. produced 3,884 oz gold (100).
* The Mexican mill was enlarged to 120 stamps. The Treadwell mines had produced 375,294 oz of gold by this year (91).
* The Horrible, Ivanhoe, and Kensington deposits were discovered (51, 113).
* Mining continued at the Bear Mine (51).
* The main crosscut at the Comet Mine was driven 1,875-ft and 5,915 st of ore, containing $94,339 worth of gold, were produced (45).
* A 10-stamp mill was built by the Boonville Group at the Jualin Mine, which produced $25,511 in gold and concentrates (92).
* Work began at the Indiana prospect (51).
* An arrastre mill was built at the Smith and Heid prospect and a few oz of gold recovered (72).
* Mining continued at the Sumdum Chief Mine (82).
* The Whiting River prospect was discovered (46).

1897

* Several properties in Last Chance Basin were consolidated by George Garside under the Last Chance Hydraulic Mining Co. (88).
* The Alaska Juneau Gold Mining Co. was organized (91).
* The Treadwell group earned a profit of $313,076 from 254,329 st of ore extracted (91).
* The Gold Standard/California deposits were discovered (69, 73).
* A 10-stamp mill and a two-mile tram were constructed at the Horrible Mine by the Portland Alaska Mining Co. and production began (51).
* Mining was initiated at the Ivanhoe Mine by the Mellen Mining Co. (51).
* The Berners Bay Mining and Milling Co. began working on the Kensington Mine (51).
* The Northern Belle Mine had produced 940 oz of gold from 2,302 st of ore by this year and then closed (45, 91).
* The Bear Mine closed after producing a final 685 st of ore this year and a total of 800 oz of gold during its life. Ore averaged about 0.33 oz/st gold and was only 50% free milling (45).
* The Ophir may have been discovered about this year (113).
* The Comet Mine yielded $86,832 from 12,750 st of ore (45).
* The Jualin Mine produced $78,480 in gold and concentrates (92).
* A 10-stamp mill was built at the Indiana prospect but, when it burned during the winter, the deposit was abandoned (51).

* Adits 150- and 90-ft-long were driven into the Smith and Heid prospect (72).
* The Peterson prospect was discovered by George Rudd (69).
* Almost $200,000 worth of metals had been extracted from the Sumdum Chief Mine by this year. The mine had 1,700-ft of workings, a 4,000-ft tram, and a new 10-stamp mill. The Sumdum Post Office was opened (82).
* A report for the Redwing Mine, owned by W. M. Ebner, listed a production of 82 oz gold (100).

1898

* The Wagner prospect was staked (91).
* Considerable development by the Last Chance Hydraulic Mining Co. began on the Jualpa placer deposit in Last Chance Basin (88).
* The Ready Bullion began operations with a 120-stamp mill and the Treadwell complex produced 250,408 st of ore. Operating profit was $386,792 (91).
* The Horrible Mine closed (51) but the Jualin Mine produced $45,769 worth of gold and concentrates (92).
* Work continued on the Kensington properties (45).
* The Comet Mine produced $17,208 worth of bullion from 6,582 st of ore (45).
* The Gold Standard and California prospects were consolidated and the Falls, Contact and a third tunnel were started (73).
* John G. Peterson acquired the Peterson property (69).
* The Sweetheart Ridge prospect may have been discovered (46).

1899

* The 700 Foot Mine began operations with a 100-stamp mill and the Treadwell Mine added a 300-stamp mill. The complex extracted 557,960 st of ore. Profit was $699,301 (91).
* The Moore shaft was sunk 90 ft at the Yakima Mine (19).
* Surface work was done at the Kensington mines (45).
* The Comet Mine produced $28,720 of gold from 6,191 st of ore (45).
* The Jualin Mine produced $49,292 worth of gold and concentrates (92).
* The Friday Mine began operation under the Alaska Snettisham Gold Mining Co. (88).
* The Bald Eagle and Sumdum Chief properties were merged under the Sumdum Mining Co. with Herman Tripp as superintendent (82).

1900

* Joseph Gilbert and William Sutherland formed the Alaska Perseverance Mining Co. (91).
* The Treadwell mines crushed 457,802 st of ore with a profit of $377,417 (91).
* The Moore shaft at the Yakima Mine was completed to depth of 175 ft and drifting begun (19).
* The Kensington Mine processed about 5,790 st of ore in 1900 which resulted in 5% bullion, 62% concentrates and 33% tailings. Total production from the mine was 10,342 st of ore which yielded about 2,920 oz of gold (45).

* By this year, there were 9,000 ft of workings on ten levels at the Comet Mine. The mine produced 22,250 oz of gold from 51,500 st of ore (87% bullion, 5% concentrates). The Comet closed by the end of the year (45).
* The Jualin Mine produced $81,477 worth of gold and concentrates (92)(fig. 6).
* The Greek Boy prospect was discovered about this year (76).
* The Berners Bay prospect was staked (25).
* Additional tunnels were driven on the California prospect (73).
* An arrastre mill set up by Tom Smith and French Louis at the Smith and Heid prospect milled 20 st of ore. They recovered eight oz of gold and two st of concentrates (from which 3.5 oz. gold were later recovered) (72).
* Placer gold was discovered in Nugget Creek (88).
* A 5-stamp mill was erected at the Crystal Mine (fig. 7) and production started (88).
* Five companies began active exploration on many of the Windham Bay lode deposits (93).
* The Gold Marie and Gold Fourth veins were discovered by Herman Kloss and Jack Davis (46).
* Copper mineralization was discovered at Pt. Coke (46).
* Forty miners worked at the Sumdum Chief Mine (82).
* A 3,000-ft tram and a stamp mill were built at the Yellow Jacket Mine (46).

1901

* The Hallam property was staked (88).
* The Nowell placer had produced 19,350 oz of gold by this year, averaging $0.14 per yard, but work was halted by litigation (88)(fig. 8).
* A profit of $481,634 came from 682,893 st of ore crushed at the Treadwell complex (91).
* The Tacoma prospect was discovered (74).
* The Horrible Mine operated this year but closed after producing about $1,500 of gold from 500 st of ore (51).
* Some work was done on the Kensington properties (45).
* At the Jualin Mine, $46,741 worth of gold and concentrates were produced and the mine closed (92). A post office opened (83)(fig. 9).
* A 10-stamp mill was built at the Friday Mine (88).
* The Sumdum Mining Co. began a 3,500 ft extension to the main tunnel and a 1,600 ft raise (82).
* The Redwing Mine operated with a 10-stamp mill (46).

1902

* The Lemon Creek Co. set up a small hydraulic plant in Lemon Creek but abandoned the project because of water problems (88).
* The Treadwell mines milled 756,325 st of ore and had a profit of $659,850 (91).
* Work at the Kensington mines was halted by litigation (45).
* More tunnelling was done on the California prospect (73).
* Several adits with about 800-ft of workings were completed at the Bessie Mine (113).

Figure 6. Remains of the 5-stamp mill that was built at the Crystal mine in 1900.

Figure 7. Large Pelton water wheel that provided power to the Jualin minein the late 1890's.

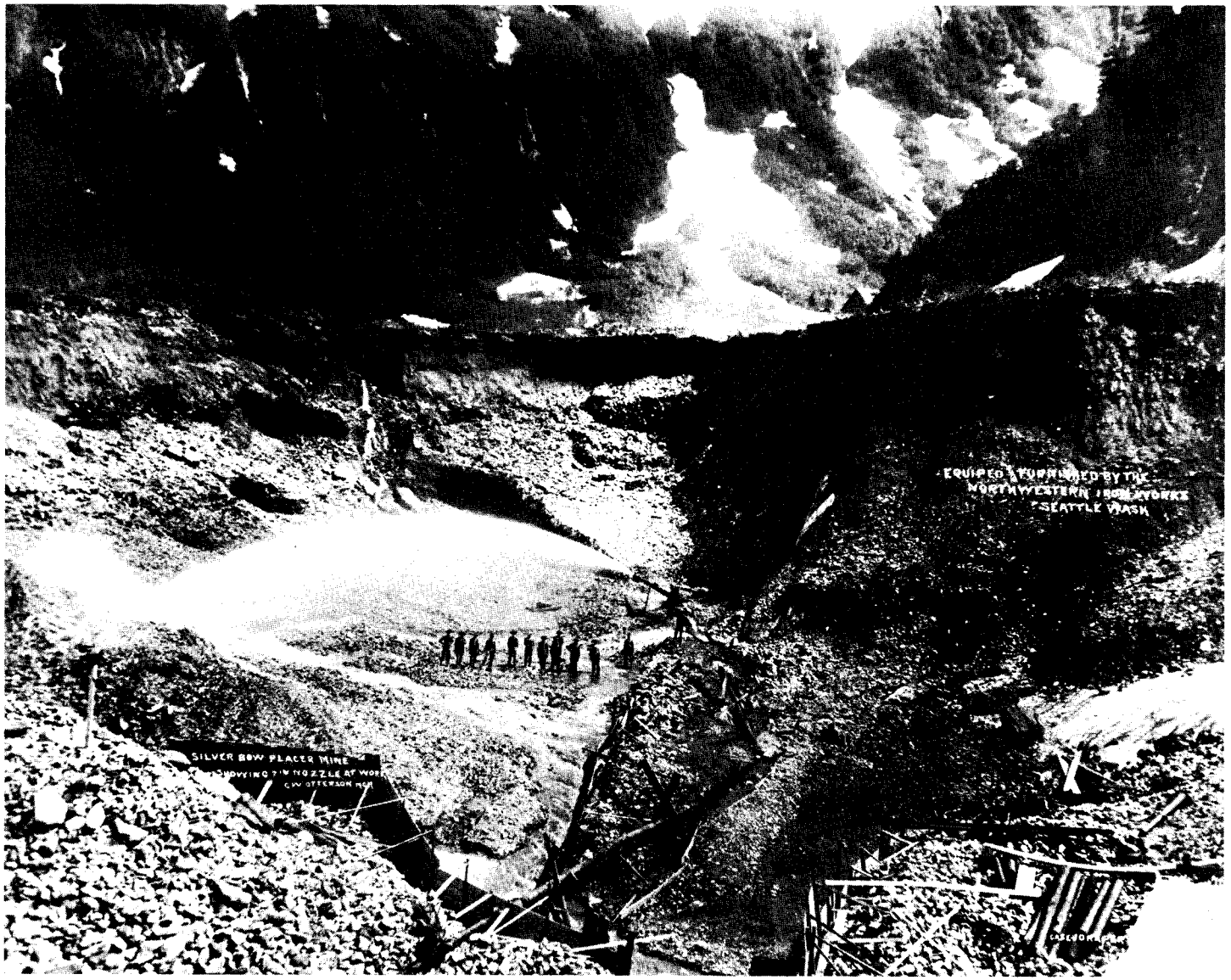

Figure 8. The Nowell placer mine in Silverbow Basin in the late 1890's (Case & Draper Coll., Alaska Historical Lib.)

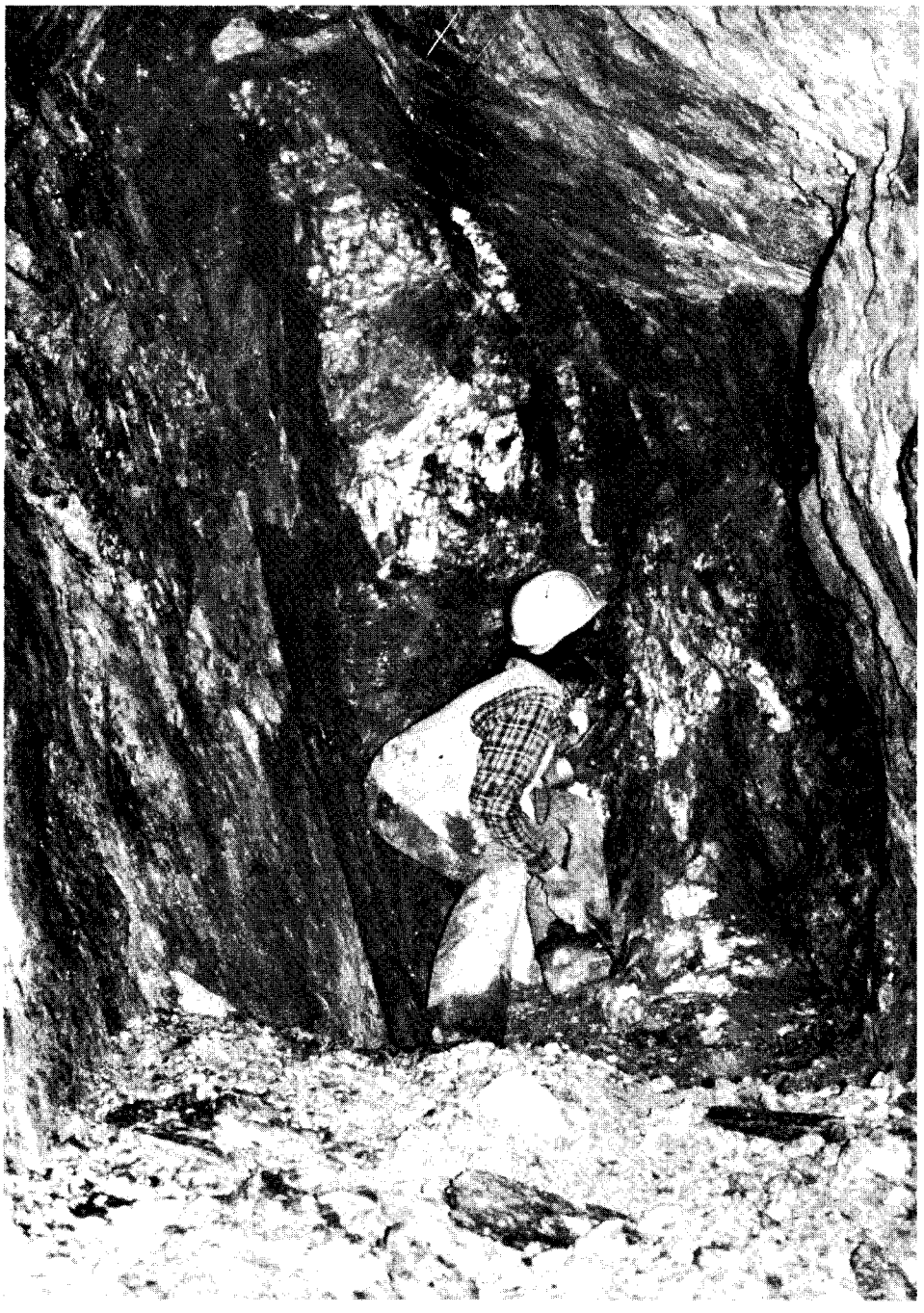

Figure 9. Quartz vein exposed in the upper workings of the Jualin mine in the early 1900's.

* The Eagle River deposit was discovered (81).
* A 22-ft-deep shaft was sunk on the Summit prospect (65).
* The Yakima prospect had been explored by a 175-ft shaft with 500-ft of crosscuts and 500-ft of drifts, and the 60-ft Davis Tunnel by this year (19).
* The Crystal Mine had produced 1,200 oz of gold by this year. The mill ran 44.5 days this year and crushed 583 st of ore worth $2969 (1).
* The Cook group of claims was staked on lower Sweetheart Lake (46).
* The Redwing Mine closed after producing 3,000 oz of gold from two tunnels (46).
* Work continued at the Sumdum Chief Mine (82).

1903

* Short adits and shallow pits had been made on the Hallam prospect by this year (88).
* Work at the Last Chance Placer Mine was taken over by the Jualpa Mining Co. (88). which drove the first half mile of a tunnel to tap the basin (27).
* Some work was done at the Humboldt prospect (86).
* There were 1,500-ft of tunnelling at the Ebner Mine and $575,000 had been produced by this year. Another $25,000 was mined during the year (88).
* Underground mining was initiated at the Alaska Juneau Mine. There were 2,400-ft of workings and the mine produced 120 st of ore per day. The ore averaged $1.50 per st with operating costs of $0.75 per st. The mine operated from May to November and had produced $100,000 by this year (88).
* By this year there were 1,900-ft of workings at the Perseverance Mine. During 1903, 2,000 ft of the Alexander Crosscut were driven to undercut the old workings (88).
* There were 80 stamps in four mills in Silver Bow Basin this year. The Humboldt mill only operated a few days. The Red Mill and 5 stamps of the Alaska Juneau Mine were idle but 15 stamps in the Ebner and 30 stamps at the Alaska Juneau Mine were active (88).
* The Raegan prospect had 320 ft of workings (fig. 10) by this year (88).
* The Glacier and Silver Queen mines had produced about $500,000 of silver and gold from 7,500 ft of workings by this year (86).
* 775,150 st of ore were produced at the Treadwell mines with a profit of $801,312 (91). A hoist with a capacity of 3,500 ft was installed at the Treadwell Mine (112).
* The Alaska Treasure Consolidated Mining Co. formed by Frank Stone for the Nevada Creek properties (114).
* The Julia, Cascade, Dividend, Noonday and Puzzler veins were discovered in Yankee Basin by 1903 (113).
* The Rex deposit was found and some mining completed (88).
* A 10-stamp mill was built at the Eagle River Mine and tunnelling began (94).
* Open-cutting and tunnelling were done at the Peterson Mine by T. G. Drew. An arrastre mill was tried with no success (69).
* A hydraulic plant was installed on Windfall Creek and much overburden was removed but little gold was produced (88).
* The Ivanhoe Mine closed after producing 3,000 st of ore worth $7,000 (51).

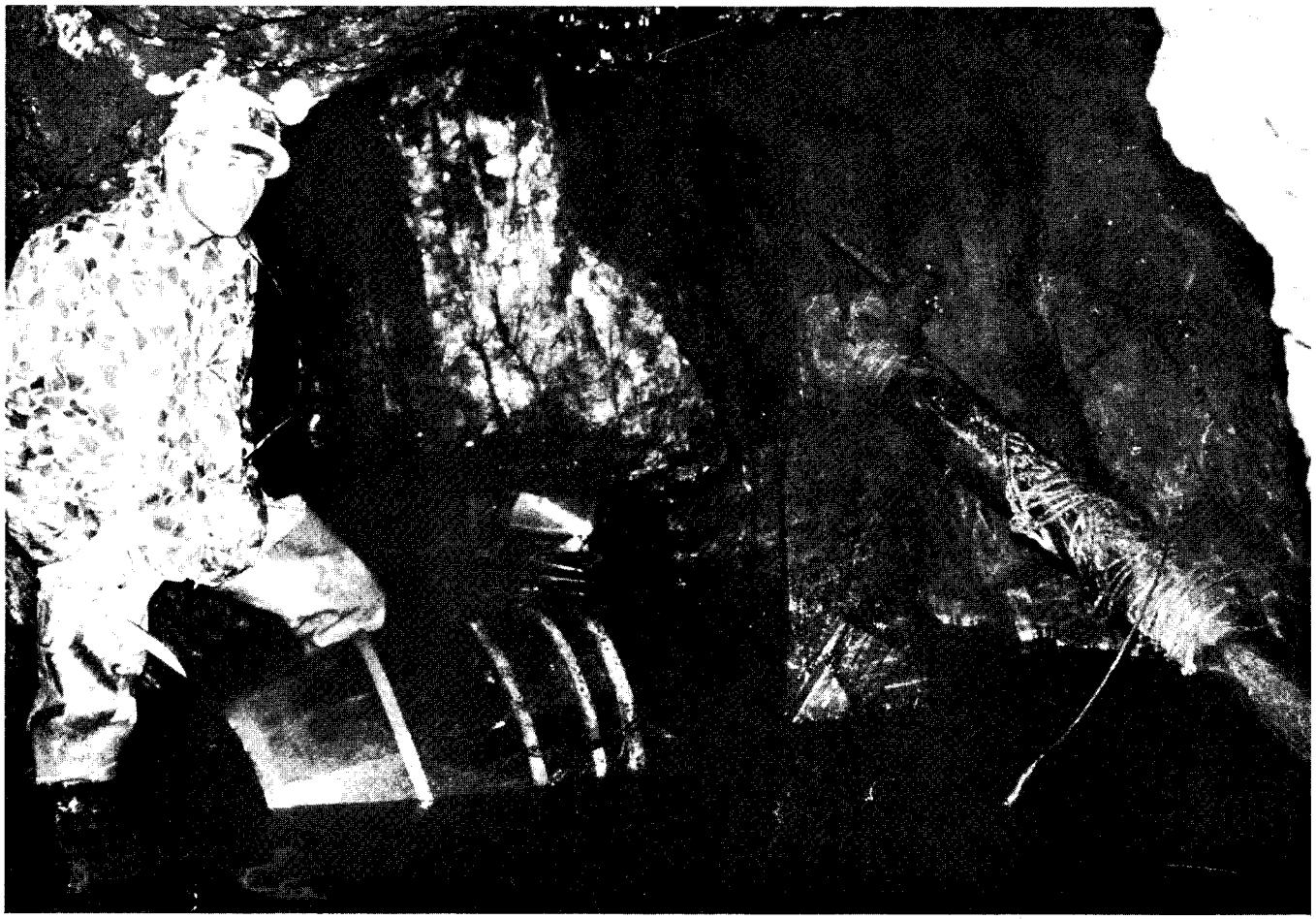

Figure 10. By 1903, this windlass and bucket had been used to sink 45 ft shaft in the Raegan prospect adit. The Raegan vein is behind the bucket.

* The Alaska Snettisham Gold Mining Co. took over the 1,000 ft of workings at the Crystal Mine (88) and mined $13,812 worth of gold from about 1,800 st of ore (100).
* A 20-stamp mill was erected at the Friday Mine and two tunnels with 1,350 ft of workings (fig. 11) were completed (88)
* The Point Astley prospect had about 200 ft of workings by this year (88).
* The Sumdum Chief orebodies mined out this year after producing 24,000 oz of gold and an equal amount of silver (82).
* The Bluebird prospect staked (46).
* Two tunnels were driven on the Jenny Reed prospect (46).
* A 3,000-ft-long tram and some tunnelling were completed at the Yellow Jacket Mine (46).
* The California Alaska prospect was exposed by two tunnels (46).
* Ore at the Apache-Navajo Mine was tested with a 2-stamp mill and found to be too low-grade to mine so the property was abandoned (46).
* The Golden River Mining Co. drove a 300-ft tunnel to placer mine a basin 8 miles up the Chuck River (88).

1904

* The quartz veins at the Lemon Creek prospect below Lemon Creek Glacier were found about this time (88).
* Some work was done at the Humboldt prospect (112).
* Tunnelling was continued at the Alaska Juneau Mine (fig. 12) to explore under the open pits. The mill had processed 24,915 st of ore by 1905 (113).
* Several short 40- to 50-ft long tunnels were completed at the Anderson prospect by this year (88).
* The Treadwell mines had produced 1,161,000 oz of gold by this year (91).
* The Atlin Alaska prospect on Douglas Island had been found and abandoned by this year (109).
* The Kensington Crosscut (fig. 13) was started and driven to a length of 1,800 ft. Cyanide testing of ore the resulted in about 82% recovery (45).
* The Jualin Mine was reopened (92).
* Four tunnels had been completed by the Greek Boy Mining Co. at the Greek Boy prospect by this year (76).
* A total of 700 to 800 ft of underground workings were completed at the California prospect by this year (73).
* Tunnelling was done at the Alaska Washington prospect (112).
* Most of the work on the Julia, Cascade, Noonday, and Puzzler prospects was probably done about this year (before 1905) (113).
* Mining at the Rex deposit produced about 145 oz of gold but halted in 1904 (113).
* A 20-stamp mill was operating at the Eagle River Mine and 8,640 st of ore produced. The ore yielded $50,100 of gold and concentrates (81).
* The Mitchell-McPherson prospect was discovered (54).
* A hydraulic elevator was installed on Windfall Creek but low water slowed mining (113).
* The Crystal Mine (fig. 14) produced about $9,234 worth of gold (1).
* The Friday Mine was closed (88).

Figure 11. The Friday vein is exposed in a stope mined by the Alaska Snettisham Gold Mining Co. in 1903.

Figure 12. The Alaska Juneau mine and mill in Silverbow Basin about 1904 (Winter & Pond Coll., Alaska Historical Lib.)

Figure 13. Portal of the mile-long Kensington Crosscut, begun in 1904.

Figure 14. This water-filled stope at the Crystal mine was mined in about 1904.

* About 400-ft of workings were completed at the Bluebird prospect (46).
* The Jenny Reed property and Yellow Jacket Mine were abandoned (46).
* The Golden River Mining Co. continued efforts on the Chuck River (88).

1905

* The capital of Alaska was moved from Sitka to Juneau.
* Placer operations on Lemon Creek ceased (113).
* A 5-stamp mill was built at the Wagner Mine and some tunnelling was begun (91).
* Drifting and tunnelling had been done at the Boston Mine by 1905 (88).
* A 2,000-ft tunnel and 4,250-ft flume were in operation at the Jualpa placer mine. Floods this year destroyed the flume and blocked the tunnel, effectively ending work (113).
* Exploration tunnels were completed at the Alaska Juneau Mine (113).
* The Bull Consolidated deposit was discovered and several sacks of high-grade ore were mined (113).
* The Alexander Crosscut was driven to a length of 2,500 ft at the Perseverance Mine (113).
* The Treadwell mines earned $883,089 from 888,411 st of ore (91).
* Considerable exploratory work was done on the Alaska Treasure prospect (114).
* A 120-ft tunnel was driven into the Red Diamond prospect with encouraging results (113).
* Two short crosscuts were put into the Mammoth prospect (113).
* Attempts by the Alaska Treadwell Co. to reorganize and take over the Kensington properties (then under litigation) failed (45).
* At the Jualin Mine, a 4-mile horse-drawn tram was built (83) and the mine produced $74,429 worth of gold and concentrates (92). The first gold brick shipped was worth $19,400 (83).
* Work at the Greek Boy prospect was continued by Stewart Woods and Joe Demos (76).
* Work was done on the Sweeny Creek prospect (113).
* The Eagle River Mine produced 8,128 st of ore and $47,200 of gold and concentrates (81).
* A 3-stamp mill was erected at the Peterson Mine (69).
* The Mansfield Gold Mining Co. worked on placer deposits and quartz veins in McGinnis Creek. Some tunnelling was done on the veins (113).
* The Enterprise deposit was discovered (113).
* Large-scale mining at the Crystal Mine halted because all ore above the adit level had been removed (91). Small scale mining continued by Bernard Heinz resulted in production of about $1,600 worth of gold (1).
* The X-ray claims were staked along the Chuck River (46).
* Property of the Helvetia Gold Mining Co. was being explored by three adits.
* A 20-ft shaft, 500 ft of tunnelling, and a 2-stamp mill were put in by the Windham Chief Copper Mining Co. at Windham Bay (100).
* The Golden River Mining Co. continued to operate on the Chuck River (88).

1906

* Tunnelling continued at the Wagner prospect (109).
* More drifting was completed at the Boston Mine (109).
* The 15-stamp mill was in operation at the Ebner Mine (109) and $600,000 in gold had been produced by this year (91).
* The 30-stamp mill at the Alaska Juneau Mine averaged 4,200 st of ore a month during the summer and fall (109).
* This was the last year of intensive operations at the Nowell Placer Mine (109).
* A 100-stamp mill was erected at the Perseverance Mine (109).
* The Treadwell group abandoned open-pit mining (90) and crushed 702,953 st of ore for a profit of $571,707 (91).
* The Corbus, Hogback and Hudson Tunnels were driven at the Alaska Treasure prospect and a 20-stamp mill and 450-ft flume were constructed. The mill (fig. 15) ran a test sample and closed down (114).
* The Red Diamond property was abandoned because of uneconomic results (109).
* Only assessment work was done on the Mammoth prospect (109).
* The Jualin Mine produced $50,892 worth of gold and concentrates but the mine closed due to financial problems (83, 92).
* The Fremming deposit was discovered about this year.
* The E Pluribus Unum and Black Chief deposits were discovered (109).
* The Joyce-Jensen and Maude S prospects were discovered (109).
* The 1,100-ft-long Standard Crosscut was driven through the Dividend vein (109).
* At the Eagle River Mine, 3,000 ft of tunnelling and 1,000 ft of raises and shafts were completed by this year. The mine produced 12,395 st of ore and $71,600 of gold and concentrates (81).
* A thousand yd^3 of gravels were sluiced at the Windfall Creek placer deposit by the Detroit Alaska Mining. Co. (109).
* Bernard Heinz ran his stamp mill for 37 days and produced $2,236 worth of gold from 481 st of ore at the Crystal Mine (1).
* The mill at the Redwing Mine was used for a test of ore from the Helvetia Mining Co. claims (109).

1907

* The Alaska Juneau Mine operated from June to November (110).
* Fifty stamps were in operation at the Perseverance Mine (110).
* Some mining occurred at the Nowell Placer Mine until flooding halted operations in August (110).
* The Treadwell mines extracted 743,097 st of ore which produced $577,493 in profits (91).
* The Alaska Treasure Mine was closed (114).
* An 80-ft adit was driven on the Maude S claim (110).
* A 40-ft adit was driven on the Joyce-Jensen claim (110).
* A 25-ft adit intersected an orebody at the Bluejay prospect (110).
* The Eagle River Mine yielded $46,592 in gold from 8,426 st of ore (81).
* John Peterson mined a small amount of ore at the Peterson Mine and crushed it with a 2-stamp mill (110).
* The Jualin Mine was reopened through a lease arrangement and the old stopes were cleaned (92).

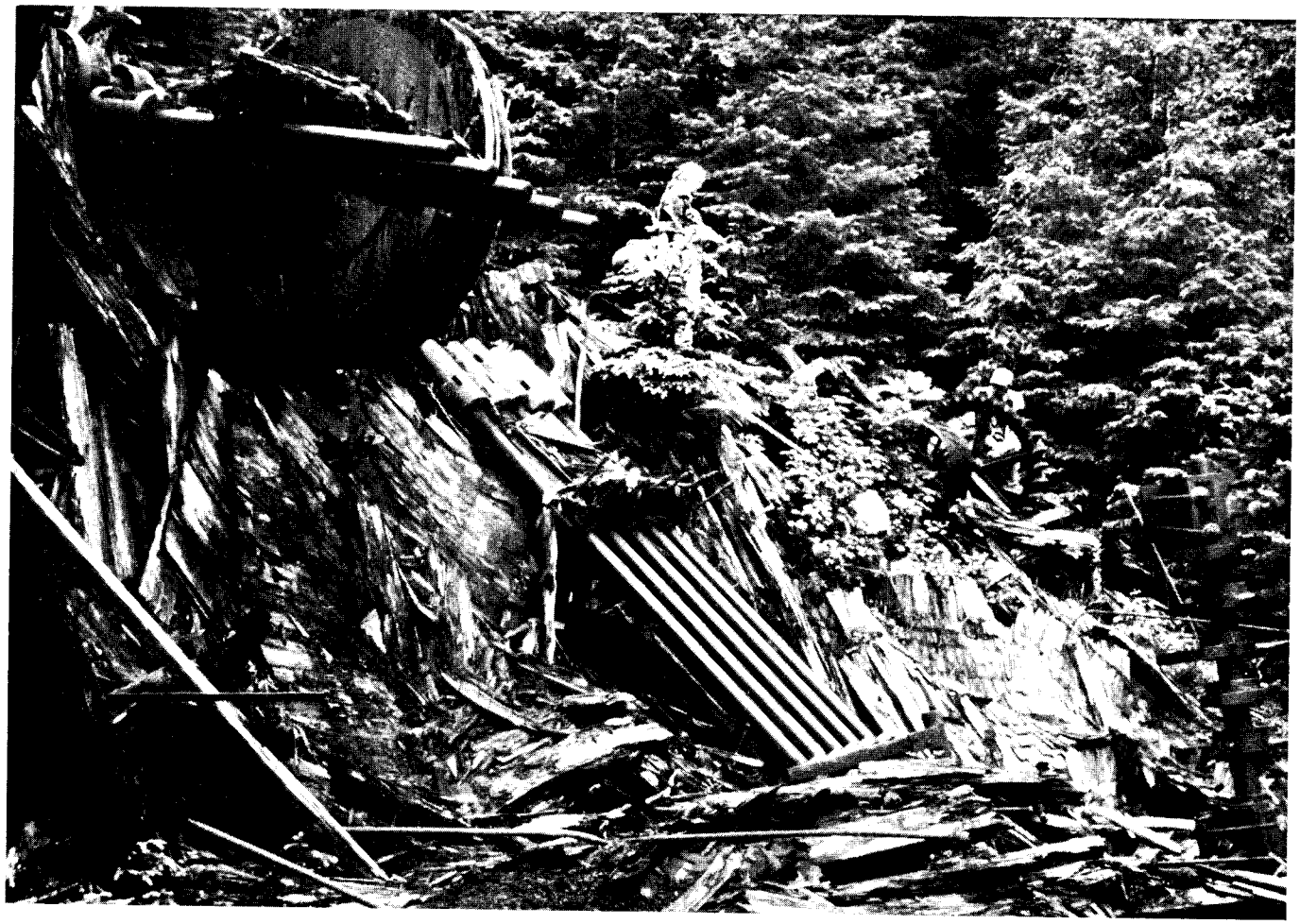

Figure 15. Present remains of the Alaska Treasure mill built in 1906.

* Some tunnelling was done at the Smith & Heid prospect (72).
* B. Heinz mined 1,313 st of ore at the Crystal Mine and produced $4,631 in gold (mill ran for 101 days) (1).
* The Sumdum Chief Mine was purchased by Richard Johnson and Charles Wells who did some tunnelling but produced no ore (82).
* A Crosscut tunnel was started at the Gold Marie prospect (110).
* A 75-ft adit and some trenching had been finished at the Whiting River prospect by this year (46).

1908

* The 100-stamp mill at the Perseverance Mine (fig. 16) operated from June through October (111).
* Thirty men were employed at the Alaska Juneau Mine (111).
* Surface exploration was completed at the Hallam prospect (111).
* A profit of $517,939 was earned from 768,628 st of crushed ore at the Treadwell complex (91)(fig. 17).
* The Jualin Mine produced $22,050 worth of gold and concentrates during 1907 and 1908 and then closed, again (92).
* Tunnelling was completed at the Black Chief Mine (111).
* Ten stamps were added to the Eagle River mill and $97,376 worth of gold and concentrates were extracted from 16,368 st of ore (81, 94).
* The Treasury Hill and Dull and Stevens prospects were discovered (68). Considerable stripping was done by Vic Spaulding and Perry Wiley at Treasury Hill. The property was then optioned to Canadian Exploration Co. who started a 700-ft adit (71).
* About 875 ft of workings in three adits were completed by this year at the Ophir Mine (51).
* A 200-ft adit with a 75-ft drift and a 60-ft raise had been completed at the E Pluribus Unum Mine by this year (62).
* Work was completed at the Enterprise Mine (111).
* A 5-stamp mill operated for 50 days at the Crystal Mine and treated an average of 15 st of ore a day (111).
* Tunnelling was completed at the Gold Marie prospect (111).

1909

* The California Nevada Copper Co. consolidated the Hallam and Ebner properties (50).
* The first serious caving occurred at the Treadwell Mine (102). Average ore grade from 1902 to 1909 was $2.20 per ton (43).
* The Main Working Tunnel at the Alaska Treasure Mine was begun by a group of Englishmen (114). Twenty-five men were employed to drive the tunnel (50).
* The E Pluribus Unum Mine produced 150 oz of gold from 15 st of ore (100).
* 11,620 st of ore were mined at the Eagle River Mine from which $50,921 of gold and concentrates were extracted (81).
* The Peterson Mine was worked by Alaska Consolidated Mines Co. (69).
* A short adit and some trenching was done at the Treasury Hill prospect (71). A 2-stamp mill was carried half way to the prospect but then abandoned (91).
* Some open cuts were made and some sluicing done at the Dull and Stevens deposit (68).

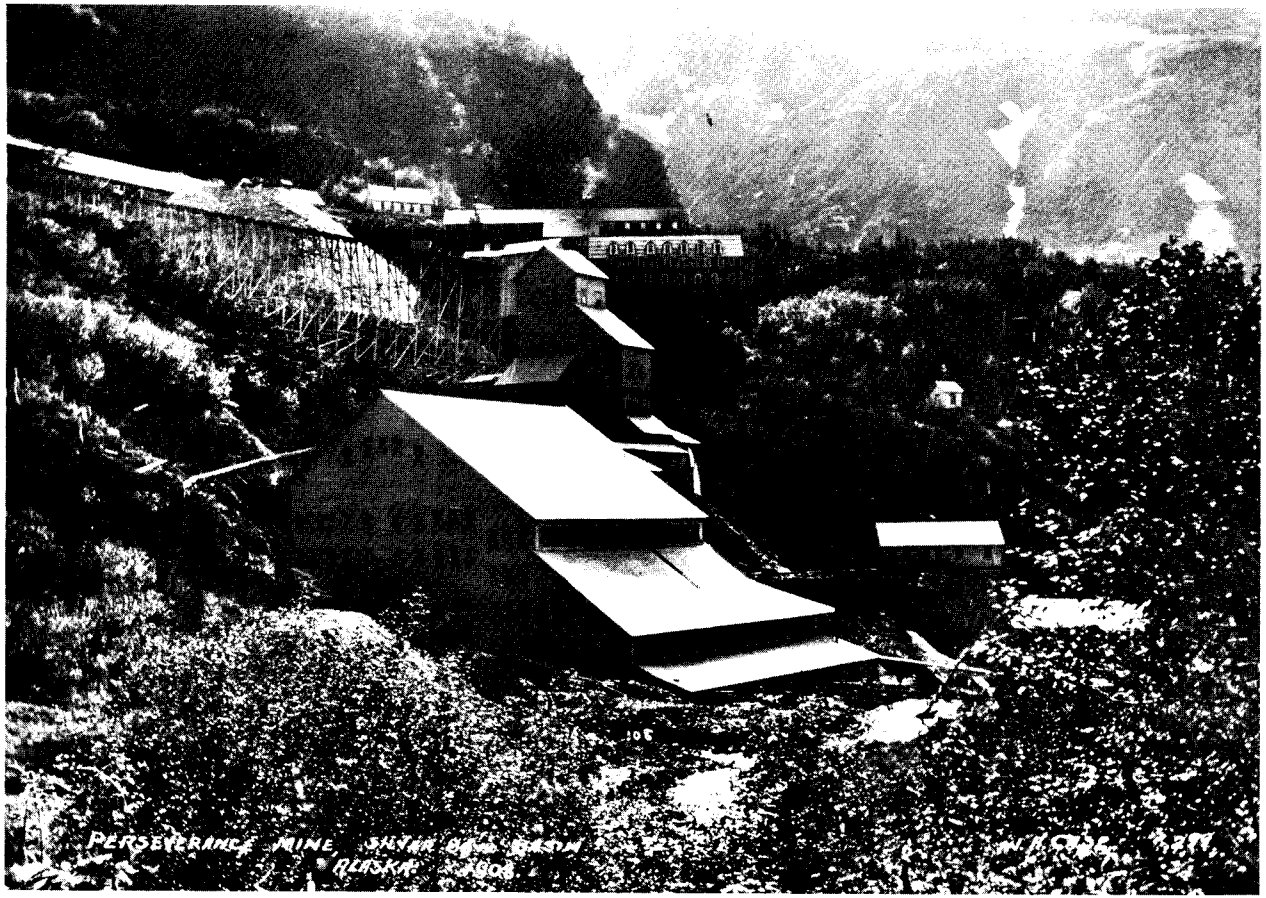

Figure 16. The 100-stamp mill for the Perseverance mine in Siverbow Basin in 1908 (Case & Draper Coll., Alaska Historical Lib.)

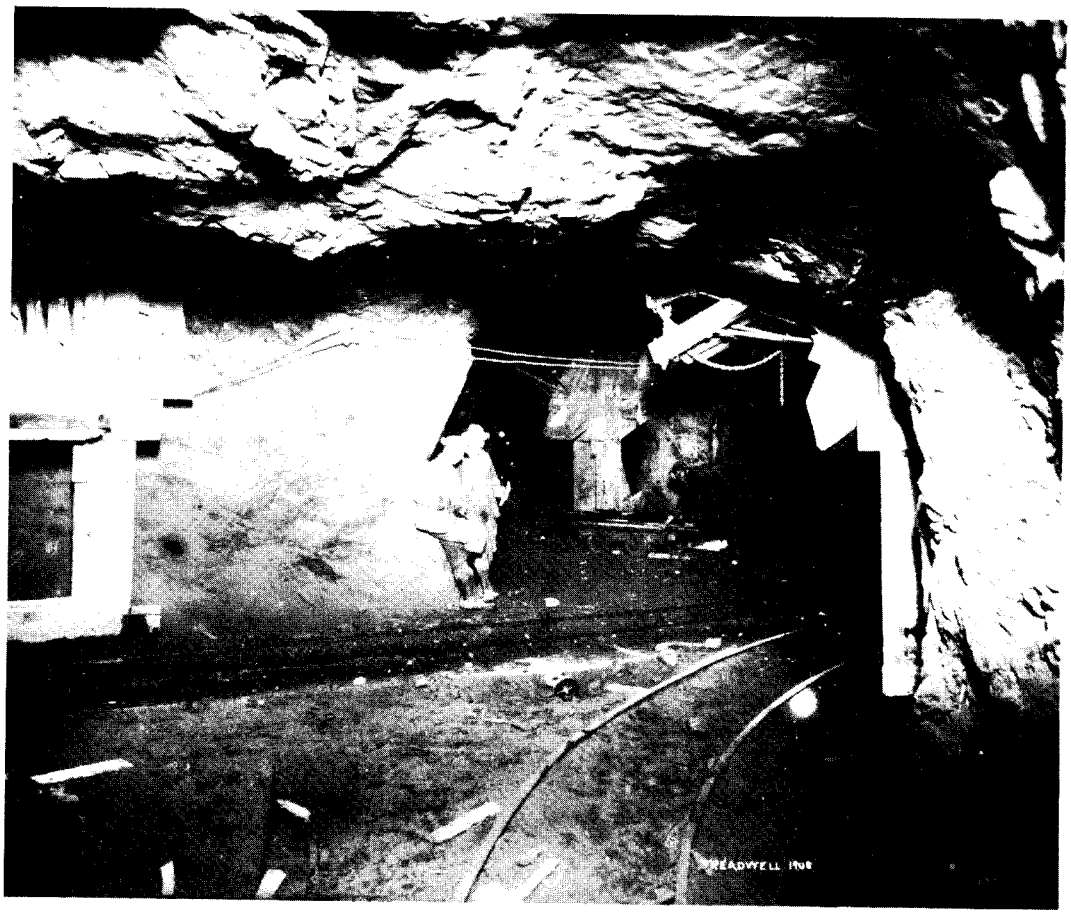

Figure 17. Underground at the treadwell mine in 1908 (Case & Draper Coll. Alaska Historical Lib.)

* The post office at the Jualin Mine was closed (83).
* Work was done at the Enterprise deposit (50).
* B. Heinz stopped work at the Crystal Mine after producing a final $8,942 in gold from 2,596 st of ore (mill ran 185 days) during 1908 and 1909 (1).
* A 173-ft adit and 127-ft of raises had been completed at the Gold Marie Mine by this year (46).

1910

* Work began on a new 200-stamp mill and more workings at the Ebner Mine (52).
* The Perseverance Mine employed 110 men and the 100-stamp mill began work in May (52).
* The shaft on the 700 Foot Mine became the main hoisting shaft for the Treadwell, 700 Foot, and Mexican mines (52). Ore grade at the Treadwell Mine during 1910 was $2.79 per ton (43). A powder magazine explosion in the Mexican Mine killed 37 miners (44).
* The Sheep Creek hydroelectric plant was built by the Treadwell Co. (90).
* The Main Working Tunnel at the Alaska Treasure Mine was driven to a length of 3,100 ft (52).
* The Orford Mining Co. built a flume and power house on lower Salmon Creek (98).
* A 100-ft adit was completed at the Joyce-Jensen prospect (52).
* Litigation of the Kensington properties ended and the properties were bought by the International Trust Co. of Boston (45).
* A 40-ft adit with a 10-ft drift was completed at the E Pluribus Unum Mine about this year (62).
* Production at the Eagle River Mine dropped to $7,411 of gold and concentrates from 3,815 st of ore (81).
* Two short adits were driven at the Mitchell-McPherson prospect (52).
* A 4-mile planked horse-tramway was completed from Pearl Harbor to the Peterson Mine and the Prairie Tunnel was begun by the Consolidated Mines Co. A few hundred st of ore were mined (52).
* Five hundred ft of tunneling had been completed at the Smith and Heid prospect (72).
* An adit and some surface cuts were done at the Johnson prospect (45).
* Work continued at the Enterprise Mine (52).
* Clean up work was done at the Crystal Mine by B. Heinz, who produced about 1,000 oz after 1906 (100).
* Three adits, with 305 ft of workings, had been completed by this year at the Portland prospect (46).

1911

* The Gold Creek tunnel was started at the Alaska Juneau Mine by F.W. Bradley (91). The mill operated for 153 days (28).
* Alaska Gastineau Mining Co. was formed by consolidation of several feuding claim groups in the Perseverance area (91).
* The Carlson Creek prospect was discovered and a 150-ft adit driven (31).
* Twenty more stamps were added to the 700 Foot mill (35).
* Some prospecting work was done at the Bear's Nest prospect (28).

* English backers of the Alaska Treasure Mine withdrew (114).
* Over 1,300-ft of workings had been completed at the Greek Boy prospect (76).
* The Yankee Boy prospect was discovered by the McCloskey brothers who drove one adit and made several open cuts (75).
* Only 545 st of ore worth $1,089 were produced at the Eagle River Mine. The main effort went into exploration (81).
* A 100-ft inclined shaft was sunk by B. L. Thane and Herman Tripp at the Peterson Mine (69).
* An adit and open cut had been completed at the Mendenhall prospect by this year (52).
* The final placer mining occurred at both the Powers Creek and Windham Bay deposits (46).

1912

* Two adits had been completed at the Doran prospect by this year (54).
* The California-Nevada Copper Co. (Ebner Mine) went into receivership (29).
* Work began on the Sheep Creek Tunnel (fig. 18), which would connect with the Perserverence Mine, by the Alaska Gastineau Mining Co. The Perseverance mill in Silver Bow Basin was destroyed by fire in December (91)(fig. 19).
* Three adits and numerous open cuts were completed at the Carlson Creek prospect this year (96).
* Large scale mining continued at the Treadwell complex (91)(fig. 20). A central shaft, hoist, and crushing plant, to be used jointly by the Treadwell, 700 Foot and Mexican mines, were completed (90).
* Construction of the Nugget Creek hydroelectric plant was initiated by the Treadwell Co. (90).
* The Eagle River Mine had 30,000 ft of workings which had yielded 70,112 st of ore by this year (175 st worth $323 during 1912). The mine closed at the end of 1912 (81).
* An inclined shaft at the Peterson Mine was completed (69).
* The Jualin Mine was optioned to a Belgian Group and the post office reopened (92).
* The Gold Nest claims were staked above Tracy Arm (46).

1913

* The Gold Creek Tunnel was finished and large scale development began at the Alaska Juneau Mine (fig. 21). A total of 34,240 oz of gold had been extracted from the mine by this year. Construction of a 50-stamp pilot mill began (91).
* Construction of the Salmon Creek dam was begun by the Alaska Gastineau Mining Co. and work continued on the Sheep Creek Tunnel (91).
* Almost 23,000 ft of workings were excavated at the Treadwell mines this year but there were also more caving problems at the mines (103).
* Work began on the Flume Tunnel at the Eagle River Mine but the mill was closed (81, 94).
* The Kensington Tunnel reached the Johnson deposit (29).
* Surface work was done at the Jualin Mine by the Belgian group (92).
* Some work was completed at the Treasury Hill prospect (71).
* About 200 st of ore were mined from the Enterprise Mine by this year. Ore was processed in a Johnson rod mill and 15 oz of gold were produced (67).

Figure 18. Beginning the 10,400 ft-long Sheep Creek Tunnell in 1912 which would connect with the Perseverance mine (Winter & Pond Coll., Alaska Historical Lib.)

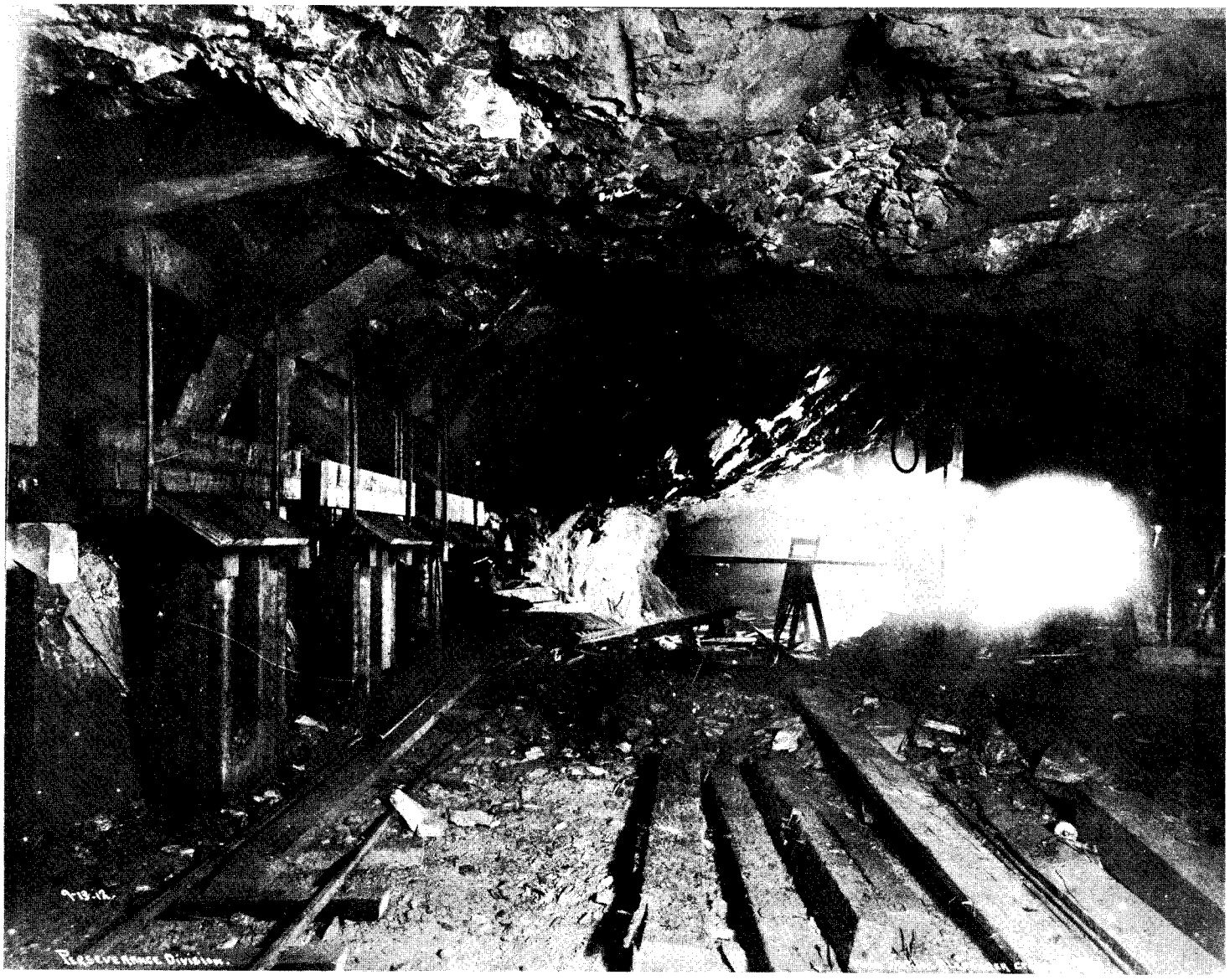

Figure 19. The Main Station in the Alexander Crosscut of the Perseverance mine in 1912 (Winter & Pond Coll., Alaska Historical Lib.)

Figure 20. Miners at the 1500 ft level of the Ready Bullion mine about 1912 (J.N. Dexter Coll., Alaska Historical Lib.)

Figure 21. A view of the Gold Creek Tunnel,
finished in 1913, at the No. 1 Raise in the Alaska Juneau mine.

1914

* A 20-st tubular mill was in operation at the Wagner Mine and a 15-stamp mill was under construction (fig. 22). There were 1,150 ft of workings completed by this year (35).
* Some work was done at the Boston Mine (35).
* A 3,500 ft adit was driven at the Ebner Mine by United States Smelting and Refining Co. (35).
* At the Alaska Juneau Mine, 473,000 st of ore was mined from open pits between 1893 and 1914 (57).
* The pilot mill was completed at the Alaska Juneau Mine (91).
* The 10,400-ft-long Sheep Creek Tunnel (fig. 23) reached the main shaft of the Perseverance Mine. An average of 544.2 ft of tunnel were driven each month during construction, a world's record. (91).
* The Penn Alaska prospect was staked and some underground work done (35).
* Mining continued at the Treadwell mines. The Salmon Creek dam was completed and Nugget Creek was diverted for power by the Alaska Treadwell Co. (91).
* The Jersey City prospect was explored by a shaft and crosscut (35).
* English interests reexamined the Alaska Treasure Mine but did not finalize plans because of the onset of World War I (114).
* The Main shaft at the Jualin Mine was rehabilitated and work began on the Berners Tunnel (92).
* The Tacoma claims were abandoned (74).
* The Eagle River Mine produced $20,225 from 2,353 st of ore (81).
* Some work was done at the Mitchell-McPherson prospect (35).
* Some work was done on the Peterson Mine by John Peterson (69).
* Some work was completed at the Treasury Hill prospect (71).
* B. L. Thane aquired the Enterprise Mine and drove two adits (67).
* Alaska Bond and Development Co. tried to promote the Redwing Mine (91).
* A 20-ft shaft and 150-ft trench had been completed on the Gold Shaft prospect by this year (46).

1915

* The Territory of Alaska replaced the ten-hour work day with an eight-hour day (84).
* Mine accidents during 1915 killed one worker at the Treadwell, Ready Bullion, Ebner, Mexican, and Alaska Juneau mines while two were killed at the 700 Foot Mine and four died at the Perseverance Mine (84).
* Large scale development continued at the Alaska Juneau Mine and 179,892 st of ore were processed in the 50-stamp pilot mill (2). The mine produced 12,175 oz gold, 6,192 oz silver, and 117,031 lbs lead in 1914 and 1915 (17).
* A 6,000 ton/day mill was built by the Alaska Gastineau Mining Co. at Thane. The mill processed 1.1 million st of ore yielding $0.94 per ton (81% recovery) at a cost of $0.71 per ton (91).
* The Annex Creek hydro power facility completed by the Alaska Gastineau Co. (91).
* The Gold Belt Tunnel was driven to 2,500 ft (30).
* The Alaska Taku claims were staked in Rhine and Grindstone Creeks (30).

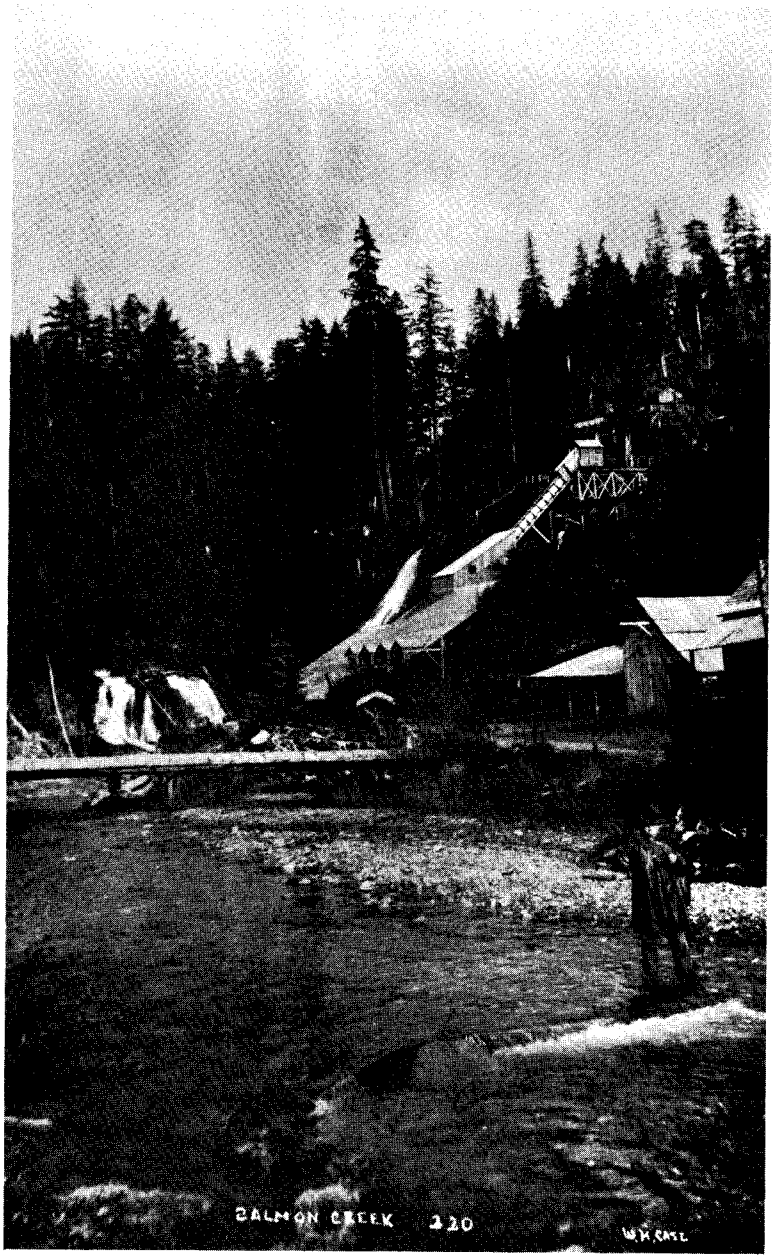

Figure 22. This stamp mill worked at the Wagner mine in 1914 (Case & Draper Coll. Alaska Historical Lib.)

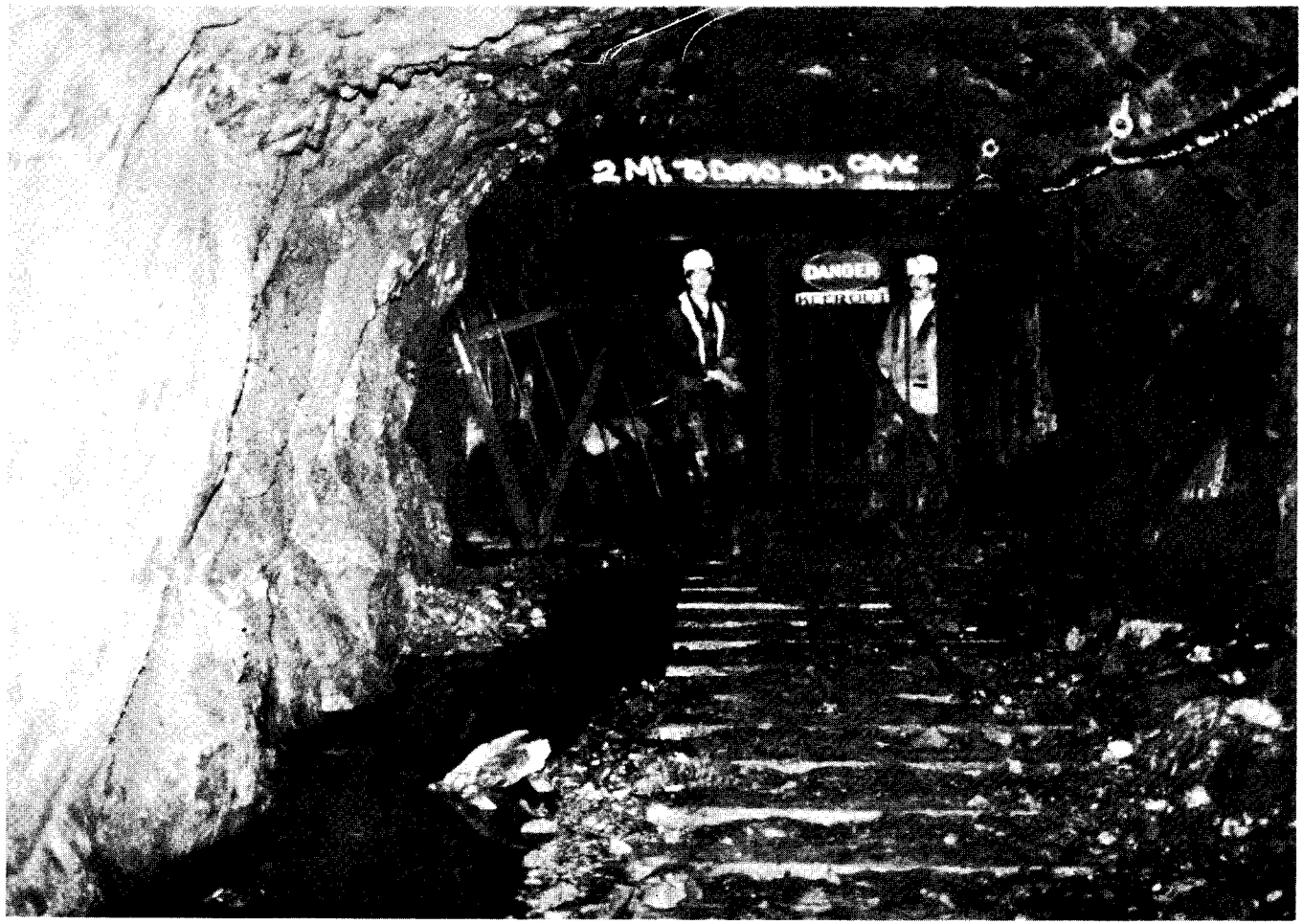

Figure 23. The Sheep Creek Tunnel, driven between 1912 and 1914, was, 10,400 ft long and was driven at a record-setting pace of 544.2 ft per month.

* About 14,500 ft of workings were completed at the Treadwell mines this year and the Treadwell 240 hydroelectric plant was completed (91). A total of 2,821,420 oz of gold had been produced by the Treadwell mines (fig. 24) by 1915 (91). More caving occurred at the Treadwell mines (103)(fig. 25).
* The Flume Tunnel at the Eagle River Mine was pushed to 3,000-ft and 2,411 st of ore, worth $7,154, were produced. The mine produced 20,000 oz of gold and 8,853 oz of silver during its life (81, 94).
* The Kensington Tunnel was completed with 5,000-ft of workings. The Hayden-Stone interests consolidated the Kensington, Bear, and Comet properties with B. L. Thane as superintendent (30).
* The Johnson prospect had been explored by 1,600 ft of workings by this year (30).
* Development work at the Jualin Mine produced $19,089 worth of gold and concentrates (92). The first semi-diesel engines in Alaska were installed at the power plant (83).
* Bernard Heinz made a trial run of his mill at the Crystal Mine (100).

1916

* Extensive work was done at the Ebner Mine (85).
* Large scale development continued at the Alaska Juneau Mine and 180,000 st of ore were trammed but no gold was produced. A loss of $186,757 was reported (17). The mine employed 465 men (2). Five people were killed and 38 hurt in accidents at the mine (85).
* Four miners were killed in the Alaska Gastineau workings (fig. 26) and another 58 injured (85). The tram was used to move ore from the Sheep Creek tunnel to the mill in 1916.
* A few open cuts were made at the Alaska Taku prospect (36).
* The Dolan prospect had been staked at the mouth of Sheep Creek by this year (36).
* The Tyee and Holeman prospects were explored by diamond drilling (36).
* Accidents killed one at the Treadwell Mine, two at the 700 Foot and one at the Ready Bullion Mine. Eighteen more were hurt (85).
* The Mexican Mine produced 304,000 oz of gold from 4,445,807 st of ore between 1894 and 1916. During 1916, three miners were hurt in accidents (85)(fig. 27).
* Open cuts were made made at the Alaska Endicott Mine (100).
* The Jersey City prospect was drilled (36).
* Only assessment work was done at the Alaska Treasure Mine (114).
* Reserves above the adit level at the Kensington Mine were reported to be 500,000 st (45).
* The Jualin Mine produced $72,051 worth of gold and concentrates (fig. 28)(92). Six miners were hurt in accidents (85).
* The Eagle River Mine closed after working the veins on ten levels (85).
* The Peterson Mine produced 61 oz of gold from 25 st or ore (100).
* A 5-stamp mill was installed at the Enterprise Mine by Williams and Leak (36) and was used to produce 85 oz of gold from 300 st of ore (67).
* The Neglected Prize/Jingle Jangle prospect was staked (later called the Tracy Arm prospect)(46).
* The Alaska Peerless Mining Co. drove two adits at the Jensen prospect (85).

Figure 24. View from the Mexican mine, in 1915, showing the Treadwell mine with Douglas beyond and Juneau across Gastineau Channel.
(Case & Draper Coll., Alaska Historical Lib.)

Figure 25. Remains of the main hoist at the Mexican mine.

Figure 26. Buildings and tram built by the Alaska Gastineau Mining Co. The tram was used to move ore from the Sheep Creek Tunnel to the mill in 1916 (Winter & Pond Coll., Alaska Historical Lib.)

Figure 27. The town of Douglas is in the center, the Treadwell mine is to the right, and Mayflower Island, present site of the Bureau of Mines offices in Juneau is just above Douglas. Photo was taken about 1916 (W.H. Case Coll., Alaska Historical Lib.)

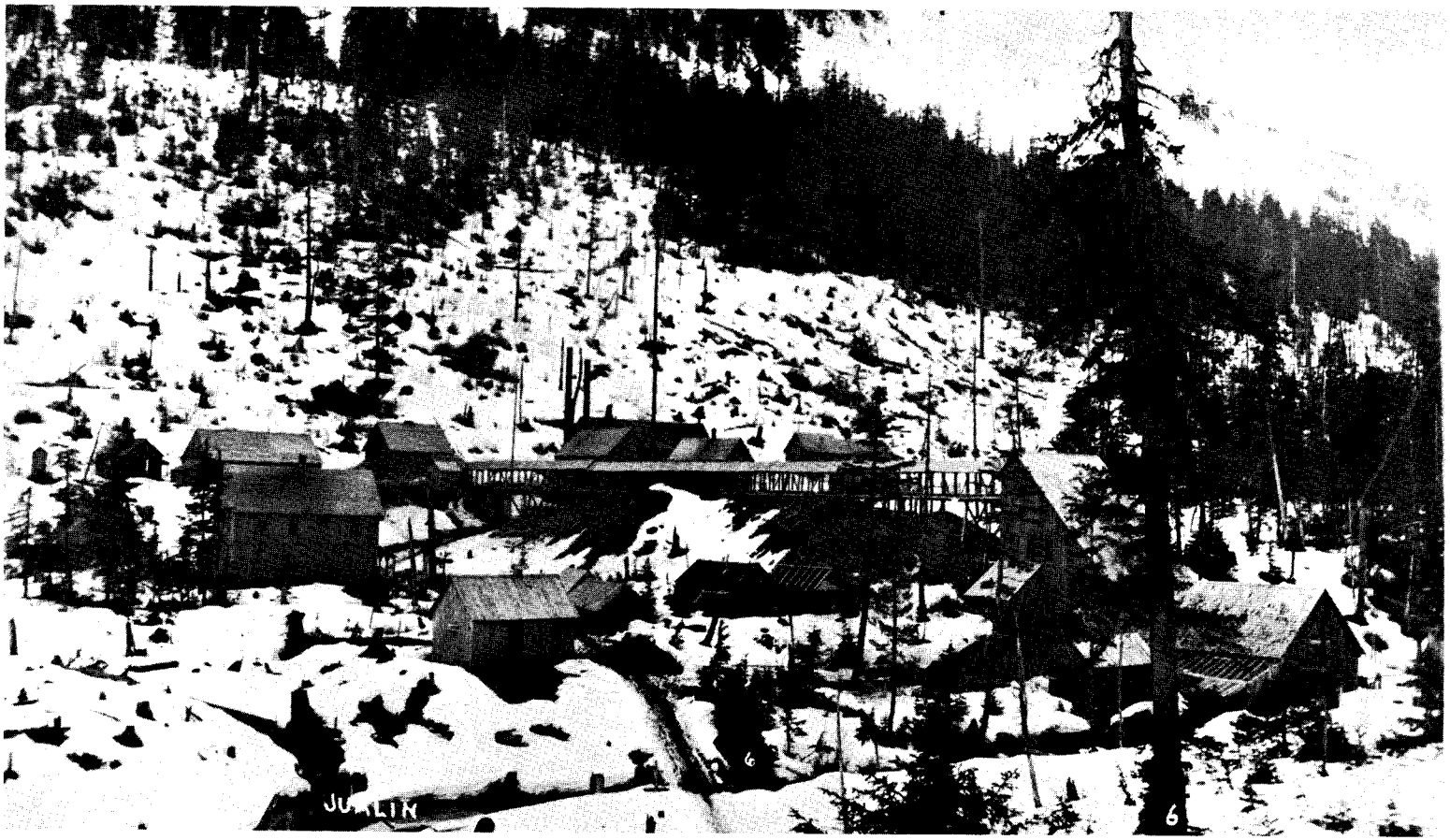

Figure 28. The Jualin mine in about 1916 (W.H. Case Coll., Alaska Historical Lib.)

1917

* Development work continued at the Ebner Mine (31).
* An 8,000 st per day ball mill was put into operation at the Alaska Juneau Mine in April but it was very inefficient, handling an average of only 2,472 st per day. Operating costs were $0.72 per st while recovery gained only $0.62 per st with a resulting $201,011 loss (91).
* The Perseverance Mine (fig. 29) produced 2.24 million st of ore yielding $0.81 per st (74% recovery) at a cost of $0.77 per st (91).
* On April 21, the Treadwell caved in and sea water flooded the Treadwell, 700 Foot and Mexican mines, irrevocably closing them (104). The mines had produced a total of 3,142,273 oz of gold during their operation. The Ready Bullion Mine continued to work (91).
* The Peterson Mine produced 39 oz of gold from 134 st of ore (91).
* The Dull and Stevens property was acquired by the Alaska Treadwell Co. which drove two adits and did considerable trenching (68).
* The Jualin Mine produced $186,691 worth of gold and concentrates but closed down in October with the Berners Tunnel 2,500 ft long (92).
* The Greek Boy prospect was abandoned when the Jualin closed (76).
* The Alaska Endicott adit was driven 477 ft (100).
* The Alaska Treadwell Co. purchased Crystal Mine concentrates from B. Heinz (91).

1918

* Development work continued at the Ebner (31).
* The Alaska Juneau mill was redesigned and 592,218 st of ore mined but a $227,135 loss resulted. The mine produced 20,809 oz gold, 11,828 oz silver, and 273,297 lbs lead (17).
* The Alaska Gastineau Mining Co. had a loss at the Perseverance Mine of $116,565 (91).
* The McCartney prospect had been discovered before 1918 (101).
* Some clean up work was done at the Treadwell mines. Mining continued at the Ready Bullion (91).
* A test shipment was sent from the Alaska Endicott Mine to the Tacoma smelter (100).
* Twenty-four oz of gold were produced from 82 st of ore at the Peterson Mine (100).
* The Dull and Stevens property was dropped by the Alaska Treadwell Co. but some tunnelling was done by the owner (68).
* Four or five st of titaniferous magnetite were taken from the Snettisham deposit and shipped to Douglas for analysis (91).
* The Alaska Peerless Co. continued tunnelling work on the Yellow Jacket and Jensen prospects at Windham Bay (31).

1919

* Development continued at the Ebner Mine (56).
* At the Alaska Juneau Mine, 215 men were employed (56) and mill redesign continued. The mine produced 693,000 st of ore and 24,141 oz gold, 16,431 oz silver, and 359,762 lbs lead but the operation lost $160,512 (17).
* The Perseverance Mine had 460 workers (56). The mine produced about 2.2 million st of ore which yielded only $0.66 per st in gold against $0.78 per st in costs. The mine produced an average of 150,000 to 200,000 st of ore per month (91).

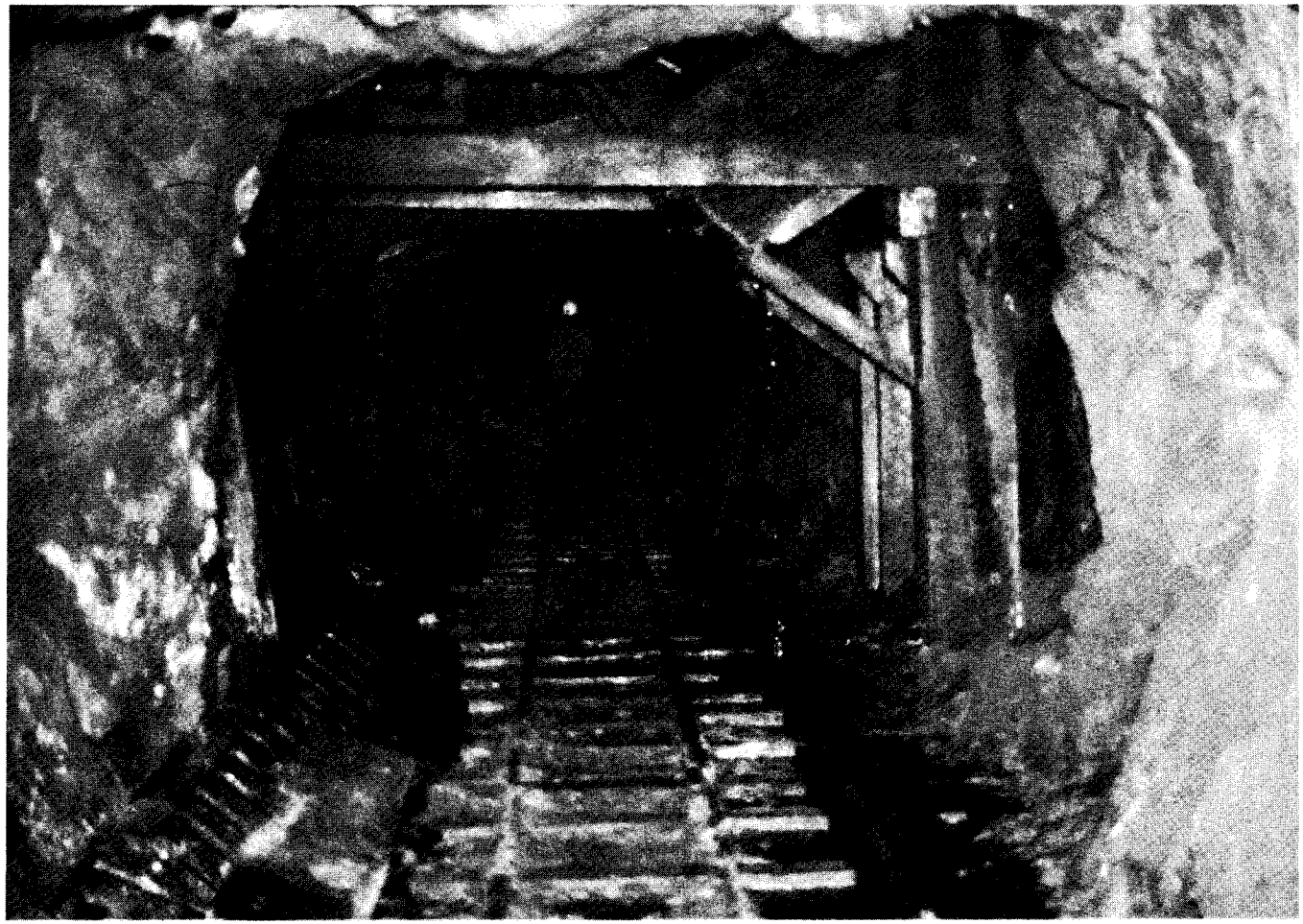

Figure 29. Ore chute and tracks on the 8 Level of the Perseverance mine.

* At the Alaska Endicott Mine, 1,800 ft of adits and drifts were completed (100).
* The Dull and Stevens Mine produced 14 oz of gold from a high-grade pocket.
* Work resumed at the Jualin Mine. The mill began operating in October and the Berners Tunnel was advanced (92).
* Ninety st of ore were mined at the Peterson Mine and yielded 26 oz of gold (100). Eighty percent of the gold was free-milling (56).
* Minor development work was done at the Crystal Mine by Bernard Heinz (100).
* The Alaska Peerless Co. drove 50-ft of adit at the Yellow Jacket Mine (46).

1920

* Development continued at the Ebner Mine (31).
* The Alaska Juneau mill received 943,000 st of ore which was reduced by hand sorting to 637,000 st. Ore yielded $0.84 of gold per st (72% recovery) (98) with costs of $0.76 per st (3). The Alaska Juneau Mine had produced 3.8 million st of ore between 1903 and 1920 averaging $0.83 per st (3) at a cost of $0.65 per st. This year the mine produced 35,456 oz gold, 23,348 oz silver, and 487,574 lbs lead (17) and employed 242 men (3).
* The Perseverance Mine produced about 2.2 million st of ore that contained $0.70 of gold per st at a cost of $0.83 per st (57). About 500 men were employed at the mine (91).
* The Ready Bullion Mine continued to operate (91).
* The Jualin mill burned in January but work continued on the Berners Tunnel (92).
* A 30-stamp mill was brought to the Alaska Endicott Mine but was not set up (100).
* Twenty-nine oz of gold and 4 oz of silver were produced from 100 st of ore at the Peterson Mine (100).
* The Crystal Mine produced 67 oz gold and 6 oz silver from 180 st of ore (100).
* The Point Astley prospect was restaked by the Alaska Copper Mining Co. (32).
* Only assessment work was done by the Alaska Peerless Co. at the Yellow Jacket Mine (32.)
* Adits were driven into the Gertrude and Mildred prospects (at Windham Bay)
(46).

1921

* Work continued at the Ebner Mine (31).
* The Alaska Juneau Mine began extracting ore from the South Orebody (4).
* The Alaska Juneau Mine processed 1,613,600 st of ore which resulted in a profit of $30,606 from 46,914 oz gold, 40,619 oz silver, and 550,913 lbs lead (17).
* The Alaska Gastineau Co. closed the Perseverance Mine after producing 383,693 oz gold, 310,660 oz silver, and 4,793,391 lbs lead. Workings included the 10,400 ft Sheep Creek Tunnel and 19 mi of underground workings (91).

* The Douglas Mining Co. staked the Josie and Karen (Jumbo) claims (70).
* The Ready Bullion Mine closed in December (91).
* No work was done at the Jualin Mine (83).
* A 30-stamp mill was erected at the Alaska Endicott Mine (100).
* The Peterson Mine produced 209 oz gold and 8 oz silver from 531 st of ore between 1916 and this year. Thirty oz of gold were extracted from 100 st of ore during 1916 (100).
* Seventeen oz gold and one oz silver were produced from 40 st of ore at the Crystal Mine (100).
* The Alaska Peerless Co. continued work at the Yellow Jacket Mine (32).

1922

* Work continued at the Ebner Mine (31).
* The Alaska Juneau Mine trammed 2.3 million st of ore, which yielded 62,707 oz gold, 49,405 oz silver, and 687,315 lbs lead, and a profit of $228,280 (17).
* The Douglas Mining Co. began tunnelling and making open cuts on the Josie and Karen (Jumbo) claims (70).
* Some development work was done on the Jualin Mine (83).
* Two hundred tons of ore were processed at the Alaska Endicott Mine resulting in production of 48 oz gold and 20 oz silver (100).
* A little work was done on the Peterson Mine (69).
* R. V. Rowe held the Jensen Mine and drove an 80-ft adit (46).

1923

* More work was done at the Ebner Mine (31).
* The Alaska Juneau Mine trammed 2.5 million st of ore. Gross value was $1.5 million from 69,047 oz gold, 41,876 oz silver, and 755,423 lbs lead and profits reached $170,000 (17). The mine employed 398 men with an average daily wage of $5.15 (5).
* Some work was done by the Douglas Mining Co. on the Josie and Karen (Jumbo) claims (70).
* The Berners Tunnel was extended to 5,000 ft in length but work then stopped at the Jualin Mine (83).

1924

* Work continued at the Ebner Mine (31).
* The Alaska Juneau Mine trammed 3.1 million st of ore that contained 92,277 oz gold, 63,191 oz silver, 1.3 million lbs lead and reported a profit of $445,862 (17).
* A 125-ft adit had been completed on the Josie and Karen (Jumbo) claims by the Douglas Mining Co. by this year (70).
* The Winn Mine produced 290 oz gold, 102 oz silver and 115 lbs lead from 27 st of ore (100).
* The Alaska Copper Co. sent a test shipment of ore to the Tacoma smelter from the Pt. Astley prospect by 1924 (20).
* Gudmund Jensen worked the Jensen Mine (46).
* The mill at the Alaska Peerless Co. property was destroyed by fire (91).
* Some placer mining was done on the Chuck River (32).

1925

* The Alaska Juneau Co. entered into a milling agreement with the Ebner Mine and operated with a royalty agreement (91).
* A total of 3.5 million st of ore, an average of 9,618 st per day, were trammed to the Alaska Juneau mill. Fifty-six percent of all ore trammed was rejected as waste (6). Ore yielded 98,213 oz gold, 55,971 oz silver, and 1.3 million lbs lead with a profit of $357,481 (17). An average of 530 men were employed at the mine (6).
* The Alaska Peerless Co. built a new mill for the Jensen Mine and began a mill test. Jacob Marty Mines (fig. 30) acquired all the prospects in the upper portion of Spruce Creek (above the Redwing ground) (108).

1926

* The Alaska Juneau Mine trammed 3.8 million st of ore containing 93,423 oz gold, 52,333 oz silver, and 1.3 million lbs lead. Profit was $174,494 (17).
* William Fleek placer mined the Alaska Gastineau tailings (40).
* A fire burned most of the buildings of the old Treadwell Mine and town.
* A 4,500-ft-long tram was built at the Jensen Mine by Jacob Marty Mines and about 1,000-ft of drifts and crosscuts were driven (108).

1927

* The Alaska Juneau Mine trammed 4.3 million st of ore and earned a profit of $256,413 from 112,653 oz gold, 61,232 oz silver, and 1.5 million lbs lead (17).
* William Fleek placer mined the Alaska Gastineau tailings (40).
* Jacob Marty Mines extracted 118 st of ore from the Jensen Mine and recovered 55 oz of gold (0.45 oz per st from rock assaying 1.31 oz per st gold) (108).

1928

* The Alaska Juneau Mine began to become healthy with a profit of $1.16 million from 3.7 million st of ore that contained 152,047 oz gold, 77,591 oz silver, and 2 million lbs lead (17). All Treadwell Co. holdings were purchased (91).
* A 50-ft shaft was sunk at the Jualin Mine and 150 oz of gold produced (92).
* Harry Watson sluiced 1,500 yd^3 of gravel from Montana Creek and extracted 28 oz gold (100).
* A small amount of work was done at the Jensen Mine (32).
* The Sulphide deposit (Sulfide) was discovered (46).

1929

* About 98% of the ore mined at the Alaska Juneau Mine came from the South Orebody and 615 men were employed (7). The Alaska Juneau Mine earned a profit of $1.4 million from 3.8 million st of ore and produced 164,993 oz gold, 90,635 oz silver, and 2.5 million lbs lead. (17).

Figure 30. The Marty mill, built in 1925, still stands along Spruce Creek.

* Harry Watson sluiced 8 more oz of gold from Montana Creek (100).
* Minor work was done in the Windham Bay area (32).

1930

* The Alaska Juneau Mine paid its first dividend, of 10¢ per share, from profits of $1.3 million (8). About 3.9 million st of ore were trammed which contained 163,312 oz gold, 97,607 oz silver, and 2.6 million lbs lead. An average ton of ore yielded about $0.90 worth of metals and cost about $0.50 to mine (17). The mine employed 620 men (8).
* A 2,600 ft adit with about 1,100 ft of crosscuts were completed by the Alaska Juneau Co. at the Jeff & Russell prospect (90).
* The Marty prospect was taken over by the Alaska Windham Gold Mining Co. (46).

1931

* Extensive tunnelling, trenching, and sampling of the Hallam prospect was done by the Alaska Juneau Gold Mining Co. (31).
* The Alaska Juneau Mine produced 4.2 million st of ore and made a profit of $1.5 million from 179,532 oz gold, 118,508 oz silver, and 3.3 million lbs lead (17). Development of the Deep North Orebody began (8).
* The Summit and St. Louis claims were restaked by Gelsinger (65)
* The Smith & Heid and Montana Basin lodes were examined by the Alaska Juneau Gold Mining Co. (58).
* A cord road was built from Windham Bay to the Marty mill (46).

1932

* Four million tons of ore were trammed to the Alaska Juneau mill. The ore contained 151,578 oz gold, 94,519 oz silver, and 2.5 million lbs lead which resulted in a profit of $1.1 million (17).
* The Carlson Creek prospect was sampled (97).
* The Douglas Antimony deposit was staked by Ralph Thompson. A short adit was driven (79).
* The Summit and St. Louis claims were optioned to J. Holland who attempted to work the glacial sands with little success (65).
* Some prospecting was done in the Windham Bay area (32).

1933

* The official price of gold was raised from $20.67 to $35 per oz in September (91).
* The Alaska Juneau Mine produced 4.1 million st of ore which yielded 150,967 oz gold, 109,483 oz silver, and 3 million lbs lead and a profit of $1.8 million (17).
* Howard Hayes and George and William Fleek cleaned up the old Perseverance and Archie Campbell mill sites and tailings dumps in Silver Bow Basin, recovering 140 oz gold and 27 oz silver. Hayes and George Fleet also sluiced 60 oz gold from drainage tunnel for the old Nowell placer (40).
* A small amount of gold was recovered from the Smith and Heid prospect by sluicing and some trenching was done (72).

* Three oz of gold were sluiced from Montana Creek by Harry Watson (100).
* Some development work was done by the Alaska Windham Gold Mining Co. (32).

1934

* The Alaska Gastineau property (Perseverance Mine) was purchased by the Alaska Juneau Gold Mining Co. (91).
* The main hoist was installed for Deep North Orebody but it only worked for a few hours before deficiencies halted its operation for a few weeks (9). The six-day workweek was adopted at the Alaska Juneau Mine and the average wage was $6.05 per day (9).
* Ninety percent of the ore mined at the Alaska Juneau Mine came from the South Orebody (fig. 31)(9). The Alaska Juneau Mine extracted 4.3 million st of ore and extracted 128,015 oz gold, 86,458 oz silver, and 1.7 million lbs lead and had a profit of $2.2 million (17).
* Howard Hayes sluiced Quartz and Nugget Gulches in Silver Bow Basin.
* Some trenching was done at the Smith and Heid prospect (72).
* Two oz of gold were sluiced from 150-yd^3 of Montana Creek gravel by Harry Watson (100).
* Gudmund Jensen reopened the adits at the Greek Boy prospect (76).
* The Yankee Boy prospect was restaked (75).
* H. Jackson and A. Westall put in a 52-ft raise in the Enterprise Mine (67).
* Some development work was done in the Windham Bay area (32) and the Alaska Windham Gold Mining Co. produced 22 oz gold (100).

1935

* The Alaska Juneau and Perseverance mines were connected by underground workings. There was a 48 day strike at the mine (10).
* About 3.7 million st of ore were mined at the Alaska Juneau Mine. This yielded 118,998 oz gold, 77,787 oz silver, 1.5 million lbs lead, and a profit of $1.8 million (17).
* H. Hayes finished sluicing Quartz and Nugget Gulches in Silver Bow Basin and recovered 150 oz gold (40).
* Sampling was carried out at the Alaska Treasure Mine (114).
* The Knob mineralization was discovered at the California/Gold Standard prospect (72).
* Ashenbrenner mined a few oz of gold and produced 1,456 lbs of concentrates at the E Pluribus Unum Mine (62).
* J. Holland pumped out the inclined shaft at the Peterson Mine and did considerable sampling (69).
* Minor work was done at the Treasury Hill prospect (71).
* Harry Watson sluiced five oz of gold from Montana Creek (100).
* The Sunrise Canyon manganese prospect was discovered (59).
* Minor work was done at Windham Bay (32).

1936

* The Alaska Juneau Mine began mining the Perseverance orebodies and started a drainage tunnel below Gold Creek Tunnel (11).

Figure 31. Skip used to move men up and down the Icy Gulch Raise at theAlaska Juneau mine in 1934.

* The Alaska Juneau Mine produced 149,235 oz gold, 101,591 oz silver, and 2.1 million lbs lead from 4.4 million st of ore which resulted in a profit of $2.5 million (17).
* H. Hayes took 40 oz gold from Gold Creek below Ebner Falls (40).
* The Skookum Chief claims may have been staked (64).
* Minor work was done at the Tacoma prospect (74).
* Ashenbrenner recovered about 8 oz gold and 1,000 lbs of concentrates at the E Pluribus Unum Mine (62).
* Minor work was done at Windham Bay (32).

1937

* The Alaska Juneau Mine trammed 4.4 million st of ore to the mill that contained 151,671 oz gold, 120,691 oz silver, and 2 million lbs lead. The mine made a profit of $2.4 million (17). Sixteen percent of the ore came from the Perseverance workings (12).
* Howard Hayes and William Fleek began placer mining the Thane tailings from the Alaska Gastineau mill (100).
* Most of Douglas was destroyed by fire but the town was soon rebuilt.
* Ashenbrenner continued small scale mining at the E Pluribus Unum Mine (100).
* Some ground over the Smith & Heid prospect was sluiced (72).
* Some work was done in Windham Bay area (32).

1938

* Placer mining continued on the Thane tailings (100).
* About 4.7 million st of ore trammed to the Alaska Juneau mill contained 148,103 oz gold, 121,473 oz silver, and 2.2 million lbs lead. Profit was $2 million (17). The Perseverance workings provided 35% of the ore to the Alaska Juneau mill and the average daily wage was $6.55 per day (13).
* A 315 ft adit was driven this year or earlier at the Lost Lucy prospect (77).
* Small scale mining occurred at the E Pluribus Unum Mine (100).
* A developmental study of the Jualin Mine was begun by Eudore Poncin (61).
* All work at the Kensington properties ended (31).

1939

* Hayes continued placer mining the Thane tailings (100).
* About 4.6 million st of ore were mined at the Alaska Juneau Mine. This yielded 129,012 oz gold, 111,494 oz silver, and 2 million lbs lead resulting in a gross profit of $1.3 million (17). Forty-four percent of the ore came from Perseverance workings (14).
* Some drifting was completed at the Carlson Creek prospect (97).
* Ashenbrenner continued mining at the E Pluribus Unum Mine (100).
* Poncin finished his developmental study at the Jualin Mine (61).
* The Mitchell-McPherson prospect was sampled (38).
* The McGinnis Creek placer claims were staked and 3 oz gold were produced from 220 yd^3 of sluiced material (78).
* The Sulphide prospect was restaked by Herman Kloss and Jack Davis as the 40% Lode (46).

1940

* The Alaska Juneau Mine produced 122,470 oz gold, 100,633 oz silver, and 1.7 million lbs lead from 4.7 million st of ore. Gross profit was $1.1 million (17).
  The mine employed about 1,000 workers who earned an average of $6.69 per day (15).
* Work continued on the Thane tailings (100).
* Ashenbrenner had produced 142 oz gold, 69 oz silver, and 100 lbs lead from 71 st of ore at the E Pluribus Unum Mine by this year (100).
* An attempt had been made by this year to placer mine a small glacial lake east of the Chuck River by running material through a tunnel (46).
* A 2-ton Gibson mill was set up and 90-ft of drifting was completed at the Gold Marie property by Kloss and Davis (46, 48, 100).

1941

* Labor shortages at the Alaska Juneau Mine resulted in 200 fewer miners being available than during the previous year (91). About 4.4 million st of ore were trammed to the mill and yielded $0.98 per st gold at a cost of $0.73 per st. A total of 120,501 oz gold, 95,777 oz silver, and 1.5 million lbs lead were produced at a profit of $1.2 million (17).
* Mining of the Thane tailings continued (100).

1942

* The work force at Alaska Juneau Mine dropped from 866 to 478 men during the year. Only 2.8 million st of ore were mined due to the labor shortages. 75,537 oz gold, 62,298 oz silver, and 938,117 lbs lead were produced. Profits dropped to half a million dollars (17). Twenty percent of the ore came from the North Orebody, 23% from the South Orebody, and 57% from the Perseverance workings. The average daily wage was $7.67 (16).
* Placer mining continued on the Thane tailings (100).

1943

* The labor force at the Alaska Juneau Mine decreased from 478 to 328 and average wage rose to $8.58 per day (17). The mine produced 39,927 oz gold, 35,531 oz silver, and 400,000 lbs lead from 1.5 million st of ore at the Alaska Juneau Mine. The mine lost $80,962. Seventeen percent of the ore mined came from the North Orebody, 13% from the South Orebody, and 70% from the Perseverance (17).
* More placer mining of the Thane tailings occurred (100).

1944

* Labor force at the Alaska Juneau Mine dropped from 328 to 44 by the end of the year (18). This was the final year of production for the Alaska Juneau Mine and 378,800 st of ore were trammed. The mine produced 9,712 oz gold, 8,454 oz silver, and 88,000 lbs lead and lost $246,739 (18).
* Work continued on the Thane tailings (100).

1945

* No ore was produced from the Alaska Juneau Mine but 1,665 oz gold and 263 oz silver were recovered from clean up work. Total production for the Alaska Juneau Mine during its history was 2,888,996 oz gold, 1,949,819 oz silver, and 40,219,231 lbs lead (91).
* Placer mining of the Thane tailings continued (100).

1947

* The Wanderer claims (Bessie and Aurora Borealis mines) were explored by Joe Green (80).
* A 100 ft drift was driven on the K & D prospect (100).

1948

* Placer mining of the Thane tailings was ended after 11 years with 13,400 st of material worked and 890 oz gold and 249 oz silver extracted (100).
* Placer mining of the Alaska Juneau mine tailings was begun by Howard Hayes and others (100).
* Kloss and Davis set up a 2-st Gibson mill and drove a 35 ft inclined shaft at the K & D Mine (100).

1949

* Mining of the Alaska Juneau Mine tailings continued (100).
* Howard Hayes worked the Treadwell tailings and produced 115 oz gold and 12 oz silver from 4,500 st of material (100).

1950

* Work continued on the Alaska Juneau tailings (100).
* The Michele and Suzanne claims were staked on the Snettisham iron deposits by R. Coughlin and W. Pekovich (95).

1951

* The Alaska Juneau Co. purchased the Ebner Mine in December for $1,500 (90).
* More work was done on the Alaska Juneau tailings (100).

1952

*Work continued on the Alaska Juneau tailings (100).

1953

* Placer work continued on the Alaska Juneau tailings (100).
* Some work was done on the Thane tailings (100).
* The Sunrise Canyon property was optioned by Canadian company (59).
* An extensive drilling program (6,543-ft) was carried out at the Snettisham iron prospect by the Bureau of Mines (95).

1954

* Work by Howard Hayes on the Alaska Juneau tailings had produced 5,931 oz gold, 1,463 oz silver, 2,500 lbs lead, and 1,400 lbs copper by this year. Operations were halted (100).
* The Taku Chief claims were staked by Tiger Olson above Taku Harbor. Some trenching and tunnelling was completed (99).
* Small amounts of gold were produced at the Heiner prospect (part of the Redwing claim area) about this year (107).

1955

* The Rainbow prospect was staked on north Douglas Island (99).
* The Sunrise Canyon prospect was dropped (59).
* The Sulphide prospect was restaked as the Sulfide prospect (46).

1956

* The Board of Directors of the Alaska Juneau Co. was removed as a result of a proxy fight and the new management decided to salvage all mining and milling equipment (90).

1958

* The Sumdum prospect discovered by the Alaska Helicopter Syndicate (46).

1959

* At the Sumdum prospect, 5,400-ft of diamond drilling and 300-ft of open cuts were done (46).
* Claims were staked at the mouth of Ready Bullion Creek by the Douglas Mining Co. (99).

1961

* Small amounts of gold were found in iron-stained gneisses at Cooper Point (34, 42).
* Molybdenite was discovered near Mt. Ogden (99).

1964

* Most of the equipment in the Alaska Juneau mill had been salvaged by 1964 (90).
* Sweetheart Creek claims were staked (99).

1965

* The Alaska Juneau mill was destroyed by fire on March 20 (fig. 32). The main hoist for the Deep North Orebody was sold and taken to Arizona where it was used by Noranda. Recently, the hoist has been renovated and is in use at the Ropes Mine in Michigan (91).

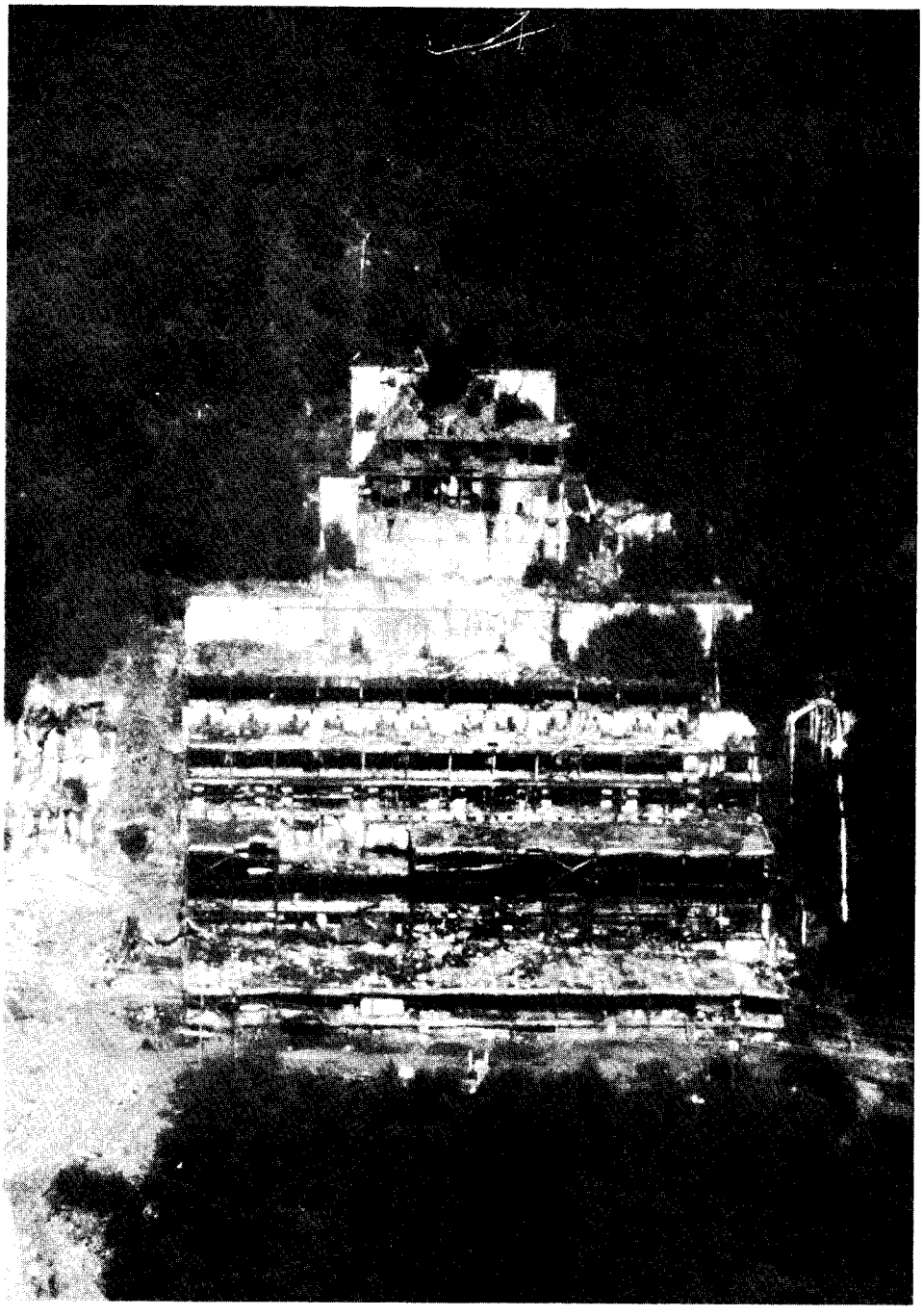

Figure 32. Remains of the Alaska Juneau mill after it was destroyed byfire in 1965 and then dismantled.

1967

* Some work was done by Howard Hayes on the Treadwell tailings (100).

1968

* The Alaska Treasure prospect was acquired by AlVenCo (114).

1969

* Three drill holes (totalling 1,660 ft) were drilled at the Alaska Treasure prospect by AlVenCo. The company also did detailed sampling and mapping (114).

1970

* The Alaska Treasure property was dropped by AlVenCo (89).
* The Mt. Kluchman claims were staked by El Paso Natural Gas Co. (99).

1972

* The official U.S. gold price rose to $38 per oz.
* All properties and power facilities of the Alaska Juneau Gold Mining Co. were sold to Alaska Electric Light and Power Co. (90).

1973

* The official U.S. gold price rose to $42.22 per oz.

1974

* Alaska Electric Light and Power Co. sold a majority of the Alaska Juneau properties to the City and Borough of Juneau (90).

1975

* Alaska Electric Light and Power Co. and the City and Borough of Juneau formed a unitization agreement for the Alaska Juneau Mine (90).

1978

* Howard Hayes and Alaska Elec. Light and Power Co. formed an agreement for clean up work at the Alaska Juneau mill (90).
* Howard and Mike Hayes began cleanup of the Alaska Juneau mill (40).
* Occidental Petroleum began an evaluation of Treadwell mines area (90) and restaked the Dull & Stevens prospect area (89).
* Hyak Mining Co. restaked the Jualin Mine (61).
* Claims were staked around the Mt. Ogden molybdenum deposit (99).
* The Sweetheart Ridge prospect was staked by Dale Henkins and Roger Eichman (99). The prospect was optioned to Mapco who did 1,000-ft of diamond drilling (60).
* The Bogert Point area was staked by the American Hill Placer Co. (99).

* The Tracy Arm prospect was optioned and drilled by Placid Oil Co.
* The Sumdum Chief Mine area was restaked by Resource Associates of Alaska (89).

1979

* Cleanup by Howard and Mike Hayes continued at the Alaska Juneau mill (40).
* One hundred seventy-seven placer claims were staked on Prospect Creek (99).
* Mapco worked on the Sweetheart Ridge prospect (41).
* Placid Oil Co. drilled the Tracy Arm prospect (40).
* The market-related gold price was adopted by the U.S.

1980

* Gold prices rose to a high of $850 per oz in January and remained over $600 for the year.
* Hayes continued Alaska Juneau mill cleanup (40).
* Occidental Petroleum Co. signed a lease with Alaska Electric Light and Power Co. and the City and Borough of Juneau to explore the Treadwell area and began a drilling program (90).
* The Red Diamond prospect was restaked and drilled by Occidental Petroleum Co. (90).
* Eagle River Mine, Yankee Basin and Canyon Creek area were staked by Whelan Mining and Exploration Co. The Treasury Hill prospect was also restaked (89).
* The AEK claims (202 claims) were staked between Prospect Creek and Limestone Inlet. No further work was done (89).
* The JLC claims (114 placer claims) were staked in a valley north of Bogert Point. No further work was done (89).
* The Mist placer claims were staked (89).
* The Whigg placer claims were staked (89).
* The Crystal Mine was restaked by Whelan Mining and Exploration Co. (89).
* The Boulder Creek placer deposit was staked (89).
* Mapco continued work on the Sweetheart Ridge prospect (41).
* Placid Oil continued work on the Tracy Arm prospect (89).

1981

* Howard and Mike Hayes produced a total of 1,000 oz gold and 200 oz silver from 5,000 st of material at the Alaska Juneau mill between 1978 and 1981 (40).
* The Taku Mining Co. began to sluice the Alaska Juneau tailings (40).
* Placid Oil Co. aquired the Kensington/Comet ground (61).
* Placid Oil Co. worked on the Whelan claims in the Eagle River area (89).
* Noranda staked 57 claims on the Peterson Lake area (89).
* More work was completed at the Sweetheart Ridge prospect by Mapco (41).
* Placid Oil worked on the Tracy Arm prospect (89).
* Mapco staked a claim block near Meigs Peak (89).
* The Carroll Creek placer was staked (89).

1982

* Taku Mining Co. continued to placer mine the Alaska Juneau tailings (40).
* Placid Oil began a drilling program at the Kensington Mine (61).
* Hyak continued exploration of the Jualin Mine area (61).
* Placid Oil completed a drilling program in the Eagle River area (89).
* Dale Henkins did small scale mining at the Peterson Mine (41).
* Occidental Petroleum Co. dropped the Treadwell claims (89).
* Noranda staked claims in the Nevada Creek area (89).
* The Prospect Creek, Mist, Meigs Peak claims lapsed (89).
* Mapco continued work on the Sweetheart Ridge prospect (41).
* Placid Oil Co. dropped the Tracy Arm prospect (41).

1983

* Barrick Resources and WGM Inc. initiated negatiations to lease the Alaska Juneau and Treadwell properties.
* The Taku Mining Co. was forced to stop placer mining the Alaska Juneau tailings by litigation (90). Between 1981 and 1983, the company sluiced 70,000 st of material and produced 900 oz gold and 200 oz silver.
* The Juneau Mining Co. began feasibility studies for mining Thane tailings.
* Placid Oil Co. continued a drilling program at the Kensington/Comet mines (89).
* Bear Creek Mining Co. drilled the Jualin Mine (21).
* Placid Oil Co. dropped the Eagle River area (89).
* The Bogert Point, Whigg, Carroll Creek and Boulder Creek claims lapsed (89).
* The Point Astley prospect was staked by George Sieffert and Ken Manning (89).

1984

* Placid Oil Co. continued their drilling program at Kensington/Comet area (89).
* Bear Creek Mining Co. drilled at Jualin then dropped the property (22).
* Barrick Resources and WGM Inc. aquired a lease for the Alaska Juneau properties (including the Alaska Gastineau and Treadwell deposits) and began an economic evaluation.
* Winkie drilling and blasting was done at the Point Astley prospect (89).

1985

* Barrick Resources and WGM Inc. continued to evaluate the Alaska Juneau properties. Barrick sold their portion of the lease to Echo Bay Mines.
* Placid Oil Co. continued their drilling program at the Kensington properties.
* Blasting and Winkie drilling were done at the Point Astley Mine (89).
* Houston International Minerals examined the Eagle River region.

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APPENDIX - GLOSSARY OF MINING TERMS

Adit - a horizontal passage driven from the surface into a hill used for the exploration or working of a deposit.

Arrastre mill - a primitive grinding mill composed of a circular rock-lined pit in which ore is pulverized by large stone dragged around the pit by a horizontal pole attached to a central pillar.

Ball mill - a rotating horizontal cylinder containing heavy steel balls. Ore is fed into the mill and crushed into very small particles by the falling balls.

Cage - an elevator used to raise and lower men and equipment in a shaft, raise, or winze. The cage is attached to a hoist by a cable or rope.

Concentrates - the enriched product resulting from removal of waste material in the ore. Concentrates must be processed by other methods to extract pure metals.

Crosscut - a horizontal passage driven across veins, rock structure, or the direction of the main workings.

Dip - angle at which a vein, orebody or rock formation slopes compared to a horizontal plane.

Dodge mill - a primitive jaw crusher used to break ore down to a uniform size.

Drift - a horizontal passage that follows a vein or the rock structure.

Feasibility study - a comprehensive economic evaluation of a potential mine used to determine its probable overall profitability. The study would include evaluation of different mining methods, tests of the ores to determine the most efficient and economic methods to extract the metals, and analyses of marketing problems.

Flume - an inclined channel, usually made of wood and often supported by a trestle, used to convey water for use in power generation or placer mining.

Free Milling - gold or silver ore from which the precious metals can be extracted simply by crushing and physical separation and do not need chemical treatment.

Gibson mill - a type of mill used to crush ore.

Glory hole - a large open pit from which ore is mined.

Grade - a classification of the richness of ores. High-grade ore would contain abundant economic minerals while low-grade ore would contain only small amounts of economic minerals.

Hoist - a machine used for raising and lowering a cage or skip in a shaft, winze, or raise.

Huntington mill - a cylindrical tub containing four rolling steel disks used to crush ore.

Hydraulic elevator - a water-powered arrangement for lifting sand and gravel up through a pipeline to the top of a sluice box.

Hydraulic plant - sluice boxes, and other equipment used in placer mining. Involves the use of jet of water discharged through a nozzle under high pressure to wash gravels through a sluice box.

Johnson rod mill - a type of mill used for crushing ore.

Level - horizontal mine workings at a single elevation. Levels are usually regularly spaced 100 to 300-feet apart.

Lode - a mineral deposit in solid rock.

Mill - a plant used to crush and treat ore to recover valuable metals or concentrates; a machine use to pulverize ore in preparation for treatment.

Mine - a deposit of valuable minerals from which a significant amount of ore has been extracted.

Open cut - a surface working used to expose fresh rock for surface mining or evaluation.

Ore - rock containing mineral commodity(s) that can be mined at a profit.

Ore chute - a vertical or inclined passage through which ore is dropped. A gate at the bottom of the chute is used to fill ore cars.

Overburden - unconsolidated deposits of sand, gravel, and soil that lie on top of bedrock.

Pelton water wheel - a water-powered turbine with buckets bolted to the outer rim of a wheel. A high velocity jet of water aimed at the buckets is used to spin the wheel and generate power.

Pilot mill - a small-scale mill used to determine the techniques which should be used before erection of the permanent mill.

Placer deposit - a deposit of sand and gravel containing valuable minerals, such as gold, silver, or platinum, usually formed by the erosion of mineral-bearing rock and concentration of heavy minerals by water.

Placer mining - method of removing valuable minerals such as gold from a placer deposit by washing the gravels with water through a sluice box or similar recovery device.

Portal - the surface entrance to an adit, tunnel, or drift.

Powder magazine - room or building used to store explosives.

Prospect - a mineral property whose value has not been proved by exploration.

Raise - a vertical or inclined passage that was driven from the bottom upward. After two levels have been connected, the passage may be either a raise or a winze depending on whether one is at the top or the bottom.

Recovery - the percentage of a valuable mineral that is recovered by a mill.

Shaft - a vertical or inclined passage used to open and work a mine. A shaft usually has a hoist to raise and lower men and equipment.

Skip - a large bucket used primarily for hoisting ore up shafts and raises. Skips can also be adapted to carry men.

Sluice box - long, inclined troughs containing riffles, wire screen, and open-weave matting which are used to trap heavy minerals such as gold which are washed down the trough with water.

Smelter - a plant where ores are chemically reduced by melting.

Stamp mill - a plant where ore is crushed by heavy piston-like iron stamps. The stamps weighed up to half a ton and would be raised and lowered about 96 times a minute using water or steam powder.

Stope - an open or rubble-filled cavity or room in a mine from which ore is being or has been removed.

Tailings - the waste material resulting from washing, treatment, or concentration of ground ores.

Tram - to haul ore or waste materials.

Tram line - the roadway along which material is hauled; usually a railroad with cars pulled by horse or engine.

Trench - a surface ditch dug through overburden used to expose bedrock.

Trestle - a framework of timbers that carries tram tracks.

Tubular mill - a revolving cylinder half-filled with steel rods, balls or pebbles used for fine grinding of ore.

Tunnel - a horizontal underground passage that is open to the surface at both ends.

Vein - a fracture or crack in rock that has been filled with minerals.

Waste - barren rock or rock that is uneconomic to mine or mill.

Windlass - a device used for hoisting, usually consisting of a hand cranked drum.

Winkie drill - small, portable diamond drill used to drill short holes.

Winze - a vertical or inclined passage that is sunk from the top down. After two levels have been connected, the passage may be either a winze or a raise depending on whether one is at the top or the bottom.

Workings - general term for all underground mine developments.