STATE OF OREGON
DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES

PORTLAND, OREGON

THE ORE.-BIN

VOL. 10 NO. 2 PORTLAND, OREGON February 1948

STATE DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES
Head Office: 702 Woodlark Bldg., Portland 5, Oregon

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OREGON'S MINING INDUSTRY

By

P. W. Libbey*

Introduction

Mining in Oregon is highlighted by dormant metal mining and an upsurge in production of nonmetallics, especially those used in construction. Normally gold is the principal metal produced. Copper, lead, and zinc have always been minor and generally are by-products of gold ore shipped to custom smelters.

Oregon is one of the relatively few states which have commercial deposits of mercury and chromite, and, under the stimulus of war needs, production of both was greatly increased by a high price in a free market in the case of mercury, and by provision for prompt payment for ore delivered to Government depots in large or small lots at a price higher than peacetime in the case of chrome.

Mercury

With the war's end, Government agencies had no further interest in encouraging production of mercury and chromite, and producers were allowed to shift for themselves. What happened to the quicksilver market is too well known to need any review here. The current market price is about $79 a flask compared to $196 during the war, but operating costs have increased while the price has tobogganed. A few mercury mines are still struggling to keep their heads above water, mainly because the mines would be lost if they closed down.

Because of wartime restrictions and demands, there was insufficient labor at mercury mines, as at other metal mines, to carry on both mining and development work. Therefore production was emphasized and development suffered. At the end of the war when price support was removed, the mines had reserves depleted and were far behind in exploration.

In Oregon, mercury production increased from 4610 flasks valued at $347,917 in 1938 to a maximum of 9000 flasks valued at $1,671,000 in 1941. The better grade ore bodies were mined out and no new deposits were found to take their place. In 1941 there were 20 producers in the State, but more than 90 percent of the production came from five mines. Now there is only one producer, the Bonanza in Douglas County, with a production of only about 100 flasks a month. It is problematical just how long this mine will be able to continue under present conditions. If it closes down and the underground workings are not maintained, the mine will be lost. This condition is duplicated in mercury mines in California, Nevada, and Idaho. If we have another war, it would probably take at least two years to develop a sizable mercury production.

Chromite

The situation in Oregon chromite mining parallels that of mercury except that in peacetime we have always depended on foreign chrome, whereas we had a small profitable peacetime

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*Testimony presented to National Resources Subcommittee, Senator George Malone, Chairman of Senate Interior and Insular Affairs Committee, Denver, Colorado, February 5, 1948.

mercury industry before the war. Normally domestic chrome producers cannot compete with foreign chrome. During the war, chromite production and exploration were urged and encouraged by the War Production Board. About 30,000 tons of Oregon chrome was produced valued at nearly $1,000,000 and a large amount of exploration work was done on low-grade chromite sands in ancient marine terraces of the southern Oregon coast. When Government buying of chrome stopped, Oregon chrome mines closed down except the largest mine, the Oregon Chrome Mine, located in Josephine County. This property had shipped about 10,000 tons assaying slightly under 45 percent Cr_2O_3 to Metals Reserve Company depots during the war and because he had developed a substantial tonnage (for a chrome mine with lenticular orebodies) the owner was loath to close down. Therefore he has attempted over a period of months to get a decision from the Federal stockpiling agency as to whether that agency would purchase his chrome. At last account no decision had been obtained.

Gold

From the early 1850's to World War II gold was the most important in dollar value of the metals produced in Oregon. In 1940, which was the time of maximum gold production, Oregon produced 113,400 ounces valued at $3,970,000. Two-thirds of this production came from placers and one-third from lode mines. During 1940 there were 192 placer producers and 112 lode producers. Most of these operations were small; some of them were worked by hand methods, and many of the placers were seasonal - that is, they were worked only when they had water. Of course after L-208 stopped gold production, only a few thousand dollars a year was recovered from ores shipped to smelters until 1945 when relaxation of L-208 allowed resumption of gold mining. Gold production has increased from $48,000 in 1944 to approximately $650,000 in 1947, but this is far below the 1940 value, and there does not seem to be much hope of increasing gold production under present conditions. In 1946 the U.S. Bureau of Mines reported 37 placer producers and 23 lode producers. Most of these were either very small shippers or hydraulic operators who work on a seasonal basis. Several of the 1946 operators were not active in 1947. There is a definite lack of interest in starting new gold mines, even dredging enterprises, for reasons which have been repeated many times.

One factor which is clouding the gold dredging picture in Oregon is the growing opposition of the State Grange and some other groups to gold dredging. In the last Legislature, bills sponsored by officials of the Grange were introduced which, if they had passed, would have shut down nearly all the dredges in the State. Although this legislation was not passed, a Legislative interim committee was set up to hold hearings and to draw up a bill designed to regulate surface mining. This bill is to be submitted at the next Legislature. It is important to note that this legislation is concerned with surface mining even though all previous opposition has been aimed at the more restricted gold dredging. It appears that the Grange and some other agencies are opposed to anything in the way of surface mining that will destroy agricultural land. Possibly any low-priced grazing land could be called agricultural land. It has been stated by proponents of dredge legislation that all dredged land should be recoiled, this notwithstanding that more top soil is lost each year from Oregon farms because of improper farming methods than has been destroyed by mining of all kinds including dredging in the whole life of Oregon mining. In addition there is the serious soil erosion generally started by logging on steep slopes, also the erosion caused by overgrazing and the plowing up of marginal sod land. Even though the amount of farm land destroyed by dredging is but a drop in the bucket in percentage of the State's farm land, tailings from gold dredges, sometimes stacked along a principal highway, give a distorted picture of the amount of land taken out of production compared to loss of soil by erosion. The latter is generally gradual and therefore not appreciated by the general public. There is, I believe, another factor which enters into the picture - that is, production of gold has been propagandized as unimportant, even detrimental to our economy. Nothing could be further from the truth, but farmers who are now very prosperous have repeated the old catch phrase, "Why dig gold out of the ground in order to bury it at Fort Knox?" The opposition to gold dredging is confined to only a few states, but if regulation of all types of surface mining gains impetus, the matter will assume importance to the whole mining industry.

Nonmetallics

Oregon's nonmetallic mineral production is in a very healthy condition, principally because of the activity in the construction industry. In 1946 a canvass by our Department showed a value of approximately $11,700,000. The principal products are sand, gravel and crushed rock, portland cement, limestone, coal, quartz and silica sand, diatomite, pumice, and perlite. Pumice production has increased many fold since the war because of its use as a lightweight aggregate in building blocks. The perlite industry is new and promises to have a tremendous growth. Oregon has one substantial producer which is planning an immediate large increase in plant capacity.

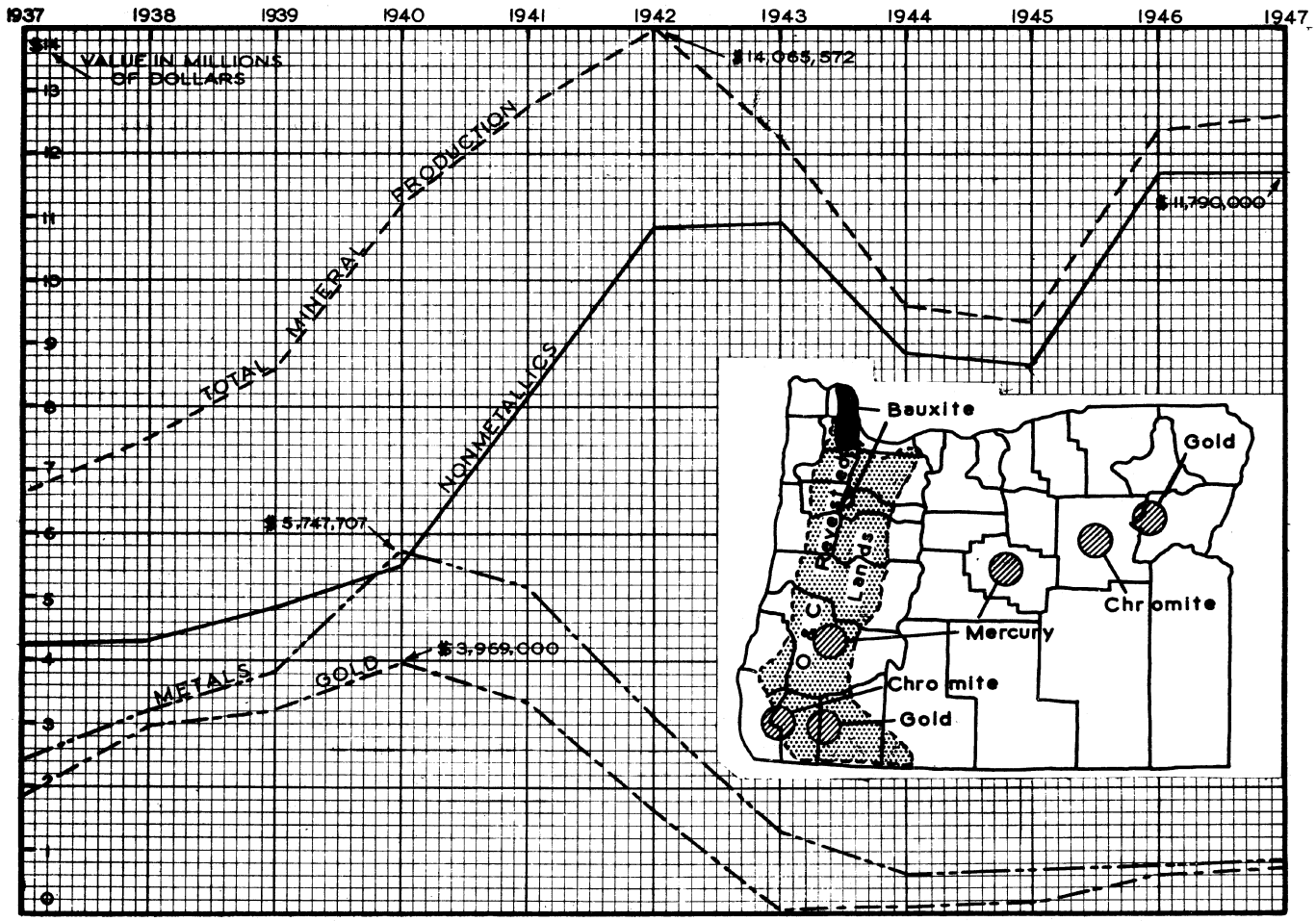
Bauxite

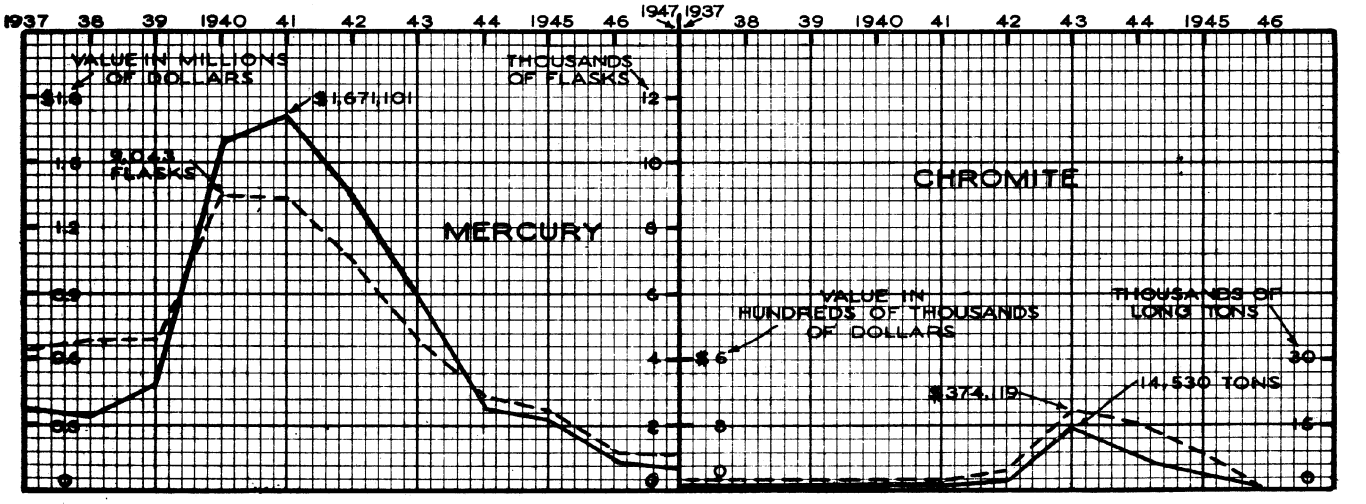
The mineral industry picture in Oregon is set off from other western states because of the discovery in 1943 of large reserves of high-iron bauxite in the northwestern part of the State. The Oregon Department of Geology and Mineral Industries was instrumental not only in the discovery but in the development of these widespread deposits. Alcoa Mining Company has been actively developing the area for over three years and is continuing drilling and sampling at the present time. From a national standpoint this is an outstanding mineral discovery because of the deficiency in bauxite reserves in continental United States. Although alumina is relatively low grade in these ores (approximately 35 percent), silica content is low - around 7 percent - which simplifies the treatment problem. Alumina may be recovered economically from this ore by either or both of two processes - the Bayer and the Pedersen. Using the latter, pig iron would be a by-product. No attention has been paid to these deposits by the "have not" people.

Oregon and California revested lands

All through the West, more and more potential mineral land has been withdrawn from the public domain by the Federal Government. This fact is very well known in detail to the Senate Public Lands Committee. In Oregon the matter is a live issue principally because the Interior Department decided in 1937 that the Oregon and California revested railroad grant lands comprising 2½ million acres of land, much of it known to be mineral land, in western Oregon should be withdrawn from mineral entry. These lands were originally granted to the Oregon and California Railroad in order to subsidize construction. In 1916 they were revested in the Federal Government and on June 9, 1916, Congress passed an act providing for the classification of these lands as timber lands, power-site lands, and agricultural lands, and it was expressly provided that the general mineral land laws should apply except to power sites. Therefore until 1937 the revested lands were open to mineral entry and location the same as other parts of the public domain. On August 28, 1937, a bill was passed by Congress which set up a program of sustained yield of timber on these revested lands. No mention was made in the legislation concerning application of the United States mining laws. However, after passage, the bill was interpreted by the Secretary of the Interior as excluding application of the mining laws to O and C land, and his decision declared that any mine locations made subsequent to August 28, 1937, would be invalid. In several sessions of Congress Senator Cordon and Congressman Ellsworth have introduced bills designed to reopen O and C lands to mineral entry with certain restrictions. So far these bills have not come out of committee. The lands contain deposits of various ores including bauxite, refractory clays, gold, silver, copper, lead, and zinc. Prospecting and mining would have no ill effect on the sustained yield program and there is no good reason why these lands should not be open to mineral entry except the wish of the Interior Department to place all Government mineral lands under a leasing system. This committee could further the program of encouraging mining development by urging passage of bills introduced by Senator Cordon and Congressman Ellsworth.

OREGON MINERAL PRODUCTION 1937—1947





Exploration incentives

Various other witnesses have advocated needed incentives designed to stimulate development and mining, particularly of marginal ores. Possibly much of the needed incentive is provided for in H.R. 2455, the Russell Bill, but tax relief incentive, such as is allowed new mines in Canada, would be highly desirable in the United States. From a long range viewpoint it seems to me that the Federal Government will have to subsidize prospecting and exploration by private enterprise in order to build up ore reserves. We cannot depend on the old time prospector any more. In addition to the Government departments concerned with ore finding, more direct assistance should be given prospectors as well as both small and large operators in finding and developing new ore bodies. From a long range viewpoint, overall demand for metals will increase faster than new reserves can be added in this country under our present system of taxation and high working costs. In addition, some stimulation should be given to prospecting for uranium and thorium. I do not like government subsidies, but there does not seem to be any way for private enterprise to meet the situation successfully unless the Government provides the needed incentive. This, I believe, could be done by direct or indirect subsidies to persons or groups who will aim specifically at finding and developing ore. In order to provide for national security the need for a subsidy is as great if not greater than is the need for subsidies to agriculture.

As has been stated many times, we should work to become as nearly self-sufficient in mineral supplies as is humanly possible so that we shall not be vulnerable in wartime. Another factor in the problem which should be carefully weighed by government officials is the probability that,as time goes on, foreign nations will become more and more reluctant to export strategic materials.

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OREGON PERLITE PRODUCTION SUBSTANTIAL

According to the State Department of Geology and Mineral Industries the new perlite industry of the Dantore Division of Dant & Russell, Inc., mined and milled 2,623 tons of raw ore in 1947. Of this quantity, 2,130 tons was furnaced and produced 68,771 bags of expanded perlite of 4 cubic feet each. In January 1948 the company produced 641 tons of raw perlite and shipped approximately 200 tons to a new Dantore furnace installation at Grand Rapids, Michigan, now being constructed. This is the first perlite ever shipped outside the State. The new furnace unit will be in operation sometime in March and at that time regular shipments of raw perlite will begin to Grand Rapids from the Lady Frances Mine of Dant & Russell, Inc., located on the Deschutes River at Frieda, a station on the Oregon Trunk Railroad about 14 miles south of Maupin, Wasco County.

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OREGON CHROME MINE RESUMES PRODUCTION

W. S. Robertson, Grants Pass, has resumed shipping chromite from the Oregon Chrome Mine on the Illinois River, Josephine County, after more than a year's development work. He has driven a 700-foot crosscut for a haulage tunnel which has tapped the ore body at a depth of approximately 500 feet below the surface. Shipments are being made to the Ohio Ferro Alloys Company in Tacoma at the rate of about 500 long tons per month. Twelve men on two shifts are now employed at the property.

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SOUTHERN OREGON LIMESTONE EXPLORATION

It is reported at Grants Pass that about 700 feet of diamond drilling has been completed at the Muck limestone property located on Cheney Creek south of Wilderville in Josephine County. The drilling was planned to check the quality of the stone at depth. The deepest hole drilled was reportedly 186 feet deep. A plant site has been prepared near Cheney Creek and a large Telsmith jaw crusher has already been installed. The bulk of the production will be sold for agricultural limestone but part will go for paper mill rock and part for calcium carbide.

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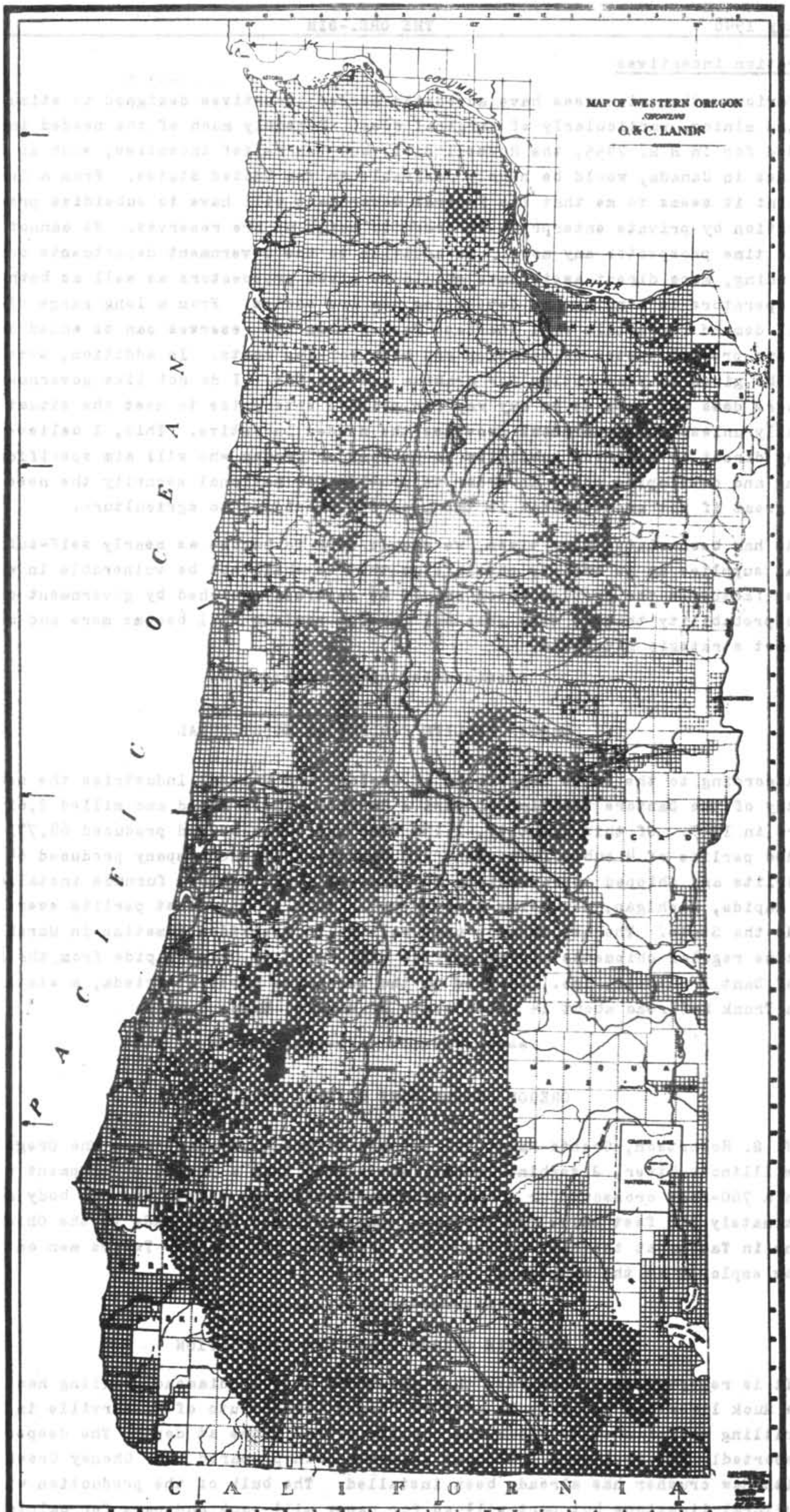
MAP OF WESTERN OREGON
SHOWING
O.&C. LANDS
COLUMBIA
PACIFIC OCEAN
CALIFORNIA

ELLSWORTH'S O&C BILL REPORTED FAVORABLY

Congressman Harris Ellsworth has stated in a letter to the Department that his bill, newly introduced this year, to open O&C lands for mineral entry and location was favorably reported to the House by the Public Lands Committee on February 10. The bill will be on the House Consent Calendar March 1 and possibly may pass the House at that time.

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SUMPTER VALLEY DREDGE SOLD

According to the Oregon Journal of January 30, the Sumpter Valley dredge has been purchased by the Baker Dredging Company composed of G. P. Lilley, M. A. Grant, and Harold Banta.

Except for the war period when gold mines were closed by Government order, the dredge has been digging steadily since 1934. It has 72 buckets, 9 cubic feet each, and is capable of handling about 280,000 cubic yards a month of Sumpter Valley ground.

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DEMAND FOR METALS CONTINUES STRONG

According to the E. & M. J. Metal and Mineral Markets, issue of February 19, 1948, the demand for copper, lead, and zinc continues active in spite of the unsettled condition of the market for agricultural commodities. The domestic copper market was firm at 21½¢ Connecticut Valley. There was some unsettlement in the scrap copper trade but this exerted no influence on the market for electrolytic copper. February deliveries, according to reports, should exceed 103,000 tons. Deliveries of refined copper to consumers in January amounted to 118,855 tons compared with 113,446 tons in December. Production of copper at domestic refineries in January amounted to 102,314 tons.

Market price for lead continues at 15¢ New York and there has been no let-up in the demand. Offers by producers of lead for March delivery have been slow, whereas consumer demand for April shipment of lead has been very active.

Galvanizers and the die-casting industry have been absorbing zinc at a continuing high rate. The base price for prime western was reported as firm at 12¢ East St. Louis. The export market was said to be unchanged at 12 to 12½¢ f.a.s. Gulf ports.

The quicksilver market was unsettled. Spot metal was available at prices ranging from $76 to $78 per flask. It is stated that on forward shipment of metal covering round lots it was possible to buy at a lower price, possibly $74 per flask.

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AIME INDUSTRIAL MINERALS CONFERENCE

The Oregon Section, American Institute of Mining and Metallurgical Engineers, is sponsoring an industrial minerals conference which will be held at the Multnomah Hotel, Portland, all day Saturday, May 8. Both the Columbia and the North Pacific Sections of the AIME have been asked to participate and to present papers. Co-sponsors of the Portland meeting are the State Department of Geology and Mineral Industries, the Raw Materials Survey, and the Industries Committee, Portland Chamber of Commerce. The technical program will include eight papers on industrial mineral subjects and time will be allotted for discussions. At the luncheon meeting a talk will be given by a prominent speaker. In the evening a banquet will be held at the Multnomah Hotel by the Oregon Section, AIME. Leslie C. Richards, mining engineer, Portland, is chairman of the committee on plans and preparations.

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PERLITE AS FILTER AID

In doing some metallurgical testing work with finely divided laterite in the Department chemical laboratory, considerable difficulty was experienced in filtering the material. Therefore different methods were tried in order to speed up the filtering operation. Expanded perlite (Dantore) was tried along with other agents and the following table shows some experimental results obtained in the attempt to find filter aids which would lessen the filtering time. Expanded perlite gave excellent comparative results but it is realized that additional work is required in order to verify these preliminary results, also that perlite might not be as efficient as a filter aid in other types of materials requiring filtration.

Time of filtering (minutes)	Straight ore	Ore + 2½ gms. perlite untreated	Ore + 2½ gms. perlite treated with H_2SO_4	Ore + 2½ gms. perlite treated with H_2O_2	Ore + 2½ gms. of a commercial filter aid	Ore + 2½ gms. CaO
Actual time of running through original 100 cc H_2O + 25 gms. ore	10	7	6	6	7	12
Actual time of running through 50 cc of "wash" H_2O	19	12	16	8	17	15
Total elapsed time of filtering 150 cc liquid	29	19	22	14	24	27

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LIGHT METALS AND NORTHWEST POWER

Seattle *** Light metal producers are not without their troubles, too (Refers to shortage of steel reinforcing bars, Ed.). The plan announced by Aluminum Co. of America last November for construction of a new plant to manufacture aluminum rod, wire and electrical transmission cables, remains in the blueprint stage because of the present power shortage.

According to C. S. Thayer, manager of the company's smelting works in Vancouver where the new plant was to be located, they cannot go ahead until they have assurance that they will get continuous power for the new unit and further commitments which will insure power for continuous production of virgin pig at the present level.

The proposed plant would require approximately 4000 kw daily in addition to the heavy demand made at the smelting works. Contract for Bonneville Power for the smelting operation has expired and a new one is being negotiated.

It is interesting to note that one of the important reasons for the power shortage in the Northwest is the heavy demands made by the several primary aluminum producers in this area and that the proposed new plant of Alcoa would make aluminum cable and aluminum wire for electric transmission lines.

It has recently been divulged here that Reynolds Metals Co. is preparing to reopen its primary aluminum production plant at Longview, Wash. in July and is already recruiting labor. This plant was closed down last year because of the power shortage and the backlog of aluminum pig this company had on hand. A new contract has been negotiated which will asure power for this producer after July 1.

From West Coast edition of the Iron Age, February 17, 1948.

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CLEARING HOUSE

CH-100: For Sale - Complete dragline unit including shop. Good operating condition. Reported capacity 3500 cu. yds. per day. For information write Ben Baker, 110 Union Ave., Grants Pass, Ore.

CH-101: For Sale - Lone Wolf group of 4 unpatented lode claims located 3 miles northwest of Marial, Curry County, Oregon. Development reported to consist of two 50-ft. tunnels, two shafts, and numerous open cuts. Hill H. Smith, Box 145, Gold Beach, Ore.

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