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MINING IN IDAHO

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(See copy in file for map)

Most of the production statistics and much of the descriptive information for this brief account of Idaho's more important metallic mining areas were supplied by Ernest Oberbillig. Prepared by the Idaho State Historic Society in 1960, this compilation has been revised to cover production through 1969.

MINING IN IDAHO, 1860-1969

Most of Idaho's mineral production, 1860-1969, has come from metals--\$2,880,000,000 out of \$3,420,000,000, according to the best estimates. Of the metallic mining areas of Idaho, the Coeur d'Alene region has produced by far the most, and accounts for about 80% of the total Idaho yield. Several others--Boise Basin, Wood River, Stibnite, Blackbird, and Owyhee--range considerably above the other big producers. Atlanta, Bear Valley, Bay Horse, Florence, Gilmore, Mackay, Patterson, and Yankee Fork all ran on the order of ten to twenty million dollars, and Elk City, Leesburg, Pierce, Rocky Bar, and Warren's make up the rest of the major Idaho mining areas that stand out in the sixty or so regions of production worthy of mention.

A number of small operations do not appear in this list of Idaho metallic mining areas: a small amount of gold was recovered from Goose Creek on Salmon Meadows; a mine near Cleveland was prospected in 1922 and produced a little manganese in 1926; a few tons of copper came from Fort Hall, and a few more tons of copper came from a mine near Montpelier. Similarly, a few tons of lead came from a property near Bear Lake, and lead-silver is known on Cassia Creek near Elba. Some gold quartz and lead-silver workings are on Ruby Creek west of Elk River, and there is a slightly developed copper operation on Deer Creek near Winchester. Molybdenum is known on Roaring River as well as on the east fork of the Salmon, and some scattered mining enterprises have been undertaken around Soldier Mountain and on Squaw Creek north of Montour. Most of the metallic mining in Idaho, though, has been done in the areas listed alphabetically in this directory.

ATLANTA (Gold)

A party of prospectors led by John Stanley left Warren's, July 4, 1863, and tried Bear Valley and Stanley Basin before crossing to the middle fork of the Boise River where they struck gold on Yuba River. Although an effort to conceal this discovery succeeded at least partially, a rush from Idaho City after August 8 attracted a host of eager prospectors who failed to find anything valuable there. Not until well after a Yuba mining district was organized, July 20, 1864, did a second rush follow from Rocky Bar to Yuba River, September 19. Only two months remained in the season, but the Atlanta lode was found that winter. Stamp milling, however, did not get started until the summer of 1867, because of the extreme difficulty in getting machinery into the district. Refractory ores posed a problem also, and although the lode was known to be rich, production was limited for some years to arastra and occasional small-scale stamp milling. London investors introduced important capital to the district in 1868, and British investment in Atlanta continued

for more than twenty years in spite of repeated failure in management and technology. Indiana capitalists also organized the Monarch in 1869, but all three stamp mills at Atlanta failed that year. Finally in 1877, the Buffalo mill began to operate with partial success. Construction of a road from Rocky Bar helped in 1878, and much of the richer ore in Atlanta was worked in the nineteenth century. A cyanide plant operated with limited success, 1908 to 1910, but the recovery problem for much of the ore was not licked until a modern amalgamation-flotation concentrator began production in 1932. Atlanta produced through the depression and the war, continuing uninterrupted until 1954.

About \$300,000 in antimony from Swanholm Creek was processed in Atlanta from 1947 to 1953. The district probably should be credited with a production of about \$16,000,000 in the ninety years after 1864.

BANNER (Silver)

Prospectors radiating out from Boise Basin discovered placers on Crooked River in the summer of 1863. These were traced to a quartz lode, July 6, 1864, and the Banner mine was located August 8. A rush from Idaho City followed two weeks later. After a decade of arastra production, G. W. Craft installed a mill in 1874, and capital from Elmira, New York, helped further to develop the district in 1878. Stamp mill reproduction at Banner continued for more than ten years, with a considerable spurt in activity there from 1882 to 1884, ending in a \$400,000 mine sale in 1884. Production totaled close to \$3,000,000 worth of silver before the district shut down in 1921.

BAYHORSE-CLAYTON (Silver-Lead, Zinc)

Named for two bay horses who came through there in 1864 with a prospecting party from Stanley Basin, Bayhorse Creek was inspected at some length then, and W. A. Norton located a claim there in 1872. Work did not begin, though, until George Harland and David Potts discovered a lead-silver property in March, 1877.

Mines near Clayton were found in April, and a party from Bonanza located the major producer at Bayhorse--the Ramshorn--the same spring. A mining district including Bayhorse and Clayton (about fifteen miles apart) was organized October 1, 1877, and smelters were installed both at Bayhorse and at Clayton. This was one of the prominent central Idaho districts in the great expansion there after 1880; production totaled about \$10,000,000 by 1898. Revivals in 1910 and 1920-1925 added some \$2,500,000 more. The Clayton silver mine was worked steadily from 1935, more than doubling the previous \$12,500,000 production. Rising silver prices boosted notably in 1967 and still more in 1968, when \$2,340,000 (more than half in zinc) a year was reached. About \$100,000 came from a tungsten mine near Clayton after 1960. By

1980, total production exceeded \$42,000,000. Then a still more extensive operation commenced with development of a substantial molybdenum property on Thompson Creek in 1980, where production commenced in 1982.

BEAR VALLEY (Columbium, Tantalum, Uranium)

Dredging of extensive placers produced some 1,168,000 pounds of columbium and tantalum between 1953 and 1959. A total production of \$12,800,000 in columbium, tantalum, and uranium was realized in those years.

BIG CREEK (Gold)

Prospecting of the Salmon River mountains increased considerably after the Sheepeater War of 1879, and organization of Alton district on Big Creek, June 15, 1885, extended mining from Warren's east into that region. Although there were a number of prospects on upper Big Creek, the main production was realized at the Snowshoe which yielded \$400,000 between 1906 and 1942.

BIRCH CREEK (Lead-Silver)

Charles F. Blackburn, a geologist who found a Birch Creek district in 1881, expanded Idaho's Lemhi mining region to an adjacent drainage. Discovery of the Viola mine in 1882 northwest of Blackburn's property led to the establishment of the town of Lava, not to be confused with the Lava district around Era. This lead-silver region, with some copper, attracted substantial British capital in 1883 for development of the Viola, the major producer. A smelter at nearby Nicholia was installed in 1885, and the bulk of production of the Viola came in 1886-1888. Together with Blackburn's and other nearby properties, Birch Creek is thought to have produced \$2,500,000.

BLACK PINE (Silver-Lead)

This district, found when freight traffic to the Central Pacific at nearby Kelton brought traffic to the region, was thought to be a promising silver lode zone early in 1870. More than ten years later, 25 or 30 miners were at work, but the district attracted little notice. Limited production occurred in 1894 and 1914; some activity continued into the depression.

BLACKBIRD (Cobalt, Copper, Gold)

Gold discoveries in 1892 and copper in 1896 finally were developed (after consolidation of a number of claims in 1899) in 1913-1915 and 1921, with a \$35,000 production. Cobalt (known

there in 1901) eventually became the prominent mineral of the district after the period of modern production finally got underway in 1939. After severe curtailment of operations in 1959, the district shut down in 1960. Over 14,000,000 pounds of cobalt, valued at government contract price of \$2.30 a pound, came from this district from 1952-1959, making it one of the main producers in Idaho, with a total of more than \$47,500,000 in the short ten-year span of 1949-1959, in cobalt, copper, and gold, plus minor amounts of nickel. Rising prices made it possible to resume production in 1967, with \$1,186,000 (almost all in copper) turned out that year. Then rising cobalt prices brought a \$35,000 mine rehabilitation project from 1980-1982, but an unstable market delayed resumption of full scale production.

BOISE BASIN (Gold)

Discovered August 2, 1862, by a party from Florence and Auburn, Boise Basin gained prominence as the major mining region of the Northwest in 1863 and 1864. With a population of 20,000 during the gold rush, the basin ranked as the largest of Idaho's early mining communities. The placers were sufficient there to employ miners equipped with hydraulic giants for more than two decades, Quartz discoveries, commencing on Granite Creek late in 1862, also tended to give the basin mines greater stability, and the Gold Hill at Quartzburg continued active into the 1930 depression, when production was halted by fire. Commencing with Pioneerville (known as Hogem during the early days) October 7, 1862, several communities sprang up in the basin during the winter, and for the next few years, Idaho City, Placerville, and Centerville were the leading camps of Idaho. In 1863 and 1864 several important offshoots of Boise Basin--South Boise (Rocky Bar), Owyhee, Atlanta, and Banner--expanded the mining region of southwestern Idaho substantially, and the founding of Boise in the summer after the basin discovery resulted directly from the mining advance. With the Blackfoot excitement in Montana in 1865 and 1866, and the rush to Loon Creek in 1869, the basin lost its surplus population. But Idaho City--in spite of a series of disastrous fires--held its place as the leading camp of Idaho in 1870, although a Chinese influx in 1868 made its population more than half Oriental. Proposals for an enormous Boise Basin bedrock flume project, which would have required consolidation of placer claims on a scale unheard of in Idaho, were considered for more than twenty years after the rush to the basin subsided. But finally the problem of placer cleanup was solved by a series of dredging operations that continued through the depression. About 2.9 million ounces of gold--ranging in value from nine to more than twenty billion dollars as gold prices fluctuated between 1980 and 1984--have been recovered from Boise Basin.

BOISE RIDGE (Gold)

Hopeful prospectors made promising finds on the ridge above Boise in the winter of 1864 and 1865, and discoveries were reported regularly for the next fifteen years. Shaw Mountain attracted considerable attention in 1879 and 1880, and a mill was brought in. A limited amount of activity continued for many years, and production finally exceeded \$400,000.

BOISE RIVER [Middle Fork] (Gold)

Placer operations on the middle fork of the Boise below Atlanta go back to August, 1863, when a rush from Idaho City led to scattered discoveries. Extensive early workings in the Boise King area farther down the river include an early hydraulic ditch from Black Warrior and some surprisingly large-scale Chinese operations high on the ridges above the river there. Some large hydraulic giant operations at Twin Springs came at the turn of the century, and there are other placer areas along the entire middle fork. A dredge at Boise King produced some \$200,000 in 1940-1942 and 1946. Another \$150,000 may have come from Twin Springs and from other bars along the river below Queen's River.

In addition to these placers, a lode location in August, 1903, led to considerable activity on Black Warrior Creek from 1904 to 1906, and to occasional revivals there after that time.

BUFFALO HUMP (Gold)

Claims at Buffalo Hump--where quartz prospects had been known since 1894--were located August 10, 1898, and assays from them led to a gold rush that winter. After a year or two, mills were introduced, one of which ran intermittently for fifteen years. By the time the last one had shut down in 1915, a production of about \$540,000 had been realized.

CAMAS [Hailey Gold Belt] (Gold)

Idle for fourteen years after an initial discovery in 1865, this district--along with adjacent Willow Creek--produced about a million dollars after work began in 1879 following the Bannock War. Activity there corresponded with development of the neighboring Wood River mines.

CARIBOO MOUNTAIN (Gold)

A rush to Cariboo Mountain, September 8, 1870, followed gold discoveries there that summer. Mining began the next season, although the district was not fabulous, and Chinese were at work there in 1872. Lode discoveries in 1874, together with short placer seasons arising from lack of water, lengthened the life of the camp. Production continued for more than a decade (\$200,000 in 1879, for example), and renewed interest helped in

1886. A stamp mill was imported to Cariboo by 1890, handling ore from a 275-foot stope. An attempt to develop a copper mine followed in 1904. Placer mining resumed there in 1907 and 1922, and recurred briefly in 1924-1925. By that time a four-mile ditch served some hydraulic giants that increased gold production on Cariboo Mountain. A depression-inspired revival after 1930 increased Cariboo's total production to some \$1,200,000.

CLARK'S FORK (Lead-Silver)

Lead-silver production began in 1913 at Clark's Fork with the installation of a fifty-ton concentrator. Some \$2,500,000 (24,000,000 pounds of lead, and 1,000,000 ounces of silver) was realized in the district from 1913 to 1943. [See also Pend d'Oreille.]

COEUR d'ALENE (Lead-Silver, Zinc, Gold)

Gold was known on the Coeur d'Alene before 1860, and reports of a big discovery, May 27, 1865, set off a false rush long before A. J. Prichard's extended prospecting led to a Coeur d'Alene quartz location, April 25, 1882, and to placer discoveries that created excitement in the fall of 1883 and led to the Coeur d'Alene gold rush of 1884. (Promotional literature issued by the Northern Pacific Railway, February 1, 1884, contributed substantially to the rush, much of which came on the railway.) Placers on the north fork produced almost \$260,000 in gold in 1884 and \$376,000 in 1885; the real future of the region, though, lay with the lead-silver discoveries on the south fork during those years: the Tiger at Burke, May 2, 1884; the Morning at Mullan, July 2, 1884; the Polaris, August 30, and the Yankee (later the Sunshine), September 25, 1884, between Kellogg and Osburn; and the Bunker Hill and Sullivan at Wardner, September 10, 1885. The lead-silver district that resulted from these and other discoveries soon became the largest in the United States.

Production of the lead-silver properties depended upon construction of railroads to serve the district, and the Union Pacific and Northern Pacific competed to reach the new mines. By 1887 serious development was possible, and yields of \$800,000 in 1887, \$1,200,000 in 1888, and \$4,000,000 in 1890 showed the importance of the new lead-silver properties. Until 1890, the Northern Pacific (hauling to a smelter at Helena) and the Union Pacific (hauling to a smelter at Omaha) competed. But early that year they combined into a smelter trust that raised rates; the mines, in turn, suspended temporarily or decided to reduce wages.

The result was a series of bitter mine-labor wars, involving wages and union recognition; major dynamitings of mills and concentrators in 1892 and 1899 led to martial law in each instance. Eventually the Bunker Hill and Sullivan gained control of a smelter as a partial solution to the problem, and then a

series of smelters were installed in the district: a lead-reduction plant, opened July 5, 1917; a zinc-reduction plant, opened November 6, 1928; and a zinc-slag plant which began production in April, 1943. Of the Coeur d'Alene mines, the Bunker Hill and Sullivan has been the leading lead-silver producer in the United States for many years, and the Sunshine after 1934 became the largest silver producer in the world. More than 80% of the total value of Idaho metal production has come from the Coeur d'Alene region; from 1884 to 1984, the area has produced 453,750 ounces of gold (\$15,880,000 at present prices); 772,177,000 ounces of silver; 7,067,565 tons of lead; 127,824 tons of copper; 2,601,787 tons of zinc. Of the slightly more than \$2,880,000,000 of value of metal produced in Idaho for the years 1860-1984, \$,000 is credited to the Coeur d'Alenes.

DEADWOOD (Gold, Lead-Silver)

Several parties of prospectors went to work at Deadwood in the summer of 1863, and work resumed in the summer of 1864. A mining district was organized October 17, 1864, but the Deadwood excitement soon lapsed. Then Nathan Smith's party discovered some hopeful prospects and organized a new Deadwood mining district, August 16, 1867. A rush to Deadwood followed in 1868, but with the Loon Creek rush of 1869, interest in Deadwood diminished. Although there was quartz activity later, Deadwood City was a ghost town in 1876. Deadwood mining resumed from 1924 to 1932, and a lead-zinc mine there yielded about a million dollars by 1947.

DIXIE (Gold)

Although a rush to Dixie came during the same week as the rush to Florence in August, 1861, work for practical purposes apparently did not begin around Dixie for more than twenty years. At least there is no record of any community there in the early days, and claims recorded in 1884 in what appears to have been the new camp of Dixie mark the beginning of serious activity. Quartz prospects there came into prominence after the panic of 1893, and by 1896, Dixie had attained some importance. Production records for the nineteenth century are lacking but more than \$100,000 was recovered in the twentieth--mostly from a drag line placer operation during the depression. Total yield of \$270,000 placer and \$50,000 quartz are recorded, but are probably incomplete. The total, though, very likely did not exceed \$1,500,000.

ELK CITY (Gold)

As soon as weather permitted prospecting, parties from

Pierce set out to examine the surrounding country, and by the middle of May, 1861, fifty-two miners were on their way to the south fork of the Clearwater, where gold had been noticed in 1856 by a white traveler on the Nez Perce Trail. Gold was found before the end of May, and a mining district was organized June 14. The South Fork got off to a slow start, but Elk City was established before the end of July, and some handsome strikes August 1-2 improved the reputation of the district enormously. By then the diggings there were rated as an ounce a day, and the dust was relatively good--about \$16 per ounce. Some 800 or 1,000 miners were there by late August, but the rush to Florence swept away almost all the miners by the end of September, so there was little opportunity for big production the first season. Elk City revived in June, 1862, when a surplus of miners overflowed from Florence, but production rates again were rather low. Even though ditches were dug for water during the 1863 operations, the season was a bad one, and recovery was poor. The camp, though, went on, and with hydraulic giants a relatively small number of miners began to work a lot of placer ground. After 1872, Chinese placers predominated. Quartz properties go back to 1870, but production did not begin on any scale until 1902; some \$725,000 quartz production has been recorded. Work at Elk City had gone on now for over a century, and with extensive dredging and dragline operations total production may have reached as high as sixteen million.

FLORENCE (Gold)

Fabulous reports of production at Florence startled the entire Pacific Coast in the fall of 1861. Production got underway within six weeks of the original discovery, August 19-20, and during October and November some of the miners there were taking out hundreds of dollars a day. The district was not large, but what there was of it seemed incredibly rich--at least as reported in the newspapers--and except for its isolation and hard winters, Florence was exactly the kind of mining zone that prospectors had dreamed of finding. In spite of an exceptionally difficult first winter, thousands of hopeful miners joined the rush to Florence, and some 10,000 actually reached the mines there the next spring. The trouble was that only about 3,000 could find work there at all, so most had to look for other mines. Production reached about \$50,000 per day in 1862, after which most of the best deposits were pretty well worked out. Florence was a good but unspectacular camp in 1863, and then went rapidly down hill. Chinese worked there for years, and in 1896 there was a considerable quartz promotion, with New Florence established April 5. Quartz mining there, however, did not compare with the old placers, and the greater part of the district's production came in the one big year of 1862--with most of the rest in the two adjoining seasons. For a relatively

small area, though, Florence turned out an astonishing production--in the neighborhood of \$9,600,000. Between 1980 and 1984, Florence's gold had increased in value to a range of \$150,000,000 depending upon price fluctuations in those years.

GERMANIA BASIN AND EAST FORK OF THE SALMON (Lead-Silver)

Lead-silver discoveries in Germania Basin in the summer of 1879 led to extensive prospecting of the east fork of the Salmon, and activity continued there for many years. The Livingston mine on Boulder Creek is the most prominent in the area, producing about \$650,000 between 1926 and 1930. Prospecting for molybdenum led to important discoveries and development on the east fork drainage in 1968 and 1969, but efforts to develop a large open pit mine near Castle Peak led to creation of an important recreation and wilderness area there in 1972.

GIBBONSVILLE (Gold)

Placers found on Anderson Creek in the summer of 1877 proved to be low grade, but they were traced to a promising vein in September. An arastra was built in 1877 and two more in 1878. Then in 1879, a ten-stamp mill began production, although development--carried on solely by the discoverers--was slow. British investment came in 1881, and fifty men were employed during the winter of 1881-1882, although the company got into disrepute by neglecting to pay them. Then the camp shut down completely because of litigation. A thirty-stamp mill brought in in 1895 ran a little over two years until the company became insolvent in 1898. Still another operation added to the district's yield in 1906 and 1907, and although the ore was not too rich, the large tonnage processed was sufficient to account for a total of perhaps \$2,000,000. Recent production has increased this figure by \$600,000.

GILMORE [Texas Creek] (Lead-Silver)

Organization of the Texas district in 1880 preceded a six-year effort to get this lead-silver operation underway; finally when the Viola smelter at Nicholia commenced, ore from the district could be handled. But when the Viola shut down after a fire in 1889, the Texas Creek mines had to quit also. Purchase by a Pittsburgh company in 1902 led to attempts to ship ore by wagon to the railroad at Dubois, but after the ore wagons wore out and a steam traction outfit broke down, the Pittsburgh closed from 1907 until completion of the Gilmore and Pittsburgh railway made shipping practical in 1910. Production by 1929 amounted to \$11,520,852, primarily from the Pittsburgh-Idaho mine. A limited amount of activity continued in the depression after the major property closed.

GRAHAM [Silver Mountain] (Silver)

Silver veins of incredible thickness were reported at Silver Mountain in the fall of 1885, by early 1886 those discoveries had created a decided excitement, particularly in Atlanta. Several years of effort to develop the allegedly fabulous district, with the help of British capital introduced by Matt Graham, served only to prove that mining there would not pay because of the complete absence of ore. A large \$350,000 mill, completed August 12, 1888, was connected to the potential mine by a mile-long tramway. The enterprise collapsed, with a total loss of about \$1,000,000, with sheriff's sales August 31 and November 16, 1889.

HEATH [Cuddy Mountain] (Lead-Silver, Copper)

T. J. Heath and James Ruth discovered this district in October, 1874, but a mining district was not organized until June 28, 1875. New discoveries and serious development came in 1876, and intermittent mining continued until after 1920, when the Bunker Hill and Sullivan leased the properties there. After more than four decades of inactivity, a Cuddy Mountain silver discovery brought renewed interest to this area in 1977 and 1978.

INDIAN CREEK [Ulysses] (Gold)

Located in 1895, this gold quartz district was so inaccessible that production did not begin until a large stamp mill arrived there in 1902. By 1912, none of the mills had operated profitably, although about \$600,000 had been produced. Much of the ore was not rich enough to pay the cost of shipment to a smelter.

LAVA [Era] (Silver)

Discovered by James Hood's prospecting company in 1879, this district remained undeveloped until 1882. By 1884, enough ore was tested to attract eastern investment. Frank Martin's Horn Silver mine there was the major producer; a 20-stamp mill turned out \$250,000 from that property in 1886-1887, and the town of Era boomed for two years. A small amount of lead was recovered there in 1908, and subsequent brief revivals came in 1913 and 1928. Perhaps \$400,000 was realized from the entire district.

LEADORE [Junction] (Lead-Silver)

Prospects in the region were known earlier, but the Leadville mine was not located until 1904 nor productive until 1908. Construction of the Gilmore and Pittsburgh railway solved the transportation problem, and as early as 1912, \$100,000 had

been realized. Nearly \$300,000 finally came from the district.

LEESBURG (Gold)

Placers discovered July 16, 1866, at Leesburg led to a rush to the Lemhi country, and a mining district was organized August 10. Some 3,000 claims (many more claims than miners) were recorded the first fall, and four or five hundred miners spent the winter there. By April 1867, the population of Leesburg rose to about 2,000, but a late mining season that spring left most of them idle. The gold was coarse and assayed high (\$18.40); some of the claims in the first fall paid \$8 to \$20 a day, and in a few instances, much more. The Leesburg rush brought mines to a whole new area, and led immediately to the founding of Salmon as a service community for the new mines. Quartz discoveries were expected right from the first season, although the few that were made in 1879, 1880, and 1892 never did compare with the placers.

A seventeen-mile ditch and flume system expanded Leesburg's placer operations in 1908, but substantial recovery with hydraulic giants was delayed until 1926, when a couple of years of production became possible. A dragline operation, responsible for \$80,000 from 1939 to 1942, and a large modern placer program in 1982 augmented Leesburg's production to about \$6,250,000.

LEMHI (Gold)

Lode discoveries on Comet Creek in June, 1867, preceded a series of Salmon area placer discoveries that summer. These led to additional efforts at lode mining on Kirtley and Arnett creeks, where arastras were busy in 1875 and 1876. Quartz properties in the Beaverhead range from the Lemhi reservation north to Carmen, and in the range across the valley west of Salmon, go back to F. B. Sharkey's location of the Copper Queen near the reservation in 1883. By 1910 it had produced \$100,000.

Placer workings in such areas as Bohannon's Bar (\$200,000) went back at least a decade earlier. Although an early dredge failed at Bohannon's Bar, early hydraulic giants on Kirtley Creek southeast of Salmon operated successfully, as did a \$1,200,000 dredge enterprise from 1908 to 1911. Opening of the reservation to entry, July 15, 1909, brought expanded mining efforts there. Thorium possibilities near Lemhi Pass attracted considerable attention after 1960, but lacked a market.

LITTLE LOST RIVER (Lead-Silver)

Interest in Little Lost River goes back to a rush there from Leesburg, June 15-16, 1867. Then in September, 1882, T. C. Blackburn made a big lead-silver discovery on the east side of Little Lost River and established a Blackburn district there, not to be confused with the Blackburn district of his brother

(Charles F.) on Birch Creek. Some high-grade ore was hauled about seventy-five miles to the Viola smelter at Nicholia while it was in operation from 1886 to 1889, after which production suspended until operations resumed in 1906. A one-hundred-ton concentrator was used from 1908 until it burned in 1918. Work resumed in 1922, and a new mill produced continuously from 1924 to 1931. Total value of the district exceeded two million dollars.

LITTLE SMOKY (Lead-Silver, Gold)

Originally located in 1864, the Little Smoky placers were worked intermittently until 1879, when quartz discoveries boomed the district. The main production came in 1884, when about \$1,200,000 worth of ore was shipped to Ketchum and smelted.

LONG VALLEY (Gold, Monazite)

Gold Fork placers, discovered at Copeland in 1863, came into production in 1864, and two other Long Valley districts followed at Hawkeye and Lake City. Miners from Long Valley also had some Salmon River south fork placers across a high ridge separating those drainages. Deep placers at Copeland's Bar finally were largely worked out in 1870-1872, but a nine-mile ditch to serve Hawkeye was delayed until 1879. When the principal sources for monazite (India and Brazil) were cut off in 1946 and 1950, an examination of Idaho possibilities led to extensive monazite dredging in Long Valley beginning in January, 1951. Three dredges were in operation that year, although one capsized and sank in 1953. Lack of a market led to suspension of the other dredges in 1955, after a production of about \$2,000,000. By-products raised this to \$3,500,000.

LOON CREEK (Gold, Copper)

Nathan Smith took a prospecting party from Leesburg to Loon Creek in May 1869; reports of good placers there led to a Loon Creek rush from Leesburg on July 19 and Idaho City on August 14.

Loon Creek was the big Idaho excitement that year. Immediate offshoots included discoveries at Yellow Jacket and Yankee Fork.

Placering on Loon Creek continued for a number of years, with the Chinese who had barely begun to enter in 1870, soon taking over. A Chinese massacre in Orogrande (attributed to twelve energetic Sheepeater Indians) February 12, 1879, wiped out mining there (the ground would not pay wages for whites any more, and the Chinese did not care to go back) and precipitated the Sheepeater War which opened much of the Salmon River country to prospecting and mining by driving out the Indians. Lode mining on Loon Creek early in the twentieth century continued with the development of the Lost Packer, discovered in 1902. A smelter

was brought in to Loon Creek in 1905, and intermittent operation to 1914 produced some \$600,000 in copper and gold. A small production (possibly \$10,000) also was realized at Parker Mountain between discovery in 1904 and 1915. Renewed interest in Loon Creek's Lost Packer property in 1980 was thwarted by price declines before production could resume there. But about \$1,200,000 came from Loon Creek's gold and copper deposits.

MACKAY (Copper, Lead-Silver, Zinc)

Alder Creek--the original mining area around Mackay--progressed very slowly after discovery in 1879; those seeking to develop it were too poor to be able to spend much time in exploration, and mining did not get underway until some additional copper finds four years later brought attention to the area. A number of small smelters and towns sprang up--Cliff City, Houston, and White Knob--as a result of the 1884 boom, but large-scale copper mining had to await the coming of the railroad which led to the founding of Mackay in 1901. Together with Copper Basin, the mines around Mackay (limited almost entirely to copper after 1900) became the leading copper region for Idaho from 1900 to 1930. The main producer suspended operation and was sold for taxes in 1931. Up to 1914 the Mackay region produced about \$3,750,000 of which two-thirds was copper. Some tungsten production was made on nearby Wildhorse, 1953 to 1955. Total production approximated \$15,000,000.

MARSHALL LAKE (Gold)

An outgrowth of the Thunder Mountain rush, Marshall Lake mining did not get into serious production until discovery of the Golden Anchor in 1914. Production (mainly \$289,000 in 1916 to 1918) lasted until 1922 and from 1935 to 1942 when the national gold mining shutdown suspended operations there. About \$2,000,000 total was produced there.

MILLER'S CAMP [Secesh] (Gold)

Secesh River placers were noticed not long after the discovery of nearby Warren's, and Miller's Camp seems to have been active from 1863 on, with about fifty people there. Activity at Ruby Meadows [the site of Miller's Camp]. Burgdorf, the Golden Rule, and Secesh Meadows continued through the depression, and a \$500,000 production may have resulted.

MINERAL CITY (Silver)

Discovered in 1880 and organized as a mining district September 22, 1881, Mineral attracted considerable attention, and two small smelters were installed in 1889 and 1890. Production

soon was halted by collapsing silver prices during the panic of 1893. A larger sixty-ton smelter brought in in 1900 also failed.

Much of the district's estimated production of a million ounces of silver came in 1903 and 1904, before wage reduction led to a strike and shutdown in July. Wartime revivals from 1918 to 1922 and for a few years after 1940 resulted from higher prices for silver during those national emergencies.

MOOSE CREEK (Gold)

A rush to Moose Creek in the fall of 1868 turned out to be a humbug, but that did not prevent a second false rush from Pierce, February 15, 1869. A few early claims were productive, and Chinese activity continued there as late as 1880. A more recent drag line operation processed some of Moose Creek's more difficult placers.

MULDOON (Lead-Silver)

This Little Wood River district, found in May, 1881, made quite a splash, and two forty-ton smelters were brought in in 1882. A modern, progressive camp, Muldoon had electric lights before Hailey or Boise did, but only 16 miners remained at work late in 1882. Financial difficulties, compounded by inability to develop an adequate recovery system for processing ore, ruined Muldoon's early development. A series of later efforts got no farther. Production, limited to only a few months in 1882 to 1884 augmented slightly from 1908 to 1910, amounted to about \$200,000.

NEAL (Gold)

Arthur Neal located a mining district at the head of Black's Creek, July 20, 1889, and three productive mines there attracted considerable attention for two decades, although production did not amount to much after 1905. The district has been credited with \$2,000,000.

NEWSOME, CLEARWATER STATION, AND GOLDEN (Gold)

Concurrent with the rush to Elk City, John Newsome discovered placer ground on Newsome Creek in the early summer of 1861, and three hundred men were at work in July. Soon the mining area was enlarged. Late in July 1862, placers rated at \$10 to \$20 per day became active on the south fork of the Clearwater near the mouth of Newsome Creek, and by the next season Clearwater Station (located near the Leggett Creek placers just below the mouth of Newsome) took second only to Elk City among the south fork camps. Newsome itself did not have much population after 1862; although an 1864 ditch helped during the

early years, most of the early production was confined to the lower part of the stream. Activity revived at Newsome during the panic of 1893, and altogether, the Leggett placers, Moose Meadow placers, Old Golden placers, followed by dragline operations during the depression (suspended in July 1940), may have raised the Newsome-Golden placer total to something like \$1,600,000. A quartz property located at Golden in 1907 and 1908 became productive from 1916 to 1918 and from 1928 to 1942, and probably added another \$600,000, making a total of \$2,940,000.

OROGRANDE (Gold)

Crooked River placers were known from the time of the south gold rush, and quartz at Orogrande came into prominence in 1896.

A mill ran intermittently from 1902 to 1931 with a yield of \$70,000 and activity resumed in 1932 during the depression, which raised the district's total to over \$100,000. Including early placers, the Gnome quartz mine, and recent dredging, Orogrande produced at least \$640,000.

OWYHEE (Silver-Gold)

Although Owyhee placers were noted by the Boise Basin discovery party June 28, 1862, the rush to Owyhee did not come until after Michael Jordan's party made a big strike, May 18, 1863. The Owyhee rush was an especially exciting one, and although the placers did not amount to much, important lodes including the Orofino, August 15, and the Morning Star, October 14, came to light. Even more fabulous was the Poorman, discovered September 14, 1865; a bitter fight developed for control, which was natural considering that one spectacular 500-pound sample of native ruby silver crystal received a special gold medal at the Paris International Exposition of 1867. Stamp milling in Owyhee, though, as in other Idaho districts at the time, started off poorly, and the failure of the leading mill, August 30, 1866, was a major setback. But the mines were rich, and another armed battle for control of a good property developed into the celebrated Owyhee War, which led to military intervention by soldiers from Fort Boise, April 2, 1868. With ore treatment problems worked out, production continued high until failure of the Bank of California, August 26, 1875, and Silver City was second only to the Comstock Lode as a western silver district during that time. Revival was helped by completion of the Oregon Short Line across southern Idaho in 1883 and 1884, and in 1888, J. R. DeLamar got major production underway again. Bringing British capital into the district, he had a mine that produced dividends of 112% on a bullion production of \$1,076,432. (This was the only really good British investment in early Idaho mines.) After W. E. Dewey's Black Jack mine was consolidated with the Trade Dollar, and a railroad built

to Murphy in 1899, major production continued on that property. Work continued at Silver City through the depression, although the major yield--of a total of about \$40,000,000--had been realized by 1912. Over one million ounces of gold and twenty million ounces of silver are-credited to early Silver City and Delamar. In 1976, arrangements were completed for a large open-pit operation at DeLamar, with \$22,000,000 invested in development and in recovery facilities. With an annual production of about 2,000,000 ounces of silver and 24,000 ounces of gold (totaling ten to twelve million dollars) annually, DeLamar's revival matched Owyhee County's historic yield by 1984.

PALOUSE (Gold)

Placers on the Palouse rated at \$10 were struck not far from later Moscow in 1866, and whites and Chinese were at work on twenty claims found the first season. Some activity went on for years: after an initial decline, placer operations revived in 1884 and benefitted from national economic depressions after 1893 and 1930. A dredge above Harvard reworked some old Chinese ground from 1940 to 1942, producing slightly over \$550,000. Palouse lode properties have not amounted to much: Hoodoo quartz operations have always been more or less a hoodoo. Although a stamp mill once operated on Moscow Mountain, there haven't been any others of consequence. Total upper Palouse gold production approximates \$800,000.

PATTERSON (Tungsten)

Tungsten veins on Patterson Creek were prospected for gold and silver as early as 1881, but they proved to be too low grade to work. But after identification of tungsten there in 1903, production began in 1911, and a mill was constructed in 1912. Limited production followed during World War I, but major development did not come until 1934. Activity continued until 1958, when the mine shut down and the equipment was sold. Production by then had reached the range of \$10,000,000.

PEARL (Gold)

Discovered December 7, 1867, the Pearl district remained largely inactive until the Panic of 1893. Most production came from 1894 to 1908, when the Lincoln mine went into receivership. Pearl is still active, although work since 1945 has centered almost entirely at the Dewey mine. Total production has been estimated at \$2,000,000.

PEND d'OREILLE (Lead-Silver)

Discovered September 20, 1888, this district had a one-year

boom after a rush from Eagle City and the Coeur d'Alenes that fall. Mines were found all around the lake, although operations were small until 1917. The Talache mill turned out about \$2,000,000, mostly in silver, from 1922 to 1926, and some parts, particularly around Hope, still are active or promising. [See also: Clark's Fork.]

PIERCE (Gold)

Although gold was known in several Idaho districts before prospecting started around Pierce in the first week of October, 1860, the Pierce discovery marked the beginning of mining in Idaho. Miners from Pierce then went out to find Elk City and Florence, and from there to Warren's and Boise Basin. Several thousand prospectors joined the Clearwater gold rush in the spring of 1861. Since the mining season commenced late that year because of an exceptionally bad spring, and since the rush to Elk City that summer and to Florence that fall drained away most of the miners, production did not immediately reach the level that was expected of the district: the first season's yield, though, approached a million dollars worth, and a force of several hundred white miners produced from four to eight hundred thousand dollars a season until the Chinese took over the district in 1865 and 1866. Chinese placering continued there for twenty or thirty years, and some quartz discoveries in 1879 led eventually to a revival of Pierce, primarily in the decade or so after 1896.

PINE GROVE (Gold)

Discovered May 16, 1887, the mines at Pine Grove on the Rocky Bar road attracted considerable attention for a number of years, with British investment entering the district in 1892. The Franklin mine there is credited with a little over \$750,000 in gold before it shut down in 1917.

PORTHILL AREA (Lead-Silver)

Located on the crest of the Selkirk range about six miles south of the international boundary, the Idaho Continental mine produced 849,791 ounces of silver and 43,913,407 pounds of lead for the Bunker Hill and Sullivan Company between 1915 and 1924. Other mines, including some recent thorium, are east of the Kootenai River near Porthill. Over \$1,000,000 additional production between 1940 and 1950 raised the Porthill total to over \$4,500,000.

ROCKY BAR (Gold)

Prospectors trying to determine the extent of the Boise mining region set out from Boise Basin as soon as possible in the

spring of 1863, and discovered placers on Feather River. Then a quartz prospect was located May 7 not far above Rocky Bar. The South Boise gold rush followed just after the middle of May. Placers on Red Warrior and on Elk Creek at Happy Camp were of some consequence, but the South Boise mines primarily were quartz. During 1864, production with arastras gave very promising results. Stamp mills were brought in in 1865, but failures during 1866 and 1867 set the district back. Until about 1886 to 1888, and by 1892 it and all the other important properties were practically worked out. Activity continued on a limited scale with something of a revival during the depression after the Featherville dredge had recovered 33,000 ounces of gold between 1922 and 1927. With the suspension of gold mining during the war, the camp closed down entirely in 1942. Occasional minor production, including a Rocky Bar townsite placer in 1982, followed after 1946. Production reached approximately \$6,000,000.

SALMON RIVER BARS (Gold)

Prospected by the Florence discovery party in July 1861, the Salmon River bars were eclipsed instantly by Florence. But by March 1862 miners driven out of Florence by deep snow and a hard winter began to work some of the better claims, which ran from five to twelve dollars a day. By the summer of 1862 the entire Salmon River Canyon from later Salmon City on down had been prospected (with some difficulty, for that matter), and white and Chinese miners worked the richer bars for many seasons. Total production reached \$2,500,000.

SEAFOAM, SHEEP MOUNTAIN, AND GREYHOUND RIDGE (Lead-Silver)

An inaccessible silver district a dozen miles in extent, Seafoam and Sheep Mountain escaped notice for years. Discovered June 8, 1879, during an Army campaign, Sheep Mountain attracted prospectors to Seafoam and Greyhound Ridge as well. Most exploration work began in 1886, and although a small smelter was installed at the Greyhound mine nearby, the region did not live up to expectations. Out of sad experience here, in fact, mining engineers learned to distrust rich lead veins in granite. Less than \$400,000 probably came from the district, with later activity mainly in 1902, 1926, and 1979-1980.

SEVEN DEVILS (Copper, Gold)

Discovered July 4, 1862, by Levi Allen's party, the Peacock (located near the rim of the canyon near Kinney Point) had excellent copper possibilities. Allen kept his interest in the area and returned to locate mines with Isaac I. Lewis in 1877. The Seven Devils copper region showed great promise for years,

but lack of transportation held back serious development until after Albert and Reinhold Kleinschmidt took over in 1885. An 1887 ore shipment to Anaconda led to more extensive production in 1888. In 1889 and 1890, the Kleinschmidt grade was built to Snake River in the hope of establishing river transportation to the area. The steamer *Norma*, built for this purpose, failed to meet the need, and the Pacific and Idaho Northern Railroad never got to the mines as was planned. Discovery of the Great Eastern copper mine near Pittsburg Landing extended the area in 1891, and after a setback during the Panic of 1893, the Seven Devils enjoyed a major boom from 1898 to 1899. A series of failures in handling the ore led to installation of a smelter at Landore, active mainly from 1904 to 1906. A fraudulent promotion attracted considerable attention to the Seven Devils from 1925 to 1928. Intermittent efforts continued, with leasors shipping out \$150,000 worth of ore from 1960 to 1963, and regularly scheduled hauling of ore to Anaconda from 1966 on. Those shipments increased Seven Devils production, along with nearby Heath, to about \$1,200,000 including \$200,000 from Black Lake. Then a large open pit operation at Copper Cliff and Iron Dyke raised Seven Devil's total yield to about \$2,800,000 by 1980.

SHOUP (Gold)

Placering around Shoup began in 1868-1869, but more than a decade went by before much attention was paid to that area. Discovered in 1880, lodes around Shoup warranted construction of a ten-stamp mill by 1884, and a number of others thereafter. Altogether, 55 stamps were in operation by 1902, and about \$750,000 in gold had been recovered by that time. From 1935 to 1942 close to \$600,000 in gold came from this area, mainly from the Grunter mine. Production of the Shoup area totals over \$1,500,000.

SNAKE RIVER (Fine Gold)

Fine gold occurs for hundreds of miles along Snake River, and if economical recovery were possible, exceptionally large production could result. The particles are so fine that three or four thousand must be collected to get a penny's worth of gold [at a value of \$35 an ounce!], and collecting that many particles often is not easy. A rush of 2,000 miners to upper Snake River led to serious disappointment in the late summer of 1863, but mining on Snake River below Salmon River was undertaken in 1863 and 1864. Operations in the two decades after 1869 were scattered all along Snake River for hundreds of miles, and some of them were productive. Although the problem of processing fine gold never was really licked, recovery of more than two million of an estimated several billion dollars of Snake River fine gold has been recorded.

SOUTH MOUNTAIN (Lead-Silver)

Late in the fall of 1871 a substantial lead-silver discovery was made at South Mountain and a small smelter was in operation there by 1874, when there was considerable excitement over the district. Mining properties at South Mountain in 1874 and 1875 were more notable for their usefulness in stock manipulation in San Francisco than for their production, and with the speculative collapse there following the failure of the Bank of California, August 26, 1875, South Mountain was ruined. Talk of revival of the district, though, continued for several decades, and some additional work was done there in 1906. The main production (\$1,670,000) came between 1940 and 1945, with another \$120,000 between 1950 and 1955.

STANLEY (Gold)

John Stanley's Atlanta discovery party came through Stanley Basin from Warren's in the summer of 1863, and several miners were busy there by 1868. At that time an hydraulic giant was operating at Robinson's Bar. Some gold was placered in and around Casino Creek during the time that the Yankee Fork area was active. Small scale dredging commenced in 1899, and a lode development north of Stanley soon followed. Another lode on Fisher Creek and a nearby ridge also gained considerable attention. Possibly \$400,000 came from all these mines. A uranium property just north of Stanley also was productive for a time after 1958.

STIBNITE (Antimony, Tungsten, Gold, Mercury, Silver)

Surpassed only by the Coeur d'Alene, Boise Basin, and Wood River mining regions, this camp finally assumed some of the importance that originally had been anticipated for nearby Thunder Mountain. Discovered during the Thunder Mountain rush, Stibnite developed slowly because of its isolation. Gold and antimony claims were recorded there in 1914, and a mercury excitement (encouraged by wartime shortage) occurred there in 1918.

(Another wartime mercury shortage helped to make the Stibnite area the second largest producer in the United States in 1943.) After F. W. Bradley acquired the mines there in 1927, serious development got underway, and production of gold and antimony began in 1932. Important tungsten deposits came into production in the United States. Total yields for the active period, 1932 to 1952, amounted to \$24,000,000 in antimony, \$21,000,000 in tungsten, \$4,000,000 in gold, \$3,000,000 in mercury, and \$1,000,000 in silver. After being abandoned for three decades, Stibnite was reopened in 1982 with another major open pit operation.

THUNDER MOUNTAIN (Gold)

Thought by early prospectors to be a mountain of gold, Thunder Mountain received very flattering notice after Ben and Lew Caswell, who located claims there July 10, 1894, announced their find in 1897. Excitement gradually built up into a major gold rush by the spring of 1902. The mines there eventually yielded almost a half million dollars, but the main production proved to be capital investment from Pittsburgh, rather than a bonanza greater than Cripple Creek that was expected to transform central Idaho. In 1909, the nearly abandoned town of Roosevelt (the chief community there) was gradually flooded by a lake formed when Monumental Creek was blocked by a slide, but by then most of the early production (about \$350,000) had been achieved.

An incidental result of the rush to Thunder Mountain was the discovery of the nearby Stibnite and Marshall Lake districts. Later operations in 1937 through 1939 and 1948 and 1949 may have raised Thunder Mountain's total yield to something like a half million. Finally in 1980, large scale mining, made possible by modern equipment and careful development work, came to Thunder Mountain. After eight decades, some of that district's early promise finally was realized.

VIENNA AND SAWTOOTH CITY (Silver)

Promising indications of silver at the head of the Salmon River were noticed by Levi Smiley's party in August, 1878, and on October 5 and 6, Smiley and T. B. Mukey located the earliest of the Vienna properties. Smiley and some prospectors discovered rich Vienna claims in May, 1879, and Sawtooth City was organized nearby in a miners' meeting September 29. A ten-stamp mill was installed in 1882 at Sawtooth City, but it did not commence production until 1886. It shut down in 1888. The Silver King in Beaver Canyon produced from 1886 to 1892; about \$250,000 was realized from the Sawtooth and Beaver Canyon properties. Vienna fared more successfully. A twenty-stamp mill ran from 1883 to 1885, yielding \$40,000 to \$50,000 a month. Shut down by claims litigation, the Vienna mill resumed on a smaller scale until 1888, after which some intermittent shipments kept up interest in the camp. A new camp and mill were built in 1917, but production did not materialize. In spite of later revivals, Vienna never turned out much more than the half million or so realized in 1888.

VOLCANO (Silver, Copper)

Discovered March 12, 1864, Volcano for a year or two was thought to be one of the more promising districts of southern Idaho, and W. R. DeFrees brought in a stamp mill in the fall of 1865. An experimental lot of 100 tons of ore processed in

September of 1866 brought early operations at Volcano to an end.

William Clemens' effort to develop a copper mine got no farther in 1900. From 1924 to 1931 an unproductive 1,453-foot tunnel was driven. Finally in 1982, a large open pit silver-copper operation began to supply a 360-ton concentrator in Mountain Home, and Volcano at last justified its early promise.

WARREN'S (Gold)

Organized as a mining district July 22, 1862 (a little less than two weeks before discovery of Boise Basin), Warren's had a steady development, in contrast to the spectacular rush and decline that marked neighboring Florence from which Warren's was discovered. In its second season it was the leading camp of North Idaho and an 1866 to 1868 quartz excitement brought in two stamp mills. Isolation of the district greatly retarded development of the quartz properties, which went through the same pattern of stamp mill experiment and failure that characterized South Boise and Owyhee. From 1874 to 1876 Chinese miners took over the placers, and quartz properties were worked at times during the Chinese period. Finally the Little Giant mine commenced to pay dividends from 1883 through the rest of the century. Although lode mining never matched the placers at Warren's, the district was kept active until a steam shovel dredging operation failed at the turn of the century. A steam dredge finally was employed successfully from 1931 to 1942, producing about \$4,500,000. Altogether Warren's lodes and placers accounted for about \$16,120,000 in value.

WEISER MERCURY (Mercury)

Discovered in 1927, this property was leased after additional finds in 1936 to L. K. Regua, who formed the Idaho Almaden Company; between 1939 and 1942, \$750,000 [4,000 flasks] were recovered. Another leasee brought in the largest rotary kiln installation in the United States, and began to produce 200 flasks monthly in September of 1955. An additional million dollars worth of pozzolan has been produced as a ground product from the calined mercury tailings. This raised the Weiser total to about \$8,000,000 by 1969.

WOOD RIVER (Lead-Silver, Zinc)

After the Bannock War of 1878, the Indian obstacle to mining on Wood River was removed. Warren P. Cahalan, who had been aware of lodes around Bellevue in 1864, and had located a lead-silver property there on September 3, 1873, relocated it April 26, 1879.

In May David Ketchum found lead-silver near the head of Wood River, and Frank Jacobs located the Queen of the Hills near later Bellevue, July 15. Galena City and Broadford were established in

the fall of 1879. In 1880 the Wood River rush was the major mining excitement in the northwest, and Bellevue, Ketchum, and Hailey soon sprang into existence. Production commenced at the Philadelphia Smelter in Ketchum, October 8, 1881, and several more soon were in operation. When the Oregon Short Line was being constructed across southern Idaho in 1882, the Wood River mines were considered important enough that a branch was built there before the main line was extended on west across the state.

Hailey became the leading city in Idaho for several years, and Wood River surpassed the other mining regions until 1888, when Coeur d'Alene gained a position of prominence. British capital took over the leading early Wood River mine--the Minnie Moore (an \$8,400,000 producer)--February 25, 1884, and large California investors, including George Hearst, entered the region at about the same time. With the falling price of silver in 1892, mining on Wood River declined seriously. But the Minnie Moore reopened from 1902 to 1906. Later the Triumph, with a yield of about \$28,000,000 or \$29,000,000 between 1936 and 1957, more than matched the early production. Rising silver prices in 1967 led to revival of some of the old lead-silver-zinc properties around Bellevue, with production of \$1,574,000 in 1967, and nearly \$2,000,000 in 1968. When this operation shut down in April, 1970, Wood River finally had reached a total of over \$62,000,000.

Renewed activity in reprocessing of Minnie Moore dumps near Bellevue and new exploratory tunnels near Ketchum in 1977 extended activity in this district to a full century.

YANKEE FORK (Gold)

Named by Joel Richardson's party of Yankees from Montana who prospected the stream unsuccessfully at the time of the Leesburg discoveries, Yankee Fork was the scene of extensive attempts at placer mining beginning in 1870 after the Loon Creek rush brought mines to that part of the country. D. B. Varney and Sylvester Jordan located claims on Jordan Creek in 1870, and were followed by many others; the placers, though, ran \$3 to \$4 per day, and with wages of \$6, they did not pay. Better placers discovered the next year led to organization of a mining district, with sixty or so miners in the summer and about fifteen in the winter. Then William A. Norton discovered the Charles Dickens lode in 1875, and the General Custer--the leading mine of the region--was located August 17, 1876. Finally a mining rush to Yankee Fork brought major outside interest to the area early in 1879. The Custer mill is credited with \$8,000,000 between 1881-1886 and 1895-1904. Some minor operations occurred intermittently from then until the depression, when low-grade placers were dredged with success (\$1,800,000) during the 1939-1942 and 1946-1951. Altogether, Yankee Fork is responsible for some \$12,000,000 in gold with some additional silver augmenting that total.

YELLOW JACKET (Gold)

Discoveries by Nathan Smith led to a rush from Loon Creek to Yellow Jacket, September 23, 1869. Although the original placers proved to be a disappointment, and although quartz operations there were handicapped by the extreme remoteness of the district, the gold quartz was free milling. By 1892, Colorado investors arranged for a large tram to make milling practical. A thirty-stamp mill, packed into Yellow Jacket in 1894, was doubled in size when major production got underway, and a sixty-stamp mill was run by water power until labor costs became too high in 1896. Tailings were reworked profitably after the shutdown, but intermittent attempts to operate there from 1912 to 1984 had very limited results. Mining efforts on nearby Silver Creek from 1876 to 1897 encountered similar problems. Perhaps \$400,000 was recovered at Yellow Jacket, mainly in the nineteenth century.

IDAHO METAL PRODUCTION 1860-1980

Atlanta	\$ 16,000,000
Banner	3,000,000
Bay Horse-Clayton	42,000,000
Bear Valley	12,800,000
Big Creek	400,000
Blackbird (Cobalt)	49,000,000
Boise Basin	60,000,000
Boise Ridge	428,000
Boise River	450,000
Buffalo Hump	540,000
Cariboo Mountain	1,200,000
Clark's Fork	2,500,000
Coeur d'Alene	3,845,732,000
Deadwood	1,200,000
Dixie (South Fork Clearwater)	1,500,000
Elk City	16,000,000
Era and Martin	400,000
Florence	9,600,000
Germania-Livingston	650,000
Gibbonsville	2,000,000
Gilmore	11,600,000
Hailey Gold Belt	1,000,000
Leadore	300,000
Leesburg	5,420,000
Lemhi	1,940,000
Little Lost River	2,000,000
Little Smoky	1,200,000
Long Valley	3,500,000
Loon Creek	1,200,000
Mackay-Copper Basin	15,000,000
Marshall Lake	2,000,000
Miller's Camp-Secesh	500,000
Mineral City	800,000
Muldoon	200,000
Neal	2,000,000
Newsome-Golden	2,940,000
Orogrande	640,000

Owyhee	90,000,000
Palouse	800,000
Patterson	10,000,000
Pearl	400,000
Pend d'Oreille	2,000,000
Pierce	8,000,000
Porthill	4,500,000
Rocky Bar-Pine	6,090,000
Salmon River Bars	2,500,000
Seafoam-Greyhound	400,000
Seven Devils-Heath	2,800,000
South Mountain	1,900,000
Stanley	400,000
Stibnite	53,000,000
Thunder Mountain	500,000
Ulysses	600,000
Vienna-Sawtooth City	800,000
Viola	2,500,000
Warren's	16,120,000
Weiser Mercury	8,000,000
Wood River	62,000,000
Yankee Fork	12,000,000
Yellow Jacket	200,000

Many of these totals are based largely upon reliable sources (usually Bureau of Mines or other governmental compilations), but some are of unknown accuracy. Most lode and dredge production figures are reliable, and almost all Idaho metal production is of those kinds. Less than 2% of the total production of \$4,406,590,000 are from sources of uncertain accuracy. This table must be used with great caution, since mineral prices--even for gold--varied greatly over the century the figures cover. Inflation has weighted the period since 1940 very heavily. Gold and silver prices after 1976 have fluctuated ten or twenty times as much. Boise Basin's gold values, for example, recently have risen to more than one or two billion dollars. Other major gold districts (Elk City, Florence, Leesburg, Pierce, Rocky Bar, Warren's, and Yankee Fork) have increased similarly. Silver prices have varied much more. Assignment of smelting values and federal support prices also affects some of these totals (such as Blackbird) to a marked degree.