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STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

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A REVIEW OF OREGON MINING IN 1949

Introduction

Mining in Oregon during 1949 was characterized by the preponderence of production of nonmetallics. A further falling off in metal mining occurred when the Bonanza quicksilver mine closed down late in the year. Four dredges in eastern Oregon accounted for nearly all of the gold production of the State. There was a small production of metals, mainly gold, from the Bohemia district in Lane County and the Buffalo mine in Grant County. During winter months when water was available about 40 hydraulic mines, principally in southwestern Oregon, operated into 1950. A new hydraulic mine was put into production in the old mining district of Spanish Gulch, Wheeler County.

Metals

Gold, silver, copper, lead, and zinc

Metal mining continues to decline because the profit incentive required to find and develop mines is almost completely lacking. The low, fixed price of gold measured by what the dollar will now buy in labor and goods makes gold mining unattractive.

Four dredges worked in Baker and Grant counties throughout the year. The Baker Dredging Company operated a bucket-line dredge in Sumpter Valley, Baker County; Porter and Company operated a bucket line on Clear Creek in Grant County; the Buffalo Dredging Company operated a bucket line about half the year at Mount Vernon on the John Day River in Grant County; and Calhoun & Howell worked a dragline dredge on the North Fork of the John Day River in Grant County.

Only one lode gold mine, the Buffalo in Grant County, produced consistently throughout the year. Two mines, the Champion and Helena, in the Bohemia district of Lane County, shipped some ore and concentrates to the Tacoma Smelter. The Champion mill worked part of the time. Exploration was carried on at the Queen of Bronze, the Cowboy, and the Hamlin mines in Josephine County, and a small amount of copper ore was shipped from these mines to Tacoma.

Mercury

Especially since the war the small domestic quicksilver industry has been struggling to keep alive, hoping that Federal government policies in regard to imports would change so that a nucleus of a quicksilver industry could be maintained in the interest of national defense. One by one the mercury mines have shut down. The Bonanza mine, Douglas County, Oregon, was one of the standbys during the war and had been producing steadily although on a reduced scale since the war. It finally succumbed and closed down early in December. It seems unlikely that it would be practicable to reopen this mine, even under the pressure of a war emergency.

Quicksilver production in Spain and Italy has been encouraged by Government policies at the expense of our own production, and the United States has come to rely almost entirely on imports. For example, according to U.S. Bureau of Mines reports, domestic production in 1949 was about 9,400 flasks. Imports of mercury during the first ten months of 1949 amounted to 95,358 flasks, most of which was purchased by the Economic Cooperation Administration and placed in the Government stockpile. The domestic price was about $71 a flask of 76 pounds at the end of the year. This means about $35 a flask measured by the prewar dollar value. No domestic mine can break even at this price.

Chromite

All chromite mining in Oregon has ceased. One mine which struggled along until the middle of 1948 finally gave up the ghost. Its owner pulled the equipment and abandoned the underground workings, which are in serpentine and, without maintenance, will cave rather rapidly and thoroughly. He was unable to arouse any interest in his ore from the Government stockpiling agency although his output was in demand during the war as metallurgical chrome.

Nonmetals

The relatively high rate of production of nonmetallics in 1948 was continued, with some reduction, in 1949. The three portland cement plants at Oswego in Clackamas County, at Lime in Baker County, and at Gold Hill in Jackson County operated at capacity throughout the year. Diatomite quarried by Great Lakes Carbon Corporation at Terrebonne in Deschutes County continued to produce at capacity. Most of this processed material was used as a filter aid. Quartz and granite were quarried steadily during 1949 by the Bristol Silica Company, Rogue River, Jackson County. The output was used for poultry grit and foundry furnace linings. Dant & Russell, Inc., Dantore Division, continued to produce perlite plaster sand and also finished the installation of a million-dollar acoustical tile plant at the mine located on the Deschutes River in southern Wasco County. Dantore continues to be the only perlite produced in the Northwest. Other perlite projects are in the planning stage. The demand for lightweight aggregate in building blocks continued good in 1949, but use of haydite increased, probably at the expense of pumice. Six pumice producers operated consistently through 1949. Two of these producers started marketing a pumice plaster sand.

Development Work

In southwestern Oregon development work was undertaken in the area of the Gold Hill "pocket," Jackson County, where a lenticular body of molybdenite was uncovered in bulldozing.

A nickel deposit at the Shamrock mine in northern Jackson County was explored on the surface and by underground work by the U.S. Bureau of Mines. The Bureau's work at this property was a continuation of work started in 1948 following an investigation by the State Department of Geology and Mineral Industries. Ore consists of pyrrhotite carrying nickel, copper, and a small quantity of cobalt.

Early in 1949 scheelite was found in the granitic area near Ashland in southern Jackson County. Two shipments of the ore were made to a tungsten concentrating mill in California. The State Department of Geology and Mineral Industries is making an investigation of the area including topographic and geologic mapping designed to obtain, if possible, a structural pattern of the occurrences in order to assist prospecting. Results of this study will be published.

Alcoa Mining Company has continued to carry on exploration work of the ferruginous bauxite deposits in Columbia County but on a reduced scale. Most of the areas of interest have been checked by drilling and sampling. Alcoa continues to maintain its office and laboratory at Hillsboro, Washington County.

Oil prospecting was carried on during 1949 in the Harney Valley near Burns. The Weed and Poteet No. 1 was drilled by the United Company of Oregon to a depth of 6480 feet and abandoned. A fire destroyed equipment at this test early in December 1949. Previously the United Company had drilled to a depth of 4500 feet in Fay No. 1 and suspended drilling in favor of the Weed and Poteet No. 1. In December the I. W. Love Drilling Company started a test located about 15 miles southeast of Burns after doing some geophysical work.

Value of Mineral Production

Total value of Oregon's mineral production in 1949, according to a preliminary estimate made by the U.S. Bureau of Mines, amounted to approximately $20,680,000 of which about $20,000,000 was in nonmetallics. This compares with a total value in 1948 of about $24,980,000 with value of nonmetallics of about $24,350,000.

Construction fell off somewhat during 1949 which accounts for the decreased value of production of nonmetallics. The postwar boom in private building subsided to a large extent and construction financed by Government funds began to take up the slack. Near the end of the year Government-financed projects made up the major proportion of construction activity.

Mining Laws

During the past year the U.S. Bureau of Land Management has issued voluminous printed material and has held public meetings all designed to show alleged weaknesses in the United States mining laws. The Bureau and the U.S. Forest Service have combined in this endeavor. They have enlisted the support of logging operators, stockmen, and recreationalists in efforts to show the supposed need for changing the mining laws so that the Bureau and the Forest Service may obtain complete control of the surface of mineral land. They state that such control is necessary in order to put into effect the so-called multiple use of land.

Informed people with experience in mining and prospecting view these activities of the Federal bureaus with misgivings. Mining people, realizing the continued growth in Federal ownership of land and natural resources, see in this control of mineral lands the inevitable bad effects on an already sick industry - an industry which is vital to the country in time of war.

Outlook for the Metal Mining Industry

Metal mining in Oregon is at a low ebb. Gold mining was the backbone of Oregon's metal production in prewar days, but gold mining has declined to only a few operations since the war. The decline was caused partly by the ill effects of War Production Board Order L-208 which closed gold operations down without recourse in 1942, and partly by the fixed price of gold in relation to the low value of the dollar measured by what it will buy in labor and supplies. The conditions in Oregon reflect, on a smaller scale, those in California, Nevada, Utah, Colorado, and Montana. Similar discouraging conditions exist in other metal mining categories with the possible exception of copper.

Why is our domestic nonferrous metal mining industry in such a sad state? In the first place, known ore reserves were depleted during the war when mining was emphasized at the expense of development. Then there is little in the way of profit incentive offered to private capital to invest in new mining ventures. Risk capital has all but disappeared because of repressive taxation, Government regulations, and Government competition in the investment field. Note the recent announcement in the Mining World that the Miami Copper Company will finance a new $13,000,000 project northeast of Miami, Arizona, by means of an RFC loan. This old, established company would have no difficulty in financing the project from private sources, and it is perfectly obvious that a Government loan is a profitable deal for Miami stockholders. But what is the effect of such deals on private venture capital?

The closing of mercury mines since the war has focused attention on the loss of our small domestic strategic minerals industry because of inability of our domestic mines to compete with imported supplies, some of which are financed by United States funds in the interest of promoting foreign trade. Uncle Sam has become the banker for promotion of foreign mineral production which competes in the domestic market at a big advantage over our mines. Buying of foreign minerals for our strategic stockpile, and revaluation of foreign currencies in terms of the dollar have given foreign producers a preferred position in the domestic market. Besides mercury this advantage affects producers of such metals as lead, zinc, copper, tungsten, antimony, and chrome.

A few unbiased and informed people in government realize the serious situation of the mining industry and are greatly concerned, primarily because of the national defense angle. Efforts have been made and are being made to legislate new life into the industry, so far without success. Perhaps under present policies of government we must turn to subsidies to save the industry and turn our backs on private initiative and independence. It looks as if one of the last bulwarks of free enterprise is about to be breached. The result will probably mean government control of a mining industry made up of a few large companies. In this event, the small mine operator and the prospector will soon be only a memory.

F. W. L.

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FOSSIL TREE TO BE PRESERVED

The 30-million years old fossil tree in the roadcut at the east end of McCord Creek bridge, Columbia River Highway, is to be transplanted.

Relocation and widening of the Columbia River Highway between Dodson and Cascade Locks will destroy the site of the fossil tree trunk that has long been one of the many interest points of scenic Columbia River Highway. The tree trunk is to be moved to a viewpoint and historical monument site planned for an area about 1000 feet east of McCord Creek, according to Mr. Carl Peterson, Resident Engineer for the Oregon State Highway Department.

This tree was uncovered when the Columbia River Highway was first constructed, about 1914. A picture appearing in the November 1916 issue of The Mineral Resources of Oregon, publication of the Oregon Bureau of Mines and Geology, shows the tree to be about 8 feet high and 2 feet through. Weathering and souvenir collectors have reduced the tree to approximately one-half its original height. In an effort to protect it, the State Highway Department erected a fence around it.

Although the tree has a sign on it identifying it as a "Western Hemlock" there is some question as to the accuracy of this identification. The July 1948 issue of the Geological News Letter, monthly publication of the Geological Society of the Oregon Country, quotes Dr. George F. Beck, paleobotanist of Central Washington College of Education, as follows:

> "The wood structure places the tree in the broad category Cedroxylon which includes all fossil woods having a pinelike structure without the scattering resin canals. Modern hemlocks, firs, and golden larch belong to this group, with an outside possibility of cedar of Lebanon or the Chinese firlike Keteleeria being involved. What I can see of the ray detail almost surely excludes hemlock, so that fir or golden larch is the likely modern equivalent."

The rocks enclosing this tree belong to the Eagle Creek formation of upper Oligocene or lower Miocene age. The Eagle Creek formation is composed principally of volcanic agglomerates and tuffs and marks a period of explosive volcanic activity in Oregon around thirty million years ago. Undoubtedly the vast quantity of material ejected by the volcanoes engulfed the forests of the area and provided the necessary conditions for petrification. Fossil wood is common in this formation; within a few feet of this tree and in the same road cut is a smaller stump, and in the railroad cut just below the highway there is a log larger than the fenced-in tree. In Tanner Creek, just east of McCord Creek, fossil logs several feet long and as much as two feet in diameter have been found.

H.M.D.

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MOUNTAIN MINERALS

Perusing Rice's Dictionary of Geologic Terms recently we were struck by the numerous minerals which bore the prefix "mountain." Although mountain cork and mountain leather, varieties of asbestos, are fairly well known, some of the other "mountain minerals" were relative strangers. For instance, mountain flax, a fine silky variety of asbestos, mountain meal, a synonym for diatomite, and mountain milk, a very soft spongy variety of calcite, are followed in the dictionary by mountain soap, an unctuous variety of halloysite, and mountain tallow, a soft waxlike hydro-carbon. Not to be outdone by these, we also found mountain butter a hydrated aluminum sulphate, occurring in delicate fibrous masses or crusts, which in turn is undoubtedly surpassed in beauty by mountain crystal, a synonym for rock crystal, which is exceeded in intensity of color by mountain green, another name for malachite. There are even subvarieties of mountain minerals. Tucked away in the midst of the list we found mountain paper, a thin paperlike variety of mountain cork. We found one mountain mineral that had a cousin - mountain brown ore, which is another term for limonite used in Virginia. It is related to a much richer cousin called valley brown ore, comparatively pure hydrated iron ore found in the Valley of Virginia. Incidentally, valley brown ore is the only 'valley' mineral listed. Rice apparently avoided in-between geographical units, for we found only one "hill mineral" and that hardly meets the test, since it proved to be hillebrandite, which is a calcium silicate.

R.S.M.

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COAL SHORTAGE CHEMICALS FURNISHED BY GAS COMPANY

Portland Gas & Coke Company not only met northwest demands for its Gasco briquets during the coal shortage but also helped supply vitally needed chemicals to east coast industries.

Briquets which are produced at a rate of approximately 100,000 tons annually, were sent to southern and eastern Oregon, Seattle, Spokane, Pocatello, and Vancouver, B. C. Briquets also were shipped for gas-making purposes to Eugene, Tacoma, and Bremerton.

Benzol, normally obtained from coking coal in the steel industry was shipped east. It is used by manufacturers of detergents, paints, aniline dyes, and synthetic rubber. Gasco was able to divert benzol in tank car lots to the eastern market while at the same time meeting west coast commitments, including regular tanker shipments to the Rubber Reserve corporation plant operated by Dow Chemical Company at Gardena, California.

Benzol is produced during the manufacture of gas from oil, a field in which the Portland utility has pioneered. As a result, it is the nation's only large producer of oil-derived aromatic chemicals closely approximating those obtained from coal. Gasco's benzol production is approximately 5,000,000 gallons annually.

(From Commerce, March 10, 1950, published by the Portland Chamber of Commerce.)

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RESEARCH FELLOWSHIPS AVAILABLE

The University of Washington offers five fellowships in the School of Mineral Engineering for research in coal and nonmetallics, in cooperation with the U.S. Bureau of Mines. Fellowship studies start on July 1 or September 1 and continue for twelve months. Payments to fellows are made monthly and total $1,320 a year. Fellowships are open to graduates of universities and technical colleges, who are qualified to undertake investigations of research quality. Anyone interested should correspond with Dr. Drury A. Pifer, Director, School of Mineral Engineering, University of Washington, Seattle 5, Washington.

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CEMENT PLANT SHUT DOWN FOR SHORT PERIOD

The Pacific Portland Cement plants at Gold Hill and Marble Mountain quarry suspended operations in February because of bad weather and market conditions, Frank Sutcliff, local manager, said. Repairs to both plants are under way including installation of a dust eliminator at the Gold Hill plant. The majority of employees have been kept on full or part time work during the shutdown.

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A.I.M.E. INDUSTRIAL MINERALS CONFERENCE

The North Pacific Section, American Institute of Mining and Metallurgical Engineers, will be hosts at an Industrial Minerals conference sponsored by the three Northwest A.I.M.E. sections on April 6, 1950, at Seattle. Besides the North Pacific, Columbia, and Oregon sections of A.I.M.E. the Vancouver branch of the Canadian Institute of Mining and Metallurgy will join in sponsoring the regional meeting. Registration for the sessions will be in Room 211, Mines Building, University of Washington, beginning at 9:00 A.M., April 6. The technical sessions will start promptly at 9:30 A.M. A banquet will be held at the Edmund Meany Hotel, which adjoins the University campus, at 6:00 P.M. The following papers will be included in the technical session:

"Phosphate Industry in Idaho" - Earl W. Murphy, Boise, Idaho.

"Chemical Phases of the Elemental Phosphorus Industry" - J. G. Miller, Pocatello, Idaho.

"Techniques of Identification of Nonmetallic Materials" - Dr. J. I. Miller, Seattle, Washington.

"Prevention of the Hydration of Lime" - Harold Cahoon, Seattle, Washington.

"Nonmetallic Mineral Resources in Montana" - Dr. E. S. Perry, Butte, Montana.

"Perlite in Oregon, Washington, and Idaho" - Kenneth E. Hamblen, Portland, Oregon.

"Problems of the Silica Business in the Northwest" - F. I. Bristol, Rogue River, Oregon.

Two field trips are planned, - one to the Tacoma Smelter on Friday forenoon, April 7; the other will be a visit to the Bethlehem Steel plant in Seattle on Friday afternoon, April 7.

Reservations for luncheon and banquet on April 6 should be made in advance, preferably by April 3, to Drury A. Pifer, Secretary, North Pacific Section, A.I.M.E., School of Mineral Engineering, University of Washington, Seattle 5, Washington.

The Cordilleran Section of the Geological Society of America will hold a convention in Seattle on April 7 and 8, immediately following the Industrial Minerals conference.

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ALLOY TO EXTEND USE OF MAGNESIUM EXTRUSIONS

An improved magnesium extrusion alloy containing six percent zinc and six-tenths of one percent zirconium has shown increased toughness and fatigue strength, according to the March issue of "Magnesium."

Early experimental work in Germany and England on zirconium-containing magnesium alloys had been devoted mainly to casting alloys. Investigation at the Dow Chemical Company has been directed at developing an extrusion alloy with improved properties.

It was found that the high strength properties were due mainly to small grain size, insured and maintained by the addition of zirconium. Other factors contributing to strength properties are extrusion conditions, such as speed, temperature and reduction of cross-sectional area.

An outstanding application in the use of the alloy is in floor beams in the Douglas DC-6 airplane. While the first major uses of the alloy (ZK60) have been in the aircraft field, the requirements of strength, toughness, notch insensitivity and light weight are said to be applicable to truck and trailer floor sills and parts, textile machinery, materials handling equipment, and numerous other commercial applications.

(From E&MJ Metal and Mineral Markets, New York, March 2, 1950.)

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