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STATE DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES
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HISTORICAL NOTES

Eastern Oregon contains some gold-bearing alluvial areas which have received relatively little attention since early days of mining because of lack of easily obtainable water. One of these is in northern Malheur County as described below. The description is taken from the report of J. Ross Browne on the "Mineral Resources of the States and Territories West of the Rocky Mountains" for the year 1868. In this as in all other placer areas discovered in the pioneer days, the first mining was by small scale methods; later ditches were constructed, some of them over long distances, to supply water for hydraulicking. The water thus obtained was expensive and usually insufficient to supply all demands. When the richest and most easily accessible gravels were mined, activities languished. It would appear that some of these "high bars" now offer possibilities of profitable large-scale operation because of improvements in handling materials. Investigations of these areas seem to be warranted in the light of modern conditions.

Additional items from the above-named report are appended to give other sidelights on the Oregon picture as they appeared to pioneer writers and investigators.

Editor

Mineral Resources

The mineral resources of Oregon, though not so thoroughly prospected as those of adjacent States and Territories, are both extensive and valuable, and will no doubt at some future time form a prominent source of wealth.

Placer mining has been carried on extensively and profitably in the southern counties since 1852, and the mines of John Day and Powder river have yielded several millions of dollars since their discovery in 1860. The annual product of these mines, until within the last two years, has been from $1,500,000 to $2,000,000. In common with the surface deposits of elsewhere, there is a gradual diminution as the placers become exhausted. New discoveries, however, are being continually made.

Willow Creek Mines:

A writer in the Oregonian thus describes the mines in the Willow creek country, a region which has attracted considerable attention of late:

"Willow creek is a branch of the Malheur, having its source near the head of John Day's river, and, flowing near 100 miles in an easterly direction, discharges its waters into the Malheur about 15 miles above its junction with Snake river. Although a long stream, Willow creek, owing to the nature of the country through which it flows, much of it being a low mountain or hill country, destitute of timber, receives but few tributaries, and those few of small size. It is but a small stream in proportion to its length, and its surroundings are gloomy enough and differ but little from those of the Malheur, Owyhee, and other tributaries, on the south side of Snake river, between Farewell Bend and old Fort Hall.

"The mines on the tributaries of Willow creek were, I believe, first discovered in 1862, at what is known as Mormon or Humbolt basin, nearly at the same time, by one party from Salt Lake and another from the Humbolt mining region in Nevada. This is a small but rich camp, and only lacks plenty of water to render it one of the richest in the upper country. But water it can never have from any outside source, as the basin is higher than the source of any of the streams around it, so that the miners in that locality will have to be content with the scanty supply they now have for three or four months in the year.

"But what are known as the Willow creek mines are situated on the south slope of the divide, between the waters of Willow creek and Burnt river, and are now divided into Shasta, Easton, and Willow Creek districts.

"Shasta district comprises Shasta creek, Rich creek, Cottonwood creek, Quartz gulch, and many others. Mining has been carried on to some extent on Shasta creek for several years, but it was not until last summer that the district was prospected to any extent, or assumed any importance as a mining camp, or became known as such outside of its immediate vicinity. Since then greatly exaggerated reports have gained circulation in Idaho, Oregon, California, &c., as to the richness and extent of the mines. In most of the creeks and gulches in Shasta district good prospects have been obtained of rather coarse gold, mostly on the bed rock, which is usually of slate, and generally from 10 to 25 feet below the surface. Shasta, like most of mining districts, contains an embryo town which rejoices in the name of El Dorado City, indifferently supplied with everything but whiskey.

"Easton district was organized last summer, and is situated east of and joining Shasta district. It contains a large number of gulches, some of which were worked during last summer, paying very well. Good prospects have been obtained in many others, and if water were plenty it would be a lively camp next season, and continue so for two or three years. In these districts the gold is finer than in Shasta district, and the bed rock (if rock it can be called) is a kind of cement of clay and gravel.

"Willow Creek district has recently organized, and comprises the lower part of Mormon Basin creek and a number of gulches east of it, but gold in paying quantities has only been found in one of them. This district is immediately east of Easton district, and the mines are of the same character. These districts are all on the north side of Willow creek, and are comprised in a space of about 12 miles in length and but little over one in width.

"Water is very scarce in all the mines in this vicinity. During the spring the melting snow furnishes a good many gulches with water for two or three months. After that is gone, all the natural water in Shasta district would not amount to more than one sluice head in Easton district, including the water in Mormon basin creek, about two, in Willow Creek district about one. And in speaking of creeks in those districts the reader must bear in mind that all the gulches in which water flows during summer (no matter how small the quantity)

is called a creek. Most of the gulches are dry during the fall and winter, and a prospector frequently has to carry dirt one-half mile or more to find water to wash it. Another great inconvenience here is the scarcity of timber, it being on the mountains and in canons remote from the mines. Lumber for mining and building purposes has to be hauled from 8 to 16 miles, and fire-wood from two to five miles, the former costing about $70 per 1,000 feet, and the latter from $12 to $14 per cord.

"The climate here is similar to that of the Grande Ronde and Powder River valleys, the amount of snow falling being much less than in the mining regions of Idaho. Yet the winters are very cold. The past two weeks have been about as cold an any weather I ever saw during several years' residence in the mountains. The snow is now about 10 inches deep in the mines, and perhaps two feet deep on the divide between Willow creek and Burnt river.

"There is much good agricultural land along Willow creek, Burnt river, and other streams in this vicinity, upon which abundant supplies could be raised for all this part of Oregon, unless the crickets, which seem to be one of the natural productions of the country, should claim too large a percentage of the crop.

"Several different ditches have been talked of for bringing water from Willow creek and Burnt river for mining purposes, which would supply Shasta district and subsequently districts east of that, only one of which has been prosecuted to any extent; that being the ditch of Carter, Packwood & Company, which is one of large extent, and will, when completed, supply a large extent of mining ground with water and give employment to many men. But unfortunately there is little probability of its completion in time to do any good next summer; so that many owning claims will have to wait another year before they can work them to any extent, as the mines are of such a nature that they can only be worked by the hydraulic or ground sluice, which requires a large amount of water.

"There is a large extent of unprospected country in this part of Oregon, in much of which it is probable gold may be found. Were the facilities better for working the mines, this would soon be a populous portion of the State, but much of the country is destitute of timber and water.

"There is but little to induce men to come here at present, but if any do come from Oregon and California, they had best not come before the first of May, as before that time the weather will be stormy and unsettled, and they will find it rough camping out in a country where even sage brush for fuel is not very plenty.

"There are a few stores in the country, at Clark's creek, Mormon Basin, and other camps, but they are poorly furnished with mining tools, clothing, groceries, and in fact everything but whiskey, and other beverages of like nature, which are supposed to be necessary in a country where water is not very plenty. Our nearest post office is at Express, nearly 20 miles. We get our mail matter from there or from Auburn, which is upwards of 35 miles distant. A mail route which would accommodate Clark's Creek, Mormon Basin, and the Willow mines is very necessary, and should receive the attention of our postal authorities."

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The following extracts from a premium essay written by Mr. W. Lair Hill for the State Agricultural Society give a correct idea of the general resources and productions of Oregon. The descriptions of the country and facts stated are entirely reliable:

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"Physical Geography, &c: All the country in North America lying west of the Mississippi river has a common axis of elevation, which is the great chain of the Rocky mountains, and their southern continuation, the Cordilleras of Mexico. The Sierra Nevada range, with its northern extension, the Cascade mountains of Oregon and Washington Territory, constitutes a secondary axis which materially affects the entire country of the Pacific coast, both in soil and climate. To the volcanic forces of these two great central lines of subterraneous commotion is originally due the physical geography of Oregon.

"It is generally known that the Rocky mountain range is chiefly of igneous composition. Some portions of this range are of plutonic character, while some bear unmistakable evidences that their upheaval was prior to the process of consolidation. Sandstone abounds in many places in these mountains and very considerable silurian deposits are also found. Gold-bearing rocks occur in various localities. Where sedimentary rocks are found they are frequently regular in their stratification; generally, indeed, distorted from their original position, but nevertheless retaining perfectly their stratified character. These rocks are usually interlaid with micaceous slate, and rest on masses of granite and gneiss. Mica is so abundant in some places that it may be found in extremely thin flakes in all the water of the mountain streams.

"Of the same general character is the geological structure of the Cascade range, except that there is less of stratified rocks, and stronger indications of recent volcanic action are observed. Basaltic and granitic rocks constitute the geological basis of the country. Slate and other argillaceous rocks, and a sort of irreducable limestone, also characterize the western slope of the continent. Metamorphic features become more marked the nearer we approach the Pacific coast, until, arriving at the Cascade range, this characteristic is seen in its most clear and unmistakable aspects."

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"Although the general character of this region is indicative of its having had formerly a volcanic origin, still there is found here a large proportion of sedimentary rocks, especially sandstone and a sort of conglomerate of highly silicious composition, which often contains shells and other indications of its sedimentary formation. In the Willamette valley this feature is chiefly observed on the western side of the river, and in the Umpqua and Rogue River valleys it becomes more marked on approaching the sea-coast. Shales and a sort of argillaceous limestone, irreducable by the ordinary process of heating and slaking, also abound in many places. The country here is of a much less mineral character than that east of the Cascade mountains, or even than those mountains themselves. Notwithstanding the evidences of volcanic origin common to all the western coast of America, and of which this region presents many, the rocks here, and especially on the Coast mountains, are often found regularly stratified, and in some instances their parallelism remains undisturbed for considerable distances.

"The geological basis of the Coast mountains is sandstone. Scoriaceous and trappean masses occur in the more volcanic localities. At the intersection of these mountains by the Umpqua river, sandstone prevails, and the strata remain uninterrupted, except at long intervals."

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"The Grande Ronde, lying a few leagues north of the Powder River valley, is a beautiful circular valley some 20 or 30 miles in diameter, watered by a stream bearing the same name. Surrounded by high hills or spurs of the Blue mountains, its amphitheatrical form, relieving its smooth, grassy surface, intersected by a bold stream fringed on either margin with small trees, renders it sufficiently

charming, to say nothing of the fertility of its soil, which is unsurpassed. Settlements are being made in this valley, also, by the emigrants who have come over the plains, but it will not all be occupied this season.

"The following analysis of the soil in Powder River and Grande Ronde valleys is reported by Fremont:

Powder River		Grande Ronde	
Silica	72.30	Silica	70.81
Alumina	6.25	Alumina	10.97
Carbonate of lime	6.86	Lime and magnesia	1.38
Carbonate of magnesia	4.62	Oxide of iron	2.21
Oxide of iron	1.20	Organic matter	8.16
Organic matter	4.50	Phospate of lime	1.38
Water and loss	4.27	Water and loss	5.46
	100.00		100.00 "

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PAINT PIGMENT SHIPPED

During the past month 20 cars of limonite, mined from the Ironcrest property, have been shipped from Scappoose, 20 miles northwest of Portland. This material will be used as paint pigment in the San Francisco Bay region.

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QUICKSILVER INDUSTRY MAY BE DOOMED

Since the termination of the war in Europe, Spanish quicksilver has been imported into the United States in large amounts. There have also been large steady receipts of Mexican quicksilver. Thus supplies in this country have been built up to a size that is dangerous to an orderly market. The price has dropped below $100 a flask but there are few buyers. One producer is reported to have over a thousand flasks on hand for which there is no market. This "dumping" of foreign quicksilver on the United States market can have but one result unless a halt is called; and that is the complete shut-down of the quicksilver industry in this country.

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MERCURY IN JULY 1945

The following items are taken from the U.S. Bureau of Mines monthly mercury report for July released September 13, 1945:

Record-breaking imports were the feature of the mercury industry in July, according to the Bureau of Mines, U.S. Department of the Interior. Imports amounted to 19,354 flasks and were 77 percent above the previous high monthly record for April. Meanwhile consumption dropped to 6,600 flasks, 1,900 below June and 2,300 below the high record in May. Stocks in the hands of consumers and dealers at the end of July were three times those held at the beginning of the year and inventories in the hands of producers likewise trended upward. The price continued the downtrend that has been in progress since February.

Salient statistics on mercury in the United States.
October 1944 to July 1945, in flasks of 76 pounds

Period	Production	General imports	Exports	Consumption	Stocks at end of month 3/		Price per flask at New York
					Consumers and dealers 4/	Producers 5/	
1944:							
October	2,700	886	33	3,900	7,400	2,550	$109.20
November	2,300	1,270	42	3,900	7,800	2,094	116.30
December	2,500	935	20	3,900	10,400	2,714	128.88
Total 1944	1/ 37,688	19,819	748	42,900	----	---	$118.36 6/
1945:							
January	2,500	846	28	5,200	9,000	2,188	156.85
February	2,700	2,835	9	5,100	13,000	1,946	165.55
March	3,000	2,263	25	6,100	7/ 12,200	1,584	162.00
April	3,000	10,963	30	7,500	7/ 15,800	2,148	156.84
May	3,300	7,242	70	8,900	7/ 15,600	2,760	153.69
June	3,000	3,677	22	8,500	7/ 16,100	1,377	147.73
July	3,600	19,354	(2/)	6,600	7/ 32,000	3,179	140.72

1/ Final annual total; monthly figures not adjusted. 2/ Data not yet available. 3/ Based on location rather than ownership. 4/ Largely excludes redistilled metal. 5/ Held by reporting companies. 6/ Average. 7/ Excludes metal afloat from Europe.

Mine production:

Figures covering mercury production at domestic mines, obtained from companies that accounted for 99 percent of the total output in 1944, indicate that 3,600 flasks were produced in July and 17,500 flasks were recovered in the first six months of 1945. Production in the first six months was 7 percent below the rate that prevailed in all of 1944 but it was 15 percent above the rate for the latter half of 1944. California produced about 12,600 flasks in the first half of 1945 and accounted for 72 percent of the country's total, a continuation of the advanced relative importance assumed by this State in 1944. The 1945 rate, however, was about 10 percent below that for all of 1944. Nevada was second with 2,100 flasks, indicating a noteworthy gain over the 1944 rate. The Bureau of Mines is not at liberty to publish 1945 details for the remaining States of Arizona, Arkansas, Idaho, Oregon, and Texas and for Alaska, because there were less than three reporting companies in each of these areas.

Foreign trade:

Imports of mercury totaled 19,354 flasks in July, according to records of the Department of Commerce, or more in a single month than the average annual rate for the period of high importation and low domestic production of the nineteen twenties. The imports in July were 77 percent above the previous record of 10,963 flasks in April. Details by countries for July are not yet available.

Mercury imported into the United States in October 1944 - June 1945, by countries, in flasks (general imports)

	1944		1945						
	Oct.-Dec.	Total	January	February	March	April	May	June	Total
Canada	---	1,565	20	1,700	---	---	---	----	1,720
Chile	101	981	----	---	300	---	---	200	500
Honduras	---	---	----	---	---	---	---	23	23
Mexico	2,990	17,221	826	1,055	1,963	1,909	1,390	1,452	8,595
Peru	---	52	----	80	---	51	---	----	131
Spain	---	---	----	---	---	9,003	5,852	2,002	16,857
	3,091	19,819	846	2,835	2,263	10,963	7,242	3,677	27,826

Exports of mercury thus far in 1945 have failed to reach 100 flasks in any month; they totaled 184 flasks in the first six months of 1945. Data for July are not yet available.

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