STATE OF OREGON
DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES

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NON-METALLICS IN OREGON

Oregon's 1940 non-metallic mineral production was valued at over $5,750,000, according to a report just issued by the State Department of Geology & Mineral Industries. This report, GMI Short Paper no.5, gives results of a survey made by C. P. Holdredge, consulting geologist, who was employed by the Department to do the field work and compile the report. Non-metallic minerals produced were sand, gravel, crushed rock, limestone, clay, silica, coal, diatomite, pumice, semi-precious gem stones, and mineral water.

The report analyzes the survey statistics and contains much information on Oregon's non-metallic mineral resources. The production of non-metals according to geographical districts of the state is discussed, and the statistics are summarized in a table.

The price of the report is 10¢. Copies may be obtained at the State Department of Geology & Mineral Industries, 702 Woodlark Building, Portland, Oregon, or will be sent postpaid to any address upon receipt of price. Copies of the report are available also at the State Assay Laboratories at Baker and Grants Pass.

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1940 PRODUCTION OF METALS IN OREGON

A preprint of the chapter on production of metals (except quicksilver) in Oregon, to appear in U.S. Bureau of Mines Minerals Yearbook for 1941, has just been released. Total value of production of gold, silver, copper, and lead in the State for 1940 was $4,148,271, representing an increase of 24 percent over 1939. Of the above metals, gold accounted for 96 percent of the total.

As in previous years, Baker County led in production of gold, silver, copper, and lead, followed by Grant, Jackson, and Josephine counties in the order named. Of the total, Baker County produced 43 percent, Grant 29 percent, Jackson 15 percent, and Josephine 9 percent.

Approximately 63 percent of the total gold production came from placers and 37 percent from lode mines. Dragline dredges recovered 49 percent of the total placer gold produced, connected-bucket dredges recovered 35 percent, 6 percent each by wet small-scale hand methods and non-floating washing plants

with mechanical excavators, and 4 percent by hydraulicking, drift mining and dry small-scale hand methods combined. The number of producing properties was 304. Of this number 10 accounted for 62 percent of the total gold production. These were, in order of value of output: Cornucopia Gold Mines, Sumpter Valley Dredging Co. (bucket-line), Northwest Development Co. (dragline dredge), Porter & Co. (bucket-line), Cougar Independence Lessees, Murphy Murray Dredging Co. (bucket-line), Ferris Mining Co. (dragline), Benton Mine, Timms Gold Dredging Co. (bucket-line), the B-H Co. (dragline).

According to reports received, Oregon placer mines consumed 1317 pounds of quicksilver during 1940. Average number of ounces of gold recovered per pound of quicksilver used was, according to the several classifications: for connected bucket dredges, 61 ounces; for dragline dredges, 51 ounces; non-floating washing plants with mechanical excavators, 13 ounces; hydraulic mines, 22 ounces; small-scale hand operations, 5 ounces.

Concentrating mills, most of which used flotation, treated 69 percent of the total ore and old tailings (105,469 tons, of which 3,219 tons was old tailings); amalgamation and cyanidation mills treated 23 percent; and 8 percent was shipped crude to smelters. 11,139 pounds of 91 percent sodium cyanide were reported consumed in recovering 3,811 ounces of gold and 305 ounces of silver from 16,420 tons of ore and 579 tons of old tailings. Indicated cyanide consumption would be approximately $1\frac{1}{2}$ pounds of the above grade cyanide per ton of ore and old tailings treated. 34 pounds of quicksilver were used in recovering 1,007 ounces of gold and 242 ounces of silver from 659 tons of ore and 250 tons of old tailings. A recovery of 29.6 ounces of gold recovered per pound of quicksilver used is indicated.

A table showing production data at various Oregon mines follows.

OREGON MINING OPERATIONS, 1940

Compiled from preprint of U.S.B.M. Minerals Yearbook Chapter on Oregon

County	Mining District	Name of Operation	Lode or placer	Tons or cu.yds. treated	Gold ozs.	Silver ozs.	Copper lbs.	Lead lbs.	Remarks
Baker	Baker	Midas Mine	hydraulic	20,000	304	22	-	-	
Baker	Bull Run	Ferris Mining Co.	dragline dredge	124,820	529	56	-	-	Production from Oct.3 to Dec.31
Baker	Cornucopia	Cornucopia Gold Mines Inc.	lode	49,060	22,570	120,743	122,448	24,650	2266 tns.conc., unit value based on net metal recovery as given in annual report
Baker	Cracker Creek	Consuelo Oregon Mines	dragline dredge	-	-	-	-	-	No production data given
Baker	Cracker Creek	Oregon Argonaut Gold, Inc.	lode	509	643	128	630	-	Operated 10 mos. then suspended
Baker	Cracker Creek	Lessees at Bourne	lode	3,948	2,173	5,992	7,211	-	Group incl.No.Pole, Columbia,Tabor Fraction, E&E
Baker	Greenhorn	Triangle Constr. Company	dragline dredge	-	--	-	-	-	No production data
Baker	Mormon Basin	Ancient Channel Syndicate	dryland plant	-	-	-	-	-	No production data
Baker	Sumpter	Sumpter Valley Dredging Co.	bucket line	3,311,112	7,697	1,663	-	-	
Baker	Sumpter	Northwest Development Co.	dragline dredge	1,210,080	6,934	1,776	-	-	Operated two draglines
Baker	Virtue	Columbian Mine	lode	822	320	74	1,363	-	
Douglas	Riddle	Lobicasa Co.	dragline dredge	220,586	-	-	-	-	Operated from 5/24 to 10/14; values not disclosed
Grant	Canyon	Ferris Mining Co.	dragline dredge	1,152,210	4,065	416	-	-	Operated 1/1 to 9/21 also prod.14 oz.Pt group
Grant	Canyon	Western Dredging Co.	bucket line	-	-	-	-	-	No production data
Grant	Granite	Porter & Co.	bucket line	-	-	-	-	-	No production data
Grant	Granite	Oroplata Mining Co	dragline dredge	-	-	-	-	-	No prod.data. Moved to Union Co. 8/20

County	Mining District	Name of Operation	Lode or placer	Tons or cu.yds. treated	Gold ozs.	Silver ozs.	Copper lbs.	Lead lbs.	Remarks
Grant	Granite	Intermountain Mining Co.	Dragline dredge	110,000	1,719	403	-	-	Operated from 5/10 to 12/31
Grant	Granite	Bellevue Mine	lode	4,800	811	40,444	8,243	33,732	1,001 tons conc.
Grant	Granite	Constitution Gold Mining Co.	lode	-	-	-	-	-	Shipped small quantity hi-grade gold ore. No detailed data
Grant	Granite	Cougar-Independence	lode	18,427	6,560	8,169	3,471	817	Includes 664 tns. shipping ore & 2066 tns. conc. from 17763 mill ore
Grant	Quartzburg	H.F.England Co.	dragline dredge	650,000	3,119	525	-	-	
Grant	Susanville	Timms Gold Dredging Co.	bucket line	-	-	-	-	-	No production data
Jackson	Elk Creek	Al Sarena Mines Inc	lode	-	-	-	-	-	No production data. Shipped lead conc. during January
Jackson	Gold Hill	Gold Hill Placers	dryland plant	-	-	-	-		No production data
Jackson	Gold Hill	Lance Mine	hydraulic & non-floating wash.plnt.	-	-	-	-	-	No production data
Jackson	Gold Hill	Murphy-Murray Dredging Co.	bucket line	627,261	4,253	616	-	-	
Jackson	Gold Hill	Pleasant Creek Mining Corp.	bucket line	-	-	-	-	-	No production data Operated short time
Jackson	Gold Hill	Lucky Eagle Mining Co.	lode	-	-	-	-	-	No production data. Suspended May 10. Opened to leasing
Jackson	Upper Applegate	Chas.C.Stearns	dragline dredge	-	-	-	-		No prod.data-worked Alaska of Ore., Belle, Holzang & Mee prop.
Jackson	Upper Applegate	B-H Co.	Dragline dredge	-	-	-	-		No production data
Jackson	Upper Applegate	Crescent Pacific	dragline dredge	-	-	-	-		Oper.on Matney, Offenbacher & Smith ranches

Jackson	Upper Applegate	Sterling Mine	hydraulic	-	-	-	-	-	No production data
Jackson	Upper Applegate	So. Oregon Mining Co.	dragline dredge	-	-	-	-	-	No prod. data. Worked Taylor property 11/14 to 12/31
Jackson	Upper	D. A. Wright	lode	50	678	170	-	-	Worked Steamboat Gr.
Jefferson	Ashwood	Oregon King Mines	lode	1,062	329	20,313	6,169	29,474	Started work 9/1
Josephine	Galice	Lewis Inv. Co.	lode	-	-	-	-	-	No prod. data. 3rd largest lode mine, 60 ton cyanide plant
Josephine	Galice	W. S. Robertson	lode	-	-	-	-	-	No prod. data. 5th largest lode mine, Amalgamated high grade
Josephine	Greenback	Blue Channel	hydraulic	-	-	-	-	-	no prod. data. Operated Jan. 1 to May 20
Josephine	Greenback	P. B. Wickham	lode	-	-	-	-	-	No prod. data. Worked Greenback Mine 1/1 to 9/10
Josephine	Waldo	Esterly Mine	hydraulic	-	-	-	-	-	No prod. data. Worked 1/1-7/1 and 10/20-12/31
Josephine	Waldo	Atlas Gold Dredging Co.	dragline dredge	-	-	-	-	-	No production data
Malheur	Malheur	Pacific Placers Eng. Co.	non-floating plant	-	-	-	-	-	No production data
Malheur	Snake River	J. M. Rhodes	non-floating plant	36,039	-	-	-	-	No further prod. data. Worked 4/28-8/3 Shovel & trucks
Union	Camp Carson	Oroplata Mining Co.	dragline dredge	-	-	-	-	-	No prod. data. Moved from Grant Co.; started work 9/23
Union	Camp Car.	F.M. Kronkhite	hydraulic	-	-	-	-	-	No production data

TALE OF A ROCK-HOUND
"Damp Landing"

by Earl K. Nixon

The big, twin-motored "bird of the Andes" zoomed in over a volcanic rim and settled nonchalantly astride the equator at Quito, Ecuador. We passengers hopped out. I retrieved my camera from the air-steward's locked pouch, and snapped a team of red bulls hitched to an American-made mowing machine that was trimming the grass of the airport.

Two hours later we dropped down at Cali, Colombia, for gas, and for a smoke under the trellis at the little airport, and for a cup of the coffee for which Colombia is famous. Then the big mainliner plane wheeled off across the bumpy field, kicked into the air, tucked its wheels back under its tail feathers, and headed nearly due north for the Panama Canal zone.

It was a mite under four hours' non-stop to Cristobal Colon at the north or Atlantic end of the canal. For three hours, coming down from the high plateau country, we had skimmed through broken clouds and bright sun, over mountain-and-jungle terrain peppered here and there with coffee plantations where the red volcanic soil peered up boldly as rents in Mother's emerald apron. Then we reached the deep jungle, the coast, and weather. Rain spattered on the thick windows. The coastline, sometimes invisible, cut in and out. We, following the controlled whim of a tiny needle, bored straight on, now out of sight of land.

The trim little steward brought our luncheon trays, - soup, mixed pickles, turkey sandwiches, celery, salad, coffee, and dessert; took away the trays again and stacked them in a cupboard at the rear of the cabin. I sat talking with John Dos Passos with whom I had travelled before. We spoke of books, of Spanish refugees, of a sunset at Guayaquil that he had captured with words, I only with color film. I wondered when he would buy a respectable-looking hat; he doubtless wondered why I went chasing all over Nature's rump looking in obscure places for mines and minerals.

Panama City and the Pacific end of the canal slid under us, vaguely outlined through the 5000 vertical feet of murk. Blasts of rain still rattled at the windows and an occasional gust of wind swung the big plane a few degrees off line to give a glimpse of green jungle and canal ribboned below. I turned back to finish a short story I had started the day before. Only two paragraphs remained.

The signal light at the front of the cabin flashed on. "Please fasten safety belts." The plane had started its long glide toward the Cristobal landing field. The latter, I had noted as we circled, was bounded on two adjacent sides by the jungle, on the other two by the water of the bay, now leaden because of the rain. I braced myself from unconscious habit as the landing wheels of the plane touched the rain-soaked ground, and glanced out the window at the airport buildings flitting by.--- Still a short paragraph remained of my story; I'd have time to finish that before the big plane could slow down, turn, and taxi back to the airport -- I thought!

It must have been only a matter of seconds later that the big plane "hit a mountain". I sunk a foot into the seat cushions as the ship bounced high in the air; then rose to the limit of my safety belt on the rebound. The tail of the

ship went up-- 60 degrees, it seemed-- as the nose went down. Then the ship leveled a bit as it surged forward under "gunned motors". In a split-second glance out the window I noted that we cleared only by yards, it seemed, the rip-rapped stone seawall, and that our speed had slackened but little since we first touched ground in landing.

Things happen so swiftly under such circumstances that time is not given for ordered thought. I do recall distinctly that there flashed through my mind the old remark "Things that go up must come down", and intuitively I braced my feet and stiffened the muscles across my abdomen under the tight seat belt.

We DID come down - with a hell of a splash - about 100 feet out in the ocean! There was a shower of hats, magazines, brief cases from overhead racks, and dirty pasteboard dishes and uneaten food from the opened cupboard at the back of the plane. No one had enough wind to scream; the jerk of seat belts into our stomachs on landing had taken care of that. I wriggled out of my seat belt and squeaked - of all the inane things -- "Well, folks, here we are!" One does crazy things under stress. Someone giggled, senselessly; someone hawhawed; and the spell was broken. Of the three women aboard, the one across the aisle was beginning to dig a big gob of potato salad out of her hair, another a few seats ahead was whimpering in Spanish; then all was confusion.

Would the plane sink? No, because the tail wheel was still on the bottom, the front of the ship floating. (The level floor of the cabin proved that). The little steward was cool as a cat's nose. He had been standing behind my seat, the farthest one back, and holding to Heaven knows what. Immediately he got the door open some way, and started kicking litter out into the sea. The tropical downpour continued.

The Captain (chief pilot), hair flying, and without neat cap or jacket, came charging back through the cabin. His lips were quivering as he grabbed me by the arm and said, "Why don't you start getting off?" But the woman still tussling with portions of the potato salad had brought me back to normal. I made some remark about not wanting to get out in the rain, and besides there were women to get off first. The Captain grinned, then remarked that he must have been a little excited. Who in his place wouldn't have been?

By that time some native peons had gathered on shore and began wading out. The water came almost to their armpits at the door of the plane as they carried us, partly on their shoulders and partly on their heads, back to land. I recall thinking what a bedraggled mess we were, dressed in tropical whites, clawing our way one at a time up over the seawall in the blinding rain, and into one of the waiting cars that had come down from the airport.

Then the payoff came! Ahead of me in the car into which I dived was a little Japanese woman, who with her husband had been on the plane since I got on at Lima. She was still quivering from fear and shock. She said to me in Spanish, "Do you speak English?" I replied that I did. She went on in Spanish, "Please tell the driver to go very carefully on the way to the airport for I am about to have a baby!" I carried out her request, the while wanting to say to her, "What a wonderful chance you missed ten minutes ago when the plane landed in the ocean!"

(The foregoing happened July 29, 1940. Although shaken up, none of the air passengers was injured. One of the crew went to the hospital with a crushed knee. $3000 or $4000 damage was done to the plane. Gunning of the motors by

the quick-thinking pilot doubtless kept the plane from turning over on its back. Had that happened the result would have been serious. I learned that the plane's brakes failed to work. We overran the short field, hit a drainage ditch, kicked into the air, then plopped into the sea.)

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SOMETHING ABOUT TALC

(The following was abstracted from an article by R. Crawford Lees in COMPRESSED AIR MAGAZINE for June 1941).

The United States produces annually around 200,000 tons of low-grade talc, and in addition it imports about 50,000 tons of high quality talc for cosmetics and other special uses.

Until recently the principal source of supply of high quality material was Italy. Since 1935 the higher grade product of India has come into our markets. The price of high grade talc ranges from $45 to $80 per ton wholesale.

Talc is a hydrous silicate of magnesia and is a definite mineral, consequently it should not be classified with soapstone which is a rock containing talc and other minerals. Talc from Dagotha, Jaipur State, India, the source of the high grade talc for importation into this country, has the following characteristics: hardness 1.2; sp.gr. 2.7; color, white to pale green; luster, pearly; chemical analysis, silica 61.8%; magnesium 31.4%; aluminum 0.8%; iron (as ferrous oxide) 0.7%; water of hydration and traces of alkalies, etc., 5.3%; lime, negligible.

The talc in the Dagotha deposits occurs in large pockets in limestone belonging to the Rialto series of rocks of pre-Cambrian age. Rialto limestone is a dolomite containing more than 42% of magnesium carbonate. The talc has been derived from dolomite by metamorphic processes resulting in the conversion of the carbonate into hydrous silicate.

The principal workings at Dagotha are in a large pit measuring about 300x150 feet at the surface and gradually tapering to the bottom, which is now about 200 feet below ground level. Until recently all operations - stripping, drilling and hauling - were done by hand. The broken material was carried away in baskets holding about 20 pounds each, on the heads of coolie women. The economic depth of manual operation has been reached and machinery including air compressor, jackhammers, hoist, track and cars is now used.

From the pit workings the talc is transported by truck to the mill at Rewasa. The material is first hand-sorted and the various grades put in stock sheds. The talc is withdrawn from storage as required and pulverized in a Raymond mill. The pulverized product is air-classified into three grades: grade 1 is 100% through 300 mesh; grade 2 is 100% through 200 mesh, and 97% through 300 mesh; grade 3 is 100% through 100 mesh and 30% through 200 mesh.

Uses According to Grade

Grade I	Grade II	Grade III
Cosmetics	Paper manufacture	Roofing material
Creams	Textile processing	Leather industry
Lotions	Rubber filler	Ingredient in special cements
Pastes	Paint filler	Wall tile and ceramic bodies
Toilet powder	Soap filler	Filler for sprays
	Facing foundry molds	Floor wax
	Food industry	Putty ingredient
	Packing for pharmaceuticals	Insulating compounds
	Filtering medium	

Massive talc is used for electrical insulation, gas burner tips, and in spark plugs. For these services it must have a fine-grained structure, have no cracks or cleavage planes, be devoid of iron and grit, and be easily machinable. Other uses for massive talc are in crayons and pencils; also molds for bottles, watch crystals, iron, brass, copper, and other metallic castings.

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DOMESTIC MERCURY PRODUCTION

Production of mercury amounted to 3600 flasks in May compared to 3500 flasks in April according to the U.S. Bureau of Mines MONTHLY MERCURY REPORT released July 3rd. Consumption was 3500 flasks compared to 3200 flasks in April and 4000 flasks in March. Consumers' and dealers' stocks at the end of May were 10,700 flasks, a reduction of 1000 flasks compared to the stocks on hand at the end of April. Producers' stocks amounted to 661 flasks at the end of May as against 459 flasks at the end of April. Exports in April amounted to 217 flasks; imports were 25 flasks.

Statistics on exports and imports for May were not available at the time of the release of the report. Market quotations in May ranged from $180.00 to $183.00 a flask; present market quotation (July 9th) is about $190.00 a flask.

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CLEARING HOUSE

H. L. Coombs, 1765 W.25th St., Los Angeles, Cal., states that "Unlimited capital available for the development or purchase of properties or tonnage of manganese, tungsten, antimony, quicksilver, beryllium, mica, fluospar, aluminum clays. Will also consider a well developed high or low-grade gold property".

H. Stein,530 Golden Gate Ave., San Francisco, Calif., states that he has responsible buyers for a large copper property.

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GOVERNMENT STOCKPILES

An act of Congress, approved by the President June 25th, 1940, caused the Metals Reserve Co. to be organized by the R.F.C. with a capital of $5,000,000 for the purpose of acquiring reserves of strategic and critical minerals. The following table gives information released in a report by the Federal Loan Administrator, concerning activities of the Metals Reserve Co. in acquiring metals and minerals as of April 30th, 1941.

	Tons delivered	Tons afloat	Tons on order	Amount
Antimony:				
Chinese	6,796	-	-	$1,903,000
Domestic	250	-	2,750	780,000
Asbestos	-	-	1,560	215,000
Chrome Ore:				
South African, etc.	12,457	11,950	138,593	4,039,000
Philippine	-	-	148,000	3,166,000
Copper:				
Latin American	106,722	-	1/ 393,777	140,110,000
Graphite:				
Madagascar	411	-	4,500	486,000
Manganese ore:				
Far Eastern	172,866	48,450	393,940	20,533,000
Latin American	16,149	-	439,945	15,023,000
Domestic	-	-	1,490,000	53,155,000
Mica	-	-	489	400,000
Tungsten trioxide, domestic	-	-	1,250	2,875,000
Tin:				
Far Eastern	30,375	6,275	2/ 113,350	168,000,000
Bolivian	-	-	90,000	100,000,000
Zinc	-	-	50,000	8,250,000
Antimony, wolframite, and tin, Chinese (respective quantities undetermined)	-	-	-	90,000,000
				$608,935,000

1/ Includes 198,160 tons for which purchase contract has not yet been executed.

2/ Includes 93,024 tons for which purchase contract has not yet been executed.

- U.S. Bureau of Mines
Mineral Trade Notes
June 20th, 1941.

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