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# The Ore Bin



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# **The Ore Bin**

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## LEST WE FORGET \*

By

F. W. Libbey \*\*

### Introduction

Gold mining was originally the mainstay of the economy of southern Oregon. It started settlements, built roads and schools, promoted local government, and established law and order. It was about the only source of new wealth and was a common means of earning a livelihood. It is now at best only a token of its past. Not only is gold mining as an industry dead, but its history and the knowledge of its individual mines, which formerly represented a large part of the area's payrolls, are fading into the hazy past. The critical point in its downfall was World War II's Administrative Order L-208, which was designed to stop the mining of gold, thus forcing gold miners to seek employment in base-metal mines, especially copper, in which there was supposed to be a shortage of miners. The order failed essentially to accomplish its objective, but the final result was to deal a crushing blow to gold mining. Shutdowns, always a serious operating matter in an underground mine because of the maintenance problem, compounded the gold miners' difficulties. After the war and the termination of L-208, costs of labor and supplies had multiplied but the price of gold remained the same. Thus gold mining was effectively killed.

The following outline of events in the rise and fall of gold mining in southwestern Oregon is here recorded - almost as an obituary - so that Oregonians may not entirely forget how important this industry was in building up this part of the state.

### History

#### California gold rush

In 1848-49 a large number of Oregonians went south to the Sacramento Valley in the great California gold rush. As has been told many times, so great was the exodus that fully two-thirds of the inhabitants of the Willamette Valley joined the stampede, paralyzing business and industry in this newly settled

\* Reprinted from the June 1963 issue of The ORE BIN by popular request.

\*\* Mining engineer, retired: Director of the Oregon Department of Geology and Mineral Industries 1944 to 1954.

region. One party of south-bound fortune-hunters found gold in the sands of a Rogue River crossing (Scott, 1917, p. 150) but they were not diverted by the find from their main objective.

As the miners moved from one camp to another in central California, attracted by word-of-mouth reports of rich "strikes" made on another stream, a small reverse flow of prospectors set in. This began as a few groups started probing into northern California, especially along the Klamath River. Thus, while the great influx of people continued into California, a part of the current - a small eddy - changed from southbound to northbound, and inevitably drew gold seekers into southern Oregon.

The migration of fortune-hunters was generally overland, but one historic trip was made by a party who sailed north from San Francisco to the mouth of the Umpqua River in 1850. This expedition had, as principals, Herman Winchester, Dr. Henry Payne, Jesse Applegate, Levi Scott, and Joseph Sloan. It resulted in the founding of Umpqua City (at the mouth of the river), Gardiner, Scottsburg (at the head of tidewater), Elkton, and Winchester, and this string of settlements became a main supply route for the mining camps.

### Placer mining in southern Oregon

Stream placers: In 1850 a party of prospectors from California investigated streams near the California-Oregon border, found pay gravels on Josephine Creek, and began to work them near its junction with the Illinois River. This may have been the first gold mining in the state (Spreen, 1939, p. 5).

The discovery that made the real gold boom in Oregon, however, was on Jackson Creek, near what is now the town of Jacksonville. In December 1851 two packers from Scottsburg on their way to the mines of northern California found a small gold nugget in the gravels of Jackson Creek. Later they told freighters Jim Cluggage and J. R. Poole of the find, and, in January 1852, Cluggage and Poole camped at the spot. They found rich gravels in the creek at what was named Rich Gulch and the rush to Jacksonville began as the news spread rapidly. People came from all directions--from the Willamette Valley, from the California gold camps, and from the Eastern States. Jackson County soon became the most populous county in Oregon. Gold production increased and the producing area spread into Josephine and Douglas Counties (see figure 1).

After Jacksonville came Sailors Diggings\* (Waldo, near the headwaters

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\* Named because a party of sailors deserted ship at Crescent City when they heard of the rich strikes at Jacksonville. They journeyed across the Siskiyou and camped on the upper Illinois River, where they found rich gravels, and the boom camp of Sailors Diggings was born. A single nugget was found weighing 15 pounds and valued at \$3,100, as reported by Spreen. He also states that the largest nugget ever found in southwestern Oregon was that discovered by Mattie Collins on the East Fork of Althouse Creek in 1859. It weighed 204 ounces (17 pounds troy) and was valued at \$3,500.

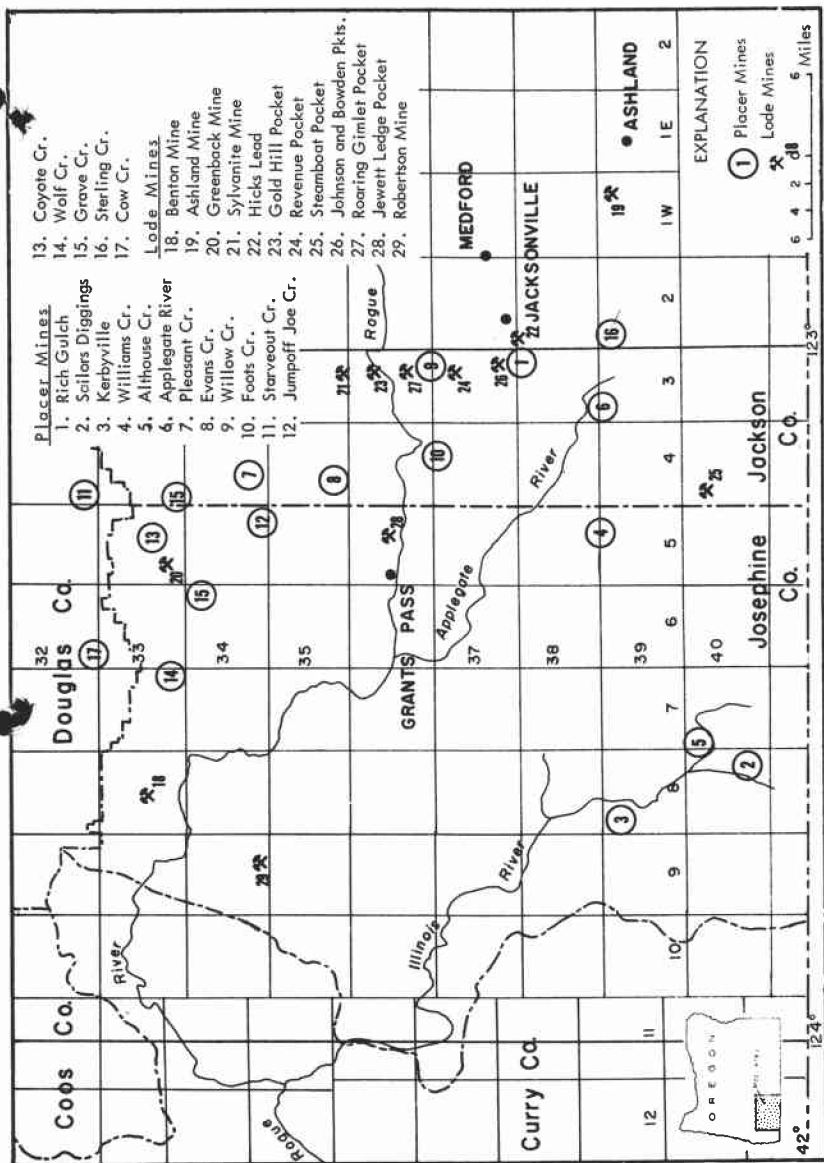


Figure 1. Index map showing locations of stream placer and lode gold mines in southern Oregon.

of the Illinois River), Kerbyville, Williams Creek, Althouse Creek, Applegate River, and numerous tributaries of the Rogue System on which such camps as Buncom became good producers. Farther up the Rogue, camps sprang up on Pleasant Creek, Evans Creek, Willow Creek, and Footh Creek. Numerous other creeks of the Rogue system were found to be productive, notably Starveout, Jumpoff Joe, Coyote, Wolf. Probably the most important of all was Grave Creek and its tributary, Tom East Creek. Some of the other stream valleys were later dredged, notably Footh Creek, Evans Creek, Pleasant Creek, and members of the Applegate system. Practically all important tributaries of the lower Rogue were hydraulicked at one time or another, and, although decreasing greatly in recent years, family operations and a very few partnerships are continuing for a few months a year. The Sterling was one of the largest of the hydraulic mines, continuing over many years. It worked the gravels on Sterling Creek for 4 of the 7 miles of its length above Buncom at the junction with the Little Applegate River. Total production was valued at \$3,000,000 in 1916 (Oregon Dept. of Geology, 1943, p. 190). No production records are available for later years.

Cow Creek in Douglas County had some prolific placers in the early days. Starveout Creek, a tributary of Cow Creek, was said to have had very rich gravels when first worked.

Beach placers: Gold prospecting on the inland streams spilled over onto the ocean beaches as prospectors fanned out. "Colors" were easily found by panning the beach sands almost anywhere on the southern coast. Horner (1918) writes that the first beach mining on the Pacific Coast was at Gold Bluff, Humboldt County, California. Spreen (1939, p. 11) reports that gold was found in the beach sands of Curry and Coos Counties at Gold Beach, Pistol River, Ophir, Port Orford, Cape Blanco, Bandon, Old Randolph, and South Slough (see Figure 2). Exact dates of each discovery are not available, but they probably were from 1852 to 1854. It is recorded that the earliest beach mining in Oregon was at Whiskey Run, about 10 miles north of Bandon, in 1852. Here the boom town of Randolph was born and flourished for awhile, then suffered a decline. There is no record of production for the pioneer period. It may have been substantial, amounting to many thousands of dollars, since reports of good returns were current. The discoverers, reportedly halfbreed Indians, worked their ground for two summers without news of their find getting abroad. After word got out, the rush started and they sold out to McNamara Brothers for \$20,000. Spreen's (p. 11) report contains an estimate "that during the fifties and sixties more than one hundred thousand dollars were taken from this one claim." It is stated that pans of black sand from this claim yielded from 8 to 10 dollars each. Pardee (1934, p. 26) groups Whiskey Run with other beaches in his statement that "they are popularly reported to have yielded a large amount of gold."

The mining history of the various other southern Oregon beaches was

similar to that of Whiskey Run. First was the discovery, next the boom period when flush production was obtained, and then came the decline--sometimes rather quickly when workers encountered concentrations of heavy black sand\* which resulted in high mechanical losses of gold and in discouragement.

Since the boom period of the past century, sporadic attempts to work the black sand deposits for gold and platinum have been made in both Coos and Curry Counties, and on both the present beaches and the ancient elevated terraces. A typical operation on a present beach, as at Cape Blanco, is described as follows by J. E. Morrison (Oregon Dept. Geology & Mineral Ind., 1940, p. 81):

"The beach sands just south of Cape Blanco have been worked off and on for almost a century. For five years prior to March 29, 1938, the property had been operated by Carl Hopping. . . . It is said that Hopping was very successful, but most of his records as to production were lost in the Bandon fire. However, he did have records covering the period from January 4 to July 8, 1937, during which time he ran approximately 700 yards of sand. His mint receipts amounted to \$1,650.32. Platinum and osmium amounted to \$1,133.93. The gold averaged about 860 in fineness."

Offshore beds: A characteristic of the present beaches in relation to their economic importance is that they are transitory, and may vary in volume and distribution with the seasons and weather. A heavy storm may pile up sand from offshore beds on the beach, and another storm under different conditions may return the sand to the ocean. Thus the difficulty of estimating the volume and mineral content of sand on beaches is evident. Whether or not a feasible plan to recover economic minerals from offshore beds may be developed is problematical. If all the economic minerals could be recovered and sold, such a project could have future commercial possibilities.

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\* The principal original source of the heavy minerals such as gold, platinum, chromite, magnetite, ilmenite, olivine, garnet, and zircon found in southern Oregon beaches, was the Klamath Mountains. Gold occurs in veins in the rocks, and chromite, platinum, olivine, and other common heavy minerals are genetically related to the large bodies of peridotite and serpentine in the Klamath Mountains. Erosion breaks down these rocks, and the streams transport the resulting sands and gravels toward the ocean. Finally they become beach sands, where the heavy minerals collect in beds called "black sand" because they are predominantly black in color. It is not difficult for the placer miner to detect gold and platinum in a gold pan; the problem is to separate them from the other heavy minerals by methods available to small-scale miners. Losses of the metallics in tailings may be so large that profits disappear. Placer operations that succeeded in early days did so because the sands were so rich that, even though the losses were heavy, a profitable quantity of gold was recovered.

Distribution of black sand beds has been greatly influenced by changes in ocean level throughout geologic time, evidence of which is given by ancient shore terraces at several elevations. Black sand layers in these old terraces have been of considerable economic interest in recent times because of their chromite content.

Ancient terraces: Ancient elevated beach terraces contain black sand beds and, in places, gold and platinum metals. Before World War II, many attempts were made to work these deposits commercially. The remnants of these old mines may be found along the coast ranging from South Slough in Coos County to Gold Beach and beyond in Curry County (Figure 2). Many of them had interesting histories. One of the best known and typical of attempts to recover the precious metals from old beach terraces was the Pioneer mine on Cut Creek, about 5 miles north of Bandon in Coos County. It adjoins the Eagle mine on the south and since they were both on the same bed similar methods were used in treatment. Following is a description by Pardee (1934, p. 38) of one of several attempts to mine the deposit.

"The pay streak is a layer of black sand 3 feet or more thick, the richer part of which was mined through drifts said to have been made more than 60 years ago. Some of the mining timbers as well as an occasional huge log of drift wood are exposed by the present workings. Samples of the black sand remaining averaged about 3 percent of magnetite and 55 percent of chromite and ilmenite together. Gold and platinum alloy were being recovered by sluicing. A sample of the platinum alloy as determined by a spectrographic examination by George Steiger in the laboratory of the United States Geological Survey is composed of a relatively very large amount of platinum and smaller amounts of iridium and ruthenium. It contains in addition a possible trace of rhodium but no osmium or palladium.... A sample from a hole 3 feet deep at one place contained 4 percent of magnetite and 60 percent of chromite and ilmenite. It is said that the tailings in the Lagoons contain unrecovered gold and platinum..." The thick overburden of barren gray sand (thicker than indicated by Pardee) was a great drawback, also the quantity of minable reserve was limited. The tailings flowed down Cut Creek and were impounded in a basin called the Lagoons, from which they were mined for their chromite content during World War II.

Some of the other early-day black sand mines on elevated terraces, named from north to south, were the Chickamin, Rose, Eagle, Iowa, Geiger, Butler, Madden, and Peck.

#### Lode mining in southern Oregon

Earliest mining in California and Oregon meant placer mining. First there were the high-grade stream gravels, which gave rich returns and generated an influx of miners. The best gravels were exploited relatively soon. Some of the miners moved on to other camps. Others, especially those with families, stayed on to build communities and become permanent residents. They also began to search for the lodes or veins which, in the process of weathering and erosion, formed the placer deposits.

Southwestern Oregon had some fame among prospectors and miners as a

"pocket" country, that is, a region where rich concentrations of lode gold were sometimes found, usually as near-surface deposits. Many of these were discovered in Jackson and Josephine Counties down through the years. A class of prospectors known as "pocket hunters" became adept at finding and following traces which might lead to a pocket of gold. Most pockets were small - worth only a few hundred or, rarely, a few thousand dollars, but always the incentive was sufficient to keep them searching. Naturally the locations of most of the smaller ones were never reported and remained nameless. However, some exceptionally large and rich pockets were discovered and became famous. In the aggregate even the smaller pockets created a great deal of wealth in periods of the state's history when even a thousand dollars meant wealth to a settler or, in later years, to a family out of work. This was especially true during the early 1930's, when there was much unemployment. Pocket hunting became popular and, along with small-scale placer mining, helped the free-enterprise people of southern Oregon through a difficult period.

The discovery and development of lodes is generally more complicated and costly than the same undertaking for placers. Excavations in the form of cuts, tunnels, shafts, and various other underground workings in rock must be opened, involving much labor and the expenditure of time and money, hence the term "hard-rock miners."

Over the years many gold lodes were discovered in southwestern Oregon - too many to list here. Most of these were closed because of economic conditions or because of government restrictions. A few of those representative of gold mining (see Figure 1) are briefly described below.

**Benton Mine:** The mine, owned by the Lewis Investment Co., Portland, is on Drain Creek about 21 miles southwest of Glendale in secs. 22, 23, 26, and 27, T. 33 S., R. 8 W., Josephine County. Eight patented and 16 unpatented claims are included in the Benton Group. Joe Ramsey made the discovery in 1893. Mr. J. C. Lewis acquired the property in 1894 and developed it until 1905, completing approximately 5,000 feet of development work, at which time the mine was shut down. When the price of gold was increased in 1934, the mine was reopened and development work was resumed. A cyanide plant was installed and production maintained until April 15, 1942, when government regulations forced the closing down of mining and milling operations. Between 1935 and 1942, including time spent on exploration and construction, ore mined and milled totaled 64,282 tons averaging \$8.55 for a gross value of \$549,414.00. All development rock high enough in value to pay milling cost was sent to the mill rather than to the waste dump. About 10,000 lineal feet of work was done in the Benton mine proper, and about 1,150 feet on adjacent claims.

Ore bodies were formed in quartz veins by replacement in a quartz diorite or granodiorite stock which is in contact with metavolcanics and greenstone on

the east. Eight veins have been found on the property. The main Benton vein has been explored and mined through the Kansas adit for an over-all strike length of 2,000 feet trending N. 20° to 40° E., and for 600 feet in depth. The main ore shoots were formed within a network of intersecting veins related to premineral faulting, and their emplacement was governed by structural control. The ore bodies have a pronounced rake (inclination in the plane of the vein) to the south. Minor postmineral faulting has been encountered but nothing that presented a serious problem.

On the bottom level (1,020) development revealed ore of better grade than the average value of ore mined in upper levels. A drift on the Louisiana No. 1 vein, 200 feet long, with a strike N. 80° E. and dip of 55° N.W., to its junction with the Benton Vein showed ore which averaged \$25 a ton for widths of from 2½ to 3 feet, with the face still in ore when work stopped. A winze on the 1,020 level sunk on the Benton vein from a point 50 feet south of the Kansas crosscut to a depth of 64 feet was channel sampled at about 5-foot intervals in both compartments of the winze. The north compartment samples averaged about \$40 a ton for 4½ feet average; the samples from the north compartment averaged about \$18 a ton for approximately 5 feet average width\*.

The cyanide plant of 40 tons capacity was completed in 1937 and enlarged to 60 tons capacity in 1940. It incorporated a counter-current system using Dorr thickeners, Dorr agitators, an Oliver continuous filter, together with Merrill-Crowe precipitation equipment. Reportedly mill recovery was about 85 percent, which could be increased to 90 percent if changes indicated by the operating experience were made. An adequate water supply was obtained from Drain Creek. Diesel power was used.\*

It may be noted that in 1941 the Benton Mine had the largest individual payroll in the county.

Ashland Mine: Owners are Fred and Dewey Van Curler, Ashland, Oregon. The mine area comprises 276 acres of patented ground situated about 3 miles northwest of the City of Ashland in the E½ sec. 12, T. 39 S., R. 1 W., Jackson County, at an approximate elevation of 3,500 feet.

The mine was located in 1886 by William Patton (Burch, 1942, p. 105-128) and was active almost continuously until 1902 when the shaft reached a depth of 900 feet. It was closed down because of litigation with owners of adjoining claims and was not reopened until about 1932 when P. B. Wickham became manager. A 10-stamp mill operated by electric power was installed.

Total development is approximately 11,000 lineal feet and includes two shafts, an adit, raises and drifts. A depth of 1,200 feet on the dip of about 45° was reached. Reportedly (Oregon Dept. Geology & Mineral Ind., 1943,

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\* Elton A. Youngberg, written communication, 1963.

p. 24) several veins have been found but only two have been explored. The one on which most of the work has been done represents a fissure filling of quartz and brecciated granodiorite country rock. Two principal ore shoots have been mined. They show metallization of pyrite and metallic gold with occasional galena. Originally ore was graded as "shipping," which averaged about \$100 a ton (gold at \$20 an ounce), and "milling," which averaged about \$13 a ton. Mill concentrates assayed about \$75 a ton, although concentrate values of \$150 to \$350 have been reported. Value of ore and size of ore shoots are said to increase with depth. Up to 1933 total value of production was reported as \$1,300,000. From 1933 to 1939 production was reported to be steady but "modest," all from milling operations (Oregon Dept. Geol. & Mineral Ind., (1943), p. 25).

The 10-stamp mill had the usual amalgamation plates, a concentration table, and cyanide tanks. Most of the gold recovery was from amalgamation, with a small percentage from concentration. Total recovery was reported to be 90 percent. Cyanidation proved to be of little assistance.

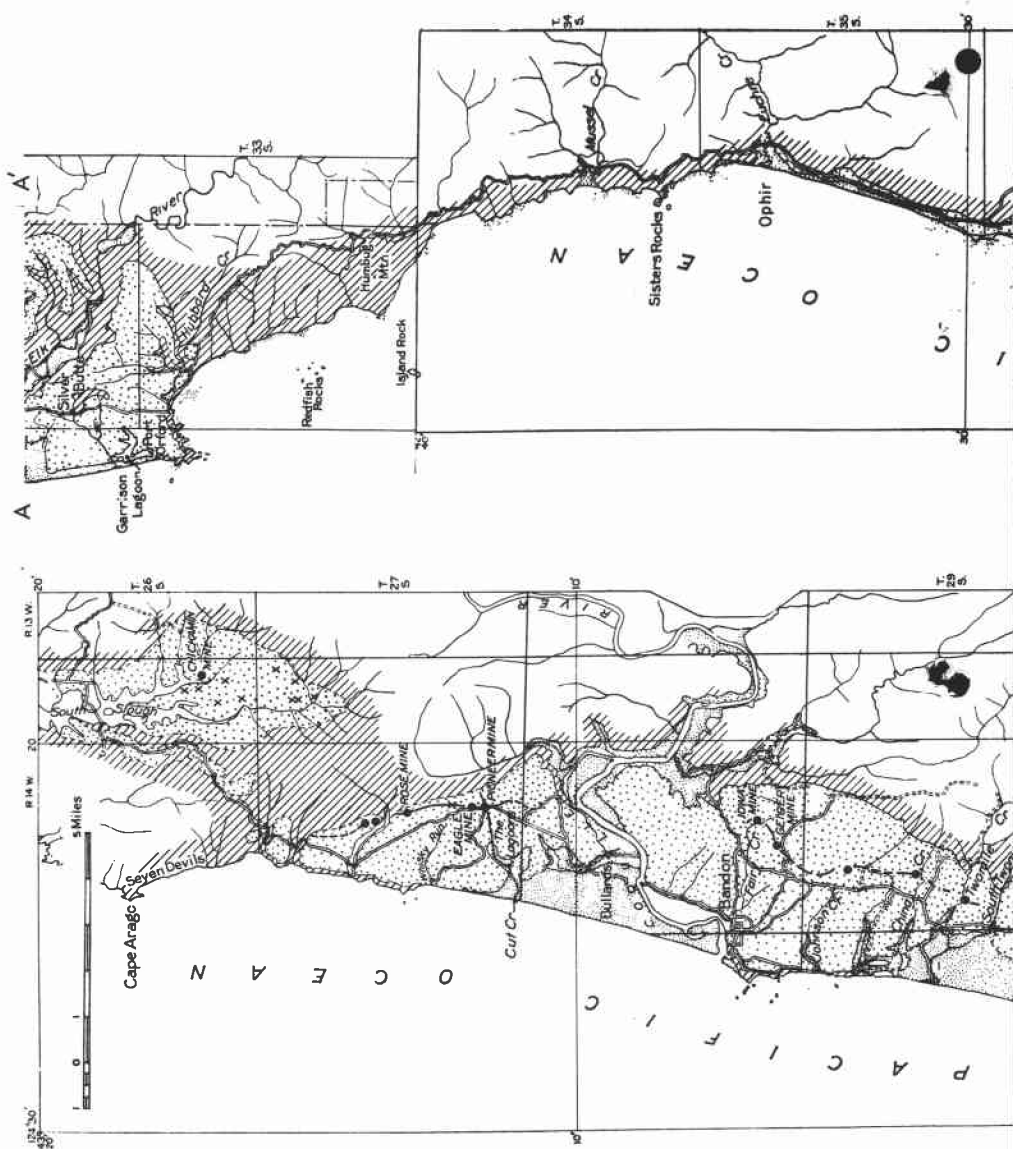
The owners used the mill for concentrating chrome ore during World War II.

Greenback Mine: The location is on Tom East Creek about 1.5 miles north of the old settlement of Placer and about 5 miles east of U.S. Highway 99 at the Grave Creek bridge. The property includes 243 acres of patented ground and 76 acres held by location. Legal description is secs. 32 and 33, T. 33 S., R. 5 W., and sec. 4, T. 34 S., R. 5 W., Josephine County.

Parks and Swartley (1916, p. 112-114) reported that the property was owned and operated by a New York group. In 1924 it was acquired by L. E. Clump, who held the mine until 1954. During part of that time the mine was operated by the following lessees: Finley and McNeil of San Francisco in 1937; P. B. Wickham in 1939; and in 1941 Anderson and Wimer, who discontinued work in 1942. The mine was purchased from Clump in 1954 by Wesley Pieren, Grants Pass, the present owner, who is carrying on some exploration.

The early history began with a rich surface discovery in 1897. The ore was first worked in an arrastra and later, after mine development work, a 40-stamp mill was installed, together with concentration tables and cyanide tanks. Capacity was rated at 100 tons per day. Electric power was brought in from the Savage Rapids Dam on the Rogue River.

Total underground development work aggregated about 7,000 lineal feet on 12 levels to a depth of 1,000 feet on the dip of the vein, which strikes about east and dips about 45° N. to the ninth level and 55° to 60° below the ninth. The country rock is greenstone and the quartz vein was productive for about 600 feet in length along the strike. Thickness averaged about 3 feet. Value was reported to average somewhat more than \$8 a ton (gold at \$20 an ounce). The vein was cut off by a fault on the west and by serpentine on the east. Commercial values were principally gold partly recovered by amalgamation.





Concentrates made up of chalcopyrite, pyrite, and some arsenopyrite averaged about \$75 a ton (gold at \$20 an ounce).

According to Mr. Wickham, production amounted to  $3\frac{1}{2}$  million dollars. Mr. Pieren reports that about \$100,000 was produced during L.E. Clump's ownership and that the average mill ore was \$13.70 a ton.

One of the largest placer deposits in the state was formed on Tom East Creek below the outcrop of the Greenback Mine. It operated as Columbia Placers for many years.

**Sylvanite Mine:** The property is in sec. 2, T. 36 S., R. 3 W., about 3 miles northeast of Gold Hill in Jackson County, and comprises 132 acres of patented ground which, the record shows, includes four full mining claims and two fractional claims. The owner of record in 1951 was George Tulare, Route 2, Box 371, Gold Hill.

The discovery and early history of the mine are not of public record. Various published reports show that, beginning in 1916, owners and operators were, successively, E. T. Simons, with Stone and Avena, Denver, Colorado, lessees who found scheelite (tungsten ore) associated with the gold ore; Oregon-Pittsburg Co. in 1928; Discon Mining Co., A. D. Coulter, Manager, discoverer of the high-grade ore shoot along the Cox Lyman vein in 1930; Western United Gold Properties; Sylvanite Mining Co.; and finally Imperial Gold Mines, Inc., in 1939. This last company built a concentrating mill of 140 tons daily capacity and cleaned out underground workings to expose the openings where the rich ore shoot had been found.

The Sylvanite vein or shear zone occurs between meta-igneous and meta-sedimentary (largely argillite) rocks. It shows intense shearing and alteration and is intruded in places by basic igneous dikes. It trends just east of north and dips southeasterly at about  $45^\circ$ . The Cox-Lyman shear zone strikes at right angles to the Sylvanite vein and stands nearly vertical. No certain sequence of faulting in the two shear zones has been established. Ore shoots are said to be from 5 to 12 feet thick and have averaged from \$5 to \$15 a ton. They have a gangue of quartz and calcite and carry galena, chalcopyrite, and pyrite. A fracture zone roughly parallel to the Sylvanite vein cuts the Cox-Lyman vein and at the intersection a rich ore shoot was found on the hanging wall, producing \$1,000 per lineal foot of winze in sinking 600 feet. Discontinuous pockets of ore were found in the hanging wall of the shoot for 200 additional feet of depth. The winze reached 900 feet below the surface. This ore shoot was reported to have yielded about \$700,000.

A total of more than 2,560 lineal feet of underground development work has been done. In addition, numerous surface pits and cuts, now caved, have been dug by pocket hunters.

Seemingly little effort has been made to explore the scheelite possibilities, although it is known that the Imperial Gold Mines Co. had such plans. They

ran into difficulties underground because of caving ground, and presumably war-time conditions finally forced them to close down.

**Hicks Lead:** The first gold "pocket," also the first gold lode, discovered in Oregon was the so-called Hicks Lead found on the left fork of Jackson Creek above Farmers Flat in Jackson County. Sonora Hicks, the discoverer, working with his brother, took out \$1,000 in two hours, according to the Jacksonville Sentinel of that time. Walling (1884, p. 328) relates that Hicks sold his claim to Maury, Davis, and Taylor, owners of the adjoining claim, who then built the first arrastra in Oregon in order to treat the Hicks ore. The yield from the Hicks claim was \$2,000.

**Gold Hill Pocket:** The most famous of all was the astonishing Gold Hill Pocket, discovered in January, 1857 by Emigrant Graham and partners near the top of the hill 2 miles northeast of the town of Gold Hill in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 14, T. 36 S., R. 3 W., Jackson County, at about 2,000 feet elevation. According to available records (Oregon Dept. Geology & Mineral Ind., 1943, p. 70), the outcropping rock was so full of gold that it could scarcely be broken by sledging. The crystallized quartz associated with the gold was not honey-combed as it generally is where sulfides have leached out of the rock, leaving sprays of gold in the cavity. The gold in this pocket went down only 15 feet and occurred in a fissure vein striking about N. 20° W., dipping about 80° E., with a vertical gash vein cutting the fissure nearly due east. The fissure vein averages 5 feet between walls with 1 to 2 feet of gouge on the footwall, which contains calcite and quartz mixed with a little pyrite, in spots containing free gold. A mass of granite, about 5 feet wide by 200 feet long, crops out in the footwall side of the fissure. The country rock is pyroxenite. It is said that this pocket produced at least \$700,000.

**Revenue Pocket:** Another large "pocket" was named the Revenue. It was found and mined out (date unknown) by the Rhotan brothers 5 miles south of Gold Hill on Kane Creek in sec. 11, T. 37 S., R. 3 W., Jackson County, at an elevation of about 2,570 feet. Reportedly it produced \$100,000 (Parks and Swartley, 1916, p. 193) and was one of the larger pockets discovered by Rhotan brothers, who evidently were well-known pocket hunters.

**Steamboat Pocket:** This important enrichment in a network of quartz veins in andesite was found in the Steamboat mine about 1860. The location is on Brush Creek, a tributary of Carberry Creek, 2 miles west of Steamboat and 42 miles by road west of Medford. It is in sec. 20, T. 40 S., R. 4 W., Jackson County. The property has had several names and once was known as the Fowler mine, derived from the name of one of the owners of the Fowler and Keeler Trading Post on the Applegate River, 17 miles distant, and under this name

was a litigant in long and costly law suits over title. The yield from the pocket (Parks and Swartley, 1916, p. 212) is reported to have been \$350,000.

Johnson and Bowden Pockets: Two pockets in the Jacksonville locality are described under the name of Town Mine by Parks and Swartley (1916, p. 136). Date of discovery and extraction is not recorded. The deposits were discovered at points about 600 feet apart, approximately 2 miles west of the reservoir on Jackson Creek in sec. 25, T. 37 S., R. 3 W., Jackson County. The Johnson deposit yielded \$30,000 and the Bowden \$60,000.

Roaring Gimlet Pocket: Diller (1914, p. 46) described a rich deposit known as the Roaring Gimlet pocket, discovered in 1893. It was found at the mouth of China Gulch, Jackson County, about  $2\frac{1}{2}$  miles south of the Gold Hill pocket. The high-grade ore was apparently liberated from oxidized sulfides, leaving very little quartz, and formed an enriched gouge seam from a quarter of an inch to 6 inches thick between a porphyry footwall and a slate hanging wall. At a depth of 40 feet the vein continued down between dioritic walls and contained some small kidneys of calcite and quartz with pyrite - a gangue looking very much like that of the Gold Hill pocket. Several small pockets were extracted just east of the large Gimlet pocket. The combined yield is said to have been \$40,000.

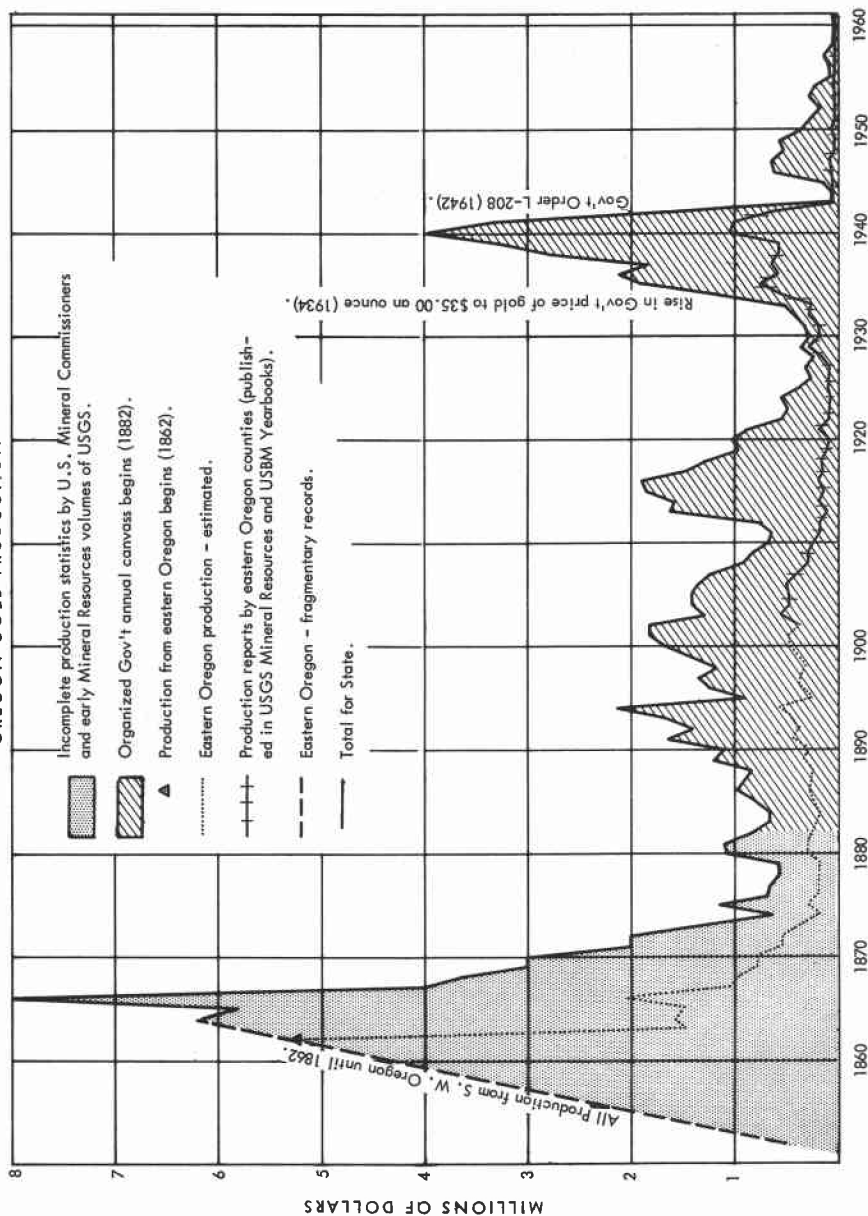
Jewett Ledge Pocket: Known as the Jewett Ledge, this pocket was found in 1860 by the Jewett brothers on the south side of the Rogue River in sec. 27, 28, 33, and 34, T. 36 S., R. 5 W., Josephine County. As reported by Walling (1884, p. 330), the Jewetts were "signally successful" and took out \$40,000. It is said that they exhausted the deposit and ceased work. In later years considerable work was done on the property and seven claims were patented.

Robertson Mine: In more recent times an underground high-grade lens of gold ore was found at the Robertson (or Bunker Hill) mine in March, 1940, somewhat different in character from the surficial deposits previously described. The mine owners, William Robertson and Virgil E. Hull, struck an enrichment in their quartz vein, and took out 640 ounces of gold valued at about \$20,480 in four days of mining. The mine is west of Galice in sec. 2, T. 35 S., R. 9 W., Josephine County, at an elevation of 4,500 feet. A specimen of this high-grade ore is on display in the Portland museum of the Oregon Department of Geology and Mineral Industries.

### Production

Early-day statistics of gold production in Oregon were meager and, for the most part, based on records of agencies such as Wells Fargo, banks, and

# OREGON GOLD PRODUCTION



post offices which handled gold shipments to the San Francisco Mint. An organized canvass of mineral production in Western States by the Government began about 1880, although U.S. Mineral Commissioners J. Ross Browne (in the 1860's) and Rossiter W. Raymond (in the 1870's) reported on the mineral industry in Western States and included incomplete production statistics. These pioneer efforts grew into the reliable annual Mineral Resources volumes of the U.S. Geological Survey, the statistical duties of which were, in 1933, assigned to the U.S. Bureau of Mines. Since then mineral industry statistics have been assembled and published annually in the Bureau's comprehensive Minerals Yearbook.

Figures for annual production of gold in Oregon, beginning in 1881, are believed to be reliable. However, production statistics segregated by counties were not published until 1902. Thus, any estimate of gold production for southwestern Oregon for the period 1852 to 1902 must be based on sketchy reports of the U.S. Mineral Commissioners, plus some arbitrary assumptions noted below.

#### Gold Production of Southwestern Oregon

Periods		Ounces (Troy)	Dollars
1852-1862 (estimate based on early reports)	(a)	1,560,000	31,200,000
1863-1901 (estimated by assuming a fixed ratio of production between the total for the state and that of southwestern Oregon)	(b)	943,000	18,800,000
1902-1933 (U.S.B.M. records)	(c)	495,590	12,670,000
1934-1942 (U.S.B.M. records)	(d)	183,900	6,436,000
1943-1961 (U.S.B.M. records)	(e)	12,520	438,000
Total 1852-1961		3,195,010	69,544,000

(a) Mostly from U.S. Mineral Commissioner's and U.S.G.S. Mineral Resources reports, which are fragmentary. Undoubtedly, some Oregon production was credited to California, because all the gold produced was shipped to the San Francisco Mint, and the records of origin were some times questionable. This period was before any production was reported from eastern Oregon. Value is calculated at \$20 an ounce.

(b) After 1901, production records are authentic, both for the state's total and for southwestern Oregon. An over-all ratio for these two production units was calculated for the period 1902 to 1942 (Order L-208 closed gold mines), and this calculated ratio was arbitrarily applied to production for the period 1863-1901 in order to translate it into production for southwestern Oregon. As has been stated, no reliable records for southwestern Oregon are available for this period, but the corresponding figure for the state's total production is a fair approximation, and accurate after 1880. The ratio was 4.2:1 and 4:1 was used to obtain the estimate of southwestern Oregon production for the period 1863-1901.

(c) Authentic records from U.S.B.M. Ounces into dollars at \$20 per ounce.

(d) In 1934 the government price for gold was raised to \$35 per ounce.

(e) The effect of Government Order L-208, promulgated at the beginning of World War II in 1942, is strikingly shown by the production record.

As gold was not discovered in eastern Oregon until 1862, the reports of production in the state from 1852 to 1862 represent production from southwestern Oregon, except a very small amount from camps in the Western Cascades. This early 10-year period, of course, included the large flush production which may have been as much as two-thirds of the total for the 50-year period, 1852-1902. Gold production in southwestern Oregon from 1852-1961 is summarized in the accompanying table and graph.

### Outlook

What is the outlook for gold mining in Oregon? Prospects for any change in economic conditions that would narrow the gap between high operating costs in gold mining on the one hand and the fixed government price on the other look rather bleak. No matter what else may happen other than a deep depression, high costs, the principal element of which is labor, are here to stay. Then how about a rise in the price of gold? Economists do not agree on the effects of such a change, and as a matter of policy, official Washington must oppose it very definitely.

An uncertain element in this murky situation is the effect of our continuing loss of gold because of the unfavorable balance of payments in our international trade. But one thing is certain. There is a limit below which our gold stock may not go without destroying confidence in the dollar. What is that limit? Probably no one knows, and Washington doesn't like to talk about disagreeable subjects.

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## DESCHUTES COUNTY BULLETIN PUBLISHED

"Geology and Mineral Resources of Deschutes County, Oregon," by N.V. Peterson, E.A. Groh, E.M. Taylor, and D.E. Stensland, has just been published as Bulletin 89 by the Oregon Department of Geology and Mineral Industries.

For the past 40 million years, Deschutes County has had a complex history of volcanism. The products of these eruptions, particularly the more recent ones, are basic to the economy of the County: The unique volcanic scenery promotes recreational expansion, while the abundance of construction materials satisfies the ever-increasing urban development. As population and land use increase, however, the knowledge of the locations and extent of the resource materials becomes mandatory in order to conserve and plan for the future.

The 66-page bulletin is illustrated and includes a geologic map of the County, larger scale geologic maps of the Bend and Redmond areas, and a locality map of mineral resources.

Bulletin 89 is for sale at the Department's offices in Portland, Baker, and Grants Pass. The price is \$6.50.

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## WESTERN CURRY COUNTY LAND USE GEOLOGY STUDY

"Land use geology of Western Curry County, Oregon," the latest of the Department's bulletins on land use geology of parts of Oregon, has been published as Bulletin 90. Authors are John D. Beaulieu, Department stratigrapher and land use geologist, and Paul W. Hughes, consulting geologist.

The study concerns geologic processes in western Curry County as they relate to land use, the environment, and land management. Hazards include flooding, ocean erosion, stream and slope erosion, landsliding, and earthquake potential. Mineral resources are reviewed briefly. The report is written for the use of planners, resource specialists, and the general public.

The 148-page report, including 12 maps in color at a scale of 1:62,500, is available for \$9.00 at the Department offices in Portland, Baker, and Grants Pass.

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